

Consec. Cast # 001		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 30		Vessel Sta. I.D.		Instructions										Sta. Designation										
Consec. Cast #		Latitude N or S Deg. Min.		Longitude E or W Deg.		Date JD = 121 Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb		Wet Bulb		Bar. mb		SS. Vis.		Wind Dir.		Wind Sp.		Cloud Type		Weath.		Bottom Depth, m		Sta. Name or I.D.	
001		15 7 28 43 N		15 4 42 20 W		01 MAY 91			16 00		6 7		5 9		17 28		1 00 10		8 8		2		57		055					
CTD Type & SN <u>91220-A</u>				Monitor Checks				16 00 Times JD/Time				1016.8 MF9105 Data Location																		
Press. SN <u>25084</u>				on Deck at Surface				Data on <u>121/1556</u>				Tape/Diskette I.D.				File Name/Header														
Temp. SN <u>701</u>				Press. _____				at Surface _____				Start Down <u>121/15:58</u>				<u>Cast 001 / Cast 002</u>				<u>CAST 001 - 01 MAY 1996</u>										
Cond. SN <u>304</u>				Temp. _____				at Bottom <u>16:06</u>				Start Up <u>16:05</u>																		
				Cond. _____				at Surface <u>16:10</u>				Data off <u>16:08</u>				Remarks														
Other _____																														

Stn. #	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.			
1	28			1600						50.167	3.868	30.216	32.332				29	122	1
2	27			1604						30.3	3.865	30.201	32.329					123	2
3	26			1605						20.3	3.864	30.185	32.317					124	3
4	29																	125	4
5	21																		5
6	24																		6
7	19																		7
8	24																		8
9	25																		9
10	22																		10
11	23																		11
12																			12

WF, CBC, DCK Initials ✓

Consec. Cast # 002		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 32		Vessel Sta. I.D.		Instructions										Sta. Designation														
Consec. Cast #		Latitude N or S Deg. Min.			Longitude E or W Deg.			Date JD = 121 Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb		Wet Bulb		Bar. mb		S.S.		Vis.		Wind Dir.		Wind Sp.		Cloud Type		Weath.		Bottom Depth, m		Sta. Name or I.D.	
002		572855N			1544237W			01 MAY 91			1650		58		41		1628		28		0601		88		82		60		056					
CTD Type & SN 91220-A					Monitor Checks					Times JD/Time 1015.5 MF 9105					Data Location																			
Press. SN 25084					on Deck at Surface					Data on 121: 1645					Tape/Diskette I.D.					File Name/Header														
Temp. SN 701					Press. _____					at Surface 1647					Cast 002/cast002					Cast 002 - 01 May 1991														
Cond. SN 304					Temp. _____					Start Down 1648																								
					Cond. _____					at Bottom 1650																								
					Other _____					Start Up 1650																								
										at Surface 1702																								
										Data off 1652																								
															Remarks																			

Pos.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.			
1	28		50	1651						50.915	3.883	30.242	32.349				MZ	1	
2	27		50	1651						50.893	3.821	30.246	32.348				Chl	2	
3	26		40							40.3	3.871	30.224	32.341				MZ	3	
4	29		40	1654						40.3	3.871	30.221	32.341				Chl	4	
5	21		30	1655						30.3	3.864	30.267	32.337				MZ	5	
6	20		30	1656						30.3	3.873	30.216	32.340				Chl	6	
7	19		20	1657						20.229	3.853	30.190	32.333				MZ	7	
8	24		20	1658						20.308	3.845	30.184	32.330				Chl	8	
9	25		10	1700						10.342	3.935	30.210	32.281				MZ	9	
10	22		10	1701						10.379	3.891	30.190	32.301				Chl	10	
11	23																	11	
12																		12	

WF, CBC, DCR Initials

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Consec. Cast # 603		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 33		Vessel Sta. I.D.		Instructions 16156										Sta. Designation																												
Consec. Cast #	Latitude			N or S	Longitude			E or W	Date JD = 121			Time GMT		Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.																							
	Deg.	Min.			Deg.		Day		Mo.	Yr.	Hr.	Min.																																				
003	5	7	3	6	7	4	N	1	5	4	4	6	7	7	W	0	1	M	A	Y	9	1	1	7	4	8	5	1	3	8	1	5	3	8	0	6	2	2	6	8	8	2	2	0	5	0	5	6
CTD Type & SN 91220-A					Monitor Checks										Times JD/Time 121					Data Location																												
Press. SN 25084					on Deck at Surface										Data on 1739					MF-91-05																												
Temp. SN 701					Press. _____										at Surface 1735					Tape/Diskette I.D.																												
Cond. SN 304					Temp. _____										Start Down 1740					File Name/Header																												
					Cond. _____										at Bottom 1745					Cast 003/Cast 004																												
					Other _____										Start Up 1946					Cast 003 - SI May 1739																												
															at Surface 1809					Remarks																												
															Data off 1748																																	

Pos.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.			
1	28																	Not	1
2	38	B			1750.10													Not	2
3	26			100														Not	3
4	29			75														Not	4
5	21			50														Not	5
6	20			30														Not	6
7	19			20														Not	7
8	24			10														Not	8
9	25																		9
10	22																		10
11	23																		11
12																			12

CBC, WF, DGG Initials

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Consec. Cast # 004		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 35		Vessel Sta. I.D.		Instructions 1014.8										Sta. Designation														
Consec. Cast #		Latitude N or S			Longitude E or W			Date JD = 121 Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb		Wet Bulb		Bar. mb		S.S.		Vis.		Wind Dir.		Wind Sp.		Cloud Type		Weath.		Bottom Depth, m		Sta. Name or I.D.	
004		57 31 01 N			154 46 9 8 W			01 MAY 91			18 56		5 0		4 0		1 5		3 8		0 6		3 0		8 8		2		2 1 1		05 6			
CTD Type & SN 91220-A					Monitor Checks					Times JD/Time 121					MF-91-05 Data Location																			
Press. SN 25084					on Deck at Surface					Data on 1857					Tape/Diskette I.D.					File Name/Header														
Temp. SN 701					Press. _____					at Surface 1854					Cast003/Cast004					Cast004 - 01 May 1991														
Cond. SN 304					Temp. _____					Start Down 1854																								
					Cond. _____					at Bottom 1855																								
					Other _____					Start Up 1856																								
										at Surface _____																								
										Data off 1857																								
															Remarks																			

Pos.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.			
1	28			60	1857					60.844	4.299	30.598	32.353				MZ	1	
2	27			60/50	1858					50.242	4.327	30.605	32.338				Chl	2	
3	26			50	1858					50.161	4.329	30.606	32.338				MZ	3	
4	29			40	1859					40.232	4.334	30.588	32.320				MZ	4	
5	21			40	1900					39.970	4.323	30.576	32.314				Chl	5	
6	20			30	1901					29.835	4.281	30.478	32.246				MZ	6	
7	19			30	1901					30.198	4.294	30.510	32.274				Chl	7	
8	24			20	1902					21.082	4.260	30.437	32.223				MZ	8	
9	25			20	1903					21.277	4.266	30.452	32.234				Chl	9	
10	22			10	1904					10.279	4.253	30.421	32.217				MZ	10	
11	23			10	1905					10.156	4.253	30.421	32.217				Chl	11	
12																		12	

CBC, WF, DCK Initials

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Consec. Cast # 005		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 36		Vessel Sta. I.D. 57		Instructions										Sta. Designation					
Consec. Cast #	Latitude Deg. Min.		N or S	Longitude Deg. Min.		E or W	Date JD = 121 Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb	Wet Bulb	Bar. mb	SS	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.		
005	57	33	11	N	154	52	49	W	01	MAY	91	19	48	55	47	14	47	04	53	48	72	227	057		
CTD Type & SN 91220-A			Monitor Checks			Times JD/Time			Data Location 226																
Press. SN 25084			on Deck			at Surface			Data on 193			Tape/Diskette I.D.													
Temp. SN 701			Press. _____			_____			at Surface 1940			File Name/Header													
Cond. SN 304			Temp. _____			_____			Start Down 1941			Cast 005 - 01 May 1993													
_____			Cond. _____			_____			at Bottom 1946			_____													
_____			Other _____			_____			Start Up _____			Remarks													
_____			_____			_____			at Surface _____			LINE 8 : STAS7													
_____			_____			_____			Data off _____			_____													

Stn. No.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.			
1	28		200	1951	✓					200.14	4.528	31.308	32.883					1	
2	27		150	1953	✓					150.849	4.321	30.752	32.465					2	
3	26		100	1955	✓					99.401 99.401	4.285	30.624	32.377					3	
4	29		75	1956	✓					74.899	4.255	30.523 30.301	32.301					4	
5	21		50	1957	✓					49.365	4.269	30.452	32.219					5	
6	20		30	1959	✓					29.686	4.388	30.489	32.145					6	
7	19		20	1959.7	✓					20.041	4.413	30.505	32.154					7	
8	24		10	20005	✓					9.435	4.441	30.525	32.154				8	8	
9																		9	
10																		10	
11																		11	
12																		12	

WF, CBC, DCK, JDS Initials **JDS**

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Consec. Cast # <u>6</u>		Vessel <u>MILLER FREEMAN</u>		Proj. & Leg <u>MF-91-05</u>		Event # <u>38</u>		Vessel Sta. I.D. <u>57</u>		Instructions										Sta. Designation														
Consec. Cast #	Latitude <u>N</u> Deg. Min. S		Longitude <u>E</u> Deg. W		Date JD = <u>121</u> Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.													
006	57	33	07	N	154	52	22	W	01	MAY	91	21	05	5	2	4	5	1	4	4	7	0	4	0	3	0	8	7	2	22	7	\$	5	7

CTD Type & SN <u>91220-A</u>		Monitor Checks				Times JD/Time		Data Location			
Press. SN <u>25084</u>		on Deck		at Surface		Data on _____		Tape/Diskette I.D.		File Name/Header	
Temp. SN <u>701</u>		Press. _____		_____		at Surface _____		_____		<u>CAST006_01MAY2100</u>	
Cond. SN <u>304</u>		Temp. _____		_____		Start Down <u>21:03:14</u>		_____		_____	
_____		Cond. _____		_____		at Bottom _____		_____		_____	
_____		Other _____		_____		Start Up _____		_____		Remarks	
_____		_____		_____		at Surface _____		_____		<u>MICROZOOPOLOGY LIGHT METER ON</u>	
_____		_____		_____		Data off _____		_____		_____	

Pos.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.			
1	28			60	21:06					61.678	4.274	30.453	32.207					MZ	1
2	27		50	50	21:08					49.861	4.312	30.436	32.157					Chl	2
3	26		✓	50	21:08					50.714	4.311	30.436	32.157					MZ	3
4	29		✓	40	21:09					39.424	4.416	30.514	32.151					MZ	4
5	21		✓	40	21:10					40.141	4.397	30.499	32.152					Chl	5
6	20		✓	30	21:12					29.402	4.401	30.498	32.152					MZ	6
7	19		✓	30	21:13					28.834	4.413	30.508	32.152					Chl	7
8	24		✓	20	21:14					20.236	4.419	30.509	32.152					MZ	8
9	25		✓	20	21:15					20.029	4.421	30.510	32.152					Chl	9
10	22		✓	10	21:16					10.693	4.419	30.504	32.151					MZ	10
11	23		✓	10	21:17					10.692	4.416	30.501	32.151					Chl	11
12																			12

WF, JDS

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Consec. Cast # 007		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event #	Vessel Sta. I.D.		Instructions ABORTED										Sta. Designation				
Consec. Cast #	Latitude		N or S	Longitude		E or W	Date JD =			Time GMT		Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.
	Deg.	Min.		Deg.			Day	Mo.	Yr.	Hr.	Min.												
007			N			W	01	M	A	Y	9	1											058

CTD Type & SN <u>91220-A</u> Press. SN <u>25084</u> Temp. SN <u>701</u> Cond. SN <u>304</u>		Monitor Checks on Deck at Surface Press. _____ Temp. _____ Cond. _____ Other _____		Times JD/Time Data on 22 <u>22:19:21</u> at Surface _____ Start Down _____ at Bottom _____ Start Up _____ at Surface _____ Data off _____		Data Location Tape/Diskette I.D. _____ File Name/Header <u>CAST 007-01MAY 246</u>	
						Remarks <u>CAST ABORTED AT 82M</u> <u>FLUOROMETER NO DATA (OFF SCALE?)</u>	

Pos.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.			
1	28																	1	
2	38	B															35	2	
3	26																	3	
4	29																	4	
5	21																	5	
6	20																	6	
7	19																35	7	
8	24																	8	
9	23																	9	
10	22																35	10	
11	23																	11	
12																		12	

ABORTED
CH OFF
SCALE

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Consec. Cast # 007		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 39		Vessel Sta. I.D. 58		Instructions										Sta. Designation 058																										
Consec. Cast #	Latitude Deg. Min.		N or S	Longitude Deg.		E or W	Date JD = Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.																							
007	5	7	3	6	1	1	N	1	55	00	2	2	W	0	1	M	A	Y	9	1	2	2	3	5	5	8	5	0	1	4	5	7	0	5	0	4	0	8	7	2	2	3	4	0	5	8
CTD Type & SN 91220-A				Monitor Checks				Times JD/Time				Data Location																																		
Press. SN 25084				on Deck at Surface				Data on _____				Tape/Diskette I.D. File Name/Header																																		
Temp. SN 701				Press. _____				at Surface _____				Start Down 22:27:20																																		
Cond. SN 304				Temp. _____				at Bottom _____				Start Up _____																																		
_____				Cond. _____				at Surface _____				Data off _____																																		
_____				Other _____				_____				Remarks																																		
_____				_____				_____				TEMP CAL AT 150 M																																		

Pos.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.			
1	28		200	✓	22:37					199.868	4.307	30.830	32.546						
2	38	B	150	✓	22:44					150.602	4.149	30.535	32.381		4.16		35	TEMP	
3	26		100	✓	22:46					99.251	4.492	30.720	32.286						
4	29		75	✓	22:47					76.283	4.463	30.654	32.250						
5	21		50	✓	22:48					50.187	4.472	30.604	32.196						
6	20		30	✓	22:49					30.786	4.470	30.585	32.185						
7	19		20	✓	22:50					19.820	4.470	30.579	32.185						
8	24		10	✓	22:51					9.993	4.468	30.569	32.180						
9																			
10																			
11																			
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WF, JDS

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Consec. Cast # 008		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 42		Vessel Sta. I.D. 58		Instructions										Sta. Designation			
Consec. Cast #	Latitude Deg. Min.		N or S	Longitude Deg.		E or W	Date JD = Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.
008	57	36	01 N	155	00	32 W	01	MAY	91	23	50	50	42	11	57	04	55	08	72			239	058
CTD Type & SN 91220-A				Monitor Checks						Times JD/Time				Data Location									
Press. SN 25084				on Deck						Data on				Tape/Diskette I.D.									
Temp. SN 701				at Surface						at Surface				File Name/Header									
Cond. SN 304				Press. 23:46						Start Down				CAST 008-01 MAY 23 44									
				Temp.						at Bottom													
				Cond.						Start Up													
				Other						at Surface				Remarks									
										Data off				MICRO 200P									

Stn. No.	Bot. Rack	T	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.		
1	28		✓	60	23:49					61.466	4.514	30.646	32.198				M2	
2	27		50 ✓	60	23:50					51.145	4.515	30.642	32.198				CH	
3	26		✓	50	23:50					51.229	4.515	30.642	32.197				M2	
4	29		✓	40	23:51					59.832	4.512	30.635	32.198				M2	
5	21		✓	40	23:52					40.153	4.513	30.635	32.198				CH	
6	20		✓	30	23:53					29.678	4.511	30.630	32.198				M2	
7	19		✓	30	23:54					29.966	4.507	30.626	32.197				CH	
8	24		✓	20	23:54					20.200	4.510	30.625	32.198				M2	
9	25		✓	20	23:55					20.305	4.505	30.620	32.197				CH	
10	22		✓	10	23:56					10.351	4.505	30.615	32.198				M2	
11	23		✓	10	23:56					10.431	4.502	30.613	32.197				CH	
12																		

Initials
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Consec. Cast # 009		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 43		Vessel Sta. I.D. 59		Instructions										Sta. Designation										
Consec. Cast #		Latitude Deg. Min. N or S		Longitude Deg. E or W		Date JD = Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb		Wet Bulb		Bar. mb		S.S.		Wind Dir.		Wind Sp.		Cloud Type		Weath.		Bottom Depth, m		Sta. Name or I.D.	
009		5738 41 N		15503 58 W		02 MAY 91			0130		56		50		1056		0504		4872		255		059							
CTD Type & SN 91220-A Press. SN 25084 Temp. SN 701 Cond. SN 304				Monitor Checks on Deck at Surface Press. _____ 0054.45 Temp. _____ Cond. _____ Other _____				Times JD/Time Data on _____ at Surface _____ Start Down _____ at Bottom _____ Start Up _____ at Surface _____ Data off _____				Data Location Tape/Diskette I.D. _____ File Name/Header CAST009 - 02 MAY 2053 Remarks SFC = 3VOLTS CHA - PEAK ≈ 10 volts @ 50m																		
Pos. Bot.		T Rack		Trip Depth		Time @ Depth Trip		Monitor Values Press. Temp. Cond. Other				Conv. Mon. Values-CTD Press. Temp. Cond. Sal.				Sample Bot. Data Therm-P Avg Tw Sal.			Sal. Bot. #		Other Samp.		Pos.							
1 28				30		60 01:03						250.619 4.536 31.343 32.892							1250 27		1		1							
2 27				200		80 01:05						198.044 4.233 30.611 32.363							1251		2		2							
3 26				150		50 01:07						148.383 4.439 30.671 32.256							1252		3		3							
4 29				100		40 01:09						98.965 4.496 30.683 32.239							1253		4		4							
5 24				75		40 01:11						75.612 4.461 30.601 32.190							1254		5		5							
6 20				50		30 01:12						50.293 4.431 30.537 32.158							1255		6		6							
7 19				30		20 01:13						31.916 4.317 30.349 32.058							1256		7		7							
8 24				20		20 01:15						20.525 4.262 30.271 32.027							1257		8		8							
9 25				10		20 01:15						10.861 4.282 30.293 32.037							1258		9		9							
10 22				10																	10		10							
11 23				10																	11		11							
12																					12		12							

 Initials _____
 ✓

Consec. Cast # 010		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 45		Vessel Sta. I.D. 59		Instructions										Sta. Designation 59							
Consec. Cast #	Latitude Deg. Min.		N or S	Longitude Deg.		E or W	Date JD = Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.				
01	05	73	8	1	7	N	155	03	55	W	02	MAY	9	1	02	25	5	2	4	8	08	56	455	45	872	251	059
CTD Type & SN 91220-A				Monitor Checks				Times JD/Time				Data Location															
Press. SN 25084				on Deck				Data on				Tape/Diskette I.D.															
Temp. SN 701				at Surface				at Surface				File Name/Header															
Cond. SN 304				Press.				Start Down				CAST 010-02MAY0220															
				Temp.				at Bottom																			
				Cond.				Start Up				Remarks															
				Other				Data off				MICRO200P: CHA PEAK AT 60M															
												36 VOLTS															

Stn. No.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.			
1	28		✓	60	02:25					59.618	4.419	30.502	32.124				MZ	1	
2	27		✓	60	02:26					59.230	4.426	30.509	32.126				CH	2	
3	26		✓	50	02:27					46.838	4.409	30.482	32.115				MZ	3	
4	29		✓	40	02:28					40.948	4.310	30.344	32.055				MZ	4	
5	24		✓	40	02:28					41.602	4.287	30.313	32.041				CH	5	
6	20		✓	30	02:29					29.424	4.193	30.178	31.982				MZ	6	
7	19		✓	30	02:30					29.323	4.213	30.206	31.995				CH	7	
8	24		✓	20	02:31					21.452	4.166	30.140	31.966				MZ	8	
9	25		✓	20	02:31					22.138	4.169	30.143	31.962				CH	9	
10	22		✓	10	02:32					9.695	4.162	30.129	31.963				MZ	10	
11	23		✓	10	02:33					10.047	4.161	30.129	31.963				CH	11	
12																		12	

Initials

✓

Consec. Cast # 011		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 46		Vessel Sta. I.D. 6006		Instructions										Sta. Designation																														
Consec. Cast #	Latitude N or S Deg. Min.		Longitude E or W Deg.		Date JD = 122 Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb	Wet Bulb	Bar. mb	SS	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.																													
011	5	7	4	0	5	6	N	1	5	5	1	0	5	4	W	0	2	M	A	Y	9	1	0	3	2	6	5	1	4	4	0	9	5	6	0	5	9	4	6	8	7	6	2	8	8	F	0	X	6	0
CTD Type & SN 91220-A			Press. SN 25084			Temp. SN 701			Cond. SN 304			Monitor Checks						Times JD/Time		Data Location																														
												on Deck						at Surface		Data on		Tape/Diskette I.D.																												
												Press.								at Surface		STARTED AT CAST 011 - 02 MAY 03 15																												
												Temp.								Start Down		2011																												
												Cond.								at Bottom		Remarks TAPE LEFT ON DURING UPCAST																												
												Other								Start Up		TO COVER UPPER 20M CH PEAK @ 200m																												
																				at Surface																														
																				Data off																														

Pos.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.	
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.				
1	28		250	03:27	✓							247.666	4.410	30.801	32.386			13		1
2	27		200	✓	03:29							200.185	4.489	30.706	32.322					2
3	26		150	✓	03:31							152.904	4.394	30.527	32.130					3
4	29		100	✓	03:33.5							98.661	4.368	30.460	32.105					4
5	21		75	✓	03:35							76.069	4.368	30.448	32.102					5
6	20		50	✓	03:37							49.633	4.211	30.223	32.006					6
7	19		30	✓	03:38							28.693	4.169	30.157	31.980					7
8	24		20	✓	03:40							20.468	4.167	30.150	31.978					8
9	25		10	✓	03:41							11.483	4.169	30.149	31.980					9
10	22																			10
11	23																			11
12																				12

Initials

✓

Consec. Cast # 012		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 48		Vessel Sta. I.D.		Instructions										Sta. Designation												
Consec. Cast #	Latitude		N or S	Longitude		E or W	Date JD = 122			Time GMT		Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.									
	Deg.	Min.	Deg.	Day	Mo.	Yr.	Hr.	Min.																								
01	25	74	04	5	N	155	10	27	W	02	MAY	91	05	14	5	0	4	20	9	5	6	0	5	5	4	0	8	7	6	28	8	060
CTD Type & SN 91220-A				Monitor Checks				Times JD/Time				Data Location																				
Press. SN 25084				on Deck				at Surface				Data on				Tape/Diskette I.D.				File Name/Header												
Temp. SN 701				Press. _____				Start Down				_____				_____				_____												
Cond. SN 304				Temp. _____				at Bottom				_____				_____				_____												
_____				Cond. _____				Start Up				_____				_____				_____												
_____				Other _____				at Surface				_____				_____				_____												
_____				_____				Data off				_____				_____				Remarks ctrl const @ ~ 1.5 Volts												

Pos.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.			
1	28		✓	60	05:11					60.470	4.287	30.335	32.057					M2	1
2	27		✓	60 50	05:13					49.936	4.297	30.340	32.059					CH	2
3	26		✓	50	05:13					49.976	4.299	30.342	32.059					M2	3
4	29		✓	40	05:14					41.326	4.299	30.339	32.060					M2	4
5	21		✓	40	05:15					41.452	4.300	30.340	32.061					CH	5
6	20		✓	30	05:16					30. ?	4.300	30.337	32.061					M2	6
7	19		✓	30	05:17					31.276	4.296	30.333	32.060					CH	7
8	24		✓	20	05:18					20.498	4.300	30.332	32.062					M2	8
9	25		✓	20	05:19					20.260	4.307	30.340	32.064					CH	9
10	22		✓	10	05:20					10.528	4.304	30.333	32.063					M2	10
11	23		✓	10	05:24					10.558	4.304	30.333	32.063					CH	11
12																			12

Initials _____
✓

Consec. Cast # 013		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 49		Vessel Sta. I.D.		Instructions										Sta. Designation			
Consec. Cast #	Latitude Deg. Min.		N or S	Longitude Deg.		E or W	Date JD = 122 Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weather	Bottom Depth, m	Sta. Name or I.D.
013	57	42	88	N	155	15	33	W	02	MAY	91	06	12	48	40	09	56	05	54	58	76	293	061
CTD Type & SN 91220-A Press. SN 25084 Temp. SN 701 Cond. SN 304				Monitor Checks on Deck at Surface Press. _____ Temp. _____ Cond. _____ Other _____				Times JD/Time Data on _____ at Surface _____ Start Down 0602 at Bottom _____ Start Up _____ at Surface _____ Data off _____				Data Location Tape/Diskette I.D. File Name/Header CAST 013-02MAY 0600 Remarks I'm tired											
Pos. #	Bot.	T Rack	Trip	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data				Sal. Bot. #	Other Samp.	Pos.			
			Depth	Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.							
1	28		✓	250	06:14					250.880	4.371	30.964	32.614				1268		1				
2	27		✓	200	06:16					201.297	4.373	30.709	32.338				1269		2				
3	26		✓	150	06:18					149.180	4.094	30.101	32.926				1270		3				
4	29		✓	100	06:20					98.712	4.087	30.069	31.921				1271		4				
5	21		✓	75	06:22					74.795	4.067	30.033	31.910				1272		5				
6	20		✓	50	06:23					50.198	4.062	30.018	31.909				1273		6				
7	19		✓	30	06:25					30.894	4.060	30.008	31.909				1274		7				
8	24		✓	20	06:26					20.051	4.066	30.010	31.912				1275		8				
9	25		✓	10	06:27					10.199	4.067	30.008	31.913				1276	Sal #10	9				
10	22																		10				
11	23																		11				
12																			12				

225
20/40
Tandem
5 Reel = 12000
= 35 m/sec
1600
40

Initials _____

✓

Consec. Cast #		Vessel		Proj. & Leg		Event #		Vessel Sta. I.D.		Instructions										Sta. Designation														
Consec. Cast #		Latitude N or S			Longitude E or W			Date JD = 12			Time GMT		Dry Bulb		Wet Bulb		Bar. mb		S.S.		Vis.		Wind Dir.		Wind Sp.		Cloud Type		Weath.		Bottom Depth, m		Sta. Name or I.D.	
014		574313N			1551516W			02 MAY 91			0733		45		43		0456		0554		0876				273				61					
CTD Type & SN 91220-A						Monitor Checks						Times JD/Time						Data Location																
Press. SN 25084						on Deck						Data on 0727						Tape/Diskette I.D.						File Name/Header										
Temp. SN 701						at Surface						at Surface 0729												Cast 014 - 02 May 0727										
Cond. SN 304						Press. _____						Start Down 0729																						
						Temp. _____						at Bottom 0733																						
						Cond. _____						Start Up 0733																						
						Other _____						at Surface 0735																						
												Data off 0735												Remarks MICRO 200P, went to ~80m then backup to 60m										
Pos.		Bot.		T Rack		Trip Depth		Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data				Sal.		Other		g.								
Pos.		Bot.		T Rack		Trip Depth		Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data				Sal.		Other		g.								
Pos.		Bot.		T Rack		Trip Depth		Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data				Sal.		Other		g.								
Pos.		Bot.		T Rack		Trip Depth		Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data				Sal.		Other		g.								
1	28					60	0734							60.264	4.042	29.991	31.891					MZ	1											
2	27					50	0735							50.419	4.045	29.991	31.894					Chl	2											
3	26					50	0735							50.250	4.045	29.989	31.893					MZ	3											
4	29					40	0736							40.464	4.044	29.985	31.893					MZ	4											
5	21					40	0736							40.093	4.043	29.983	31.892					Chl	5											
6	20					30	0738							30.659	4.041	29.977	31.891					MZ	6											
7	19					30	0738							30.762	4.042	29.977	31.891					Chl	7											
8	24					20	0740							20.416	4.045	29.978	31.895					MZ	8											
9	25					20	0741							20.244	4.043	29.975	31.893					Chl	9											
10	22					10	0742							10.554	4.042	29.970	31.894					MZ	10											
11	23					10	0742							10.582	4.042	29.976	31.893					Chl	11											
12																							12											

WF, DK Initials ✓

Consec. Cast # <u>015</u>			Vessel <u>MILLER FREEMAN</u>			Proj. & Leg <u>MF-91-05</u>			Event # <u>77</u>			Vessel Sta. I.D.			Instructions										Sta. Designation		
Consec. Cast #		Latitude			N or S	Longitude			E or W	Date JD = <u>123</u>			Time GMT		Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.	
015		5640			92 N	15607			66 W	03 MAY 91			0304		52	50	0236	0951	8576					260			
CTD Type & SN <u>91220-A</u>					Monitor Checks					Times JD/Time					Data Location												
Press. SN <u>25084</u>					on Deck					Data on <u>30123</u>					Tape/Diskette I.D. File Name/Header												
Temp. SN <u>701</u>					at Surface					at Surface <u>03:00</u>					CAST015-03MAY0258												
Cond. SN <u>304</u>					Press. _____					Start Down _____					_____												
_____					Temp. _____					at Bottom _____					_____												
_____					Cond. _____					Start Up _____					Remarks: THIS CAST IS NEAR LOCATION OF SAT. BUOY AN AREA OF MANY LARVA												
_____					Other _____					at Surface _____					_____												
_____					Data off _____					_____																	

Pos.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.			
1	28		✓	60	03:14					59.375	4.101	30.244	32.094				MZ	1	
2	27		✓	50	03:15					49.984	4.136	30.232	32.089				Chl	2	
3	26		✓	50	03:16					50.115	4.138	30.235	32.090				MZ	3	
4	29		✓	40	03:17					40.350	4.137	30.223	32.083				MZ	4	
5	21		✓	40	03:18					40.445	4.137	30.224	32.083				Chl	5	
6	20		✓	30	03:19					29.895	4.133	30.212	32.079				MZ	6	
7	19		✓	30	03:20					30.087	4.134	30.213	32.078				Chl	7	
8	24		✓	20	03:21					19.785	4.176	30.239	32.074				MZ	8	
9	25		✓	20	03:22					19.678	4.207	30.254	32.073				Chl	9	
10	22		✓	10	03:22					10.053	4.229	30.248	32.072				MZ	10	
11	23		✓	10	03:22					10.138	4.223	30.273	32.073				Chl	11	
12																		12	

* ADCP 2:33:27 MAY 3 [ENSAMBLE 615]; DATA CONSISTENTLY SHOW 10 TO 15 cm/s² Toward SW.
 PEAK IN ACC ≈ 80M and a lesser one AT 60M — NOT CONFIRMED BY CTD CHL. ✓

Initials

Consec. Cast # <u>016</u>		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # <u>84</u>		Vessel Sta. I.D.		Instructions										Sta. Designation				
Consec. Cast #	Latitude		N or S	Longitude		E or W	Date JD =			Time GMT		Dry Bulb	Wet Bulb	Bar. mb	SS	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.	
	Deg.	Min.	Deg.	Day	Mo.	Yr.	Hr.	Min.																
<u>016</u>	<u>56</u>	<u>21</u>	<u>N</u>	<u>156</u>	<u>54</u>	<u>11</u>	<u>W</u>	<u>03</u>	<u>MAY</u>	<u>91</u>	<u>06</u>	<u>48</u>	<u>4</u>	<u>6</u>	<u>4</u>	<u>50</u>	<u>136</u>	<u>100</u>	<u>22</u>	<u>8</u>	<u>7</u>	<u>6</u>	<u>121</u>	
CTD Type & SN <u>91220-A</u>			Monitor Checks										Times JD/Time			Data Location								
Press. SN <u>25084</u>			on Deck					at Surface					Data on _____			Tape/Diskette I.D.			File Name/Header					
Temp. SN <u>701</u>			Press. _____					_____					at Surface _____			<u>CAST016-03 MAY 0642</u>								
Cond. SN <u>304</u>			Temp. _____					_____					at Bottom _____			_____			_____					
			Cond. _____					_____					Start Up _____			_____			_____					
			Other _____					_____					at Surface _____			_____			Remarks					
			Data off _____					_____					_____			_____			_____					

Pos.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.			
1	28																	1	
2	27																	2	
3	26																	3	
4	29																	4	
5	21																	5	
6	20																	6	
7	19																	7	
8	24																	8	
9	25	<u>28</u>																9	
10	22	<u>B</u>		<u>100</u>	<u>06:54</u>					<u>100.900</u>	<u>2.868</u>	<u>29.221</u>	<u>32.109</u>		<u>2.89</u>		<u>34</u>	<u>TEMP</u>	10
11	23																	11	
12																		12	

Initials JOS/WF

✓

Consec. Cast # 17		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 93		Vessel Sta. I.D.		Instructions										Sta. Designation																
Consec. Cast #		Latitude Deg. Min.		N or S		Longitude Deg.		E or W		Date JD = 123 Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb		Wet Bulb		Bar. mb		S.S.		Vis.		Wind Dir.		Wind Sp.		Cloud Type		Weath.		Bottom Depth, m		Sta. Name or I.D.	
017		5544		83		N		15833		00		W		03 MAY 91			1256		S3		500		137		170		148		76		92		9140			
CTD Type & SN 91220-A				Press. SN 25084				Temp. SN 701				Cond. SN 304				Monitor Checks on Deck at Surface				Times JD/Time Data on 123:12 at Surface 1252 Start Down 1252 at Bottom 1255 Start Up 1255 at Surface 1303 Data off 1255				Data Location Tape/Diskette I.D. File Name/Header Cast 017-03 May 1239												
								Press. _____				Temp. _____				Cond. _____				Other _____				Remarks Temperature cal CTD at current meter mooring #9140												
Pos. Bot.		T Rack		Trip Depth		Time @ Depth Trip		Monitor Values Press. Temp. Cond. Other				Conv. Mon. Values-CTD Press. Temp. Cond. Sal.				Sample Bot. Data Therm-P Avg Tw Sal.				Sal. Bot. #		Other Samp.		Pos.												
1		28																						1												
2		27																						2												
3		26																						3												
4		29																						4												
5		21																						5												
6		20																						6												
7		19																						7												
8		24																						8												
9		25																						9												
10		22																						10												
11		23 B		265		125658 1361158						63.875 2.337 28.760 32.098				2.35				18				11												
12																								12												

 Initials _____
 ✓

Consec. Cast # 018		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 126		Vessel Sta. I.D.		Instructions 999,0		Sta. Designation											
Consec. Cast #	Latitude		N or S	Longitude		E or W	Date JD = 124			Time GMT		Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.
	Deg.	Min.		Deg.	Day		Mo.	Yr.	Hr.	Min.													
018	55	09	N	156	01	33	W	04	MAY	91	12	56	60	50	99	47	12	53	28	72	2000	R7	
CTD Type & SN 91220-A				Monitor Checks				Times JD/Time				Data Location											
Press. SN 25084				on Deck				Data on 124: 1246				Tape/Diskette I.D.											
Temp. SN 701				at Surface				at Surface 1248				File Name/Header											
Cond. SN 304				Press. _____				Start Down 1248				Cast 018-04 May 12 46											
				Temp. _____				at Bottom 1256															
				Cond. _____				Start Up 1256															
				Other _____				at Surface 1309				Remarks broken 1 broken bottle handle											
								Data off 1256															

Stn. No.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Stn. No.
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.			
1	28			60						58.827	4.280	30.757	32.558				MZ	1	
* 2	27			60						59.104	4.279	30.757	32.559			03	Chl	2	
3	26			50						49.727	4.333	30.801	32.561				MZ	3	
4	29			40						39.765	4.378	30.832	32.559				MZ	4	
5	21			40						40.533	4.387	30.843	32.562				Chl	5	
6	20			30						29.604	4.105	30.518	32.466				MZ	6	
7	19			30						29.983	4.109	30.522	32.466				Chl	7	
8	24			20						20.866	3.965	30.352	32.414				MZ	8	
9	25			20						20.932	3.919	30.279	32.393				Chl	9	
10	22			10						11.153	3.881	30.244	32.374				MZ	10	
11	23			10						11.051	3.883	30.249	32.379				Chl	11	
12																		12	

* Note: Bottles @ positions 2 & 3 were broken upon recovery - contamination likely.

Initials

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Consec. Cast # 019		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 137		Vessel Sta. I.D.		Instructions										Sta. Designation					
Consec. Cast #	Latitude Deg. Min. N or S		Longitude Deg. E or W		Date JD = Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.				
019	55	15	61	N	155	46	66	W	04	MAY	91	12	03	46	0	55	9	35	71	25	40	87	2	825	R9
CTD Type & SN 91220-A			Monitor Checks						Times JD/Time				Data Location												
Press. SN 25084			on Deck at Surface						Data on _____				Tape/Diskette I.D. File Name/Header												
Temp. SN 701			Press. _____						at Surface _____				CAST 019-04MAY 2029												
Cond. SN 304			Temp. _____						Start Down 124 20 30-30				_____												
_____			Cond. _____						at Bottom _____				_____												
_____			Other _____						Start Up _____				Remarks MICRO200P CAST SEVERAL												
_____			_____						at Surface _____				BOTTLE # 5 DIFFERENT: CRACKED												
_____			_____						Data off _____				_____												

Stn. No.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.			
1	28		✓	60	37:00					60.101	3.132	29.591	32.314				M2	1	
2	28 B		✓	60 38:20						49.259	3.134	29.550	32.269				24	CH	2
3	28 41		✓	50	38:45					49.359	3.132	29.549	32.269				M2	3	
4	29		✓	40	39:55					39.980	3.116	29.503	32.234				M2	4	
5	21		✓	40	40:35					39.333	3.079	29.458	32.218				CH	5	
6	20		✓	30	41:30					30.081	3.429	29.672	32.132				M2	6	
7	19		✓	30	41:55					30.468	3.319	29.600	32.153				CH	7	
8	24		✓	20	43:00					20.156	3.542	29.743	32.109				M2	8	
9	25		✓	20	43:30					19.842	3.510	29.723	32.118				CH	9	
10	22		✓	10	44:50					11.314	3.525	29.730	32.115				M2	10	
11	23		✓	10	45:20					11.391	3.531	29.731	32.111				CH	11	
12																		12	

Initials _____

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Consec. Cast # 020		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 183		Vessel Sta. I.D. 158		Instructions										Sta. Designation				
Consec. Cast #	Latitude Deg. Min. S		N or S	Longitude Deg. W		E or W	Date JD = Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb	Wet Bulb	Bar. mb	SS	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.	
020	55	57	9	5	N	156	38	20	W	06	MAY	91	05	19	52	50	92	48	230	14	44	1	196	158
CTD Type & SN 91220-A				Monitor Checks				Times JD/Time				Data Location												
Press. SN 25084				on Deck at Surface				Data on _____				Tape/Diskette I.D. File Name/Header												
Temp. SN 701				Press. _____				at Surface _____				Start Down 06 MAY 05 1346												
Cond. SN 304				Temp. _____				at Bottom 05 2007				Start Up _____												
				Cond. _____				Start Up _____				Remarks												
				Other _____				Data off _____				LINE 17: MICR200P/BONGO/CHI/LIVE TOW												

Pos.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.			
1	28		✓	60	24:00					59.953	3.577	29.769	32.086				MZ	1	
2	38	B	✓	50	29:00					50.073	3.625	29.800	32.080		3.66		33	CHI	2
3	3141		✓	50	29:39					50.104	3.630	29.807	32.084				MZ	3	
4	29		✓	40	30:45					40.028	3.715	29.829	32.032				MZ	4	
5	7		✓	40	31:15					40.263	3.712	29.826	32.030				CHI	5	
6	20		✓	30	32:20					29.744	3.725	29.825	32.022				MZ	6	
7	5		✓	30	32:50					29.650	3.737	29.832	32.018				CHI	7	
8	24		✓	20	33:40					19.853	3.804	29.860	31.991				MZ	8	
9	25		✓	20	34:05					19.805	3.803	29.859	31.991				CHI	9	
10	22		✓	10	34:58					9.854	3.818	29.865	31.968				MZ	10	
11	23		✓	10	35:30					9.739	3.813	29.861	31.968				CHI	11	
12	Light Meter			X														12	

Initials _____

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Consec. Cast # 021		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 125		Vessel Sta. I.D. 157		Instructions										Sta. Designation					
Consec. Cast #	Latitude Deg. Min. S		N or S	Longitude Deg. W		E or W	Date JD = Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb	Wet Bulb	Bar. mb	U.S. Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.			
021	55	57	20	N	156	31	70	W	06	MAY	91	06	45	4	5	4	39	2	48	22	51	86	41	202	157
CTD Type & SN 91220-A				Monitor Checks								Times JD/Time				Data Location									
Press. SN 25084				on Deck at Surface								Data on _____				Tape/Diskette I.D. File Name/Header									
Temp. SN 701				Press. _____								at Surface _____				CAST 021 - 06MAY0636									
Cond. SN 304				Temp. _____								Start Down _____				_____									
_____				Cond. _____								at Bottom _____				_____									
_____				Other _____								Start Up _____				Remarks DATA COLLECTION STOPPED									
_____				_____								Data off _____				LINE 17: CHL ON WAY UP @ 61M.									

Pos. No.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos. No.		
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.					
1	28		✓	BOTTOM	45								197.613	4.166	30.971	32.852			25		1
2	8			60	49															Chl	2
3	3141			50																Chl	3
4	29			40																Chl	4
5	7			30																Chl	5
6	20			30																Chl	6
7	5			20																Chl	7
8	24			10																Chl	8
9	25																				9
10	22																				10
11	23																				11
12	light																				12

Initials

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Consec. Cast # 021A		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 185		Vessel Sta. I.D. MTF 9105		Instructions COMPLETION OF #21 SAME HEADER										Sta. Designation				
Consec. Cast #	Latitude Deg. Min.		N or S	Longitude Deg.		E or W	Date JD = Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.	
021	55	57	20	N	156	31	70	W	1	06	45	4	5	4	3	92	4	2	25	18	64	1	202	157
CTD Type & SN 91220-A				Monitor Checks								Times JD/Time 992.1				Data Location								
Press. SN 25084				on Deck at Surface								Data on _____				Tape/Diskette I.D. File Name/Header								
Temp. SN 701				Press. _____								at Surface _____				CAST021-06MAY0632								
Cond. SN 304				Temp. _____								Start Down _____				_____								
_____				Cond. _____								at Bottom _____				_____								
_____				Other _____								Start Up _____				Remarks COMPLETION OF CAST021-06MAY0636								
_____				_____								at Surface _____				LINE 17 IE. DATA FOR CHE BOTTLES ONLY								
_____				_____								Data off _____				_____								
Pos.	Bot.	T Rack	Trip Depth	Time @ Depth Trip		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data				Sal. Bot. #	Other Samp.	Pos.				
				Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.										
1	28																1							
2	8		✓ 60					61.149	3.579	29.794	32.112						2							
3	3141		✓ 50					50.661	3.579	29.789	32.112						3							
4	29		✓ 40					40.992	3.582	29.788	32.112						4							
5	7		✓ 30					30.165	3.600	29.798	32.113						5							
6	20		✓ 30					30.264	3.593	29.793	32.113						6							
7	5		✓ 20					20.144	3.608	29.800	32.112						7							
8	24		10					10.099	3.022	30.145	32.119						8							
9	25																9							
10	22																10							
11	23																11							
12	Light Meter																12							

Initials

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Consec. Cast # 022		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event #		Vessel Sta. I.D.		Instructions										Sta. Designation			
Consec. Cast #	Latitude		N or S	Longitude		E or W	Date JD = 126			Time GMT		Dry Bulb	Wet Bulb	Bar. mb	S.S. Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D.		
	Deg.	Min.		Deg.	Day		Mo.	Yr.	Hr.	Min.													
022	5	5	N	1	5	W	06	MAY	91	07	43	4	8	4	7	93	4	2	2	1	21	2	156
CTD Type & SN 91220-A			Monitor Checks								Times		Data Location										
Press. SN 25084			on Deck				at Surface				Data on		Tape/Diskette I.D.										
Temp. SN 701			Press. _____				_____				at Surface 07 36:55		File Name/Header										
Cond. SN 304			Temp. _____				_____				Start Down _____		CAST022-06MAY0735										
_____			Cond. _____				_____				at Bottom _____		_____										
_____			Other _____				_____				Start Up _____		Remarks * DEP INDICATES 40cms outflow										
_____			_____				_____				at Surface _____		LINE 17° throughout upper 150m										
_____			_____				_____				Data off _____		_____										

Stn	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.			
1	28																	1	
2	28		✓	Bottom	0750					189.518	3.832	30.533	32.673		3.85		22	TEMP	2
3	3141		✓	60	0755					60.757	3.533	29.864	32.242					Chl	3
4	29		✓	50	0756					51.503	3.605	29.907	32.227					Chl	4
5	7		✓	40	0757					41.016	3.702	29.966	32.206					Chl	5
6	20		✓	30	0758					31.118	3.741	29.833	32.015					Chl	6
7	5		✓	20	0759					20.225	3.754	29.821	31.994					Chl	7
8	24		✓	10	0800					10.187	3.757	29.818	31.992					Chl	8
9	25																		9
10	22																		10
11	23																		11
12	Light Motor																		12

Initials _____

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Consec. Cast # 023		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 188		Vessel Sta. I.D. MF9105		Instructions										Sta. Designation																											
Consec. Cast #	Latitude Deg. Min.		N or S	Longitude Deg.		E or W	Date JD = 126 Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.																								
023	5	55	5	9	3	N	1	5	6	2	1	5	7	W	6	6	M	A	Y	9	1	0	9	1	0	4	8	4	5	9	3	4	8	2	2	0	1	6	0	-	0	2	3	2	1	5	5
CTD Type & SN 91220-A				Monitor Checks								Times JD/Time 992.9				Data Location 232																															
Press. SN 25084				on Deck at Surface								Data on 126: 0902				Tape/Diskette I.D. File Name/Header																															
Temp. SN 701				Press. _____								at Surface 0903				_____																															
Cond. SN 304				Temp. _____								Start Down 0903				_____																															
_____				Cond. _____								at Bottom 0910				_____																															
_____				Other _____								Start Up 0911				_____																															
_____				_____								at Surface 0926				Remarks																															
_____				_____								Data off 0911				LINE 17: MICROZOOPO/BONGO/CHL																															

Stn	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.	
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.				
1	28			60								61.246	3.516	29.843	32.233				MZ	1
2	8			50								50.229	3.114	29.442	32.157				CHL	2
3	3141			50								50.110	3.104	29.432	32.155				MZ	3
4	29			40								39.909	3.263	29.562	32.159				MZ	4
5	7			40								40.120	3.262	29.560	32.158				CHL	5
6	20			30								30.172	3.901	29.980	32.033				MZ	6
7	5			30								30.429	3.878	29.965	32.038				CHL	7
8	21			20								20.481	3.893	29.954	32.014				MZ	8
9	25			20								20.488	3.893	29.954	32.015				CHL	9
10	22			10								10.494	3.882	29.932	32.005				MZ	10
11	23			10								10.466	3.872	29.914	31.993				CHL	11
12	Light																			12

Initials

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Consec. Cast # 024		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 189		Vessel Sta. I.D.		Instructions										Sta. Designation														
Consec. Cast #		Latitude N or S Deg. Min.			Longitude E or W Deg.			Date JD = Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb		Wet Bulb		Bar. mb		S.S.		Vis.		Wind Dir.		Wind Sp.		Cloud Type		Weath.		Bottom Depth, m		Sta. Name or I.D.	
024		555546N			1561519W			06 MAY 91			1015		50		45		93		48		215		14		-6		226		154					
CTD Type & SN 91220-A					Monitor Checks					Times					Data Location																			
Press. SN 25084					on Deck at Surface					Data on 1005					Tape/Diskette I.D. File Name/Header																			
Temp. SN 701					Press. _____					at Surface 1006					_____																			
Cond. SN 304					Temp. _____					Start Down 1007					_____																			
_____					Cond. _____					at Bottom 1015					_____																			
_____					Other _____					Start Up 1015					_____																			
_____					_____					at Surface 1313					Remarks Runaway wrench at 1025																			
_____					_____					Data off 1015					on bow wrench, set at water 13:13																			

St. #	Bot. Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	St. #
			Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.			
1	28		50	1020					49.671	4.015	30.400	32.406					CU	1
2	8		40	1022					40.287	4.062	30.347	32.361					CU	2
3	3141		30	1023					30.173	3.959	30.247	32.290					CU	3
4	29		20	1024					20.681	3.885	30.163	32.198				23	CU	4
5	7		10		← Runaway CTD wrench							32.				CU	5	
6	20				15m bottle not found													6
7	5																	7
8	24																	8
9	25																	9
10	22																	10
11	23																	11
12	light meter																	12

Initials _____

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Consec. Cast # 025		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event# 213		Vessel Sta. I.D.		Instructions										Sta. Designation	
Consec. Cast #	Latitude N or S Deg. Min.		Longitude E or W Deg.		Date JD = Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vls.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.
025	S	63 17 1	N	156 32 84	W	07	MAY	91	0251	5	0	5	0	91	36	170	14	966		196	E1

CTD Type & SN 91220-A		Monitor Checks				Times JD/Time		Data Location			
Press. SN 25084		on Deck		at Surface		Data on		Tape/Diskette I.D.		File Name/Header	
Temp. SN 701		Press. _____		_____		at Surface _____		CAST025 - 07MAY0243		_____	
Cond. SN 304		Temp. _____		_____		Start Down 02 45		_____		_____	
_____		Cond. _____		_____		at Bottom 02 51		_____		_____	
_____		Other _____		_____		Start Up _____		_____		_____	
_____		_____		_____		at Surface _____		_____		Remarks 1st STA. ALONG MAJOR AXIS OF EDDY (COVER):	
_____		_____		_____		Data off _____		_____		_____	

Pos. R.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos. R.
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.			
1	28			60	0255					59.711	4.102	30.158	32.030				Mz	1	
2	8			50	0256					49.526	4.106	30.132	32.001			16	Chl	2	
3	3141			50	0257					49.437	4.106	30.132	32.001				Mz	3	
4	29			40	0258					39.235	4.104	30.123	31.998				Mz	4	
5	7			40	0259					39.212	4.104	30.123	31.998				Chl	5	
6	20			30	0300					29.617	4.094	30.103	31.989				Mz	6	
7	5			30	0300					29.778	4.095	30.104	31.989				Chl	7	
8	21			20	0301					19.487	4.085	30.083	31.979				Mz	8	
9	11			20	0301					19.517	4.085	30.083	31.979				Chl	9	
10	22			10	0302					9.298	4.176	30.153	31.979				Mz	10	
11	23			10	0302					9.295	4.170	30.132	31.979				Chl	11	
12	light motor																	12	

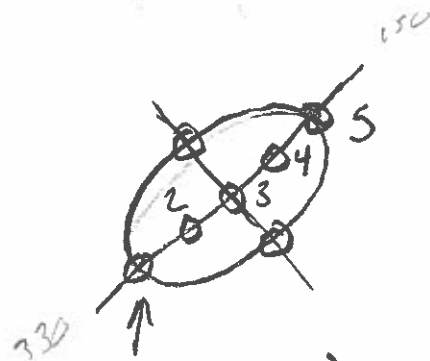
AT 100M 4.099 32.215 100.49

Initials

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STA.	TIME	CURRENT SPEED	AIR (°)
ES			
1	127 : 0140 TO 0150	10-15	325°
2	127 : 0422 0432	15-20	000°
3	127 : 0527 0537	25-30	090°

SPEEDS EST, DURING
BONGO IE STEADY
HEADING



STA 1 (025)
ADCP SHOWS [AT 75M]
FLOW NNW @ 10-15 cm s^{-1}
JD 127 0140
TO 0150
JD 127 0422 TO 0432
N @ 15-20 cm s^{-1}

Consec. Cast # 026		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 216		Vessel Sta. I.D.		Instructions										Sta. Designation					
Consec. Cast #	Latitude Deg. Min.		N or S	Longitude Deg.		E or W	Date JD = Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.		
026	56	34	14	N	156	23	05	W	07	MAY	91	04	33	S	1	S	1	90	36	27	01	69	66	209	E2
CTD Type & SN 91220-A				Monitor Checks								Times JD/Time				Data Location									
Press. SN 25084				on Deck at Surface								Data on				Tape/Diskette I.D. File Name/Header									
Temp. SN 701				Press. _____								at Surface _____				CAST026_07MAY0424/									
Cond. SN 304				Temp. _____								Start Down _____				at Bottom 0433									
				Cond. _____								Start Up _____				Remarks CAST026_07MAY0421 ABORTED!									
				Other _____								at Surface 0453				2ND STA. ALONG BODDY'S MAJAXIS.									
				Data off _____																					

Pos.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.		
1	28		✓	60	0438					60.723	3.908	29.922	31.941					Mz
2	38	B	✓	50	0444					51.450	3.892	29.880	31.912					Chl
3	3141		✓	50	0445					51.501	3.892	29.879	31.911					Mz
4	29		✓	40	0446					40.480	3.867	29.836	31.880					Mz
5	7		✓	40	0446					40.565	3.869	29.838	31.891					Chl
6	20		✓	30	0447					30.620	3.856	29.819	31.886					Mz
7	5		✓	30	0448					30.580	3.856	29.819	31.886					Chl
8	21		✓	20	0449					20.707	3.862	29.819	31.886					Mz
9	11		✓	20	0449					20.	3.8	29.8	31.8					Chl
10	22		✓	10	0450					10.471	3.955	29.880	31.872					Mz
11	23		✓	10	0450					10.521	3.947	29.876	31.874					12 Chl
12	Light																	

100M Z T S
100.5 4.083 32.049

Initials
✓

Consec. Cast # 027		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event# 252		Vessel Sta. I.D.		Instructions										Sta. Designation			
Consec. Cast #	Latitude Deg. Min.		N or S	Longitude Deg.		E or W	Date JD = Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.
027	57	21	95 N	156	20	91 W	08	MAY	91	02	58	63	60	01	26	025	59	66	76	82			
CTD Type & SN 91220-A Press. SN 25084 Temp. SN 701 Cond. SN 304				Monitor Checks on Deck at Surface Press. _____ Temp. _____ Cond. _____ Other _____				Times JD/Time 1000.5 Data on _____ at Surface _____ Start Down _____ at Bottom _____ Start Up _____ at Surface _____ Data off _____				Data Location Tape/Diskette I.D. File Name/Header CAST 027-08MAY0254 Remarks NOTE: 0252 ABORTED, SCREEN COLORS BAD M2 & Chl's											
Pos.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.					
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.							
1	28		✓	60								59.152	4.161	30.159	31.975					M2			
2	8		✓	50								48.963	4.161	30.151	31.971					Chl			
3	3141		✓	50								48.809	4.138	30.115	31.950					M2			
4	29		✓	40								39.830	4.129	30.095	31.941					M2			
5	7		✓	40								39.924	4.130	30.098	31.943					Chl			
6	20		✓	30								30.047	4.128	30.093	31.943					M2			
7	5		✓	30								29.976	4.128	30.093	31.943					Chl			
8	21		✓	20								20.127	4.099	30.080	31.903					M2			
9	11		✓	20								20.144	4.104	30.030	31.899					Chl			
10	22		✓	10								9.926	4.174	30.038	31.845					M2			
11	23		✓	10								9.918	4.176	30.039	31.844				20	Chl			
12	Light Meter																						

Initials

✓

Consec. Cast # 629		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 288		Vessel Sta. I.D.		Instructions 6099A		Sta. Designation											
Consec. Cast #	Latitude Deg. Min. S		N or S	Longitude Deg. W		E or W	Date JD = 129 Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb	Wet Bulb	Bar. mb 982.0	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.
029	56	30	26	N	156	13	16	W	09	MAY	91	04	50	42	42	82	56	130	329	66		267	11
CTD Type & SN 91220-A Press. SN 25084 Temp. SN 701 Cond. SN 304				Monitor Checks on Deck at Surface Press. _____ Temp. _____ Cond. _____ Other _____				Times JD/Time Data on _____ at Surface 04 40 Start Down _____ at Bottom 04 50 Start Up _____ at Surface _____ Data off _____				Data Location Tape/Diskette I.D. _____ File Name/Header CAST029-09MAY0439 Remarks BONGO F17-7 [G099A] DEPLOYMENT SITE SAT BUDY 7162											
Pos.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	C.D.				
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.							
1	(28)			60								62.246	4.244	30.324	32.085					Mz	1		
2	8			60 150																Out	2		
3	(314)			50								49.866	4.054	30.055	31.961					Mz	3		
4	(29)			40								39.937	4.005	29.977	31.923					Mz	4		
5	7			10																Out	5		
6	(20)			30								30.735	4.034	29.988	31.924					Mz	6		
7	5			30																Out	7		
8	(21)			20								21.187	4.025	29.987	31.924					Mz	8		
9	11 25			20																Out	9		
10	(22)			10								9.843	4.026	29.983	31.925					Mz	10		
11	23			10																Out	11		
12	Light 1000																				12		

 Initials _____
 ✓

Consec. Cast # 030		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 320		Vessel Sta. I.D.		Instructions										Sta. Designation					
Consec. Cast #	Latitude Deg. Min.		N or S	Longitude Deg.		E or W	Date JD = Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb	Wet Bulb	Bar. mb (982.1)	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.		
030	55	19	14 N	155	48	51 W	10	M	A	Y	91	07	14	09	04	58	26	62	15	30	96	6	57	1	R9
CTD Type & SN 91220-A				Monitor Checks				Times JD/Time				Data Location													
Press. SN 25084				on Deck at Surface				Data on _____				Tape/Diskette I.D. File Name/Header													
Temp. SN 701				Press. _____				at Surface 0358				_____													
Cond. SN 304				Temp. _____				Start Down _____				_____													
_____				Cond. _____				at Bottom _____				Bottles out of order													
_____				Other _____				Start Up _____				Remarks NO Samples Taken													
_____				_____				at Surface _____				RECORDING "UPCAST" TO GET FLOURESCENCE													
_____				_____				Data off _____				_____													

Pos.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.			
1	28		✓	60	65				VOLTS 4.272	60.074	4.576	31.033	32.587				mZ/ chl	1	
2	—		✓		50													2	
3	3141		✓	40	40				3.906	49.690	4.383	30.719	32.417				mZ/ chl	3	
4	29		✓	30	25				1.450	39.655	3.830	29.962	32.076				mZ/ chl	4	
5	—				25													5	
6	20		✓	20	10				1.567	29.751	3.820	29.943	32.069				mZ/ chl	6	
7	—									19.451	3.807	29.924	32.060					7	
8	21		✓	50					2.617	50.625	4.088	30.335	32.257				mZ/ chl	8	
9	—																	9	
10	22			10					1.396	19.600	3.609	29.920	32.062				mZ/ chl	10	
11	11		✓						—	302.55	4.078	31.833	33.901					11	
12	Light meter																	12	

START

Initials

✓

Consec. Cast # <u>31</u>		Vessel <u>MILLER FREEMAN</u>		Proj. & Leg <u>MF-91-05</u>		Event# <u>322</u>		Vessel Sta. I.D.		Instructions										Sta. Designation				
Consec. Cast #	Latitude		N or S	Longitude		E or W	Date JD =			Time GMT		Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.	
<u>031</u>	<u>55</u>	<u>19</u>	<u>53</u>	<u>N</u>	<u>154</u>	<u>83</u>	<u>6</u>	<u>W</u>	<u>10</u>	<u>MAY</u>	<u>91</u>	<u>08</u>	<u>17</u>	<u>05</u>	<u>00</u>	<u>04</u>	<u>59</u>	<u>36</u>	<u>62</u>	<u>20</u>	<u>30</u>	<u>97</u>	<u>65</u>	<u>53</u>
CTD Type & SN <u>91220-A</u>				Monitor Checks				Times JD/Time				Data Location												
Press. SN <u>25084</u>				on Deck				Data on				Tape/Diskette I.D.												
Temp. SN <u>701</u>				at Surface				at Surface				File Name/Header												
Cond. SN <u>304</u>				Press. _____				Start Down <u>08:10:50</u>				<u>Cast 031</u>												
				Temp. _____				at Bottom _____				<u>Cast 031-10 MAY 0809</u>												
				Cond. _____				Start Up _____				Remarks <u>STAR-9</u>												
				Other _____				at Surface _____				<u>DRIFTER #3</u>												
				Data off _____																				
St. #	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.					
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.								
1	28			60						62.564	4.561	32.603	31.035	V4.023				1						
2				✓														2						
3	314			50						50.644	4.269	30.587	32.375	V=2.729				3						
4	29			40						41.238	3.863	30.006	32.095	V=1.602				4						
5				✓														5						
6	20			30						32.999	3.822	29.942	32.064	V=1.479				6						
7				✓														7						
8	21			20						20.692	3.815	29.928	32.059	V=1.450				8						
9				✓														9						
10	22			10						10.438	3.812	29.919	32.057	V=1.387				10						
11	11			—														11						
12																		12						

Initials _____

✓

Initials _____
✓ _____

Consec. Cast # 033			Vessel MILLER FREEMAN			Proj. & Leg MF-91-05			Event # 336			Vessel Sta. I.D.			Instructions										Sta. Designation										
Consec. Cast #		Latitude N or S			Longitude E or W			Date JD = 130			Time GMT			Dry Bulb		Wet Bulb		Bar. mb		S.S.		Vis.		Wind Dir.		Wind Sp.		Cloud Type		Weath.		Bottom Depth, m		Sta. Name or I.D.	
033		55 55 12 N			156 11 13 W			10 MAY 91			17 43			49		41		96		47		20		20		98		22		20		153			
CTD Type & SN 91220-A						Monitor Checks 1742 Times JD/Time 996.4						Data Location 200																							
Press. SN 25084						on Deck at Surface						Data on 1301 1735						Tape/Diskette I.D.								File Name/Header									
Temp. SN 701						Press. _____						at Surface 1736						_____						Cast 033-10 MAY 17 35											
Cond. SN 304						Temp. _____						Start Down 1736						_____						_____											
_____						Cond. _____						at Bottom (96m) 1742						_____						_____											
_____						Other _____						Start Up 1742						_____						_____											
_____						_____						at Surface 1754						Remarks						_____											
_____						_____						Data off 1754						_____						Chl-V											

Pos.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.			
1	28			60	1747					59.923	3.852	30.140	32.255	0.469				1	
2	-b	1	an	k -	/													2	
3	3141			50	1748					50.269	4.092	30.231	32.132	1.094				3	
4	29			40	1749					39.619	4.176	30.236	32.060	1.309				4	
5	-b	1	an	k -	/													5	
6	20			30	1750					30.170	4.172	30.225	32.056	1.401				6	
7	-b	1	an	k -	/													7	
8	21			20	1751					19.623	4.175	30.224	32.057	1.431				8	
9	-b	1	an	k -	/													9	
10	22			10	1752					10.710	4.171	30.216	32.056	1.406				10	
11	11			10	1753					10.694	4.176	30.220	32.056	1.338			05	11	
12																		12	

Initials
 ✓

Consec. Cast # 034		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 339		Vessel Sta. I.D.		Instructions										Sta. Designation			
Consec. Cast #	Latitude Deg. Min. S		Longitude Deg. E or W		Date JD = 134 Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb	Wet Bulb	Bar. mb	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.			
034	55	55	34	N	156	15	23	W	10	MAY	91	19	15	5	4	2	97	47	198	22	982	228	1164
CTD Type & SN 91220-A			Monitor Checks						Times JD/Time 996.6				Data Location 225										
Press. SN 25084			on Deck at Surface						Data on 1341 1966				Tape/Diskette I.D. File Name/Header										
Temp. SN 701			Press. _____						at Surface 1947				_____										
Cond. SN 304			Temp. _____						Start Down 1948				_____										
_____			Cond. _____						at Bottom 1915				_____										
_____			Other _____						Start Up 1915				_____										
_____			_____						at Surface 1927				Remarks										
_____			_____						Data off 1927				Chl - Votts										

Pos.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm P	Avg Tw	Sal.			
1	28			60	1920					60.379	3.442	29.741	32.205	0.303				Chl/MZ	1
2	-b	1	an	k-	/														2
3	3141			50	1921					50.133	3.713	29.984	32.213	0.342				Chl/MZ	3
4	29			40	1922					40.033	4.163	30.228	32.063	1.461				Chl/MZ	4
5	-b	1	an	k-	/														5
6	20			30	1923					30.403	4.178	30.235	32.062	1.396				Chl/MZ	6
7	-b	1	an	k-	/														7
8	21			20	1924					19.928	4.182	30.234	32.061	1.514				Chl/MZ	8
9	-b	1	an	k-	/														9
10	22			10	1925					9.966	4.190	30.236	32.061	1.475				Chl/MZ	10
11	11			10	1926					10.119	4.192	30.237	32.061	1.479			20		11
12																			12

Initials _____

✓

Consec. Cast # 035		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 344		Vessel Sta. I.D.		Instructions										Sta. Designation							
Consec. Cast #	Latitude Deg. Min.		N or S	Longitude Deg.		E or W	Date JD = Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb		Wet Bulb		Bar. mb		SS	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.	
035	55	55	19	N	156	21	31	W	10	M	A	Y	9	12	22	4	55	45	98	48	21	02	47	71	233	155	
CTD Type & SN 91220-A				Monitor Checks				Times JD/Time				Data Location															
Press. SN 25084				on Deck				at Surface				Data on				Tape/Diskette I.D.											
Temp. SN 701				Press. _____				_____				at Surface 130-22 16 35				File Name/Header											
Cond. SN 304				Temp. _____				_____				Start Down _____				_____											
_____				Cond. _____				_____				at Bottom _____				_____											
_____				Other _____				_____				Start Up _____				_____											
_____				_____				_____				Data off _____				Remarks											
Pos.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.								
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.											
1	28		60						0.366	60.555	3.731	30.054	32.272					CHL MZ	1								
2	—		✓																2								
3	3141		50						0.635	51.307	3.974	30.190	32.198					11	3								
4	29		40						2.041	40.469	4.234	30.288	32.065					11	4								
5	—		✓																5								
6	20		30						2.446	30.362	4.245	30.292	32.063					11	6								
7	—		✓																7								
8	21		20						2.813	20.580	4.270	30.308	32.062					11	8								
9	—		✓																9								
10	22		10						1.782	10.168	4.298	30.326	32.062					11	10								
11	38	B							0.273	201.680	4.243	31.004	32.811		4.25		16	THEPMS	11								
12	Light Net																		12								

Initials _____

✓

Consec. Cast # 036		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 348		Vessel Sta. I.D.		Instructions										Sta. Designation			
Consec. Cast #	Latitude Deg. Min. S		N or S	Longitude Deg. W		E or W	Date JD = Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb	Wet Bulb	Bar. mb	SS	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.
036	55	56	37 N	156	26	50 W	11	MAY	91	00	00	51	47	98	38	210	162	11	211			156	
CTD Type & SN 91220-A				Monitor Checks				Times JD/Time				Data Location											
Press. SN 25084				on Deck at Surface				Data on				Tape/Diskette I.D. File Name/Header											
Temp. SN 701				Press. _____				at Surface 09:29				CAST036-11 MAY 0008											
Cond. SN 304				Temp. _____				Start Down 09:45															
				Cond. _____				at Bottom _____															
				Other _____				Start Up _____															
								at Surface _____				Remarks											
								Data off _____															

Pos.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.			
1	28		60		✓				VOLTS 2.251	60.155	4.250	30.327	32.084				CH1 M2	1	
2	—		—		✓												—	2	
3	3141		50		✓				2.983	51.087	4.256	30.325	32.081				CH1 M2	3	
4	29		40		✓				2.422	39.940	4.258	30.321	32.080				CH1 M2	4	
5	—		—		✓												—	5	
6	20		30		✓				3.137	29.940	4.265	30.323	32.080				CH1 M2	6	
7	—		—		✓												—	7	
8	21		20		✓				3.262	28.095	4.303	30.351	32.081				CH2 M2	8	
9	—		—		✓													9	
10	22		10		✓				2.793	10.444	4.368	30.401	32.081				CH2 M2	10	
11	11	✓	—		✓				0.185	205.938	4.621	31.528	33.044				32	11	
12	Light Net	2	—		✓													12	

Initials

✓

Consec. Cast # 037		Vessel MILLER FREEMAN		Proj. & Leg. MF-91-05		Event # 350		Vessel Sta. I.D.		Instructions										Sta. Designation			
Consec. Cast #	Latitude Deg. Min.		N or S	Longitude Deg.		E or W	Date JD = Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb 5.1	Wet Bulb 4.9	Bar. mb	SS	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.
037	55	36	81 N	156	31	36 W	11	MAY	91	01	35	4.9	5.1	98	38	210	14	211	201	157			
CTD Type & SN 91220-A			Monitor Checks			Times JD/Time			Data Location														
Press. SN 25084			on Deck			at Surface			Data on			Tape/Diskette I.D.							File Name/Header				
Temp. SN 701			Press. _____			_____			at Surface			CAST 037-11 MAY 10126							_____				
Cond. SN 304			Temp. _____			_____			Start Down			_____							_____				
_____			Cond. _____			_____			at Bottom			_____							_____				
_____			Other _____			_____			Start Up			_____							_____				
_____			_____			_____			at Surface			_____							_____				
_____			_____			_____			Data off			_____							Remarks				

Pos.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	St. Bot.
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.			
1	28			60	✓				VOLTS 2.363	59.863	4.255	30.314	32.064				MZ Chl	1	
2	—			—	✓												—	2	
3	3141			50	✓				2.588	49.955	4.255	30.309	32.063				MZ Chl	3	
4	29			40	✓				2.866	39.716	4.255	30.305	32.063				MZ Chl	4	
5	—			—	✓												—	5	
6	20			30	✓				2.710	30.107	4.275	30.306	32.051				MZ Chl	6	
7	—			—	✓												—	7	
8	21			20	✓				2.549	19.534	4.320	30.336	32.046				MZ Chl	8	
9	—			—	✓												—	9	
10	22			10	✓				1.665	9.864	4.336	30.344	32.046				MZ Chl	10	
11	11				✓				0.259	199.591	4.282	30.985	32.752				14	11	
12	Light Meter				✓													12	

Initials

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Consec. Cast # 038		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 352		Vessel Sta. I.D.		Instructions										Sta. Designation												
Consec. Cast #		Latitude N or S		Longitude E or W		Date JD = Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb 5.0		Wet Bulb 4.6		Bar. mb		S.S.		Vis.		Wind Dir.		Wind Sp.		Cloud Type		Weath.		Bottom Depth, m		Sta. Name or I.D.	
038		55 57 64 N		156 38 54 W		11 MAY 91			02 53		4 6		5 09		538		185		162		11		193		158							
CTD Type & SN 91220-A				Monitor Checks				Times JD/Time				Data Location																				
Press. SN 25084				on Deck at Surface				Data on				Tape/Diskette I.D. File Name/Header																				
Temp. SN 701				Press. _____				at Surface 02 46				038 Cast 038-11 May 0245																				
Cond. SN 304				Temp. _____				Start Down				_____																				
_____				Cond. _____				at Bottom 02 52				_____																				
_____				Other _____				Start Up				_____																				
_____				_____				at Surface				Remarks																				
_____				_____				Data off				_____																				

Pos.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.
				Depth	Trip	Press.	Temp.	Cond.	VOLTS	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.			
1	28			60	✓				0.762	59.374	3.694	29.827	32.040				MZ CUL	1	
2	—			—	✓				—								—	2	
3	3141			50	✓				0.845	49.870	3.701	29.829	32.039				MZ CUL	3	
4	29			40	✓				0.791	40.072	3.702	29.825	32.039				MZ CUL	4	
5	—			—	✓				—								—	5	
6	20			30	✓				0.918	30.284	3.724	29.837	32.037				MZ CUL	6	
7	—			—	✓				—								—	7	
8	21			20	✓				1.016	20.334	3.725	29.874	32.036				MZ CUL	8	
9	—			—	✓				—								—	9	
10	22			10	✓				0.986	10.242	3.853	29.933	32.034				MZ CUL	10	
11	38	B		Bottom	✓				0.234	161.247	3.005	29.436	32.201		3.66		19	11	
12	Light Net				✓				—	—	—	—	—				—	12	

Initials

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Consec. Cast # 039		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 379		Vessel Sta. I.D.		Instructions										Sta. Designation			
Consec. Cast #	Latitude		N or S	Longitude		E or W	Date JD = 131			Time GMT		Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.
	Deg.	Min.		Deg.			Day	Mo.	Yr.	Hr.	Min.												
039	56	29	06	N	155	08	W	11	MAY	91	17	04	04	30	39	02	28	12	50	89	82	127	141
CTD Type & SN 91220-A			Monitor Checks			1704			Times JD/Time			Data Location											
Press. SN 25084			on Deck			at Surface			Data on 131: 1704			Tape/Diskette I.D.										File Name/Header	
Temp. SN 701			Press. _____			_____			at Surface 1704			_____										_____	
Cond. SN 304			Temp. _____			_____			Start Down 1704			_____										_____	
_____			Cond. _____			_____			at Bottom 1704			_____										_____	
_____			Other _____			_____			Start Up 1704			_____										_____	
_____			_____			_____			at Surface 1718			Remarks wave at = 122										_____	
_____			_____			_____			Data off 1718			Floor - Volts										_____	

Stn	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.			
1	28		60	1707						59.914	3.991	30.084	32.051	0.581				1	
2	38	B	60	1707						59.828	3.976	30.069	32.049	0.576	4.00		24	2	
3	341		50	1712						50.494	3.953	30.038	32.039	0.625				3	
4	29		40	1713						46.286	3.753	29.833	31.999	0.811				4	
5	—		/	/														5	
6	20		30	1715						30.438	3.809	29.876	32.004	0.826				6	
7	—		/	/														7	
8	21		20	1716						20.141	3.924	29.977	32.011	0.747				8	
9	—		/	/														9	
10	22		10	1718						10.308	3.937	29.961	31.986	0.801				10	
11	11		10															11	
12	Light Meter																	12	

Initials _____

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Consec. Cast #		Vessel		Proj. & Leg		Event #		Vessel Sta. I.D.		Instructions										Sta. Designation											
Consec. Cast #		Latitude		Longitude		Date		Time		Dry Bulb		Wet Bulb		Bar. mb		Wind Dir.		Wind Sp.		Cloud Type		Bottom Depth, m		Sta. Name or I.D.							
Deg.		Min.		Deg.		Day Mo. Yr.		Hr. Min.																							
041		56 29 07 N		156 55 09 W		11 MAY 91		19 04 04		7 0 3		9 0 3		2 8 1		7 0 0		6 9 8		2 1 2		7 1 4		9							
CTD Type & SN 91220-A				Monitor Checks				Times JD/Time				Data Location																			
Press. SN 25084				on Deck at Surface				Data on 131/1859				Tape/Diskette I.D. File Name/Header																			
Temp. SN 701				Press. _____				at Surface 1900				_____ CAST041-11 MAY 1858																			
Cond. SN 304				Temp. _____				Start Down 1900				_____																			
				Cond. _____				at Bottom 1904				_____																			
				Other _____				Start Up 1904				_____																			
								at Surface _____				Remarks																			
								Data off _____																							
Bot.		T Rack		Trip Depth		Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data				Sal. Bot. #		Other Samp.									
Depth				Depth		Trip		Press.		Temp.		Cond.		Other		Press.		Temp.		Cond.		Sal.		Therm-P		Avg Tw		Sal.			
1 28				60		1907										59.975		3.566		29.720		32.038		0.737						Ch/MZ	
2 38		B		100		1911										59.502		3.540		29.704		32.045		0.659				15			
3 3141				50		1912										49.802		3.564		29.713		32.036		0.762						Ch/MZ	
4 29				40		←										39.826		3.563		29.708		32.037		0.737		← marked @ 40m				Ch/MZ	
5				/		/																									
6 20				30		1916										30.253		3.575		29.713		32.036		0.771						Ch/MZ	
7				/		/																									
8 21				20		1917										20.275		3.588		29.716		32.032		0.806						Ch/MZ	
9				/		/																									
10 22				10		1919										10.128		3.780		29.845		32.002		0.859						Ch/MZ	
11 11				10		1919										10.090		3.781		29.846		32.002		0.864							
12																															

Initials _____
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Consec. Cast # 042		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 389		Vessel Sta. I.D.		Instructions		Sta. Designation FOX 149-4																					
Consec. Cast #	Latitude Deg. Min.		N or S	Longitude Deg.		E or W	Date JD = 132 Day Mo. Yr.		Time GMT Hr. Min.		Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.											
042	56	25	SSN	156	52	38W	12	MAY	9	10	00	05	06	9	0	5	8	0	5	2	8	2	5	0	8	9	8	2	11	1	8		
CTD Type & SN 91220-A Press. SN 25084 Temp. SN 701 Cond. SN 304				Monitor Checks on Deck at Surface				Times JD/Time Data on _____ at Surface _____ Start Down _____ at Bottom _____ Start Up _____ at Surface _____ Data off _____				Data Location Tape/Diskette I.D. File Name/Header CAST042-11MAY2359 116 w/o				Remarks BOTTLES FIRED AT 60M EVERY 1.0M CAST NEAR LORAN BODY'S:																	
Pos	Bot.	T Rack	Trip Depth	Time @ Depth Trip		Monitor Values Press. Temp. Cond. Other				Conv. Mon. Values-CTD Press. Temp. Cond. Sal.				Sample Bot. Data Therm-P Avg Tw Sal.			Sal. Bot. #	Other Samp.	Pos														
1	28		✓	30	07				9.67	28.585	3.992	30.008	31.970					EMZ10m		1													
2	—		✓																	2													
3	3141		✓	30	08				9.67	28.547	3.979	29.998	31.978					EMZ20m		3													
4	29		✓	30	09				9.47	28.532	3.981	29.999	31.978					30m		4													
5	—		✓						9.77	28.578	3.976	29.995	31.978							5													
6	20		✓	30	10													40m		6													
7	—		✓																	7													
8	21		✓	30	11				9.87	28.549	3.964	29.985	31.978					50m		8													
9	—		✓																	9													
10	22		✓	30	12				9.81	28.511	3.961	29.983	31.978					60m		10													
11	11		✓						0.366	115.379	3.895	30.115	32.155					22		11													
12	Light Meter		✓																	12													

Initials JS

✓

Consec. Cast # <u>043</u>			Vessel <u>MILLER FREEMAN</u>			Proj. & Leg <u>MF-91-05</u>			Event # <u>396</u>			Vessel Sta. I.D.			Instructions										Sta. Designation									
Consec. Cast #		Latitude Deg. Min. S			Longitude Deg. E or W			Date JD = <u>132</u> Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb		Wet Bulb		Bar. mb		S.S.		Vis.		Wind Dir.		Wind Sp.		Cloud Type		Weath.		Bottom Depth, m		Sta. Name or I.D.	
043		562523 N			1565362 W			12 MAY 91			013905		0043		0528		3000		898		20123													
CTD Type & SN <u>91220-A</u>						Monitor Checks						Times JD/Time						Data Location																
Press. SN <u>25084</u>						on Deck at Surface						Data on _____						Tape/Diskette I.D. _____																
Temp. SN <u>701</u>						Press. _____						at Surface _____						File Name/Header <u>Fox 149-5</u>																
Cond. SN <u>304</u>						Temp. _____						Start Down _____						<u>Cast 043-12 May 0133</u>																
						Cond. _____						at Bottom _____						<u>119W/0</u>																
						Other _____						Start Up _____						Remarks																
						Data off _____																												

Pos.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.			
1	28								$\sigma_t = 381$	119.465	3.877	30.097	32.148				03		1
2	—																		2
3	3141																		3
4	29																		4
5	—																		5
6	20																		6
7	—																		7
8	21																		8
9	—																		9
10	22																		10
11																			11
12	Light Net																		12

Initials WF

Consec. Cast # 044		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 406		Vessel Sta. I.D.		Instructions										Sta. Designation FOX 151													
Consec. Cast #	Latitude		N or S	Longitude		E or W	Date JD = 132			Time GMT		Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.										
	Deg.	Min.		Deg.	Day		Mo.	Yr.	Hr.	Min.																							
044	56	30	N	156	59	54	W	12	MAY	9	10	7	9	50	5	30	4	7	0	6	2	8	1	30	0	5	6	7	2	4	7		
CTD Type & SN 91220-A			Monitor Checks										Times JD/Time		Data Location																		
Press. SN 25084			on Deck at Surface										Data on _____		Tape/Diskette I.D. File Name/Header																		
Temp. SN 701			Press. _____										at Surface _____		_____																		
Cond. SN 304			Temp. _____										Start Down 07:43:50		_____																		
			Cond. _____										at Bottom 7:47		_____																		
			Other _____										Start Up 7:47		_____																		
													at Surface _____		Remarks																		
													Data off _____																				
St. #	Bot. Rack	Trip	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.															
			Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.																		
1	28		40	60	7:47	30.7689	3.675	29.759	31.988	31.689	3.675	29.759	31.988	1.055			CH/MZ	1															
2	-b	1	au	k-														2															
3	3141		30	50	7:48					29.713	3.677	29.756	31.988	1.138			CH/MZ	3															
4	29		20	40	7:49					19.654	3.679	29.754	31.988	1.211			CH/MZ	4															
5	-b	1	au	k-														5															
6	20		10	30	7:50					9.655	3.742	29.800	31.986	1.216			CH/MZ	6															
7	-b	1	au	k-														7															
8	21			20													CH/MZ	8															
9	-b	1	au	k-														9															
10	22			10													CH/MZ	10															
11	30	B	41	10						41.973	3.676	29.761	31.988	1.372			23	11															
12	Light meter																	12															

START

Initials WF

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Consec. Cast # 046		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 409		Vessel Sta. I.D.		Instructions										Sta. Designation FOX 149					
Consec. Cast #	Latitude Deg. Min.		N or S	Longitude Deg.		E or W	Date JD = Day Mo. Yr.		Time GMT Hr. Min.		Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D. FOX 149			
046	56	24	12	N	156	51	S	12	MAY	91	09	39	05	55	04	6	06	18	11	00	78	72	12900149		
CTD Type & SN 91220-A			Press. SN 25084			Temp. SN 701			Cond. SN 304			Monitor Checks on Deck at Surface				Times 132 JD/Time Data on _____ at Surface 0934 Start Down 0934 at Bottom 0938 Start Up 0939 at Surface 0949 Data off 0949				Data Location Tape/Diskette I.D. _____ File Name/Header CAST046_12MAY0934 w/o 126				Remarks	
Pos.	Bot.	T Rack	Trip Depth	Time @ Depth Trip		Monitor Values Press. Temp. Cond. Other				Conv. Mon. Values-CTD Press. Temp. Cond. Sal.				Sample Bot. Data Therm-P Avg Tw Sal.			Sal. Bot. #	Other Samp.	Pos.						
1	28			6φ	0943					59.68	3.545	29.723	32.062	0.762					CH/MZ	1					
2	-b	1	au	k -																2					
3	3141			5φ	0944					50.048	3.548	29.718	32.058	0.850					CH/MZ	3					
4	29			4φ	0945					40.109	3.550	29.709	32.051	0.972					CH/MZ	4					
5	-b	1	au	k -																5					
6	2φ			3φ	0946					29.892	3.559	29.707	32.046	0.996					CH/MZ	6					
7	-b	1	au	k -																7					
8	21			2φ	0947					19.908	3.709	29.808	32.023	1.187					CH/MZ	8					
9	-b	1	au	k -																9					
10	22			1φ	0949					9.944	3.906	29.971	32.027	0.952					CH/MZ	10					
11	11	B		1φ	0939					116.75	2.875	29.263	32.144	0.361	2.92			02		11					
12	11																			12					

Initials CLC

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Consec. Cast # 048		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 414		Vessel Sta. I.D.		Instructions										Sta. Designation FOX 147						
Consec. Cast #	Latitude N or S Deg. Min.		Longitude E or W Deg.		Date JD = 132 Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb 5.3	Wet Bulb 5.0	Bar. mb	SS	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D. FOX 147					
048	56	17	88	N	156	48	00	W	12	MAY	91	12	14	05	00	53	06	18	09	00	89	72	01	01	00	147
CTD Type & SN 91220-A Press. SN 25084 Temp. SN 701 Cond. SN 304				Monitor Checks on Deck at Surface Press. _____ Temp. _____ Cond. _____ Other _____				Times 132 JD/Time Data on 132/12:10 at Surface 12:10 Start Down 12:10 at Bottom 12:13 Start Up 12:14 at Surface 12:17 Data off 12:17				Data Location Tape/Diskette I.D. _____ File Name/Header Cast 048-12 May 1209 w/10 98				Remarks										
Stn. #	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Stn. #							
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.										
1	28			6φ	1214					88.491	3.203	29.509	32.130	V=0.479			12	Ch/MZ	1							
2	-b	1	aw	k-															2							
3	3141			5φ														Ch/MZ	3							
4	29			4φ														Ch/MZ	4							
5	-b	1	aw	k-															5							
6	2φ			3φ														Ch/MZ	6							
7	-b	1	aw	k-															7							
8	21			2φ														Ch/MZ	8							
9	-b	1	aw	k-															9							
10	22			1φ														Ch/MZ	10							
11	11			1φ															11							
12																			12							

NO chl or mzp @ FOX 147

Initials CHL

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Consec. Cast # 049			Vessel MILLER FREEMAN			Proj. & Leg MF-91-05			Event # 416			Vessel Sta. I.D.			Instructions										Sta. Designation															
Consec. Cast #		Latitude Deg. Min. S			N or S		Longitude Deg. Min. W			E or W		Date JD = 132 Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb		Wet Bulb		Bar. mb		S.S.		Vis.		Wind Dir.		Wind Sp.		Cloud		Type		Weath.		Bottom Depth, m		Sta. Name or I.D.	
049		562987			N		1562463			W		12 MAY 91			142104		304		107		162300		6988		216															
CTD Type & SN 91220-A					Monitor Checks										Times JD/Time					Data Location																				
Press. SN 25084					on Deck at Surface										Data on 132/409					Tape/Diskette I.D. File Name/Header																				
Temp. SN 701					Press. _____										at Surface 1410					_____																				
Cond. SN 304					Temp. _____										Start Down 1410:30					_____																				
					Cond. _____										at Bottom 1415					_____																				
					Other _____										Start Up 1416					_____																				
															at Surface _____					Remarks																				
															Data off _____																									

Pos.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.			
1	28	11	1415	6	1415	No Bottle tripped the light meter				198.397 4.161 30.754 32.601				.254			28	Ch/MZ	1
2	-b	1	au	k	-													2	
3	3141			5														3	
4	29			4														4	
5	-b	1	au	k	-													5	
6	20			3														6	
7	-b	1	au	k	-													7	
8	21			2														8	
9	-b	1	au	k	-													9	
10	22			1														10	
11	11			1														11	
12																		12	

Initials _____
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Consec. Cast # 650		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 421		Vessel Sta. I.D.		Instructions										Sta. Designation			
Consec. Cast #	Latitude Deg. Min. N or S		Longitude Deg. E or W		Date JD = 132 Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb	Wet Bulb	Bar. mb	Si.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.		
050	56	29 16 N	156	24 36 W	12	MAY	91	16	26	5	2	5	0	07	17	1	00	8	9	8	2	218	
CTD Type & SN 91220-A			Monitor Checks					Times JD/Time					Data Location										
Press. SN 25084			on Deck					Data on 132/16:18					Tape/Diskette I.D.										
Temp. SN 701			at Surface					at Surface 16:18:30					File Name/Header										
Cond. SN 304			Press. _____					Start Down 16:19					CAST 050-12 MAY 16 17										
			Temp. _____					at Bottom _____					213 W/O										
			Cond. _____					Start Up _____					Remarks										
			Other _____					at Surface _____															
			Data off 16:31																				
Pos.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.				
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.							
1	28			6φ	1627					203.194	4.189	30.797	32.622	0.259			28	Ch/MZ	1				
2	-b	1	au	k-															2				
3	3141			5φ														Ch/MZ	3				
4	29			4φ														Ch/MZ	4				
5	-b	1	au	k-															5				
6	2φ			3φ														Ch/MZ	6				
7	-b	1	au	k-															7				
8	21			2φ														Ch/MZ	8				
9	-b	1	au	k-															9				
10	22			1φ														Ch/MZ	10				
11	11			1φ															11				
12																			12				

Initials

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Consec. Cast # 51		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 423		Vessel Sta. I.D.		Instructions										Sta. Designation Rouy-2				
Consec. Cast #	Latitude Deg. Min. S		N or S	Longitude Deg. W		E or W	Date JD = 132 Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.	
051	56	32	03	N	156	19	69	W	12	MAY	91	17	39	06	00	51	07	170	90	12	98	2	210	

CTD Type & SN 91220-A Press. SN 25084 Temp. SN 701 Cond. SN 304	Monitor Checks		Times JD/Time		Data Location	
	on Deck	at Surface	Data on	132 / 17:32	Tape/Diskette I.D.	File Name/Header
	Press.		at Surface	17:32:48		
	Temp.		Start Down	17:32:45		
	Cond.		at Bottom	17:39		
		Start Up	17:45			
		at Surface	17:57			
		Data off	17:57			
Remarks						

Pos	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	nos
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.			
1	28		6φ	1750						60.115	4.064	30.227	32.198	0.771				Ch/MZ	1
2																			2
3	3141		5φ	1752						50.179	4.161	30.269	32.108	0.879				Ch/MZ	3
4	29		4φ	1753						46.058	4.101	30.171	32.057	1.021				Ch/MZ	4
5																			5
6	2φ		3φ	1754						30.193	4.084	30.142	32.044	1.157				Ch/MZ	6
7																			7
8	21		2φ	1755						20.204	4.209	30.245	32.048	1.938				Ch/MZ	8
9																			9
10	22		1φ	1756						10.149	4.396	30.378	32.026	1.685				Ch/MZ	10
11	11	B	1φ	1745						197.498	4.756	31.687	33.098	0.273	4.76		06		11
12	light net																		12

Start →

Initials
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Consec. Cast # 52		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 424		Vessel Sta. I.D.		Instructions										Sta. Designation			
Consec. Cast #	Latitude Deg. Min.		N or S	Longitude Deg.		E or W	Date JD = 132 Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb	Wet Bulb	Bar. mb	SS	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weather.	Bottom Depth, m	Sta. Name or I.D.
052	56	32	03 N	156	19	65 W	12	M	A	Y	91	18	32	60	55	07	17	08	01	49	92	211	
CTD Type & SN <u>91220-A</u> Press. SN <u>25084</u> Temp. SN <u>701</u> Cond. SN <u>304</u>				Monitor Checks on Deck at Surface Press. _____ Temp. _____ Cond. _____ Other _____				Times JD/Time Data on <u>132/18:24</u> at Surface <u>18:25</u> Start Down <u>18:25</u> at Bottom <u>18:32</u> Start Up <u>18:32</u> at Surface <u>18:37</u> Data off <u>18:35</u>				Data Location Tape/Diskette I.D. _____ File Name/Header <u>cast 052-12 May 1991</u> <u>w/o 210</u> Remarks _____											
St. #	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.				
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.							
1	28		134	1834								137.892	3.719	30.157	32.366	0.303			26	Ch/MZ	1		
2	/		/																		2		
3	3141		54																	Ch/MZ	3		
4	29		44																	Ch/MZ	4		
5	/		/																		5		
6	24		34																	Ch/MZ	6		
7	/		/																		7		
8	21		24																	Ch/MZ	8		
9	/		/																		9		
10	22		14																	Ch/MZ	10		
11	11		14																	26		11	
12	light meter																					12	

Initials _____

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Consec. Cast # 054		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 429		Vessel Sta. I.D.		Instructions										Sta. Designation															
Consec. Cast #	Latitude		N or S	Longitude		E or W	Date JD = 132			Time GMT		Dry Bulb	Wet Bulb	Bar. mb 1007.2	SS	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.												
	Deg.	Min.		Deg.	Day		Mo.	Yr.	Hr.	Min.																									
054	56	32	74	N	156	18	74	W	12	M	A	Y	9	1	20	28	5	7	5	2	0	7	2	7	0	9	0	1	8	8	7	2	2	1	5
CTD Type & SN <u>91220-A</u>				Monitor Checks				Times JD/Time				Data Location																							
Press. SN <u>25084</u>				on Deck				at Surface				Data on _____				Tape/Diskette I.D.				File Name/Header															
Temp. SN <u>701</u>				Press. _____				_____				at Surface _____				_____				_____															
Cond. SN <u>304</u>				Temp. _____				_____				Start Down <u>20:20:55</u>				_____				_____															
_____				Cond. _____				_____				at Bottom _____				_____				_____															
_____				Other _____				_____				Start Up _____				_____				_____															
_____				_____				_____				at Surface _____				_____				_____															
_____				_____				_____				Data off _____				_____				_____															
Remarks <u>Tape recorder on late!</u>																																			

Pos.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.	
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.				
1	28		6φ						V=1.928	60.257	4.206	30.305	32.101					Ch/MZ	1	
2	/		/																2	
3	3141		5φ						1.211=V	50.625	4.246	30.320	32.084					Ch/MZ	3	
4	29		4φ						V=1.211	40.554	4.146	30.217	32.066					Ch/MZ	4	
5	/		/																5	
6	2φ		3φ						V=1.182	30.486	30.486	4.117	30.180	32.057					Ch/MZ	6
7	/		/																7	
8	21		2φ						V=1.421	20.569	4.110	30.158	32.043					Ch/MZ	8	
9	/		/																9	
10	22		1φ						V=1.587	10.449	4.366	30.367	32.044					Ch/MZ	10	
11	38		1φ						V=1.264	178.738	4.080	30.631	32.546			4.10		11	11	
12	light meter																		12	

Start
here →Initials WF

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Consec. Cast # 055		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 431		Vessel Sta. I.D.		Instructions										Sta. Designation		
Consec. Cast #	Latitude Deg. Min.		N or S	Longitude Deg.		E or W	Date JD = Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb	Wet Bulb	Bar. mb 1007.3	SS	Vis.	Wind Dir.	Wind Sp.	Cloud Type	Weath.	Bottom Depth, m	Sta. Name or I.D.
055	55	63	27	N	156	10	63	W	12	MAY	91	21	28	65	58	07	28	070	107	71	215	
CTD Type & SN 91220-A Press. SN 25084 Temp. SN 701 Cond. SN 304				Monitor Checks on Deck at Surface Press. _____ Temp. _____ Cond. _____ Other _____				Times JD/Time Data on _____ at Surface _____ Start Down 21:21:10 at Bottom _____ Start Up _____ at Surface _____ Data off _____				Data Location Tape/Diskette I.D. _____ File Name/Header <u>cast 055-12 May 2120</u> _____ _____ Remarks _____										
Pos.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	OS			
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.						
1	28		6φ															Ch/MZ	1			
2	/		/																2			
3	3141		5φ															Ch/MZ	3			
4	29		4φ															Ch/MZ	4			
5	/		/																5			
6	2φ		3φ															Ch/MZ	6			
7	/		/																7			
8	21		3φ							V=1.445	39.176	4.109	30.175	32.055				27	Ch/MZ	8		
9	/		/																9			
10	22		1φ															Ch/MZ	10			
11	11		1φ																11			
12	light meter																		12			

Initials WF

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Consec. Cast # 056		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 432		Vessel Sta. I.D.		Instructions										Sta. Designation												
Consec. Cast #		Latitude N or S Deg. Min.			Longitude E or W Deg.			Date JD = 132 Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb		Wet Bulb		Bar. mb 1007.8		S.S.	Vis.	Wind Dir.		Wind Sp.		Cloud Type		Weath.		Bottom Depth, m		Sta. Name or I.D.	
056		563257 N			1561842 W			12 MAY 91			22 29		5 8		5 1		0.8		28	070	16		771		219							
CTD Type & SN 91220-A Press. SN 25084 Temp. SN 701 Cond. SN 304						Monitor Checks on Deck at Surface Press. _____ Temp. _____ Cond. _____ Other _____						Times JD/Time Data on _____ at Surface _____ Start Down _____ at Bottom _____ Start Up _____ at Surface _____ Data off _____						Data Location Tape/Diskette I.D. _____ File Name/Header Cast 056-12 May 2220 Remarks _____														
Pos.		Bot.	T Rack	Trip Depth	Time @ Depth Trip		Monitor Values Press. Temp. Cond. Other				Conv. Mon. Values-CTD Press. Temp. Cond. Sal.				Sample Bot. Data Therm-P Avg Tw Sal.			Sal. Bot. #	Other Samp.	Pos.												
1		28		6φ															Ch/MZ	1												
2		/		/																2												
3		3141		5φ															Ch/MZ	3												
4		29		4φ															Ch/MZ	4												
5		/		/																5												
6		2φ		3φ															Ch/MZ	6												
7		/		/																7												
8		21		2φ															Ch/MZ	8												
9		/		/																9												
10		22		1φ							v=.283 213.499 4.748 31.682 33.092							07	Ch/MZ	10												
11		11		1φ																11												
12		light meter																		12												

Initials **WPF**
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Consec. Cast # 057		Vessel MILLER FREEMAN		Proj. & Leg MF-91-05		Event # 434		Vessel Sta. I.D.		Instructions										Sta. Designation														
Consec. Cast #		Latitude N or S Deg. Min.			Longitude E or W Deg.			Date JD = 132 Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb		Wet Bulb		Bar. mb 1607.9		S.S.		Vis.		Wind Dir.		Wind Sp.		Cloud Type		Weath.		Bottom Depth, m		Sta. Name or I.D.	
057		563124 N			1562058 W			12 MAY 91			23 27		69		60		08		28		030		08		872		217							
CTD Type & SN 91220-A Press. SN 25084 Temp. SN 701 Cond. SN 304						Monitor Checks on Deck at Surface Press. _____ Temp. _____ Cond. _____ Other _____						Times JD/Time Data on _____ at Surface _____ Start Down _____ at Bottom _____ Start Up _____ at Surface _____ Data off _____						Data Location Tape/Diskette I.D. _____ File Name/Header cast 057-13 May 2319 Remarks _____																
Pos.		Bot.		T Rack		Trip Depth		Time @ Depth Trip		Monitor Values Press. Temp. Cond. Other				Conv. Mon. Values-CTD Press. Temp. Cond. Sal.				Sample Bot. Data Therm-P Avg Tw Sal.			Sal. Bot. #		Other Samp.		Pos.									
1		28				6φ				V=1.869				60.898 4.166 30.290 32.122									CH/MZ		1									
2		/		/																					2									
3		3141				5φ				V=1.084				49.829 4.199 30.284 32.089									CH/MZ		3									
4		29				4φ				V=1.392				40.839 4.265 30.335 32.088									CH/MZ		4									
5		/		/																					5									
6		2φ				3φ				V=1.406				30.698 4.263 30.325 32.084									CH/MZ		6									
7		/		/																					7									
8		21				2φ				V=1.890				21.048 4.272 30.325 32.080									CH/MZ		8									
9		/		/																					9									
10		22				1φ				V=2.261				9.970 4.757 30.717 32.070									CH/MZ		10									
11		38A		B		23:28:20				V=2.229				160.959 3.931 30.411 32.445							3.94		04		11									
12		light meter				/																			12									

Initials WP

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Consec. Cast # 058			Vessel MILLER FREEMAN			Proj. & Leg MF-91-05			Event # 437			Vessel Sta. I.D.			Instructions										Sta. Designation							
Consec. Cast #		Latitude N or S Deg. Min.			Longitude E or W Deg.			Date JD = 133 Day Mo. Yr.			Time GMT Hr. Min.		Dry Bulb		Wet Bulb		Bar. mb 1007.9		SS	Vis.	Wind Dir.		Wind Sp.		Cloud Type		Weath.		Bottom Depth, m		Sta. Name or I.D.	
058		562949 N			1561978 W			13 MAY 91			0111		059		051		1007.9		27	070	18		88		2		218					
CTD Type & SN 91220-A					Monitor Checks					Times JD/Time					Data Location																	
Press. SN 25084					on Deck at Surface					Data on					Tape/Diskette I.D. File Name/Header																	
Temp. SN 701					Press. _____					at Surface _____					Start Down 01:03:30																	
Cond. SN 304					Temp. _____					at Bottom _____					Start Up _____																	
					Cond. _____					at Surface _____					Remarks																	
Other _____					Data off _____																											

Stn. No.	Bot. Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.
			Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.			
1	28		6φ															1
2	/		/															2
3	3141		5φ															3
4	29		4φ															4
5	/		/															5
6	2φ		3φ															6
7	/		/															7
8	21		2φ							278	140.559	3.726	30.189	32.396			08	8
9	/		/															9
10	22		1φ															10
11	11		1φ															11
12	light meter																	12

Initials WJ

Consec. Cast # <u>059</u>		Vessel <u>MILLER FREEMAN</u>		Proj. & Leg <u>MF-91-05</u>		Event# <u>489</u>		Vessel Sta. I.D.		Instructions										Sta. Designation			
Consec. Cast #	Latitude		N or S	Longitude		E or W	Date JD = <u>134</u>			Time GMT		Dry Bulb	Wet Bulb	Bar. mb	S.S.	Vis.	Wind Dir.	Wind Sp.	Cloud	Type	Weath.	Bottom Depth, m	Sta. Name or I.D.
<u>059</u>	<u>57</u>	<u>16</u>	<u>51</u>	<u>N</u>	<u>155</u>	<u>55</u>	<u>01</u>	<u>W</u>	<u>14</u>	<u>MAY</u>	<u>91</u>	<u>15</u>	<u>41</u>	<u>65</u>	<u>57</u>	<u>62</u>	<u>83</u>	<u>15</u>	<u>12</u>	<u>56</u>	<u>1</u>	<u>237</u>	
CTD Type & SN <u>91220-A</u>				Monitor Checks								Times JD/Time				Data Location							
Press. SN <u>25084</u>				on Deck				at Surface				Data on <u>15:32</u>				Tape/Diskette I.D.				File Name/Header			
Temp. SN <u>701</u>				Press. _____				_____				at Surface <u>15:32</u>				_____				<u>cast 059-14 May 1991</u>			
Cond. SN <u>304</u>				Temp. _____				_____				Start Down <u>15:33</u>				_____				_____			
_____				Cond. _____				_____				at Bottom <u>15:37</u>				_____				<u>220 w/4/d=221.9</u>			
_____				Other _____				_____				Start Up <u>15:37</u>				_____				Remarks			
_____				_____				_____				at Surface _____				_____				_____			
_____				_____				_____				Data off _____				_____				_____			

Pos.	Bot.	T Rack	Trip Depth	Time @		Monitor Values				Conv. Mon. Values-CTD				Sample Bot. Data			Sal. Bot. #	Other Samp.	Pos.
				Depth	Trip	Press.	Temp.	Cond.	Other	Press.	Temp.	Cond.	Sal.	Therm-P	Avg Tw	Sal.			
1	28		<u>71</u>		<u>15:46</u>					<u>71.308</u>	<u>4.331</u>	<u>30.314</u>	<u>31.984</u>	<u>.703</u>				<u>CH/MZ</u>	1
2																			2
3	<u>3141</u>		<u>57</u>		<u>15:49</u>					<u>57.988</u>	<u>4.327</u>	<u>30.281</u>	<u>31.957</u>	<u>1.021</u>				<u>CH/MZ</u>	3
4	<u>29</u>		<u>44</u>		<u>15:51</u>					<u>43.717</u>	<u>4.331</u>	<u>30.268</u>	<u>31.945</u>	<u>1.035</u>				<u>CH/MZ</u>	4
5																			5
6	<u>20</u>		<u>30</u>		<u>15:53</u>					<u>35.580</u>	<u>4.294</u>	<u>30.217</u>	<u>31.925</u>	<u>0.859</u>				<u>CH/MZ</u>	6
7																			7
8	<u>21</u>		<u>20</u>		<u>15:55</u>					<u>21.198</u>	<u>4.619</u>	<u>30.394</u>	<u>31.824</u>	<u>2.490</u>				<u>CH/MZ</u>	8
9																			9
10	<u>22</u>		<u>10</u>		<u>15:56</u>									<u>3.657</u>			<u>30</u>	<u>CH/MZ</u>	10
11																			11
12																			12

Initials CBL
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