BONGO TOWS

EXPEDITION	SHIP	STANO	Sample Date	Start Time	Event No.	Tow Type	Max Depth	Vol H20 filtered
CCE-LTER-P1706	R/V REVELLE	Transect 1-1	6/7/2017	1838	134	Vertical	98.27	40.5
CCE-LTER-P1706	R/V REVELLE	Transect 1-2	6/7/2017	1944	139	Vertical	99.69	44.3
CCE-LTER-P1706	R/V REVELLE	Transect 1-3	6/7/2017	2050	143	Vertical	100.00	49.5
CCE-LTER-P1706	R/V REVELLE	Transect 1-4	6/7/2017	2213	151	Vertical	99.90	43.9
CCE-LTER-P1706	R/V REVELLE	Transect 1-5	6/8/2017	0002	159	Vertical	99.67	44.4
CCE-LTER-P1706	R/V REVELLE	Transect 1-6	6/8/2017	0143	166	Vertical	99.52	46.0
CCE-LTER-P1706	R/V REVELLE	Transect 1-7	6/8/2017	0252	171	Vertical	99.85	36.0
CCE-LTER-P1706	R/V REVELLE	Transect 1-8	6/8/2017	0356	178	Vertical	99.56	41.9
CCE-LTER-P1706	R/V REVELLE	Transect 1-9	6/8/2017	0456	184	Vertical	99.14	44.2
CCE-LTER-P1706	R/V REVELLE	Transect 1-10	6/8/2017	0627	192	Vertical	99.94	40.6
CCE-LTER-P1706	R/V REVELLE	Transect 1-11	6/8/2017	0729	197	Vertical	100.00	37.0
CCE-LTER-P1706	R/V REVELLE	Cycle 1-1	6/9/2017	0839	214	Oblique	208.13	378.2
CCE-LTER-P1706	R/V REVELLE	Cycle 1-2	6/9/2017	2034	229	Oblique	194.37	332.4
CCE-LTER-P1706	R/V REVELLE	Cycle 1-3	6/10/2017	0836	244	Oblique	216.71	372.4
CCE-LTER-P1706	R/V REVELLE	Cycle 1-4	6/10/2017	2034	258	Oblique	176.99	304.0
CCE-LTER-P1706	R/V REVELLE	Cycle 1-5	6/11/2017	0832	269	Oblique	213.98	344.1
CCE-LTER-P1706	R/V REVELLE	Cycle 1-6	6/11/2017	2048	279	Oblique	195.60	362.4
CCE-LTER-P1706	R/V REVELLE	Cycle 2-1	6/13/2017	0731	310	Oblique	209.55	358.2
CCE-LTER-P1706	R/V REVELLE	Cycle 2-2	6/13/2017	2112	324	Oblique	219.70	414.8
CCE-LTER-P1706	R/V REVELLE	Cycle 2-3	6/14/2017	0733	339	Oblique	200.03	389.9
CCE-LTER-P1706	R/V REVELLE	Cycle 2-4	6/14/2017	2033	348	Oblique	214.71	362.4
CCE-LTER-P1706	R/V REVELLE	Cycle 2-5	6/15/2017	0829	362	Oblique	208.40	445.3
CCE-LTER-P1706	R/V REVELLE	Cycle 2-6	6/15/2017	2109	373	Oblique	203.55	362.4
CCE-LTER-P1706	R/V REVELLE	Cycle 2-7	6/16/2017	0830	383	Oblique	213.31	384.1
CCE-LTER-P1706	R/V REVELLE	Cycle 2-8	6/16/2017	2035	393	Oblique	197.69	362.4
CCE-LTER-P1706	R/V REVELLE	Transect 2-1	6/17/2017	1935	412	Vertical	99.98	58.8
CCE-LTER-P1706	R/V REVELLE	Transect 2-2	6/17/2017	2111	416	Vertical	99.83	61.8
CCE-LTER-P1706	R/V REVELLE	Transect 2-3	6/17/2017	2303	422	Vertical	99.62	65.2
CCE-LTER-P1706	R/V REVELLE	Transect 2-4	6/18/2017	0035	428	Vertical	100.00	67.3
CCE-LTER-P1706	R/V REVELLE	Transect 2-5	6/18/2017	0207	434	Vertical	99.36	73.4
CCE-LTER-P1706	R/V REVELLE	Transect 2-6	6/18/2017	0410	441	Vertical	98.70	59.3
CCE-LTER-P1706	R/V REVELLE	Transect 2-7	6/18/2017	0605	448	Vertical	98.88	59.2
CCE-LTER-P1706	R/V REVELLE	Transect 2-8	6/18/2017	0723	453	Vertical	99.88	72.8
CCE-LTER-P1706	R/V REVELLE	Transect 2-9	6/18/2017	0846	459	Vertical	100.00	55.9
CCE-LTER-P1706	R/V REVELLE	Transect 2-10	6/18/2017	1010	465	Vertical	96.13	67.3
CCE-LTER-P1706	R/V REVELLE	Transect 2-11	6/18/2017	1208	473	Vertical	99.66	44.7
CCE-LTER-P1706	R/V REVELLE	Cycle 3-1	6/19/2017	0832	488	Oblique	217.35	313.5
CCE-LTER-P1706	R/V REVELLE	Cycle 3-2	6/19/2017	2051	506	Oblique	216.36	364.5
CCE-LTER-P1706	R/V REVELLE	Cycle 3-3	8/20/2017	0832	521	Oblique	214.96	365.3
CCE-LTER-P1706	R/V REVELLE	Cycle 3-4	6/20/2017	2048	535	Oblique	211.56	380.2
CCE-LTER-P1706	R/V REVELLE	Cycle 3-5	8/21/2017	0835	548	Oblique	216.06	384.1
CCE-LTER-P1706	R/V REVELLE	Cycle 3-6	8/21/2017	2036	559	Oblique	197.42	342.6
CCE-LTER-P1706	R/V REVELLE	Transect 3-1	6/22/2017	1813	574.7	Vertical	98.77	62.8
CCE-LTER-P1706	R/V REVELLE	Transect 3-2	6/22/2017	1914	578	Vertical	98.48	59.1

CCE-LTER-P1706	R/V REVELLE	Transect 3-3	6/22/2017	2021	583	Vertical	100.00	60.4
CCE-LTER-P1706	R/V REVELLE	Transect 3-4	6/22/2017	2130	588	Vertical	100.00	59.5
CCE-LTER-P1706	R/V REVELLE	Transect 3-5	6/22/2017	2237	593	Vertical	99.86	60.1
CCE-LTER-P1706	R/V REVELLE	Transect 3-6	6/23/2017	0016	600	Vertical	95.22	80.0
CCE-LTER-P1706	R/V REVELLE	Transect 3-7	6/23/2017	0143	605	Vertical	99.92	75.0
CCE-LTER-P1706	R/V REVELLE	Transect 3-8	6/23/2017	0249	610	Vertical	99.67	66.4
CCE-LTER-P1706	R/V REVELLE	Transect 3-9	6/23/2017	0354	615	Vertical	99.99	57.7
CCE-LTER-P1706	R/V REVELLE	Transect 3-10	6/23/2017	0456	620	Vertical	99.20	61.9
CCE-LTER-P1706	R/V REVELLE	Transect 3-11	6/23/2017	0635	627	Vertical	99.69	61.1
CCE-LTER-P1706	R/V REVELLE	Cycle 4-1	6/24/2017	0829	647	Oblique	207.82	319.0
CCE-LTER-P1706	R/V REVELLE	Cycle 4-2	6/24/2017	2036	671	Oblique	200.59	362.6
CCE-LTER-P1706	R/V REVELLE	Cycle 4-3	6/25/2017	0830	686	Oblique	209.99	330.0
CCE-LTER-P1706	R/V REVELLE	Cycle 4-4	6/25/2017	2038	695	Oblique	205.00	341.6

Depth: 100 → 90
Display
wait 20 sec
↓ 30 m/min → 27
↑ 50 m/min → 45

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P 1706	Revelle	T1, ~~B1~~ T	1	134	17 06 07	1938	1947

TIME	Min.	Sec.		PORT	STB.	TOW TYPE: **CALBOBL**
SINKING (descend)	4	02	NET NO.			TOW NO. 1 OF 1
			METER NO.	same as before		SEA (Conditions): Calm (Circle one) Moderate Rough
TOWING (at depth)	0	20	FINAL	970032	970032	
			INITIAL	966318		
Total (ascend)	2	04	DIFF.			WIND: 1 knots
			MESH SIZE	202µm		

AMT. OF WIRE OUT: meters

TOTAL NO. OF ANGLES:

OBSERVERS: LL, SM, MDO

ANGLES	11	15	12	12	—	12	11	8	7
WIRE OUT	10	20	30	40	50	60	70	80	90
ANGLES	15	12°	10°	10°	10°	9°	7°	7°	10
WIRE OUT	10	20	30	40	50		70		

	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: Vertical Bongo

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P 1706	Revelle	Transect 1	~~Stn~~ Tow 2	139	17 06 07	20:44	~20:53

TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL
SINKING (descend)	~4	00 "	NET NO.			TOW NO. 1 OF 1
			METER NO.			SEA (Conditions): Calm
TOWING (at depth)		20 "	FINAL		973668	(Circle one) Moderate
			INITIAL		970022	Rough
Total (ascend)	5	22 "	DIFF.			WIND: knots
			MESH SIZE			

AMT. OF WIRE OUT: meters

TOTAL NO. OF ANGLES:

OBSERVERS: LL; SM, VB

ANGLES	15°		10°		8°		3°		
WIRE OUT	10 20m	30m	40m	50m	60m	70m	80	90	100
ANGLES									
WIRE OUT	80	0°		5°		5°			

	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:

Full moon; almost fully dark Vertical Bongo

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P 1706	Revelle	Transect 1	Tow 3	143	170607	2150	2156

TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL
SINKING (descend)	3	20 "	NET NO.			TOW NO. 1 OF 1
			METER NO.			SEA (Conditions): (Calm) Moderate Rough (Circle one)
TOWING (at depth)	3	40 "	FINAL		971340	
			INITIAL		973671	
Total (ascend)	5	46 "	DIFF.			WIND: knots
			MESH SIZE			

AMT. OF WIRE OUT: meters

TOTAL NO. OF ANGLES:

OBSERVERS: LEL, SM, VB

ANGLES	25°	25°	21	19°	15°	15°	7°	0	0
WIRE OUT	10m	20m	30m	40m	50m	60m	70m	80m	90m
ANGLES									
WIRE OUT	0	0	0	0	0	0	0	0	0

	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:

Vertical Bongo

Depth: 90 MWO
Down spd: 27 m/m
Time at bottom: 2
Up spd: 45 m/m

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT)	
						BEGIN TOW	END TOW
CCE-P 1706	Revelle	Transect 1	Tow 4	151	1706 07	2313	2320

TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL
SINKING (descend)	3	40	NET NO.			TOW NO. 1 OF 1
			METER NO.			SEA (Conditions): Calm
TOWING (at depth)	0	20	FINAL		99396	(Circle one) Moderate
			INITIAL		977360	Rough
Total (ascend)	2	15	DIFF.			WIND: 2 knots
			MESH SIZE			

AMT. OF WIRE OUT: meters

TOTAL NO. OF ANGLES:

OBSERVERS:

ANGLES		10		5		0		0	-3
WIRE OUT	10m	20m	30m	40m	50m	60m	70m	80m	90m
ANGLES	0	0			-3		-3		-3
WIRE OUT	10	20	30	45	50	60	70	80	90

	PORT		STB.		NET CLOGGING	none or slight	moderate	heavy	very heavy
No. OF JARS									
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:

Vertical Bongo

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P 1706	Revelle	Transect 1	Tow 5	159	17/06/08	0102	0109

TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL
SINKING (descend)		"	NET NO.			TOW NO. 1 OF 1
			METER NO.			SEA (Conditions): (Calm) Moderate Rough (Circle one)
TOWING (at depth)	20	"	FINAL			
			INITIAL	981390	985045	
Total (ascend)		"	DIFF.			WIND: knots
			MESH SIZE			

AMT. OF WIRE OUT: meters

TOTAL NO. OF ANGLES:

OBSERVERS: BMW LL

ANGLES	10	9	11		15	13	11		
WIRE OUT	10m	20m	30m	40m	50m	60m	70m	80m	90m
ANGLES									
WIRE OUT		10	9		3	1	0	5	

	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:

Vertical Bongo

Labels on top of Jars [illegible]
need to [illegible]

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P	Ro-P 2	Transect 1	Tow 6	1606	170608	02:43	02:49

TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL	
SINKING (descend)	3	52 "	NET NO.			TOW NO. 1 OF 1	
			METER NO.			SEA (Conditions): (Circle one) Calm	
TOWING (at depth)		20 "	FINAL	989375		Moderate	
			INITIAL	985105	~~978~~	Rough	
Total (ascend)	2	02 "	DIFF.			WIND: knots	
			MESH SIZE				

AMT. OF WIRE OUT: meters

TOTAL NO. OF ANGLES:

OBSERVERS: BMW, JG, KK

ANGLES	5	3		2	2	4	7	4	
WIRE OUT	10m	20m	30m	40m	50m	60m	70m	80m	90m
ANGLES		5		5	7	6	5		
WIRE OUT									

	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:

Vertical Bongo

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P	Revelle	Transect 1	Tow 7	171	170608	03:52	03:59

TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL	
SINKING (descend)	3	33"	NET NO.			TOW NO. 1 OF 1	
			METER NO.			SEA (Conditions): (Circle one) Calm Moderate Rough	
TOWING (at depth)		20"	FINAL	992681			
			INITIAL	989406			
Total (ascend)	2	04"	DIFF.			WIND: knots	
			MESH SIZE				

AMT. OF WIRE OUT: meters

TOTAL NO. OF ANGLES:

OBSERVERS: BMW, JG, HH

ANGLES	5	8	8	7	8	0	5	5	
WIRE OUT									
ANGLES	10m	20m	30m	40m	50m	60m	70m	80m	90m
WIRE OUT		5		3	3	3	4	1	

	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:

Vertical Bongo

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P 1706	Revelle	Transect	Tow 8	178	170608	04:56	[illegible]

TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL	
SINKING (descend)	03	05 "	NET NO.			TOW NO. 1 OF 1	
			METER NO.			SEA (Conditions): (Circle one)	Calm
TOWING (at depth)	[illegible]	"	FINAL				Moderate
			INITIAL	992685	996531		Rough
Total (ascend)	32	09 "	DIFF.			WIND:	knots
			MESH SIZE				

AMT. OF WIRE OUT: meters

TOTAL NO. OF ANGLES:

OBSERVERS: BmW, JG, HK

ANGLES	10°	9°	7°	[illegible]	5°	5°	2°	3°	
WIRE OUT	10m	20m	30m	40m	50m	60m	70m	80m	90m
ANGLES									
WIRE OUT	13		10			9	[illegible]		

	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:

Vertical Bongo

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P 1706	Revelle	Transect 1	Tow 9	184	170608	05:55	[illegible]

TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL	
SINKING (descend)	3	34 "	NET NO.			TOW NO. 1 OF 1	
			METER NO.			SEA (Conditions): (Circle one)	Calm
TOWING (at depth)		25 "	FINAL				Moderate
			INITIAL	99654	[illegible]		Rough
Total (ascend)		"	DIFF.			WIND:	knots
			MESH SIZE				

AMT. OF WIRE OUT: meters

TOTAL NO. OF ANGLES:

OBSERVERS: Bmw, tct, JBJ

ANGLES	0	8	8	5	6	10	12	8	
WIRE OUT	10m	20m	30m	40m	50m	60m	70m	80m	90m
ANGLES		5		14		8		3	
WIRE OUT									

	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:

Vertical Bongo

[illegible] GF/Biomass [illegible]

For the GC cups Filter 13 had a hole so we [illegible]

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P 1706	Revelle	Transect 1	Tow 10	192	170608	07:27	07:34

TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL	
SINKING (descend)	3	36 "	NET NO.			TOW NO. 1 OF 1	
			METER NO.			SEA (Conditions): (Calm)	
TOWING (at depth)		26 "	FINAL	004412		(Circle one) Moderate	
			INITIAL	000734		Rough	
Total (ascend)	2	24 "	DIFF.			WIND: 4 knots	
			MESH SIZE				

AMT. OF WIRE OUT: meters

TOTAL NO. OF ANGLES:

OBSERVERS: BMW, KK, JG

ANGLES	15	20	10	3	5	3	0	0	0
WIRE OUT	10m	20m	30m	40m	50m	60m	70m	80m	90m
ANGLES			0		5	3		0	
WIRE OUT									

	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:

Vertical Bongo

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P 1706	Revelle	Transect 1	Tow 11	197	170608	0829	0835

TIME	Min.	Sec.		PORT	STB.	TOW TYPE: ~~CALBOBL~~ Vertical
SINKING (descend)	3	30 "	NET NO.			TOW NO. 1 OF 1
			METER NO.			SEA (Conditions): (Circle one) Calm / Moderate / Rough
TOWING (at depth)		20 "	FINAL			
			INITIAL	004431	007781	
Total (ascend)	2	10 "	DIFF.			WIND: knots
			MESH SIZE			

AMT. OF WIRE OUT: meters

TOTAL NO. OF ANGLES:

OBSERVERS: BMW, J.G, [illegible] SM

ANGLES	10	10	4	2	4	2	0	0	
WIRE OUT	10m	20m	30m	40m	50m	60m	70m	80m	90m
ANGLES			0	0			0	0	
WIRE OUT									

	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:

Vertical Bongo

Tow Speeds:

↓ 30 m/min = 27 m/m (Depth)

20 sec → — 100 m = 90 m

↑ 50 m/min = 45 m/min

NET TOW DATA SHEET

CRUISE	SHIP	~~CYCLE~~ Transect	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P 1706	Revelle	2	Tow 1	~~412~~ 411.1	17 06 17	2035	2042

Vertical Tow

V. Bongo

TIME	Min.	Sec.		PORT	STB.	TOW TYPE: ~~OBLIQUE~~
SINKING (descend)	3	45 "	NET NO.			TOW NO. 1 OF 1
			METER NO.			SEA (Conditions): ~~Calm~~
TOWING (at depth)	4	05 "	FINAL		511908	(Circle one) Moderate
			INITIAL		507467	Rough
Total (ascend)	C	30 "	DIFF.			WIND: knots
			MESH SIZE		202 µm	

AMT. OF WIRE OUT: ~~100~~ meters

TOTAL NO. OF ANGLES:

OBSERVERS: VB SS LL CM

ANGLES	0	0	10	10		
WIRE OUT	20	40	60	80		
ANGLES	0	0	0	5	0	
WIRE OUT	10	30	50	70	90	

	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:

NET TOW DATA SHEET

CRUISE	SHIP	~~CYCLE~~ transect	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P	Revelle	2	Tow 2	416	170617	2211	2220

TIME	Min.	Sec.		PORT	STB.	TOW TYPE: V. Bongo ~~Oblique~~
SINKING (descend)		"	NET NO.			TOW NO. 1 OF 1
			METER NO.			SEA (Conditions): Calm
TOWING (at depth)	0	20 "	FINAL		512704	(Circle one) Moderate
			INITIAL		511903	Rough
Total (ascend)		"	DIFF.			WIND: knots
			MESH SIZE		202 µm	

AMT. OF WIRE OUT: 100 meters

TOTAL NO. OF ANGLES:

OBSERVERS: CM, LEL, SM, VB

ANGLES	0	0	0	0	0	0	0	5	5
WIRE OUT	10	20	30	40	50	60	70	80	90
ANGLES	0	10	0	0	5	5	5	5	10
WIRE OUT	16	20	30	40	50	60	70	80	90

	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:

NET TOW DATA SHEET

CRUISE	SHIP	Transect ~~CYCLE~~	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P 1706	Revelle	2	Tow 3	422	17 06 18	0003	0012

V. Bongo

TIME Min. Sec.		PORT	STB.	TOW TYPE: ~~CALBOBL~~
SINKING (descend) ′ ″	NET NO.			TOW NO. 1 OF 1
	METER NO.			SEA (Conditions): Calm
TOWING (at depth) ′ ″	FINAL	522725		(Circle one) Moderate
	INITIAL	517302		Rough
Total (ascend) ′ ″	DIFF.			WIND: knots
	MESH SIZE	202 µm		

AMT. OF WIRE OUT: 100 meters

TOTAL NO. OF ANGLES:

OBSERVERS: CM, VB, LL, SM

ANGLES	-3		1		0		-1	-3	-1
WIRE OUT	10	20	30	40	50	60	70	80	90
ANGLES	-6		-4						
WIRE OUT	10	20	30	40	50	60	70	80	90

	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:

↓27
hold at 90 mwo
hold for 20sec
↑45

NET TOW DATA SHEET

Tow

CRUISE	SHIP	~~CYCLE~~ Transect	~~ORDER~~ OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P	Revelle	2	4	428	20170618	01:35	0142

TIME	Min.	Sec.		PORT	STB.	TOW TYPE: ~~CALBOBL~~ Bongo
SINKING (descend)	4	59 "	NET NO.			TOW NO. 1 OF 1
			METER NO.			SEA (Conditions): Calm
TOWING (at depth)	5	19 "	FINAL	527700		(Circle one) Moderate
			INITIAL	522725		Rough
Total (ascend)	7	41 "	DIFF.			WIND: knots
			MESH SIZE	202 µm		

AMT. OF WIRE OUT: 100 meters

TOTAL NO. OF ANGLES:

OBSERVERS: BMW, tfc, JG, PL

ANGLES	12	5	0	0	3	6	0	0	
WIRE OUT	10	20	30	40	50	60	70	80	90
ANGLES									
WIRE OUT			0		0	0	0		

	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:

NET TOW DATA SHEET

CRUISE	SHIP	~~CYCLE~~ Transect	~~ORDER OCCUPIED~~ Tow	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P	RV Roger Revelle	2	5	434	2017 06 18	03:07	03:14

TIME	Min.	Sec.		PORT	STB.	TOW TYPE: ~~CalBOBL~~ V. Bongo
SINKING (descend)	04	30 "	NET NO.			TOW NO. 1 OF 1
			METER NO.			SEA (Conditions): Calm
TOWING (at depth)	04	50 "	FINAL			(Circle one) Moderate
			INITIAL	527700		Rough
Total (ascend)	07	11 "	DIFF.	533412		WIND: knots
			MESH SIZE	202 µm		

AMT. OF WIRE OUT: 100 meters

TOTAL NO. OF ANGLES:

OBSERVERS: BMW, KK, JG, PL

ANGLES	2	5	7		0		0			
WIRE OUT										
ANGLES	10	20	30	40	50	60	70	80	90	
WIRE OUT				5	5	10		6		

	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:

NET TOW DATA SHEET

CRUISE	SHIP	Transect ~~CYCLE~~	Tow ~~ORDER OCCUPIED~~	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	END TOW
CCE-P	RV Revelle	2	6	441	2017/06/18	05:10	05:17

V. Bongo

TIME	Min.	Sec.		PORT	STB.	TOW TYPE: ~~CalBOBA~~
SINKING (descend)	04	11	NET NO.			TOW NO. 1 OF 1
			METER NO.			SEA (Conditions): (Calm) Moderate Rough
TOWING (at depth)	04	31	FINAL	538258		(Circle one)
			INITIAL	533461		
Total (ascend)	06	46	DIFF.			WIND: knots
			MESH SIZE	202 µm		

AMT. OF WIRE OUT: 100 meters

TOTAL NO. OF ANGLES:

OBSERVERS: KK, BMW, PL, JG

ANGLES		0°	0°	3°	0°	2°	0°			
WIRE OUT / ANGLES	10	20	30	40	50	60	70	80	90	
WIRE OUT	10°	20°	12°	10°	7°	6°	4°	5°		

	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: ~ 5% of starboard side (5% Formalin) spilled from bucket (when we were washing the net down

NET TOW DATA SHEET

Transect Tow

CRUISE	SHIP	~~STATION~~	~~ORDER OCCUPIED~~	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P	RV Revelle	2	7	448	2017 06 18	07:05	07:12

V. Bongo ~~MOCNESS~~

TIME	Min.	Sec.		PORT	STB.	TOW TYPE: ~~MOCNESS~~
SINKING (descend)	04	20 "	NET NO.			TOW NO. 1 OF 1
			METER NO.			SEA (Conditions): (Calm) Moderate Rough (Circle one)
TOWING (at depth)	00	30 "	FINAL			
			INITIAL	538258		
Total (ascend)	06	59 "	DIFF.	543155		WIND: knots
			MESH SIZE	202 µm		

AMT. OF WIRE OUT: 100 meters

TOTAL NO. OF ANGLES:

OBSERVERS: KK, BMW, JG, PL

ANGLES				0°	0°	0°	0°	0°		
WIRE OUT ANGLES	~~10~~	20	30	40	50	60	70	80	90	
WIRE OUT		150	150	150	100	50	0°	0°		

	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:

NET TOW DATA SHEET

Transect Tow

CRUISE	SHIP	~~CYCLE~~	~~ORDER OCCUPIED~~	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P	RV Revelle	2	8	453	2017 06 18	0823	0830

STB.

V. Bongo

TIME	Min.	Sec.		~~PORT~~	STB.	TOW TYPE: ~~MOCNESS~~
SINKING (descend)	4	05	NET NO.			TOW NO. 1 OF 1
			METER NO.			SEA (Conditions): Calm
TOWING (at depth)	4	25	FINAL	549007		(Circle one) Moderate
			INITIAL	543255		Rough
Total (ascend)	6	51	DIFF.			WIND: knots
			MESH SIZE	202 µm		

AMT. OF WIRE OUT: 100 meters

TOTAL NO. OF ANGLES:

OBSERVERS:

ANGLES		-5°		-3°		0°		0°		
WIRE OUT	10	20	30	40	50	60	70	80	90	
ANGLES										
WIRE OUT		6°			1°		3°		1°	

	PORT	STB.		none or slight	moderate	heavy	very heavy
No. OF JARS			NET CLOGGING				
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:

NET TOW DATA SHEET

Transect Tow

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P	RV Revelle	2	9	459	2017 06 18	0946	0954

V. Bongo

TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL
SINKING (descend)		"	NET NO.			TOW NO. 1 OF 1
			METER NO.			SEA (Conditions): Calm
TOWING (at depth)		"	FINAL	553515		(Circle one) Moderate
			INITIAL	549012		Rough
Total (ascend)		"	DIFF.			WIND: 6 knots
			MESH SIZE	202 µm		

AMT. OF WIRE OUT: 100 meters

TOTAL NO. OF ANGLES:

OBSERVERS: ~~K K, P2, J G, B M W~~ The day shift

ANGLES	0		12	5	-1	-5	-10	-3	-1
WIRE OUT									
ANGLES	10	20	30	40	50	60	70	80	90
WIRE OUT				0		0		-1	-1

	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:

Vertical Bongo

NET TOW DATA SHEET

CRUISE	SHIP	~~CYCLE~~ Transect	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P P1706	Revelle	2	Tow 10	465	17 06 18	1110	1116

TIME	Min.	Sec.		PORT	STB.	TOW TYPE: **CALBOBL**
SINKING (descend)	4	03 "	NET NO.			TOW NO. 1 OF 1
			METER NO.			SEA (Conditions): Calm
TOWING (at depth)	4	23 "	FINAL		558754	(Circle one) Moderate
			INITIAL		553516	Rough
Total (ascend)	6	39 "	DIFF.			WIND: 8 knots
			MESH SIZE			

AMT. OF WIRE OUT: 90 meters

TOTAL NO. OF ANGLES:

OBSERVERS: VRB, LL, CM, SM

ANGLES	-15°		-30°		-20°		5°		18°
WIRE OUT	10	20	30	40	50	60	70	80	90
~~ANGLES~~									
~~WIRE OUT~~ Angles	-10°	5°		25°		30°	30°		

	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:

NET TOW DATA SHEET

CRUISE	SHIP	~~CYCLE~~ Transect	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P 1706	Revelle	2	Tow 11	473	17 06 18	1308	1315

TIME	Min.	Sec.		PORT	STB.	TOW TYPE: **CALBOBL**	
SINKING (descend)	3	51	NET NO.			TOW NO. 1 OF 1	
			METER NO.			SEA (Conditions): (Circle one) Calm / Moderate / Rough	
TOWING (at depth)	0	20	FINAL		562838		
			INITIAL		558759		
Total (ascend)	2	30	DIFF.			WIND: knots	
			MESH SIZE				

AMT. OF WIRE OUT: meters

TOTAL NO. OF ANGLES:

OBSERVERS:

ANGLES	-8		-3		0		-5		0
WIRE OUT	10	20	30	40	50	60	70	80	90
ANGLES									
WIRE OUT		5		8		5		1	

	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:

RWS

NET TOW DATA SHEET

Transect Tow

CRUISE	SHIP	~~CYCLE~~	~~ORDER OCCUPIED~~	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P	Revelle	3	1	574.7	2017/06/22	19:13	19:19

V. Bongo

TIME	Min.	Sec.		PORT	STB.	TOW TYPE: ~~CALBOBL~~
SINKING (descend)	3	51 "	NET NO.			TOW NO. 1 OF 1
			METER NO.			SEA (Conditions): (Calm) Moderate Rough (Circle one)
TOWING (at depth)	4	12 "	FINAL		762905	
			INITIAL		758089	
Total (ascend)	6	31 "	DIFF.			WIND: knots
			MESH SIZE	202 µm	202 MM	

20 sec

AMT. OF WIRE OUT: 100 mwo meters

TOTAL NO. OF ANGLES:

OBSERVERS: SM, LL, CM, VB

ANGLES	0°	25°	15°	10°	10°	5°	5°	0°	0°	
WIRE OUT wireout ~~ANGLES~~	10	20	30	40	50	60	70	80	90	
~~WIRE OUT~~ angles	20°		10°		10°		5°		0°	

	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:

Transect Tow

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	~~ORDER~~ OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P	Revelle	3	2	578	2017-06-22	2014	2021

✓. Bongo

TIME	Min.	Sec.		PORT	STB.	TOW TYPE: ~~CalCOFI~~
SINKING (descend)	3	35 "	NET NO.			TOW NO. 1 OF 1
			METER NO.			SEA (Conditions): Calm
TOWING (at depth)	3	56 "	FINAL		767415	(Circle one) Moderate
			INITIAL		762902	Rough
Total (ascend)	6	20 "	DIFF.			WIND: knots
			MESH SIZE	202 µm		

20 sec

AMT. OF WIRE OUT: 100 mno meters

TOTAL NO. OF ANGLES:

OBSERVERS: VB, LL, SM, CM

ANGLES	2°	6°	9°	10°	10°	10°	10°	10°	10°	
WIRE OUT	10	20	30	40	50	60	70	80	90	
~~ANGLES~~										
~~WIRE OUT~~ Angles		9°	10°	9°	10°	10°	12°	10°	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:

Transect Tow

NET TOW DATA SHEET

RWS

CRUISE	SHIP	~~STATION~~	~~ORDER OCCUPIED~~	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P	Revelle	3	3	583	2017·06·22	2121	2128

V. Bongo

TIME	Min.	Sec.		PORT	STB.	TOW TYPE: ~~CALCOFI~~
SINKING (descend)	3	42	NET NO.			TOW NO. 1 OF 1
			METER NO.			SEA (Conditions): Calm
TOWING (at depth)	4	03	FINAL		772021	(Circle one) Moderate
			INITIAL		767408	Rough
Total (ascend)	6	28	DIFF.			WIND: knots
			MESH SIZE	202 µm	202 µm	

20 sec

AMT. OF WIRE OUT: 100 mwo meters

TOTAL NO. OF ANGLES:

OBSERVERS: VB, CM, SM, LL

ANGLES	3°	5°	10°	10°	9°	10°	10°	8°	7°		
WIRE OUT ANGLES	10	20	30	40	50	60	70	80	90		
WIRE OUT	0'		0°		0°		2°				

	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:

NET TOW DATA SHEET

Transect Tow

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P	Revelle	3	4	5880	2017 06 22	2230	2237

V. Bongo

TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALCOFI
SINKING (descend)	3	35	NET NO.			TOW NO. 1 OF 1
			METER NO.			SEA (Conditions): Calm
TOWING (at depth)	3	57	FINAL		776578	(Circle one) Moderate
			INITIAL		772019	Rough
Total (ascend)	6	19	DIFF.			WIND: knots
			MESH SIZE	202 µm		

208

AMT. OF WIRE OUT: 100 mwo meters

TOTAL NO. OF ANGLES:

OBSERVERS: VB, SM, LL, CM

ANGLES		0	0	0	0	0	0	0	0	
WIRE OUT ANGLES	10	20	30	40	50	60	70	80	90	
WIRE OUT		0	0	0	0	0	0		0	

	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:

NET TOW DATA SHEET

CRUISE	SHIP	Transect CYCLE	Tow ORDER OCCUPIED	EVENT # (Deployed)	DATE YR	MO	DY	HOUR (PDT) BEGIN TOW	END TOW
CCE-P	Revelle	3	5	593	2017	06	22	2337	2343

V. Bonaa

TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CalBOBL
SINKING (descend)	3	29 "	NET NO.			TOW NO. 1 OF 1
			METER NO.			SEA (Conditions): Calm
TOWING (at depth)	3	50 "	FINAL		78252	(Circle one) Moderate
			INITIAL		776576	Rough
Total (ascend)	0	03 "	DIFF.			WIND: knots
			MESH SIZE	202 µm		

20 sec

AMT. OF WIRE OUT: 100 mwo meters

TOTAL NO. OF ANGLES:

OBSERVERS: VB, LL, SM, CM

ANGLES	30° (Yikes!)	30° surface current?	30°	20°	15°	15°	10°	10°	5°	
WIRE OUT	10	20	30	40	50	60	70	80	90	
ANGLES										
WIRE OUT		10		0	?	0!	?	0!	5°	

	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:

↓ 27 to 90 mwo
hold 20 second
↑ 45
(actually 30, 100 mwo
50)

NET TOW DATA SHEET

Transect Tow

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	END TOW
CCE-P	Revelle	3	6	600	2017 06 23	01:16	01:23

V. Bongo

TIME	Min.	Sec.		PORT	STB.
SINKING (descend)	04	19 "	NET NO.		
			METER NO.		
TOWING (at depth)	04	39 "	FINAL	787594	
			INITIAL	781248	
Total (ascend)	07	35 "	DIFF.		
			MESH SIZE	202 µm	

TOW TYPE: ~~Bongo~~ V. Bongo
TOW NO. 1 OF 1
SEA (Conditions): (Calm) Moderate Rough (Circle one)
WIND: knots

AMT. OF WIRE OUT: 100 mwo meters
TOTAL NO. OF ANGLES:
OBSERVERS: BMW, JG, PL, KK

ANGLES (up)	10	2	2	1	1	5	0			
WIRE OUT ANGLES	10	20	30	40	50	60	70	80	90	
WIRE OUT (down)	45	36	28	20	14	11	5	1	0	

	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: KK, PL, JG, BMW

NET TOW DATA SHEET

Transect Tow

CRUISE	SHIP	~~CYCLE~~	~~ORDER OCCUPIED~~	EVENT # (Deployed)	DATE YR MO DY			HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P	Revelle	3	7	605	2017	06	23	02:43	02:50

V. Bongo

TIME	Min.	Sec.		PORT	STB.	TOW TYPE: ~~CALBOBL~~
SINKING (descend)	04	42 "	NET NO.			TOW NO. 1 OF 1
			METER NO.			SEA (Conditions): (Calm) Moderate Rough (Circle one)
TOWING (at depth)	05	03 "	FINAL	793442		
			INITIAL	787614		
Total (ascend)	7	17 "	DIFF.			WIND: knots
			MESH SIZE	202 µm		

AMT. OF WIRE OUT: 100 mwo meters

TOTAL NO. OF ANGLES:

OBSERVERS: BMW, KK, JG, PL

ANGLES	5°	2°	0°		5°		4°			
WIRE OUT										
ANGLES	10	20	30	40	50	60	70	80	90	
WIRE OUT	3°	3°	5°	0°	0°	0°	3°	4°		

	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: KK, BMW, PL, JG delayed due to having to repair the net. ~4 in gash occurred when we wired up the crane

The net was slightly under the weight

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE (Transect)	ORDER OCCUPIED (Tow)	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P	Revelle	3	8	610	2017 06 23	03:49	03:56

TIME	Min.	Sec.		PORT	STB.
SINKING (descend)	04	07 "	NET NO.		
			METER NO.		
TOWING (at depth)	04	27 "	FINAL	798535	
			INITIAL	793440	
Total (ascend)	06	54 "	DIFF.		
			MESH SIZE	202 µm	

TOW TYPE: ~~CALCOFI~~ V. Bongo

TOW NO. 1 OF 1

SEA (Conditions): (Calm) Moderate Rough (Circle one)

WIND: knots

AMT. OF WIRE OUT: 100 ~~mwo~~ meters

TOTAL NO. OF ANGLES:

OBSERVERS: BMW, KK, JG, PL

ANGLES			7°		5°		8°	5°		
WIRE OUT										
ANGLES	10	20	30	40	50	60	70	80	90	
WIRE OUT	0°	3°	7°	6°	5°	5°	5°	6°		

	PORT	STB.		none or slight	moderate	heavy	very heavy
No. OF JARS			NET CLOGGING				
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: KK, JG, BMW, PL

NET TOW DATA SHEET

CRUISE	SHIP	~~CYCLE~~ Transect	~~ORDER OCCUPIED~~ Tow	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	END TOW
CCE-P	Revelle	3	9	615	2017 06 23	04:54	05:01

V. Bongo

TIME	Min.	Sec.		PORT	STB.	TOW TYPE: ~~CALBOBL~~
SINKING (descend)	04	13 "	NET NO.			TOW NO. 1 OF 1
			METER NO.			SEA (Conditions): (Calm) Moderate Rough (Circle one)
TOWING (at depth)	04	33 "	FINAL	802786		
			INITIAL	~~798~~542		
Total (ascend)	06	39 "	DIFF.			WIND: knots
			MESH SIZE	202 um		

AMT. OF WIRE OUT: 100 mwo meters

TOTAL NO. OF ANGLES:

OBSERVERS:

ANGLES		0°	0°			0°		0°		
WIRE OUT										
ANGLES	10	20	30	40	50	60	70	80	90	
WIRE OUT	0	3°	3°	0°	0°	0°	0°	6°		

	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: KK, BMW, JG, PL

NET TOW DATA SHEET

CRUISE	SHIP	~~CYCLE~~	~~ORDER OCCUPIED~~	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT)	
						BEGIN TOW	END TOW
CCE-P	Revelle	Transect 3	Tow 10	620	2017 06 23	05:56	06:03

Vertical Bongo

TIME	Min.	Sec.		PORT	STB.	TOW TYPE: ~~CALBOBL~~
SINKING (descend)	03	54	NET NO.			TOW NO. 1 OF 1
			METER NO.			SEA (Conditions): Calm
TOWING (at depth)	04	14	FINAL	807576		(Circle one) Moderate
			INITIAL	802828		Rough
Total (ascend)	06	22	DIFF.			WIND: knots
			MESH SIZE	202 µm		

AMT. OF WIRE OUT: 100 mwo meters

TOTAL NO. OF ANGLES:

OBSERVERS: BMW, PL, Jbyrkit

ANGLES			0°		8°		7°		5°
WIRE OUT	10	20	30	[illegible]	50	60	[illegible]	80	00
ANGLES									
WIRE OUT	10°	18°	15°	10°	0°	0°	0°	5°	

	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:

NET TOW DATA SHEET

CRUISE	SHIP	~~CYCLE~~ transect	~~ORDER~~ OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P 1706	R/V Revelle	3	tow 11	627	2017.06.23	07:35	07:42

Veh. Bargo

TIME	Min.	Sec.		PORT	STB.	TOW TYPE: ~~CALBOBL~~
SINKING (descend)	03	54 "	NET NO.			TOW NO. 1 OF 1
			METER NO.			SEA (Conditions): Calm
TOWING (at depth)	04	14 "	FINAL	812205		(Circle one) Moderate
			INITIAL	807576		Rough
Total (ascend)	06	40 "	DIFF.			WIND: knots
			MESH SIZE	202 um		

AMT. OF WIRE OUT: meters

TOTAL NO. OF ANGLES:

OBSERVERS: RMW, JG, KK, PL

ANGLES		0°		5°		0		0	
WIRE OUT									
ANGLES	10	20	30	40	50	60	70	80	90
WIRE OUT	10'	8'	8'	5'	5'	0'	0'	0'	

	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: