BONGO TOWS

Tows (Hauls)

Cruise	SHIP	STANO	Sample Date	Start Time	Event No.	Tow Type	Max Depth	Vol H2O filtered
CCE-LTER-P0810	R/V MELVILLE	Cycle 1 - 1	10/04/08	1048	81	Oblique	211.14	429.62
CCE-LTER-P0810	R/V MELVILLE	Cycle 1 - 2	10/04/08	2213	102	Oblique	222.36	561.97
CCE-LTER-P0810	R/V MELVILLE	Cycle 1 - 3	10/05/08	1049	117	Oblique	203.06	499.71
CCE-LTER-P0810	R/V MELVILLE	Cycle 1 - 4	10/05/08	1441	124	Oblique	209.40	562.87
CCE-LTER-P0810	R/V MELVILLE	Cycle 1 - 5	10/05/08	1803	128	Oblique	196.55	490.40
CCE-LTER-P0810	R/V MELVILLE	Cycle 1 - 6	10/05/08	2048	132	Oblique	205.92	497.09
CCE-LTER-P0810	R/V MELVILLE	Cycle 1 - 7	10/06/08	0111	136	Oblique	209.15	584.57
CCE-LTER-P0810	R/V MELVILLE	Cycle 1 - 8	10/06/08	0335	141	Oblique	187.44	486.51
CCE-LTER-P0810	R/V MELVILLE	Cycle 1 - 9	10/06/08	0557	148	Oblique	212.63	520.67
CCE-LTER-P0810	R/V MELVILLE	Cycle 1 - 10	10/06/08	1149	152	Oblique	206.89	444.99
CCE-LTER-P0810	R/V MELVILLE	Cycle 1 - 11	10/06/08	2356	172	Oblique	194.10	417.70
CCE-LTER-P0810	R/V MELVILLE	Cycle 2 - 12	10/07/08	1042	189	Oblique	198.86	453.00
CCE-LTER-P0810	R/V MELVILLE	Cycle 2 - 13	10/07/08	2228	212	Oblique	214.83	474.47
CCE-LTER-P0810	R/V MELVILLE	Cycle 2 - 14	10/09/08	1115	238	Oblique	172.07	490.56
CCE-LTER-P0810	R/V MELVILLE	Cycle 2 - 15	10/11/08	1035	269	Oblique	172.07	490.68
CCE-LTER-P0810	R/V MELVILLE	Cycle 2 - 16	10/11/08	2118	283	Oblique	227.39	490.53
CCE-LTER-P0810	R/V MELVILLE	Cycle 2 - 17	10/12/08	1041	299	Oblique	196.10	546.37
CCE-LTER-P0810	R/V MELVILLE	Cycle 2 - 18	10/12/08	2057	317	Oblique	182.06	562.33
CCE-LTER-P0810	R/V MELVILLE	Cycle 2 - 19	10/13/08	1122	332	Oblique	204.87	515.76
CCE-LTER-P0810	R/V MELVILLE	Cycle 2 - 20	10/13/08	2207	349	Oblique	250.17	554.79
CCE-LTER-P0810	R/V MELVILLE	Cycle 2 - 21	10/15/08	1017	382	Oblique	202.85	484.71
CCE-LTER-P0810	R/V MELVILLE	Cycle 3 - 22	10/15/08	2124	400	Oblique	190.96	475.57
CCE-LTER-P0810	R/V MELVILLE	Cycle 3 - 23	10/16/08	1040	417	Oblique	200.09	488.07
CCE-LTER-P0810	R/V MELVILLE	Cycle 3 - 24	10/16/08	1359	424	Oblique	202.12	494.31
CCE-LTER-P0810	R/V MELVILLE	Cycle 3 - 25	10/16/08	1750	428	Oblique	186.21	613.92
CCE-LTER-P0810	R/V MELVILLE	Cycle 3 - 26	10/16/08	2001	433	Oblique	186.62	551.86
CCE-LTER-P0810	R/V MELVILLE	Cycle 3 - 27	10/16/08	2357	438	Oblique	172.22	513.54
CCE-LTER-P0810	R/V MELVILLE	Cycle 3 - 28	10/17/08	0347	446	Oblique	196.03	470.95
CCE-LTER-P0810	R/V MELVILLE	Cycle 3 - 29	10/17/08	0520	452	Oblique	192.17	585.89
CCE-LTER-P0810	R/V MELVILLE	Cycle 3 - 30	10/17/08	1059	456	Oblique	201.01	456.84
CCE-LTER-P0810	R/V MELVILLE	Cycle 3 - 31	10/17/08	2128	474	Oblique	173.07	485.79
CCE-LTER-P0810	R/V MELVILLE	Cycle 4 - 32	10/19/08	1108	499	Oblique	181.10	449.13
CCE-LTER-P0810	R/V MELVILLE	Cycle 4 - 33	10/19/08	2314	517	Oblique	178.17	552.94
CCE-LTER-P0810	R/V MELVILLE	Cycle 4 - 34	10/20/08	1125	530	Oblique	194.98	522.31
CCE-LTER-P0810	R/V MELVILLE	Cycle 4 - 35	10/21/08	0023	549	Oblique	144.22	490.56
CCE-LTER-P0810	R/V MELVILLE	Cycle 5 - 36	10/22/08	1044	586	Oblique	205.01	490.63
CCE-LTER-P0810	R/V MELVILLE	Cycle 5 - 37	10/22/08	2205	607	Oblique	199.18	451.58
CCE-LTER-P0810	R/V MELVILLE	Cycle 5 - 38	10/23/08	1044	618	Oblique	217.14	360.87
CCE-LTER-P0810	R/V MELVILLE	Cycle 5 - 39	10/23/08	2350	637	Oblique	210.15	395.69
CCE-LTER-P0810	R/V MELVILLE	Afront - 1	10/24/08	2109	660	Vertical	99.62	50.53
CCE-LTER-P0810	R/V MELVILLE	Afront - 2	10/24/08	2204	665	Vertical	98.48	46.86
CCE-LTER-P0810	R/V MELVILLE	Afront - 3	10/24/08	2253	670	Vertical	98.48	49.94
CCE-LTER-P0810	R/V MELVILLE	Afront - 4	10/24/08	2343	675	Vertical	98.48	38.04
CCE-LTER-P0810	R/V MELVILLE	Afront - 5	10/25/08	36	680	Vertical	98.48	36.18
CCE-LTER-P0810	R/V MELVILLE	Afront - 6	10/25/08	130	685	Vertical	99.62	46.78
CCE-LTER-P0810	R/V MELVILLE	Afront - 7	10/25/08	228	690	Vertical	100.00	46.60
CCE-LTER-P0810	R/V MELVILLE	Afront - 8	10/25/08	321	695	Vertical	100.00	56.37
CCE-LTER-P0810	R/V MELVILLE	Afront - 9	10/25/08	429	700	Vertical	100.00	50.65
CCE-LTER-P0810	R/V MELVILLE	Cycle 6 - 40	10/25/08	2158	721	Oblique	197.21	434.58
CCE-LTER-P0810	R/V MELVILLE	Cycle 6 - 41	10/26/08	1033	739	Oblique	188.93	430.89
CCE-LTER-P0810	R/V MELVILLE	Cycle 6 - 42	10/26/08	2303	757	Oblique	195.10	470.16
CCE-LTER-P0810	R/V MELVILLE	Cycle 6 - 43	10/27/08	1109	774	Oblique	207.52	425.54
CCE-LTER-P0810	R/V MELVILLE	Cycle 6 - 44	10/28/08	0021	793	Oblique	211.64	407.73

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P0810	MV	"A" Front	1	660	2008 Oct. 24	21:09	

TIME Min. Sec.		~~PORT~~ Yellow	STB. Blue	TOW TYPE: CALBOBL
SINKING ' " (descend)	NET NO.			TOW NO. 1 OF 1
	METER NO.	08786	08695	SEA (Conditions): (Circle one) Calm / Moderate / Rough
TOWING ' " (at depth)	FINAL	190152	1291953	
	INITIAL	185005	125212	
Total ' " (ascend) 2 14	DIFF.		004741	WIND: knots
	MESH SIZE	202 µm	[illegible] µm	

AMT. OF WIRE OUT: [illegible] meters

OBSERVERS:

TOTAL NO. OF ANGLES:

ANGLES															
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	190	170	160
ANGLES						5	5								
WIRE OUT	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10

	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	X		NET WASHING	none	rinsed ✓	washed	
ALCOHOL ADDED		X See Jesse Powell					
COLLECTORS INITS.			RIPS AND HOLES IN NET	none	location	when mended: (Circle one)	Before station / After station

REMARKS: Vertical Bongo! Yellow side → Live, EtOH
Blue side → ½ gut pigment

Port? at 2/16/10

MDB 17 Oct. 2011

Jesse Powell sorted out Calanus pacificus ½ formalin + Metridia pacifica adult females from yellow side, then fixed the remainder of the sample in EtOH.

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P0810	MV	A FRONT	2	665	2008 Oct. 24	22:04	2240

TIME	Min.	Sec.		Yellow ~~PORT~~	Blue ~~STB.~~	TOW TYPE: CALBOBL	
SINKING (descend)	'	"	NET NO.			TOW NO. 1 OF 1	
			METER NO.	08286	08695	SEA (Conditions): (Circle one)	Calm / Moderate / Rough
TOWING (at depth)	' 30	"	FINAL				
			INITIAL	190162	[illegible]		
Total (ascend)	2 ' 14	"	DIFF.			WIND: Ø	knots
			MESH SIZE	202μm	202μm		

AMT. OF WIRE OUT: 100 vertical meters

TOTAL NO. OF ANGLES: ——

OBSERVERS:

ANGLES															
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	190'	170	160
ANGLES						10	—		10	—	8	—		5	
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)		X			
FORMALIN & BORATE ADDED	X		NET WASHING	none	rinsed	washed	
ALCOHOL ADDED		X			X		
COLLECTORS INITS.		[illegible]	RIPS AND HOLES IN NET	none	location	when mended: (Circle one)	Before station / After station

REMARKS: Yellow → LIVE (EtOH)
Vertical tow
Blue → 1/2 Fractionation
1/2 preservation

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P0810	MV	A FRONT	3	570	2008 Oct. 24	2253	22:58

			Yellow	Blue	
TIME	Min.	Sec.		~~PORT~~	~~STB.~~	TOW TYPE: CALBOBL
SINKING (descend)	'	"	NET NO.			TOW NO. 1 OF 1
			METER NO.	08786	08695	SEA (Conditions): (Circle one) Calm / Moderate / Rough
TOWING (at depth)	30	"	FINAL	[illegible]	[illegible]	
			INITIAL	[illegible]	[illegible]	
Total (ascend)	2	08 "	DIFF.			WIND: Ø knots
			MESH SIZE	202µm	202µm	

AMT. OF WIRE OUT: Yellow [illegible] meters

OBSERVERS: /

TOTAL NO. OF ANGLES:

ANGLES	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	190'	170	160
ANGLES	—	—	—	—	—	10	10	10	10	10	10	10	10	10	10
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		X			
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

Yellow → LIVE (E704)

Blue → 1/2 fractionation

1/2 preservation

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P0810	MV	A Fall	4	[illegible]	2008 Oct. [illegible]	[illegible]43	[illegible]
				Yellow	Blue		

TIME	Min.	Sec.		PORT	STB.	TOW TYPE: CALBOBL	
SINKING (descend)	'	"	NET NO.			TOW NO. 1 OF 1	
			METER NO.	08286	08695	SEA (Conditions): (Circle one)	Calm
TOWING (at depth)	'	"	FINAL	30402	[illegible]		Moderate
	30		INITIAL	199796	129013		Rough
Total (ascend)	'	"	DIFF.			WIND: 8	knots
	2	10	MESH SIZE	70[illegible]	[illegible]		

AMT. OF WIRE OUT: [illegible] meters

OBSERVERS:

TOTAL NO. OF ANGLES:

ANGLES	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	190	170	160
ANGLES	—	—	—	—	—	10	10	10	10	5	5	5	5	5	10
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		X			
FORMALIN & BORATE ADDED	X		NET WASHING	none	rinsed	washed	
ALCOHOL ADDED		X			X		
COLLECTORS INITS.			RIPS AND HOLES IN NET	none	location	when mended: (Circle one)	Before station / After station

REMARKS:

Vertical Bongo

Yellow → LIVE (ETOH)

Blue → 1/2 fractionation

1/2 preservation

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P0810	MV	7 FROM	5	[illegible]	2008 Oct. 25	0036	0043.

				Yellow	Blue	
TIME	Min.	Sec.		~~PORT~~	~~STB.~~	TOW TYPE: CALBOBL
SINKING (descend)	'	"	NET NO.			TOW NO. 1 OF 1
			METER NO.	08786	[illegible]	SEA (Conditions): (Circle one) Calm / Moderate / Rough
TOWING (at depth)	'	"	FINAL	[illegible]	[illegible]	
			INITIAL	[illegible]	[illegible]	
Total (ascend)	2'	16"	DIFF.			WIND: 0 knots
			MESH SIZE	[illegible]	[illegible]	

AMT. OF WIRE OUT: [illegible] meters

OBSERVERS:

TOTAL NO. OF ANGLES: —

ANGLES															
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	190'	170	160
ANGLES						10	10	10	10	10	10	10	10	10	20
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		X			
FORMALIN & BORATE ADDED	X		NET WASHING	none	rinsed	washed	
ALCOHOL ADDED		X			X		
COLLECTORS INITS.			RIPS AND HOLES IN NET	none	location	when mended: (Circle one)	Before station / After station

REMARKS:

Vertical Bongo

Yellow → LIVE (ETOH)

Blue → 1/2 fractionation

1/2 preservation

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P0810	MV	A FRONT	6	685	2008 Oct. 25	01:30	01:38

TIME Min. Sec.		~~PORT~~ Yellow	~~STB.~~ Blue	TOW TYPE: CALBOBL
SINKING (descend) — ' "	NET NO.			TOW NO. 1 OF 1
	METER NO.	08786	08695	SEA (Conditions): Calm (Circle one) Moderate Rough
TOWING (at depth) — ' 30 "	FINAL	[illegible]	[illegible]	
	INITIAL	208668	147272	
Total (ascend) — ' 08 "	DIFF.			WIND: 4 knots
	MESH SIZE	202µm	202µm	

AMT. OF WIRE OUT: Vertical 100 meters

TOTAL NO. OF ANGLES: —

OBSERVERS: /

ANGLES	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	190'	170	160
ANGLES	—	—	—	—	—	5	5	5	5	5	5	5	10	10	30
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		X			
FORMALIN & BORATE ADDED	X		NET WASHING	none	rinsed	washed	
ALCOHOL ADDED		X See Rose Point			X		
COLLECTORS INITS.			RIPS AND HOLES IN NET	none	location	when mended: (Circle one)	Before station / After station

REMARKS:

Vertical tow

Yellow → LIVE (ETOH)

Blue → 1/2 formaldehyde

1/2 preservation

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P0810	MV	1 FINAL	7	670	2008 Oct. [illegible]	0228	0235

TIME	Min.	Sec.		Yellow ~~PORT~~	Blue ~~STB.~~	TOW TYPE: CALBOBL	
SINKING (descend)	'	"	NET NO.			TOW NO. 1 OF 1	
			METER NO.	08786	08695	SEA (Conditions): (Circle one)	Calm
TOWING (at depth)	'	"	FINAL	212504	150015		Moderate
			INITIAL	213203	151650		Rough
Total (ascend)	'	"	DIFF.			WIND: 6 knots	
			MESH SIZE	[illegible]	[illegible]		

AMT. OF WIRE OUT: [illegible] meters

TOTAL NO. OF ANGLES:

OBSERVERS:

ANGLES															
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	190'	170	160
ANGLES						[illegible]	[illegible]					[illegible]	[illegible]		
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		X			
FORMALIN & BORATE ADDED	X		NET WASHING	none	rinsed	washed	
ALCOHOL ADDED		X			X		
COLLECTORS INITS.		SP	RIPS AND HOLES IN NET	none	location	when mended: (Circle one)	Before station / After station

REMARKS:

Vertical bongo

Yellow → LIVE (ETOH)

Blue → 1/2 fractionation

1/2 preservation

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P0810	MV	A Front	8	695	2008 Oct. 25	0321	0330

TIME	Min.	Sec.		Yellow ~~PORT~~	Blue ~~STB.~~	TOW TYPE: CALBOBL	
SINKING (descend)	—	"	NET NO.			TOW NO. 1 OF 1	
			METER NO.	02786	08695	SEA (Conditions): (Circle one)	Calm / Moderate / Rough
TOWING (at depth)	30	"	FINAL	222982	161245		
			INITIAL	217498	156020		
Total (ascend)	3	25 "	DIFF.			WIND: 6	knots
			MESH SIZE	505μm	505μm		

AMT. OF WIRE OUT: Vertical 30 meters

TOTAL NO. OF ANGLES: —

OBSERVERS: /

ANGLES															
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	190	170	160
ANGLES															
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		X			
FORMALIN & BORATE ADDED	X		NET WASHING	none	rinsed	washed	
ALCOHOL ADDED		X			X		
COLLECTORS INITS.		JB	RIPS AND HOLES IN NET	none	location	when mended: (Circle one)	Before station / After station

REMARKS:

Vertical Bongo

Yellow → LIVE (EtOH)

Blue → 1/2 formaldehyde

meter reading failed, but no preservation.

effort for speed or volume up to 50 m/min

NET TOW DATA SHEET

CRUISE	SHIP	CYCLE	ORDER OCCUPIED	EVENT # (Deployed)	DATE YR MO DY	HOUR (PDT) BEGIN TOW	HOUR (PDT) END TOW
CCE-P0810	MV	A FRONT	9	700	2008 Oct. 25	04:29	4:36

TIME Min. Sec.		~~PORT~~	~~STB.~~	TOW TYPE: CALBOBL	
SINKING (descend)	NET NO.			TOW NO. 1 OF 1	
	METER NO.	02786	02605	SEA (Conditions): (Circle one)	Calm
TOWING (at depth) 30	FINAL	227534	165996		Moderate
	INITIAL	22[illegible]32	161239		Rough
Total (ascend) 2 08	DIFF.			WIND: 6 knots	
	MESH SIZE	202µm	202µm		

AMT. OF WIRE OUT: Vertical 100 meters

TOTAL NO. OF ANGLES: —

OBSERVERS:

ANGLES	—	—	—	—	—										
WIRE OUT	300	290	280	270	260	250	240	230	220	210	200	190	190	170	160
ANGLES	—	—	—	—	—										
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		X			
FORMALIN & BORATE ADDED	X		NET WASHING	none	rinsed	washed	
ALCOHOL ADDED		X			X		
COLLECTORS INITS.			RIPS AND HOLES IN NET	none	location	when mended: (Circle one)	Before station / After station

REMARKS: