32.276 to The John 50100 ವಿಷ.ಎಎಇ%₀ @ 106 m changet Sta. Name .coq L of 25 d m Ŋ 2 4 • 0 Ξ Remarks Makushin Bay Calibrations: at Anchor or I.D Sta. Designation Other Bot. # Samp. File Name/Header Sal. 13 31JAN 2144 Depth, m Bottom 32614 Data Location
Tape/Diskette I.D. Sa Cloud Type Weath. 07024832 Sample Bot. Data Avg Tw · [wind] Wind Therm-P JAN88 3 .siV .S .S 32.607. mb Bar. Sal 2152 1256 Conv. Mon. Values-CTD 2149 000 2148 Cond. D/Time Wet Bulb Instructions Temp. 07 4 106.201- 4517. Data on 31 Dry Bulb 34479.457(2.032) | Start Down_ Start Up. at Surface. Times at Surface. at Bottom. Data off Vessel Sta. I.D. Press. W31170082149 or GMT W. Yr. Hr. Min. Time GMT 6490.066-(3.613) Other 33.301 8705.594. at Surface Vessel Proj. & Leg Event# 10 = 31Monitor Checks 1253 34780.735-6619.433,8836.086 Cond Monitor Values Longitude E Date Temp. Press. 34473.383. Cond. 3073.570. Temp. 6746.309. on Deck 66492 Press. Other_ Deg. Depth Trip Time @ o S Z 1252 CTD SBE 91220-B 0011513412119 Latitude 8 26072 304 Rack Depth 100 710 Consec.Cast # Deg. Press. SN_ Cond. SN Temp. SN_ Bot. Cast # Consec. 겁 9 Pos. 4 'n •

Supply of -,0304 cheering 0.3m not change 50 N .co9 ~ m Ŋ 9 Sta. Name 4 • 2 = or I.D Other Bot. # Samp. ō Remarks Beginning of Survey Transect 7 Sta. Designation File Name/Header Pg. 2 05 FEB 1934 Sal. 970739114768 Depth, m Bottom S. Cloud Type Weath. Data Location Instructions Conductivity Sensor disconneted from pump when retrieved - may never have been connec Sample Bot. Data "Donut Hole" Therm-P Avg Tw Wind -S G Tape/Diskette I.D. Wind Q. JANBB .siV 0 S S 7 α Bar. mb S 7 1933 1953 1953 2005 Conv. Mon. Values-CTD N 1936 Cond. D/Time Bulb Wet 0 ١ 000 Temp. Dry Bulb Data on at Surface. Start Down. 6256.531.(1958) at Bottom Start Up. at Surface. Times Data off Event# Vessel Sta. I.D. 250 0 Press. Hr. Min. 3 Time GMT 34474.3717(1.924) 6/ 33.268. Other 8628.395. at Surface 1761033 5051 5888 Mo. Yr. Longitude E Date D = 36**Monitor Checks** Cond. Vessel Proj. & Leg MILLER FREEMAN MF-88-01 Leg IL Monitor Values W Day Temp. on Deck Press. Press. __ Other_ Temp. Cond. Deg. Trip Time @ 0025537 37 351 Z P Type & SN SBE 91220-B Depth Ξ Ë Latitude 26072 002 30 210 Rack Depth Consec.Cast # Deg. Press. SN_ Temp. SN. Cond. SN Bot. Consec. Cast # .soq <u>~</u> 9 M • œ 4

33,338

33, 333 33.308

changed 0-3m 33,248 33,250 0 Sta. Name .so9 7 3 4 S • Remarks 30 m/min rate to 200 m; 45-50 to 500 m 25 <u>₩</u> or I.D Other Bot. # Samp. 08FEB 2200 <u>o</u> TRAWL # 9 Sta. Designation File Name/Header 3 b Sal. 0114114181812131750 Depth, m Bottom M <u>Б</u> 33.953 S Data Location Cloud Type Weath. Sample Bot. Data Avg Tw Wind Sp. Tape/Diskette I.D. WIR out 515 m Wind Therm-P Q. FONDY HOLE JAN 38 .siV 47 .S. S. 33.948. را Sal. Bar. mb 0 2206 2221 2221 2232 2232 3 JD/Time 39/2203 22.05 Conv. Mon. Values-CTD 0 1 0 END OF SURVEY TRANSECT 16 Cond Bulb Wet Instructions Ŋ 3.625. Temp. Dry Bulb Start Up. at Surface. at Surface. Start Down. 1010101 Data on at Bottom. Data off Times 506.180. Vessel Sta. I.D. Press. Ħ. Min. Time GMT 27 (Auring apring) 8664.621. Other 6314 379 <u>အ</u> Event# ۲ E Date D = 3935921.082.6491.6HE.8904.66 **Monitor Checks** EO8FEB ö Σ Cond. Monitor Values MILLER FREEMAN MF-88-01 Leg IL or W Day Press. 34471, 339 Cond. 3079.516 Temp. Proj. & Leg on Deck Temp. 6497.38 39 Longitude 7912 Press. Other_ Deg. 505 2220 2220 Ę. Time @ 00356011 [39N] ZβS Vessel CTD Type & SN SBE 91220 - B Depth | Ξ Latitude 26072 304 710 Depth 8 Consec.Cast # Deg. Rack Press. SN_ Temp. SN. Cond. SN. Bot. Z Consec. Cast # Pos. 겉 9 2 m • 00 0 4 'n

33.20b

Sp.819 33.808 \$ 33.8859. .coq 25 Sta. Name Ŋ 9 = 0 Other nitials DWD Bot. # Samp. Pg. 4 of 15 FEB 0839 Sta. Designation TRAWL 13,14 File Name/Header 4.6 Sal. Bottom 0 Depth, m 023250-0193 33.944 Solution of the search. Sa Traw # 13 \$ 14 : Bogoslot Data Location Instructions Display crashed at 500 m (end of downcast) garbage and error messages on screen Sample Bot.Data Wire out :513 Avg Tw Tape/Diskette I.D. Wind Dir. Therm-P JAN 89 $\frac{\sigma}{\varepsilon}$ S. S. Vis. Remarks 0 шþ Bar. Sal. JD/Time Conv. Mon. Values-CTD 0846 7 0060 0846 1060 0901 Cond Wet Bulb ı Temp. 0 1 -Dry Bulb 34478.64(1.99) Start Down Start Up. at Surface. 6549.641(4.03) at Bottom. Data on Data off Times Event# Vessel Sta. I.D. 7 Press. Hr. Min. Time GMT <u>တ</u> (32.801) 8774.203 Other at Surface WISFEBBB Υ. Longitude E Date JD = 4/6**Monitor Checks** W Day Mo. Monitor Values Cond MILLER FREEMAN MF-88-01 Leg TIL Cond. 3074 703. (0000) Press. 34470.641. Temp. C-0.870 5860 711. Proj. & Leg (-o.co4)on Deck ō 68401717 Press. Other_ Deg. Ţ. 1060 Time @ o o Vessel Depth CTD SBE 91220-B 534931 Ξ. Latitude 26072 710 304 Rack Depth Consec.Cast # Deg. Press. SN_ Temp. SN. Cond. SN. 70 Bot. Cast # 3 Consec.

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reran DECKIED on upeast and had full display no error indicator on dack unit

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Sta. Name Chariste 0-200 Jan 31.641 stalde Son @100m 19 0 Sta. Designation
Hompsack Bay Calibration .coq Ŋ ~ 4 • 0 œ Pg. 5 of 25 Remarks At Anchor, Humpback Bay for calibration Other Bot. # Samp. File Name/Header 17FEB0326 Sal. 0 Depth, m Bottom æ 32.310 Sal. Cloud Type Weath. Data Location 0028070107771 Sample Bot. Data Therm-P | Avg Tw Wire 02+ : 105 m Tape/Diskette I.D. Wind JAN 88 S. S. 32.309 Sal. Bar. mb 0333 0336 0337 0337 Conv. Mon. Values-CTD JD/Time / 0330 Cond. 0 Wet Bulb Instructions 4.066 1166531751W17FEBBB03340110 Temp. Dry Bulb 34476, 344. (1,859) Start Down_ Data off__ 6474.953 (3.504) at Bottom_ at Surface_ Start Up. at Surface. Times Data on Event# Vessel Sta. I.D. 100.304 Press. Η̈́. Time GMT (१९९७ १९) 9617.223 Other at Surface Longitude E Date D = 0.48W Day Mo. Yr. 34763.49 6554.764 8756.703 **Monitor Checks** Monitor Values Cond. OS MILLER FREEMAN MF-88-01 Leg III on Deck
(0.000)

Press. 34470.723.
(0.355)

Temp. 6007.863. Cond. 3073.523. (0000 Temp. Press. Other, Deg. 0336 0337 Depth | Trip Time ® 005534436 CTD SRE 91220-8 Ξ Ξ Latitude 26072 710 Bot. Rack Depth 9 Consec.Cast # Deg. 1 Press. SN_ Temp. SN Cond. SN 251 Consec. Cast # 얼 9 0 • œ

Initials DMD

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و	Sta. Designation FOC1 #	Bottom	Cepui, III	45		File Name/Header	B 135		m wife	wire angle. Weak bottom	Sal	Bot. #	11,0/												Initials
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		oud pe eath.	<u>사</u>	3-3	ocatio	ш	7		1.74	W.Pe	.Data		S Selfa	-73		- 4-						-			
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	ta. I.D.		Min.) 2 -	F	۵	at Surface.	at Bo	Stal	្តិ		Press.	1268.862								:		:		
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	l Leg.	Date	Day	2 O F	Monitor Checks					1	tor Va	H						=			100				
	Proj. & Leg MF-38-01 Leg III	m p	≯	W /	Mo	on Deck					Monitor	Temp.	310.0		70					:					
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	FREEMAN	Lon	ģ	166588			Press	Temp.	Cond	Other		Press.			23										
	مع		S Deg.				<u> </u>	<u> </u>		<u> </u>	(B)	Trip	1436												
	Vessel MILLER		Min.	1 / N	6	2 .	4				Time	Depth	1436												
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Pg. 7 of 25

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signati FO		308	8	э/Неас	1547		m CTD	-	Sal.	Bot. #	13,15							13.				e.	Initials
Sta. Designation FOC.	Type Weath. Option	73 1480FOC	ation	File Name/Header	20 FEB 1547		out 1370m			Sal.	34.467												
	Vind Sp. Cloud	32513373	Data Location		1		wife o		Sample Bot.Data	Avg Tw													
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	S. S. Vis. Qir. Şind	4832		Tape/Diskette I.D.	1AN 98		Remarks 1620 m		٥	Therm-P						8							
	Bar. mb	0		<u>E</u>			Rem			Sal.	34.461.								:				
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Instructions	Wet	1 S	-	51/1553	1554	1632	1104		>	Cond.							<u> </u>						
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. I.D.		5	Times	Data on	at Surface	at Bott	Start Up- at Surface.	Data off		Press.	77.638												
Vessel Sta. I.D.	Time GMT Hr. Min.	5			34472.895(6.38) start Down.	6520 - 258 (3.83) at Bottom		_ _ _ _		ڄ	13											·	
	I	8 / 5		at Surface	. 895.	. 258	961.	जिक्त्वन <u>व</u>		Other			8		.6								
Event#	JD = 51	1665462 W 20 FEB 88	ecks	at Su	34472	6520	8713.961.			+	8865.470							:					
二,2,1	Date J	0 TT	Monitor Checks		1				or Valu	Cond.			1										
		7	Mon	eck	·0(-	1561	3074.527.		Monitor Values	Temp.	38278.656-6311.090.												
Proj. & Leg	tude	62		on Deck	34471.4110.	5283.195	3074			-	3.6566	_											-
3	Longitude	654			Press.			Other		Press.	3827				m —								
		- 6		_	- P		ပိ		B	Trip	1633												
Vessel		3 S N		91220-18					Time	Depth	1632												
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Consec. Cast	c.Cast #	80	Vessel	Proj. & Leg	oj. & Leg	F E	Event# Ve	Vessel Sta. I.D.		Instructions					Sta.	Pg. β ο Sta. Designation	of 25	6	
Consec.	Deg	Z E		Longitude Deg.	de F	Date JD = Day Mo.	χ. Υ . Η	Time GMT Hr. Min.	Dry Bulb	Wet		Bar.	Vis.	Wind Sp. Cloud	Cloud Weath.	Bottom Depth, m	Sta. Name or I.D	- 7	cheriged On
000	<u> </u>	030	2 N 1	6 6 4 9 8	8 4 W 2	2 N 1664984W20FEBBB1B	1881	02	- 3	Ŋ	0 2	2 4	806	806311772		761FOC	0) A -	to 33. 169%
Tyne & CTD	S. S	SRE 91220-B	20		Mon	Monitor Checks	19			<u>a</u>	e (Data Location	cation				
Press. SN	SNS	26072		7 344.	on Deck 75. 609.(₍	on Deck at Surface Data on. Press 34475, 609, (0.000), 3,4473, 95.3, (-0.131) at Surface.	at Surface 473.953	(-0.133) at S		1802	802	Tape,	Tape/Diskette I.D.	<u>.</u>	File Na	File Name/Header 20 FEB 1757	der 7		
Cond. SN		304	· ř	emp. 523	74.469-	Temp. 5254. 469 (55644) 6477. 398 (3533) at Bottom	7.898	352a) at B	Down	18	1820								
80				Cond. 3973. 480. Other (0.000	(0.000)	860	(31.890)		Start Upat Surface Data off	1821 1835 1820	252	Remark	Remarks Bothom		depth @ start @ end s	735m 551 m			01 (87
.8		Trip T	Time @		Monit	Monitor Values			Conv. Mon	١.	Values-CTD		San	Sample Bot. Data	Sata	Sal.	Other	.sc	de vied or in
P. Bot.	Rack	وّا	\vdash	Press.	Temp.	Cond.	Other	Press.	Temp.		Jď.	Sai.	Therm-P	Avg Tw	Sal.	Bot. #	Samp.	्व	
1 25	1	MAX 1820	20 1820		48-6460.11	36235.846.460.113.8900.297		49E-319	4. 3.400.	ó	34	34.081.			34.085	12,14	***	=	
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Pg. 9 of 25

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gnation 09	Sta. Name n or I.D	60		Header	5.58					Bot. # Samp. ட்	20,22	2	3	4	S	9	7	ω	6	01	=	112	als DMD
rg o Sta. Designation	Cloud Type Weath. Depth. 3	875/23	Data Location	File Name/Header	23 FEB US 38		Ç.			Sal.	33.913							==					Initials
RANKERT 23	Wind Wind	33912	Data L	Tape/Diskette I.D.	JAN 88				Sample Bot.Data	Therm-P Avg Tw				1			S-			Н		80	
TRAWLS#17,18,7RANSECT	Bar. S. S.	8 7 9 4 7			<u> </u> 		Remarks	3	TD OT:	Sal. Th	33.911.			I						S.			
Instructions	۲ Wet اb Bulb	0 0 2	JD/Time	5,	05			0558	Conv. Mon. Values-CTD	Temp. Cond.	3.628							1					
Vessel Sta. I.D.	Time Dry GMT Bulb	5 4303	Times	a.134) of Curface		(3991)at Bottom	Start Up	اتـــره Data off	Conv	Press.	503.260.3.												•
Event#	=54 Yr. H	FEBBBOS	Checks		1	E11	8772.324	(32.513).	alues	Cond. Other	900.849.												
roj. & Leg MF - 88 - 01 Leg	ude E Date or W Day	4 1 W 23	Monitor Checks	on Deck	34471-402-(0,000)	Temp. 6505.234 (3.680)	3073.648.	(0000)	Monitor Values	Temp. (6492.033 8900.878.		the state of the s										
Vessel MILLER FREEMAN MF - 38 - 01 Leg III	N Longitude or S Deg.	1792N1670441W23FEB8B			Press. 344	_ Temp. 65	l l	Other	Time @	Trip Press.	0558 35912.6		A CONTRACTOR OF THE PARTY OF TH										
40°	13 Σ	7	ָן וְּ	26072	270	304			Trip Tim	Depth De	0550												
Consec. Cast	Consec.	2600	E	lype & SN A	Temp. SN	Cond. SN_	#		<u> </u>	2 Bot. Rack	1 252 -	2	3	4	ın	•	7	∞	•	01	-	12	

Charage 0-4m 200, 02, 22, 2 22, 24, 2 44, 20, 24, 2 22, 24, 2 22, 24, 2 22, 24, 2 So. Alle 0 Ros 2 5 Sta. Name 4 • 9 = Pg. 10 of 25 Other Bot. # Samp. 00 Sta. Designation File Name/Header 24 FEB 0942 16,17 Sal. Bottom Depth, m 58315088871280 33.891 Sal Cloud Type Weath. Data Location Sample Bot. Data Therm-P Avg Tw Wind Wind Sp. TRANSECT 25. Tape/Diskette I.D. IANSB S. S. Vis. Remarks 33.887 Bar. mb Sal. <u>~</u> TRANL # 19 JD/Time 5 / 0953 Conv. Mon. Values-CTD \overline{a} 9560 2560 1012 10 Cond 10 Wet Bulb 0 Instructions Temp. 015 503,055 3.679 Dry Bulb at Bottom_ Start Down_ Start Up. at Surface. at Surface. Times Data on Data off Vessel Proj. & Leg Event# Vessel Sta. I.D. MILLER FREEMAN MF - 38-01 Leg III 267 Press. 105401 [32 N/67/2]96W24FEBBB0956 Hr. Min. Time GMT at Surface (3,104) 344180. 523. (4.0376550.504. (32.617) 8777. 723. Other W Day Mo. Yr. Longitude E Date D = 55Monitor Checks 35914.895-6499.199 8903.984 Cond. Monitor Values Temp. on Deck Press. Press._ Temp. -Cond. Other_ Deg 10 Bot. Rack Depth Depth Trip Time @ Z 10/ Latitude Ξ ï. 26072 710 304 Q 503 Consec.Cast # Deg. Press. SN_ 1 Temp. SN_ Cond. SN 252 Consec. Cast # O 9

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Pg. 11 of 25

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- 26 26	Sta. Designation	Bottom Depth, m	1 4 0 3	the state of	File Name/Header	16FEBU032	error @	S	Bo													Initials
	স	Type Weath.	9 1	cation	File	197	□	Sata	Sal	[8]												
	7	Wind Sp. Cloud	808681	Data Location	Ċ		11-5	Sample Bot.Data	Avg Tw			destructions and service to the service of the serv			ŀ							
	cr 27	-	8338		Tape/Diskette I.D.	aa	Underwerk the and	Samp	Therm-P '											!		
	RANSECT	S. S. Vis.	5		Tape/Dis	Z	Remarks Uncast halkd		The	;		4 mm mm mm m m m m m m m m m m m m m m										
	20	Bar. mb	93		.				Sal.													
	#	Wet Bulb	2 2	/Time	51/0035	0038	2 5	<u>છ</u>	Cond.										,			<u> </u> -
	Instructions TRAWL	> 4	00	Δĺ	571		7	Mon. V	Temp.													
	<u>.</u>	Dry Bulb	40	Times	Data on	Start Down	Start Up. at Surface	Conv.				de area anno 100 miles de 100 m										
	Vessel Sta. I.D.	Time GMT r. Min.	039		····	S '1	1 1		Press.										. I	-		
		I	008		at Surface	(3.914)	(39.448)		Other										ŀ			
	Leg III 303	11	EBB	Checks	at Su	`''			Cond.		ī											
		Date Day	2 6 F	Monitor Checks	(6.0.0)	6435.754(237)		Monitor Values	$\vdash \vdash$::					· · · · · · ·	
	oj. & Leg F-38-0	de ro≺	<u>₩</u>	Σ	on Deck (0.013)	35.75	3078.039	Ψou	Temp.							6.						
	Proj. & Leg FREEMAN MF-38-01	Longitude	48 61 N 16812 60 W 26FEB88		0	``J	-1		Press.				*									
			9/			Press	Cond.	- e	Trip										_		:	
	Vessel MILLER		1 9	0	9/220-8			Time	Depth			the section of the se										
	 - -	Latit		,	26072	710		Trip	_			The set of a set of the set of th										
	Consec. Cast	# Deg.	- ا ا	CTD	S SN SE	SN	75	L	Bot. Rack	1												1
	Cons	Consec. Cast #	~		Type & SN Press. SN	Temp. SN	3	٠,	P. Bc	1 25	2	3	4	25	9	2	∞	6	0	=	12	1

Broken fin connector at ctD/cable connection: repaired

Pg. 12 of 25

12 Vesse 12 Vesse 12 Vesse 13 Vesse 14 Vesse 15 Vesse	Pg. 16 of 45	Sta. Designation 12	Bottom Sta. Name Annual Depth, m or I.D	1/2	7 John	FIE Name/Header		5050 STO	Sal Other 1.5	Bot. #	1 61.81 046	2	3	4	2	9	7	8	6	01	=	
12 Vessel Vesse		28	S S S S S S S S S S S S S S S S S S S	13	ata Locati	`			Sample Bot. Data	Avg Tw	id.											
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2 Vesse Conductor 2		Instru	me नर Min.	00 40			Start Down	Start Upat Surface	Mon	Temp.			Treated to the second s									_
2 Vesse Conductor 2	ì	Event# 322	JD = 57		itor Checks	at Surrace (30)34476.332:(3.	0,10 6526.5551(38	875B.012:														
				682856WZ	Moni					Press.	-											
			ξΣ		SBE 91220-B	1			- G	Depth	1219											

Pg. 13 of 25

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ion /3	Sta. Name or I.D			der ,					Samp.									8				DWC
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ET 31	S Kind Cloud	9 / 9	Data Location	<u>.</u>				Sample Bot.Data	Avg Tw				-									
TRANSECT	S.S. Vis. Vind	348036166611		ape/Diskette .D.	NAN OO	ırks		Sar	Therm-P						×							
# 23	Bar. mb	503		1 1		26 Remarks		ΤD	Sal.	33.928												
Instructions TRAWL	Wet Bulb	00		010/69	0711	.70	0726	Val	Cond													
	Dry Bulb	020	Times	Data on Surface	itart Down	Start Up	Data off	Conv. Mon.	Temp.	\$ 3.475.							13		í			
Vessel Sta. I.D.	Time GMT Hr. Min.	7		at S	<u>~</u> _	3			Press.	497.853	l ki											
Event# Ve 383	= 59 Yr.	B 8 8 0	ks	at Surface	6560.957(4.109)	8801. 2 89.	(04E.65)		Other	92			_									
TE 637	Date JD : Day Mo.	8 F	Monitor Checks		000) 34'		1	Monitor Values	Cond	8885.99	<u></u>		200		4							
		7 / W /	Mor	on Deck	6126.793.(1,019)	3086, 125	(0000)	Monit	Temp.	35903.500 6470.135						:						
Vessel MILLER FREEMAN MF 8801	Longitude Deg.	16921171 W 28 FEBBB			Press. 3		Other		Press.							=						
Vessel MILLER FRI	Σρν	1 N /	20,		<u> </u>		_ 	Time @	oth Trip	25 0726												
S.	Latitude Min.	018 67 M	CTD TVDA & SN SBE 91220-B	26072	710	[2]		Trip	epth Depth	500 0125												
Cast #	Deg.	53	N SBE	Z					Rack D	7											•	
Consec. Cast #	Consec.	13	Type C	Press. SN	Temp. SN				Po Bot.	1 25.1	7	3	4	25	9	7	60	6	01	=	12	

Shanged 0-1 m Po stables 5900. to 327919. 2512 Sta. Name 9 N m 4 S • 1 œ 0 2 14 of 25 orI.D Other Bot. # Samp. Sta. Designation File Name/Header 25,26 29 FEB /144 Sal. 9248113058822150 Depth, m Bottom ٦ ج 33.626 S in Cloud Type Weath. Sal Data Location Sample Bot. Data Avg Tw # Tape/Diskette I.D. Wind TRANSEKT ۵ آ۔ Therm-P JAN 88 S. S. Vis. Remarks 33.623-Bar. mb Sal TRAWL # 24 Conv. Mon. Values-CTD 154 209 1209 Cond 1153 Wet Bulb 0 Instructions Temp. 0 2 8 250.750, 3.953. Pry Bulb at Bottom_ at Surface. at Surface. Start Down. Start Up. Times Data on Data off Vessel Proj. & Leg Event# Vessel Sta. I.D. MILER FREEMAN MF-38-01 Leg III 422 Press. 7 Hr. Min. Time GMT 6937 58 W29 FEBBB11 at Surface (a.o.1 a) 34476.465 (3.667) (6496.766 8761.453 Other (33.8.65) or W Day Mo. Yr. Longitude E Date D = 60**Monitor Checks** 35198.367 6538.469. 8891.996-Monitor Values Cond. on Deck on S4471.555 Cond. 3075.789. Temp. 3449, 177-043. Temp. Other (0.000) Press. Deg. 1216 Depth | Trip Time @ 145343 50N ٥ CTD SBE 91220-8 Vessel 1216 Latitude Σ Ë 26072 304 710 Bot. Rack Depth Consec.Cast # H 250 Deg. ١ Press. SN_ Temp. SN. Cond. SN. 22 Cast # Consec. 2 2 4 S • ∞

Initials DMD

Bath widden Den 33.902 de Spo, stable 5 charaged 0-1m Sta. Name Survey Stor @ 295m Bassage .so9 7 m 'n • 2 4 0 Pg. 15 of 25 Other Bot. # Samp. Sta. Designation File Name/Header 01 MAR 0528 27 Sal. 582401768111737 Bottom Depth, m 33.762 Sal. Cloud Type Weath. Data Location Sample Bot.Data Therm-P | Avg Tw Wind. 25 Tape/Diskette I.D. Ħ Wind JOHALS JAAAL JAN 88 S. S. Vis. Remarks 33.442 Bar. mb Sal. 0 0545 Conv. Mon. Values-CTD 02.76 4 0545 0531 05.30 Cond. 0 D/Time Wet Bulb Instructions 532022 Temp. 294.812. 3.903. P. Bulb Press. 34471.273. (-0.01) 34480.336. (3.30) at Surface. Temp. 6219.215 (1.917) 6466.578 (3.449) at Bottom. Start Up. at Surface. Data on Data off. Times Vessel Sta. I.D. Press. Hr. Min. **Time** GMT (32,959) Cond. 3074.809. 8753.512 16184719161W1011M1A1R181810 Other at Surface Event# 453 or W Day Mo. Yr. Longitude $E \mid Date \mid D = 6/$ **Monitor Checks** 300 0550 0551 35323.21 6531.285 8870.094 Cond Monitor Values MILLER FREEMAN MF-88-01 LEGIL (000.0) Temp. Proj. & Leg on Deck Press. Other_ Deg. Bot. Rack Depth Depth Trip Time ® 55420801 o S Vessel Latitude 26072 7/0 Consec.Cast # Deg. l Press. SN_ Temp. SN. Cond. SN. 252 Consec. Cast # 2 2 d m S • 4

Pg. 16 of 25

REEMA	Froj. & Leg Event#		Vessel Sta. I.D. Inst	Instructions TR	TRAWL STATION	LV# 201	Sta. Designation	ation //	
			Time Dry	Wet		Wind	pe eath.	Sta. Name	charmed 6-3m
Day Mo. Yr. H	Mo. Yr. H	<u>-</u> i	Min. Bulb	ging	E S.S	راز. کلا	Ι <u>Υ</u> Ι	O.I.D	59.88
1685025WOIMARBBO630016	MARBBO		630016	005	9/58	225	126812058	9	22.987
or Che	or Checks		Times	JD/Time		Data Location	cation		
(co.oa6) at Surface (a.3a5)	at Surface (a	• •	Data on at Surface	0630	Tape/[Tape/Diskette I.D.	File Name/Header	ader	
Press. 374/1: 661. 57110: 613. 10. 6121. 441/3136)	6421.441.6	1 3	\(\text{S} \)	0630	§ 	000	O I MAR O GA	3	
	8710.859		, E	0643	Remarks				
Other (0.000) (03/16)		١	Data off	Noluse-CTD		Sample Rot Data	t tel	Orher	
Trin Press Temp Cond Other	\vdash	Į.	Press Temp		Çsi	Therm-P Avg Tw	S		5. 10 10 cm
35040,789 6555.066 8892.333	8892.332		3		ė		36	1	and to be to
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changed 0-3m 140.55 mg Sta. Name • Pg. 17 of 25 Remarks Display went haywire at ~ 420 m depth or I.D similar to Cast # 4; garbage and error messages on screen. Continued cast to S40 m wire out

Sample Bot. Data

Sal. Other Bot. # Samp. Sta. Designation File Name/Header & MARO745 $\overline{\omega}$ Depth, m Bottom 9210683205 Sal. Cloud Type Weath. Data Location Therm-P | Avg Tw S. # 26 Tape/Diskette 1.D. Wind Ģ. JAN 86 8 Instructions TRAWL STATION .siV Ŋ S.S. 7 Bar. mb Sal. 16. 2080 JD/Time Conv. Mon. Values-CTD 0803 0749 0748 000 Cond. Wet Bulb 9 0 Temp. N Press. 34471.410-(-0.005) 34479.086 (3.890) Start Down at Bottom_ Data on_ at Surface. at Surface. Times Start Up. Data off. 0 Vessel Sta. I.D. Press. 67 Hr. Min. Time GMT Temp. 60.5346): (अघट. 6)अहमाळे अवन (33.083) 6 8 4 7 4 4 W O 1 M A R 8 8 0 Other at Surface Event# 455 Ϋ́. 8333,609. E Date $D = \langle o |$ **Monitor Checks** or W Day Mo. Monitor Values Cond. Vessel
MILLER FREEMAN MF-88-01 Leg III Temp. (0.050) on Deck Cond. 2095.369. Longitude Press. Other Deg. Trip Time @ 1 6 3 9 N o S Z Vessel CTD Type & SN_SBE_9/220-B Depth Ξ Ξ Latitude 26072 Depth 754 Consec.Cast # Deg. Bot. Rack Press. SN_ Temp. SN. Cond. SN Consec. Cast #

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Malso STa 32.94Pla M8.25. mg H18.25. mg 128.25. charged 0-4 m (33,947 %. Q 501 m 493 m $\frac{\sim}{\infty}$ 2 = Sta. Name φ or I.D Other Bot. # Samp. Pg. 18 of Sta. Designation File Name/Header DI MARO915 Sa. 29 Bottom Depth, m 58215163711560 33.947 Sal. Cloud Type Weath. Data Location Sample Bot. Data Therm-P Avg Tw Tape/Diskette I.D. Wind <u>ت</u>. JAN 88 .siV Remarks S.S. 33.968. 9 2 Bar. mb Sal. Conv. Mon. Values-CTD 0 0933 0932 0932 6160 6160 JD/Time Cond Wet Bulb ~ Instructions Temp. 3.475. ဆ Pry Bulb Bulb 00 Start Down_ at Bottom. Data on at Surface. Start Up. at Surface. Times Data off 501.270 Event# Vessel Sta. I.D. Press. 9 Ę. Min. Time GMT o at Surface (5.52) 8750.539. ō (2.271) 6476.914. Other (33.850) 683716MOIMAR88 or W Day Mo. Yr. Longitude E Date JD = 6 0933 35907,285.6470.4411. 8890.406. **Monitor Checks** Cond. Monitor Values MILLER FREEMAN MF 88 01 Temp. Press. 34471.262 (o,o,o) Cond. 3073.547 Temp. 6114.238. Proj. & Leg (0000) Press. Other_ Deg. Trip Time @ o S 185420 80 N Vessel Depth CTD 58E 91220 · B 500 0932 Ξ i. Latitude 26072 304 710 Bot. Rack Depth Consec.Cast # Deg. 1 Press. SN_ Temp. SN_ Cond. SN. 152 Cast # Consec. 2 2 .soq m ø œ 2 5 4

Charaga 0-30 100.32,934 32,029 49,92,639 33,086 500 m .soq 6 Sta. Name 2 N 9 ~ 5 • 4 - ∞ 0 25 6/ or!.D Other Bot. # Samp. Pg. 19 of Sta. Designation Ø1MAR/122 File Name/Header 30 Sal. 7184248731920 Depth, m Bottom 34.039 Sal. Cloud Type Weath. Data Location Sample Bot.Data Therm-P | Avg Tw Wind. S G 28 Tape/Diskette 1.D. 4 Wind Ę. JAN 88 TRAWL STATION .siV Remarks S.S. و 34.040 Bar. mb Sal. 0 Conv. Mon. Values-CTD M 126 Cond 1139 9 Wet Bulb _ Instructions Temp. 3.403. 26000 Dry Bulb at Bottom_ Start Up_ at Surface. Data on at Surface_ Start Down_ Times Data off 501.548. Event# Vessel Sta. I.D. Press. Ę. Air. Time GMT 169011857WOIIMAR188111 34475.988 (3,058) 410.906. 8723.922 (35.03C) Other at Surface W Day Mo. Yr. Longitude E Date JD = 6Vessel Proj. & Leg Eventa WILLER FREEMAN MF 88-0,1 Leg III 460 35707,238,6459.879, 8889.656 **Monitor Checks** Monitor Values Cond. Press. 34470.672: Cond. 3073.547. Temp. 5986.000 Temp. on Deck (0000) Press. Other Deg. 140 Depth Depth Trip Time @ 195420194N S 1139 CTD Type & SN_SBE 91220 B Latitude Ξ Ë 26072 304 7.0 88 6 Consec. Cast # Deg. Bot. Rack Press. SN_ Temp. SN_ Cond. SN. 252 Cast # Consec. 2 2 œ 4 • 0

Pg. 20 of 25

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tion 20	Sta. Name or I.D			ader 3			Other	# Samp.	.kośsi	. WE											DMD
Sta. Designation	Bottom Depth, m	08		File Name/Header			Sal	Bot. #	2									,		:	Initials
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	Cloud	681	Data Location	- 0			t.Data	W	10								-				-
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Instructions	Wet	0	JD/Time	+			Valu									,	`			-	
Instr	Dry Bulb	0	`			0 5	Conv. Mon.	Temp.	3.626			W. F.				1(4	,				
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Vessel Sta. I.D.	Time GMT			ن	מ כ			Press.	200.137									. 1			
	I			at Surface (3.230) 34477.297.	6536, 258,	(32,644)		Other		*											
Event#	$\mathbf{JD} = 62$ $\mathbf{Mo} \forall \mathbf{r}.$	8	.ks	at Surfa 4477.	536.	8112, 143. (33.644)	1		sao.			<u> </u>									
	~(t	Z	Monitor Checks				Monitor Values	Cond.	8809.820												
		0	Monito	on Deck 34471.355.(0.000)	6161.066(1.335)	(0000)	onitor	Temp.	6492.324												
roj. & L	ade I	80		on Deck [7]. 355.	61.066	(0.000	Σ	Te													-
Proj. & Leg	Longitude	339	; ;		0.61	2.		Press.	35049,841												
1	Deg.	7 16 N 16839 8		Press.	Temp	Cond.	@	T-I								 				_	
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Consec. Cast	Consec.	206	CTD <re 91220-8<="" td=""><td>Press. SN.</td><td>Cond. SN.</td><td></td><td></td><td>Bot. Rack</td><td>155</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>,</td><td></td><td></td><td>1</td></re>	Press. SN.	Cond. SN.			Bot. Rack	155									,			1
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Pg. 21 of 25	Sta. Designation 21	Wind do Bottom Sta. Name Sp. O Pye Depth, m or I.D	168052811716 21 33.345	ata Location	File Name/Header	8			-P Avg Tw Sal Bot, # Samp. P Samp.	33.218 32 1	2	3	4	25	9	7	8	6	01	=	12
3	It# Vessel Sta. I.D. Instructions	63 Time Dry Wet Bar. Wind GMT Bulb Bulb mb 63 5 Dir.	10170280109348	Times JD/Time	Data on at Surface	at Bottom	Start Upat Surface	1031	Other Press. Temp. Cond. Sal. Therm-P	33.216											
	Consec. Cast # Vessel Present Proj. & Leg III Event# MF-88-01 Leg III SSH	Longitude E Date JD = or Or Deg. W Day Mo.	54 60N	CTD SCN SBE 91220-B		Temp. 6243.109.(1,644)	Cond. 3073.492. 871	Other (0,000)	Bot. Rack Depth Depth Trip Press. Temp. Cond. (252 - 250 1037 1038 35197.961.6541.234.6	2		4	2	9	7	σ.	6	01		

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to 32.41496 5900 at 396m - Beily Tables charge 0-1 m 2 (in . 1 m & like Jan 32.354 77 Sta. Name or I.D .co9 2 00 Pg. 22 of 25 22 Other Bot. # Samp. Sta. Designation File Name/Header 03 MAR 1059 33 S. 1673 Depth, m Bottom 33.643 Sal. Cloud Type Weath. Data Location 4817604381 Sample Bot.Data Therm-P | Avg Tw Tape/Diskette I.D. ۵ ۲ Wind JAN 88 S. S. Vis. Remarks 33.640 593 Bar. mb Sal. Conv. Mon. Values-CTD 105 107 <u>=</u> 101 611 Cond JD/Time Wet Bulb 1673549 WO3MAR88 110502 501 Instructions Temp. 3.920. Start Down_ Data on_ at Bottom_ at Surface_ Times Start Up. at Surface. Data off 395.923. Vessel Proj. & Leg Event# Vessel Sta. I.D. MILLER FREEMAN MF-88-01 Leg III 5555 Press. Ξ. Ain **Time** GMT at Surface 34476.660. (3.634) (3.634) (3.634) (ceree) 8724. 480. Other or W Day Mo. Yr. Longitude $E \mid Date \mid D = 63$ 35611. Cal.6533.64.8898.2993. Monitor Checks Monitor Values Cond. Temp. \$976.715. Temp. (0.00) Press. 34472.277. 3074.070 (0.000) Press. Cond._ Other_ Deg. 1122 Bot. Rack Depth Depth Trip Time ® S 225354 96N CTD SBE 9/220-B 400 1122 Ξ Ë Latitude 26072 304 710 Consec. Cast # 22 Deg. 1 Press. SN_ Temp. SN. Cond. SN. 227 Consec. Cast # 2 2 m • 00 0 4 M .soq 4

charged 0-3m to 32.735900 3400 0350. (32.53E) 1419171F101C111S Bot. # Samp. 6-2 2 m 4 Ы • œ 0 9 Sta. Name Pg. 23 of 25 Sta. Designation FOC (S Other File Name/Header 34 44 MAR 1025 Sal. Bottom Depth, m 33.536 Sal. Cloud Type Weath. Data Location 1919 4 80 75 1558 Sample Bot.Data Therm-P Avg Tw Tape/Diskette I.D. Wind JANSB S. S. Vis. Remarks 33.534 Bar. mb Sal. Conv. Mon. Values-CTD 0211 1030 10 44 1044 1055 1044 Cond. Wet Bulb Instructions Temp. 249.483 4.090. 030 Dry Bulb at Surface_ 6407. 391. Start Up. Data on Times at Surface. Data off Press. Vessel Sta. I.D. 031 Hr. Min. Time GMT at Surface (a. a.g.4) 3683.629. (इंडा-इंट) Other 6707193 NO4MAR88 Event# 569 or W Day Mo. Yr. Longitude E Date D = 64**Monitor Checks** 1050 1050 35195.934.6557.984.8897.289 Cond **Monitor Values** MILLER FREEMAN MF-88-01 Leg III Cond. 3073. 488. (00000) Press. 34471.500. (3.0.5) Temp. 6404.074. Temp. (o.oo) Proj. & Leg Press. Other_ Deg. Bot. Rack Depth Depth Trip 235430[90N] Time @ ρN CTD SBE 91220-B Vessel 26072 Latitude 304 5 250 Consec.Cast # Deg. I Press. SN. Temp. SN. Cond. SN 727 Cast # Consec. 겁 9 40 • N 4

Initials DMD

Changet 0-1m 2m 32.419 F0C114 .soq ~ Sta. Name 9 Pg. 24 of 25 Other Bot. # Samp. Similar to casts 4 \$ 17. Repeated cast Similar to Casts Of the Sample Bot. Data Sal. Othe Remarks Display showed error messages from during Sta. Designation File Name/Header 04 MAR /140 607 Depth, m Bottom Spe Cloud Type Weath. Sal Data Location 0651126811 Avg Tw Instructions Run time error indicated Tape/Diskette I.D. Wind Therm-P <u>.</u> JAN 88 ∞ S. S. Vis. 7 0 Bar. mb Sai. ENTRIES 0 Conv. Mon. Values-CTD 2 1202 1146 1202 1142 145 1202 Cond. Wet 0 FILE Temp. 0 1 4 Dry Bulb 8 at Bottom. Start Up. at Surface. Data on_ at Surface. Start Down. Data off Times Event# Vessel Sta. I.D. 571 No 46 Press. Hr. Min. at Surface **Time** GMT 34477.504. (32,542) 6471.066. 8713. 473. Other 214 514 213 103 M167 617 613 10 11 WO 14 MAR 18 18 Υ. E Date JD = 64**Monitor Checks** . Σ Cond. **Monitor Values** | Vessel | Proj. & Leg | MF-69-01 | Leg | III or W Day 3077.656 Press. 34471.975. Temp. 219. (000.0 Temp. on Deck Longitude Press. Other Cond._ Deg. 1207 Trip Time @ o S Depth 26072 Latitude 710 Consec.Cast # 24 Depth 5 Deg. Rack 1 Press. SN. Temp. SN Cond. SN 727 Bot. Cast # Consec. .soq 7 9 N m • œ 0 4 S

Initials UND

[20ramples/ 3 discorded 5 Souting walatered 5% very stable 7 std day .con no change mean .003 6 # operate 18 (34.02x) 2 @ 59300 **∞** 608 FIOCI 14 Pos. Sta. Name or I.D Pg. 25 of 25 4 9 Sta. Designation Foce 4 Other Bot. # Samp. File Name/Header Ø4MAR 1226 35 Sal. Bottom Depth, m 34.036 So ind Cloud Type Weath. Data Location
Tape/Diskette I.D. S. Remarks Repeat of Cast 24 4804509781 Sample Bot.Data Avg Tw Wind Dir. Therm-P JANBB S. S. Vis. 34.032 66 Bar. mb Sal. Conv. Mon. Values-CTD 0015 1232 250 JD/Time 1229 1232 Cond. Wet Bulb Instructions 255422399N1670306W04MARBB1232020 Temp. 3.486. Pry Bulb Start Down_ Times at Bottom_ Start Up. at Surface. Data on at Surface. Data off 592.619. Vessel Sta. I.D. Press. or Wo Day Mo. Yr. Hr. Min. Time GMT 24478.445. 8713.641 (33.563) Other Consec.Cast # 25 MILLER FREEMAN MF-38-01 Leg III 572 Longitude E Date JD = C436164.0514 6471.844 8903.086 **Monitor Checks** Cond. **Monitor Values** 3122.637 (-0.041) on Deck Temp. 6143.152 (880.0) Temp. Press. Other Cond._ Deg. 1249 Bot. Rack Depth | Depth | Trip Time @ CTD SBE 91220 - B 1248 Latitude <u>Mi</u> 26072 304 710 Deg. 1 Press. SN_ Temp. SN. Cond. SN Cast # Consec. थि 건 9 4 •