

Rosette Sampling Log

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date 2002/08/16

CAST # 2

Latitude 20 34.56

Local time/Zone

Station AGS (cast 2)

Longitude 122 59.45

UTC time 2148

Wt. sh 650 sounding CTD/R instruments

Cast depth 55m

6x10L for Russ Below 10m.

0 3 6 10 20
100% 30% 30% 11% 2% Surface Irradiation
55m → depth of the CHLA MAX
25m → to replace mistripped bottle from cast 1

PAM-PS

Geochemistry														Terry Whittedge																				
Sample Number	Raw Nominal Pressure	Rosetta bottle number	Bottle integrity	Trip Up or Down	CFC	Disa O2	ALK	DOC	HCH	SA	NUTS	O18	BA	CHLA IOS	I-129	Ch-137	ROS Bor	HPLG	POC/PO N C13/N15	LIGHT NO3 CPRO D	LIGHT NH4 CPRO D	LIGHT CPRO D	DARK NO3 CPRO D	DARK NH4 CPRO D	DARK CPRO D	TOT CHLA	FRACT CHLA	C- PATH	ASSY-1	ASSY-2	ASSY-3	ASSY-4		
25	25	1		U		X	3116							X				X																
26	25	2		U		X																												
27	25	3		U																														
28	25	4	37	U	X					X	X	X	X	X				X								X								
29	20	5	37	U																														
30	20	6	37	U																														
31	20	7	25	U	X	3113				X	X	X	X	X																				
32	20	8	20	U																														
33	20	9	20	U																														
34	20	10	20	U																														
35	20	11	20	U			X			X	X							X	X								X	X						
36	20	12	10	U						X	X								X								X	X						
37	20	13	6	U						X	X								X								X	X						
38	20	14	3	U						X	X								X								X	X						
39	20	15	2	U			X			X	X								X	X	X	X	X	X	X	X	X	X						
40	20	16	20																															
41	20	17	20																															
42	20	18	20																															
		19																																
		20																																
		21																																
		22																																
		23																																
		24																																

CONNIE

CHLA MAX

Notes: COLOUR OF NUT RACK: YELLOW (1, 4, 11-15 ONLY)

TRANSMISSION WINDOW NOT CLEANED (BUT CLEANED FOR CAST 1 by spray & fresh water)

55m was the CHLA max for cast 1 but for this cast it was much shallower at ~37m. Cast depths

were changed to allow for 3 bottles to be tripped at 37m. The Rosette was lowered on

after the 0m bottle was tripped in order to get 3 more bottles at 30m for Russ.

Rosette Sampling Log

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date 2002/08/16

CAST # 2

Latitude 20 34.56

Local time/Zone

Longitude 122 59.45

UTC time 2148

Water 650 sounding

CTD/R Instruments

Cast depth 55m

6x10L for Russ; Below 10m.

0 3 6 10 20
100% 50% 30% 11% 2% Surface Irradiation
55m → depth of the CHLA MAX
25m → to replace mistripped bottle from cast 1

PAM-PS

NO WATER LEFT

2

CONNIE

CHLA MAX

Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle integrity	Trip Up or Down	Geochemistry										Terry Whiteledge																			
					CFC	Des O2	ALK	DOC	HCH	SAL	MUTS	O18	BA	CHLA IOS	H29	Cs-137	Ros Bot	HPLC	POCPO N C13N15	LIGHT NO3 CPRO D	LIGHT NH4 CPRO D	LIGHT CPRO D	DARK NO3 CPRO D	DARK NH4 CPRO D	DARK CPRO D	TOT CHLA	FRACT CHLA	C PATH	ASSY-1	ASSY-2	ASSY-3	ASSY-4		
25	25	1		U		X	3116							X			1	X																
26	25	2		U		X											2																	
27	25	3		U													3																	
28	25	4	37	U		X			X	X	X	X	X				4	X								X								
29	20	5	37	U													5																	
30	20	6	37	U													6																	
31	20	7	25	U		X	3113		X	X	X	X	X				7																	
32	20	8	20	U		X											8																	
33	20	9	20	U													9																	
34	20	10	20	U													10																	
35	20	11	20	U					X	X							11	X	X															
36	10	12	10	U					X	X	X						12	X	X															
37	6	13	6	U		X			X	X							13	X	X															
38	6	14	6	U		X			X	X							14	X	X															
39	20	15	20	U		X			X	X							15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
40	20	16	20																															
41	20	17	20																															
42	20	18	20																															
		19																																
		20																																
		21																																
		22																																
		23																																
		24																																

Notes: COLOUR OF MUD RACK: YELLOW (1, 4, 11-15 ONLY)

TRANSMISSION METER WINDOW NOT CLEANED (BUT CLEANED FOR CAST 1 by spray of fresh water)

55m was the CHLA max for cast 1 but for this cast it was much shallower at ~37m. Cast depths were changed to allow for 3 bottles to be tripped at 37m. The Rosette was lowered again after the 0m bottle was tripped in order to get 3 more bottles at 20m for Russ.

Rosette Sampling Log - Geochemistry

ALΦ5 1 OF 2 (* 43-66)

SEE ALSO BIOLOGY LOG (2012)

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date

AUG 18, 2002 (UTC)

No Pa/PON

CAST Event # 3

Latitude 71 9.08 N

Local time/Zone

Station ALΦ5

Longitude 133 56.91 W

UTC time (start) 03:50 UTC

Water depth 509 Sounding

CTD/R Instruments

Cast depth 500 m

Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle integrity	Trip Up or Down	CFC	CFC SYRINGE#	Diss O2	OXYGEN FLASK #	TCO2 ALK	DOC	HCH	SAL	NUTS	O18	BA	CHLA IOS	I-129	Cs-137	FCM	NH4	HPIC
43	25	1	OK	D			X	2000			X	X	X	X	X	X			X	✓	
44	50	2						2007											X	✓	
45	75	3						2014											X	✓	
46	100	4						2015											X	✓	
47	125	5						2017											X		
48	150	6						2025											X		
49	175	7						2027													
50	200	8						2032											X		
51	225	9						2033													
52	250	10						2035						✓	✓	✓					
53	275	11						2036													
54	300	12						2043											X		
55	325	13						2044													
56	350	14						2047													
57	375	15						2049													
58	400	16						2051													
59	450	17						2055						X	X	X			X		
60	BOT 500m	18		▽				2056												✓	
61	150	19		U				2057						X	X	X					
62	70	20			CHL MAX			2059													✓
63	50	21						2060													✓
64	30	22						2063													✓
65	10	23						2064												✓	✓
66	5	24	▽	▽				2061				▽	▽								

10

Notes: COLOUR NUTRIENT RISK - GREEN - NH4 TOO!

Start pressure offset at beginning of cast

Bottles 20, 21, 22 and 24 taken for Chem (HPIC)

150m → dropped for a duplicate of up & down trip.

CHL MAX at ~ 50m.

NH4 TAKEN at 6, 10, 18 and 23.

Connie phone 170

Rosette Sampling Log - Biology

11L 45 2 of 2 43-66

SEE 1 of 2 Geo. Rel. Log. Top

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date

CAST #

Latitude

Local time/Zone

Station AL05

Longitude

UTC time (start)

Water depth

CTD/R Instruments

Cast depth

see other
cast

Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle integrity	Trip Up or Down	PCR EUK	BULK TO SUB SAMPL	FOR	AODC FISH	CULTURE	STERVEX	HPLC			POC/N C13/N15	LIGHT NO3	CPROD	LIGHT NH4	CPROD	LIGHT CPROD	DARK NO3	CPROD	DARK NH4	CPROD	DARK CPROD	TOT CHLA	FRACT CHLA	C-PATH	ASSY-1	ASSY-2	ASSY-3	ASSY-4	DON	BENTHIC C13 N15				
43	25	1		D																																	
44	50	2																																			
45	75	3																																			
46	100	4																																			
47	125	5																																			
48	150	6					X																														
49	175	7																																			
50	200	8					X																														
51	225	9																																			
52	250	10																																			
53	275	11																																			
54	300	12					X																														
55	325	13																																			
56	350	14																																			
57	375	15																																			
58	400	16																																			
59	450	17					X																														
60	BOT	18		▽																																	
61		19											X	X	X	X	X	X	X	X	X	X	X	X													
62		20											X	X	X	X	X	X	X	X	X	X	X	X													
63		21											X	X	X	X	X	X	X	X	X	X	X	X													
64		22											X	X	X	X	X	X	X	X	X	X	X	X													
65	SURF	23											X	▽	▽	▽	▽	▽	▽	▽	▽	▽	▽	▽	X	X											
66	SURF	24																																			

4/

20

2 No

Notes: CONTINUE (BULK) - For C13/N15 only -> 1001

Rosette Sampling Log - Geochemistry

AL06 1 OF 2 (#67-90)

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date AUG 18, 2002

CAST ~~Event~~ # 4

Latitude 71 17.33 N

Local time/Zone

Station 11402 (cast 1)

Longitude 134 15.11 W

UTC time (start) 05:49 UTC

Water depth 949 m

CTD/R Instruments

Cast depth 945m

(FCM)

COUNT TUBES

20

CHEN BO

COUNTIE

COUNTIE

Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle integrity	Trip Up or Down	CFC	CFC SYRINGE#	Diss O2	OXYGEN FLASK #	1CO2 ALK	DOC	HCH	SAL	NUTS	O18	BA	CHLA IOS	I-129	Cs-137	NH4	DIV (DNA)	PER	EUK	Buck
67	5	1		D	✓		✓	3107			✗	✓								✓	✗		
68	10	2			✗	9837		3108												✓	✗	✗	✗
69	25	3						3109												✓	✗	✗	✗
70	50	4			✗	7635		3123												✓	✗	✗	✗
71	75	5					✓	3124												✓	✗	✗	✗
72	100	6			✗	4821		3126												✓	✗	✗	✗
73	125	7						3119															
74	150	8			✗	9822		3121													✗	✗	
75	175	9						3128															
76	200	10			✗	9830		3137															
77	225	11						3142															
78	250	12			✗	7634		3152						✓	✓	✗					✗	✗	
79	275	13			✗	4825		3130															
80	300	14			✗	7637	✓	3135															
81	325	15			✗	7677		3136															
82	350	16			✗	7629		3160															
83	375	17			✗	7625		3166															
84	400	18			✗	7624		3069													✗	✗	
85	425	19						3153															
86	450	20			✗	7676		3157												✓	✗		
87	475	21			✗	7631		3159															
88	500	22			✗	7627		3171															
89	956	23		✓	✗	7678	✓	3174						✗	✗	✗				✓	✗	✗	✗
90	CHLOR MAX	24		U				3177												✓			

47db

Notes: COLOUR NUTRIENT RACK - WHITE

DUP OXY 86dup 3162

71dup 3161

Bottle 23 - CFC sampled first 500m) + ~500ml taken onto O2 & Res O2

Rosette Sampling Log - Geochemistry

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date Aug 18, 2002

bottles 2-5

CAST Event # 5

Latitude 71 42.09 N

Local time/Zone 10:47 MST

Station ALO7 (Cont)

Longitude 134 40.78 W

UTC time (start) 16:49 UTC

Water depth 1560 m + 5 CTD/R Instruments

Cast depth 1568 m (tripped on depth)

6 NH4

105 BODIL

JERRY COUNIE COUNIE PAM -PS

Sample Number	Raw Nominal Pressure (m)	Rosette bottle number	Bottle integrity	Trip Up or Down	CFC X	CFC SYRINGE#	Diss O2	OXYGEN FLASK #	TCO2 ALK	DOC	HCH	SAL	NUTS	O18	BA	CHLA IOS	I-129	Cs-137	Poc PON	C13 NIS	HPIC	11m	Mix 300 mL
5	91	5	OK	D			✓		4	✓		✓	✓	✓	✓	✓			✓	✓	✓	✓	✓
10	92	10											✓							✓	✓	✓	✓
25	93	25											✓							✓	✓	✓	✓
50	94	50											✓							✓	✓	✓	✓
75	95	75											✓							✓	✓	✓	✓
100	96	100											✓								✓	✓	✓
125	97	125											✓								✓	✓	✓
150	98	150											✓								✓	✓	✓
175	99	175											✓										
200	100	200											✓			✓							
225	101	225																					
250	102	250												✓	✓								
300	103	300																			✓	✓	
350	104	350																					
400	105	400											✓			✓						✓	✓
500	106	500							✓				✓			✓							
750	107	750							✓				✓										
1000	108	1000							✓				✓										
1250	109	1250							✓				✓										
1500	110	1568	BT-DM	Y			✓		✓	✓			✓	✓	✓	✓			✓	✓		✓	✓
	111	1000		U							✓												
	112	1000		U							✓												
	113	400		U							✓												
	114	600		U							✓												

> 1568 m db

NUTRIENT TEST TUBE RACK - RED LABELS / ORANGE RACK

Notes: CHLA MAX AT 300m ON DOWNCAST (NOT MEASURED)

TRIPLED AT 1500m DOWN TO 1500m (MOST STATIONS WERE TRIPPED ON PRESSURE)

TRANSMISSOMETER 1.0000 CLEANED BY DOUG

30-SEC WAIT BEFORE TRIPPING ON THE WAY UP

CHLA MAX AT ~400m ON UPCAST

JERRY

Cruise # 2002-23

Event #

Station

Water depth

Cast depth

Vessel CCGS Louis S. St-Laurent

Latitude

Longitude

CTD/R Instruments

Date _____

Local time/Zone

UTC time (start)

CTD/R Instruments

Downcast
chea max 8

53m 1st peak
(Large sig)

62 2nd peak
broader, Sma
Signal

[illegible]

Notes :

HCN CAST -

Rosette Sampling Log - Geochemistry

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date 19 Augst 2002

CAST ~~EVENT~~ # 7

Latitude 17° 59.11" N

Local time/Zone UTC

Station AL 08 (cast 1)

Longitude 135° 18.67" W

UTC time (start) 03 = 04

Water depth 2090 ELAC

CTD/R Instruments

Cast depth 50m

[illegible]

Notes :

Notes: This code was done to check whether there was an influence in the compiler from the internal processing / washing in the job deck. 50 m AL07 ?
of 50 m AL08 no mid

Rosette Sampling Log - Geochemistry

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date 19 August 2002

Event # 8

Latitude 41 59.09

Local time/Zone UTC

Station AL08 (cont 2)

Longitude 135 18.94

UTC time (start) 03:22

2000m Water depth 2090 (ELAC) 2056m CTD/R Instruments

Cast depth 2083 (Pressure), 2051 m (Depth)

Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle integrity	Trip Up or Down	CFC	CFC SYRINGE#	Diss O2	OXYGEN FLASK #	TCO2 ALK	DOC	HCH	SAL	NUTS	O18	BA	CHLA IOS	I-129	Cs-137	FCM						
135	5	1	OK	D	✓	7624	✓					✓	✓	✓	✓	✓									
136	10	2											✓			✓			✓						
137	25	3			✓	7676							✓			✓			✓						
138	50	4			✓	7627							✓			✓			✓						
139	75	5											✓			✓			✓						
140	100	6			✓	7678							✓			✓			✓						
141	125	7											✓			✓									
142	150	8			✓	7629							✓						✓						
143	175	9																							
144	200	10			✓	7625													✓						
145	225	11					✓✓																		
146	250	12			✓	7677								✓	✓	✓									
147	300	13			✓	7631																			
148	350	14																							
149	400	15			✓	9837													✓						
150	450	16																							
151	500	17			✓	7365	✓✓						✓												
152	600	18			✓	9821																			
153	800	19			✓	9828																			
154	1000	20			✓	9830													✓						
155	1250	21			✓	7634																			
156	1500	22			✓	7637																			
157	bottom 2000	23			✓	9822							✓	✓	✓										
158	CHLA MAX	24																							

Notes:

NUT TUBES - green

Rosette Sampling Log - Geochemistry

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date 19 Aug 2002

Event # 9

Latitude 72 37.81

Local time/Zone UTC

Station AL 49

Longitude 136 13.75

UTC time (start) 17=38

Water depth 2600(ELAC), 2580 CTD/R Instruments

Cast depth 2575

Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle integrity	Trip Up or Down	CFC	CFC SYRINGE#	Diss O2	OXYGEN FLASK #	TCO2 ALK	DOC	HCH	SAL	NUTS	O18	BA	CHLA IOS	I-129	Cs-137	FeM	NH4	C13 N15		
159	5	1 ✓	OK	D			✓					✓	✓	✓	✓	✓	×	×		✓			
160	10	2 ✓																	✓	✓			
161	25	3 ✓																	✓	✓			
162	50	4 ✓																	✓	✓			
163	75	5 ✓																	✓	✓			
164	100	6 ✓	▽																✓	✓			
165	125	7 ✓	*																✓	✓			
166	150 ✓	8	OK																				
167	175 ✓	9	OK																				
168	200 ✓	10	*																✓				
169	225 ✓	11	*																				
170	250 ✓	12	SEE NOTE											▽	▽	▽							
171	275 ✓	13	*																				
172	300 ✓	14	*																				
173	325 ✓	15	OK																				
174	350 ✓	16	*																				
175	400 ✓	17																	✓				
176	500 ✓	18	*																	✓	✓		
177	750 ✓	19	OK																				
178	1000 ✓	20																	✓				
179	1250 ✓	21																					
180	1500 ✓	22	▽																				
181	2000 ✓	23	*																	✓			
182	2500 ✓	24	*	▽			✓					✓	✓								✓	✓	

Notes: NUT TUGES - BLUE

WHEN TOP SPIGOT TURNED TO LEFT BOTTLE #12 LEAKED FROM BOTTOM

Notice Top Seal not complete: 23, 24, 7, 10, 11, 12, 13, 14, 16, 18. & Bottle 6 not sealed on the top

Rosette Sampling Log - Geochemistry

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date 19 Aug 2002

Event # 10

Latitude 72 37.63

Local time/Zone UTC

Station AL 09

Longitude 136 14.34

UTC time (start) 20:54

Water depth 2590 (ELAC)

CTD/R Instruments

Cast depth

TEMP

	Sample Number	Raw Nominal Pressure Depth	Rosette bottle number	Bottle integrity	Trip Up or Down	CFC	CFC SYRINGE#	Diss O2	OXYGEN FLASK #	DO ALK	DOC	HCH	SAL	NUTS	O18	BA	CHLA IOS	I-129	Cs-137	NH4							
CHLA MNT	183	62 ✓	1	OK	U			✓					✓	✓						✓							
	184	62 ✓	2																	✓							
20%	185	23 ✓	3	S				✓		✓			✓	✓						✓							
	186	23 ✓	4																								
11%	187	13 ✓	5	4				✓		✓			✓	✓						✓							
	188	13 ✓	6																								
30%	189	7 ✓	7	3				✓		✓			✓	✓						✓							
	190	7 ✓	8																								
50%	191	4 ✓	9	2				✓		✓			✓	✓						✓							
	192	4 ✓	10																								
100%	193	0 ✓	11	1	U			✓		✓			✓	✓						✓							
	194	0 ✓	12	U	U																						
			13																								
			14																								
			15																								
			16																								
			17																								
			18																								
			19																								
			20																								
			21																								
			22																								
			23																								
			24																								

Notes: COLOUR OF TEST TUBE RACK-YELLOW

NH4 (#1, 3, 5, 7, 9, 11)

Ship reposition to avoid waste disposal (72° 37.85' N, 136° 14.51' W)

Rosette Sampling Log - Biology

AL 09 [2 of 2]

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date

Event # 10

Latitude

Local time/Zone

Station AL 09

Longitude

UTC time (start)

Water depth

CTD/R Instruments

Cast depth

Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle integrity	Trip Up or Down	PCR EUK	BULK TO SUB SAMPL	AODC FISH	CULTURE	STERVEX	HPLC	POC/N C13/N15	LIGHT NO3 CPROD	LIGHT NH4 CPROD	LIGHT CPROD	DARK NO3 CPROD	DARK NH4 CPROD	DARK CPROD	TOT CHLA	FRACT CHLA	C-PATH	ASSY-1	ASSY-2	ASSY-3	ASSY-4	DON	BENTHC C13 N15			
183	62	1									✓							✓											
184	62	2																											
185	23	3																✓											
186	23	4																✓											
187	13	5									✓							✓											
188	13	6																✓											
189	7	7																✓											
190	7	8																✓											
191	4	9																✓											
192	4	10																✓											
193	0	11									✓	✓	✓	✓	✓	✓	✓	✓	✓										
194	0	12										✓						✓	✓										
		13																											
		14																											
		15																											
		16																											
		17																											
		18																											
		19																											
		20																											
		21																											
		22																											
		23																											
		24																											

↑
check with Terry

Notes :

AL 09 | 2022

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date

Event #

Latitude

Local time/Zone

Station

AL 09

Longitude

UTC time (start)

Water depth

CTD/R Instruments

Cast depth

Sample Number		Raw Nominal Pressure	Rosette bottle number	Bottle integrity	Trip Up or Down	PCR EUK	BULK TO SUB SAMPL	AOC FISH	CULTURE	STERMEX	HPLC	POC/N C13/N15	LIGHT NO3 CPROD	LIGHT NH4 CPROD	LIGHT CPROD	DARK NO3 CPROD	DARK NH4 CPROD	DARK CPROD	TOT CHLA	FRACT CHLA	C-PATH	ASSY-1	ASSY-2	ASSY-3	ASSY-4	DON	BENTHIC C13 N15			
183	62	1										✓							✓											
184	62	2																	✓											
185	23	3																	✓											
186	23	4																	✓											
187	13	5										✓							✓											
188	13	6																	✓											
189	7	7																	✓											
190	7	8																	✓											
191	4	9																	✓											
192	4	10																	✓											
193	0	11										✓	✓	✓	✓	✓	✓	✓	✓	✓										
194	0	12											✓						✓											
		13																												
		14																												
		15																												
		16																												
		17																												
		18																												
		19																												
		20																												
		21																												
		22																												
		23																												
		24																												

↑
check with Terry

Notes :

BAKA BEYOND - SAMPLING MUSIC

CONNIE - V NEED 10m (200, 400, 750) FROM ANOTHER CAST.

Rosette Sampling Log - Geochemistry

150m → PICK UP ANOTHER PCYN 1LATER

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date AUG 20, 2002

Event # 11

Latitude 73 29.27

Local time/Zone UTC

Station AL10

Longitude 136 59.61

UTC time (start) 15:56

Water depth 3200(ELAC), 3130^(CTD+ALT) m CTD/R Instruments

Cast depth 3180dbar, 3124m

10m level to be picked up on another cast

Sample Number	Raw N-minal Pre-ure	Rosette bottle number	Bottle integrity	Trip Up or Down	CFC	CFC SYRINGE#	Diss O2	OXYGEN FLASK #	TCO2 ALK	DOC	HCH	SAL	NUTS	O18	BA	CHLA IOS	I-129	Cs-137	PCR EUK	PCR ETC	PNA	PCR AN	NH4	C13 N15
195	2 ✓	1		D			✓	2000	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
196	5 ✓	2			✓	7635		2007											✓	✓	✓	✓	✓	✓
197	25 ✓	3						2014											✓	✓	✓	✓	✓	✓
198	50 ✓	4			✓	9822		2015											✓	✓	✓	✓	✓	✓
199	75 ✓	5						2017											✓	✓	✓	✓	✓	✓
200	100 ✓	6			✓	7625		2025								✓			✓	✓	✓	✓	✓	✓
201	125 ✓	7					✓	2027									✓					✓	✓	✓
202	150 ✓	8						2032									✓		✓	✓		✓	✓	✓
203	175 ✓	9						2033									✓						✓	✓
204	200 ✓	10			✓	7629		2035								✓	✓		✓	✓		✓	✓	✓
205	225 ✓	11						2036								✓	✓							
206	250 ✓	12						2043								✓	✓							
207	300 ✓	13			✓	7634		2044								✓	✓							
208	350 ✓	14			✓	7631		2047								✓	✓							
209	400 ✓	15			✓	7678		2049								✓	✓		✓	✓				
210	500 ✓	16			✓	9825	✓	2051								✓	✓		✓	✓			✓	✓
211	750 ✓	17			✓	9821		2073								✓	✓		✓	✓				
212	1000 ✓	18			✓	9837		2056								✓	✓							✓
213	1250 ✓	19			✓	7627		2057								✓	✓							
214	1500 ✓	20			✓	9830		2059								✓	✓							
215	2000 ✓	21			✓	7676		2060														✓		
216	2500 ✓	22			✓	7637		2061																
217	3000 ✓	23			✓	7677		2063						✓	✓							✓		
218	Bot ✓	24		STOPPED	✓	7624	✓	2064																✓

CONNIE

CHEN BO (LATER CAST)

BODIL 2 clear C13 N15

5m

4L

Notes: Rosette bottle 2 : 10m → about 5~6m (Sorry) NO PROBLEM.

53 dbar ~ Chlamax (starts at ~ 49m, ~ 10m bad)

OXY DUPS : Bot 7 125m flask & 2065 Bot 16 500m flask & 2068

TCO2 / ALK - Bot 1 (2m) and Bot 2 (5m) Cap removed to add HgCl2

¹³C/¹⁵N - from 1000m + BOTTOM - 4 L each

NUTS - Red in ORANGE RACK 1.5 →

3: 2.5 4
5 CHEN

Rosette Sampling Log - Geochemistry

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date Aug. 22, 2002

Event # 13

Latitude 73 26.94 N

Local time/Zone

Station AL 10 (3)

Longitude 136 49.18 W

UTC time (start) 1331 UTC

Water Depth ~ 3170

CTD/R Instruments

Cast depth 1000 m

Chla max at 52 m

Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle integrity	Trip Up or Down	CFC	CFC SYRINGE#	Diss O2	OXYGEN FLASK #	TCO2 ALK	DOC	HCH	SAL	NUTS	O18	BA	CHL A IOS	I-129	Cs-137	BACT DNA			
243	1000 ✓	1		U	✓	7676	✓	2000	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
244	600 ✓	2			✓	7627	✓	2007				✓	✓	✓					✓			
245	350 ✓	3			✓	9837	✓	2014				✓	✓									
246	300 ✓	4			✓	7677	✓	2015				✓	✓									
247	275 ✓	5	*		✓	9821	✓	2017				✓	✓	✓								
248	250 ✓	6			✓	7624	✓	2025				✓	✓									
249	225 ✓	7			✓	9830	✓	2027				✓	✓									
250	175 ✓	8			✓	7637	✓	2032				✓	✓									
251	150 ✓	9			✓	7635	✓	2033				✓	✓									
252	150 ✓	10			✓	7678	NO	oxy			✗	✓	NO									
253	150 ✓	11									✗	✓										
254	125 ✓	12	*		✓	7631	✓	2036			✗	✓	✓									
255	100 ✓	13			✓	7629	✓	2043			✗	✓	✓						✓			
256	100 ✓	14			✓	9835	NO	oxy			✗	✓	NO									
257	100 ✓	15									✗	✓										
258	75 ✓	16									✗	✓										
259	75 ✓	17									✗	✓										
260	50 ✓	18			✓	7634	✓	2047			✗	✓	✓						✓			
261	50 ✓	19									✗	✓										
262	50 ✓	20									✗	✓										
263	25 ✓	21			✓	9822	✓	2049			✗	✓	✓									
264	25 ✓	22									✗	✓										
265	25 ✓	23									✗	✓										
266	5 ✓	24		✓	✓	7625	✓	2051			✗	✓	✓						✓			

Notes: HCH 150m (bot 10,11) 100m (bot 14,15) 75m (16,17) 50m (19,20) 25m (22,23)

SALINITY - DUPLICATES FOR K031 at 1000m, 600m, and 5m

CHEN - DNA, BACT SAMPLE 2.5 L at each of 1000, 600, 100, 50 & 0 levels.

Chla max - 52m.

oxy DIPS Bot 3-2073; BOT 6-2036

* Bottle 5, 12 Bottoms not quite sealed - & small drop from bottom / Bottles 7, 9, 10, 13, 14, 17, 18, 23, 24 Tops not quite sealed

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date 23 Aug 2002

Event # 114

Latitude 72 33.78 N

Local time/Zone UTC

Station SB01(1) (Stn A01)

Longitude 140 59.82 W

UTC time (start) 16:47

Water depth 3220 (ELAC)

CTD/R Instruments

Cast depth 18 3166 m

(LOCATED AT 705 STN A01 - CLIMATE STN)

Sample Number	Raw Nominal Pressure	Rosette bottle number	NOT SEALED Bottle integrity TOP BOT	Trip Up or Down	✓ CFC	✓ CFC SYRINGE#	✓ Diss O2	✓ OXYGEN FLASK #	✓ TCO2 ALK	✓ DOC	✓ NH4	✓ SAL	✓ NUTS	✓ O18	✓ BA	✓ CHLA IOS	✓ I-129	✓ Cs-137	✓ VIRUS	✓ C13 N15	✓ BACT DNA	✓ PC POP	✓ HPLC
266A	807 ✓	1	*	U	✓	7676	✓	2084	✓	✓	✓	✓	✓										
267	3000 ✓	2				7624		2085				✓	✓										
268	2500 ✓	3				9821		2086				✓	✓										
269	2000 ✓	4				9837		2087				✓	✓										
270	1500 ✓	5				7637	✓	2088				✓	✓										
271	1250 ✓	6	*			9830		2089				✓	✓										
272	1000 ✓	7				7627		2090				✓	✓										
273	800 ✓	8				7677		2091				✓											
274	600 ✓	9				7625		2092				✓											
275	500 ✓	10	*			7635		2093		✓		✓	✓										
276	400 ✓	11				9822		2094				✓											
277	350 ✓	12				7631		2095				✓											
278	300 ✓	13	*				✓	2096				✓											
279	275 ✓	14	*			7629	✓	2097				✓											
280	250 ✓	15				7634		2098				✓											
281	225 ✓	16				9825		2099				✓											
282	200 ✓	17						3003			✓	✓											
283	175 ✓	18	*			7678		3004			✓	✓	✓										
284	150 ✓	19	*					3006			✓	✓											
285	125 ✓	20						3007			✓	✓											
286	100 ✓	21						3009			✓	✓	✓										
287	75 ✓	22	*					3010			✓	✓											
288	50 ✓	23	*					3012			✓	✓											
289	5 ✓	24	*			7676		3016			✓	✓	✓										

COUNTS
BODILY
CHEN

Ammonia

IF ENOUGH WATER DO THIS TO

ONLY FOUND TAKEN BECAUSE 1000 m not enough

NOT ENOUGH WATER

Notes: Chla-max 52m

* Top not sealed fully for bottles 10, 13, 14, 18, 23, 24 AND Bottom not sealed fully for bottles 1, 6, 19, 22, 23

OXY DUPS 2 bottles 13 (3018) 14 (3019) AND 5 (3020)

NUTRIENTS → BLUE RACK

POC/N - DID NOT GET 5m, 50m, 100m

1L 1L 250 ML (4L) 2.5 (4)

Cruise # 2002-23

Event #

15

Station
$$SB\phi_1(2) \quad (St_n A\phi_1)$$

Water depth

~ 3220 m

CTD/R Instruments

Cast depth

791 m (800 db.)

Vessel CCGS Louis S. St-Laurent

Latitude

72 35.55 N

Longitude

140 52.30 W ✓

Date August 23, 2002

Local time/Zone

UTC time (start)

23:48 UTC

UP

SAMPLING FINISHED at 1930 MDT

[illegible]

→ 52.2 m

Notes: Cs-137 $\rightarrow$ no solinites $\rightarrow$ to be sampled / analyzed at BIO

HCH $\rightarrow$ one solinity taken for combined samples

TOPS - 10, 13, 14, 16, 18, 23, 24 → NOT CLOSED COMPLETELY. FLUSH

Bottoms - 1, 2, 5, 6, 7, 8, 10, 11, 15, 16, 18, 19, 20, 22, 23 $\rightarrow$ NOT COMPLETELY FLUSH

Rosette Sampling Log - Geochemistry

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date 21 Aug. 2002

Event # 12

Latitude 73 29.30 N

Local time/Zone UTC

Station AL10(2)

Longitude 137 0.03 W

UTC time (start) 13:25

Water depth 2126 + 5 m

CTD/R Instruments

Cast depth 2131 (deepest bottle 2000) TRANSMISSOMETER WINDOW CLEANED

NUTRIENTS - P BLUE PACK AND BLUE TUBES.

CONNIE COLING CHEN

TERRY

Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle integrity	Trip Up or Down	CFC	CFC SYRINGE#	Diss O2	OXYGEN FLASK #	TCO2 ALK	DOC	HCH	SAL	NUTS	O18	BA	CHLA IOS	I-129	Cs-137	PER EUR	FCH	BAC DIN	NH	PH
219	200	1		D	X	7635	X	2000			✓	X	X						X	X			
220	400	2		D	X	9825	X	2001				X	X						X	X			
221	750	3		D	X	9822	X	2002				X	X						X	X			
222	1500	4		U								X	X								X		
223	2000	5		U								X	X										
224	2500	6		U								X	X										
225	2350	7		U								X	X								X		
226	1500	8										X	X										
227	1500	9										X	X										
228	750	10	X		X	7625	X	2015				X	X										
229	750	11			X	7631	X	2017				X	X										
230	400	12	X		X	7634	X	2025				X	X										
231	400	13	X		X	7629	X	2027				X	X										
232	300	14	X									X	X										
233	300	15										X	X										
234	250	16										X	X										
235	250	17										X	X										
236	200	18			X	7678	X	2032				X	X										
237	200	19					X	2033															
238	500	20					X	2035					X						X		X	X	
239	400	21					X	2036					X						X		X	X	
240	300	22					X	2043					X						X		X	X	
241	200	23	X				X	2044					X						X		X	X	
242	100	24	X				X	2047					X						X		X	X	

CHLA TAKEN BY SAUG - NO 105 CHLA

Notes: O-RINGS ON BOTTLES 10, 12 changed back to old O-RINGS FOR TEST OF CFC CONTAMINATION. -> SLOVER

about 50 bottles used

* bottom cap not flush on recovery for 8, 6, 10, 12 & Top cap not flush for 13, 14, 10, 23, 24

Note Seal scores on for bottles where caps not flush

bot x 2

Rosette Sampling Log

Biology

20/2

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date

Event # 12

Latitude

Local time/Zone

Station AL10 (cast 2)

Longitude

UTC time (start)

Water depth

CTD/R Instruments

Cast depth

Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle integrity	Trip Up or Down	PCR EUK	BUCK TO SUB SAME	AOC FISH	CULTURE	STERNEX	HPLC	POC/N C13/N15	LIGHT NO3 CPROD	LIGHT NH4 CPROD	LIGHT CPROD	DARK NO3 CPROD	DARK NH4 CPROD	DARK CPROD	TOT CHLA	FRACT CHLA	C-PATH	ASSY-1	ASSY-2	ASSY-3	ASSY-4	DON	BENTHIC C13/N15	AKK			
219	200	1																												
220	400	2																												
221	750	3																												
222	2800	4																												
223	2700	5																												
224	2580	6																												
225	2350	7																												
226	1500	8																												
227	1500	9																												
228	750	10																												
229	750	11																												
230	400	12																												
231	400	13																												
232	300	14																												
233	300	15																												
234	250	16																												
235	250	17																												
236	200	18																												
237	200	19																												
238	555	20										X							X						X		X			
239	30	21										X							X						X		X			
240	317	22										X							X						X		X			
241	210	23								X									X						X		X			
242	10	24										X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Notes :

P. Buxton

Rosette Sampling on - Geochemistry

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date AUG 24, 2002

Event # 16

Latitude 42 35.92 N

Local time/Zone

Station SB01 (3) (Stn A01)

Longitude 140 49.08 W

UTC time (start) 01:36 UTC

Water depth 3220 m

CTD/R Instruments

Cast depth 300 db

UP

Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle integrity	Trip Up or Down	CFC	CFC SYRINGE#	Diss O2	OXYGEN FLASK #	TCO2 ALK	DOC	HCH	SAL	NUTS	O1R	BA	CHLA IOS	I-129	Cs-137	HPLC	CB NIS	PAM-PS			
314	300	1	✓	UP	✓	7676	✓	2000				✓												
315	200	2	✓		✓	7637	✓	2007				✓												
316	150	3	✓		✓	7625	✓	2014				✓												
317	150	4	✓								X	X												
318	150	5	✓								X	X												
319	125	6	✓		✓	9825	✓	2015				✓												
320	125	7	✓								X	X												
321	125	8	✓								X	X												
322	100	9	✓		✓	9837	✓	2017			X	X												
323	100	10	✓								X	X												
324	100	11	✓								X	X												
325	75	12	✓	*	✓	9821	✓	2025				✓							✓			✓		
326	75	13	✓								X	X												
327	75	14	✓								X	X												
328	50	15	✓		✓	7627	✓	2027			X	✓							✓	✓	✓			
329	50	16	✓								X	X												
330	50	17	✓	*								✓							✓		✓			
331	25	18	✓		✓	7677	✓	2037				✓							✓		✓			
332	25	19	✓								X	X												
333	25	20	✓								X	X												
334	10	21	✓									✓							✓					
335	5	22			✓	9822	✓	5033				✓							✓					
336	5	23									X	X												
337	5	24		DOWN							X	X												

Notes:

HCH → X → two bottles combined and salinity taken from combined sample.

CHLA MAX at 53 db

TOP = 9, 2, 3, 14, 17, 20, 23, 26

Bottom = 1, 2, 6, 7, 15, 18, 21, 24

GERRY BOAL 2002/08/24

Rosette Sampling Log - Geochemistry

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date August 25, 2002 (SUNDAY)

Event # 18

Latitude 72° 44.32 N

Local time/Zone

Station SB 02

Longitude 145° 01.98 W

UTC time (start) 21:40

Water depth 3550 (ELAC)

CTD/R Instruments

Cast depth 3468m, 3533dbar

Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle integrity	Trip Up or Down	CFC	CFC SYRINGE#	Diss O2	OXYGEN FLASK #	TCO2 ALK	DOC	HCH	SAL	NUTS	O18	BA	CHLA IOS	I-129	Cs-137	Poc PON	C13 N15	VIRUS	HPDC
338	3533	✓ 1		✓	✓	7678	✓	3119				✓	✓	✓	✓				✓	✓		
339	3000	2	✱		✓	7624		3121												✓		✓
340	2500	3	✓					3123											✓			
341	2000	4	✓		✓	7635		3124											✓			✓
342	1500	5	✓		✓	9822		3126														
343	1250	6	✓ ✱					3128														
344	1000	7	✓		✓	7631		3130						✓	✓				✓			✓
345	800	8	✓		✓	7629		3135												✓	✓	
346	600	9	✓		✓	7634		3136											✓			
347	500	10	✓		✓	7678		3137													✓	
348	400	11	✓		✓	9830		3142														
349	350	12	✓		✓	9825		3151											✓			
350	300	13	✓		✓	9837		3153														
351	275	14	✓		✓	7635		3157						✓	✓	✓						
352	250	15	✓		✓	9821		3159														
353	225	16	✓		✓	7627		3160											✓		✓	
354	200	17	✓		✓	7677		3161						✓	✓	✓					✓	
355	175	18	✓					3162						✓	✓	✓						
356	150	19	✓		✓	7676		3164						✓	✓	✓						
357	125	20	✓					3166						✓	✓	✓					✓	✱
358	100	21	✓		✓	7637		3167						✓	✓	✓						✓
359	75	22	✓					3171						✓	✓	✓						
360	50	23	✓		✓	7625		3174						✓	✓	✓					✓	✱
361	5	24	✓					3177						✓	✓	✓						✓

Notes: Chla-max ~ 60m

Bottom 36, 21, 12, 13, 22 (76 cap did not seal - water pouring out) - bottom cap not flush

Tops 12, 13, 14, 16, 18, 23, 24 - top cap not flush

Bottle 2 → leaking around seal on the bottom cap after top seal opened

- 3104 Oxy duplicate Bot #15 Sample 352

- 3100 Oxy duplicate Bot #20 Sample 357

Rosette Sampling Log - Biology

[SBφ3 location moved from original planned location]

Chen MAY
2%
11%
30%
50%
100%
Cruise # 2002-23
Event # 19
Station SBφ3 (1)
Water depth 3850 m
Cast depth 100 m

Vessel CCGS Louis S. St-Laurent
Latitude 74 14.01 N
Longitude 148 22.19 W
CTD/R Instruments NO TRANSMISSOMETER

Date Aug 26, 2002
Local time/Zone
UTC time (start) 16:20

Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle integrity	Trip Up or Down	PCR EUK	BULK TO SUB SAMPL	AOC FISH	CULTURE	STERMEX	HPLC	PAM PS	POC/N C13/N15	LIGHT NO3 CPROD	LIGHT NH4 CPROD	LIGHT CPROD	DARK NO3 CPROD	DARK NH4 CPROD	DARK CPROD	TOT CHL	FRACT CHL	C-PATH	ASSY-1	ASSY-2	ASSY-3	ASSY-4	DON	BENTHIC C13 N15	SNL	11/11/11/14	DM BA
362	50	1								X	X															X	X	X		
	50	2								X	X															X	X	X		
363	48	3								X	X															X	X	X		
	48	4								X	X															X	X	X		
364	25	5								X	X															X	X	X		
	25	6								X	X															X	X	X		
365	14	7								X	X															X	X	X		
	14	8								X	X															X	X	X		
366	8	9								X	X															X	X	X		
	8	10								X	X															X	X	X		
367	0	11								X	X	X	X	X	X	X	X	X	X	X	X					X	X	X		
	0	12								X	X	X	X	X	X	X	X	X	X	X	X					X	X	X		
	0	13								X	X	X	X	X	X	X	X	X	X	X	X					X	X	X		
		14																												
		15																												
		16																												
		17																												
		18																												
		19																												
		20																												
		21																												
		22																												
		23																												
		24																												

Notes: PAR measurements made just prior to cast to determine the 100%, 50%, 30% 11% & 2% light levels
Two bottles tripped at each depth, Rosette brought back on board and bottles drained into 20L cubitainers with Rosette out on deck
Chen MAY at 48m

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date 26 Aug 2002

Event #

CAST 20

Latitude

74 13.92 N

Local time/Zone

Station

SB03(2)

Longitude

148 22.42 W

UTC time (start)

1720

Water depth

3850m

CTD/R Instruments

NO TRANSMISSOME ER

Cast depth

3398 m

Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle integrity	Trip Up or Down	CFC	CFC SYRINGE#	Diss O2	OXYGEN FLASK #	TCO2 ALK	DOC	HCH	SAL	NUTS	O18	BA	CHLA IOS	I-129	Cs-137	HPK	C13 N15	PAM PS	EUK	DNA
368	3398m	1	✓	U	✓	7631	✓	2084				XX		✓	✓								✓
369	3200	2	✓		✓	7629		2085				XX											✓
370	2500	3	✓					2086				XX											
371	2000	4	✓		✓	7634		2087				XX											✓
372	1500	5	✓		✓	7830		2088				XX											
373	1250	6	✓		✓	7825		2089															
374	1000	7	✓		✓	7678		2090				XX											✓
375	800	8	✓		✓	7674		2091														✓	
376	600	9	✓		✓	7635		2092															
377	500	10	✓		✓	7822		2093				XX											✓
378	400	11	✓		✓	7676		2094														✓	
379	350	12	✓		✓	7637		2095															
380	300	13	✓		✓	7625		2096															
381	275	14	✓		NO			2097															
382	250	15	✓		✓	9821		2098						✓	✓	✓							
383	225	16	✓		✓	9821		2099															
384	200	17	✓		✓	7627		3003														✓	
385	175	18	✓					3004															
386	150	19	✓		✓	7677		3006						✓	✓	✓						✓	
387	125	20	✓					3007						✓	✓	✓						✓	
388	100	21	✓		✓	7631		3009						✓	✓	✓						✓	✓
389	75	22	✓					3010						✓	✓	✓						✓	
390	50	23	✓		✓	7629		3012				✓		✓	✓	✓						✓	✓
391	5	24	✓	✓				3016				XX	✓	✓	✓	✓						✓	✓

2L

Notes: Duplicates OXY #9 376, #16 383 3019.

NUTS - Red 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date AUGUST 27, 2002

Event # 21

Latitude 76° 46.62

Local time/Zone

Station NW08

Longitude 148° 57.55

UTC time (start) 16=39

Water depth 3880 (ELAC)

CTD/R Instruments No transducer

Cast depth 3409m, 3477m

Sampling START 1325

1-PS → NO

HPLC → NO

CIB/NIS → NO

* CHEN → ONLY IF GLASSH

J.W. BAVERLEY
COUNTIE 300mL
CHEN ?

Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle integrity	Trip Up or Down	CFC	CFC SYRINGE#	Diss O2	OXYGEN FLASK #	TCO2 ALK	DOC	HCH	SAL	NUTS	O18	BA	CHLA IOS	I-129	Cs-137	PAC PON	AODC FISH	EUK	AND VIRUS
392	3474	1			NO				✓	✓		✓	✓	✓	✓	✓			✓	✓		✓
393	3000	2			✓	7637			✓	✓		✓	✓						✓	✓		✓
394	2500	3	✓						✓	✓		✓	✓						✓	✓		✓
395	2000	4	✓		✓	7625			✓	✓		✓	✓				✓		✓	✓		✓
396	1500	5	✓		✓	9825			✓	✓		✓	✓									
397	1250	6	✓		✓	9837	✓	✓	✓	✓		✓	✓									
398	1000	7	✓		✓	9821			✓	✓		✓	✓						✓	✓		✓
399	800	8	✓		✓	7627			✓	✓											✓	
400	600	9	✓ SPIGOT *		✓	7637			✓	✓		✓	✓						✓	✓		✓
401	500	10	✓		✓	7676			✓	✓		✓	✓						✓	✓		✓
402	400	11	✓		✓	7624			✓	✓											✓	
403	350	12	✓		✓	7635			✓	✓									✓			
404	300	13	✓		✓	9822			✓	✓												
405	275	14	✓		✓	7631			✓	✓												
406	250	15	✓		✓	7629			✓	✓				✓	✓	✓						
407	225	16	✓		✓	7634	✓	✓	✓	✓				✓	✓	✓			✓			
408	200	17	✓		✓	7830			✓	✓				✓	✓	✓			✓			
409	175	18	✓						✓	✓											✓	
410	150	19	✓		✓	7678			✓	✓											✓	
411	125	20	✓						✓	✓									✓	✓		✓
412	100	21	✓		✓	7637			✓	✓									✓	✓		✓
413	75	22	✓									✓	✓	✓	✓	✓			✓	✓		✓
414	50	23	✓		✓	7625			✓	✓		✓	✓	✓	✓	✓			✓	✓		✓
415	5	24	✓						✓	✓		✓	✓	✓	✓	✓			✓	✓		✓

Notes: TCO2 and DOC - no samples at 75m and 1250m; duplicates at 1500m & 800m

Oxy dups 225m^(bot 16) and 1250m^(bot 6)

Tops 14, 16, 17, 18, 23, 24, 7, 10, 11, 13 → NOT FLUSH / BOTTOMS 6 NOT FLUSH

SPIGOT LOOSE ON BOTTLE #9 → IN FACT, IT CAME RIGHT OUT WHEN TUBE FROM TCO2 WAS

BEING REMOVED

NUTRIENT RACK - GREEN

COUNTIE - GUTTER LIES; PCB + FISH LEE STUFF (FCH) + VIRUS. SALINITY CRISIS

SEE OVER FOR

Rosette Sampling on - Geochemistry

DAVE ALLEN CAST

Cruise # 2002-23
 Cast Event # 72
 Station NW 7 (11)
 Water depth ~ 3900m
 Cast depth 3414m

Vessel CCGS Louis S. St-Laurent
 Latitude 75° 53.02 N
 Longitude 153° 8.57 W
 CTD/R Instruments No transmission meter

Date AUG 29, 2002
 Local time/Zone 15:43
 UTC time (start) 21:43

→ SAL FOR HCH IS FROM THE POOLED SAMPLE

Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle integrity	Trip Up or Down	CFC	CFC SYRINGE#	Diss O2	OXYGEN FLASK #	TCO2 ALK	DOC	HCH	SAL	NUTS	O18	BA	CHLA IOS	I-129	Cs-137	DNA	STEIN	CULT BACT	AODX FISH	C13 N15	POC / PON
416	Dup 3414	1	✓	U	✓		✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
417	Dup 4	2	✓		✓	7627	✓	3100				✓	✓	✓	✓				✓	✓	✓	✓	✓	✓
418	Dup 4	3	✓																					
419	3000	4	✓																✓	✓	✓	✓	✓	✓
420	3000	5	✓		✓	7677	✓	3104				✓	✓				✓		✓	✓	✓	✓	✓	✓
421	3000	6	✓																					✓
422	2500	7	✓																					✓
423	2500	8	✓		✓	7676	✓	3107				✓	✓				✓							✓
424	2500	9	✓																					✓
425	2000	10	✓																✓					✓
426	2000	11	✓		✓	7637	✓	3108				✓	✓				✓		✓					✓
427	2000	12	✓																					✓
428	800	13	✓																					
429	800	14	✓																					
430	800	15	✓																					
431	800	16	✓																					
432	800	17	✓																					
433	600	18	✓																					
434	600	19	✓																					
435	600	20	✓																					
436	400	21	✓																					
437	400	22	✓																					
438	300	23	✓																					
439	300	24	✓																					

Notes: Chla max at 33m

BOTTLE 20 DID NOT CLOSE → ONLY SAL FOR 600m Cs-137

TOPS 17, 18, 16, 14, 13, 12, 11, 10, 7, 23, 24, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

BOTTOMS 5, 6, 8, 14, 15, 16, 17, 18, 19, 20, 21-24, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

11: CFC AND OXYGEN BOTTLES SAMPLED AFTER DAVE ALLEN - 250CC Sample
 OXY DUP BOT 11 (Flask 4129)

BUNGIE
 BOTTLE
 NOT CLOSED

Rosette Sampling on - Geochemistry

GEOCHEM 1 HOUR AFTER CAST
Micromonas pusilla to the tune of 10⁶ at Row 400
Don't make it.

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date Aug 30, 2002

Event # 23

Latitude 75° 55.05

Local time/Zone

Station NW 07 (cast 21)

Longitude 152° 56.28

UTC time (start) 01=19

Water depth 3900 m

CTD/R Instruments

Cast depth 1500 db

CONNIE?

Poc/N

2.5

Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle integrity	Trip Up or Down	CFC	CFC SYRINGE#	Diss O2	OXYGEN FLASK #	TCO2 ALK	DOC	HCH	SAL	NUTS	O18	BA	CHLA IOS	+129	Cs-137	Poc/N	C13 N15	PCR	J1	
440	1500	✓ 1		U	✓	7627		2084											✓				
441	1250	✓ 2	4		✓	7677		2084											✓				
442	1000	✓ 3			✓	7676		2086												✓			
443	800	✓ 4			✓	7637		2087															
444	600	✓ 5			✓	7625		2088															
445	500	✓ 6						2089											✓				
446	450	✓ 7			✓	9825		2090															
447	400	✓ 8			✓	9837		2091															
448	375	✓ 9			✓	9821		2092															
449	350	✓ 10			✓	7624		2093															
450	325	✓ 11			✓	7635		2094															
451	300	✓ 12			✓	9822		2095															
452	275	✓ 13						2096															
453	250	✓ 14			✓	7631		2097						✓	✓	✓	✓		✓				
454	225	✓ 15			✓	7629		2098															
455	200	✓ 16			✓	7634		2099						✓	✓	✓	✓						
456	175	✓ 17						3003						✓	✓	✓	✓						
457	150	✓ 18			✓	7678		3004						✓	✓	✓	✓						
458	125	✓ 19						3006						✓	✓	✓	✓						
459	100	✓ 20			✓	9830		3007						✓	✓	✓	✓		✓				
460	75	✓ 21	✗			✗								✓	✓	✓	✓		✓		✓		
461	50	✓ 22			✓	7677		3010						✓	✓	✓	✓		✓				
462	25	✓ 23						3012						✓	✓	✓	✓		✓				
463	5	✓ 24			✓	7627	✓	3016						✓	✓	✓	✓		✓				

Notes:

Chla max ~ 50m

Bottle #21 did not close - hook on bottom lanyard gone.

Bottle #2 leaking from the bottom cap.

OXY DUPLICATES Bot #3 (fleck & 3018) and Bottle #10 (3019)

5m

near 500m line

Rosette Sampling Log - Geochemistry

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date 30 Aug 2002

Event # 24

Latitude 75° 54.95

Local time/Zone 22 04 (29 Aug)

Station NW167 (cast 3)

Longitude 157° 50.86

UTC time (start) 04:04

Water depth ~3900m

CTD/R Instruments No transmissometer

Cast depth 1000m

NOTE: TRANSMISSOMETER SHOULD GO ON → DIDN'T!

Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle integrity	Trip Up or Down	CFC	CFC SYRINGE#	Diss O2	OXYGEN FLASK #	TCO2 ALK	DOC	HCH ✓	SAL ✓	NUTS	O18	BA	CHLA IOS	H29	Cs-137	DNA VIALS	STER WEX	Cult PAT	AOC FISH	C13 NIS
464	1000	1	✓	U															mm			✓	mm
465	1000	2	✓								X	X							mm			✓	
466	1000	3	✓																			✓	
467	500	4	✓								X	X										mm	
468	500	5	✓																			✓	
469	500	6	✓																			✓	
470	400	7	✓															X					
471	400	8	✓															X					
472	400	9	✓															X					
473	300	10	✓															X					
474	300	11	✓															X					
475	300	12	✓								X	X						X					
476	250	13	✓															X					
477	250	14	✓															X					
478	200	15	✓															X					
479	200	16	✓															X					
480	200	17	✓															X					
481	200	18	NO LOSE																				
482	200	19	✓																				
483	150	20	✓																				
484	150	21	✓																				
485	100	22	✓								X	X											
486	100	23	✓																				
487	100	24	✓																				

→ DELAYED TILL

NEXT CAST

Notes:

Bottle 18 hung up to 16

1000
500
100

→ 2 labels

Dave did not get the HCH sample too fast

Rosette Sampling Log - Geochemistry

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date 30 Aug 2002

Event # 25

Latitude 76 3.67 N

Local time/Zone

Station NW 07 (cast 4)

Longitude 152 35.67 W

UTC time (start) 14:33

Water depth ~3900m

CTD/R Instruments No transmissometer

Cast depth 1000m

Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle integrity	Trip Up or Down	CFC	CFC SYRINGE#	Diss O2	OXYGEN FLASK #	TCO2 ALK	DOC	HCH	SAL	NUIS	O18	BA	CHLA IOS	NH4	Cs-137	DIA VIRUS	STEP WEB	CUL	AODE FISH	C13 NIS	Doc/
488	1000	1	✓										✓						✓			✓		
489	500	2	✓										✓						✓			✓		
490	500	3	✓										✓						✓			✓		
491	200	4	✓										✓						✓			✓		
492	200	5	✓										✓						✓			✓		
493	100	6	✓										✓						✓			✓		
494	75	7	✓										✓						✓			✓		
495	75	8	✓										✓						✓			✓		
496	75	9	✓										✓						✓			✓		
497	50	10	✓										✓						✓			✓		
498	50	11	✓										✓						✓			✓		
499	50	12	✓										✓						✓			✓		
500	CHLA MAX	13	✓										✓			✓			✓			✓		
501	CHLA MAX	14	✓										✓			✓			✓			✓		
502	CHLA MAX	15	✓										✓			✓			✓			✓		
503	25	16	✓										✓			✓			✓			✓		
504	25	17	✓										✓			✓			✓			✓		
505	25	18	✓										✓			✓			✓			✓		
506	10	19	✓										✓			✓			✓			✓		
507	5	20	✓										✓			✓			✓			✓		
508	5	21	✓										✓			✓			✓			✓		
509	5	22	✓										✓			✓			✓			✓		
510	Surface	23	✓										✓			✓			✓			✓		
511	Surface	24	✓										✓			✓			✓			✓		

Notes :

Chla max 42m

Bottle #13 did not close

Tops not closed 2, 7, 10, 13, 14, 19, 20, 23, 24

Bottoms not closed 1, 2, 3, 12, 15, 16, 17, 18, 21, 22

Rosette Sampling Log - Biology

PRODUCTIVITY CAST

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date 30 Aug 2002

Event # 26

Latitude 75° 55.09'

Local time/Zone

Station NW 06

Longitude 155° 1.87'

UTC time (start) 19:11

Water depth 3900m

CTD/R Instruments No Transmissometer

Cast depth 3400m

TERRY

TERRY																														
Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle Integrity	Trip Up or Down	PCR EUK	BULK TO SUB SAMPLE	AODC FISH	CULTURE	STERVEX	HPLC	PAM PS	POC/N C13/N15	LIGHT NO3 CPROD	LIGHT NH4 CPROD	LIGHT CPROD	DARK NO3 CPROD	DARK NH4 CPROD	DARK CPROD	TOT CHLA	FRACT CHLA	C-PATH	ASSY-1	ASSY-2	ASSY-3	ASSY-4	DON	BENTHIC C13/N15	ALK	SAL	NUT
512	75 ✓	6 1								✓	✓	✓							✓								✓	✓	✓	✓
	75 ✓	2																												
513	Chla MAX ✓	3 3								✓	✓	✓							✓								✓	✓	✓	✓
	Chla MAX ✓	4																												
514	35 ✓	4 5								✓	✓	✓							✓								✓	✓	✓	✓
	25 ✓	6																												
515	10 ✓	3 7								✓	✓	✓							✓								✓	✓	✓	✓
	10 ✓	8																												
516	5 ✓	2 9								✓	✓	✓							✓								✓	✓	✓	✓
	5 ✓	10																												
517	0 ✓	1 11								✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓							✓	✓	✓	✓
	0 ✓	12																												
	0 ✓	13																												
	0 ✓	14																												
	0 ✓	15																												
	0 ✓	16																												
	0 ✓	17																												
	0 ✓	18																												
	0 ✓	19																												
	0 ✓	20																												
	0 ✓	21																												
	0 ✓	22																												
	0 ✓	23																												
	0 ✓	24																												

Notes:

Spare bottles kept to ensure depth are correct and also for water to use in incubator on deck
Chla-max = 16µm

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date Aug 31, 2002

Event # 24

Latitude 75° 56.72 N

Local time/Zone

Station NW05

Longitude 155° 38.04 W

UTC time (start) 14:25

Water depth 2080m

CTD/R Instruments

Cast depth 2082dur, 2050m

NH4 14, 16-24

Sample Number	Raw N/min Pressure	Rosette bottle number	Bottle integrity	Inp Up or Down	CFC	CFC SYRINGE#	Diss O2	OXYGEN FLASK #	TCO2 ALK X	DOC X	HCH X	SAL	NUTS	O18	BA	CHLA IOS	I-129	Cs-137	VIRUS	C13 A15	NH4
513	2082	✓ 1			✓	9825	✓	2084												✓	
519	1500	✓ 2	*leaking		✓	9837		2085													
520	1250	✓ 3			✓	9821		2086													
521	1000	✓ 4			✓	7627		2087						✓							
522	800	✓ 5			✓	7677		2088												✓	
523	600	✓ 6			✓	7676		2089									✓				
524	500	✓ 7						2090													
525	400	✓ 8			✓	7637		2091									✓				✓
526	315	✓ 9			✓	7625		2092									✓				
527	350	✓ 10			✓	7631		2098									✓				
528	325	✓ 11			✓	7629		2093									✓				
529	250	✓ 12			✓	7634		2094									✓				
530	215	✓ 13			✓	7678		2095									✓				
531	250	✓ 14			✓	9830		2096						✓	✓	✓	✓				✓
532	225	✓ 15						2097									✓				
533	200	✓ 16			✓	7624		2097						✓	✓	✓	✓		✓		✓
534	175	✓ 17						3003						✓	✓	✓					✓
535	150	✓ 18			✓	7635		3001						✓	✓	✓	✓				✓
536	125	✓ 19						3006						✓	✓	✓					✓
537	100	✓ 20			✓	9822		3007						✓	✓	✓	✓				✓
538	75	✓ 21						3009						✓	✓	✓					✓
539	50	✓ 22			✓	9825		3010						✓	✓	✓	✓				✓
540	25	✓ 23						3012						✓	✓	✓					✓
541	5	✓ 24			✓	9837	✓	3016				✓	✓	✓	✓	✓	✓				✓

Notes:

Chla max = 32m

O2 Bottle duplicate #16 = 3019

Bottle #2 leaking from bottom

" " " #3 =

Gxy dup bot 3 3018

Bottle #16 oil on spout

Tops #7, 10, 13, 14, 16, 17, 18, 23, 24

Bottom 5, 6, 7, 8, 10, 15, 16, 17, 18, 19, 20, 22, 23, 24

NW05 2 of 2

Vessel CCGS Louis S. St-Laurent

Date _____

Latitude _____

Local time/Zone _____

Longitude

UTC time (start) _____

CTD/R Instruments

Cast depth _____

Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle Integrity	Trip Up or Down	PCR ELK	BULK TO SUB SAMPL	AOC FISH	CULTURE	STERIVEX	HPLC	POC/N C13/N15	LIGHT N03 CPROD	LIGHT N04 CPROD	LIGHT CPROD	DARK N03 CPROD	DARK N04 CPROD	DARK CPROD	TOT CHLA	FRACT CHLA	C-PATH	ASSY-1	ASSY-2	ASSY-3	ASSY-4	DON	BENTHIC C13 N15
		1																								
		2																								
		3																								
		4																								
		5																								
		6																								
		7																								
		8																								
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		20																								
		21																								
		22																								
540		23									✓	✓	✓	✓				✓								
541		24									✓	✓	✓	✓				✓								

BUCKET for surface sample

Notes :

Rosette Sampling Log - Geochemistry

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date September 01, 2002

Event # 29

Latitude 75 59.08 N

Local time/Zone

Station NW03

Longitude 156 11.32 W

UTC time (start) 17:47

Water depth 1220 m

CTD/R Instruments New transmissometer

Cast depth 1223 m, 1240 dbar

Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle integrity	Trip Up or Down	CFC ✓	CFC SYRINGE#	Diss O2 ✓	OXYGEN FLASK #	TCO2 ALK	DOC	HCH	SAL ✓	NUTS ✓	O18 ✓	BA ✓	CHL A IOS ✓	I-129 ✓	Cs-137	VIRUS	NH4	C13 N15	Poc N
542	1250	✓1	✓		✓	7678		2084													✓	✓
543	1250	✓2	✓		✓	9830		2085														
544	1000	✓3	✓		✓	7624		2086														
545	800	✓4	✓		✓	7635		2087														
546	600	✓5	✓		✓	9822	✓	2088					✓									
547	500	✓6	✓		✓			2089														
548	400	✓7	✓		✓	7631		2090														
549	375	✓8	✓		✓	7629		2091														
550	350	✓9	✓		✓	7634	✓	2092														
551	325	✓10	✓		✓	7672		2093														
552	300	✓11	✓		✓	7676		2094														
553	275	✓12	✓		✓	7637		2095					✓									
554	250	✓13	✓		✓	7635		2096						✓	✓	✓	✓					
555	225	✓14	✓		✓			2097														
556	200	✓15	✓		✓	9825		2098						✓	✓	✓	✓					
557	175	✓16	✓		✓			2099														
558	150	✓17	✓		✓	9837		3003														
559	125	✓18	✓		✓			3004														
560	100	✓19	✓		✓	9821		3006														
561	75	✓20	✓		✓			3007														
562	50	✓21	✓		✓	7621		3009					✓									
563	25	✓22	✓		✓			3010					✓									
564	12.5	✓23	✓		✓			3012					✓									
565	0	✓24	✓		✓	7678	✓	3016					✓									

BOTTLE #2 DRIPPING FROM BOTTOM CAP

NUTRIENT RACK - YELLOW

Notes: Chla max - 35 m

CFC - Bottle #19 difficult to sample - frame gets in the way.

OXY bot #5 (3018) bot #9 (3019) bot #10 (3019)

Bottle #17 leaking - noticed after the CFC sample taken - Janet noticed it before taking the oxy sample. Fiona says not leaking when CFC taken.

Bottles 22 and 23 were mistakenly put back on the rosette in reverse order after the transmissometer was installed.

BOTTLE 18/19/20/21/22/23/24

CONTINUE
LOS
Bottle
LOS

3L

Rosette Sampling Log - Biology

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date 1 Sept 2007

Event # 31

Latitude 75° 56.97

Local time/Zone

Station NW 01 (1)

Longitude 157 1.73

UTC time (start) 21:24

Water depth 800m

CTD/R Instruments

Cast depth Surface only

Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle Integrity	Trip Up or Down	PCR EUK	BULK TO SUB SAMPLE	AOC FISH	CULTURE	STERNEX	HPLC	PAR	POCIN C13/N15	LIGHT NO3 CPROD	LIGHT NH4 CPROD	LIGHT CPROD	DARK NO3 CPROD	DARK NH4 CPROD	DARK CPROD	TOT CHLA	FRACT CHLA	C-PATH	ASSY-1	ASSY-2	ASSY-3	ASSY-4	DON	BENTHIC C13 N15	NUIS	NH4	SAL
590	Surf	1	✓							✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
591	"	2	✓																											
592	"	3	✓																											
593	"	4	✓																											
		5																												
		6																												
		7																												
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		21																												
		22																												
		23																												
		24																												

Notes:

4 Bottles tripped at surface for Terry W. → productivity experiment.

Special Productivity at surface - incubated on deck (ice used to keep pool cool)

Notes :

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date 02 Sep 2002

Event # 33

Latitude 75° 59.13

Local time/Zone

Station NW 01 (3)

Longitude 156° 52.39

UTC time (start) 02=11

Water depth 850m,

CTD/R Instruments

Cast depth 878 dbar, 868 m

Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle integrity	Trip Up or Down	CFC	CFC SYRINGE#	Diss O2	OXYGEN FLASK #	TCO2 ALK	DOC	HCH	SAL	NUTS	OIB	BA	CHLA IOS	I-129	Cs-137	NH4	43 NIS	DNA	EUK	HAC	Phy PS	PO4
✓ 594	878 (878)	✓ 1					✓	31161												✓					✓
595	800	✓ 2			✓	7624		3118						✓							✓				
596	600	✓ 3			✓	7637		3119									✓								✓
✓ 597	500	✓ 4						3121											✓						✓
598	400	✓ 5			✓	7625		3123									✓								
599	400	✓ 6						3113										✓							
600	375	✓ 7						3126									✓								
601	350	✓ 8			✓	7837		3128									✓								
602	325	✓ 9						3130									✓								
603	300	✓ 10			✓	9825		3135									✓								
604	300	✓ 11						3136									✓								
605	275	✓ 12						3124									✓								
✓ 606	250	✓ 13			✓	9821		3142						✓	✓	✓	✓		✓						✓
607	225	✓ 14						3151									✓								
608	200	✓ 15						3153						✓	✓	✓	✓								
609	175	✓ 16			✓	7627		3157									✓								
610	150	✓ 17			✓			3159									✓								
611	125	✓ 18						3137																	
612	100	✓ 19			✓	7677		3160									✓								
613	75	✓ 20						3161									✓								
614	50	✓ 21			✓	7676		3162																	
615	Adm Max	✓ 22						3164																	
616	25	✓ 23						3166																	
617	5	✓ 24			✓	9830		3069						✓	✓	✓	✓								

Notes:

Cs at 400 m and 300 m → extra vol to add to sample for previous cast.

+ surface = -1.37

Chla-max = 34m

Bottle #17 leaking from bottom cap when top spigot opened → CFC not taken from this bottle - bottle #16 (175m sampler instead)

Oxy dup #9 (2007); dup #21 (3171)

Rosette Sampling Log - Biology

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date September 3, 2002

CASIT # 34

Latitude 74° 21.61

Local time / zone 0834

Station NAΦ5(1)

Longitude 162° 10.53

UTC time (start) 1434

Water depth ~1450m

CTD/R Instruments

Cast depth 100m

Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle Integrity	Trip Up or Down	PCR EUK	BULK TO SUB SAMPLE	HCH	AOC FISH	CULTURE	STERNE	HPIC	PAR PS	POCIN C13N15	LIGHT NO3 CPROD	LIGHT NH4 CPROD	LIGHT CPROD	DARK NO3 CPROD	DARK NH4 CPROD	DARK CPROD	TOT CHLA	FRACT CHLA	C-PATH	ASSY-1	ASSY-2	ASSY-3	ASSY-4	DON	BENTHIC C13 N15	NUTS	NH4	SAL
618	100	1	✓				×																								
	100	2	✓				×																								
619	75	3	✓				×																								
	75	4	✓				×																								
620	50	5	✓				×																								
	50	6	✓				×																								
621	25	7	✓				×																								
	25	8	✓				×																								
622	5	9	✓				×																								
	5	10	✓				×																								
623	SURF	11	✓								✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		12	✓																												
		13	✓																												
		14	✓																												
		15	✓																												
		16	✓																												
		17																													
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		19																													
		20																													
		21																													
		22																													
		23																													
		24																													

Notes :

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date September 3, 2002

Event # 35

Latitude 74° 21.76

Local time/Zone 0920

Station NA 05 (2)

Longitude 162° 11.14

UTC time (start) 1520

Water depth ~1450 m

CTD/R Instruments

Cast depth 1431 m

Size fract Chla.

CHEN
BOUL
CONNIE
KOSI CAL

Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle integrity	Trip Up or Down	CFC	CFC SYRINGE#	Diss O2	OXYGEN FLASK #	CHL T602 AMK FROM	DOC PON	RJH4	SAL	NUTS	O18	BA	CHLA IOS	I-129	Ge-137	C13 N15	BACT	HPLC	RAM PS	
624	BOT	1	✓	✓	✓	9837	✓	3113		✓		✓	✓	✓			✓		✓	✓			
625	1000	2	✓	✓	✓	9821	✓	3116									✓		✓	✓			
626	800	3	✓	✓	✓	7637	✓	3118									✓		✓	✓			
627	600	4	✓	✓	✓	7624	✓	3119									✓		✓	✓			
628	500	5	✓	✓	✓	7676	✓	3121		✓	✓	✓					✓		✓	✓			
629	400	6	✓	✓	✓	7677	✓	3123									✓		✓	✓			
630	375	7	✓	✓	✓	7625	✓	3124									✓		✓	✓			
631	350	8	✓	✓	✓	9825	✓	3126									✓		✓	✓			
632	325	9	✓	✓	✓	7627	✓	3128									✓		✓	✓			
633	300	10	✓	✓	✓	7635	✓	3130			✓						✓		✓	✓			
634	275	11	✓	✓	✓	9822	✓	3135			✓						✓		✓	✓			
635	250	12	✓	✓	✓	7631	✓	3136		✓	✓			✓	✓	✓	✓		✓	✓			
636	225	13	✓	✓			✓	3137			✓						✓		✓	✓			
637	200	14	✓	✓	✓	7629	✓	3142			✓			✓	✓	✓	✓		✓	✓			
638	175	15	✓	✓			✓	3151			✓			✓	✓	✓	✓		✓	✓			
639	150	16	✓	✓	✓	7634	✓	3153			✓			✓	✓	✓	✓		✓	✓			
640	125	17	✓	✓			✓	3157			✓			✓	✓	✓	✓		✓	✓			
641	100	18	✓	✓	✓	7678	✓	3159		✓	✓	✓		✓	✓	✓	✓		✓	✓			
642	75	19	✓	✓			✓	3160		✓	✓			✓	✓	✓	✓		✓	✓			
643	50	20	✓	✓	✓	9830	✓	3161		✓	✓			✓	✓	✓	✓		✓	✓			✓
644	Chl Max	21	✓	✓			✓	3162		✓	✓			✓	✓	✓	✓		✓	✓			
645	Chl Max	22	✓	✓			✓	3164	✓	✓	✓			✓	✓	✓	✓		✓	✓			
646	25	23	✓	✓			✓	3166		✓	✓			✓	✓	✓	✓		✓	✓			
647	5	24	✓	✓	✓	9837	✓	3069			✓	✓	✓	✓	✓	✓	✓		✓	✓			✓

Notes:

Bottle #12, looking from bottom cap when top spigot opened

Tops 13, 14, 14, 23 - NOT flush

Bottoms 1, 2, 5, 6, 7, 8, 10, 15, 16, 17, 18, 19, 20, 22, 23 - NOT flush

Oxy Dps bot 21 (3171), bot 9 (3177)

Chlorophyll max at 4km

↑ num

36

Cruise # 2002-23 Vessel CCGS Louis S. St-Laurent Date 3 SEP '02
 Cast Event # 36 Latitude 74 23.17 Local time/Zone _____
 Station NA45 (3) Longitude 162 14.05 UTC time (start) 1850
 Water depth ~1450 CTD/R Instruments SBE 911 - 0443, GO 24 BOT ROSETTE w/ SBE PYLON
 Cast depth 800 dbar FLOOROMETER, TRANSMISSOMETER, DO SENSORS
CELEPINT# 2326 #139 105 SP45-0052

Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle integrity	Trip Up or Down	CFC	CFC SYRINGE#	Diss O2	OXYGEN FLASK #	TCO2 ALK	DOC	HCH	SAL	NUIS	O18	BA	CHLA IOS	I-129	Cs-137	POC POW				
648	800	✓ 1	*															X					
649	800	✓ 2	*															X					
650	800	✓ 3																X					
651	600	✓ 4																X					
652	600	✓ 5																X					
653	600	✓ 6																X					
654	400	✓ 7																X					
655	400	✓ 8																X					
656	400	✓ 9																X					
657	400	✓ 10									X							X					
658	400	✓ 11									X							X					
659	300	✓ 12																X					
660	300	✓ 13																X					
661	300	✓ 14																X					
662	300	✓ 15									X							X					
663	300	✓ 16									X							X					
664	200	✓ 17	*															X					
665	200	✓ 18																X					
666	200	✓ 19																X					
667	200	✓ 20									X							X					
668	200	✓ 21									X							X					
669	150	✓ 22									X							X					
670	150	✓ 23									X							X					
671	5	✓ 24										✓	✓					X					

Notes: Bottles 1, 2, 17 leaking from bottom caps when top spigot opened
 Top lids not flush for bottles 10, 11, 13, 14, 16, 18, 23
 Bottom lids " " " " 1, 2, 5, 6, 8, 10, 16, 17, 18, 19, 20, 22, 23

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date 03 Sep 2002

Event # 38

Latitude 74° 40.77' N

Local time/Zone

Station NA 07

Longitude 161° 49.51' W

UTC time (start) 23=01

Water depth 900m (ELAC), 1846m

CTD/R Instruments

Cast depth 1846m

→ BOTTOM.

Sample Number	Raw Nominal	Rosette bottle	Bottle integrity	Trip Up or	CFC	CFC SYRINGE#	Diss O ₂	OXYGEN TASK #	TCO ₂ ALK	DOC	HCH	SAL	NUTS	O18	BA	CHLA 103	1129	Cs-137	NH ₄	Poc PON				
672	1846	✓1		U	X		✓					✓✓	✓				X	X		✓				
673	1250	✓2	*									✓✓												
674	1000	✓3										✓✓												
675	800	✓4																						
676	600	✓5										✓✓							✓	✓				
677	500	✓6										✓✓												
678	400	✓7																						
679	375	✓8																						
680	350	✓9																						
681	325	✓10																						
682	300	✓11																						
683	275	✓12																						
684	250	✓13												✓	✓	✓				✓				
685	225	✓14												✓	✓	✓				✓				
686	200	✓15												✓	✓	✓				✓				
687	175	✓16												✓	✓	✓				✓				
688	150	✓17												✓	✓	✓				✓				
689	125	✓18										✓✓		✓	✓	✓				✓				
690	100	✓19										✓✓		✓	✓	✓				✓				
691	75	✓20										✓✓		✓	✓	✓				✓				
692	50	✓21										✓✓		✓	✓	✓				✓				
693	chen Max	✓22										✓✓		✓	✓	✓				✓				
694	25	✓23										✓✓		✓	✓	✓				✓				
695	5	✓24		▽			▽					✓✓	▽	✓	✓	✓				✓	✓			

Notes:

T_{surf} = -0.9°C

Chla-max = 48 mV

Bot #1,2,17 leaking from bottom cap when top spigot opened

NUTS- RED RACK

Chen - NO
JERRY/QUIN - NO
CONNIE - NO
BORIS - NO
KOTI - YES
TERRY/SANA - NO

Rosette Sampling Log - Biology

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date 04 Sep 2002

Event # 40

Latitude 74° 29.2

Local time/Zone

Station NWR02 (1)

Longitude 158° 01.35

UTC time (start) 15=13

Water depth 1550

CTD/R Instruments

Cast depth

Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle Integrity	Trip Up or Down	PC8 EUK	BULK TO SUB SAMPLE	AOC FISH	CULTURE	STERNEX	HPLC	PAM PS	POC/N C13/N15	LIGHT NO3 CPROD	LIGHT NH4 CPROD	LIGHT CPROD	DARK NO3 CPROD	DARK NH4 CPROD	DARK CPROD	TOT CHLA	FRACT CHLA	C-PATH	ASSY-1	ASSY-2	ASSY-3	ASSY-4	DON	BENTHIC C13 N15	NUT	NH4	SAL
696	SURFACE	1								✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
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Notes :

Rosette Sampling Log - Geochemistry

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date 04 Sep 2002

Event # 41

Latitude 74° 29.47

Local time/Zone

Station (NWR02) (2)

Longitude 158° 0.77

UTC time (start) 15:38

Water depth 1505 m (ELAC) CTD/R Instruments

Cast depth 1513 m, 1533 dbar

(1513+5) m

Bottle #1 (~1460.22)

Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle Integrity	Trip Up or Down	CFC	CFC SYRINGE#	Diss O2	OXYGEN FLASK #	TCO2 ALK	DOC	POC NOW PON	SAL	NUTS	O18	BA	CHLA IOS	I-129	Ca-137	EUK	NH4	DWA Bact	C13	#PLC	PAM-PS
697		✓1			✓	7629		2000				✓✓	✓								✓	✓	✓	
698	1250 m	✓2	*		✓	7678		2015	✓✓✓✓			✓✓		✓							✓	✓		
699	1000 db	✓3			✓	7678		2017				✓✓									✓	✓		
700	800	✓4			✓	9830		2025													✓	✓		
701	600	✓5			✓	7627		2027	✓✓✓✓			✓✓												
702	500	✓6			✓	7635		2032	✓✓✓✓			✓✓												
703	400	✓7			✓	9822		2033	✓✓✓✓															
704	375	✓8			✓	7634		2035	✓✓✓✓															
705	350	✓9			✓	7631		2036	✓✓✓✓															
706	325	✓10			✓	7625		2043																
707	300	✓11			✓	9837		2044																
708	275	✓12			✓	9825		2047																
709	250	✓13			✓	9821		2051																
710	225	✓14			✓	7637			✓✓✓✓					✓	✓	✓								
711	200	✓15			✓				✓✓✓✓					✓	✓	✓								
712	175	✓16			✓	7624			✓✓✓✓					✓	✓	✓								
713	150	✓17			✓				✓✓✓✓					✓	✓	✓								
714	125	✓18			✓	7676			✓✓✓✓			✓✓		✓	✓	✓								
715	100	✓19			✓				✓✓✓✓					✓	✓	✓								
716	75	✓20			✓	7677			✓✓✓✓					✓	✓	✓								
717	50	✓21			✓				✓✓✓✓					✓	✓	✓								
718	Chla Max	✓22			✓				✓✓✓✓					✓	✓	✓								
719	2	✓23			✓	7629			✓✓✓✓					✓	✓	✓								
720	5	✓24			✓	7678	✓		✓✓✓✓			✓✓	✓✓	✓	✓	✓								

Notes: Chla-max 42 m ← down

Chla-max ~ 40 m ← up

* Bottle #2 did not close

NOT ENOUGH

THE PLANT - 1000
EVEN AT 1000

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date 5 SEPT 02

BODIL C13 x3

Event # 42

Latitude 75° 9.34

Local time/Zone

Chen. 2.5L

Station NA 49 (1)

Longitude 160° 11.88

UTC time (start) 00:35

CONNIE

Water depth 1963 CTD/R Instruments

TCO2/DOC

Cast depth 1958m (1982.06)

(5.25 CHM, 75) JERRY. 3L

bottom x2

Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle integrity	Trip Up or Down	CFC	CFC SYRINGE#	Diss O2	OXYGEN FLASK #	TCO2 ALK	DOC	HCH	SAL	NUTS	O18	BA	CHLA IOS	I-129	Cs-137	DNA BACT	C13	DOC PON	NH4
721	1988	1	OK		✓	9830		3025	✓	✓		✓	✓						✓	✓		
722	1988	2						3028													✓	✓
723	1988	3			✓	7627		3033	✓	✓		✓	✓								✓	✓
724	1500	4			✓	7635		3034	✓	✓		✓	✓				✓					
725	1250	5																				
726	1000	6			✓	9822			✓	✓		✓	✓	✓			✓		✓		✓	✓
727	800	7			✓	7631	✓		✓	✓		✓	✓				✓			✓		
728	800	8																				
729	800	9																				
730	800	10																				
731	600	11			✓	7629	✓		✓	✓		✓	✓				✓					
732	600	12																				
733	600	13																				
734	600	14																				
735	500	15			✓	7634	✓		✓	✓		✓	✓				✓		✓		✓	✓
736	400	16																				
737	400	17																				
738	400	18																				
739	300	19																				
740	300	20																				
741	300	21																				
742	200	22																				
743	200	23																				
744	200	24																				

Notes :

DUP OXY BOT 5 (3047) BOT 11 (3048)

2ML

252

081

Rosette Sampling on - Geochemistry

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date 5 Sept 02

Event # 43

Latitude 75 9.34 N

Local time/Zone

Station NA 09 (2)

Longitude 160 12.02 W

UTC time (start) 02:56

Water depth 1963 m

CTD/R Instruments

Cast depth 450 db

7

TEARY
BIBL
BOPIL

Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle integrity	Trip Up or Down	CFC	CFC SYRINGE#	Diss O2	OXYGEN FLASK #	TCO2 ALK	DOC	HCH	SAL	NUTS	O18	BA	CHLA IOS	I-129	Cs-137	POC PON	NH4	HNCO	PAR PS	C13
745	450	1 ✓	OK		✓	9821		3113	✓	✓	X						✓	X					
746	400	2 ✓			✓	7637		3116	✓	✓							✓						
747	375	3 ✓						3118	✓	✓													
748	350	4 ✓			✓	7624		3119	✓	✓							✓						
749	325	5 ✓						3121	✓	✓													
750	300	6 ✓			✓	7676		3123	✓	✓							✓						
751	275	7 ✓						3124	✓	✓													
752	250	8 ✓			✓	7677		3126	✓	✓				✓	✓	✓	✓		✓	✓			
753	225	9 ✓						3128	✓	✓				✓	✓	✓	✓		✓	✓			
754	200	10 ✓			✓	7625		3130	✓	✓				✓	✓	✓	✓		✓	✓			
755	175	11 ✓						3135	✓	✓				✓	✓	✓	✓		✓	✓			
756	150	12 ✓			✓	9837		3136	✓	✓				✓	✓	✓	✓		✓	✓			
757	125	13 ✓						3137						✓	✓								
758	100	14 ✓						3142				✓	✓			✓	✓						
759	100	15 ✓			✓	9825		3151	✓	✓				✓	✓	✓	✓		✓	✓			
760	75	16 ✓						3153						✓	✓								
761	50	17 ✓						3157				✓	✓	✓	✓	✓	✓		✓	✓			
762	50	18 ✓			✓	7678		3159	✓	✓				✓	✓	✓	✓				✓	✓	✓
763	chl max	19 ✓						3160						✓	✓	✓			✓	✓			
764	chl max	20 ✓						3161													✓	✓	
765	25	21 ✓						3162						✓	✓	✓	✓		✓	✓		✓	
766	25	22 ✓			✓	7627		3164	✓	✓				✓	✓	✓	✓		✓	✓		✓	
767	5	23						3166						✓	✓	✓	✓		✓	✓		✓	
768	5	24	✓		✓	9830	✓	3069	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓			

Notes:

chl max at 450 db downcast
dry drops (767 - 3171) (766 - 3177)

Rosette Sampling Log - Biology

Cruise # 2002-23

Vessel CCGS Louis S. St-Laurent

Date Sep 5, 2002

Event # 44

Latitude 74 20.41 N

Local time/Zone

Station NA 05 (4)

Longitude 162 19.38 W

UTC time (start) 16:05

Water depth ~1450

CTD/R Instruments

Cast depth Surface (0.5m)

Sample Number	Raw Nominal Pressure	Rosette bottle number	Bottle Integrity	Trip Up or Down	PCR EUK	BULK TO SUB SAMPL	AOC FISH	CULTURE	STERNEX	HPLC	POC/N C13/N15	LIGHT NOS CPROD	LIGHT NH4 CPROD	LIGHT CPROD	DARK NOS CPROD	DARK NH4 CPROD	DARK CPROD	TOT CHLA	FRACT CHLA	C-PATH	ASSY-1	ASSY-2	ASSY-3	ASSY-4	DON	BENTHIC C13 N15			
769	0.5	1	OK								✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
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