

Cruise	Event	Cycle	Order Occupied (Tow)	Date	Latitude (degrees) (min) N	PORT Mesh (µm)	PORT Initial Revs	PORT Final Revs	PORT Total Revs	PORT Revs/sec	PORT Mrev	PORT Volume Water Strained (m³)	PORT Standard Haul Factor (10 m²/unit area)	Comments
CCE-LTER-P1908		1	1	13-Aug-2019		202								
CCE-LTER-P1908		1	2	13-Aug-2019		202	418,563	464,535	45,972	35.282	0.269	489	3.86837	
CCE-LTER-P1908		1	3	14-Aug-2019		202	464,537	496,124	31,587	34.001	0.269	336	5.58119	
CCE-LTER-P1908		1	4	14-Aug-2019		202	496,119	525,358	29,239	30.457	0.269	311	7.05117	
CCE-LTER-P1908		1	5	15-Aug-2019		202	525,404	560,520	35,116	34.907	0.269	374	5.54761	
CCE-LTER-P1908		1	6	15-Aug-2019		202	560,520	594,080	33,560	36.798	0.269	357	5.83708	
CCE-LTER-P1908		1	7	16-Aug-2019		202	594,080	624,138	30,058	32.530	0.269	320	5.12230	
CCE-LTER-P1908		2	1	18-Aug-2019		202	654,178	685,575	31,397	35.238	0.269	334	5.66412	
CCE-LTER-P1908		2	2	19-Aug-2019		202	685,587	712,818	27,231	28.277	0.269	290	6.24357	
CCE-LTER-P1908		2	3	19-Aug-2019		202	729,689	760,907	31,218	34.648	0.269	332	6.29698	
CCE-LTER-P1908		2	4	20-Aug-2019		202	760,924	789,485	28,561	30.033	0.269	304	5.74547	
CCE-LTER-P1908		2	5	20-Aug-2019		202	789,497	817,553	28,056	31.882	0.269	299	5.82102	
CCE-LTER-P1908		2	6	21-Aug-2019		202	817,550	842,990	25,440	26.695	0.269	271	6.33816	
CCE-LTER-P1908		3	1	24-Aug-2019		202	842,982	872,434	29,452	30.457	0.269	313	5.93223	
CCE-LTER-P1908		3	2	24-Aug-2019		202	872,442	901,517	29,075	33.229	0.269	309	6.38748	
CCE-LTER-P1908		3	3	25-Aug-2019		202	901,518	930,485	28,967	28.343	0.269	308	6.49824	
CCE-LTER-P1908		3	4	25-Aug-2019		202	930,485	963,101	32,616	36.280	0.269	347	4.54312	
CCE-LTER-P1908		4	1	30-Aug-2019		202	4,827	32,271	27,444	28.119	0.269	292	6.07800	
CCE-LTER-P1908		4	2	30-Aug-2019		202	32,417	60,800	28,383	31.999	0.269	302	6.56323	
CCE-LTER-P1908		4	3	31-Aug-2019		202	60,792	88,032	27,240	29.290	0.269	290	6.45184	No ascent time written, ascent time estimated for spreadsheet
CCE-LTER-P1908		4	4	31-Aug-2019		202	88,035	118,720	30,685	35.722	0.269	326	6.08924	
CCE-LTER-P1908		4	5	1-Sep-2019		202	118,714	144,380	25,666	24.444	0.269	273	8.02882	No ascent time written, ascent time estimated for spreadsheet
CCE-LTER-P1908		4	6	1-Sep-2019		202	144,368	175,318	30,950	34.658	0.269	329	6.00268	

OBLIQUE BONGOS

N=22

P1908

Oblique bongos

Logged?  
D, R  
✓✓

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT)									
						BEGIN TOW	END TOW								
CCE-P	ATL	C1, T1		20190814. 0407.001	19/08/13	9:34	10:01								
#156															
TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL									
SINKING (descend)	8	08	NET NO.		<del>X</del>	TOW NO.	1 OF 1								
TOWING (at depth)		30	METER NO.			SEA (Conditions):	Calm								
Total (ascend)	17	12	FINAL	418559		(Circle one)	Moderate								
			INITIAL	828540			Rough								
			DIFF.			WIND:	knots								
			MESH SIZE												
AMT. OF WIRE OUT:			meters	OBSERVERS:											
TOTAL NO. OF ANGLES:															
ANGLES	↑45	39	↑45	38	↑45	38	↑47	35	↑46	35	↑47	33	49↑	33	51
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	190	170	160
ANGLES				50↑			50↑		49↑		45↑			43↑	
WIRE OUT	32	51		25		50↑	25		25					25	
WIRE OUT	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10
PORT		STB.													
No. OF JARS								none or slight	moderate	heavy	very heavy				
SIZE OF JAR (Circle One)	P	Q	P	Q	NET CLOGGING										
FORMALIN & BORATE ADDED					NET WASHING		none	rinsed	washed						
ALCOHOL ADDED					RIPS AND HOLES IN NET		none	location	when mended: (Circle one)	Before station	After station				
COLLECTORS INITS.															
REMARKS:															

30

Down odd up evens

Oblique Bongo Size Fractionated Data Sheet							
Cruise	Ship	Cycle	Tow	Event # (Deployed)	Date YR MO DY	Hour (PDT) Begin Tow End Tow	
P1408	ATL	1	1		19 08 13	0934	1001
Tow Type: Oblique Bongo (202 µm)				Port or Starboard			
		Gut Contents (Cup #)	Gut Fluorescence	Size Fraction	Biomass (Pre-weighed filter #)		
Split		1/4	3/8		3/8		
Container Number		2	Cup 3	5 mm	10.78		
			199	2 mm	2.3		
			200	1 mm	1		
			201	500 µm	4		
			202	200 µm	5		
Dewar		1	1		1		
Canister Number		2	1		2		
Notes:							
dishes and GF cup (3)							
some <del>GF</del> GF sample spilled from 2mm							
GF 5mm fraction = in white cup #3 (lots of pyrosomes)							
Initials: LEL et al.							

IM

Logged?  
D/R

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT)									
						BEGIN TOW	END TOW								
CCE-P 1908	ATL	C1T2		#169	13 Aug 19	21:27	2156								
TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL									
SINKING (descend)	09	31	NET NO.			TOW NO.	1 OF 1								
TOWING (at depth)		30	METER NO.			SEA (Conditions):	<u>Calm</u> Moderate Rough								
Total (ascend)	21	13	FINAL	464535		(Circle one)									
			INITIAL	418563											
			DIFF.	645,972		WIND:	knots								
			MESH SIZE	202											
AMT. OF WIRE OUT:			meters		OBSERVERS:										
TOTAL NO. OF ANGLES:															
ANGLES	35		42		45		48		53		55		55		
	27			27		26			26			26		27	
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	180	170	160
ANGLES	56		56		56		56		55		52			49	
		28		31		33		34			40	43			
WIRE OUT	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10
PORT		STB.													
No. OF JARS							none or slight		moderate		heavy		very heavy		
SIZE OF JAR (Circle One)	P	Q	P	Q	NET CLOGGING										
FORMALIN & BORATE ADDED					NET WASHING		none		rinsed		washed				
ALCOHOL ADDED					RIPS AND HOLES IN NET		none		location		when mended: (Circle one)		Before station		After station
COLLECTORS INITS.															
REMARKS:															

Clear moonlit night



Oblique Bongo Size Fractionated Data Sheet							
Cruise	Ship	Cycle	Tow	Event # (Deployed)	Date YR MO DY	Hour (PDT) Begin Tow End Tow	
P1908	ATL	1	2		19 08 13	2127	
Tow Type: Oblique Bongo (202 µm)				Port or Starboard			
Gut Contents (Cup #)		Gut Fluorescence		Size Fraction		Biomass (Pre-weighed filter #)	
Split		3/8				3/8	
Container Number		203, 204		5 mm		9, 10, 11, 12	
Cup #		205		2 mm		14, 1	
		206		1 mm		13	
		207		500 µm		15	
		208		200 µm		16	
Dewar		1				1	
Canister Number		2		3		3	
Notes:							
↑ only filtered 1/8 of sample because very green							
Initials: LEL, et al.							

IM

Logged?  
D, R  
✓ ✓

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT# (Deployed)	DATE YR MO DY	HOUR (PDT)																																																						
						BEGIN TOW	END TOW																																																					
CCE-P 1908	ATL	01, T3		#180	2019-08-14	9:39	10:03																																																					
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">TIME</td> <td style="width: 10%;">Min.</td> <td style="width: 10%;">Sec.</td> <td style="width: 15%;"></td> <td style="width: 15%;">PORT</td> <td style="width: 15%;">STB.</td> <td colspan="2">TOW TYPE: CALBOBL</td> </tr> <tr> <td>SINKING (descend)</td> <td>7</td> <td>21</td> <td>"</td> <td>NET NO.</td> <td rowspan="4" style="text-align: center; vertical-align: middle; font-size: 2em;">X</td> <td>TOW NO.</td> <td>1 OF 1</td> </tr> <tr> <td>TOWING (at depth)</td> <td></td> <td>30</td> <td>"</td> <td>METER NO.</td> <td>SEA (Conditions):</td> <td><u>Calm</u></td> </tr> <tr> <td>Total (ascend)</td> <td>14</td> <td>59</td> <td>"</td> <td>FINAL</td> <td>(Circle one)</td> <td>Moderate</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>INITIAL</td> <td>Swell</td> <td>Rough</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>DIFF.</td> <td>31587</td> <td>WIND:</td> <td>10-15 knots</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>MESH SIZE</td> <td></td> <td></td> <td></td> </tr> </table>								TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL		SINKING (descend)	7	21	"	NET NO.	X	TOW NO.	1 OF 1	TOWING (at depth)		30	"	METER NO.	SEA (Conditions):	<u>Calm</u>	Total (ascend)	14	59	"	FINAL	(Circle one)	Moderate					INITIAL	Swell	Rough					DIFF.	31587	WIND:	10-15 knots					MESH SIZE			
TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL																																																						
SINKING (descend)	7	21	"	NET NO.	X	TOW NO.	1 OF 1																																																					
TOWING (at depth)		30	"	METER NO.		SEA (Conditions):	<u>Calm</u>																																																					
Total (ascend)	14	59	"	FINAL		(Circle one)	Moderate																																																					
				INITIAL		Swell	Rough																																																					
				DIFF.	31587	WIND:	10-15 knots																																																					
				MESH SIZE																																																								
AMT. OF WIRE OUT:			300	meters	OBSERVERS:			L. Lilly et al.																																																				
TOTAL NO. OF ANGLES:																																																												
ANGLES	65	65	63	65	63	65	60	65	60	65	60	65	60	65	60																																													
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	180	170	160																																													
ANGLES	65	56	65	55	65	45	40	60	45	55	35	45	28	25																																														
WIRE OUT	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10																																													

		PORT	STB.					
No. OF JARS				NET CLOGGING	none or slight	moderate	heavy	very heavy
SIZE OF JAR (Circle One)	P	Q	P	Q				
FORMALIN & BORATE ADDED				NET WASHING	none	rinsed	washed	
ALCOHOL ADDED								
COLLECTORS INITS				RIPS AND HOLES IN NET	none	location	when mended: (Circle one)	Before station After station

REMARKS:

**Oblique Bongo Size Fractionated Data Sheet**

Cruise	Ship	Cycle	Tow	Event # (Deployed)	Date YR MO DY	Hour (PDT)	
						Begin Tow	End Tow
P1908	ATL	1	3		19 08 14	0939	1003

Tow Type: Oblique Bongo (202 µm) Port or Starboard

	Gut Contents (Cup #)	Gut Fluorescence	Size Fraction	Biomass (Pre-weighed filter #)
Split	1/8	3/8		3/8
Container Number	Cup 5	17, 18	5 mm	209, 153
		20	2 mm	210, 150
		23	1 mm	154, 150
		21	500 µm	151, 150
		19	200 µm	152, 150
Dewar	1	1		1
Canister Number	5	4		3

Notes:  
 Sample so green

Initials: L. Lilly et al.

*filter #'s  
flip-flopped (RWS)*

IM

Logged?

D, R  
✓✓

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT)									
						BEGIN TOW	END TOW								
CCE-P 1908	ATL	C1,T4		#191	19 08 14	2130	2202								
TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL									
SINKING (descend)	08	21	NET NO.			TOW NO. 1 OF 1									
TOWING (at depth)		30	METER NO.			SEA (Conditions): (Circle one) Calm Moderate Rough									
Total (ascend)	15	30	FINAL	525358		WIND: knots									
			INITIAL	496119											
			DIFF.	2923961											
			MESH SIZE												
AMT. OF WIRE OUT:			meters	OBSERVERS:											
TOTAL NO. OF ANGLES:															
ANGLES	63	62	62	62	60	61	60	57	55						
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	190	170	160
ANGLES	43	38	32	32	30	32	30	31*	32	33					
WIRE OUT	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10
PORT		STB.		No. OF JARS		NET CLOGGING		none or slight		moderate		heavy		very heavy	
SIZE OF JAR (Circle One)		P	Q	P	Q	NET WASHING		none		rinsed		washed			
FORMALIN & BORATE ADDED				RIPS AND HOLES IN NET		none		location		when mended: (Circle one)		Before station		After station	
ALCOHOL ADDED															
COLLECTORS INITS.															
REMARKS: * Turn off lights 30m before surface															





IM

Logged?  
D/R  
✓✓Initial flow meter  
from next tow  
560520  
calculated new: 35116

## NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT)											
						BEGIN TOW	END TOW										
CCE-P	ATL	C1, T5		#201	19 08 15	09 30	9:56										
TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL											
SINKING (descend)	8	08	NET NO.		<del>X</del>	TOW NO.	1 OF 1										
TOWING (at depth)		30	METER NO.			SEA (Conditions):	Calm										
Total (ascend)	14	16	FINAL	120177		(Circle one)	Moderate										
			INITIAL	525404			Rough										
			DIFF.	405227		WIND: 5	knots										
AMT. OF WIRE OUT:			meters	OBSERVERS:													
TOTAL NO. OF ANGLES:																	
ANGLES	48	53	45	55	45	55	45	52	40	50	38	48	42	45	40	↑	
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	180	170	160	↓	
ANGLES	45	45	40	43	35	48	30	50	35	53	25	55	35	58	60	↑	
WIRE OUT	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10	↓	
PORT		STB.															
No. OF JARS																	
SIZE OF JAR (Circle One)	P	Q	P	Q	NET CLOGGING		none or slight	moderate	heavy	very heavy							
FORMALIN & BORATE ADDED					NET WASHING		none	rinsed	washed								
ALCOHOL ADDED					RIPS AND HOLES IN NET		none	location	when mended: (Circle one)	Before station							
COLLECTORS INITS.										After station							
REMARKS:																	

Oblique Bongo Size Fractionated Data Sheet

Cruise	Ship	Cycle	Tow	Event # (Deployed)	Date YR MO DY	Hour (PDT) Begin Tow End Tow	
P1908	ATL	1	5		19 08 15	0930	0956
Tow Type: Oblique Bongo (202 µm)				Port or Starboard			
		Gut Contents (Cup #)	Gut Fluorescence	Size Fraction	Biomass (Pre-weighed filter #)		
Split		1/16	3/A		3/A		
Container Number			1163, 1168	5 mm	31		
		Cup 8, 9	1164	2 mm	32		
			1165	1 mm	34		
			1166	500 µm	33		
			1167	200 µm	36		
Dewar		1	1		1		
Canister Number		6	5		5		
Notes:							
LOTS of green diatoms,							
so only filtered 1/16 for GC ←							
filtered for all hrs							
Initials: L. Lilly + the day crew							

preserved in LN2  
with full water

IM

Logged

D, R  
✓ ✓

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT)									
						BEGIN TOW	END TOW								
CCE-P 1908	ATL	CIT6		#209	190815	2132	2201								
TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL									
SINKING (descend)	9	21	NET NO.			TOW NO. 1 OF 1									
			METER NO.			SEA (Conditions): <u>Calm</u>									
TOWING (at depth)	0	30	FINAL	594080		Moderate									
			INITIAL	560520		Rough									
Total (ascend)	14	42	DIFF.	33560		WIND: 13 knots									
			MESH SIZE												
AMT. OF WIRE OUT:			meters	OBSERVERS:											
TOTAL NO. OF ANGLES:															
ANGLES	45 47	43 46	44 46	42 47	40 47	42 46	45 45	46 45							
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	180	170	160
ANGLES	47	46	48	48	50	50	50	50	49	48	50	52	50	42	42
WIRE OUT	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10
PORT		STB.													
No. OF JARS							none or slight	moderate	heavy	very heavy					
SIZE OF JAR (Circle One)	P	Q	P	Q	NET CLOGGING										
FORMALIN & BORATE ADDED					NET WASHING			none	rinsed	washed					
ALCOHOL ADDED					RIPS AND HOLES IN NET			none	location	when mended: (Circle one)	Before station After station				
COLLECTORS INITS.															
REMARKS:															



Oblique Bongo Size Fractionated Data Sheet							
Cruise	Ship	Cycle	Tow	Event # (Deployed)	Date YR MO DY	Hour (PDT) Begin Tow End Tow	
P1908	ATL	1	6		19 08 15	21	32
Tow Type: Oblique Bongo (202 µm)				Port of Starboard			
Gut Contents (Cup #)		Gut Fluorescence		Size Fraction		Biomass (Pre-weighed filter #)	
Split 1/16		3/8				3/8	
Container Number		169, 174, 176		5 mm		35, 41, 42, 43	
Cups 9, 10		170		2 mm		37, 42	
		171		1 mm		38	
* (also Cup 9 for C.I.T.S?)		172		500 µm		39	
		173		200 µm		40	
Dewar		1 (c.9) 2 (c.10)		2		2	
Canister Number		6		1		1	
Notes:							
GC cup split into 1/16 and filtered in 2 cups, but filtered quickly							
Initials: L. Lilly and the night crew							

IM

Logged?  
D, R  
VV

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT)									
						BEGIN TOW	END TOW								
CCE-P 1908	ATL	C1, T7		#217	2019-08-16	9:34	9:57								
TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CAL ROBL									
SINKING (descend)	7	44	NET NO.		<del>X</del>	TOW NO.	1 OF 1								
TOWING (at depth)		30	METER NO.			SEA (Conditions):	<u>Calm</u>								
Total (ascend)	14	54	FINAL	624138		(Circle one)	Moderate								
			INITIAL	594080		Swell	Rough								
			DIFF.	30058		WIND: 5	knots								
			MESH SIZE												
AMT. OF WIRE OUT: 300			meters	OBSERVERS:											
TOTAL NO. OF ANGLES:			L. Lilly + CO.												
ANGLES	60	60	60	60	60	58	60	58	60	58	58	57	57	58	
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	190	170	160
ANGLES	61	55	60	53	58	55	57	55	55	55	50	52	45	55	53
WIRE OUT	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10
PORT		STB.		No. OF JARS		NET CLOGGING		none or slight		moderate		heavy		very heavy	
SIZE OF JAR (Circle One)		P	Q	P	Q	NET WASHING		none		rinsed		washed			
FORMALIN & BORATE ADDED				RIPS AND HOLES IN NET		none		location		when mended: (Circle one)		Before station		After station	
ALCOHOL ADDED				COLLECTORS INITS.											
REMARKS:															

Oblique Bongo Size Fractionated Data Sheet

Cruise	Ship	Cycle	Tow	Event # (Deployed)	Date		Hour (PDT)		
					YR	MO	DY	Begin Tow	End Tow
P1908	ATL	1	7		19	08	16	0934	0957

Tow Type: Oblique Bongo (202 µm) Port or Starboard

Split	Gut Contents (Cup #)	Gut Fluorescence	Size Fraction	Biomass
				(Pre-weighed filter #)
	1/16	312		312
Container Number		175	5 mm	45
	Cups 11, 12	178	2 mm	46
		177	1 mm	47
		179	500 µm	48
		180	200 µm	49
Dewar	2	2		2
Canister Number	2	2		2

Notes:  
 Cups 11, 12 = 1/16 split of sample  
 sample still very dense

Initials: L. Lilly and the day crew (Squid Squad)

(IM)

Logged?  
R,D  
✓

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT)									
						BEGIN TOW	END TOW								
CCE-P	Atlantis	C2, T1		#271	2009 8 18	21:56	22:19								
TIME		Min. Sec.		PORT	STB.	TOW TYPE: CALBOBL									
SINKING (descend)		7 53	NET NO.			TOW NO. 1 OF 1									
			METER NO.			SEA (Conditions): <u>Calm</u>									
TOWING (at depth)		0 30	FINAL	685, 575		(Circle one) Moderate									
			INITIAL	654, 78		Rough									
Total (ascend)		14 21	DIFF.			WIND: 8.5 knots									
			MESH SIZE												
AMT. OF WIRE OUT:			meters	OBSERVERS:											
TOTAL NO. OF ANGLES:															
ANGLES	57		51		52		51		50		49		51		50
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	180	170	160
ANGLES		48		53		51		52		51		50		48	
WIRE OUT	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10
		PORT STB.													
No. OF JARS							none or slight	moderate	heavy	very heavy					
SIZE OF JAR (Circle One)	P	Q	P	Q	NET CLOGGING										
FORMALIN & BORATE ADDED					NET WASHING			none	rinsed	washed					
ALCOHOL ADDED					RIPS AND HOLES IN NET			none	location	when mended: (Circle one)	Before station	After station			
COLLECTORS INITS															
REMARKS: Passed drifter @ 100m ↑															





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NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT)										
						BEGIN TOW	END TOW									
CCE-P 1908	ATL	C2, T2		# 282	2019-08-19	09:27	9:51									
TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL										
SINKING (descend)			NET NO.		<del>X</del>	TOW NO. 1 OF 1										
			METER NO.			SEA (Conditions): <u>Calm</u> (Circle one) Moderate										
TOWING (at depth)		30"	FINAL	712818			Rough									
			INITIAL	085587			WIND: knots									
Total (ascend)	15	33"	DIFF.													
			MESH SIZE													
AMT. OF WIRE OUT:			meters	OBSERVERS:												
TOTAL NO. OF ANGLES:																
ANGLES	62	58	60	55	62	53	55	NA	50	67	48	66	52	65		
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	180	170	160	
ANGLES	49	65	47	62	50	62	50	60	52	60	55	53	55	48	55	
WIRE OUT	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10	
PORT		STB.														
No. OF JARS								none or slight	moderate	heavy	very heavy					
SIZE OF JAR (Circle One)	P	Q	P	Q	NET CLOGGING											
FORMALIN & BORATE ADDED					NET WASHING				none	rinsed	washed					
ALCOHOL ADDED					RIPS AND HOLES IN NET				none	location	when mended: (Circle one)	Before station	After station			
COLLECTORS INITS.					REMARKS:											

Calculated  
3min  
ascend

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**Oblique Bongo Size Fractionated Data Sheet**

Cruise	Ship	Cycle	Tow	Event # (Deployed)	Date YR MO DY	Hour (PDT)	
Tow Type: Oblique Bongo (202 µm)				Port or Starboard			
Split	Gut Contents (Cup #)		Gut Fluorescence	Size Fraction	Biomass (Pre-weighed filter #)		
	1/16		3/8			3/8	
Container Number	Cups 22, 23		219, 220, 221	5 mm	83.79	82	
			224	2 mm	80.81	81	
			225	1 mm	84.87	87	
			222	500 µm	06	07	
	C23	C22	223	200 µm	05	05	
Dewar	2	2	2		2	2	
Canister Number	8	9	8		8	8	
Notes:							
Initials:	L. Lilly + day crew						

Logged?

V.V

Shallow Bouys for Sven

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT)									
						BEGIN TOW	END TOW								
CCE-P1908	Atlantis	2	Tow S4	#289	2019/08/19	1558	16:04								
TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL									
SINKING (descend)			NET NO.	202 $\mu$ m		TOW NO.	1 OF 1								
TOWING (at depth)			METER NO.			SEA (Conditions): <u>Calm</u> Moderate									
Total (ascend)			FINAL	721445		2-3' swell 1-2' waves Rough									
			INITIAL	712822		WIND: 8-12 knots									
			DIFF.												
			MESH SIZE												
AMT. OF WIRE OUT:			70	meters W.O.	OBSERVERS:										
TOTAL NO. OF ANGLES:															
ANGLES															
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	180	170	160
ANGLES OUT IN									48°	47°	47°	45°	42°	-	-
WIRE OUT	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10
														59°	58°
<p style="text-align: right;">5 on ascent = 57.8°</p>															
No. OF JARS	PORT		STB.		-		none or slight	moderate	heavy	very heavy					
SIZE OF JAR (Circle One)	P	Q	P	Q	NET CLOGGING										
FORMALIN & BORATE ADDED					NET WASHING		none	rinsed	washed						
ALCOHOL ADDED					RIPS AND HOLES IN NET		none	location	when mended: (Circle one)	Before station					
COLLECTORS INITS										After station					
REMARKS:	<p>Out @ 50m min<sup>-1</sup> In @ 20m min<sup>-1</sup> Directly opposite drift array @ 16:02</p>														



Logged?  
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Sven #2

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT# (Deployed)	DATE YR MO DY	HOUR (PDT)									
						BEGIN TOW	END TOW								
CCE-P	ATL	C2 SA 52		#291	190819	1647	1653								
TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL									
SINKING (descend)	1	46	NET NO.			TOW NO. 1 OF 1									
			METER NO.			SEA (Conditions): (Circle one) Calm Moderate Rough									
TOWING (at depth)		30	FINAL	729706		WIND: knots									
			INITIAL	721488											
Total (ascend)	4	09	DIFF.												
			MESH SIZE												
AMT. OF WIRE OUT:			meters	OBSERVERS:											
TOTAL NO. OF ANGLES:				S. Sommer, Sven Gas											
ANGLES															
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	180	170	160
ANGLES									49	50		51		59	
WIRE OUT	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10
									51		47			38	
PORT		STB.													
No. OF JARS															
SIZE OF JAR (Circle One)	P	Q	P	Q	NET CLOGGING		none or slight	moderate	heavy	very heavy					
FORMALIN & BORATE ADDED					NET WASHING		none	rinsed	washed						
ALCOHOL ADDED					RIPS AND HOLES IN NET		none	location	when mended: (Circle one)	Before station	After station				
COLLECTORS INITS.															
REMARKS:	down @ 50m/min up @ 20 last payout for ~10m on way out so depth may be slightly off														

X on ascent = 45.30

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Logged?  
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NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT# (Deployed)	DATE YR MO DY	HOUR (PDT)									
						BEGIN TOW	END TOW								
CCE-P	ATL	c2T3		# 297	19 Aug 2019	21:31	22:00								
TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL									
SINKING (descend)	10	33	NET NO.			TOW NO. 1 OF 1									
			METER NO.			SEA (Conditions): <u>Calm</u>									
TOWING (at depth)		30	FINAL	760907		Moderate									
			INITIAL	729689		Rough									
Total (ascend)	14	31	DIFF.			WIND: 13.3 knots									
			MESH SIZE												
AMT. OF WIRE OUT:			meters	OBSERVERS:											
TOTAL NO. OF ANGLES:															
ANGLES	39		39		41		40		42		42		42		50
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	190	170	160
ANGLES		53		53		53		55		50		49		43	
WIRE OUT	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10
PORT		STB.													
No. OF JARS							none or slight	moderate	heavy	very heavy					
SIZE OF JAR (Circle One)	P	Q	P	Q	NET CLOGGING										
FORMALIN & BORATE ADDED					NET WASHING			none	rinsed	washed					
ALCOHOL ADDED					RIPS AND HOLES IN NET			none	location	when mended: (Circle one)	Before station				
COLLECTORS INITS.											After station				
REMARKS: * Passing the drifter 20 m/min from 0 to 150 down															





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Logged?  
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NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT)	
						BEGIN TOW	END TOW
CCE-P 1908	ATL	C2, T4		# 308	19 08 20	09:31	09:55

TIME	Min.	Sec.	NET NO.	METER NO.	PORT	STB.	TOW TYPE: CALBOBL	
SINKING (descend)	7	09				<del>X</del>	TOW NO. 1 OF 1	
TOWING (at depth)		30	FINAL	789485			SEA (Conditions): <u>Calm</u> (Circle one) Moderate Rough	
Total (ascend)	15	21	INITIAL	760924			WIND: knots	
			DIFF.					
AMT. OF WIRE OUT:			meters		OBSERVERS:			
TOTAL NO. OF ANGLES:								

ANGLES	63	62	62	60	62	58	64	58	65	57	65	54	65	52	65
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	190	170	160
ANGLES	52	63	50	62	50	62	50	55	50	55	50	50	48	57	
WIRE OUT	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10

	PORT		STB.						
No. OF JARS					NET CLOGGING	none or slight	moderate	heavy	very heavy
SIZE OF JAR (Circle One)	P	Q	P	Q					
FORMALIN & BORATE ADDED					NET WASHING	none	rinsed	washed	
ALCOHOL ADDED									
COLLECTORS INITS					RIPS AND HOLES IN NET	none	location	when mended: (Circle one)	Before station After station

REMARKS:



Oblique Bongo Size Fractionated Data Sheet

Cruise	Ship	Cycle	Tow	Event # (Deployed)	Date YR MO DY	Hour (PDT)	
P1908	ATL	2	4		190820	Begin Tow 0931	End Tow 0955
Tow Type: Oblique Bongo (202 µm)							
Port or Starboard							
Split	Gut Contents (Cup #)	Gut Fluorescence	Size Fraction	Biomass (Pre-weighed filter #)			
Container Number	1/10	3/8					
	Cups 84, 25	211, 245, 246	5 mm	3/8			
		241	2 mm	97, 101			
		242	1 mm	98			
		243	500 µm	100			
		244	200 µm	99			
Dewar	2	23		102			
Canister Number	10	1		2			
Notes:	GC cups filtered quickly						
Initials:	L. Lilly and day crew						

IM

Logged?  
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NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT)									
						BEGIN TOW	END TOW								
GCE-P	ATL	C275		#317	20 Aug 2013	21:30	21:51								
+7hr															
TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL									
SINKING (descend)	7	09	NET NO.			TOW NO. 1 OF 1									
TOWING (at depth)	0	30	METER NO.			SEA (Conditions): <u>Calm</u> (Circle one) Moderate Rough									
Total (ascend)	14	10	FINAL	817553		WIND: 17.6 knots									
			INITIAL	789497	<del>817553</del>										
			DIFF.												
			MESH SIZE												
AMT. OF WIRE OUT: meters				OBSERVERS:											
TOTAL NO. OF ANGLES:				S. Sommer et al											
ANGLES	64		59 64		59 65		58 64		57 63		58 63		57 62		58 62
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	180	170	160
ANGLES		54 61		55 60		52 59		53 60		50 59		46 58		39 55	
WIRE OUT	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10
No. OF JARS		PORT STB.		NET CLOGGING	none or slight	moderate	heavy	very heavy							
SIZE OF JAR (Circle One)		P	Q		P	Q									
FORMALIN & BORATE ADDED				NET WASHING	none	rinsed	washed								
ALCOHOL ADDED															
COLLECTORS INITS				RIPS AND HOLES IN NET	none	location	when mended: (Circle one)	Before station After station							
REMARKS:				Crane moving up @ 20m ↑ 139,											





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NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT)									
						BEGIN TOW	END TOW								
CCE-P P1908	ATL	C2,T6		#324	19 08 21	09:30	09:54								
TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL									
SINKING (descend)	7	47	NET NO.		<del>X</del>	TOW NO. 1 OF 1									
TOWING (at depth)		30	METER NO.			SEA (Conditions): (Circle one) <u>Calm</u> Moderate Rough									
Total (ascend)	15	23	FINAL	842990		WIND: 15 knots									
			INITIAL	817550											
			DIFF.												
			MESH SIZE												
AMT. OF WIRE OUT:			meters	OBSERVERS:											
TOTAL NO. OF ANGLES:															
ANGLES	55	55	52	55	55	56	57	57	50	57	50	58	52	55	
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	180	170	160
ANGLES	50	56	46	57	55	57	40	57	57	57	50	40	48	50	
WIRE OUT	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10
PORT		STB.													
No. OF JARS							none or slight	moderate	heavy	very heavy					
SIZE OF JAR (Circle One)	P	Q	P	Q	NET CLOGGING										
FORMALIN & BORATE ADDED					NET WASHING			none	rinsed	washed					
ALCOHOL ADDED					RIPS AND HOLES IN NET			none	location	when mended: (Circle one)	Before station After station				
COLLECTORS INITS.															
REMARKS:															



**Oblique Bongo Size Fractionated Data Sheet**

Cruise	Ship	Cycle	Tow	Event # (Deployed)	Date		Hour (PDT)	
					YR	MO	DY	Begin Tow
P1908	ATL	2	6		19	08	21	0930 - 0954
Tow Type: Oblique Bongo (202 µm)				Port or Starboard				
		Gut Contents (Cup #)		Gut Fluorescence		Size Fraction		Biomass (Pre-weighed filter #)
Split		1/16		3/8				5/8
Container Number		Cup 27		250	227, 228	5 mm		109, 114, 115
				226		2 mm		110
				253		1 mm		111
				254		500 µm		112
				255		200 µm		113
Dewar		3		3				3
Canister Number		2		2				2
Notes:	Filtered relatively quickly!							
Initials:	L. Lilly and the day crew							

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Logged?

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NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT)									
						BEGIN TOW	END TOW								
CCE-P P1908	ATL	C3, T1		#355	19 08 24	09:34	09:58								
						163400	1658								
TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL									
SINKING (descend)	8	07	NET NO.	<del>X</del>		TOW NO. I OF I									
TOWING (at depth)		30	METER NO.			SEA (Conditions): <u>Calm</u>									
Total (ascend)	15	37	FINAL			Moderate									
			INITIAL			Rough									
			DIFF.	WIND: 4		knots									
AMT. OF WIRE OUT: 300			meters	OBSERVERS: very calm seas! some swell											
TOTAL NO. OF ANGLES:															
ANGLES	62	67	61	62	55	55	55	63	55	64	53	63	53	65	53
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	180	170	160
ANGLES	61	51	60	52	58	50	55	48	55	45	43	45	42	45	45
WIRE OUT	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10
PORT		STB.		No. OF JARS		NET CLOGGING		none or slight		moderate		heavy		very heavy	
SIZE OF JAR (Circle One)		P	Q	P	Q	NET WASHING		none		rinsed		washed			
FORMALIN & BORATE ADDED				RIPS AND HOLES IN NET		none		location		when mended: (Circle one)		Before station		After station	
ALCOHOL ADDED				COLLECTORS INITS.											
REMARKS:															



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NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT)									
						BEGIN TOW	END TOW								
CCE-P	ATL	3	Tow 2	#367	19/8/24	21:35	21:57								
					19/8/25	0435	0457								
TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL									
SINKING (descend)	7	30	"	NET NO.		TOW NO. 1 OF 1									
				METER NO.		SEA (Conditions): <u>Calm</u>									
TOWING (at depth)	0	30	"	FINAL 901 517		Moderate									
				INITIAL 872 442		Rough									
Total (ascend)	14	05	"	DIFF.		WIND: 3.78 knots									
				MESH SIZE											
AMT. OF WIRE OUT:				meters	OBSERVERS:										
TOTAL NO. OF ANGLES:					S. Sommer et al										
ANGLES	65		49	56	52	51	48	48	46						
			64	63	65	65	64	63	62						
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	180	170	160
ANGLES		43		42		43		45		46		50		48	
		63		61		61		60		59		57		56	
WIRE OUT	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10
PORT		STB.													
No. OF JARS							none or slight	moderate	heavy	very heavy					
SIZE OF JAR (Circle One)	P	Q	P	Q	NET CLOGGING										
FORMALIN & BORATE ADDED					NET WASHING			none	rinsed	washed					
ALCOHOL ADDED					RIPS AND HOLES IN NET			none	location	when mended: (Circle one)	Before station				
COLLECTORS INITS.											After station				
REMARKS: School of fish at surface, one shark.															





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NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT)										
						BEGIN TOW	END TOW									
CCE-P P1908	ATL	C3,T3		#377	20 <sup>th</sup> 08/25	09:27	09:53									
						16:27	16:53									
TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL										
SINKING (descend)	8	42	NET NO.			TOW NO. 1 OF 1										
TOWING (at depth)		30	METER NO.			SEA (Conditions): <u>Calm</u> (Circle one) Moderate Rough										
Total (ascend)	16	32	FINAL	935485		WIND: knots										
			INITIAL	901518												
			DIFF.													
			MESH SIZE													
AMT. OF WIRE OUT:			meters	OBSERVERS: L. Lilly + day crew												
TOTAL NO. OF ANGLES:																
ANGLES	55	55	45	55	45	54	47	52	42	50	42	51	40	50	42	↑
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	180	170	160	↓
ANGLES	47	45	45	47	35	48	36	49	38	55	28	55	25	65	65	↑
WIRE OUT	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10	↓
No. OF JARS		PORT STB.		NET CLOGGING	none or slight	moderate	heavy	very heavy								
SIZE OF JAR (Circle One)		P	Q		P	Q										
FORMALIN & BORATE ADDED				NET WASHING	none	rinsed	washed									
ALCOHOL ADDED																
COLLECTORS INITS.				RIPS AND HOLES IN NET	none	location	when mended: (Circle one)	Before station After station								
REMARKS:																



Logged?  
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NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT)									
						BEGIN TOW	END TOW								
CCE-P	ATL	C3	T4	#385	25 Aug 2019	21:30	21:55								
						24 Aug	4:30	4:55							
TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL									
SINKING (descend)	7	10	NET NO.			TOW NO. 1 OF 1									
TOWING (at depth)		30	METER NO.			SEA (Conditions): <u>Calm</u> (Circle one) Moderate Rough									
Total (ascend)	14	29	FINAL	963101		WIND: 10.5 knots									
			INITIAL	G30485											
			DIFF.												
			MESH SIZE												
AMT. OF WIRE OUT:			meters	OBSERVERS:											
TOTAL NO. OF ANGLES:															
ANGLES	65	65	61	60	59	60	59	60	60						
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	180	170	160
ANGLES		61	61	58	59	55	51	46							
WIRE OUT	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10
PORT		STB.													
No. OF JARS							none or slight	moderate	heavy	very heavy					
SIZE OF JAR (Circle One)	P	Q	P	Q	NET CLOGGING										
FORMALIN & BORATE ADDED					NET WASHING		none	rinsed	washed						
ALCOHOL ADDED					RIPS AND HOLES IN NET		none	location	when mended: (Circle one)	Before station					
COLLECTORS INITS.										After station					
REMARKS:															





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NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT)										
						BEGIN TOW	END TOW									
CCE-P 1908	ATL	C4,T1		#490	19 08 30	09:31	0954									
TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL										
SINKING (descend)	6	55	NET NO.		X	TOW NO.	1 OF 1									
TOWING (at depth)		30	METER NO.			SEA (Conditions):	<u>Calm</u>									
Total (ascend)	15	46	FINAL	032271		(Circle one)	Moderate									
			INITIAL	004827			Rough									
			DIFF.			WIND: 3	knots									
AMT. OF WIRE OUT:			meters	OBSERVERS: L.Lilly + day crew												
TOTAL NO. OF ANGLES:																
ANGLES	61	61	61	58	57	54	53	52	53							
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	180	170	160	
ANGLES	57	52	53	52	50	52	48	53	41	51	36	53	32	51		
WIRE OUT	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10	
	PORT		STB.													
No. OF JARS			1			none or slight	moderate	heavy	very heavy							
SIZE OF JAR (Circle One)	P	Q	P	<u>Q</u>	NET CLOGGING											
FORMALIN & BORATE ADDED			✓		NET WASHING	none	rinsed	washed								
ALCOHOL ADDED			X													
COLLECTORS INITS.			LEL		RIPS AND HOLES IN NET	none	location	when mended: (Circle one)	Before station After station							
REMARKS:	Very full quart jar, but we are in jar conservation mode!															

Oblique Bongo Size Fractionated Data Sheet							
Cruise	Ship	Cycle	Tow	Event # (Deployed)	Date		
					YR	MO	DAY
Tow Type: Oblique Bongo (202 µm)				Port or Starboard			
Split	Gut Contents (Cup #)		Gut Fluorescence	Size Fraction	Biomass (Pre-weighed filter #)		
		V4		3/8		3/8	
Container Number			283	5 mm	137		
	Cups L1		284	2 mm	138		
	132		285	1 mm	139		
	132		292	500 µm	140		
	L1		293	200 µm	161		
Dewar	2	Freezer	2	Freezer			
Canister Number	2	-80C	3	-80C			
Notes:	Lots of pyros and salps (P. socia?)						
Initials:							

\* Additional size frac.

GF > 20mm	Biomass > 20mm
L4	L2
(1 of 1)	(1 of 1)

L-Lilly + day crew

\* GC:

- Cup L1 - Large pyrosomes + salps removed from 1/4 split manually (forceps + spoon) and placed in pint GC cup. Filtered manually via gravity for ~15 min

- Cup 132 - remaining (small) biomass from 1/4 split was filtered into small GC cup and vacuum pumped normally

Logged?

D, R  
✓

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT)									
						BEGIN TOW	END TOW								
CCE-P	ATL	4	2	#504	30 Aug 2019	21:35	21:58								
TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL									
SINKING (descend)	7	55	NET NO.			TOW NO. 1 OF 1									
TOWING (at depth)		30	METER NO.			SEA (Conditions): <u>Calm</u> (Circle one) Moderate Rough									
Total (ascend)	14	17	DIFF.	FINAL 060 800	INITIAL 032 4 17	WIND: 10 knots									
AMT. OF WIRE OUT:			meters	OBSERVERS:											
TOTAL NO. OF ANGLES:															
ANGLES	57		51		50		51		51		52		53		52
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	190	170	160
ANGLES		52		53		47		48		47		37		37	
WIRE OUT	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10
No. OF JARS		PORT STB.		NET CLOGGING	none or slight	moderate	heavy	very heavy							
SIZE OF JAR (Circle One)	P	Q	P						Q						
FORMALIN & BORATE ADDED			NET WASHING		none	rinsed	washed								
ALCOHOL ADDED			RIPS AND HOLES IN NET		none	location	when mended: (Circle one)	Before station After station							
REMARKS:															





Logged?

D, R  
✓

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT)									
						BEGIN TOW	END TOW								
CCE-P		04, T3		#514	2019-08-31	09:29	0952								
TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL									
SINKING (descend)	7	50	NET NO.			TOW NO.	1 OF 1								
			METER NO.			SEA (Conditions): <u>Calm</u> (Circle one) Moderate Rough									
TOWING (at depth)		30	FINAL	088032			WIND: knots								
			INITIAL					060792							
Total (ascend)			DIFF.												
			MESH SIZE												
AMT. OF WIRE OUT: meters				OBSERVERS: L. Lilly, P. Chabert B. Botwe, J. Barrios, J. Evans											
TOTAL NO. OF ANGLES:															
ANGLES	52	52	52	50	50	50	55	55	55						
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	180	170	160
ANGLES	48	52	45	55	45	51	42	50	40	48	40	47	35	50	
WIRE OUT	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10
PORT		STB.													
No. OF JARS															
SIZE OF JAR (Circle One)	P	Q	P	Q	NET CLOGGING		none or slight	moderate	heavy	very heavy					
FORMALIN & BORATE ADDED					NET WASHING		none	rinsed	washed						
ALCOHOL ADDED					RIPS AND HOLES IN NET		none	location	when mended: (Circle one)	Before station					
COLLECTORS INITS.										After station					
REMARKS:															

↑  
↓  
↑  
↓

Oblique Bongo Size Fractionated Data Sheet							
Cruise	Ship	Cycle	Tow	Event # (Deployed)	Date		
					YR	MO	DY
Tow Type: Oblique Bongo (202 µm)				Port or Starboard			
Split	Gut Contents (Cup #)		Gut Fluorescence	Size Fraction	Biomass (Pre-weighed filter #)		
	1/4		3/8		3/8		
Container Number	Cups 115		299	5 mm	167		
	131		300	2 mm	168		
	17		301	1 mm	169		
	115, 131		302	500 µm	170		
	17		303	200 µm	171		
Dewar	17 ↓		1		1		
Canister Number	1		Freezer	1	1		
Notes:	-80°C						
Initials:	L. Lilly and day crew						

GF 720mm

L8

↓

Freezer  
-80°C

Biomass  
> 20mm

L11

↓

Freezer  
-80°C

\* Did a freezer dump this morning  
before samples from this Bongo

Same preservation as for  
Cycle 4, Tow 1

Logged?  
D, R  
✓✓

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT)									
						BEGIN TOW	END TOW								
CCE-P	ATL	C4T4		#522	19/8/31	21:38	22:01								
TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL									
SINKING (descend)	8	08	NET NO.			TOW NO. 1 OF 1									
TOWING (at depth)	0	30	METER NO.			SEA (Conditions): <u>Calm</u> (Circle one) Moderate Rough									
Total (ascend)	13	49	FINAL	118720		WIND: 11.1 knots									
			INITIAL	088035											
			DIFF.												
			MESH SIZE												
AMT. OF WIRE OUT:			meters	OBSERVERS:											
TOTAL NO. OF ANGLES:															
ANGLES	54	51 54	50 55	50 56	50 57	50 56	47 57	50 56							
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	180	170	160
ANGLES		50 56	51 56	50 53	51 52	50 52	40 50							39 48	
WIRE OUT	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10
PORT		STB.													
No. OF JARS															
SIZE OF JAR (Circle One)	P	Q	P	Q	NET CLOGGING	none or slight	moderate	heavy	very heavy						
FORMALIN & BORATE ADDED					NET WASHING	none	rinsed	washed							
ALCOHOL ADDED					RIPS AND HOLES IN NET	none	location	when mended: (Circle one)	Before station						
COLLECTORS INITS.															
REMARKS:															





Logged  
D, R  
✓ ✓

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT)									
						BEGIN TOW	END TOW								
CCE-P 1908	ATL	C4,T5		#533	2009-09-01	09:30	09:55								
TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL									
SINKING (descend)	7	27	NET NO.			TOW NO. 1 OF 1									
TOWING (at depth)		30	METER NO.			SEA (Conditions): (Circle one) <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Calm</span> Moderate 3-4 ft swell Rough									
Total (ascend)			FINAL	144380		WIND: 15 knots									
			INITIAL	118714											
			DIFF.												
			MESH SIZE												
AMT. OF WIRE OUT:			meters	OBSERVERS:											
TOTAL NO. OF ANGLES:															
ANGLES	55	55	50	59	48	58	43	57	40	55	42	52	42	50	42
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	190	170	160
ANGLES	50	40	48	40	42	42	38	40	30	45	45				
WIRE OUT	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10
PORT		STB.													
No. OF JARS							none or slight		moderate		heavy		very heavy		
SIZE OF JAR (Circle One)	P	Q	P	Q	NET CLOGGING										
FORMALIN & BORATE ADDED					NET WASHING		none		rinsed		washed				
ALCOHOL ADDED					RIPS AND HOLES IN NET		none		location		when mended: (Circle one)		Before station		
COLLECTORS INITS.													After station		
REMARKS:															

Oblique Bongo Size Fractionated Data Sheet							
Cruise	Ship	Cycle	Tow	Event #	Date	Hour (PDT)	
				(Deployed)	YR MO DY	Begin Tow	End Tow
P1908	ATL	4	5		19 09 1	0930	0954
Tow Type: Oblique Bongo (202 µm)				Port or Starboard			
Gut Contents		Gut Fluorescence		Size		Biomass	
(Cup #)				Fraction		(Pre-weighed filter #)	
Split		3/B				3/B	
Container Number		307		5 mm		177	
Cup 123		309		2 mm		178	
		311		1 mm		179	
		312		500 µm		180	
		313		200 µm		181	
Dewar		1				1	
Canister Number		3				3	
Notes:							
Very sparse sample!							
Initials:							
L. Lilly, J. Barrios, B. Botwe							
J. Evans, P. Chabert							

GF >20mm  
 Cup 133  
 (small white cup)  
 Dewar 1  
 Can. 2

Biomass >20mm  
 Cup 122  
 Dewar 1  
 Can. 3

Logged?

D, R  
V, V

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT)									
						BEGIN TOW	END TOW								
CCE-P	ATL	C4	T6	#543	1 Sept 2019	21:30	21:55								
TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL									
SINKING (descend)	9	26	NET NO.			TOW NO. 1 OF 1									
			METER NO.			SEA (Conditions): Calm									
TOWING (at depth)		30	FINAL	175318		Moderate									
			INITIAL	144368		Rough									
Total (ascend)	14	23	DIFF.			WIND: knots									
			MESH SIZE												
AMT. OF WIRE OUT:			meters	OBSERVERS:											
TOTAL NO. OF ANGLES:															
ANGLES	52	51	52	53	56	56	57								
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	190	170	160
ANGLES	55	52	48	45	43	39	25								
WIRE OUT	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10
PORT		STB.													
No. OF JARS							none or slight	moderate	heavy	very heavy					
SIZE OF JAR (Circle One)	P	Q	P	Q	NET CLOGGING										
FORMALIN & BORATE ADDED					NET WASHING			none	rinsed	washed					
ALCOHOL ADDED					RIPS AND HOLES IN NET			none	location	when mended: (Circle one)	Before station After station				
COLLECTORS INITS.					REMARKS: Gang down slower because loose wraps										



