Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
001	MILLER FREEMAN	FOCI-88-II MF-88-04	8			FOX55

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 108 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
001	57	28	41	N	154	42	15	W	17	APR	88	11	20	04	0	03	0	02	38	15	0	156 / 1	65 FOX55

no change

CTD
Type & SN Seabird 912208
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 108
at Surface 1120
Start Down 1120
at Bottom 1122
Start Up 1127
at Surface 1134
Data off 1122

Data Location
Tape/~~Diskette I.D.~~ APR882
File Name/Header 17APR1105

Remarks Nutrients + chlorophylls taken here

5% dabbe @ 57 m

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	252	A	(57)	1122	1127					55.617	4.145	31.736		57	4.13	31.771	30,33	Nut #	1
2	1014	—	50		1128					50.752	4.149	31.738						257	2
3	1013	—	30		1130					29.600	4.110	31.722						258	3
4	1012	—	20		1131					20.517	4.090	31.716						259	4
5	1011	—	10		1132					10.280	4.063	31.708						260	5
6	PINGER																		6
7	1010		SPARE																7
8																			8
9																			9
10																			10
11																			11
12																			12

Chloro

100ml

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
002	MILLER FREEMAN	MF-88-04	12			FOX56

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 108 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	57	30.89	N	154 47.02	W	17	APR	88	1255		04.0	03.4	02	3	8	100	15	6	–	1	221	FOX56

no change

CTD
Type & SN Seabird 912208
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 108
at Surface 1254
Start Down 1255
at Bottom 1303
Start Up
at Surface
Data off 1303

Data Location
Tape/~~Diskette I.D.~~: APR882
File Name/Header: 17APR1243

Remarks Nutrients + chlorophylls collected here. check on spare bottle, it tripped - OK because CTD turned off so automatic. DS

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	2512	–	(214)		1303					207.406	5.301		32.520	—	—	32.530	28,4	Nuts. #	1	chloro.
2	1014		200		1304					199.889	5.200		32.394					261	2	
3	1013		150		1306					150.563	5.051		32.226					262	3	
4	1012		100		1309					100.504	4.664		32.064					263	4	100ml
5	1011		75		1310					79.738	4.699		32.040					264	5	100ml.
6	PINGER				✓														6	
7	1010		50		1312					50.308	4.383		31.787					265	7	100ml
8	1009		30		1313					30.109	4.366		31.767					266	8	
9	1007		20		1314					20.727	4.350		31.762					267	9	
10	1006		10		1315					10.190	4.326		31.758					268	10	
11	1005		SPARE																11	
12																			12	

Initials SD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
003	Miller Freeman	MF-88-04	15			FOX 57

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 108 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
003	57	33.22	N	154 52.81	W	17	APR	88	13	57	05.0	04.2	02	3	8	110	15	6	/6	233	FOX57

no change

CTD
Type & SN Seabird 912208
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 108/
at Surface 1356
Start Down 1357
at Bottom 1405
Start Up 1410
at Surface
Data off 1405

Data Location
Tape/~~Diskette I.D.~~ APR882
File Name/Header 17APR1346 (235 3)

Remarks Nutrients collected here.

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	252	A	(229)	1405	1410					222.090	5.559		32.897	225	5.55	32.929	03,32	NUTS #	1
2	1014		200		1411					198.605	5.408		32.624					269	2
3	1013		150		1414					149.592	5.330		32.392					270	3
4	1012		100		1416					101.024	5.214		32.245					271	4
5	1011		75		1418					74.892	4.604		32.073					272	5
6	RINGER				✓														6
7	1010		50		1420					49.809	4.668		32.051					273	7
8	1009		30		1421					30.420	4.484		31.852					274	8
9	1007		20		1422					19.756	4.413		31.824					275	9
10	1006		10		1423					9.970	4.410		31.823					276	10
11	1005		SPARE																11
12																			12

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
004	Miller Freeman	FOCI-88-II MF-88-04	18			FOX 58

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 108 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	36.24	N	155 00.52	W	17	APR	88	15	10	05.4	05.2	03	3	8	110	15	8	-6		240	FOX58

no changes

CTD
Type & SN Seabird 912203
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 108 / 1507
at Surface 1508
Start Down 1510
at Bottom 1517
Start Up 1519
at Surface
Data off 1518

Data Location
Tape/~~Diskette I.D.~~ APR882
File Name/Header 17APR 1501

Remarks nutrients & chlorophylls collected.

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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.	Chl
1	251	—	200		151958					199.706	5.409		32.626	—	—	32.646	29	NUT. 277	1	
2	1014		150		152210					151.920	5.216		32.249					278	2	
3	1013		100		1524					99.274	4.905		32.064					279	3	100 ml
4	1012		75		1525					75.369	4.773		31.979					280	4	100 ml
5	1011		50		1527					49.774	4.643		31.890					281	5	100 ml
6	PINGER				✓														6	
7	1010		30		1528					30.104	4.636		31.887					282	7	100 ml
8	1009		20		1529					19.836	4.619		31.879					283	8	100 ml
9	1007		10		1530					9.654	4.543		31.841					294	9	100 ml
10	1006		—																10	
11	1005		—																11	
12																			12	

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
005	Miller Freeman	FOCI-88-II MF-88-04	20			FOX 59

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 108 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
005	57	38.61	N	155 04.23	W	17	APR	88	16	56	04.7	04.0	04	3	8	075	13	7	1	257	FOX59

changed o-lm fm 31.3117.. to 31.5297..

CTD
Type & SN Seabird 912203
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.	9.045	
Temp.		
Cond.		
Other		

Times JD/Time

Data on	108 / 1653
at Surface	1655
Start Down	1656
at Bottom	1704
Start Up	1705
at Surface	
Data off	1704

Data Location

Tape/~~Diskette~~ I.D.	File Name/Header
APR882	17APR1648

Remarks 411 rosette positions positive response
Nutrient samples collected

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	—	(250) MAX		1705					243.321	5.602		32.970	—	—	33.002	5	NUTS	1
2	1014		243		170525					243.084	5.602		32.970					285	2
3	1013		200		170659					198.692	5.202		32.352					286	3
4	1012		150		170858					149.464	5.031		32.171					287	4
5	1011		100		171048					101.085	4.663		31.929					288	5
6	—				✓													—	6
7	1010		75		1712					74.984	4.560		31.863					289	7
8	1009		50		171318					49.795	4.393		31.751					290	8
9	1007		30		171410					30.292	4.321		31.614					291	9
10	1006		20		171450					20.515	4.221		31.572					292	10
11	1005		10		171530					10.342	4.180		31.508					293	11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
006	Miller Freeman	FOCI-88-III MF-88-04	21			FOX 60

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 108 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	40.90	N	155	W	17	APR	88	17	53	05.0	04.0	05	3	8	093	14	7	11	291	FOX60

CTD
Type & SN Seabird 9220B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 108/1750
at Surface 1752
Start Down 1753
at Bottom 1802
Start Up 1808
at Surface
Data off 1802

Data Location
Tape ~~/Diskette I.D.~~ APR882
File Name/Header 17APR 1745

Remarks All rosette positions positive response
Nutrients + chlorophylls collected.

changed 0-2m
to 30.9407‰
31.6519‰

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	252	A	(286) 270	180330	1808					267.324	5.408		32.683	269	5.40	32.712	7	NUTS	1	Chl.
2	1014		250		1809					250.430	5.375		32.640					294	2	
3	1013		200		1811					201.160	4.903		32.095					295	3	
4	1012		150		1813					150.203	4.660		31.918					296	4	
5	1011		100		1814					99.827	4.676		31.801					297	5	100ml
6	—				✓														6	
7	1010		75		181600					74.725	4.687		31.760					298	7	100ml
8	1009		50		181658	bottom plug hung up - bottle open				—									8	
9	1007		30		181750					29.481	4.730		31.706					300	9	100ml
10	1006		20		181833					20.012	4.733		31.709					301	10	
11	1005		10		181910					9.916	4.742		31.711					302	11	
~~12~~ 2	1014		50			second cast												299	~~12~~ 2	

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
007	Miller Freeman	MF-88-04	23		Check Vessel / Project Name	FOX61

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 108 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	57	41.74	N	155	16.12	17	APR	88	19	48	04.20	04.05	48	1	3	5	19	8	8	6	298	FOX61

no change

CTD
Type & SN Seabird 9220B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 108 / 1945
at Surface 1947
Start Down 1948
at Bottom 1957
Start Up 1958
at Surface
Data off 1957

Data Location
Tape/~~Diskette~~ I.D. APR882
File Name/Header 17APR1942

Remarks All positions on rosette responded
Chlorophyll & Nutrient samples collected

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	251	—	(292) 290		1958					279.973	5.132		32.324	—	—	32.353	10	NUTS.	1	Chl. 100ml
2	1014		250		1959					250.952	4.807		32.026					303	2	
3	1013		200		2001					200.557	4.363		31.709					304	3	
4	1012		150		2003					149.986	4.335		31.676					305	4	
5	1011		100		2005					99.594	4.605		31.637					306	5	✓
6	—				✓													—	6	
7	1010		75		2006					75.224	4.398		31.573					307	7	✓
8	1009		50		2008					49.442	4.034		31.475					308	8	✓
9	1007		30		2009					29.679	3.938		31.417					309	9	✓
10	1006		20		2009 54					20.457	3.948		31.437					310	10	✓
11	1005		10		2010 44					10.487	3.921		31.423					311	11	✓
12																			12	

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
008	Miller Freeman	MF-88-04	25			008

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Date Mo.	Date Yr. (JD = 108)	Time GMT Hr.	Time GMT 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	37.53	N	155 24.84	W	17	APR	88	21	44	04.0	03.8	06	4	7	140	20	8	8 2	187	008

no change

CTD
Type & SN Seabird 912208
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 108/2141
at Surface 2143
Start Down 2144
at Bottom 2150
Start Up 2151
at Surface
Data off 2150

Data Location
Tape/~~Diskette~~ I.D. APR882
File Name/Header 17APR2139

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	—	(187) 181		2151					181.913.	4.478.		31.780.	—	—	31.813	19		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
009	Miller Freeman	MF-88-04	26			009

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 108 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
009	57	34.10	N	155 17.23	W	17	APR	88	22	33	06.0	05.2	06	4	7	145	20	8	3	6	290	009

CTD
Type & SN Seabird 912208
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 108 / 2230
at Surface 2232
Start Down 2233
at Bottom 2241
Start Up 2242
at Surface
Data off 2242

Data Location
Tape/~~Diskette~~ I.D. ATR882
File Name/Header 17APR2227

Remarks

no change

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	(283) 269	224230	2247					269.393	5.598		33.079	270	5.61	33.108	17		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
010	Miller Freeman	FOCI-88-III MF-88-04	27			10

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Date Mo.	Date Yr.	Time GMT Hr.	Time GMT 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
010	57	32.20	N	155	13.29	17	APR	88	23	17	06.8	06.0	06	4	8	155	17	8	3	267	10

JD = 108

CTD
Type & SN Seabird 9220B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 108 / 2313
at Surface 2315
Start Down 2317
at Bottom 2324
Start Up 2325
at Surface
Data off 2325

Data Location
Tape/~~Diskette~~ I.D. APR882
File Name/Header 17 APR 2311

Remarks

no change

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	–	(261) 256		2325					254.791	5.603		33.095	—	—	33.126	22		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
011	Miller Freeman	MF-88-04	28			011

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Date Mo.	Date Yr. (JD = 109)	Time GMT Hr.	Time GMT 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
011	57	29.50	N	155 07.28	W	18	APR	88	00	09	04.0	03.8	06	4	8	180	18	8	3	2	246	011

no change

CTD
Type & SN Seabird 912208
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 109 / 0004
at Surface 0008
Start Down 0009
at Bottom 0017
Start Up
at Surface
Data off 0017

Data Location
Tape/~~Diskette~~ I.D. APR882
File Name/Header 18APR0001

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	(241) 226	001800	0023					225.030	5.602		33.086	228	5.59	33.117	9		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
012	Miller Freeman	FOCI-88-II MF-88-04	29			012

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 109 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
012	57	26.95	N	155 00.46	W	18	APR	88	01	04	06.2	05.4	06.3	9	1	170	20	7	3	241	012

no change

CTD
Type & SN Seabird 9220B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 109/0102
at Surface 0103
Start Down 0104
at Bottom 0112
Start Up 0113
at Surface
Data off 0112

Data Location
Tape/~~Diskette~~ I.D. APR882
File Name/Header 18APR 0100

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	–	(233) 227		0113					227.775	5.569		32.923	—	—	32.955	02		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
013	Miller Freeman	FOCI-88-II MF-88-04	30			013

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 109 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
013	57	23.84	N	154	53.99	18	APR	88	01	52	04.2	03.8	07	3	8	150	15	7	3	1	207	013

no change

CTD Type & SN Seabird 9220B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on	109/0150
at Surface	0151
Start Down	0152
at Bottom	0158
Start Up	
at Surface	
Data off	0159

Data Location

Tape/~~Diskette~~ I.D.	File Name/Header
APR882	18APR0145

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	(201) 191	015945	0205					189.900	5.189		32.385	193	5.18	32.419	26		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

no change

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
014	Miller Freeman	MF-88-04	34			014

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 109 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
014	57	14.17	N	154	54.45	18	APR	88	04	40	05.7	04.5	08	3	8	14	16	63	1	141	014

CTD
Type & SN Seabird 912208
Press. SN 260732
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface 0439
Start Down 0440
at Bottom 0444
Start Up
at Surface
Data off 0445

Data Location
Tape/~~Diskette~~ I.D. APR882
File Name/Header 18 APR0433

Remarks Nutrients + chlorophyll* 100ml collected.

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	2	(136)		0445					132.082	4.989		32.255	—	—	32.288	20	Nuts	1
2	1014		100		0446					100.175	5.162		32.235					312*	2
3	1013		75		0448					75.625	4.716		32.089					313*	3
4	1012		50		0449					50.372	4.612		32.017					314*	4
5	1011		30		0450					31.060	4.371		31.894					315*	5
6	PINGER				✓														6
7	1010		20		0451					20.710	4.274		31.805					316*	7
8	1009		10		0452					9.958	4.306		31.720					317*	8
9	1007																		9
10	1006																		10
11	1005																		11
12																			12

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
015	Miller Freeman	MF-88-04 FOCI-88-II	35			015

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude Min.	E or W	Date Day	Date Mo.	Date Yr.	JD =	Time GMT Hr.	Time GMT 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
015	57	16.98	N	155	00.15	W	18	APR	88	05	25	05	0	046	09	3	8	147	156	3	1	213	015

no change

CTD	
Type & SN	Seabird 912203
Press. SN	260072
Temp. SN	710
Cond. SN	304

Monitor Checks	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times	JD/Time
Data on	
at Surface	0524
Start Down	0525
at Bottom	0532
Start Up	0532
at Surface	
Data off	0532

Data Location 213

Tape/~~Diskette~~ I.D.	File Name/Header
APR882	18APR0518

Remarks Nutrients collected.

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	254	—	(259)		0532					203.861	5.502		32.736	—	—	32.769	31	Nuts	1
2	1014		200		0533					200.702	5.502		32.735					318	2
3	1013		150		0535					150.398	5.258		32.336					319	3
4	1012		100		0537					100.053	5.187		32.170					320	4
5	1011		75		0538					74.492	5.056		32.064					516	5
6	PINGER				✓														6
7	1010		50		0539					50.213	4.263		31.845					517	7
8	1009		30		0540					30.847	4.284		31.743					518	8
9	1007		20		0541					20.092	4.329		31.745					519	9
10	1006		10		0542					9.874	4.352		31.747					520	10
11	1005		SPARE																11
12																			12

Initials CD

✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
016	MILLER FREEMAN	FOCI 88 II MF-88-04	36			016

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 109 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
016	57	19.55	N	155	06.02	18	APR	88	06	11	06.50	05.52	09.39	8	1	140	14	6	3	1	239	016

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 0608
at Surface 0610
Start Down 0611
at Bottom 0619
Start Up 0620
at Surface
Data off 0619

Data Location 239
Tape/Diskette I.D. APR882
File Name/Header 18APR0605

Remarks Nutrients & chlorophyll collected

no changes

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	252	—	(235)		0620					229.434	5.597		33.036	—	—	33.067	11	Nuts	1
2	1014		200		0621					200.050	5.425		32.605					513	2
3	1013		150		0623					150.188	5.225		32.320					514	3
4	1012		100		0624					99.782	4.899		32.130					515	4
5	1011		75		0625					74.591	4.640		31.961					521	5
6	PINGER				✓														6
7	1010		50		0627	34627.604				50.282	4.621		31.942					522	7
8	1009		30		0628					30.250	4.694		31.931					523	8
9	1007		20		0628					19.753	4.742		31.922					524	9
10	1006		10		0630					9.892	4.696		31.884					525	10
11	1005		SPARE																11
12																			12

Cal.

100ml

100ml

100ml

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
017	MILLER FREEMAN	FOCI 88 II MF 88 04	37		CHECK CAST #	017

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 109 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	57	21.99	N	155	11.26	18	APR	88	07	08	06.2	05.8	09	3	8	145	186	3	1		246	017

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface 0707
Start Down 0708
at Bottom 0715
Start Up
at Surface
Data off 0715

Data Location
Tape/Diskette I.D. APR88Z
File Name/Header 18APR0703

Remarks Nutrients collected

no changes

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	252	A	(241)	0715	0720					235.495	5.585		33.030	242	5.56	33.061	114	Nuts	1
2	1014		200		0721					200.579	5.496		32.681					526	2
3	1013		150		0722					160.603	5.261		32.338					527	3
4	1012		100		0724					100.390	4.932		32.094					528	4
5	1011		75		0726					74.812	4.766		31.998					529	5
6	PINGER				✓														6
7	1010		50		0727					50.507	4.597		31.891					530	7
8	1009		30		0728					30.490	4.638		31.870					531	8
9	1007		20		0728					20.238	4.628		31.869					532	9
10	1006		10		0729					9.726	4.626		31.870					533	10
11	1005		SPARE																11
12																			12

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
018	MILLER FREEMAN	MF-88-04	38			018

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 109 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
018	57	24.80	N	155	17.00	W	18	APR	88	07	59	06.0	05.0	09	4	8	150	15	5	8	1256	018

CTD
Type & SN Seabird 9122OB
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 0752
at Surface
Start Down 0759
at Bottom 0807
Start Up 0808
at Surface
Data off 0807

Data Location 256

Tape/Diskette I.D.	File Name/Header
APR88B	18APR0750

no change

Remarks Nutrients + chlorophylls collected.
*SALINITY SAMPLE INDICATES INCORRECT ROSETTE FIRING SEQUENCE

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.	Chl.
1	25/1	—	(252)		0807					245.665	5.598		33.065	—	—	32.377	6	Nuts	1	
2	16/14		200		0807					245.574	5.598		33.065						2	
3	16/13		200		0810					200.123	5.426		32.586					534	3	
4	10/5		150		0812					149.608	5.251		32.329					535	4	
5	10/1		100		0814					99.989	4.973		32.145					536	5	100ml
6	PINGER				✓														6	
7	16/10		75		0815					74.764	4.714		32.017					537	7	100ml
8	16/9		50		0816					50.194	4.718		32.001					538	8	
9	10/7		30		0817					30.297	4.621		31.918					539	9	
10	10/6		20		0817					19.827	4.687		31.903					540	10	
11	10/2		10		0818					9.223	4.597		31.855					541	11	
12																			12	

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
019	MILLER FREEMAN	MF-88-04	39			019

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 109 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	57	27.25	N	155 22.68	W	18	APR	88	08	49	06.8	05.0	09	4	8	160	20	6	8	1	278	019

changed 0-1m fm 31.5882 to 31.7147

CTD Type & SN Seabird 911320B
Press. SN 26032
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on
at Surface
Start Down 0849
at Bottom 0859
Start Up 0904
at Surface
Data off 0859

Data Location 278

Tape/Diskette I.D. APR882
File Name/Header 18APR0842

Remarks TERMINAL DISPLAY DOUBLED IMAGE ≈178 m DEPTH (DESCENT) - STILL APPEARED TO BE COLLECTING GOOD DATA; NO ERROR LIGHTS

COLLECTED NUTRIENTS.

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	25 2	A	(275)	0859	0904					268.728	5.605		33.096	151	5.21	32.328	25	Nuts.	1
2	10 14		250		0905					248.785	5.603		33.083					542	2
3	10 13		200		0906					201.044	5.404		32.485					543	3
4	10 05		150		0908					151.018	5.235		32.310					544	4
5	10 11		100		0910					99.694	4.707		32.017					545	5
6	PINGER				✓														6
7	10 10		75		0911					74.246	4.726		31.956					546	7
8	10 09		50		0912					50.357	4.613		31.885					547	8
9	10 07		30		0913					29.989	4.474		31.810					548	9
10	10 06		20		0913					19.765	4.455		31.706					549	10
11	10 12		10		0914					10.116	4.411		31.600					550	11
12																			12

*THERMOMETER & SALINITY SAMPLE INDICATES SAMPLES TAKEN AT INCORRECT DEPTH

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
020	Miller Freeman	FOCI-	40			020

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 109 Day	Mo.	Yr.	Time GMT Hr.	Time GMT 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
020	57	29.82	N	155	28.71	W	18	APR	88	09	43	04.8	03.8	09	4	8	150	18	4	8	1	309 020

CTD
Type & SN Seabird 912208
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 0938
at Surface 0943
Start Down 0943
at Bottom 0539
Start Up
at Surface
Data off

Data Location 309
Tape/Diskette I.D. APR882
File Name/Header 18APR0937

Remarks Nutrients and chlorophylls collected

No change

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.	
1	251	—	(305)		0954					297.792	5.607		33.047	—	—	33.078	23	NUTS	1	Chl.
2	1014		250		0955					251.381	5.226		32.391					551	2	
3	1013		200		0957					201.293	4.935		32.082					552	3	
4	1005		150		0959					150.079	4.561		31.849					553	4	
5	1011		100		1001					100.623	4.399		31.734					554	5	100ml
6	PINGER				✓														6	
7	1010		75		1002					74.163	4.366		31.689					555	7	100ml
8	1009		50		1003					49.556	4.421		31.669					556	8	
9	1007		30		1004					30.082	4.695		31.687					557	9	
10	1006		20		1005					19.959	4.645		31.668					558	10	
11	1012		10		1005					9.986	4.583		31.622					559	11	
12																			12	

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
021	MILLER FREEMAN	FOCI-88 II MF-88-04	41			021

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 109 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	57	32.37	N	155	34.49	18	APR	88	10	36	05.0	04.0	09	4	8	140	17	8	8	2	189	021

CTD
Type & SN Seabird 912208
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 109/1032
at Surface 1036
Start Down 1036
at Bottom 1042
Start Up 1047
at Surface
Data off 1042

Data Location

Tape/Diskette I.D.	File Name/Header
APR88A	18APR1029

Remarks Nutrients + chlorophylls taken.

no changes

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	252	A	(182) 177	1042	1047					177.095	4.467		31.740	98	4.39	31.696	15	Nuts	1	Chl.
2	1014		150		1048					150.285	4.469		31.696					560	2	
3	1013		100		1050					100.194	4.468		31.664					561	3	100ml
4	1005		75		1051					74.868	4.461		31.661					562	4	
5	1011		50		1052					50.105	4.320		31.603					563	5	
6	PINGER				✓														6	
7	1010		30		1053					29.926	4.201		31.561					564	7	100ml
8	1009		20		1053					20.396	4.175		31.552					565	8	
9	1007		10		1054					10.013	4.043		31.518					566	9	
10	1006																		10	
11	1005																		11	
12																			12	

* SALINITY & THERMOMETER SAMPLE DATA INDICATE NUTS & CHLOR. SAMPLES TAKEN AT INCORRECT DEPTHS ✓

Initials CD

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
022	MILLER FREEMAN	FOCI-88-II MF-88-04	43			022

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 109 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
022	57	26.90	N	155	44.41	18	APR	88	11	48	05.0	04.0	09	4	8	150	20	8	8	2	183	022

no change

CTD Type & SN Seabird 9220B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on	1144
at Surface	
Start Down	1148
at Bottom	1153
Start Up	1154
at Surface	
Data off	1154

Data Location

Tape/Diskette I.D.	File Name/Header
APR882	18APR1138

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	251	—	(179) 174							174.254	4.408		31.644	—	—	31.676	16		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
023	Miller Freeman	MF-88-04	44			023

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 109 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	57	23.76	N	155 38.65	W	18	APR	88	12	38	04.6	04.0	09	4	8	180	25	9	8	2	292	023

CTD
Type & SN Seabird 9220B
Press. SN 26072
Temp. SN 310
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 109/1238
at Surface 1238
Start Down 1238
at Bottom 1248
Start Up 1249
at Surface
Data off 1238

Data Location

Tape/Diskette I.D.	File Name/Header
	18APR1225

Remarks

292

no change

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	–	(287) 280		1248					279.592	5.609		33.020	—	—	33.052	27		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
024	Miller Freeman	MF-88-04 FOCI-88-II	45			024

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 109 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	57	21.00	N	155	31.96	18	APR	88	13	38	05.0	04.2	094	8	8	185	23	8	8	2	287	024

CTD
Type & SN Seabird 912208
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 1328
at Surface 1330
Start Down
at Bottom 1339
Start Up
at Surface
Data off

Data Location
Tape/~~Diskette~~ I.D. APR882
File Name/Header 18APR1323

Remarks

no change

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	251	–	(282) 248		1341					248.184	5.607		33.109	—	—	33.141	08		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
025	Miller Freeman	FOCI-88-II MF-88-04	47			025

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr.	JD = 109	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
025	57	17.90	N	155	25.37	18	APR	88		14	24	03.8	03.2	09	4	B	180	25	88	2	265	025

CTD
Type & SN Seabird 912208
Press. SN 26072
Temp. SN 310
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on	109 / 1421
at Surface	1423
Start Down	1424
at Bottom	1433
Start Up	1434
at Surface	
Data off	1433

Data Location

Tape/~~Diskette~~ I.D.	File Name/Header
APR882	18APR1419

Remarks

no change

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	251	–	(261) 253		1433					253.164	5.610		33.112	—	—	33.143	21		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
026	Miller Freeman	MF-88-04	49			026

Consec. Cast #	Latitude Deg. Min.	N or S	Longitude Deg.	E or W	Date JD = 109 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	5715 06	N	155188 7	W	18 APR 88	1528	05.5	04.5	09.4	8	1	80	25	8	8	6	252	026

changed 0-1m from 31.690‰ to 31.834‰

CTD
Type & SN Seabird 9122OB
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 109 / 1526
at Surface 1527
Start Down 1528
at Bottom 1536
Start Up 1542
at Surface
Data off 1536

Data Location
Tape/Diskette I.D. APR882
File Name/Header 18 APR 1522

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	(246)	153650	1541					233.067.	5.567.		32.893.	236	5.55	32.925	12		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
027	Miller Freeman	FOCI-88-11 MF-88-02	54			027

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 109 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	12.84	N	155	12.02	W	18	APR	88	2009	04.5	03.8	11	5	7	185	23	8	3	5	237 027

no changes

CTD
Type & SN Seabird 912208
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 109 / 2005
at Surface 2008
Start Down 2009
at Bottom 2016
Start Up 2017
at Surface
Data off 2017

Data Location
Tape/Diskette I.D. APR882
File Name/Header 18APR1952

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	—	(233) 225		2017					225.219.	5.591.		33.045.	—	—	33.076	34		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
028	Miller Freeman	FOCI-88-II MF-88-04	58			028

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 110 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
028	57	09.56	N	155	05.74	W	19	APR	88	00	06	07.8	07.0	11.5	8	205	25	8	3	2	227	028

no change

CTD
Type & SN Seabird 912208
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 110 / 0004
at Surface 0005
Start Down 0006
at Bottom 0013
Start Up 0014
at Surface
Data off 0013

Data Location
Tape/Diskette I.D. APR882
File Name/Header 19APR0000

Remarks No sample bottle — Winch test

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	—	—												—	—	—	—		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
029	MILLER FREEMAN	FOCI 88 II MF-88-04	59			029

Consec. Cast #	Latitude Deg. Min.	N or S	Longitude Deg.	E or W	Date JD = 110 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
029	5706 78	N	154 59 88	W	19 APR 88	01 20	07 2	06 3	13	5	8	226	24	8	3	2	209	029

CTD
Type & SN SBE 912208
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 110 / 0117
at Surface 0119
Start Down 0120
at Bottom 0126
Start Up 0133
at Surface
Data off 0127

Data Location
Tape/Diskette I.D. APR88 2
File Name/Header 19APR 0112

Remarks

no change

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	(206.5) 194	012750	0133					193.953	5.340		32.554	196	5.32	32.582	18		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
030	MILLER FREEMAN	MF-88-04 FOCI 88 II	61			030

Consec. Cast #	Latitude Deg. Min.	N or S	Longitude Deg.	E or W	Date JD = 110 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
030	5659 97	N	155 07 14	W	19 APR 88	02 53	07 2	06 3	13	5	8	220	25	83	2	226	030

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 0249
at Surface
Start Down 0253
at Bottom 0300
Start Up 0300
at Surface 0313
Data off 0300

Data Location 226

Tape/Diskette I.D.	File Name/Header
APR882	19APR0245

Remarks nutrients collected.
silt in cond cell pump?

changed 3m
fr 31.6317‰
to 31.7209‰

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	251	—	(221) 198		0301					197.464.	5.466.		26.417.			32.846	(01)	Nuts	1
2			200		0302					196.979.	5.465.		26.401.					567	2
3			150		0304					150.132.	3.768.		32.169.					568	3
4			100		0306					102.027.	4.328.		32.186.					569	4
5			75		0308					75.541.	4.671.		32.171.					570	5
6	PINGER				✓														6
7			50		0309					50.151.	4.709.		32.115.					571	7
8			30		0310					31.129.	4.091.		31.698.					572	8
9			20		0311					19.808.	4.089.		31.695.					573	9
10			10		0312					10.171.	4.088.		31.695.					574	10
11																			11
12																			12

Initials SD
✓

7.2 6.3 13 5 8 220 25 8 3 2 32.045 5.614

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
031	MILLER FREEMAN	FOCI 88 II MF-88-04	62			031

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
031	57 02	64 N	155 11	83 W	19 APR 88	03 56	04 9	04 0	14	5	8	203	20	8	3	2	242	031

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.	34472.934 (-0.005)	34487.629 [4.698]
Temp.	6604.074 (4.322)	6549.941 [4.039]
Cond.	3082.758	8675.703
SAL ~~Other~~	0.038	31.610

Times JD/Time

Data on	0350
at Surface	0356
Start Down	0357
at Bottom	0405
Start Up	0410
at Surface	
Data off	0420

Data Location

Tape/Diskette I.D.	File Name/Header
APR882	19APR0349

Remarks Nutrients + chlorophylls collected

no changes

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.	
1	252	A	(237) 232	0405	0410	35146.035	6778.277	9009.270		228.907	5.614		33.045	233	5.60	33.077	37	Nuts	1	Chl.
2	1014		200		0411					200.855	5.372		32.482					575	2	
3	1013		150		0413					150.174	5.082		32.210					576	3	
4	1012		100		0414					100.044	4.814		32.024					507	4	100ml
5	1011		75		0416					73.232	4.671		31.965					508	5	100ml
6	PINGER				✓					—	—		—						6	
7	1005		50		0417					51.542	4.480		31.822					509	7	100ml
8	1009		30		0418					29.790	4.112		31.639					510	8	
9	1007		20		0419					19.914	4.100		31.635					511	9	
10	1006		10		0420					9.636	4.102		31.636					512	10	
11																			11	
12																			12	

Initials _____
✓ _____

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
032	MILLER FREEMAN	FOCI 88 II MF-88-04	63			032

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Date Mo.	Date Yr. (JD = 110)	Time GMT Hr.	Time GMT 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
032	57	05.50	N	155 17.48	W	19	APR	88	05	46	05.1	04.2	16	5	8	223	18	8	3	2	255 (253)	032

no change

CTD
Type & SN SBE 9/22D B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.	34472.844 (-0.040)	34482.563 (3.012)
Temp.	6596.691 (4.389)	6599.043 (4.382)
Cond.	3034.363	8719.031
Other (SAL)	0.021	31.683

Times JD/Time
Data on 0542
at Surface 0546
Start Down 0546
at Bottom 0554
Start Up
at Surface
Data off

Data Location
Tape/Diskette I.D. APR882
File Name/Header 19APR0539

Remarks Nutrients collected.

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	–	(247)		0555					240.256	5.597		33.067	—	—	33.097	(36)	Nuts	1
2	1014		200		0557					199.824	5.298		32.453					498	2
3	1013		150		0559					148.895	4.790		32.041					499	3
4	1012		100		0600					100.456	4.605		31.904					500	4
5	1011		75		0601					74.690	4.493		31.837					501	5
6	PINGER				✓														6
7	1005		50		0603					49.947	4.444		31.788					502	7
8	1009		30		0604					29.902	4.424		31.769					503	8
9	1007		20		0605					20.273	4.382		31.725					504	9
10	1006		10		0605					9.784	4.376		31.684					505	10
11																			11
12																			12

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
033	MILLER FREEMAN	FOCI 88 II MF-88-04	64			033

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 110 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
033	57	07.91	N	155 22.34	W	19	APR	88	07	04	04.5	04.0	1658	2	0	21	8	3	2		261 (260)	033

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 0658
at Surface 0703
Start Down 0704
at Bottom 0712
Start Up 0717
at Surface
Data off 0712

Data Location

Tape/Diskette I.D.	File Name/Header
APR88 2	19APR0653

Remarks nutrients & chlorophyll taken.

no change

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	251		262 245	0712	0717					244.627	5.598		33.051	—	—	33.085	41	Nuts	1	Chl.
2	1014		245		0717					244.877	5.598		33.051					506	2	
3	1013		200		0719					200.413	5.433		32.560					490	3	
4	1012		150		0721					150.957	5.223		32.338					491	4	
5	1011		100		0722					100.311	4.826		32.134					492	5	100ml
6	PINGER				✓														6	
7	1008		75		0724					74.626	4.739		32.018					493	7	100ml
8	1009		50		0725					49.294	4.680		31.951					494	8	
9	1007		30		0726					29.415	4.663		31.920					495	9	
10	1006		20		0727					20.451	4.677		31.917					496	10	
11	1010		10		0727					10.765	4.628		31.871					497	11	
12																			12	

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
034	MILLER FREEMAN	FOCI 88 II MF-88-04	65			034

Consec. Cast #	Latitude Deg. Min.	N or S	Longitude Deg.	E or W	Date JD = 110 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
034	57 10.53	N	155 27.95	W	19 APR 88	08 05	05.0	04.2	1658	2	1	0	18	8	2	266	034

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 0802
at Surface
Start Down 0805
at Bottom 0814
Start Up 0819
at Surface
Data off 0814

Data Location 265

Tape/Diskette I.D.	File Name/Header
APR882	19APR0801

Remarks Nutrients collected.

no change

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	(259) 252	0814	0819					251.500	5.607		33.066	197	5.26	32.713	(38)	Nuts	1
2	1014		250		0819					250.780	5.607		33.066					481	2
3	1013		200		0821					199.875	5.577		32.892					482	3
4	1012		150		0822					151.017	5.009		32.287					483	4
5	1011		100		0824					100.298	4.873		32.064					484	5
6	PINGER				✓														6
7	1005		75		0825					74.954	4.810		32.023					485	7
8	1009		50		0826					50.493	4.742		31.987					486	8
9	1007		30		0827					29.339	4.669		31.921					487	9
10	1006		20		0828					19.938	4.664		31.919					488	10
11	1010		10		0828					9.887	4.655		31.908					489	11
12																			12

* SALINITY & THERM SAMPLES INDICATE NUTS. & CHLORS. TAKEN AT INCORRECT DEPTHS

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
035	MILLER FREEMAN	FOCI 88 II MF-88-04	66			

Consec. Cast #	Latitude Deg. Min.	N or S	Longitude Deg.	E or W	Date JD = 110 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
035	5712 96	N	15533 81	W	19APR88	0902	050	048	1758	2	00	169	—	2		278		035

changed 0-1m fm 31.241 to 31.660

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 090D
at Surface 0902
Start Down 0902
at Bottom 0911
Start Up 0911
at Surface
Data off 0911

Data Location
Tape/Diskette I.D. APR88 2
File Name/Header 19APR0859

Remarks Nutrients + chlorophylls collected.

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.	
1	251	–	(271) 265		0911					264.378	5.600		32.999	—	—	33.033	43	Nuts	1	Chl
2	1014		250		0912					250.433	5.593		32.978					472	2	
3	1013		200		0914					200.450	5.368		32.517					473	3	
4	1012		150		0915					150.455	5.269		32.316					474	4	
5	1011		100		0917					100.013	4.853		32.092					475	5	100ml
6	PINGER				✓														6	
7	1005		75		0918					75.181	4.810		32.036					476	7	100ml
8	1009		50		0919					50.737	4.590		31.871					477	8	
9	1007		30		0920					30.534	4.386		31.709					478	9	
10	1006		20		0921					19.691	4.463		31.655					479	10	
11	1010		10		0921					10.460	4.505		31.637					480	11	
12																			12	

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
036	MILLER FREEMAN	FOCI 88 II MF-88-04	67			036

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 110 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
036	57	15.44	N	155 39.86	W	19	APR	88	10	02	05.0	04.2	17	5	8	205	21	8	8	2	281	036

changed 0.4mo from 31.443‰ to 31.597‰

CTD
Type & SN SBE 91220 B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 0958
at Surface 1001
Start Down 1002
at Bottom 1010
Start Up 1011
at Surface
Data off 1011

Data Location
Tape/Diskette I.D. APR882
File Name/Header 19APR0955

Remarks Nutrients collected.

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	252	A	(275) 250	1012	1017					248.658	5.253		32.436	253	5.24	32 468	40	nuts	1
2	1014		250		2ND TRIP 1017					250.157	5.252		32.435					463	2
3	1013		200		1019					201.083	5.194		32.322					464	3
4	1012		150		1021					150.502	4.889		32.079					465	4
5	1011		100		1022					99.671	4.609		31.880					466	5
6	PINGER				✓														6
7	1005		75		1024					75.358	4.550		31.779					467	7
8	1009		50		1025					50.991	4.650		31.677					468	8
9	1007		30		1026					30.540	4.610		31.648					469	9
10	1006		20		1026					19.577	4.436		31.589					470	10
11	1010		10		1027					10.753	4.438		31.589					471	11
12																			12

Initials SD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
037	MILLER FREEMAN	FOCI 88 II MF-88-04	68			037

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
037	5718 06 N	155 45 44 W	19 APR 88	1107	05 0	04 0	17	5	8	199	25	8	8	2	265	037

no changes

CTD
Type & SN SBE 91220 B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 1104
at Surface 1107
Start Down 1107
at Bottom 1115
Start Up 1116
at Surface
Data off 1116

Data Location
Tape/Diskette I.D.: APR 882
File Name/Header: 19APR1100

Remarks: Nutrient + chlorophyll taken. 2 samples filtered for 50m depth. * 92 ml. First filter was slow had white spot. Question filtration.

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.	
1	251	—	(258) 250		1116					251.322	5.506		32.863	—	—	32.899	39	nuts	1	Chl.
2	1014		250		1116					251.351	5.506		32.863					454	2	
3	1013		200		1118					200.352	4.821		32.047					455	3	
4	1012		150		1119					150.328	4.509		31.809					456	4	
5	1011		100		1121					100.930	4.410		31.658					457	5	100ml
6	PINGER				✓														6	
7	1005		75		1122					75.151	4.391		31.650					458	7	100ml
8	1009		50		1123					50.888	4.261		31.591					459	8	+ *92ml
9	1007		30		1124					30.696	4.338		31.585					460	9	
10	1006		20		1124					20.265	4.353		31.585					461	10	
11	1010		10		1125					9.827	4.351		31.586					462	11	
12																			12	

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
038	MILLER FREEMAN	FOCI 88 II MF-88-04	69			038

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 110 Day	Mo.	Yr.	Time GMT Hr.	Time GMT 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
038	57	21.00	N	155	51.42	19	APR	88	12	09	03.8	03.01	758	19	5	26	88	2			99	038

changed 3m from 31.583‰ to 31.615‰

CTD
Type & SN SBE 91220 B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface 1208
Start Down 1209
at Bottom 1212
Start Up 1212
at Surface
Data off 1212

Data Location 99
Tape/Diskette I.D.: APR882
File Name/Header: 19APR1205

Remarks nutrients and chlorophylls taken.

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.	chl.
1	252	A	(92) 76	1213	1218					75.797	4.094		31.641	78	4.06	31.677	42	Nuts	1	
2	1014		75		1218					75.737	4.099		31.644					449	2	100ml
3	1013		50		1219					50.680	4.102		31.646					450	3	
4	1012		30		1220					30.839	4.157		31.635					451	4	
5	1011		20		1221					20.788	4.221		31.628					452	5	
6	PINGER				✓														6	
7	1005		10		1222					10.024	4.242		31.627					453	7	100ml
8	1009																		8	
9	1007																		9	
10	1006																		10	
11	1010																		11	
12																			12	

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
39	MILLER FREEMAN	FOCI 88 II MF-88-04	80			42

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 111 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
039	57	43.72	N	155	04.62	20	APR	88	01	08	05.4	04.4	15	3	8	070	15	8	8	2	297	42

no changes

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 111 / 0106
at Surface 0107
Start Down 0108
at Bottom 0116
Start Up
at Surface
Data off 0117

Data Location
Tape/Diskette I.D. APR 882
File Name/Header 20APR0100

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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																			1
2																			2
3																			3
4																			4
5																			5
6	252	—	(292) 280	011745	0122					279.720	5.582		32.966	—	—	32.998	13		6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
040	MILLER FREEMAN	FOCI 88 II MF-88-04	95	FOX 61		43

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 111 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
040	57	41.81	N	155	15.71	20	APR	88	17	39	05.8	04.0	06	5	8	045	23	7	6	1297	43

changed 0-1 m from 31.449‰ to 31.830‰

CTD
Type & SN SBE 91220 B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 111 / 1735
at Surface 1736
Start Down 1739
at Bottom 1748
Start Up 1748
at Surface
Data off 1748

Data Location
Tape/~~Diskette~~ I.D. APR882
File Name/Header 20APR1730

Remarks 284 max depth indicated
nutrients + chlorophyll collected.

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	–	(292) 284		1748					284.183	5.580		32.941			32.974	24	Nuts	1
2	1014	–	250		174942					251.678	5.528		32.838					321	2
3	1013	–	200		175119					200.120	5.101		32.247					322	3
4	1012	–	150		175302					150.317	4.825		32.113					323	4
5	1011	–	100		175439					99.571	4.637		31.952					324	5
6	1005	–	75		175539					75.058	4.714		31.873					325	6
7	1009	–	50		175642					51.189	4.522		31.801					326	7
8	1007	–	30		175840					30.031	4.618		31.801					327	8
9	1006	–	20		175940					21.787	4.625		31.787					328	9
10	1010	–	10		180033					10.826	4.615		31.778					329	10
11																			11
12																			12

Chl.

100ml

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
041	MILLER FREEMAN	FOCI 88 II MF-88-04	97	FOX 60		44

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = 111 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
041	57	40.86	N	155	09.95	20	APR	88	18	41	03.8	03.8	06	5	8	040	23	7	6	1	291	44

CTD
Type & SN SBE 91220 B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 111 / 1839
at Surface 1840
Start Down 1841
at Bottom 1849
Start Up 1850
at Surface
Data off 1850

Data Location
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 20APR.1836

Remarks 278 m max indicated depth: monitor nutrients and chlorophyll collected.

no change

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	252	–	(285) 278		185029					277.176	5.591		33.019	—	—	33.050	35	nuts	1	chl.
2	1014	–	250		185144					248.740	5.539		32.890					330	2	
3	1013	–	200		185319					200.886	5.240		32.336					331	3	
4	1012	–	150		185504					150.988	4.882		32.107					332	4	
5	1011	–	100		185645					100.283	4.712		31.967					333	5	100ml
6	1005	–	75		185758					75.547	4.675		31.944					334	6	
7	1009	–	50		185914					51.150	4.570		31.837					335	7	
8	1007	–	30		190025					30.704	4.566		31.835					336	8	
9	1006	–	20		190117					20.743	4.568		31.833					337	9	
10	1010	–	10		190205					10.302	4.567		31.833					338	10	
11																			11	
12																			12	

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
042	Miller Freeman	FOCI 88 II MF-88-04	98	FOX 59		45

Consec. Cast #	Latitude Deg. Min.	N or S	Longitude Deg.	E or W	Date JD = 111 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	5738	N	155041	W	20 APR 88	1937	045	041	06	5	8	052	19	6	7	1	256	45

CTD
Type & SN SBE 91220 B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 111 / 1935
at Surface 1936
Start Down 1937
at Bottom 1945
Start Up 1953
at Surface
Data off 1946

Data Location
Tape/~~Diskette I.D.~~ APR 882
File Name/Header 20 APR 1932

Remarks 244 m max indicated cast depth
Nutrient samples collected

no changes

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	(250) 240	194715	195208					239.080	5.516		32.793	242	5.51	32.831	44	Nuts.	1
2	1014	—	242		195244					241.588	5.518		32.797					339	2
3	1013	—	200		195411					199.586	5.355		32.493					340	3
4	1012	—	150		195546					149.796	5.248		32.301					341	4
5	1011	—	100		195726					100.138	4.916		32.101					342	5
6	1005	—	75		195842					75.128	4.784		32.057					343	6
7	1009	—	50		195955					50.627	4.745		31.973					344	7
8	1007	—	30		200102					30.521	4.690		31.930					345	8
9	1006	—	20		200152					20.748	4.327		31.814					346	9
10	1010	—	10		200234					11.239	4.323		31.808					347	10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
043	MILLER FREEMAN	FOCI 88 II MF-88-04	99	FOX 58		46

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 111 Day	Mo.	Yr.	Time GMT Hr.	Time GMT 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	57	36.27	N	155 00.66	W	20	APR	88	20	29	04.2	04.0	07	6	8	050	23	6	8	1	239	046

CTD
Type & SN SBE 91220 B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 111 / 2027
at Surface 2028
Start Down 2029
at Bottom 2036
Start Up 2038
at Surface
Data off 2038

Data Location
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 20APR2025

Remarks 226 m max indicated depth of cast
Nutrient & Chlorophyll samples collected

no change

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.	
1	251	–	(233) 226		203719					226.283	5.429		32.650	—	—	32.685	45	NUTS	1	Chl
2	1014		227		203739					226.124	5.431		32.652					348	2	
3	1013		200		203906					199.968	5.335		32.539					349	3	
4	1012		150		204053					150.753	5.175		32.284					350	4	
5	1011		100		204251					100.461	4.780		32.116					351	5	✓
6	1005		75		204410					75.440	4.671		32.067					352	6	✓
7	1009		50		204524					50.211	4.811		32.037					353	7	✓
8	1007		30		204632					30.378	4.537		31.858					354	8	✓
9	1006		20		204713					20.466	4.538		31.857					355	9	✓
10	1010		10		204800					11.094	4.553		31.853					356	10	✓
11																			11	
12																			12	

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
044	MILLER FREEMAN	FOCI 88 II MF-88-04	100	FOX 57		47

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 111 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
044	57	33.15	N	154	52.45	20	APR	88	21	31	04.7	03.9	07	5	8	050	21	6	8	1	234	047

CTD
Type & SN SBE 91220 B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 111/2129
at Surface 2130
Start Down 2131
at Bottom 2138
Start Up 2139
at Surface
Data off 2138

Data Location
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 20 APR 2124

no changes

Remarks 222 m max indicated cast depth
Nutrient samples collected

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	251	–	(228) 222		213855					221.932	5.396		32.614	—	—	32.648	46	Nuts.	1
2	1014		200		214016					201.568	5.198		32.372					357	2
3	1013		150		214157					150.466	5.216		32.261					358	3
4	1012		100		214339					100.232	4.572		32.017					359	4
5	1011		75		214504					75.539	4.331		31.873					360	5
6	1005		50		214618					51.246	4.194		31.750					361	6
7	1009		30		214729					31.416	4.233		31.774					362	7
8	1007		20		214818					20.935	4.253		31.744					363	8
9	1006		10		214911					10.270	4.269		31.743					364	9
10	1010		—																10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
045	MILLER FREEMAN	FOCI 88 II MF-88-04	101	FOX 56		48

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 111 Day	Mo.	Yr.	Time GMT Hr.	Time GMT 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
045	57	31.01	N	154 46.91	W	20	APR	88	22	22	04.8	04.0	07	5	8	045	17	6	8	1	219	048

CTD
Type & SN: SBE 91220 B
Press. SN: 26072
Temp. SN: 710
Cond. SN: 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on: 111 / 2219
at Surface: 2221
Start Down: 2222
at Bottom: 2229
Start Up:
at Surface:
Data off: 2229

Data Location
Tape/~~Diskette I.D.~~: APR 88 2
File Name/Header: 20 APR 2217

no change

Remarks: 209 m max indicated depth of cast
Nutrient and Chlorophyll samples collected

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.	
1	252	A	(214) 206	223000	223500					206.592	5.167		32.346	207	5.16	32.380	47	Nuts.	1	Chl
2	1014	–	200		223539					200.995	5.167		32.345					365	2	
3	1013	–	150		223719					150.709	5.228		32.236					366	3	
4	1012	–	100		223902					100.649	4.968		32.092					367	4	✓ 100 ml.
5	1011	–	75		224022					75.498	4.432		31.832					368	5	✓
6	1005	–	50		224141					51.168	4.239		31.775					369	6	✓
7	1009	–	30		224254					30.880	4.192		31.719					370	7	✓
8	1007	–	20		224345					20.926	4.225		31.687					371	8	✓
9	1006	–	10		224435					10.921	4.237		31.679					372	9	✓
10	1010																		10	
11																			11	
12																			12	

Initials: DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
46	MILLER FREEMAN	FOCI 88 II MF-88-04	102	FOX 55		49

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = 111 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
046	57	28.71	N	154 42.08	W	20	APR	88	23	16	05.0	04.6	07	4	8	01	01	2	6	8	66	049

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 111 / 2314
at Surface 2315
Start Down 2316
at Bottom 2318
Start Up 2319
at Surface 2324
Data off 2318

Data Location

Tape/Diskette I.D.	File Name/Header
APR 88 2	20 APR 2310

no changes

Remarks 60 (62) m max indicated cast depth
Nutrient & Chlorophyll samples collected

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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																		Nuts	1
2																			2
3	1013		30							31.007	4.529		31.992					374	3
4	1012		20							20.431	4.332		31.835					375	4
5	1011		10							10.988	4.235		31.727					376	5
6	1005		50															373	6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Chl

100 ml

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
047	MILLER FREEMAN	FOCI 88 II MF 88 04	105			50

Consec. Cast #	Latitude Deg. Min.	N or S	Longitude Deg.	E or W	Date JD = 112 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
047	57 43.91	N	155 04.52	W	21 APR 88	01 19	13.9	12.5	08	4	8	089	14	6	8	6	299	50

changed 0-2m for 31.9567‰ to 31.9069‰

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 112 / 0117
at Surface 0118
Start Down 0119
at Bottom 0127
Start Up 0128
at Surface
Data off 0128

Data Location
Tape/~~Diskette I.D.~~ APR88 2
File Name/Header 21 APR0111

Remarks 287 m max indicated cast depth

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	(294) 280	012840	013340					280.769	5.592		32.988	283	5.59	33.019	48		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
048	MILLER FREEMAN	FOCI 88 II MF 8804	114			051

Consec. Cast #	Latitude Deg. Min.	N or S	Longitude Deg.	E or W	Date JD = 112 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
048	5740	N	155 10	W	21 APR 88	0722	0350	0309	48	2	7	5	35	6	8	7	300	051

changed 0-2m fm 31.735‰ to 31.855‰

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface 0722
Start Down 0722
at Bottom 0732
Start Up 0732
at Surface
Data off 0732

Data Location

Tape/Diskette I.D.	File Name/Header
APR 88 2	21Apr0711

Remarks No water samples

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1																			1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
049	MILLER FREEMAN	FOCI 88 II MF 88 04	123	FOX 61		53

Consec. Cast #	Latitude Deg. Min.	N or S	Longitude Deg.	E or W	Date JD = 112 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	5741 95	N	155 15 91	W	21 APR 88	1449	004	000	14	4	8	265	25	6	8	1	301	53

CTD
Type & SN SBE 9122OB
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 112 / 1445
at Surface 1448
Start Down 1449
at Bottom 1457
Start Up
at Surface
Data off 1458

Data Location
Tape/Diskette I.D.: APR 88 2
File Name/Header: 21APR1440

Remarks 288 m max indicated cast depth
Nutrient & Chlorophyll samples collected

changed 0-1m fm 31.451 to 31.521

.1m = 296 m
5.577-32.993

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.	
1	251	—	286		145825					287.253	5.584		32.973	—	—	33.011	49	Nuts.	1	Chl
2	1014		250		150023					251.233	5.403		32.649					377	2	
3	1013		200		150230					200.301	4.937		32.185					378	3	
4	1015		150		150458					151.758	4.705		32.055					379	4	
5	1012		100		150705					100.566	4.802		31.965					380	5	100ml
6	1011		75		150822					74.835	4.728		31.885					381	6	
7	1005		50		150941					51.647	4.499		31.664					382	7	
8	1009		30		151047					31.546	4.389		31.601					383	8	
9	1007		20		151140					21.084	4.356		31.524					384	9	
10	1006		10		151218					9.968	4.344		31.518					385	10	
11																			11	
12																			12	

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
050	MILLER FREEMAN	MF 88 04 FOCI 88 II	124	FOX 60	check header file for project name	54

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 112 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
050	57	41.01	N	155	10.17	21	APR	88	15	54	01.0	00.4	1558		26	0	23	5	8	296	54

CTD
Type & SN SBE 91220 B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 112/1551
at Surface 1552
Start Down 1554
at Bottom 1602
Start Up 1603
at Surface
Data off 1603

Data Location
Tape/Diskette I.D. APR88 2
File Name/Header 21 APR 1549

Remarks 283 m max indicated cast depth
Nutrient & Chlorophyll samples collected

no changes

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	252	A	250	160425	160926					251.642	5.507		32.737	253	5.50	32.764	50	Nuts	1
2	1014		250		160948					251.126	5.506		32.734					386	2
3	1013		200		161129					201.797	5.183		32.326					387	3
4	1015		150		161313					150.639	5.017		32.189					388	4
5	1012		100		161458					100.554	4.927		32.121					389	5
6	1011		75		161623					76.476	4.921		32.057					390	6
7	1005		50		161738					50.356	4.573		31.882					391	7
8	1009		30		161844					30.505	4.470		31.825					392	8
9	1007		20		161925					21.317	4.359		31.771					393	9
10	1006		10		162012					10.004	4.250		31.698					394	10
11																			11
12																			12

Chl

100 ml

Initials DMD

✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
51	MILLER FREEMAN	MF 88 04 FOCI 88 II	125	FOX59		55

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude Min.	E or W	Date JD = 112 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	57	38.59	N	155	04.24	W	21	APR	88	17	04	023	016	16	5	8	263	28	5	8	1	260	55

CTD
Type & SN SBE 91220 B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 112 / 1700
at Surface 1703
Start Down 1704
at Bottom 1713
Start Up 1714
at Surface
Data off 1713

Data Location
Tape/Diskette I.D. APR 88 2
File Name/Header 21 APR 1656

Remarks 248 m max indicated cast depth
Nutrient Samples collected

no changes

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	251	—	246		171330					246.482	5.430		32.649	—	—	32.688	52	NUTS.	1
2	1014		247		171412					246.557	5.430		32.649					395	2
3	1013		200		171549					200.476	5.264		32.469					396	3
4	1015		150		171727					150.937	5.123		32.281					397	4
5	1012		100		171909					101.102	4.948		32.168					398	5
6	1011		75		172027					74.837	4.694		32.010					399	6
7	1005		50		172137					50.916	4.504		31.854					400	7
8	1009		30		172246					29.768	4.458		31.844					401	8
9	1007		20		172334					20.912	4.461		31.845					402	9
10	1006		10		172420					10.431	4.463		31.845					403	10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
52	MILLER FREEMAN	FOCI 88 II MF 88 04	126	FOX 58		56

Consec. Cast #	Latitude Deg. Min.	N or S	Longitude Deg.	E or W	Date JD = 112 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
52	5736 38	N	155 00 50	W	21 APR 88	1800	0309	0029	1648	4	8	28	27	5	8	1	241	056

CTD
Type & SN SBE 9122038
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 112 / 1757
at Surface 1759
Start Down 1800
at Bottom 1808
Start Up 1809
at Surface
Data off 1808

Data Location
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 21 APR 1753

Remarks 230 m max cast depth indicated
Nutrent & Chlorophyll samples collected

no change

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.	
1	251	–	229		180906					229.014	5.479		32.698	—	—	32.732	51	NUTS.	1	Chl
2	1014		230		180920					228.816	5.479		32.698					404	2	
3	1013		200		181039					200.863	5.418		32.579					405	3	
4	1015		150		181230					151.246	5.212		32.283					406	4	
5	1012		100		181412					100.884	4.894		32.070					407	5	100ml
6	1011		75		181533					75.748	4.745		32.001					408	6	
7	1005		50		181646					50.816	4.658		31.926					409	7	
8	1009		30		181754					29.334	4.590		31.872					410	8	
9	1007		20		181857					19.617	4.588		31.871					411	9	
10	1006		10		181935					10.415	4.587		31.870					412	10	
11																			11	
12																			12	

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
53	MILLER FREEMAN	FOX 88 II MF 88 04	127	FOX 57		57

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 112 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
53	57	33.11	N	154	52.63	21	APR	88	19	15	05.5	03.7	17	4	8	293	22	5	8	1	231	057

CTD
Type & SN SBE 91220 B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 112 / 1913
at Surface 1914
Start Down 1915
at Bottom 1922
Start Up 1923
at Surface
Data off 1923

Data Location
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 21 APR 1907

Remarks 221 m max cast depth indicated
Nutrient samples collected

changed 0-1m from 31.123‰ to 31.756‰

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	200	192415	192918					200.222	5.151		32.368	201	5.14	32.400	53	NUTS	1
2	1014	–	200		192933					200.109	5.151		32.367					413	2
3	1013	–	150		193116					150.747	5.189		32.254					414	3
4	1015	–	100		193303					102.385	4.758		31.980					415	4
5	1012	–	75		193430					75.251	4.471		31.838					416	5
6	1011	–	50		193539					49.805	4.265		31.765					417	6
7	1005	–	30		193651					30.740	4.235		31.756					418	7
8	1009	–	20		193740					19.970	4.233		31.756					419	8
9	1007	–	10		193833					10.600	4.238		31.756					420	9
10	1006	–	—		—														10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
54	MILLER FREEMAN	FOCI 88 II MF-88-04	128	FOX 56		58

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 112 Day	Mo.	Yr.	Time GMT Hr.	Time GMT 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
054	57	30.83	N	154	47.24	W 21	APR	88	20	14	06.0	04.0	18	5	8	275	25	3	8	1	216	58

CTD
Type & SN SBE 91220 B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 112/2012
at Surface 2013
Start Down 2014
at Bottom 2021
Start Up 2022
at Surface
Data off 2021

Data Location
Tape/Diskette I.D.: APR 88 2
File Name/Header: 21 APR 2009

no change

Remarks 206 m max indicated cast depth
Nutrient & Chlorophyll samples collected

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.	
1	251	-	206		202138					205.292	5.120		32.367	—	—	32.402	54	Nuts.	1	Chl
2	1014		200		202230					200.659	5.119		32.367					421	2	
3	1013		150		202420					150.978	4.932		32.187					422	3	
4	1015		100		202600					101.264	4.729		32.025					423	4	✓ 100ml
5	1012		75		202718					76.198	4.866		31.971					424	5	✓
6	1011		50		202841					50.575	4.693		31.806					425	6	✓
7	1005		30		202950					30.652	4.666		31.722					426	7	✓
8	1009		20		203036					20.815	4.667		31.722					427	8	✓
9	1007		10		203128					11.087	4.666		31.723					428	9	✓
10	1006																		10	
11																			11	
12																			12	

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
55	MILLER FREEMAN	FOCI 88 III MF-88-04	129	FOX 55	Radar fix: 57° 28.7' N 154° 41.8' W	59

Consec. Cast #	Latitude Deg. Min.	N or S	Longitude Deg.	E or W	Date JD = 112 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
055	5728 56	N	154 42 36	W	21 APR 88	2108	027	025	1019	5	8	290	20	4	8	1	66	59

changed 2m from 31.713 to 31.743

CTD
Type & SN SBE 9122038
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 112 / 2105
at Surface 2106
Start Down 2108
at Bottom 2110
Start Up 2111
at Surface
Data off 2110

Data Location
Tape/Diskette I.D.: APR 88 2
File Name/Header: 21 APR 2103

Remarks 59m max indicated cast depth
Nutrient & Chlorophyll samples collected

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.	
1	251	–	59		211050					58.523	4.526		32.009	—	—	32.032	55	Nuts.	1	Chl
2	1014	–	50		211146					51.186	4.438		31.947					429	2	✓ 100ml
3	1013	–	30		211310					31.474	4.366		31.855					430	3	✓
4	1015	–	20		211402					19.978	4.343		31.787					431	4	✓
5	1012	–	10		211453					10.392	4.451		31.739					432	5	✓
6	1011	–	—		—														6	
7																			7	
8																			8	
9																			9	
10																			10	
11																			11	
12																			12	

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
56	MILLER FREEMAN	FOCI 88 II MF-88-04	130			60

Consec. Cast #	Latitude Deg. Min.	N or S	Longitude Deg.	E or W	Date JD = 112 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
056	5723 74	N	154 53 79	W	21 APR 88	2207	07.8	05.2	1958			290	25	4	8	1	197	060

CTD
Type & SN SBE 91220 B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 112 / 2204
at Surface 2206
Start Down 2207
at Bottom 2213
Start Up 2214
at Surface
Data off 2213

Data Location
Tape/Diskette I.D.: APR 88 2
File Name/Header: 21 APR2203

Remarks 190 m max indicated cast depth

changed 0-1m fm 31.502 to 31.729

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	252	A	185	221430	221930					182.939	5.123		32.285	184	5.11	32.316	56		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
057	MILLER FREEMAN	FOCI 88 II MF-88-04	131			61

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 112 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
057	57	26.99	N	155 00.42	W	21	APR	88	22	55	06.2	04.8	1019	5	8	290	24	6	8	1	238	061

CTD
Type & SN SBE 91220 B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 112 / 2253
at Surface 2255
Start Down 2255
at Bottom 2303
Start Up 2304
at Surface
Data off 2304

Data Location
Tape/Diskette I.D. APR 88 2
File Name/Header 21 APR 2250

Remarks 226

no changes

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	—	225		230414					225.034	5.392		32.562	—	—	32.597	57		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
58	MILLER FREEMAN	MF-88-04 FOCI SB II	132			62

Consec. Cast #	Latitude Deg. Min.	N or S	Longitude Deg.	E or W	Date JD = 112 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
058	57 29	55 N	155 07	05 W	21 APR 88	23 42	05 5	03 5	19	4	8	280	30	6	8	1	243	62

CTD
Type & SN SBE 91220 B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 112 / 2340
at Surface 2341
Start Down 2342
at Bottom 2349
Start Up 2350
at Surface
Data off 2350

Data Location
Tape ~~/Diskette I.D.~~ APR 88 2
File Name/Header 21 APR 2337

Remarks 232 m max indicated cast depth

no changes

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	-	231		2350					231.606	5.575		32.962	—	—	32.999	58		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
59	MILLER FREEMAN	FOCI 88 II MF 8804	133			63

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 113 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
059	57	32.17	N	155 13.02	W	22	APR	88	00	26	04.5	02.2	19	4	8	285	24	4	8	1	264	63

CTD
Type & SN SBE 91220B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 113 / 0023
at Surface 0025
Start Down 0026
at Bottom 0033
Start Up 0034
at Surface
Data off 0034

Data Location
Tape/~~Diskette I.D.~~: APR 88 2
File Name/Header: 22 APR0019

Remarks 254 m max cast depth indicated

no changes

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	252	A	243	003510	004019					244.195	5.583		33.011	248	5.58	33.043	59		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
60	MILLER FREEMAN	FOCI 88 II MF-88-04	134			64

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 113 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
060	57	34.24	N	155	17.16	W	22	APR	88	01	17	08.9	05.6	19	4	7	280	20	5	8	1	290 64

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 113 / 0114
at Surface 0116
Start Down 0117
at Bottom 0126
Start Up 0127
at Surface
Data off 0127

Data Location
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 224PR 0112

Remarks 278 m max indicated cast depth

no changes

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	251	–	278		012741					277.087	5.584		33.027	—	—	33.059	60		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
061	MILLER FREEMAN	FOCI 88 II MF-88-04				65

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 113 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
061	57	37.55	N	155	25.18	W	22	APR	88	02	13	05.6	03.0	19.4	8	280	21	5	8	1	186	65

CTD
Type & SN: SBE 91220B
Press. SN: 26072
Temp. SN: 710
Cond. SN: 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on: 113/2207
at Surface: 0213
Start Down: 0213
at Bottom: 0219
Start Up: 0220
at Surface:
Data off: 0219

Data Location
Tape/~~Diskette I.D.~~: APR882
File Name/Header: 22APR0206

Remarks: 178

no changes

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	—	178		022002					176.871	4.886		32.131	—	—	32.165	61		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials: CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
062	MILLER FREEMAN	FOCI 88II MF 88 04				66

Consec. Cast #	Latitude Deg. Min. N or S	Longitude Deg. E or W	Date JD = 113 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
062	57 32.46 N	155 34.69 W	22 APR 88	0307	08.1	06.0	19.48	2	9	7	22	5	8	1	85	66

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 113/0302
at Surface 0306
Start Down 0307
at Bottom 0309
Start Up 0309
at Surface
Data off

Data Location
Tape/~~Diskette I.D.~~ APR 882
File Name/Header 22APR0300

Remarks 85 Nutrients + Chlorophylls collected
Sea floor rose rapidly during cast 98 → 80 m

no changes

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	–	75	0310						74.127	4.512		31.672			31.703	62	Nuts 433	1
2	1013		50							50.946	4.495		31.658					434	2
3	1014		30							30.132	4.479		31.628					435	3
4	1007		20							18.730	4.487		31.621					436	4
5	1012		10							8.844	4.511		31.620					437	5
6	1015																		6
7	1011																		7
8	1005																		8
9	1009																		9
10	1006																		10
11	1010																		11
12																			12

Chl. 100ml

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
63	MILLER FREEMAN	FOCI 88 II MF-88-04	137			67

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 113 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
63	57	30.06	N	155 28.73	W	22	APR	88	03	58	06.2	05.1	20.48	2	8	0	14	5	8	310	67

CTD
Type & SN SBE 91220 B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 113/0350
at Surface 0357
Start Down 0358
at Bottom 0408
Start Up 0409
at Surface
Data off 0408

Data Location
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 22 APR 0349

Remarks D 297 T 300 Nutrients + chl. collected.

changed 0-1m from 31.461 to 31.845

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	952	A	250	0411	041605					253.407	5.559		32.907	260	5.54	32.939	63	Nuts	1
2	1013		250		041629					253.458	5.559		32.908					438	2
3	1014		200		041812					200.224	5.272		32.355					439	3
4	1007		150		041952					149.491	4.959		32.147					440	4
5	1012		100		042125					99.826	4.824		32.038					441	5
6	1015		75		042249					74.808	4.687		31.953					442	6
7	1011		50		042358					49.292	4.622		31.886					443	7
8	1005		30		042459					29.811	4.586		31.862					444	8
9	1009		20		042546					21.128	4.592		31.845					445	9
10	1006		10		042635					10.222	4.582		31.832					446	10
11	1010																		11
12																			12

chl

100m.

Initials SD

✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
64	MILLER FREEMAN	FOCI 88 II MF-88-04				68

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 113 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
64	57	27.34	N	155 22.49	W	22	APR	88	05	08	04.1	03.0	20.38	2	9	5	12	5	8	1	280	68

CTD
Type & SN: SBE 91220 B
Press. SN: 26072
Temp. SN: 710
Cond. SN: 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on: 0503
at Surface: 0507
Start Down: 0508
at Bottom: 0517
Start Up:
at Surface:
Data off:

Data Location
Tape/~~Diskette I.D.~~: APR 882
File Name/Header: 22APR0501

Remarks: D 265 P Nutrients Collected.

changed 0-1m fm 31.702 to 31.754

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.	
1	251		265		051815					264.773	5.609		33.105	—	—	33.135	64	Nuts	1	chl.
2	1013		250		051919					249.842	5.608		33.096					447	2	
3	1014		200		052113					200.080	5.421		32.602					448	3	
4	1007		150		052255					150.359	5.236		32.291					Q637	4	
5	1012		100		052436					100.328	4.976		32.126					Q638	5	100ml
6	1015		75		052554					73.364	4.730		31.971					Q639	6	
7	1011		50		052702					49.813	4.635		31.909					Q640	7	
8	1005		30		052802					30.204	4.432		31.742					Q641	8	
9	1009		20		052850					21.239	4.870		34.910					Q642	9	
10	1006		10		052929					10.113	4.425		31.736					Q643	10	
11	1010																		11	
12																			12	

Initials: CS
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
65	MILLER FREEMAN	FOCI 88 II MF 8804				069

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 113 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
65	57	25.11	N	155	17.41	22	APR	88	06	02	04.0	03.0	20	3	8	315	18	5	8	1257	069

CTD
Type & SN SBE 91220 B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 113 / 0557
at Surface 0602
Start Down 0602
at Bottom 0610
Start Up
at Surface
Data off 0611

Data Location
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 22APR0546 (258, 256)

Remarks: Depth 245, Press 247; nutrients + chlorophylles collected

no changes

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	252	A	245	0610	061529					245.850	5.601		33.094	249	5.59	33.124	65	Nuts	1
2	013				061543					245.844	5.601		33.094					Q3	2
3	014		200		061714					199.872	5.582		32.902					Q645	3
4	007		150		061850					149.402	5.310		32.405					Q646	4
5	012		100		062030					99.521	5.141		32.212					Q647	5
6	015		75		062150					74.280	4.903		32.097					Q648	6
7	011		50		062302					49.750	4.721		31.975					Q625	7
8	005		30		062407					29.540	4.582		31.671					Q626	8
9	009		20		062445					19.928	4.578		31.669					Q627	9
10	006		10		062527					9.518	4.582		31.669					Q644	10
11	010																		11
12																			12

Chl

100ml

Initials CD

✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
66	MILLER FREEMAN	FOCI 88 II MF-88-04				070

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 113 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
66	57	22.02	N	155	10.90	W 22	APR	88	06	58	04.7	03.5	20.3	8	3	01	13	5	8	1	247	070

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 0654
at Surface 0658
Start Down 0658
at Bottom 0706
Start Up 0707
at Surface
Data off 0706

Data Location
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 22APR0652

Remarks D 234 R 236 Nutrients collected.

no change

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251		234		070707					233.819	5.601		33.075	—	—	33.107	66	Nuts	1
2	1013		234		070728					233.978	5.601		33.075					Q628	2
3	1014		200		070847					199.942	5.594		33.047					Q629	3
4	1003		150		071026					149.969	5.476		32.674					Q630	4
5	1012		100		071202					100.298	5.218		32.353					Q631	5
6	1015		75		071308					75.379	5.226		32.282					Q632	6
7	1011		50		071407					50.158	4.790		32.077					Q633	7
8	1005		30		071458					29.770	4.699		31.871					Q634	8
9	1009		20		071534					20.559	4.708		31.851					Q635	9
10	1006		10		071614					9.745	4.704		31.850					Q636	10
11	1010																		11
12																			12

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
067	Miller Freeman	FOCI-88-II MF-88-04				071

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 113 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
067	57	19.51	N	155 06.08	W	22	APR	88	07	47	04.0	02.8	20	3	8	295	17	37	1	241	071

changed 0-1m fm 30.294 to 31.858

CTD
Type & SN SBE 912203
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 0743
at Surface 0746
Start Down 0747
at Bottom 0754
Start Up
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header 22APR0740

Remarks D 229 R 231 Nutrients + chlorophyll collected.

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.	
1	252	D	226	0754	0759					226.472	5.601		33.083	230	5.59	33.115	67	Nuts	1	Chl.
2	1013		200		080038					199.085	5.595		33.068					Q577	2	
3	1014		150		080217					149.304	5.402		32.571					Q578	3	
4	1007		100		080402					99.949	5.256		32.317					Q579	4	100ml
5	1012		75		080520					75.323	5.085		32.207					Q580	5	100ml
6	1015		50		080636		DIDN'T CLOSE			(SEE PO5N11)									6	
7	1011		30		080738					30.345	4.692		31.927					Q582	7	100ml
8	1005		20		080831					19.062	4.693		31.827					Q583	8	
9	1009		10		080915					9.654	4.692		31.825					Q584	9	
10	1006																		10	
11	1010		50							49.952	4.766		32.029					Q581	11	100ml
12																			12	

Initials _____
✓ _____

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
068	Miller Freeman	FOCI-88-II MF-88-04				072

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 113 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
068	57	17.10	N	154 59.99	W	22	APR	88	08	50	04.2	02.5	20	3	8	295	14	3	7	1	212	072

no change

CTD
Type & SN SBE 912203
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 0847
at Surface 0850
Start Down 0850
at Bottom 0857
Start Up
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header 22APR0845

Remarks D 197 nutrients
T 200 collected.

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	—	198		085745					198.411	5.583		32.989	—	—	33.021	68	Nuts	1
2	1013		198		085802					198.349	5.583		32.988					Q585	2
3	1014		150		085945					149.466	5.388		32.484					Q586	3
4	1007		100		090124					99.684	5.158		32.270					Q587	4
5	1012		75		090238					74.261	4.927		32.115					Q588	5
6	1015		50		090352					50.215	4.737		32.016					Q589	6
7	1011		30		090505					29.194	4.709		31.890					Q590	7
8	1005		20		090547					20.003	4.727		31.882					Q591	8
9	1009		10		090635					9.623	4.715		31.881					Q592	9
10	1006																		10
11	1010																		11
12																			12

Initials _____
✓ _____

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
069	Miller Freeman	FOCI-88-II MF-88-04				073

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = 113 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
069	57	14.36	N	154 54.50	W	22	APR	88	09	39	04.0	02.5	1938	2	9	5	10	3	7	142	073

CTD
Type & SN SBE 912208
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 0935
at Surface 0939
Start Down 0939
at Bottom 0944
Start Up
at Surface
Data off

Data Location
Tape/Diskette I.D.
File Name/Header 22APR0932

142 → 137

no changes

Remarks
128 Nutrients + chlorophylls collected.
129

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	252	A	100	0948	095305					100.905	5.227		32.287	103	5.21	32.319	69	Nuts	1
2	1013		100		095322					100.908	5.228		32.288					0593	2
3	1014		75		095442					74.939	5.026		32.142					0594	3
4	1007		50		095559					50.643	4.616		31.914					0595	4
5	1012		30		095713					30.308	4.411		31.725					0596	5
6	1015		20		095758					20.243	4.415		31.677					0597	6
7	1011		10		095846					9.374	4.414		31.677					0598	7
8	1005																		8
9	1009																		9
10	1006																		10
11	1010																		11
12																			12

Chl. 100ml

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
070	Miller Freeman	FOCI-88-II MF-88-04				074

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude	E or W	Date JD = 113 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
070	57	06.87	N	155	00.05	W	22	APR	88	1053		05.0	04.0	1938	3	2	5	07	5	8	1	206	074

CTD
Type & SN SBE 912208
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on	113 / 1049
at Surface	1052
Start Down	1053
at Bottom	1059
Start Up	1100
at Surface	
Data off	1059

Data Location

Tape/Diskette I.D.	File Name/Header
APR882	22APR1048

Remarks 194 195

reversed 2&3 on
fm 31.653 (2)
31.623 (3)
to 31.623 (2)
31.653 (3)

reversed 178&179m
fm 32.364 (178)
32.351 (179)
to 32.351 (178)
32.364 (179)

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	251	—	194	≈	105950					193.617	5.474		32.808	—	—	32.832	70		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

*salinity unstable @ sample depth

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
071	Miller Freeman	FOCI-88 II MF-88-04				075

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 113 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
071	57	09.98	N	155	05.69	22	APR	88	11	36	03.0	01.5	19	3	8	255	07	6	8	1	219	075

CTD
Type & SN SBD 912208
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 113 / 1129
at Surface 1135
Start Down 1136
at Bottom 1143
Start Up
at Surface
Data off

Data Location

Tape/Diskette I.D.	File Name/Header
APR882	22APR1127

Remarks D 210 P 212

no changes

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	252	A	210	1143	1148 02					210.259	5.593		33.111	213	5.58	33092	72		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
072	Miller Freeman	FOCI-88-II MF-88-04				076

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 113 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
072	57	12.41	N	155 12.21	W	22	APR	88	12	21	04.3	02.8	18	3	8	220	10	6	8	1	240	076

no changes

CTD
Type & SN SBE 912208
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 1215
at Surface 1221
Start Down 1221
at Bottom 1229
Start Up 1229
at Surface
Data off 1229

Data Location
Tape/Diskette I.D. APR882
File Name/Header 22APR1213

Remarks D 226
B 228

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	–	226		122925					226.486	5.594		33.060			33.142	71		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
073	Miller Freeman	FOCI-88-II MF-88-04				077

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 113 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
073	57	15.00	N	155	18.80	W	22	APR	88	13	08	03.4	02.0	1018	3	8	220	10	6	8	1 253	077

no change

CTD
Type & SN SBE 912208
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 1306
at Surface 1307
Start Down 1308
at Bottom 1316
Start Up
at Surface
Data off

Data Location 253

Tape/Diskette I.D.	File Name/Header
APR882	22APR1304

Remarks 239
242

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	4			131638					239.534	5.595		33.042	—	—	33.075	73		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
074	Miller Freeman	MF-88-04	149			078

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date Day	Mo.	Yr.	JD = 113	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
074	57	17.95	N	155	25.32	22	APR	88		13	54	03.8	02.7	17	3	8	210	14	6	8	1	265	078

CTD
Type & SN SBE 912208
Press. SN 26032
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 113 / 13
at Surface 1353
Start Down 1354
at Bottom 1401
Start Up 1403
at Surface
Data off 1401

Data Location
Tape/Diskette I.D.: APR882
File Name/Header: 22 APR 1349

Remarks 253 depth, 255 press } may indicated

no changes

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	150	140520	1410					149.688	5.271		32.352	149	5.27	32.385	74		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CD/DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
075	Miller Freeman	FOCI-88-II MF-88-04	150			079

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude Min.	E or W	Date Day	Date Mo.	Date Yr.	JD = 113	Time GMT Hr.	Time GMT 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
075	57	21.04	N	155	31.84	W	22	APR	88		14	50	03.4	02.1	16	3	8	210	14	6	8	1	286	079

changed 2m fm 31.806 to 31.855

CTD
Type & SN SBE 912203
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times

	JD/Time
Data on	113/1448
at Surface	1448
Start Down	1450
at Bottom	1458
Start Up	1459
at Surface	
Data off	1458

Data Location

Tape/Diskette I.D.	File Name/Header
APR882	22 APR 1442

Remarks max indicated depth : 275
press : 277

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	—	274		145848					274.022	5.586		32.978	—	—	33.011	75		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
076	Miller Freeman	MF-88-04	151			080

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 113 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
076	57	24.16	N	155	38.37	W 22	APR	88	15	39	04.0	02.8	16	3	8	215	16	6	8	1291	080

CTD
Type & SN SBD 912203
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 113/1536
at Surface 1538
Start Down 1539
at Bottom 1547
Start Up 1548
at Surface
Data off 1547

Data Location
Tape/~~Diskette I.D.~~: APB382
File Name/Header: 22 APR 1531

Remarks Max indicated depth: 279
press: 281

no change

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	–	279		154812					278.656	5.546°		32.881	—	—	32.914	76		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
077	Miller Freeman	FOCI-88-II MF-88-04	152			081

Consec. Cast #	Latitude Deg. Min.	N or S	Longitude Deg.	E or W	Date JD = 113 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
077	5726 92	N	155 44 58	W	22 APR 88	1623	039	029	1638			210	20	6	8	1	169	081

no changes

CTD
Type & SN SBE 912203
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 113 / 1621
at Surface 1622
Start Down 1623
at Bottom 1628
Start Up 1629
at Surface
Data off 1628

Data Location
Tape/~~Diskette I.D.~~ APR882
File Name/Header 22 APR 1619

Remarks Max indicated depth: 158
press: 160

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	252	A	150	162950	1634					150.980	4.814		32.033	151	4.81	32.063	77		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
078	Miller Freeman	FOCI-88-II MF-88-04	153			082

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 113 Day	Mo.	Yr.	Time GMT Hr.	Time GMT 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
078	57	20.89	N	155	51.51	W	22	APR	88	17	25	05.6	04.1	15	3	8	186	13	6	8	96	082

CTD
Type & SN SBD 912208
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 113/1723
at Surface 1724
Start Down 1725
at Bottom 1728
Start Up 1729
at Surface 1735
Data off 1729

Data Location
Tape/~~Diskette I.D.~~ APR 882
File Name/Header 22 APR 1719

Remarks 89 m depth 90 dBar press max
Nutrient + Chlorophyll samples taken

no change

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.	
1	251	—	90		172925					88.771	4.268		31.789	—	—	31.824	78	Nuts.	1	Chl
2	1014	—	75		173032					75.706	4.238		31.741					Q599	2	100ml ✓
3	1013	—	50		173151					51.429	4.075		31.637					Q600	3	✓
4	1015	—	30		173302					29.991	4.001		31.574					Q601	4	✓
5	1012	—	20		173344					20.369	4.004		31.571					Q602	5	✓
6	1011	—	10		173432					9.869	3.974		31.558					Q603	6	✓
7	1005	—																	7	
8	1009	—																	8	
9	1007	—																	9	
10	1006	—																	10	
11																			11	
12																			12	

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
79	MILLER FREEMAN	FOCI 88 II MF 88 04	154			083

Consec. Cast #	Latitude Deg. Min.	N or S	Longitude Deg.	E or W	Date JD = 113 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
079	57 17.93	N	155 45.11	W	22 APR 88	18 13	06.7	05.0	15	3	8	183	19	6	8	264	083

no change

CTD
Type & SN SBE 91220 B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 113 / 1810
at Surface 1812
Start Down 1813
at Bottom 1821
Start Up 1822
at Surface
Data off 1821

Data Location
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 22 APR 1807

Remarks Max indicated depth: 252 m, press: 255
Chlorophyll & Nutrient samples collected

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	-	250		182226					251.303	5.269		32.457	—	—	32.493	79	Nuts	1
2	1014	-	250		182245					251.397	5.270		32.457					Q604	2
3	1013	-	200		182425					200.894	4.932		32.158					Q605	3
4	1015	-	150		182601					150.528	4.159		31.759					Q606	4
5	1012	-	100		182737					100.920	4.097		31.728					Q607	5
6	1011	-	75		182846					75.102	4.077		31.721					Q608	6
7	1005	-	50		183008					51.168	4.094		31.701					Q609	7
8	1009	-	30		183116					30.376	4.185		31.648					Q610	8
9	1007	-	20		183159					20.172	4.286		31.633					Q611	9
10	1006	-	10		183247					10.043	4.342		31.628					Q612	10
11																			11
12																			12

Chl

100ml

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
80	MILLER FREEMAN	FOCI 88 II MF 8804	155			84

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 113 Day	Mo.	Yr.	Time GMT Hr.	Time GMT 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
080	57	15.62	N	155 39.79	W	22	APR	88	19	09	07.1	05.3	15	3	8	210	24	6	8	1	280	84

no changes

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 113/1907
at Surface 1908
Start Down 1909
at Bottom 1918
Start Up 1919
at Surface 1936
Data off 1919

Data Location
Tape/~~Diskette I.D.~~ APR88 2
File Name/Header 22APR 1905

Remarks Max indicated cast depth: 267 m, press: 270
Nutrient samples collected

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	264	191940	192437					262.986	5.323		32.540	266	5.32	32.573	80	Nuts	1
2	1014	–	250		192530					251.366	5.259		32.414					Q613	2
3	1013	–	200		192711					200.337	5.108		32.249					Q614	3
4	1015	–	150		192847					150.649	4.757		31.984					Q615	4
5	1012	–	100		193024					100.567	4.161		31.747					Q616	5
6	1011	–	75		193137					75.482	4.097		31.722					Q617	6
7	1005	–	50		193248					50.428	4.171		31.657					Q618	7
8	1009	–	30		193354					30.592	4.302		31.629					Q619	8
9	1007	–	20		193436					20.879	4.365		31.626					Q620	9
10	1006	–	10		193517					10.190	4.379		31.627					Q621	10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
81	MILLER FREEMAN	FOCI 88 II MF-88-04	156			85

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 113 Day	Mo.	Yr.	Time GMT Hr.	Time GMT 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
081	57	12.89	N	155	34.04	W	22	APR	88	20	07	07.0	05.2	15	3	8	209	21	8	7	2	277	85

no changes

CTD
Type & SN SBE 91220 B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 113/2005
at Surface 2006
Start Down 2007
at Bottom 2015
Start Up 2016
at Surface
Data off 2016

Data Location
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 22 APR 2003

Remarks Max indicated depth: 266 press: 268
Nutrient & Chlorophyll samples taken

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	—	265		201619					265.799	5.593		33.084	—	—	33.124	81	Nuts	1
2	1014	—	250		201724					250.446	5.376		32.588					Q622	2
3	1013	—	200		201900					200.512	5.156		32.285					Q623	3
4	1015	—	150		202051					150.114	4.816		32.071					Q624	4
5	1012	—	100		202234					100.519	4.695		31.903					Q133	5
6	1011	—	75		202346					75.764	4.646		31.861					Q134	6
7	1005	—	50		202501					51.132	4.582		31.791					Q135	7
8	1009		30		202612					31.255	4.564		31.740					Q136	8
9	1007		20		202709					21.036	4.303		31.699					Q137	9
10	1006		10		202757					10.685	4.165		31.626					Q138	10
11																			11
12																			12

Chl

100ml

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
82	MILLER FREEMAN	FOCI 88 II MF 88 04	157			86

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 113 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
082	57	10.49	N	155	28.04	W	22	APR	88	2100	06.0	04.0	015	4	8	209	18	8	7	2	264	86

CTD
Type & SN SBE 9122OB
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 113/2057
at Surface 2059
Start Down 2100
at Bottom 2107
Start Up 2109
at Surface
Data off 2108

Data Location
Tape/~~Diskette I.D.~~ APR882
File Name/Header 22APR 2055

Remarks Max depth 252 m, press 254
Nutrient samples collected

no changes

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	–	252		210838					251.788	5.594		33.113	—	—	33.144	82	Nuts.	1
2	1014		250		210901					251.963	5.594		33.115					Q139	2
3	1013		200		211133					200.579	5.270		32.415					Q140	3
4	1015		150		211318					151.076	4.958		32.149					Q141	4
5	1012		100		211458					101.082	4.790		32.022					Q142	5
6	1011		75		211613					75.955	4.697		31.951					Q143	6
7	1005		50		211728					50.166	4.594		31.860					Q144	7
8	1009		30		211837					30.289	4.615		31.854					Q121	8
9	1007		20		211924					20.810	4.603		31.850					Q122	9
10	1006		10		212015					10.637	4.597		31.807					Q123	10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
83	MILLER FREEMAN	FOCI 88 II MF-88-04	158			87

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude Min.	E or W	Date JD = 113 Day	Mo.	Yr.	Time GMT Hr.	Time GMT 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
083	57	08.01	N	155	22.50	W	22	APR	88	21	52	04.5	03.8	1154	8	2	05	16	8	8	2	260	87

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 113 / 2150
at Surface 2151
Start Down 2152
at Bottom 2200
Start Up 2206
at Surface
Data off 2200

Data Location
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 22 APR 2147

Remarks 248 m max cast depth, max press 250
Nutrient & Chlorophyll samples collected

no change

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	247	2200	220529					247.297	5.541		32.900	246	5.54	32.933	83	Nuts.	1
2	1014	-	247		220544					247.257	5.541		32.900					Q124	2
3	1013	-	200		220724					200.588	5.352		32.444					Q125	3
4	1015	-	150		220904					150.838	5.221		32.283					Q126	4
5	1012	-	100		221042					100.623	4.948		32.162					Q127	5
6	1011	-	75		221152					75.844	4.916		32.127					Q128	6
7	1005	-	50		221308					50.590	4.672		32.022					Q129	7
8	1009	-	30		221417					29.963	4.591		31.849					Q130	8
9	1007	-	20		221503					20.697	4.605		31.823					Q131	9
10	1006	-	10		221551					10.502	4.640		31.810					Q132	10
11																			11
12																			12

Chl

100 ml ✓
✓
✓
✓
✓
✓

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
84	MILLER FREEMAN	FOCI 88 II MF-88-04	159			88

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 113 Day	Mo.	Yr.	Time GMT Hr.	Time GMT 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
084	57	05.59	N	155 17.48	W	22	APR	88	22	58	05.8	04.8	1548	2	00	15	88	2			255	88

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 113 / 2256
at Surface 2257
Start Down 2258
at Bottom 2305
Start Up 2307
at Surface
Data off 2306

Data Location
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 22 APR 2252

Remarks Max indicated cast depth: 243 press: 246
Nutrient samples collected

no changes

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	-	243		230630					243.030	5.586		33.012	—	—	33.024	84	Nuts.	1
2	1014	-	243		230650					242.916	5.585		33.011					Q109	2
3	1013	-	200		230836					201.670	5.443		32.615					Q110	3
4	1015	-	150		231019					150.376	5.177		32.278					Q111	4
5	1012	-	100		231159					101.257	5.088		32.120					Q112	5
6	1011	-	75		231316					75.481	4.741		32.012					Q113	6
7	1005	-	50		231435					50.839	4.637		31.932					Q114	7
8	1009	-	30		231542					30.498	4.624		31.850					Q115	8
9	1007	-	20		231630					20.443	4.652		31.852					Q116	9
10	1006	-	10		231714					10.497	4.663		31.854					Q117	10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
85	MILLER FREEMAN	FOCI 88II MF 88 04	160			89

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 113 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
085	57	02.72	N	155 11.40	W	22	APR	88	23	54	06.5	05.6	15	4	8	205	18	8	8	2	240	089

CTD
Type & SN SBE 91220 B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times

	JD/Time
Data on	113 / 2352
at Surface	2353
Start Down	2354
at Bottom	114 / 0001
Start Up	0003
at Surface	0012
Data off	0002

Data Location

Tape/~~Diskette I.D.~~	File Name/Header
APR 88 2	22APR2347

no change

Remarks Max indicated cast depth: 229 press: 231
Nutrient & Chlorophyll samples collected

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.	
1	251	–	228		000228					228.333	5.589		33.139	—	—	33.169	85	Nuts.	1	Chl
2	1014	–	228		000250					228.275	5.589		33.139					Q118	2	
3	1013	–	200		000406					200.804	5.543		32.867					Q119	3	
4	1015	–	150		000552					150.811	5.281		32.397					Q120	4	
5	1012	–	100		000747					100.674	4.983		32.154					Q97	5	✓
6	1011	–	75		000855					75.167	4.844		32.055					Q98	6	✓
7	1005	–	50		000954					49.516	4.691		31.952					Q99	7	✓
8	1009	–	30		001056					30.745	4.622		31.848					Q100	8	✓
9	1007	–	20		001138					20.749	4.615		31.833					Q101	9	✓
10	1006	–	10		001219					10.965	4.656		31.826					Q102	10	✓
11																			11	
12																			12	

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
86	MILLER FREEMAN	FOCI 88 II MF-88-04	161			90

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 114 Day	Mo.	Yr.	Time GMT Hr.	Time GMT 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
086	56	59.91	N	155	06.91	W	23	APR	88	00	57	07.6	06.5	15.4	8	200	15	8	8	2	216	90

no changes

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on	114 / 0054
at Surface	0056
Start Down	0057
at Bottom	0103
Start Up	0104
at Surface	0115
Data off	0104

Data Location

Tape/~~Diskette I.D.~~	File Name/Header
APR 88 2	23APR0051

Remarks Max indicated cast depth: 208 press: 210
Nutrient samples collected

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	—	208		010428					207.996	5.603		33.012	—	—	33.041	86	Nuts	1
2	1014		200		010523					200.305	5.540		32.948					Q85	2
3	1013		150		010733					150.389	5.271		32.440					Q86	3
4	1015		100		010935					100.918	5.099		32.235					Q103	4
5	1012		75		011053					74.979	4.931		32.108					Q104	5
6	1011		50		011208					50.182	4.732		31.995					Q105	6
7	1005		30		011315					30.162	4.429		31.809					Q106	7
8	1009		20		011402					20.101	4.432		31.758					Q107	8
9	1007		10		011443					10.108	4.493		31.729					Q108	9
10	1006		—		—														10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
87	MILLER FREEMAN	FOCI 88 II MF-88-04	192		Bottom rising throughout cast	96

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 114 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
087	57	32.36	N	155 34.46	W	23	APR	88	18	04	05.3	04.9	12	3	8	146	18	8	8	5	185	096

no changes

CTD
Type & SN SBE 91220 B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 114 / 1801
at Surface 1803
Start Down 1804
at Bottom 1809
Start Up 1810
at Surface
Data off 1810

Data Location
Tape/~~Diskette I.D.~~ APR 882
File Name/Header 23 APR 1759

Remarks Max indicated cast depth: 173
press: 174

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	251	—	173		181038					172.405	5.116		32.307	—	—	32.336	87		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
88	MILLER FREEMAN	FOCI 88 II MF-88-04	193			97

Consec. Cast #	Latitude Deg. Min.	N or S	Longitude Deg.	E or W	Date JD = 114 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
088	5729	98 N	155286	7 W	23 APR 88	1848	05	04	5	11	3	8	140	20	8	8	5	309 97

no changes

CTD
Type & SN SBE 91220 B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 114 / 1846
at Surface 1848
Start Down 1848
at Bottom 1857
Start Up 1903
at Surface
Data off 1857

Data Location
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 23 APR 1838

Remarks Maximum indicated cast depth: 295 m
pressure: 298

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	295	1857	190304					294.191	5.601		33.075	298	5.59	33.098	88		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
89	MILLER FREEMAN	FOCI 88 II MF 88 04	194			98

Consec. Cast #	Latitude Deg. Min.	N or S	Longitude Deg.	E or W	Date JD = 114 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
089	5727 27	N	155226 3	W	23 APR 88	1940	06 7	05 3	11	3	8	143	18	8	8	1	277	98

no changes

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 114 / 1939
at Surface 1940
Start Down 1940
at Bottom 1948
Start Up 1949
at Surface
Data off 1949

Data Location
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 23 APR 1933

Remarks Maximum indicated cast depth: 265
pressure: 268

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	—	265		194927					265.050	5.605		33.092	—	—	33.121	89		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
90	MILLER FREEMAN	MF-88-04 FOCI 88 II	195			99

Consec. Cast #	Latitude Deg. Min.	N or S	Longitude Deg.	E or W	Date JD = 114 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
090	5724 77	N	155 16 98	W	23 APR 88	2023	070	060	11	3	8	135	17	8	8	255	99

no changes

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 114 / 2021
at Surface 2022
Start Down 2023
at Bottom 2031
Start Up 2032
at Surface
Data off 2031

Data Location
Tape/~~Diskette I.D.~~ APR88 2
File Name/Header 23 APR 2018

Remarks Maximum indicated cast depth: 243
pressure: 246

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	—	243		203142					242.817	5.606		33.107	—	—	33.135	90		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
91	MILLER FREEMAN	FOCI 88 II MF 88 04	196			100

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 114 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
091	57	22.09	N	155 11.23	W	23	APR	88	21	06	07.1	06.0	11	3	8	130	19	8	8	1	246	100

CTD
Type & SN SBE 9 1220 B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 114 / 2104
at Surface 2105
Start Down 2106
at Bottom 2113
Start Up 2119
at Surface
Data off 2113

Data Location
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 23 APR 210 2

Remarks Maximum indicated cast depth: 234
pressure: 236

no changes

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	252	A	232	2113	211903					231.675	5.597		33.055	235	5.59	33.084	91		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
92	MILLER FREEMAN	FOCI 98 II MF-88-04	197			101

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 114 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
092	57	19.60	N	155	05.89	23	APR	88	21	53	07.0	06.0	11	3	8	125	20	8	8	8	240	101

changed 0-1m fm 31.631 to 31.721

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 114 / 2151
at Surface 2152
Start Down 2153
at Bottom 2200
Start Up
at Surface
Data off 2200

Data Location
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 23 APR 2147

Remarks Maximum indicated cast depth: 229
pressure: 231

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	251	–	229		220051					228.800	5.594		33.060	—	—	33.090	92		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
93	MILLER FREEMAN	FOCI 88 II MF-88-04	198			102

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 114 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
93	57	17.08	N	155 00.06	W	23	APR	88	22	34	06.6	05.8	11	3	7	125	18	8	8	8	211	102

no changes

CTD
Type & SN SBE 91220 B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 114 / 2232
at Surface 2233
Start Down 2234
at Bottom 2240
Start Up 2241
at Surface
Data off 2240

Data Location
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 23 APR 2229

Remarks Maximum indicated cast depth: 199
pressure: 201

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	—	199		224118					198.996	5.589		33.029	—	—	33.059	93		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
94	MILLER FREEMAN	FOCI 88 II MF 88 04	199			103

no changes

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 114 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
094	57	14.32	N	154	54.61	W	23	APR	88	23	14	04.3	04.0	11	37	130	20	8	8	8	143	103

CTD
Type & SN SBE 9122OB
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 114 / 2312
at Surface 2313
Start Down 2314
at Bottom 2318
Start Up 2324
at Surface
Data off 2319

Data Location
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 23 APR 2309

Remarks Maximum indicated cast depth: 133
pressure: 134

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	252	A	133	2318	232357					132.089	4.673		32.187	133	4.69	32.221	94		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
095	MILLER FREEMAN	MF-88-04 FOCI 88 II	248	FOX 61		115

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 116 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
095	57	42	N	155	W	25	APR	88	08	36	04	02	09	3	8	185	13	6	8	1	301	115

no changes

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 116 / 0828
at Surface 0835
Start Down 0836
at Bottom 0845
Start Up 0846
at Surface
Data off

Data Location
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 25APR0827

Remarks 288 nutrients and chlorophyll collected.
291

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	250	0847	0852					251.006	5.456		32.746	149	4.65	31.699	1	Nuts	1
2	1014		250		0853					250.972	5.459		32.742					Q87	2
3	1001		200		0855					200.013	5.038		32.244					Q88	3
4	1015		150		0857					149.710	4.702		32.042					Q89	4
5	1012		100		0859					99.858	4.297		31.822					Q90	5
6	1011		75		0901					74.372	4.277		31.768					Q91	6
7	1005		50		090300					49.853	4.408		31.754					Q92	7
8	1009		30		090435					29.648	4.540		31.672					Q93	8
9	1007		20		090549					20.093	4.500		31.576					Q94	9
10	1006		10		090707					9.798	4.327		31.499					Q95	10
11	1010		SPARE																11
12																			12

* unstable sal & temp @ sample depth

Chl 100ml

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
096	MILLER FREEMAN	MF-88-04 FOCI 88 II	249	FOX 60		116

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 116 Day	Mo.	Yr.	Time GMT Hr.	Time GMT 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
096	57	40.89	N	155	10.14	25	APR	88	09	40	04.8	03.2	09	3	8	155	11	5	4	1	295	116

CTD
Type & SN SBE 91220 B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 0934
at Surface 0939
Start Down 0940
at Bottom 0949
Start Up 0951
at Surface
Data off 0949

Data Location
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 25 APR 0934

Remarks D 281 nutrients + chlorophylls collected.

changed 0-1m fm 31.243 to 31.340

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	BKG																	Nuts	1
2	1014		250		095231					249.589	5.520		32.874					Q73	2
3	1001		200		095505					199.425	5.206		32.361					Q74	3
4	1015		150		095735					150.249	4.820		32.072					Q75	4
5	1012		100		100139					100.367	4.892		31.923	—	—	31.840	2	Q76	5
6	1011		75		100406					75.027	4.763		31.843					Q77	6
7	1005		50		100605					50.055	4.584		31.699					Q78	7
8	1009		30		100800					29.726	4.462		31.623					Q79	8
9	1007		20		100933					19.881	4.216		31.414					Q80	9
10	1006		10		101024					9.745	4.203		31.371					Q96	10
11																			11
12																			12

Chl

100ml

100ml

Initials CD

✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
97	MILLER FREEMAN	FOCI 88 II MF-88-04	250	FOX 59		117

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 116 Day	Mo.	Yr.	Time GMT Hr.	Time GMT 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
97	57	38.50	N	155 04.36	W	25	APR	88	1048	0400	03.1	09.3	8	1	4	5	16	8	8	2	259	117

changed 0-2m fm 31.363 to 31.396

CTD
Type & SN SBE 91220 B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 1045
at Surface 1047
Start Down 1048
at Bottom 1056
Start Up 1057
at Surface
Data off

Data Location 259
Tape/~~Diskette I.~~D. APR 88 2
File Name/Header 25APR1043

Remarks ⊃ 248 Nutrients
⊃ 250 collected.

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	244	1057	110229					244.367	5.565		32.999	247	5.56	32.999	3	Nuts	1
2	1014		244		110252					244.671	5.566		33.003					Q81	2
3	1001		200		110450					199.729	5.249		32.454					Q82	3
4	1015		150		110652					150.057	4.958		32.100					Q83	4
5	1012		100		110903					99.293	4.840		31.966					Q84	5
6	1011		75		111044					74.595	4.762		31.848					Q145	6
7	1005		50		111228					49.503	4.646		31.681					Q146	7
8	1009		30		111353					29.918	4.362		31.537					Q147	8
9	1007		20		111503					19.880	4.294		31.516					Q148	9
10	1006		10		111619					9.743	4.282		31.405					Q149	10
11	1010		SPARE																11
12																			12

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
98	MILLER FREEMAN	FOCI 88 II MF-88-04	251	FOX 58		118

Consec. Cast #	Latitude Deg. Min. N or S	Longitude Deg. E or W	Date JD = 116 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
98	5736 26 N	155 00 54 W	25 APR 88	1148	03.8	03.0	08	4	8	135	16	8	8	241	118

no changes

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 1142
at Surface 1147
Start Down 1148
at Bottom 1155
Start Up 1156
at Surface
Data off

Data Location
Tape/~~Diskette I.D.~~: APR 88 2
File Name/Header: 25APR1140

Remarks D 230 *ONE SAMPLE BOTTLE
P 232 WASN'T TRIPPED ⇒ RE-DID CAST (SEE CAST #99)

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	–	230		115618					230.446	5.431		32.737	—	—	—	—		1
2	1014		200		115817					200.924	5.269		32.502						2
3	1001		150		120058					150.034	4.955		32.176						3
4	1015		100		120335					99.520	4.821		32.023						4
5	1012		75		120516					74.538	4.780		31.961						5
6	1011		50		120651					49.464	4.860		31.905						6
7	1005		30		120817					29.816	4.829		31.774						7
8	1009		20		120923					19.566	4.782		31.711						8
9	1007		10		121028					10.073	4.619		31.555						9
10	1006		SPARE																10
11	1010		SPARE																11
12																			12

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
099	Miller Freeman	FOCI-88-11 MF-88-04	252	FOX58		118

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 116 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
099	57	36.40	N	155 00.72	W	25	APR	88	12	59	02.9	02.8	08	4	8	170	10	8	8	2	241	118

changed 3m to 31.4549‰ to 31.5197‰

CTD
Type & SN SBD 912208
Press. SN 260072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 1253
at Surface 1258
Start Down 1259
at Bottom 1306
Start Up 1307
at Surface
Data off

Data Location

Tape/Diskette I.D.	File Name/Header
	25APR1235

Remarks D 231
P 233

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	–	230		130650					230.566	5.426		32.727	←		32.479	4	Nuts	1
2	1014		200		130857					199.362	5.273		32.481	←				Q150	2
3	1001		150 ~~200~~		130935					150.420	4.999		32.209					Q151	3
4	1015		100 ~~150~~		131149					100.703	4.841		32.033					Q152	4
5	1012		75 ~~100~~		131356					75.266	4.856		31.965					Q153	5
6	1011		50 ~~75~~		131521					49.768	4.843		31.879					Q154	6
7	1005		30 ~~50~~		131632					29.782	4.831		31.746					Q155	7
8	1009		20 ~~30~~		131736					19.638	4.607		31.562					Q156	8
9	1007		10 ~~20~~		131836					9.762	4.539		31.522					Q157	9
10	1006		OPEN ~~10~~		131924														10
11	1010		SPARE																11
12																			12

ROSETTE DIDN'T CLICK
ROSETTE DIDN'T CLICK
Chl. 100ml

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
100	MILLER FREEMAN	MF-88-04 FOCI 88 II	253	FOX57		119

Consec. Cast #	Latitude Deg. Min.	N or S	Longitude Deg.	E or W	Date JD = 116 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
100	5733 08	N	154524 6	W	25 APR 88	1406	036	028	07	3	8	115	15	8	8	2	234	119

changed 0-2m fm 31.2609.. to 31.4079..

CTD
Type & SN SBE 9122OB
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 1401
at Surface 1405
Start Down 1406
at Bottom 1413
Start Up 1420
at Surface
Data off 1413

Data Location
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 25APR1400

Remarks Maximum indicated cast depth 225m press 227
Nutrient samples collected

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	222	141430	141954					221.663	5.549		32.957	150	5.01	32.512	5	NUTS.	1
2	1014	–	222		142019					221.571	5.549		32.956						2
3	1001	–	200		142129					200.295	5.409		32.636					Q158	3
4	1015	–	150		142327					150.650	5.179		32.330					Q159	4
5	1012	–	100		142532					100.660	4.876		32.120					Q160	5
6	1011	–	75		142643					75.119	4.930		32.050					Q161	6
7	1005	–	50		142753					50.866	4.858		31.995					Q162	7
8	1009	–	30		142855					30.606	4.775		31.821					Q163	8
9	1007	–	20		142937					20.456	4.320		31.540					Q164	9
10	1006	–	10		143020					9.739	4.156		31.414					Q165	10
11	1010		—	—	—														11
12																			12

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
101	MILLER FREEMAN	FOCI 88 II MF-88-04	254	FOX 56		120

Consec. Cast #	Latitude Deg. Min.	N or S	Longitude Deg.	E or W	Date JD = 116 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
101	57 30.85	N	154 46.97	W	25 APR 88	15 10	03.8	03.0	06	3	8	110	10	8	9	2	218	120

CTD
Type & SN SBE 9/22 0B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 116 / 1507
at Surface 1509
Start Down 1510
at Bottom 1517
Start Up 1518
at Surface
Data off 1517

Data Location
Tape/~~Diskette I.~~D. APR 88 2
File Name/Header 25 APR 1504

Remarks Max indicated depth of cast 208, press 210
Nutrient & Chlorophyll samples collected

no change

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	–	208		151751					207.829	5.545		32.935	—	—	32.935	6	NUTS	1
2	1014	–	200		151838					200.297	5.535		32.904					Q166	2
3	1001	–	150		152039					150.697	5.149		32.355					Q167	3
4	1015	–	100		152242					100.334	4.761		32.133					Q168	4
5	1012	–	75		152354					75.635	4.659		32.077					Q169	5
6	1011	–	50		152506					50.865	4.777		32.011					Q170	6
7	1005	–	30		152609					30.162	4.910		31.927					Q171	7
8	1009	–	20		152650					20.515	4.804		31.858					Q172	8
9	1007	–	10		152733					10.517	4.653		31.641					Q173	9
10	1006	–	—	—	—														10
11																			11
12																			12

Chl

100ml

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
102	Miller Freeman	MF-88-II FOCI-88-II	255	FOX 55		121

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 116 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
102	57	28.56	N	154	41.85	W	25	APR	88	1602	04.1	03.4	05	28	12	121	28	8	8	1	60	121

changed 2m fm 31.683‰ to 31.737‰

CTD		Monitor Checks	on Deck	at Surface	Times	JD/Time	Data Location	
Type & SN	SBE 9122038	Press.			Data on	116/1559	Tape/Diskette I.D.	File Name/Header
Press. SN	26072	Temp.			at Surface	1601	APR882	25APR/557
Temp. SN	710	Cond.			Start Down	1602		
Cond. SN	304	Other			at Bottom	1604		
					Start Up	1605		
					at Surface	1615		
					Data off	1604		

Remarks Maximum indicated cast depth: 55 pressure: 56
Nutrient & Chlorophyll samples collected

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	252	A	50	150600	161053					50.264	4.579		32.048	4.58	49	32.049	7	NUTS.	1
2	1014	–	50		161113					50.237	4.569		32.045					Q174	2
3	1001	–	30		161216					30.366	4.429		31.860					Q175	3
4	1015	–	20		161257					20.627	4.434		31.803					Q176	4
5	1012	–	10		161343					10.771	4.681		31.820					Q177	5
6	1011	–																	6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Chl
100ml

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
103	Miller Freeman	FOCI-88-11 MF-88-04	282	FOX 6		135

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 118 Day	Mo.	Yr.	Time GMT Hr.	Time GMT 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
103	57	41.98	N	155 15.56	W	27	APR	88	12	55	03.4	02.4	88	3	8	310	10	8	8	1	298	135

CTD
Type & SN SBE 9/22OB
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 118 / 1247
at Surface 1254
Start Down 1255
at Bottom 1304
Start Up 1305
at Surface
Data off

Data Location
Tape/Diskette I.D.: APR882
File Name/Header: 27APR1246 (298, 295)

Remarks: Nutrients & Chlorophyll — one in additional cast
D 285
P 287

changed 0-2m
from 30.680 (0), 30.680 (1), 31.242 (2)
to 31.382
reversed 273 & 274m
32.735 (273)
32.735 (274)
to 32.735 (274)
32.735 (273)

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	279	130550	131044					278.293	5.595		33.109	279	5.60	33.107	1	Nuts	1
2	1014		250		131235					251.241	5.388		32.624					Q178	2
3	1015		200		131456					199.485	5.033		32.245					Q179	3
4	1011		150		131716					150.443	4.873		32.088					Q180	4
5	1010		100		131941					100.372	4.965		31.899					Q181	5
6	1013		75		132104					75.052	4.614		31.714					Q182	6
7	1006		50		132226					49.665	4.435		31.598					Q183	7
8	1007		30		132334					30.249	4.477		31.589					Q184	8
9	1009		20		132432					19.294	4.513		31.578					Q185	9
10	1005		10		132524					9.581	4.275		31.423					Q186	10
11																			11
12																			12

Chl.
100ml

Initials SD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
103	Miller Freeman	MF-88-04 FOCI-88-II	283	FOX 61		135

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 118 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
103	57	41.88	N	155 15.67	W	27	APR	88	13	50										298	135

CTD
Type & SN SBD 912208
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 118 / 1345
at Surface 1349
Start Down 1350
at Bottom 1352
Start Up
at Surface
Data off

Data Location

Tape/Diskette I.D.	File Name/Header
APR882	27APR1344

Remarks Microzooplankton

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1			—															mz	1
2	1014		60		135256					61.270	4.453		31.611					10l	2
3	1015		50		135401					50.685	4.436		31.599						3
4	1011		40		135457					38.957	4.448		31.593						4
5	1010		30		135541					29.552	4.464		31.587						5
6	1013		20		135627					19.911	4.490		31.568						6
7	1006		10		135711					9.304	4.306		31.340						7
8	1007																		8
9	1009																		9
10	1005																		10
11																			11
12																			12

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
104	Miller Freeman	MF-88-04 FOCI-88-II	285	FOX 60		136

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude Min.	E or W	Date JD = 118 Day	Mo.	Yr.	Time GMT Hr.	Time GMT 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
104	57	40.99	N	155	10.07	W	27	APR	88	15	29	02.8	02.0	88	3	8	310	10	8	8	7	294	136

changed 3m from 31.4649‰ to 31.5999‰

CTD
Type & SN SBD 912208
Press. SN 260072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on	118/1527
at Surface	1528
Start Down	1529
at Bottom	1538
Start Up	1539
at Surface	
Data off	1538

Data Location

Tape/~~Diskette I.D.~~	File Name/Header
APR882	27APR1525

Remarks Max indicated cast depth: 282 m
Nutrient & Chlorophyll samples collected
mz on additional cast

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.	
1	251	—	282		153917					281.577	5.593		33.089	—	—	33.085	2	NUTS.	1	Chl
2	1014	—	250		154059					250.380	5.414		32.664					Q187	2	
3	1015	—	200		154245					200.296	5.143		32.343					Q188	3	
4	1011	—	150		154424					151.058	4.942		32.156					Q189	4	
5	1010	—	100		154558					101.039	4.877		31.987					Q190	5	100ml
6	1013	—	75		154712					74.663	4.919		31.891					Q191	6	
7	1006	—	50		154821					51.151	4.765		31.781					Q192	7	
8	1012	—	30		154930					30.300	4.741		31.657					Q193	8	
9	1007	—	20		155015					20.416	4.572		31.612					Q194	9	
10	1005	—	10		155101					10.226	4.534		31.599					Q195	10	100ml
11																			11	
12																			12	

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
104	MF	MF-88-04	286	FOX 60		136

Consec. Cast #	Latitude Deg. Min. N or S	Longitude Deg. E or W	Date JD = 118 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
104	5741 02 N	155 10 05 W	27 APR 88	1605										294	136

CTD
Type & SN _____
Press. SN _____
Temp. SN _____
Cond. SN _____

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 27APR1525.LOG

Remarks Microzooplankton samples

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1																		mz	1
2	1014		60		160504					60.273	4.745		31.786					10ℓ	2
3	1015		50		160548					50.798	4.785		31.780						3
4	1011		40		160636					41.566	4.784		31.762						4
5	1010		30		160731					30.604	4.823		31.712						5
6	1013		20		160821					21.004	4.596		31.623						6
7	1006		10		160907					10.348	4.528		31.583						7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
105	MILLER FREEMAN	FOCI 88 II MF-88-04	288	FOX 59		137

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 118 Day	Mo.	Yr.	Time GMT Hr.	Time GMT 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
105	57	38.60	N	155	04.17	27	APR	88	17	30	03.0	02.5	88	3	7	304	11	8	8	7	260	137

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 118 / 1728
at Surface 1729
Start Down 1730
at Bottom 1739
Start Up 1745
at Surface
Data off 1739

Data Location
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 27APR1725

Remarks Maximum indicated cast depth: 248 m
Nutrient samples collected
mz in additional cast

changed 0 to
fm 31.389 (0)
31.389 (1)
31.477 (2)
to 31.526

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	246	174000	174511					246.069	5.586		33.062	247	5.58	33.061	3	NUTS.	1
2	1014	–	246		174527					246.052	5.586		33.062					Q196	2
3	1015	–	200		174659					200.346	5.173		32.350					Q197	3
4	1011	–	150		174839					150.515	4.871		32.109					Q198	4
5	1010	–	100		175021					100.323	4.456		31.863					Q199	5
6	1013	–	75		175129					75.600	4.763		31.834					Q200	6
7	1006	–	50		175243					51.040	4.534		31.657					Q201	7
8	1012	–	30		175348					31.535	4.320		31.535					Q202	8
9	1007	–	20		175433					20.417	4.319		31.535					Q203	9
10	1005	–	10		175518					10.610	4.317		31.535					Q204	10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
105	MF	FOCI 88 II MF-88-04	289	FOX 59		137

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 118 Day	Mo.	Yr.	Time GMT Hr.	Time GMT 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
105	57	38.53	N	155	04.49	27	APR	88	18	12										261	137

CTD
Type & SN
Press. SN
Temp. SN
Cond. SN

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 1816
Data off

Data Location
Tape/Diskette I.D.
File Name/Header: 27APR1725.LOG

Remarks: Microzooplankton samples

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1																		MZ	1
2	1014	-	60		181219					60.674	4.704		31.778					10ℓ	2
3	1015	-	50		181308					50.878	4.640		31.731						3
4	1011	-	40		181353					40.437	4.316		31.553						4
5	1010	-	30		181439					30.878	4.307		31.529						5
6	1013	-	20		181526					20.567	4.323		31.529						6
7	1006	-	10		181613					10.431	4.322		31.527						7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
106	MILLER FREEMAN	FOCI 88 II MF-88-04	291	FOX 58		138

Consec. Cast #	Latitude Deg. Min.	N or S	Longitude Deg.	E or W	Date JD = 118 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
106	5736 23	N	155 00 37	W	27 APR 88	1929	04.0	03.8	88	3	6	323	14	8	6	7	242	138

changed 0-2m fm 31.437 (0) 31.437 (1) 31.477 (2) to 31.544

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 118 / 1927
at Surface 1928
Start Down 1929
at Bottom 1936
Start Up 1937
at Surface 1947
Data off 1937

Data Location
Tape/~~Diskette I.D.~~: APR 88 2
File Name/Header: 27 APR 1922

Remarks Max indicated cast depth: 230m MF additional cast
Nutrient & Chlorophyll Samples Collected

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	–	230		193712					229.977	5.580		33.050	—	—	33.047	4	NUTS.	1
2	1014	–	230		193734					229.864	5.581		33.049					Q205	2
3	1015	–	200		193847					200.554	5.179		32.402					Q206	3
4	1011	–	150		194033					150.579	4.902		32.111					Q207	4
5	1010	–	100		194213					100.481	4.831		31.882					Q208	5
6	1013	–	75		194327					75.067	4.697		31.765					Q209	6
7	1006	–	50		194437					50.361	4.470		31.634					Q210	7
8	1012	–	30		194536					30.776	4.385		31.557					Q211	8
9	1007	–	20		194615					20.640	4.391		31.555					Q212	9
10	1005	–	10		194700					10.461	4.398		31.555					Q213	10
11																			11
12																			12

Chl

100ml

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
107	MF	FOC188II	292	FOX 58		138

Consec. Cast #	Latitude Deg. Min.	N or S	Longitude Deg.	E or W	Date JD = 118 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
107	5736.51	N	155002.8	W	27 APR 88	2000										244	138

CTD
Type & SN _____
Press. SN _____
Temp. SN _____
Cond. SN _____

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 27APR1922.LOG

Remarks
Microzooplankton samples

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1																		MZ	1
2	1014		60		200036					60.329	4.641		31.702					10l	2
3	1015		50		200128					50.364	4.450		31.615						3
4	1011		40		200215					40.523	4.424		31.590						4
5	1010		30		200302					30.676	4.400		31.564						5
6	1013		20		200354					20.864	4.393		31.560						6
7	1006		10		200447					10.553	4.394		31.559						7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
107	MILLER FREEMAN	MF-88-04 FOCI 88 II	294	FOX57		139

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 118 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
107	57	33.11	N	154 52.66	W	27	APR	88	21	24	02.5	02.0	88	3	8	305	08	88	2	235	139

no change

CTD
Type & SN SBE 91220 B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 118 / 2121
at Surface 2123
Start Down 2124
at Bottom 2131
Start Up 2132
at Surface
Data off 2131

Data Location
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 27APR2116

Remarks Maximum indicated cast depth: 224 m
Nutrient samples collected, no additional cast

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	200	213320	213824					200.346	5.097		32.294	201	5.09	32.287	5	NUTS.	1
2	1014	–	200		213839					200.279	5.096		32.293					Q214	2
3	1015	–	150		214022					150.830	4.907		32.085					Q215	3
4	1011	–	100		214204					100.761	4.728		31.875					Q216	4
5	1010	–	75		214328					75.336	4.802		31.768					N1	5
6	1013	–	50		214504					50.879	4.464		31.603					N2	6
7	1006	–	30		214613					30.226	4.438		31.575					N3	7
8	1012	–	20		214702					20.835	4.433		31.571					N4	8
9	1007	–	10		214750					10.455	4.456		31.564					N5	9
10	1005	–																	10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
107	MF	MF-88-04	295	FOX 57		139

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 118 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
107	57	33.04	N	154 52.93	W	27	APR	88	22	00										235	139

CTD
Type & SN
Press. SN
Temp. SN
Cond. SN

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 2205
Data off

Data Location
Tape/Diskette I.D.
File Name/Header: 27 APR2116.LOG

Remarks: Microzooplankton samples

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1																		MZ	1
2	1014	–	60		220037					60.455	4.452		31.625					10l	2
3	1015	–	50		220120					50.419	4.467		31.596						3
4	1011	–	40		220204					40.661	4.456		31.583						4
5	1010	–	30		220249					30.667	4.440		31.577						5
6	1013	–	20		220335					20.423	4.443		31.573						6
7	1006	–	10		220420					10.798	4.443		31.562						7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
108	MILLER FREEMAN	MF-88-04	297	FOX56		140

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 118 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
108	57	30.85	N	154 47.26	W	27	APR	88	23	17	04.2	03.8	88	3	8	308	08	8	8	2	219	140

no changes

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 118/2315
at Surface 2316
Start Down 2317
at Bottom 2323
Start Up 2330
at Surface
Data off 2324

Data Location
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 27APR 2313

Remarks Maximum indicated cast depth: 206m
Nutrient & Chlorophyll samples collected, no additional cast.

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	200	232445	232951					201.256	5.455		32.756	205	5.44	32.747	6	NUTS	1
2	1014	-	200		233005					201.352	5.456		32.759					N7	2
3	1015	-	150		233144					150.663	5.039		32.287					N8	3
4	1011	-	100		233320					100.775	4.896		32.071					N9	4
5	1010	-	75		233435					75.651	4.885		31.989					N10	5
6	1013	-	50		233549					50.337	4.780		31.875					N11	6
7	1006	-	30		233651					30.194	4.819		31.836					N12	7
8	1012	-	20		233740					20.729	4.782		31.816					N13	8
9	1007	-	10		233824					10.403	4.734		31.720					N14	9
10																			10
11																			11
12																			12

Chl

100 ml

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
108	MF	FOCI 88-II MF-88-04	298	FOX56		140

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 118 Day	Mo.	Yr.	Time GMT Hr.	Time GMT 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
108	57	30.78	N	154 47.26	W	27	APR	88	23	52										219	140

CTD
Type & SN _____
Press. SN _____
Temp. SN _____
Cond. SN _____

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 27APR2313.LOG

Remarks Microzooplankton samples

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1																		MZ	1
2	1014	-	60		235258					60.827	4.832		31.910					10 l	2
3	1015	-	50		235338					50.351	4.774		31.873						3
4	1011	-	40		235416					40.676	4.773		31.853						4
5	1010	-	30		235457					30.246	4.793		31.843						5
6	1013	-	20		235537					20.390	4.811		31.818						6
7	1006	-	10		235617					10.330	4.824		31.646						7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓ _____

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
109	MILLER FREEMAN	FOCI 88 II MF-88-04	300	FOX 55		141

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 119 Day	Mo.	Yr.	Time GMT Hr.	Time GMT 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
109	57	28.63	N	154 42.39	W	28	APR	88	01	10	03.3	02.7	88	3	8	310	10	8	8	5	69	141

no changes

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 119 / 0106
at Surface 0108
Start Down 0110
at Bottom 0112
Start Up 0113
at Surface 0119
Data off 0112

Data Location
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 28 APR 0104

Remarks Maximum indicated cast depth: 62 m
Nutrient, Chlorophyll, & Microzooplankton samples

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.	
1	251	–	60		011322					60.347	5.002		32.240	—	—	32.241	7	NUTS.	1	Chl MZ
2	1014	–	60		011338					60.336	4.999		32.238					MZ	2	10l
3	1015	–	50		011426					50.849	4.940		32.182					N15	3	100ml
4	1011	–	50		011441					50.876	4.938		32.181						4	10l
5	1010	–	40		011528					40.282	4.884		32.125						5	10l
6	1013	–	30		011617					29.993	4.843		32.056					N16	6	100ml
7	1006	–	30		011638					30.001	4.841		32.050						7	10l
8	1012	–	20		011723					19.847	4.778		31.868					N17	8	100ml
9	1007	–	20		011738					19.893	4.770		31.866						9	10l
10	1005	–	10		011818					10.202	4.794		31.733					N18	10	100ml
11	1009	–	10		011839					10.204	4.800		31.748						11	10l
12																			12	

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
110	Miller Freeman	MF-88-04	302			142

Consec. Cast #	Latitude Deg. Min.	N or S	Longitude Deg.	E or W	Date JD = 119 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
110	5723 65	N	154537 8	W	28 APR 88	0233	036	032	88	3	8	315	16	8	8	5 195	142

no change

CTD
Type & SN SBE 912203
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 0226
at Surface 0232
Start Down 0233
at Bottom 0239
Start Up 0240
at Surface
Data off 0239

Data Location 195

Tape/Diskette I.D.	File Name/Header
APR882	28APR0225

Remarks 183 185

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	97	024340	024845					97.089	5.114		32.307	98	5.09	32.309	8		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
111	MILLER FREEMAN	MF-88-04 (FOCI 88 II)	303			143

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 119 Day	Mo.	Yr.	Time GMT Hr.	Time GMT 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
111	57	26	80	N 155	00	69	W	28	APR	88	03	26	04	6	04	2	88	3	8	3	15	16	8	8	5	238 (2 38)	143

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on	0322
at Surface	0326
Start Down	0326
at Bottom	0333
Start Up	0335
at Surface	
Data off	0334

Data Location

Tape/~~Diskette I.D.~~	File Name/Header
APR 88 2	28APR0318

Remarks 225.5 227.5

no changes

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	—	225		033443					225.371	5.559		32.984	—	—	32.985	9		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
112	MILLER FREEMAN	FOCI 88 II MF-88-04	305			144

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 119 Day	Mo.	Yr.	Time GMT Hr.	Time GMT 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
112	57	29.59	N	155 06.99	W	28	APR	88	04	46	03.4	03.0	884	8	3	05	18	8	8	7	244	144

changed 0-1m fm 31.395 to 31.543

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 0443
at Surface 0446
Start Down 0446
at Bottom 0454
Start Up
at Surface
Data off

Data Location 242 244

Tape/~~Diskette I.D.~~	File Name/Header
APR 88 2	28APR0441

Remarks 233 235

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	53	050215	050713					52.526	4.740		31.782	52	4.75	31.775	10		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
113	MILLER FREEMAN	FOCI 88 II MF-88-04	307			145

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 119 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
113	57	32.35	N	155 13.05	W	28	APR	88	06	09	03.9	03.5	88	4	7	304	23	8	8	7	266	145

changed on for 31.175 to 31.505

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 0605
at Surface 0608
Start Down 0609
at Bottom 0617
Start Up 0618
at Surface
Data off

Data Location
Tape/~~Diskette I.D.~~: APR882
File Name/Header: 28APR0601

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	—			061806					253.293	5.571		33.009	—	—	33.010	11		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials SD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
114	MILLER FREEMAN	MF-88-04 FOCI 88 II	309			146

Consec. Cast #	Latitude Deg.	Min.	N or S	Longitude Deg.	E or W	Date JD = 119 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
114	57	34.27	N	155 17.40	W	28	APR	88	07	22	03.9	03.5	88	4	7	323	19	99	97		291	146

changed 0-1m from 31.534 to 31.661

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 0719
at Surface 0722
Start Down 0722
at Bottom 0732
Start Up 0733
at Surface
Data off 0732

Data Location
Tape/~~Diskette I.D.~~ APR88 2
File Name/Header 28APR0713

Remarks 278 281

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	252	A	273	073330	073824					272.624	5.579		33.033	276	5.57	33.032	12		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
115	MILLER FREEMAN	MF-88-04 FOCI 88 II	311			147

Consec. Cast #	Latitude Deg. Min.	N or S	Longitude Deg.	E or W	Date JD = 119 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
115	5737	N	15525	W	28 APR 88	0901	032	025	88	4	8	29	21	8	8	2	174	147

no changes

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 0857
at Surface 0901
Start Down 0901
at Bottom 0906
Start Up 0907
at Surface
Data off 0906

Data Location

Tape/~~Diskette I.D.~~	File Name/Header
APR 88 2	28APR0856

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	—	161		090713					161.183	4.870		32.074	—	—	32.076	13		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
116	MILLER FREEMAN	FOCI 88 II MF-88-04	313			148

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude E or W	Date JD = 119 Day	Mo.	Yr.	Time GMT Hr.	Time GMT 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
116	57	32.54	N	155 34.64	W	28	APR	88	10	15	03.5	03.0	89	4	8	300	18	8	8	2	70	148

changed 0-3m fm 31.380 (0) 31.380 (2) 31.382 (3) to 31.451

CTD
Type & SN SBE 91220-8
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on
at Surface 1015
Start Down 1017
at Bottom 1019
Start Up
at Surface
Data off

Data Location
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 28APR1010

Remarks Nutrients + chlorophylls collected.
*UNSTABLE SAL & TEMP @ SAMPLE DEPTH

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	50	102020	102320					50.214	4.323		31.500*	49	4.31	31.504*		Nuts	1
2	1015		50		102334					50.288	4.322		31.498					N6	2
3	1013		30		102449					30.273	4.329		31.478					N19	3
4	1008		20		102543					19.843	4.356		31.467					N20	4
5	1012		10		102634					9.716	4.357		31.451					N21	5
6	1014																		6
7	1011																		7
8	1010																		8
9	1009																		9
10	1007																		10
11																			11
12																			12

chl 100ml

Initials CO
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
117	MILLER FREEMAN	FOCI 88 II MF-88-04	315			149

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 119 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
117	57	29.89	N	155 28.54	W	28	APR	88	11	17	03.2	02.1	89	4	8	310	14	8	8	2	309	149

changed 0-1m fm 31.464 to 31.512

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 1111
at Surface 1116
Start Down 1117
at Bottom 1127
Start Up 1128
at Surface
Data off 1127

Data Location
Tape/~~Diskette I.D.~~: APR 88 2
File Name/Header: 28 APR 1110

Remarks Nutrients + chlorophylls collected.
D: 295

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	251	–	295		112754					294.734	5.596		33.109	—	—	33.107	15	nuts	1
2	1015		250		112946					249.810	5.565		32.975					N22	2
3	1013		200		113131					199.237	5.228		32.428					N23	3
4	1005		150		113320					149.314	5.017		32.209					N24	4
5	1012		100		113501					100.421	4.823		32.063					N25	5
6	1014		75		113622					74.995	4.781		32.020					N26	6
7	1011		50		113740					49.353	4.853		31.949					N27	7
8	1010		30		113846					29.570	4.437		31.602					N28	8
9	1009		20		113936					20.173	4.360		31.554					N29	9
10	1007		10		114028					10.023	4.354		31.554					N30	10
11																			11
12																			12

chl.

100ml

Initials CO
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
118	MILLER FREEMAN	FOCI 88 II MF-88-04	317			150

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 119 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
118	57	27.25	N	155 22.63	W	28	APR	88	13	11	02.8	01.8	889.4	8	3	20	12	8	8	277	150

changed 0-4 m
fm 31.654 (1)
31.654 (2)
31.690 (3)
31.686 (4)
to 31.765

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 1305
at Surface 1310
Start Down 1311
at Bottom 1319
Start Up 1320
at Surface
Data off 1319

Data Location
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 28APR1302

Remarks Nutrient samples collected
D: 264

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	252	A	250	132105	132604					248.063	5.573		33.033	249	5.58	33.032	16		1
2	1015		250		132622					248.447	5.573		33.033					N31	2
3	1013		200		132841					197.877	5.388		32.579					N32	3
4	1005		150		133058					148.537	5.179		32.332					N33	4
5	1012		100		133310					99.689	4.939		32.163					N34	5
6	1014		75		133435					74.641	4.757		32.053					N35	6
7	1011		50		133551					50.103	4.621		31.933					N36	7
8	1010		30		133658					29.587	4.623		31.783					N37	8
9	1009		20		133740					19.445	4.662		31.774					N38	9
10	1007		10		133821					9.703	4.699		31.746					N39	10
11																			11
12																			12

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
119	MILLER FREEMAN	FOCI 88 II MF-88-04	319			151

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 119 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
119	57	24.81	N	155 17.00	W	28	APR	88	14	59	03.2	02.0	090	4	8	320	10	8	8	2	255	151

CTD
Type & SN SBE 91220-8
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 119 / 1455
at Surface 1458
Start Down 1459
at Bottom 1507
Start Up 1508
at Surface 1519
Data off 1507

Data Location
Tape/~~Diskette I.D.~~: APR 88 2
File Name/Header: 28 APR 1451

Remarks Maximum indicated cast depth: 244
Nutrient & Chlorophyll samples collected

changed 2m fm 31.566 to 31.619

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	-	244		150747					244.088	5.594		33.089	—	—	33.087	17	NUTS	1
2	1015	-	244		150807					244.158	5.594		33.089					N40	2
3	1013	-	200		150956					200.787	5.548		32.936					N41	3
4	1005	-	150		151203					150.188	5.314		32.482					N42	4
5	1012	-	100		151405					100.468	5.067		32.231					N43	5
6	1014	-	75		151518					74.778	4.863		32.110					N44	6
7	1011	-	50		151631					49.904	4.619		31.967					N45	7
8	1010	-	30		151734					30.858	4.642		31.854					N46	8
9	1009	-	20		151817					20.335	4.678		31.761					N47	9
10	1007	-	10		151858					10.285	4.516		31.629					N48	10
11																			11
12																			12

Chl

100ml

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
120	MILLER FREEMAN	FOCI 88 II MF-88-04	321			152

Consec. Cast #	Latitude Deg. Min.	N or S	Longitude Deg.	E or W	Date JD = 119 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
120	57 22	14	N	155 10 99	W	28 APR 88	16 35	03 0	02 0	90	2	8	30	08	7	8	1	245	152

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 119 / 1631
at Surface 1634
Start Down 1635
at Bottom 1643
Start Up 1650
at Surface
Data off 1643

Data Location
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 28 APR 1628

Remarks Maximum indicated cast depth: 234
Nutrient samples collected

changed 2m fm 31.655 to 31.741

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	230	164400	164931					230.141	5.570		33.039	230	5.57	33.039	18	NUTS.	1
2	1015	-	230		164949					230.072	5.570		33.039					N49	2
3	1013	-	200		165057					200.563	5.554		32.965					N50	3
4	1005	-	150		165239					150.732	5.250		32.403					N51	4
5	1012	-	100		165422					100.023	5.036		32.200					N52	5
6	1014	-	75		165532					75.446	4.822		32.096					N53	6
7	1011	-	50		165643					49.745	4.713		31.989					N54	7
8	1010	-	30		165745					30.668	4.626		31.807					N55	8
9	1009	-	20		165827					20.765	4.666		31.800					N56	9
10	1007	-	10		165908					10.693	4.706		31.755					N57	10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
121	MILLER FREEMAN	FOCI 88 II MF-88-04	323			153

Consec. Cast #	Latitude Deg. Min.	N or S	Longitude Deg.	E or W	Date JD = 119 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
121	57 19.53	N	155 05.60	W	28 APR 88	18 08	03.0	02.0	91	2	8	340	10	6	6	1	241	153

no change

CTD
Type & SN SBE 91220-8
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 119 / 1806
at Surface 1807
Start Down 1808
at Bottom 1816
Start Up 1817
at Surface
Data off 1816

Data Location
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 28APR1803

Remarks Maximum indicated cast depth: 231
Nutrient & Chlorophyll samples collected

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	–	231		181650					230.470	5.564		33.038	—	—	33.038	19	Nuts.	1
2	1015	–	231		181707					230.511	5.564		33.038					N58	2
3	1013	–	200		181817					200.916	5.485		32.770					N59	3
4	1005	–	150		182003					150.680	5.190		32.301					N60	4
5	1012	–	100		182152					100.696	4.622		32.012					N61	5
6	1014	–	75		182318					74.796	4.344		31.900					N62	6
7	1011	–	50		182434					51.458	4.287		31.773					N63	7
8	1010	–	30		182541					30.450	4.333		31.729					N64	8
9	1009	–	20		182626					20.127	4.406		31.695					N65	9
10	1007	–	10		182710					10.256	4.430		31.692					N66	10
11																			11
12																			12

Chl

100ml

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
122	MILLER FREEMAN	FOCI 88 II MF-88-04	325			154

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 119 Day	Mo.	Yr.	Time GMT Hr.	Time GMT 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
122	57	17.16	N	154 59.80	W	28	APR	88	19	38	04.1	03.9	92	3	8	310	06	8	8	7	211	154

no changes

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 119/1936
at Surface 1937
Start Down 1938
at Bottom 1945
Start Up 1950
at Surface 1959
Data off 1945

Data Location
Tape/~~Diskette I.D.~~: APR 88 Z
File Name/Header: 28 APR 1934

Remarks Maximum indicated cast depth: 200 m
Nutrient samples collected

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	200	194500	195006					199.800	5.345		32.626	202	5.34	32.629	20	NUTS	1
2	1015	–	200		195020					199.807	5.345		32.626					N67	2
3	1013	–	150		195207					151.001	5.098		32.251					N68	3
4	1005	–	100		195350					100.283	4.760		32.015					N69	4
5	1012	–	75		195507					75.637	4.250		31.843					N70	5
6	1014	–	50		195626					50.828	4.305		31.809					N491	6
7	1011	–	30		195730					30.825	4.352		31.732					N492	7
8	1010	–	20		195819					20.618	4.421		31.723					N493	8
9	1009	–	10		195906					10.726	4.403		31.703					N494	9
10	1007	–																	10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
123	MILLER FREEMAN	FOCI 88 II MF-88-04	327			155

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 119 Day	Mo.	Yr.	Time GMT Hr.	Time GMT 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
123	57	14.31	N	154 54.51	W	28	APR	88	21	00	05.8	04.2	92	3	8	325	07	8	8	1	143	155

changed 0-2m fm 31.651 to 31.671

?115-137 m

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 119/2058
at Surface 2059
Start Down 2100
at Bottom 2104
Start Up 2106
at Surface 2113
Data off 2105

Data Location
Tape/Diskette I.D.: APR 88 2
File Name/Header: 28 APR 2055

Remarks Maximum indicated cast depth: 133 m
Nutrient & Chlorophyll samples collected

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	-	133		210534					133.195	3.971		32.241	—		32.244	21	Nuts	1
2	1015	-	133		210553					133.218	3.968		32.240						2
3	1013	-	100		210720					100.754	5.073		32.259						3
4	1005	-	75		210834					75.356	4.869		32.113						4
5	1012	-	50		210956					51.034	4.248		31.848						5
6	1014	-	30		211105					31.188	4.297		31.768						6
7	1011	-	20		211154					21.343	4.364		31.703						7
8	1010	-	10		211252					9.998	4.401		31.676						8
9																			9
10																			10
11																			11
12																			12

Chl

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
124	Miller Freeman	FOCI-88-11 MF-88-04	329			156

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 119 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
124	57	06.70	N	155 00.11	W	28	APR	88	22	28	05.2	03.8	93	3	8	030	02	3	8	1	208	156

changed 0-2 m fm 31.712 (6) 31.712 (1) 31.731 (2) to 31.675

CTD
Type & SN SBD 912208
Press. SN 260072
Temp. SN 310
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 119 / 2224
at Surface 2226
Start Down 2228
at Bottom 2234
Start Up 2240
at Surface
Data off 2234

Data Location
Tape/Diskette I.D.: APR882
File Name/Header: 28APR 2221

Remarks 196 m maximum indicated cast depth

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	194	223515	224007					193.928	4.258		32.346	194	4.23	32.332	22		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
125	MILLER FREEMAN	FOCI 88 II MF-88-04	331			157

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 119 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
125	57	09.84	N	155	05.95	W	28	APR	88	23	41	08.0	06.0	94	3	8	335	04	3	8	1	226	157

changed 3 m from 31.759 to 31.662

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on	119/ 2338
at Surface	2340
Start Down	2341
at Bottom	2348
Start Up	234
at Surface	
Data off	2348

Data Location

Tape/~~Diskette I.D.~~	File Name/Header
APR88 2	28 APR 2335

Remarks Maximum indicated cast depth: 215 m

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	257	–	215		234915					214.642	5.467		32.856	—	—	32.858	23		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD

✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
126	MILLER FREEMAN	FOCI 88 II MF-88-04	333			158

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 120 Day	Mo.	Yr.	Time GMT Hr.	Time GMT 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
126	57	12.28	N	155 12.32	W	29	APR	88	01	12	12.0	10.0	94	3	8	335	06	3	8	1	239	158

changed 0-3m to fm
31.709 (0)
31.709 (1)
31.810 (2)
31.855 (3)
to 31.778

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 120/0110
at Surface 0111
Start Down 0112
at Bottom 0119
Start Up 0125
at Surface
Data off 0119

Data Location
Tape/~~Diskette I.D.~~: APR 88 2
File Name/Header: 29APR0108

Remarks Maximum indicated cast depth: 227

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot.Data Therm-P	Sample Bot.Data Avg Tw	Sample Bot.Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	223	012000	012516					223.338	5.493		33.162	224	5.49	33.161	24		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
127	MILLER FREEMAN	FOCI 88 II MF-88-04	335			159

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 120 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
127	57	14.98	N	155 19.05	W	29	APR	88	02	48	07.5	05.5	95.3	8	3	00	07	3	8	1	251	159

changed 0-3m fm 31.770 (0) 31.770 (1) 31.826 (2) 31.844 (3) to 31.729

CTD

Type & SN: SBE 91220-B
Press. SN: 26072
Temp. SN: 710
Cond. SN: 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on: 120/0241
at Surface: 0247
Start Down: 0248
at Bottom: 0255
Start Up: 0256
at Surface:
Data off: 0255

Data Location 251

Tape/~~Diskette I.D.~~: APR882
File Name/Header: 29APR0239

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	—			025544					240.089	5.587		33.076	—	—	33.076	25		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials: CD

✓

Consec. Cast #	Vessel	Proj. & Leg	Event#	Vessel Sta. I.D.	Instructions	Sta. Designation
128	MILLER FREEMAN	FOCI 88 II MF-88-04	337			160

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 120 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
128	57	17.81	N	155 25.59	W	29	APR	88	04	11	04.5	02.7	96	2	8	234	15	6	8	1	264	160

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 120 / 0402
at Surface 0411
Start Down 0411
at Bottom 0420
Start Up 0420
at Surface
Data off

Data Location
Tape/~~Diskette I.D.~~ APR88 2
File Name/Header 29APR0401

Remarks *TDR CALIBRATION (60 SECS @ EACH DEPTH) D: 252

changed 0-4m
fm 31.240
31.670
31.722
31.786
to 31.737
to 31.724

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	252	A	245	042050	042601					242.872	5.597		33.120	245	5.59	33.123	26		1
2			200*	042734						200.049	5.578		33.034						2
3			150*	042951						NO LOG									3
4			100*	043158						100.050	5.207		32.308						4
5			50*	043407						49.700	4.735		32.013						5
6			20*	043549						19.370	4.545		31.727						6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
129	MILLER FREEMAN	FOCI 88 II MF-88-04	339			161

Consec. Cast #	Latitude Deg. Min.	N or S	Longitude Deg.	E or W	Date JD = 120 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
129	5721 05	N	155 31 86	W	29 APR 88	0556	0319	0239	9	2	8	234	15	6	8	1	285	161

CTD

Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on 120 / 0550
at Surface 0555
Start Down 0556
at Bottom 0605
Start Up 0605
at Surface
Data off 0606

Data Location

Tape/~~Diskette I.D.~~ APR882
File Name/Header 29APR0548

Remarks Cast terminated @ 254 m during ascent

changed 3m fm 31.572 to 31.612

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	251	—	270		060533					271.250	5.593		33.103	—	—	33.108	27		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
130	MILLER FREEMAN	MF-88-04 (FOCI 88 II)	341			162

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 120 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
130	57	23.90	N	155 38.42	W	29	APR	88	07	26	04.1	03.1	198	2	8	244	11	6	8	1	291	162

no change

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 120 / 0719
at Surface 0726
Start Down 0726
at Bottom 0736
Start Up 0736
at Surface
Data off 0736

Data Location
Tape/~~Diskette I.D.~~: APR 882
File Name/Header: 29APR0717

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	276		073641					276.360	5.595		33.105	280	5.58	33.104	28		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
131	MILLER FREEMAN	FOCI BB II MF-88-04	343			163

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 120 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
131	57	26.94	N	155	44.33	29	APR	88	09	11	06.0	04.2	98	2	8	325	07	6	8	1	182	163

no change

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 0907
at Surface 0911
Start Down 0911
at Bottom 0917
Start Up 0918
at Surface
Data off 0917

Data Location
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 29 APR 0904

Remarks
D: 173

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	—	173		091740					172.990	4.953		32.227	—	—	32.225	29		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
132	MILLER FREEMAN	FOCI 88 II MF-88-04	345			164

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 120 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
132	57	20.83	N	155 51.96	W	29	APR	88	1031		05.3	03.8	99	2	8	360	04	2	8	1	93	164

no change

CTD
Type & SN SBE 91220-8
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 1024
at Surface 1030
Start Down 1031
at Bottom 1034
Start Up 1034
at Surface
Data off 1034

Data Location 93
Tape/~~Diskette I.D.~~ APR 88 2
File Name/Header 29APR1023

Remarks nutrients + chlorophylls collected.
D:84

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	75	103515	104000					74.737	4.648		31.768	73	4.63	31.766	30	Nuts	1
2	1001		75		104019					74.724	4.648		31.769					N502	2
3	1007		50		104145					50.440	4.339		31.536					N503	3
4	1009		30		104257					29.712	4.302		31.499					N504	4
5	1010		20		104355					20.171	4.338		31.496					N505	5
6	1011		10		104455					9.719	4.371		31.492					N506	6
7	1014		SPARE																7
8	1012		SPARE																8
9																			9
10																			10
11																			11
12																			12

Chl. 100ml

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
133	MILLER FREEMAN	FOCI 88 II MF-88-04	347			165

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 120 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
133	57	18.01	N	155 45.43	W	29	APR	88	11	44	04.5	03.2	00	3	8	340	10	3	8	1	263	165

no changes

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 1137
at Surface 1143
Start Down 1144
at Bottom 1152
Start Up
at Surface
Data off

Data Location
Tape/~~Diskette I.D.~~ APR882
File Name/Header 29 APR1134

Remarks Nutrients + chlorophylls collected

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.	
7 1	251	—	251		115254					251.660	5.532		32.919	—		32.921	31	NUTS	1	chl.
8 2	1001		251		115312					251.601	5.532		32.920					N507	2	
9 3	1007		200		115529					200.249	5.092		32.287					N508	3	
10 4	1009		150		115741					148.382	4.874		32.050					N509	4	
11 5	1010		100		115959					101.332	4.875		31.893					N510	5	100ml
12 6	1011		75		120125					74.742	4.614		31.677					N511	6	
1 7	1014		50		120247					50.115	4.433		31.591					N512	7	
2 8	1012		30		120401					29.586	4.402		31.568					N513	8	
3 9			20		120454					19.377	4.364		31.523					N514	9	
4 10			10		120545					9.732	4.509		31.452					N515	10	
11																			11	
12																			12	

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
134	Miller Freeman	FOCI-88-11 MF-88-04	348			166

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 120 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
134	57	15.41	N	155 39.70	W	29	APR	88	12	39	03.8	02.8	00	3	8	340	10	3	8	1	279	166

CTD
Type & SN SBE 9/22OB
Press. SN 26072
Temp. SN 310
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 1236
at Surface 1238
Start Down 1239
at Bottom 1247
Start Up
at Surface
Data off 1247

Data Location

Tape/Diskette I.D.	File Name/Header
APR882	29APR1232

Remarks

no changes

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	252	A	260	124850	125349					260.238	5.588		33.084	263	5.59	33.084	32		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
135	Miller Freeman	FOCI-88-11 MF-88-04	350			167

Consec. Cast #	Latitude Deg. Min.	N or S	Longitude Deg.	E or W	Date JD = 120 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
135	5712 98	N	155337 5	W	29 APR 88	1417	038	025	02	3	8	340	06	3	8	1	276	167

changed 2m fm 31.559 to 31.639

CTD
Type & SN SBE 912208
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 120/1415
at Surface 1416
Start Down 1417
at Bottom 1425
Start Up 1426
at Surface 1438
Data off 1425

Data Location
Tape/Diskette I.D.: APR882
File Name/Header: 29 APR 1411

Remarks Maximum indicated cast depth: 263m
Nutrient & Chlorophyll samples collected

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	–	263		142556					263.018	5.570		33.008	—	—	33.011	33	NUTS	1
2	1007	–	250		142705					250.467	5.542		32.925					N516	2
3	1009		200		142905					200.558	5.337		32.544					N517	3
4	1010		150		143117					150.386	5.084		32.285					N518	4
5	1011		100		143321					100.678	4.857		32.111					N519	5
6	1014		75		143433					75.411	4.846		32.064					N520	6
7	1012		50		143547					50.689	4.867		31.985					N521	7
8	1013		30		143651					30.929	4.791		31.873					N522	8
9	1006		20		143737					20.236	4.708		31.761					N523	9
10	1005		10		143820					10.824	4.583		31.651					N524	10
11																			11
12																			12

Chl

100ml

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
136	Miller Freeman	FOCI-88-11 MF-88-04	351			168

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 120 Day	Mo.	Yr.	Time GMT Hr.	Time GMT 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
136	57	10.51	N	155 27.73	W	29	APR	88	15	10	05.5	03.9	03	2	8	275	04	4	8	1	263	168

no changes

CTD

Type & SN SBE 912203

Press. SN 26072

Temp. SN 710

Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on 120 / 1508

at Surface 1509

Start Down 1510

at Bottom 1517

Start Up

at Surface

Data off 1517

Data Location

Tape/~~Diskette I.D.~~: APR882

File Name/Header: 29 APR 1506

Remarks Maximum indicated cast depth 252 m

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	251	151745	152249					251.097	5.598		33.123	253	5.59	33.123	34		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD

✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
137	Miller Freeman	MF-88-04	353			169

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude Min.	E or W	Date JD = 120 Day	Mo.	Yr.	Time GMT Hr.	Time GMT 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
137	57	07.93	N	155	22.50	W	29	APR	88	16	31	05.6	05.0	03	2	8	301	05	4	8	1	260	169

no changes

CTD
Type & SN SBE 911plus
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 120 / 1627
at Surface 1630
Start Down 1631
at Bottom 1639
Start Up 1640
at Surface 1650
Data off 1639

Data Location
Tape/~~Diskette I.D.~~ APR882
File Name/Header 29 APR 1623

Remarks Maximum indicated cast depth: 247
Nutrient & Chlorophyll samples collected

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	–	246		163953					245.732	5.595		33.118	—	—	33.134	35	NUTS.	1
2	1007	–	245		164012					245.139	5.595		33.118					N525	2
3	1009	–	200		164156					199.226	5.536		32.910					N526	3
4	1010	–	150		164336					151.524	5.240		32.414					N527	4
5	1011	–	100		164523					100.840	4.888		32.140					N528	5
6	1014	–	75		164632					75.246	4.720		32.045					N529	6
7	1012	–	50		164740					51.035	4.597		31.948					N530	7
8	1013	–	30		164845					30.404	4.542		31.783					N531	8
9	1006	–	20		164927					20.378	4.560		31.767					N532	9
10	1005	–	10		165013					10.446	4.690		31.751					N533	10
11																			11
12																			12

Chl
100ml

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
138	Miller Freeman	FOCI-88-11 MF-88-04	354			170

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude Min.	E or W	Date JD = 120 Day	Mo.	Yr.	Time GMT Hr.	Time GMT 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
138	57	05.61	N	155	17.47	W	29	APR	88	17	29	06.1	05.0	04	2	8	300	11	5	8	1	256	170

no change

CTD

Type & SN SBD 912208
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on 120 / 1726
at Surface 1728
Start Down 1729
at Bottom 1737
Start Up 1744
at Surface
Data off 1737

Data Location

Tape/Diskette I.D.: APR882
File Name/Header: 29 APR 1724

Remarks Maximum indicated cast depth: 243

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	238	173840	174354					238.669	5.597		33.121	240	5.60	33.123	36		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD

✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
139	Miller Freeman	FOCI-88-II MF-88-04	356			171

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 120 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
139	57	02.90	N	155 11.22	W	29	APR	88	18	55	04.7	03.6	05	2	8	331	07	5	8	1	241	171

no changes

CTD
Type & SN SBE 912203
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 120/1854
at Surface 1854
Start Down 1855
at Bottom 1903
Start Up 1904
at Surface 1914
Data off 1903

Data Location
Tape/~~Diskette I.D.~~: AT8882
File Name/Header: 29 APR 1848

Remarks Maximum indicated cast depth: 229
Nutrient & Chlorophyll samples collected

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	251	–	229		190353					228.128	5.496		33.065	—	—	33.069	37	NUTS	1
2	1007	–	228		190411					227.726	5.493		33.064					N534	2
3	1009	–	200		190528					201.059	5.497		32.999					N535	3
4	1010	–	150		190708					150.224	5.190		32.322					N536	4
5	1011	–	100		190847					100.390	4.764		32.066					N537	5
6	1014	–	75		190959					75.912	4.687		31.972					N538	6
7	1012	–	50		191111					51.024	4.561		31.845					N539	7
8	1013	–	30		191213					30.415	4.596		31.758					N540	8
9	1006	–	20		191256					20.454	4.579		31.710					N541	9
10	1005	–	10		191337					10.845	4.644		31.691					N542	10
11																			11
12																			12

Chl

100m

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
140	Miller Freeman	MF-88-04	357			172

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	E or W	Date JD = 120 Day	Mo.	Yr.	Time GMT Hr.	Time GMT 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
140	56	59.97	N	155	06.78	W	29	APR	88	19	51	06.5	06.0	05	3	8	34	30	7	4	8	1	213	172

changed 0-1m fm 31.718 to 31.676

CTD
Type & SN SBE 912203
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 120 / 1947
at Surface 1949
Start Down 1951
at Bottom 1957
Start Up 1958
at Surface
Data off 1957

Data Location
Tape/~~Diskette I.D.~~ APR882
File Name/Header 29 APR 1945

Remarks Maximum indicated cast depth 202 m

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	252	A	123	200145	200646					123.127	5.098		32.243	122	5.10	32.243	38		1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
141	Miller Freeman	MF-88-04	387			183

Consec. Cast #	Latitude Deg.	Latitude Min.	N or S	Longitude Deg.	Longitude Min.	E or W	Date JD = 121 Day	Mo.	Yr.	Time GMT Hr.	Time GMT 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
141	57	40.55	N	155	10.10	W	30	APR	88	16	44	06.1	04.9	09	3	8	064	08	8	8	1	291	183

no changes

CTD
Type & SN SBE 912208
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 121 / 1642
at Surface 1643
Start Down 1644
at Bottom 1653
Start Up 1653
at Surface
Data off 1653

Data Location
Tape/~~Diskette I.D.~~: APR 88 2
File Name/Header: 30 APR 1640

Remarks Maximum indicated cast depth : 276
MOCNESS Tow Station

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1																			1
2																			2
3																			3
4																			4
5	BKG calibration :				MAX	DEPTH				275.876									5
6			200	165557						201.107									6
7			100	165910						100.252									7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
142	MILLER FREEMAN	MF-88-04	402			191

Consec. Cast #	Latitude Deg.	Latitude 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	Weath.	Bottom Depth, m	Sta. Name or I.D
142	57	40.83	N	155	10.08	W	01	MAY	88	02	34	07.0	05.4	07	3	8	050	24	8	8	1 293	191

no changes

CTD

Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on 0231
at Surface 0233
Start Down 0234
at Bottom 0243
Start Up 0243
at Surface
Data off 0243

Data Location 293

Tape/~~Diskette I.D.~~ APR88 2
File Name/Header 01MAY0226

Remarks

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	251	—			024331					278.569	5.543		32.926	—	—	—			1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
143	Miller Freeman	FOCI 88 II MF-88-04	403			191

Consec. Cast #	Latitude Deg.	Latitude 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	Weath.	Bottom Depth, m	Sta. Name or I.D
143	57	40.10	N	155	10.14	W	01	MAY	88	0302											288	191

changed 0-2m for 31.307 31.307 31.317 to 31.272

CTD
Type & SN SBE 91220 B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time
Data on 0259
at Surface 0301
Start Down 0302
at Bottom 0311
Start Up 0311
at Surface
Data off 0311

Data Location
Tape/~~Diskette I.D.~~ APR 882
File Name/Header 01MAY0257

Remarks CAST FOR CASSETTE TAPE RECORDING FOR PMEL
D: 274

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1										275.090	5.492		32.809						1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials CD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
144	MILLER FREEMAN	FOCI 88 II MF-88-04	416			199

Consec. Cast #	Latitude Deg.	Latitude 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	Weath.	Bottom Depth, m	Sta. Name or I.D
144	57	40.35	N	155	09.29	W	01	MAY	88	16	10	06.5	05.0	10.4	8	042	21	6	8	1	286	199

CTD

Type & SN SBE 91220 B

Press. SN 26072

Temp. SN 710

Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on 122 / 1609

at Surface 1609

Start Down 1610

at Bottom 1619

Start Up 1620

at Surface

Data off 1619

Data Location

Tape/~~Diskette I.D.~~ APR 88 2

File Name/Header 01MAY1606

Remarks Maximum indicated cast depth : 272 m

MOCNESS tow station

no changes

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1																			1
2																			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD

✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
145	MILLER FREEMAN	FOCI 88 II MF-88-04	429	FOX 60		204

Consec. Cast #	Latitude Deg.	Latitude 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
145	57	41.29	N	155	W	02	MAY	88	00	18	07.2	05.8	11	3	8	046	25	5	3	1	296	204

CTD
Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on	123 / 0016
at Surface	0017
Start Down	0018
at Bottom	0019
Start Up	0020
at Surface	0023
Data off	0020

Data Location

Tape/~~Diskette I.D.~~	File Name/Header
APR882	02MAY0009

Remarks CAST TO 45 m for water samples: Phytoplankton

changed 0-3m for 31.435 (0) 31.435 (2) 31.436 (3) to 31.345

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1	500	–	45		002037					44.800	4.968		31.616						1
2	251	–	20		002205					20.395	4.417		31.358						2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD
✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
146	MILLER FREEMAN	FOCI 88 II MF-88-04	430	FOX 58		205

Consec. Cast #	Latitude Deg.	Latitude 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
146	57	36.31	N	155 00.22	W	02	MAY	88	01	13	04.9	04.2	11	4	8	050	20	5	3	1	240	205

no change

CTD

Type & SN SBE 91220-B
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on	123 / 0111
at Surface	0112
Start Down	0113
at Bottom	0114
Start Up	0115
at Surface	0117
Data off	0114

Data Location

Tape/~~Diskette I.D.~~	File Name/Header
APR 88 2	Ø2MAY Ø1Ø7

Remarks Phytoplankton samples : 45 m depth max

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ 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	500	-	45		011513					46.458	4.862		31.870	—	—	—			1
2	251	-	20		011636					20.785	4.720		31.455	—	—	—			2
3																			3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials DMD

✓

Consec. Cast #	Vessel	Proj. & Leg	Event #	Vessel Sta. I.D.	Instructions	Sta. Designation
147	Miller Freeman	MF-88-04				206

Consec. Cast #	Latitude Deg.	Latitude 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
147	57	44.84	N	155	04.46	W	02	MAY	88	02	51									307	206

CTD
Type & SN SBE 912208
Press. SN 26072
Temp. SN 710
Cond. SN 304

Monitor Checks

	on Deck	at Surface
Press.		
Temp.		
Cond.		
Other		

Times JD/Time

Data on	0247
at Surface	0250
Start Down	0251
at Bottom	0259
Start Up	0300
at Surface	
Data off	0259

Data Location

Tape/Diskette I.D.	File Name/Header
APR882	02MAY0240

Remarks Cast for water samples (for Sam's eggs)

no changes

Pos.	Bot.	T Rack	Trip Depth	Time @ Depth	Time @ Trip	Monitor Values Press.	Monitor Values Temp.	Monitor Values Cond.	Monitor Values Other	Conv. Mon. Values-CTD Press.	Conv. Mon. Values-CTD Temp.	Conv. Mon. Values-CTD Cond.	Conv. Mon. Values-CTD Sal.	Sample Bot. Data Therm-P	Sample Bot. Data Avg Tw	Sample Bot. Data Sal.	Sal. Bot. #	Other Samp.	Pos.
1																			1
2					030010														2
3					030025					290.607	5.577		33.030						3
4																			4
5																			5
6																			6
7																			7
8																			8
9																			9
10																			10
11																			11
12																			12

Initials SD

✓