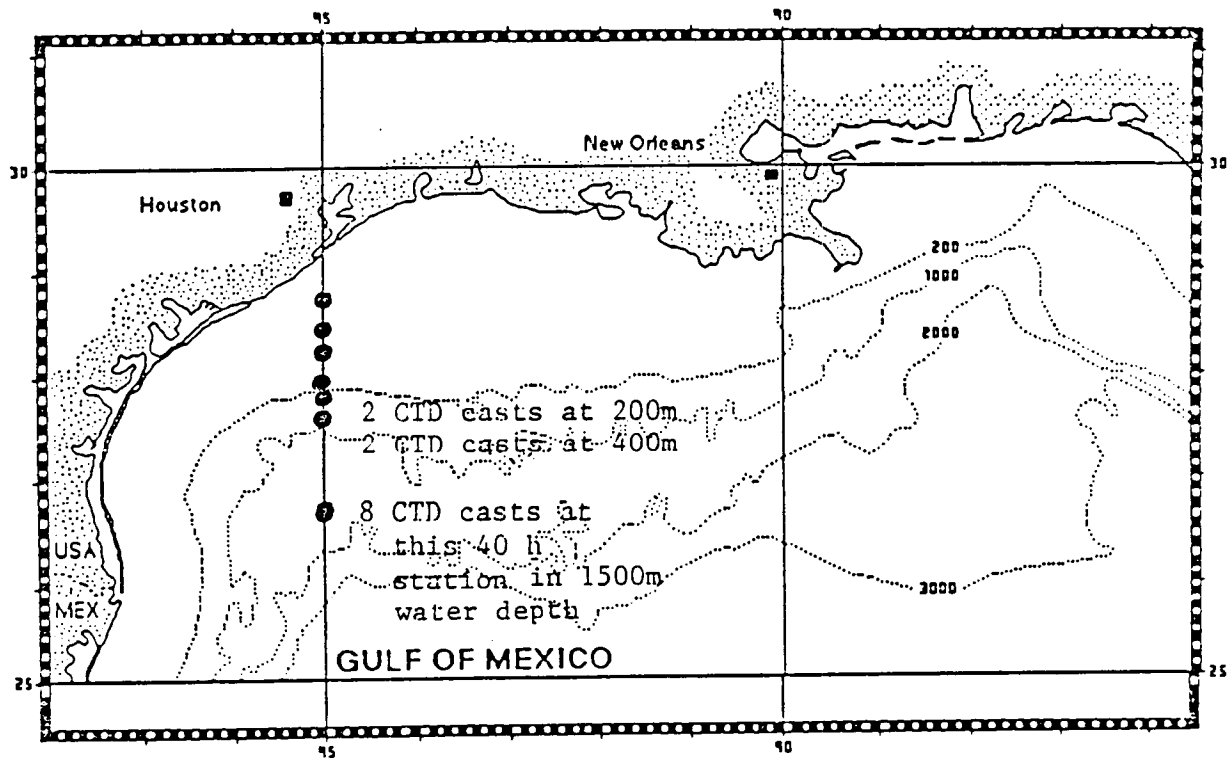


HYDROGRAPHIC DATA FROM TEXAS CONTINENTAL SHELF
 AND THE NORTHWEST CONTINENTAL SLOPE
 OF THE GULF OF MEXICO:
 R/V GYRE CRUISE 92G-03 (16-20 MARCH 1992)



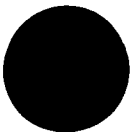
Total = 16 CTD casts at 7 stations along 95°W

Technical Report 92-02-T of the Department of Oceanography
 of Texas A&M University, College Station, TX 77843

29 May 1992

P. Santschi, Chief Scientist
 Department of Marine Science
 Texas A&M University
 Galveston, TX

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 Department of Oceanography
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BRIEF DESCRIPTION OF CRUISE AND SCIENTIFIC GOALS

Research in support of the NSF Program "Physicochemical Processes Controlling Thorium Behavior in the Ocean"(RF-6673) was conducted with a shipboard science party of 21 persons, made up of Chief Scientist P.H. Santschi, 3 undergraduate students and 3 graduate students from TAMU-G's Marine Science/Oceanography Department, 6 graduate students from TAMU's Dept. of Oceanography, 2 guest scientists from Lamar University, 4 members of TAMU Dept. of Oceanography's Technical Group, and 2 deck engineers.

Cruise 92G-03 departed Galveston at 9 pm on March 15, and returned to Galveston at 6:30 pm on March 20, 1992. The principal science programs were interdisciplinary, with goals to:

- 1) Carry out large-volume sampling of Th, Ra and Pb isotopes using the Multiple InSitu Pumping System, MIPS, which allows battery-operated in situ pumping at up to six user-selectable depths (six times three serially linked cartridges extracting suspended particles and dissolved radioisotopes),
- 2) Verify MIPS with independent techniques using Fe hydroxide precipitation and MnO₂ impregnated acrylic fiber extractions of 100-200 liter of seawater, sampled from surface waters with a shipboard pump, and for water below the the surface with the CTD-Rosette,
- 3) Carry out large-volume ultrafiltration of 200 liters of seawater using water sampled for surface water with a shipboard pump, and for water below the the surface with the CTD-Rosette,
- 4) Collection of samples for measurements of suspended particle concentrations, DOC, dissolved oxygen, nutrients, chlorophyll a, pigments, and salinity, using the CTD/Rosette (30 L),
- 5) Collection of phytoplankton and zooplankton tows,
- 6) Collection of samples for coccolyth analysis,

The cruise track followed a straight transect from Galveston across the shelf/slope until 1500 m water depth.

COLLABORATION WITH OTHER INSTITUTIONS

Dr. Tom Bianchi, collaborator in jointly funded projects, and Dr. R. Roller, both faculty members at Lamar University in Beaumont, TX, participated on this cruise for the collection of samples for pigment and biomarker analysis.

PARTICIPANTS

92G03

Peter Santschi	Chief Scientist	TAMUG Dept. of Marine Sciences
Shaunna Asbill	Undergrad. Student	"
Roberta Carvalho	" "	"
Sarah Oktay	" "	"
Matt Quigley	" "	"
Guo Laodong	Graduate Student	"
M. Ravichandran	" "	"
Kent Warnken	" "	TAMU Dept. of Oceanography
Ken Blankinship	" "	"
Vita Pariente	" "	"
Robert Zimmerman	" "	"
Robb Van Putte	" "	"
Ping Wang	" "	"
Rick Roller	Visiting Scientist	LAMAR-University
Tom. Bianchi	" "	"
R.V. Pittman	Electronics Technician	TAMU Dept. of Oceanography
Dave Voegele	" "	"
Ken Bottom	Marine Technician	"
Dennis Guffy	" "	"
Dean Letzring	Deck Engineer	Marine Operations in Galveston
William Green	" "	"

RECORD OF POSITIONS AND CTD STATIONS

R/V GYRE cruise 92G-03:

<u>Date</u>	<u>_GMT</u>	<u>Start Station Work</u>	<u>Finish Station Work</u>	<u>Station</u>	<u>Cast Depth</u>
03-16	1116 - 1127	28 45.1 95 00.0	28 45.3 94 59.8	CTD 01	19 m
	1759 - 1809	28 25.6 94 59.1	28 25.7 94 59.0	CTD 02	35 m
	2311 - 2333	28 12.1 94 59.9	28 12.2 95 00.1	CTD 03	44 m
03-17	0159 - 0214	27 55.3 95 00.1	27 55.5 95 00.2	CTD 04	96 m
	1500 - 1614	26 41.2 94 59.4	26 41.2 94 57.8	CTD 05: 1 of 8	1505 m
	2229 - 2302	26 38.6 94 44.8	26 38.2 94 43.7	CTD 05A: 2 of 8	497 m
03-18	0058 - 0109	26 40.9 94 59.2	26 40.7 94 58.8	CTD 05B: 3 of 8	95 m
	0215 - 0337	26 41.1 94 59.4	26 41.2 94 58.4	CTD 05C: 4 of 8	1500 m
	1143 - 1302	26 40.6 94 58.1	26 40.0 94 56.3	CTD 05D: 5 of 8	1500 m
	1453 - 1532	26 41.4 94 59.5	26 41.6 94 58.6	CTD 05E: 6 of 8	995 m
	2335 - 0020	26 37.2 94 49.3	26 36.7 94 48.3	CTD 05F: 7 of 8	695 m
03-19	0523 - 0625	26 40.5 94 57.2	26 40.5 94 56.4	CTD 05G: 8 of 8	1500 m
	1541 - 1608	27 37.1 95 00.1	27 36.8 95 00.0	CTD 06: 1 of 2	400 m
03-20	0102 - 0112	27 37.3 95 08.8	27 37.4 95 09.5	CTD 06A: 2 of 2	30 m
	0556 - 0616	27 50.0 94 59.8	27 50.0 94 59.8	CTD 07: 1 of 2	199 m
	1019 - 1039	27 47.5 95 03.7	27 47.8 95 03.5	CTD 07A: 2 of 2	180 m

NOAA FORM 72-36 14-78		U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION								FORM APPROVED O.M.B. No. 41-R2734			
MARINE COASTAL WEATHER LOG — SHIP STATION													
SHIP NAME		R/V GYRE : CRUISE 92G-03					RADIO CALL SIGN			DATE			
							KTCL			16 MARCH 1992			
(1) DATE	(2) TIME (GMT)	(3) POSITION	(4) PRESENT WEATHER	(5) VISI- BILITY (MI)	(6) WIND		(7) STATE OF SEA			(8) SEA TEMP. OC DF	(9) AIR TEMP. OC DF	(10) PRES- SURE	(11) REMARKS (SIGNS, ETC.)
					DIR (16 DIR)	SPEED (KTS)	WAVE HEIGHT (FT)	SWELL DIRECTION (10 DIR)	WAVE HEIGHT (FT)				
16	0545	27°03'N, 94°48'W	CLEAR	10	W	6	2	—	—		65	1020	
16	0930	28°45'N, 94°59'W	CLEAR	10	S	8	2	—	—		64.7	1020	
16	1400	28°31'N, 94°59'W	CLEAR	10	SW	5	2				65	1020	
16	1730	28°27'N, 94°51'W	PT. CLOUDY	10	SSE	8	1	S	1-2		66	1022	
16	2130	28°12'N, 94°54'W	PT. CLOUDY	10	SE	6	1	S	1-2		69	1021	
17	0135	27°57'N, 94°59'W	Ptly CLDY	10	SSE	10	1	S	2-4		69	1018	
17	0530	27°57'N, 95°02'W	Ptly CLOUDY	10	SE	10	1	S	2-4		69	1018	
17	0930	27°27'N, 95°00'W	PT. CLOUDY	10	SE	10	1	S	2-4		69	1016	
17	1330	26°50'N, 95°00'W	CLOUDY	8	SSE	12	2-3	S	2-4		71	1016	
17	1800	26°41'N, 94°56'W	HAZE	5	SSE	18	2	S	3-5		72	1016	
17	2130	26°39'N, 94°47'W	PT. CLOUDY HAZE	7	SSE	16	2	S	3-5		72	1015	
18	0130	26°40'N, 94°58'W	CLOUDY HAZE	6	SSE	15	2	S	2-4		71	1014	
18	0530	26°40'N, 94°55'W	CLOUDY HAZE	6	SSE	20	2	S	2-4		71	1014	
18	0930	26°37'N, 94°50'W	PT. CLOUDY HAZE	7	SE	16	2	S	2-4		71	1013	
18	1340	26°34'N, 94°55'W	CLOUDY LT HAZE	6	SSE	12	2	S	2-4		70	1013	
18	1735	26°41'N, 94°56'W	CLOUDY HAZE	6	SSE	15	2	S	1-3		71	1011	
18	2130	26°38'N, 94°52'W	PT. CLOUDY HAZE	3	SSE	17	1	S	1-3		72	1010.3	
19	0145	26°40'N, 94°58'W	CLEAR	10	SSE	10	1	S	1-3		70	1012	
19	0530	26°40'N, 94°57'	FOG	0	S	8	1	S	1		70	1013.6	
19	0930	26°40'N, 94°54'W	PT. CLOUDY HAZE	2	SSE	14	1	S	1-2		70	1014.7	
19	1245	27°18'N, 94°53'W	Ptly CLOUDY LT HAZE	10	W	20	2-3	W	2-3		68	1019	
19	1730	27°36'N, 95°00'W	CLEAR	10	NNW	13	1	NW	2		71	1017	
19	2130	27°36'N, 95°01'W	CLEAR	12	N	12	1	N	1-2		69	1019	
20	0145	27°37'N, 95°10'W	CLEAR	10	N	3	1	N	1		68	1020	
20	0600	27°50'N, 95°00'W	CLEAR	10	NNW	20	1	NW	2		67	1023	
20	0930	27°48'N, 95°01'W	PT. CLOUDY	10	N	17	2	N	2-4		64	1022	
20	1330	27°50'N, 95°06'W	CLEAR	10	NNE	20	2-3	NE	2-3		63	1022	
20	1745	28°27'N, 94°56'	CLEAR	10	NE	18	2-3	NE	2-3		61	1024	
20	2130	29°00'N, 94°45'W	PT. CLOUDY HAZE	7	NE	7	1	NE	1-2		60	1023	

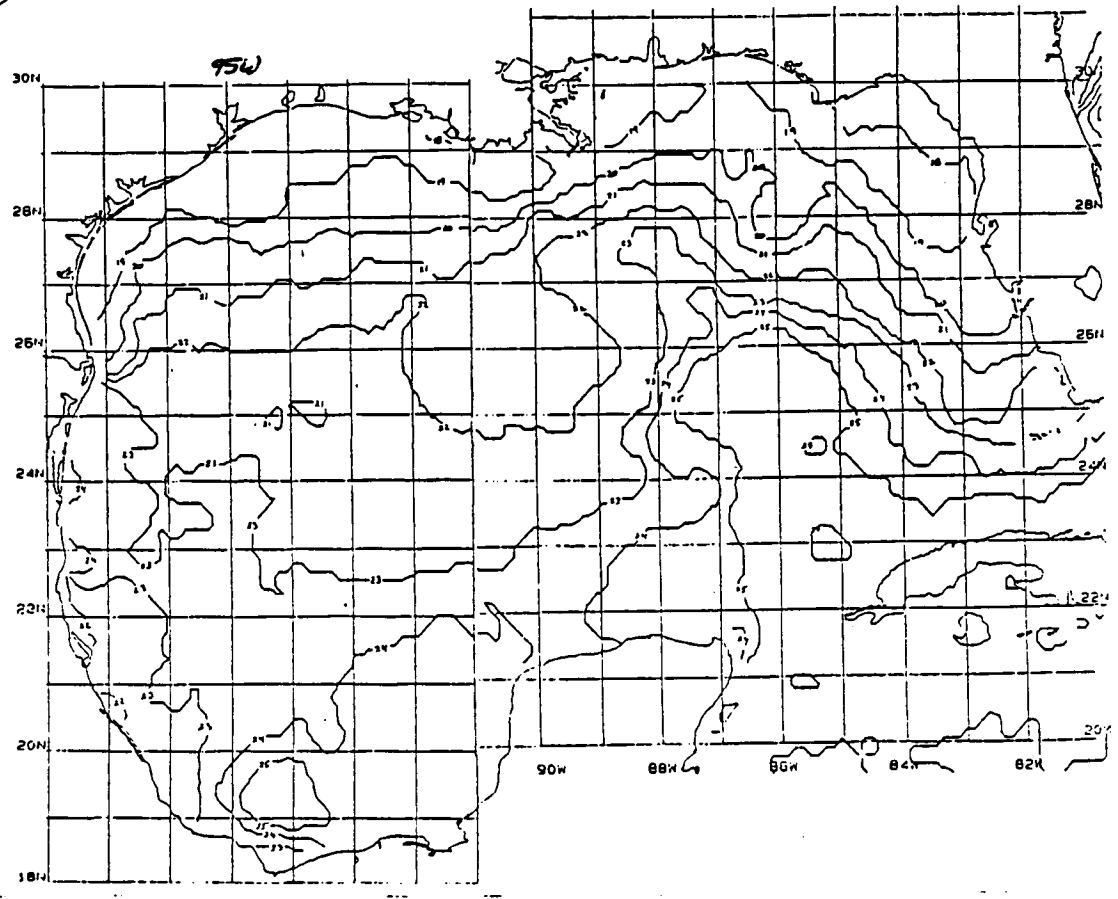
REMOTE SENSING DATA: SEA SURFACE TEMPERATURE MAPS

Although the weather in March 1992 was generally overcast and rainy, the Coastal Studies Institute at Louisiana State University was able to compile sea surface temperature data for 7 March (9 days prior to the departure of cruise 92G-02) and for 15 March (1 day prior to departure). The data are in the form of schematic maps, which were posted to the public domain Omnet bulletin board GULF.MEX. Both maps utilize Channel 4 AVHRR data from NOAA-11.

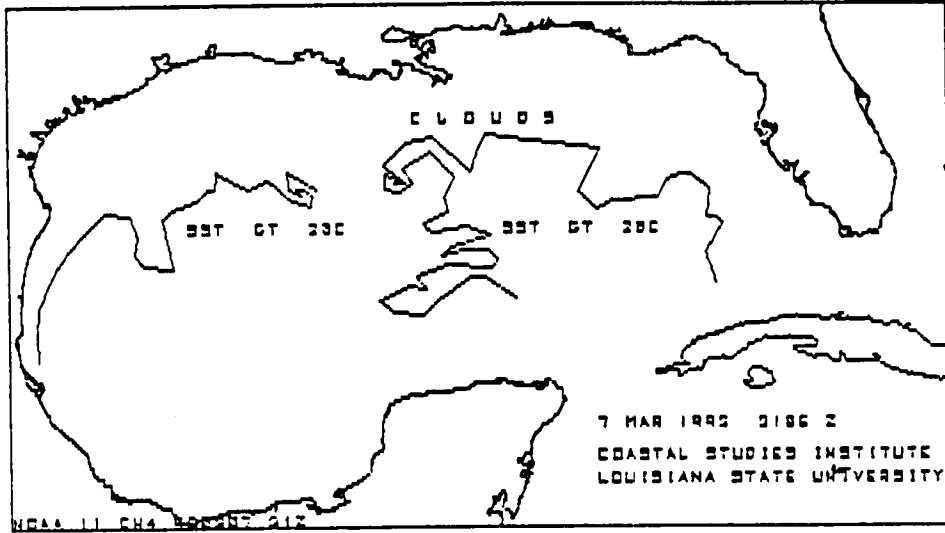
A third, somewhat more detailed Sea Surface Thermal Analysis which was prepared by NOAA-NESDIS for 5 April 1992 is included below. This map shows that surface temperatures 2 weeks after the cruise ranged from 18-21°C along 95°W.



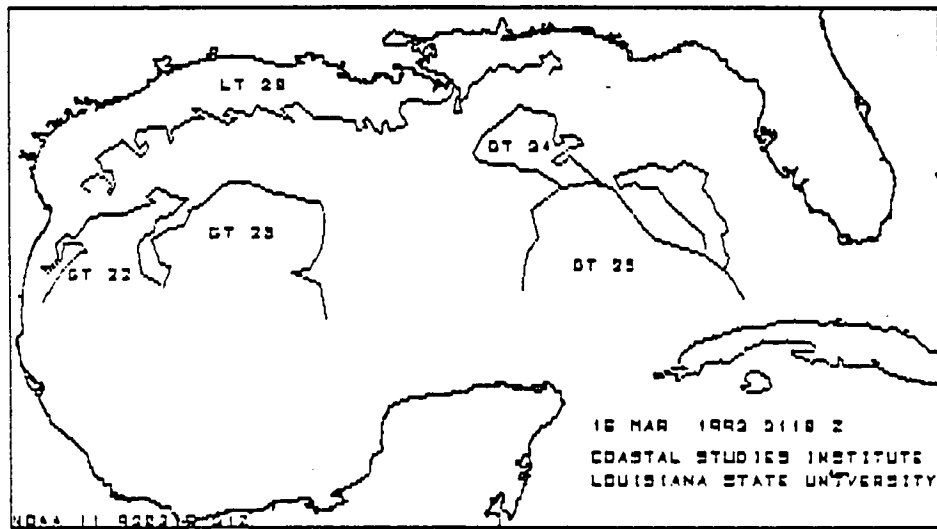
SEA SURFACE THERMAL ANALYSIS
ANALYSIS DATE: 05 APR 92.



f9203071.dat



f9203151.dat



CTD DATA

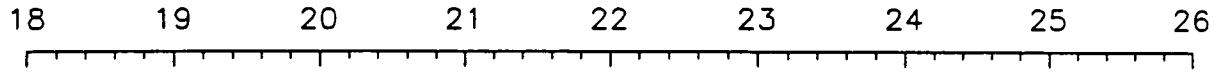
Temperature and salinity were profiled with a Seabird SBE-09 CTD to which a SeaTech model 025D 25-cm pathlength transmissometer was attached to profile transmissivity.

The following pages present plots of downcast temperature and salinity (and transmissometer) data, along with tables of downcast CTD and transmissometer data. No correction was made to the raw data CTD salinities, because these generally agreed to within ± 0.005 PSU with bottle salinities determined using our Guildline model 8400A conductive salinometer. Triangles superimposed on the (downcast) CTD salinity profiles present the (upcast) bottle salinity data. The CTD data have been 1 m averaged for casts at Stations 01-04 and for casts at Station 07, but they were 5 m averaged for casts at Stations 05 and 06 because the raw salinity data were unusually "noisy" at the latter stations. This noise (spiking artifacts) was due to a pump problem (a hose had been knocked loose) that went uncorrected until Station 07.

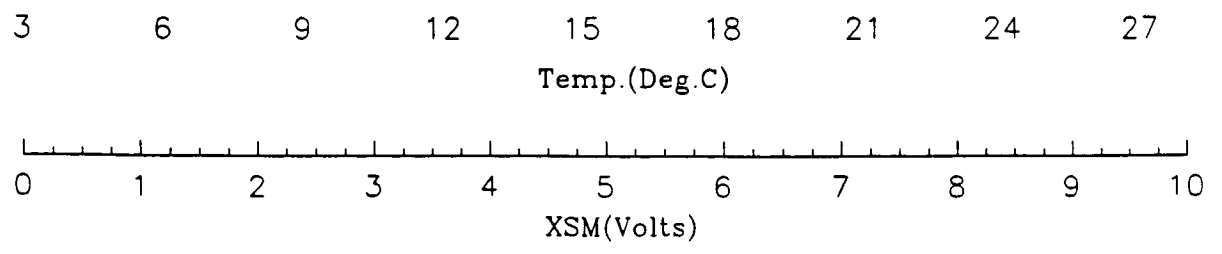
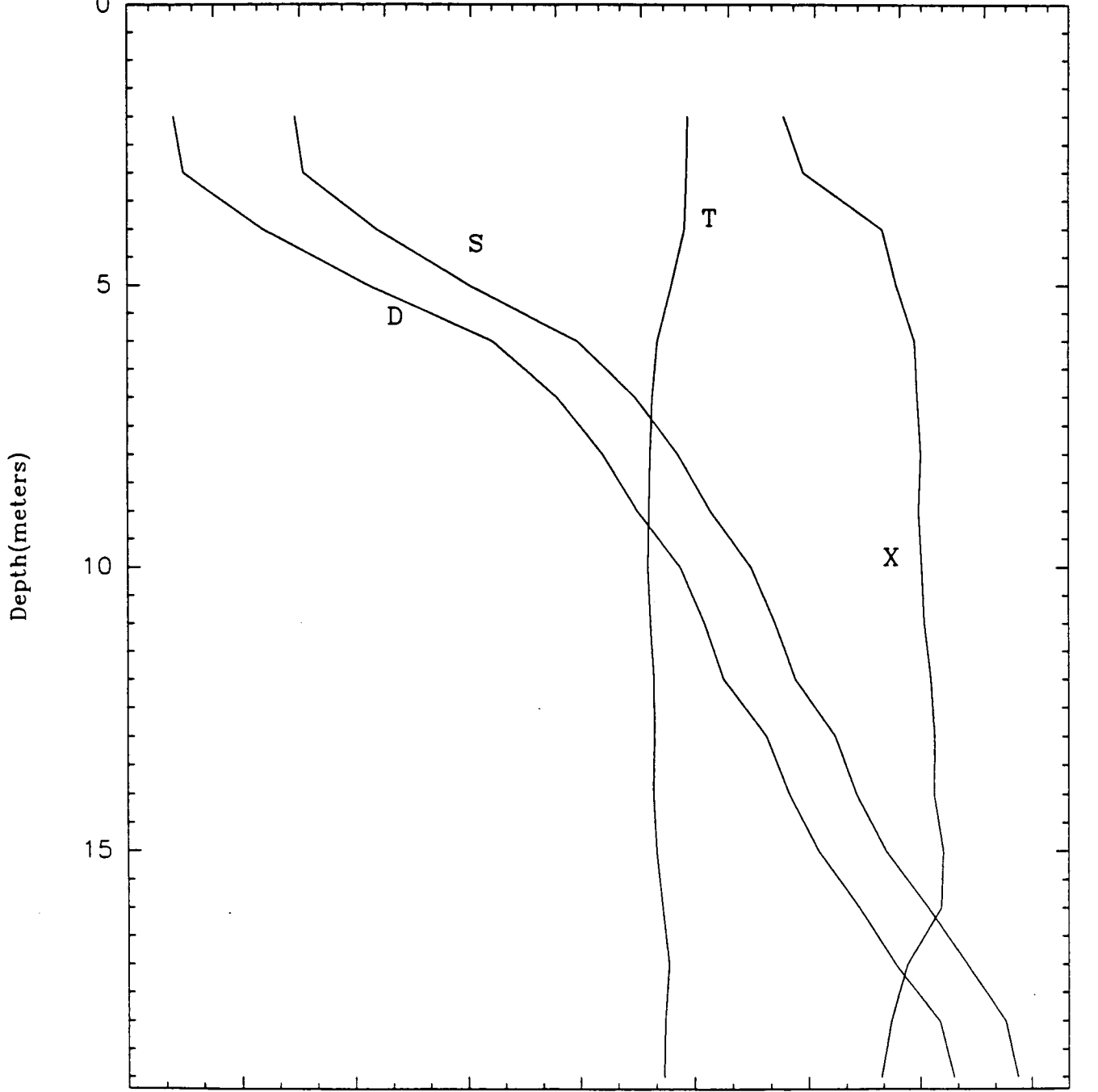
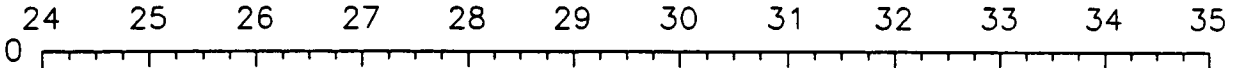
cruise: 92G03
date: Mon Mar 16 1992, Julian day = 76
time: 11:18:23 GMT
lat: 28 45.78 N
lon: 95 00.11 W
cn. 01

raw data file = C2G0301.dat

meters	temp	salinity	sigma- $\bar{\theta}$	volts# 0
2.000	17.8468	25.9457	18.3883	6.941
3.000	17.8072	26.0439	18.4725	7.149
4.000	17.7564	26.9037	19.1404	7.987
5.000	17.4224	27.9831	20.0418	8.142
6.000	17.0470	29.2488	21.0959	8.337
7.000	16.9102	29.9177	21.6393	8.367
8.000	16.8543	30.4150	22.0330	8.403
9.000	16.8304	30.7897	22.3256	8.385
10.000	16.7994	31.2554	22.6896	8.416
11.000	16.8624	31.5362	22.8903	8.446
12.000	16.9508	31.7697	23.0489	8.514
13.000	16.9599	32.2380	23.4058	8.552
14.000	16.9363	32.4816	23.5981	8.549
15.000	17.0198	32.8363	23.8505	8.648
16.000	17.1816	33.3375	24.1967	8.626
17.000	17.3503	33.7940	24.5066	8.256
18.000	17.2312	34.2506	24.8852	8.081
19.000	17.2022	34.3971	25.0045	7.979



Salinity(ppt)

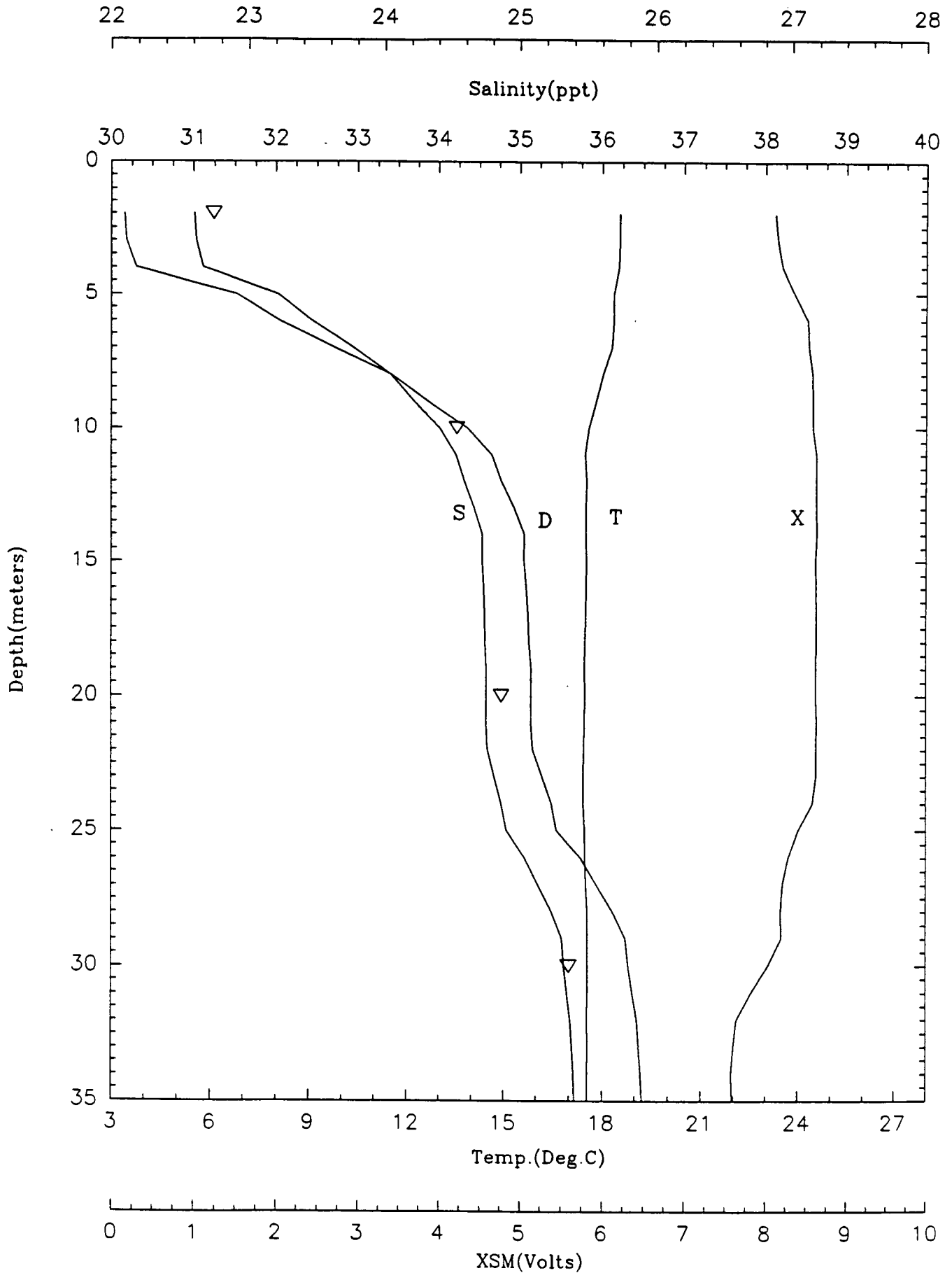


▽ - Indicates bottle Salinities.

ruise: 92G03
 ate: Mon Mar 16 1992, Julian day = 76
 ime: 17:56:10 GMT
 at: 28 26.00 N
 on: 94 59.00 W
 tn. 02

raw data file = C2G0302.dat

meters	temp	salinity	sigma- $\bar{\sigma}$	volts# 0
2.000	18.5270	31.0174	22.0981	8.119
3.000	18.5286	31.0350	22.1110	8.152
4.000	18.5010	31.1203	22.1828	8.212
5.000	18.3542	32.0264	22.9109	8.369
6.000	18.3545	32.4317	23.2207	8.524
7.000	18.2974	32.9395	23.6229	8.536
8.000	18.0215	33.4016	24.0440	8.578
9.000	17.8108	33.6957	24.3204	8.587
10.000	17.5981	34.0095	24.6123	8.587
11.000	17.4860	34.2068	24.7905	8.628
12.000	17.5322	34.3127	24.8606	8.630
13.000	17.5182	34.4353	24.9579	8.630
14.000	17.5165	34.5317	25.0323	8.635
15.000	17.5284	34.5324	25.0299	8.617
16.000	17.5120	34.5500	25.0474	8.623
17.000	17.4948	34.5604	25.0595	8.628
18.000	17.4888	34.5678	25.0666	8.628
19.000	17.4696	34.5852	25.0845	8.622
20.000	17.4788	34.5847	25.0820	8.623
21.000	17.4705	34.5832	25.0828	8.636
22.000	17.4628	34.5988	25.0966	8.631
23.000	17.4389	34.6806	25.1651	8.628
24.000	17.4390	34.7712	25.2345	8.584
25.000	17.4808	34.8335	25.2722	8.412
26.000	17.4947	35.0641	25.4457	8.292
27.000	17.5254	35.2242	25.5610	8.216
28.000	17.5614	35.3904	25.6797	8.195
29.000	17.5725	35.5165	25.7738	8.203
30.000	17.5686	35.5399	25.7926	8.028
31.000	17.5679	35.5809	25.8243	7.819
32.000	17.5599	35.6190	25.8554	7.640
33.000	17.5611	35.6380	25.8697	7.603
34.000	17.5588	35.6538	25.8824	7.577
35.000	17.5593	35.6651	25.8910	7.586

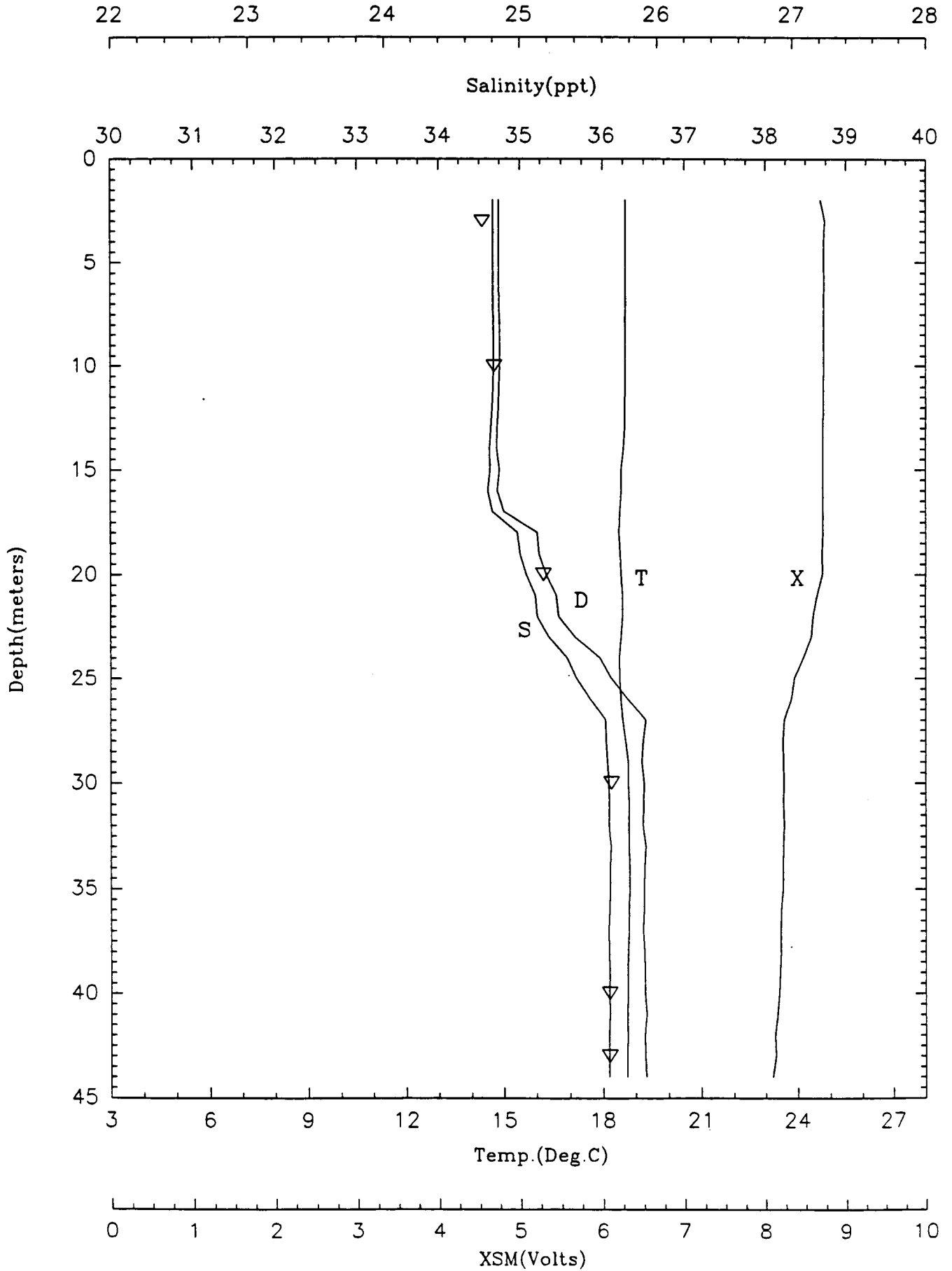


▽ - Indicates bottle Salinities.

Cruise: 92G03
 Date: Mon Mar 16 1992, Julian day = 76
 Time: 23:19:31 GMT
 Lat: 28 12.70 N
 Lon: 95 00.20 W
 Station: 03

raw data file = C2G0303.dat

meters	temp	salinity	sigma- δ	volts# 0
2.000	18.7011	34.6715	24.8471	8.686
3.000	18.7041	34.6727	24.8471	8.739
4.000	18.7053	34.6724	24.8465	8.725
5.000	18.7068	34.6711	24.8452	8.726
6.000	18.7047	34.6721	24.8465	8.727
7.000	18.7012	34.6744	24.8492	8.726
8.000	18.6994	34.6764	24.8511	8.724
9.000	18.6984	34.6776	24.8523	8.724
10.000	18.6981	34.6776	24.8524	8.723
11.000	18.6974	34.6684	24.8456	8.719
12.000	18.6827	34.6604	24.8431	8.718
13.000	18.6763	34.6454	24.8333	8.714
14.000	18.6314	34.6268	24.8303	8.715
15.000	18.5716	34.6332	24.8503	8.711
16.000	18.5648	34.6069	24.8318	8.714
17.000	18.5258	34.6599	24.8821	8.715
18.000	18.5023	34.9688	25.1243	8.711
19.000	18.5372	35.0016	25.1407	8.704
20.000	18.5679	35.0797	25.1927	8.709
21.000	18.6078	35.1882	25.2657	8.643
22.000	18.6101	35.2090	25.2810	8.591
23.000	18.5624	35.3512	25.4019	8.567
24.000	18.5217	35.5734	25.5822	8.473
25.000	18.5295	35.6846	25.6653	8.359
26.000	18.5575	35.8465	25.7821	8.324
27.000	18.6116	36.0365	25.9140	8.236
28.000	18.6982	36.0391	25.8940	8.220
29.000	18.7749	36.0549	25.8865	8.225
30.000	18.7809	36.0744	25.8999	8.229
31.000	18.7999	36.0781	25.8979	8.226
32.000	18.8091	36.0776	25.8951	8.234
33.000	18.8054	36.1003	25.9134	8.221
34.000	18.8168	36.0919	25.9041	8.218
35.000	18.8130	36.0898	25.9035	8.219
36.000	18.8094	36.0841	25.9000	8.199
37.000	18.8014	36.0729	25.8935	8.192
38.000	18.7706	36.0791	25.9061	8.192
39.000	18.7681	36.0830	25.9097	8.179
40.000	18.7614	36.0774	25.9071	8.169
41.000	18.7502	36.0865	25.9170	8.145
42.000	18.7520	36.0723	25.9057	8.116
43.000	18.7348	36.0722	25.9099	8.125
44.000	18.7289	36.0769	25.9151	8.088



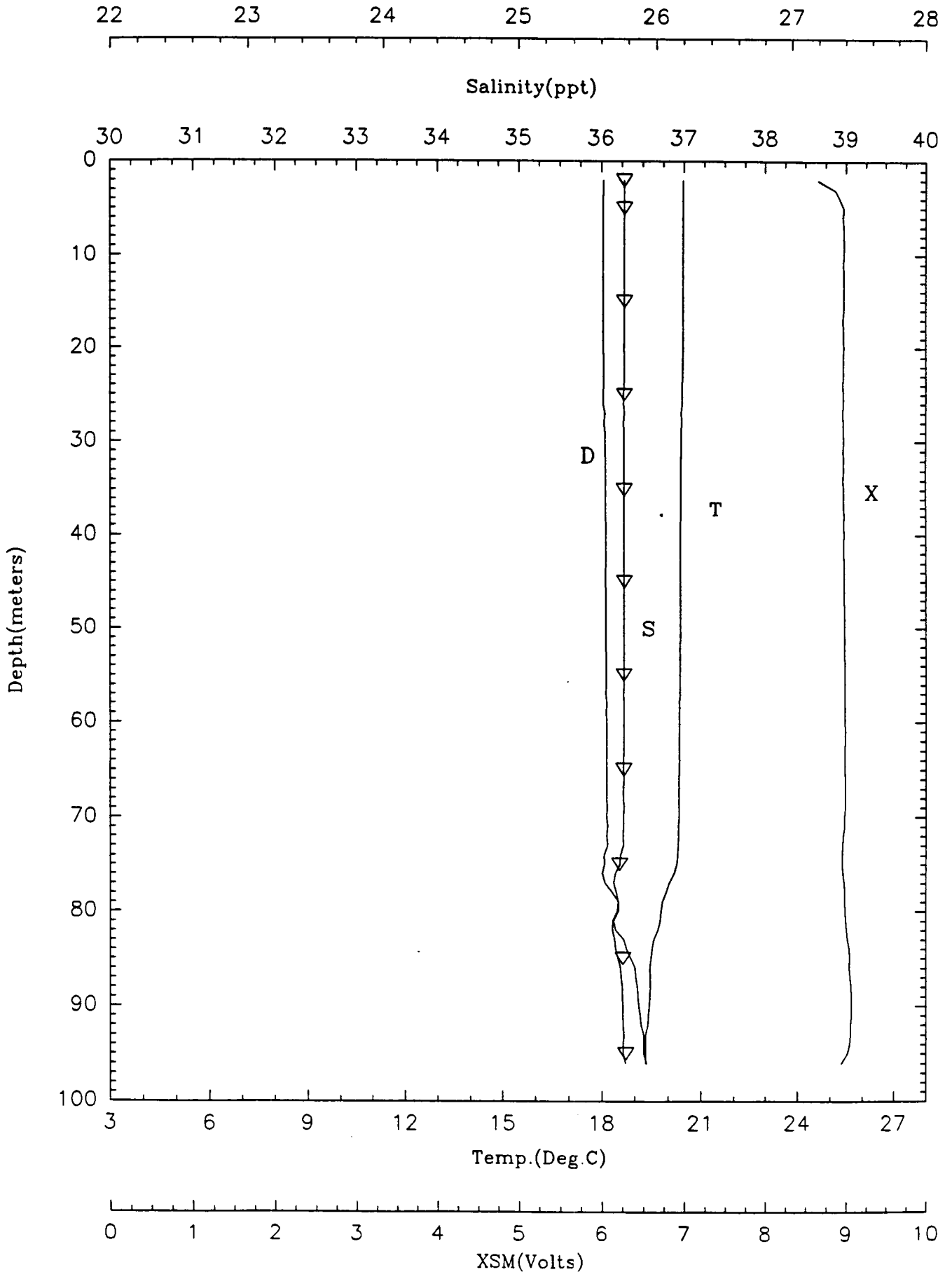
▽ - Indicates bottle Salinities.

Cruise: 92G03
 Date: Mon Mar 17 1992, Julian day = 77
 Time: 01:57:12 GMT
 Lat: 27 55.28 N
 Lon: 95 00.02 W
 Run: 04

raw data file = C2G0304.dat

meters	temp	salinity	sigma- θ	volts# 0
2.000	20.4656	36.2778	25.6136	8.660
3.000	20.4665	36.2780	25.6135	8.867
4.000	20.4679	36.2775	25.6127	8.921
5.000	20.4679	36.2778	25.6130	8.970
6.000	20.4675	36.2776	25.6129	8.960
7.000	20.4676	36.2774	25.6128	8.972
8.000	20.4675	36.2778	25.6130	8.974
9.000	20.4678	36.2778	25.6129	8.975
10.000	20.4683	36.2776	25.6127	8.974
11.000	20.4685	36.2781	25.6131	8.965
12.000	20.4689	36.2782	25.6130	8.974
13.000	20.4705	36.2784	25.6127	8.974
14.000	20.4709	36.2785	25.6127	8.973
15.000	20.4716	36.2779	25.6121	8.974
16.000	20.4723	36.2775	25.6115	8.974
17.000	20.4722	36.2776	25.6117	8.960
18.000	20.4676	36.2767	25.6122	8.967
19.000	20.4651	36.2758	25.6122	8.969
20.000	20.4645	36.2744	25.6113	8.973
21.000	20.4540	36.2751	25.6147	8.968
22.000	20.4540	36.2753	25.6148	8.969
23.000	20.4529	36.2750	25.6149	8.966
24.000	20.4352	36.2693	25.6153	8.962
25.000	20.4385	36.2670	25.6127	8.966
26.000	20.4340	36.2654	25.6126	8.968
27.000	20.4180	36.2746	25.6240	8.964
28.000	20.4198	36.2691	25.6192	8.968
29.000	20.4060	36.2737	25.6265	8.966
30.000	20.4058	36.2733	25.6262	8.970
31.000	20.4047	36.2726	25.6260	8.969
32.000	20.3968	36.2739	25.6291	8.970
33.000	20.3988	36.2723	25.6274	8.971
34.000	20.3959	36.2736	25.6291	8.969
35.000	20.3957	36.2733	25.6289	8.972
36.000	20.3951	36.2733	25.6291	8.971
37.000	20.3951	36.2721	25.6282	8.974
38.000	20.3919	36.2720	25.6290	8.975
39.000	20.3896	36.2732	25.6305	8.972
40.000	20.3886	36.2736	25.6311	8.975
41.000	20.3887	36.2737	25.6312	8.973
42.000	20.3895	36.2733	25.6306	8.974
43.000	20.3894	36.2732	25.6305	8.975
44.000	20.3889	36.2718	25.6296	8.977
45.000	20.3871	36.2707	25.6293	8.977
46.000	20.3848	36.2723	25.6312	8.978
47.000	20.3841	36.2713	25.6305	8.980
48.000	20.3817	36.2719	25.6316	8.981
49.000	20.3802	36.2718	25.6319	8.982
50.000	20.3783	36.2722	25.6328	8.982
51.000	20.3782	36.2715	25.6323	8.983

52.000	20.3768	36.2712	25.6324	8.983
53.000	20.3732	36.2726	25.6345	8.985
54.000	20.3744	36.2715	25.6333	8.986
55.000	20.3709	36.2704	25.6334	8.988
56.000	20.3689	36.2693	25.6331	8.989
57.000	20.3680	36.2684	25.6327	8.989
58.000	20.3602	36.2713	25.6369	8.988
59.000	20.3610	36.2703	25.6360	8.990
60.000	20.3589	36.2698	25.6362	8.991
61.000	20.3570	36.2693	25.6363	8.994
62.000	20.3563	36.2694	25.6365	8.992
63.000	20.3526	36.2706	25.6385	8.990
64.000	20.3534	36.2690	25.6371	8.991
65.000	20.3529	36.2684	25.6367	8.990
66.000	20.3481	36.2699	25.6391	8.992
67.000	20.3485	36.2672	25.6370	8.996
68.000	20.3468	36.2669	25.6372	8.994
69.000	20.3425	36.2698	25.6405	8.994
70.000	20.3432	36.2677	25.6388	8.983
71.000	20.3233	36.2668	25.6435	8.982
72.000	20.3258	36.2606	25.6380	8.969
73.000	20.3109	36.2645	25.6450	8.963
74.000	20.3075	36.2281	25.6181	8.953
75.000	20.2795	36.2216	25.6207	8.956
76.000	20.1952	36.1696	25.6035	8.963
77.000	20.0418	36.1446	25.6253	8.975
78.000	19.9393	36.1785	25.6784	8.981
79.000	19.8375	36.2026	25.7237	8.984
80.000	19.7964	36.1897	25.7247	8.991
81.000	19.7668	36.1330	25.6892	8.994
82.000	19.7027	36.1267	25.7012	9.007
83.000	19.5738	36.1583	25.7592	9.019
84.000	19.5233	36.1677	25.7796	9.036
85.000	19.4881	36.1938	25.8088	9.045
86.000	19.4524	36.2261	25.8427	9.036
87.000	19.4599	36.2323	25.8455	9.049
88.000	19.4609	36.2487	25.8578	9.061
89.000	19.4492	36.2507	25.8624	9.063
90.000	19.4331	36.2556	25.8703	9.067
91.000	19.4069	36.2563	25.8777	9.063
92.000	19.3886	36.2619	25.8867	9.056
93.000	19.3308	36.2649	25.9041	9.053
94.000	19.3218	36.2639	25.9056	9.042
95.000	19.3260	36.2634	25.9041	9.019
96.000	19.3190	36.2890	25.9255	8.940



▽ - Indicates bottle Salinities.

CTD cast at Station 05: Cast 1 of 8 (cast to 1505 m)

raw data file = c2g0305.dat					350.000	10.8357	35.3317	27.0721	9.116
meters	temp	salinity	sigmatheta	volts# 0	355.000	10.7640	35.2890	27.0517	9.117
5.000	20.7403	35.4062	24.8665	8.858	360.000	10.6286	35.2809	27.0696	9.116
10.000	20.6446	35.4407	24.9277	8.919	365.000	10.5217	35.2722	27.0819	9.116
15.000	20.4610	35.8036	25.2540	8.943	370.000	10.4384	35.2619	27.0886	9.116
20.000	20.5457	36.0940	25.4528	8.971	375.000	10.3428	35.2110	27.0657	9.116
25.000	20.6689	36.2480	25.5372	8.980	380.000	10.2651	35.2258	27.0908	9.117
30.000	20.6711	36.2466	25.5358	8.998	385.000	10.1932	35.2179	27.0972	9.116
35.000	20.6573	36.2457	25.5392	8.998	390.000	10.1715	35.1832	27.0740	9.116
40.000	20.6321	36.2352	25.5382	8.994	395.000	10.0609	35.1714	27.0839	9.117
45.000	20.6037	36.2404	25.5501	8.993	400.000	9.9933	35.1762	27.0993	9.116
50.000	20.5919	36.2516	25.5621	9.002	405.000	9.9200	35.1771	27.1126	9.117
55.000	20.5871	36.2491	25.5618	9.007	410.000	9.8439	35.1630	27.1146	9.117
60.000	20.5675	36.2512	25.5689	9.023	415.000	9.7776	35.1312	27.1010	9.119
65.000	20.5253	36.2526	25.5816	9.019	420.000	9.6283	35.1293	27.1246	9.118
70.000	20.4383	36.1676	25.5405	9.024	425.000	9.5081	35.1443	27.1565	9.118
75.000	20.2416	36.2274	25.6391	9.024	430.000	9.4364	35.1366	27.1623	9.118
80.000	20.2361	36.2235	25.6378	9.030	435.000	9.3694	35.1191	27.1597	9.118
85.000	20.1543	36.3635	25.7667	9.040	440.000	9.3252	35.1117	27.1613	9.119
90.000	19.9521	36.4104	25.8566	9.056	445.000	9.2567	35.1067	27.1686	9.118
95.000	19.6233	36.3931	25.9303	9.068	450.000	9.2147	35.1165	27.1833	9.120
100.000	19.3282	36.3820	25.9990	9.073	455.000	9.1652	35.0965	27.1757	9.119
105.000	19.1107	36.3477	26.0293	9.072	460.000	9.0697	35.0822	27.1800	9.119
110.000	18.7119	36.3029	26.0974	9.075	465.000	9.0185	35.0624	27.1727	9.118
115.000	18.2949	36.2499	26.1623	9.082	470.000	8.9778	35.0341	27.1572	9.070
120.000	18.0645	36.2088	26.1887	9.082	475.000	8.8976	35.0424	27.1766	9.118
125.000	17.7088	36.3439	26.3805	9.088	480.000	8.8099	35.0397	27.1885	9.120
130.000	17.4566	36.3469	26.4444	9.092	485.000	8.7431	35.0363	27.1964	9.121
135.000	17.2393	36.1787	26.3682	9.092	490.000	8.6995	35.0383	27.2049	9.121
140.000	17.0235	36.0934	26.3548	9.095	495.000	8.6385	35.0167	27.1976	9.121
145.000	16.6011	36.1633	26.5092	9.100	500.000	8.5519	35.0255	27.2180	9.121
150.000	16.3823	36.1277	26.5333	9.099	505.000	8.4832	34.9814	27.1941	9.121
155.000	16.2312	36.1276	26.5686	9.099	510.000	8.3784	34.9772	27.2070	9.121
160.000	16.0981	36.1217	26.5951	9.101	515.000	8.2653	35.0127	27.2523	9.120
165.000	15.9787	36.0874	26.5964	9.102	520.000	8.2090	34.9979	27.2492	9.120
170.000	15.8027	36.0528	26.6102	9.104	525.000	8.1756	34.9747	27.2362	9.120
175.000	15.5688	36.0609	26.6699	9.107	530.000	8.1216	34.9722	27.2424	9.122
180.000	15.4267	35.9454	26.6130	9.106	535.000	8.0705	34.9604	27.2409	9.121
185.000	15.1622	35.9524	26.6777	9.107	540.000	8.0302	34.9610	27.2475	9.121
190.000	14.9708	35.9105	26.6880	9.107	545.000	7.9546	34.9569	27.2556	9.121
195.000	14.6881	35.8755	26.7231	9.107	550.000	7.8974	34.9666	27.2718	9.122
200.000	14.4814	35.8597	26.7559	9.109	555.000	7.8581	34.9511	27.2654	9.122
205.000	14.3048	35.8354	26.7753	9.110	560.000	7.8062	34.9502	27.2725	9.123
210.000	14.2143	35.8127	26.7772	9.111	565.000	7.7221	34.9289	27.2681	9.123
215.000	14.0228	35.7728	26.7872	9.112	570.000	7.6244	34.9416	27.2924	9.124
220.000	13.8871	35.7478	26.7966	9.112	575.000	7.5641	34.9539	27.3109	9.123
225.000	13.7193	35.7320	26.8197	9.111	580.000	7.5276	34.9355	27.3017	9.123
230.000	13.5879	35.7043	26.8257	9.111	585.000	7.4799	34.9385	27.3110	9.124
235.000	13.4495	35.6786	26.8346	9.111	590.000	7.4539	34.9279	27.3064	9.126
240.000	13.2946	35.6497	26.8441	9.110	595.000	7.4052	34.9011	27.2924	9.126
245.000	13.1613	35.6816	26.8961	9.112	600.000	7.3277	34.8978	27.3009	9.126
250.000	13.0414	35.6495	26.8956	9.112	605.000	7.2591	34.9105	27.3206	9.126
255.000	12.9139	35.5932	26.8778	9.112	610.000	7.2055	34.9105	27.3283	9.125
260.000	12.8176	35.6290	26.9250	9.112	615.000	7.1312	34.9039	27.3335	9.124
265.000	12.7297	35.5904	26.9127	9.113	620.000	7.0817	34.8938	27.3325	9.126
270.000	12.6598	35.6091	26.9412	9.111	625.000	7.0118	34.9220	27.3644	9.125
275.000	12.5195	35.5326	26.9097	9.112	630.000	6.9578	34.9085	27.3613	9.125
280.000	12.4137	35.5293	26.9280	9.112	635.000	6.9002	34.9071	27.3681	9.125
285.000	12.3037	35.5337	26.9530	9.112	640.000	6.8379	34.9013	27.3722	9.126
290.000	12.1846	35.4813	26.9356	9.113	645.000	6.7858	34.9047	27.3819	9.126
295.000	12.0268	35.4674	26.9552	9.114	650.000	6.7407	34.8886	27.3755	9.126
300.000	11.9243	35.4725	26.9789	9.114	655.000	6.6814	34.8940	27.3878	9.125
305.000	11.8060	35.4488	26.9831	9.115	660.000	6.6397	34.8955	27.3946	9.124
310.000	11.6625	35.4078	26.9784	9.115	665.000	6.5730	34.8908	27.3999	9.125
315.000	11.5433	35.4000	26.9948	9.116	670.000	6.5232	34.8812	27.3990	9.125
320.000	11.4642	35.3909	27.0026	9.116	675.000	6.4830	34.8782	27.4019	9.125
325.000	11.3945	35.3705	26.9998	9.116	680.000	6.4505	34.8861	27.4126	9.126
330.000	11.2924	35.3490	27.0020	9.116	685.000	6.4318	34.8731	27.4048	9.125
335.000	11.1393	35.3909	27.0629	9.116	690.000	6.3949	34.8781	27.4137	9.126
340.000	11.0723	35.3344	27.0312	9.115	695.000	6.3721	34.8779	27.4165	9.125
345.000	10.9524	35.2965	27.0235	9.116	700.000	6.3278	34.8670	27.4138	9.126
					705.000	6.2490	34.8933	27.4449	9.124

710.000	6.2004	34.8880	27.4470	9.124	1070.000	4.7260	34.9290	27.6607	9.137
715.000	6.1751	34.8726	27.4382	9.124	1075.000	4.7038	34.9413	27.6730	9.135
720.000	6.1186	34.8949	27.4631	9.124	1080.000	4.6953	34.9264	27.6622	9.136
725.000	6.1068	34.8681	27.4434	9.126	1085.000	4.6817	34.9269	27.6642	9.136
730.000	6.0539	34.8907	27.4681	9.123	1090.000	4.6680	34.9256	27.6647	9.137
735.000	6.0333	34.8798	27.4622	9.124	1095.000	4.6434	34.9313	27.6719	9.136
740.000	6.0031	34.8774	27.4642	9.124	1100.000	4.6236	34.9397	27.6809	9.136
745.000	5.9612	34.8878	27.4778	9.125	1105.000	4.6047	34.9492	27.6905	9.136
750.000	5.9421	34.8831	27.4765	9.124	1110.000	4.5940	34.9478	27.6907	9.136
755.000	5.9255	34.8747	27.4720	9.122	1115.000	4.5910	34.9412	27.6858	9.136
760.000	5.8937	34.8808	27.4809	9.124	1120.000	4.5844	34.9392	27.6849	9.135
765.000	5.8632	34.8868	27.4895	9.123	1125.000	4.5694	34.9425	27.6893	9.135
770.000	5.8524	34.8782	27.4841	9.124	1130.000	4.5628	34.9383	27.6867	9.133
775.000	5.8310	34.8846	27.4919	9.124	1135.000	4.5555	34.9341	27.6843	9.132
780.000	5.8213	34.8788	27.4886	9.123	1140.000	4.5282	34.9449	27.6959	9.131
785.000	5.7790	34.9035	27.5134	9.125	1145.000	4.5139	34.9472	27.6993	9.131
790.000	5.7462	34.9002	27.5150	9.124	1150.000	4.5039	34.9452	27.6989	9.131
795.000	5.7307	34.8914	27.5100	9.124	1155.000	4.5010	34.9494	27.7025	9.131
800.000	5.7087	34.8988	27.5186	9.124	1160.000	4.4988	34.9417	27.6967	9.133
805.000	5.7005	34.8951	27.5167	9.124	1165.000	4.4848	34.9472	27.7027	9.131
810.000	5.6635	34.9076	27.5312	9.125	1170.000	4.4798	34.9458	27.7021	9.132
815.000	5.6359	34.9064	27.5337	9.126	1175.000	4.4723	34.9472	27.7041	9.133
820.000	5.6150	34.8940	27.5264	9.126	1180.000	4.4622	34.9484	27.7062	9.133
825.000	5.5905	34.8884	27.5251	9.126	1185.000	4.4532	34.9509	27.7092	9.125
830.000	5.5651	34.8940	27.5326	9.127	1190.000	4.4495	34.9477	27.7071	9.130
835.000	5.5602	34.8809	27.5230	9.128	1195.000	4.4422	34.9450	27.7058	9.127
840.000	5.5335	34.8877	27.5316	9.129	1200.000	4.4270	34.9589	27.7186	9.127
845.000	5.5041	34.8948	27.5408	9.130	1205.000	4.4269	34.9419	27.7051	9.126
850.000	5.4803	34.8987	27.5469	9.128	1210.000	4.4073	34.9538	27.7167	9.126
855.000	5.4627	34.9034	27.5528	9.130	1215.000	4.4026	34.9543	27.7176	9.126
860.000	5.4472	34.8908	27.5447	9.127	1220.000	4.3976	34.9529	27.7171	9.126
865.000	5.4225	34.8936	27.5499	9.130	1225.000	4.3918	34.9544	27.7190	9.126
870.000	5.4011	34.8942	27.5530	9.131	1230.000	4.3886	34.9523	27.7177	9.127
875.000	5.3794	34.9097	27.5680	9.131	1235.000	4.3852	34.9509	27.7170	9.127
880.000	5.3724	34.8967	27.5586	9.131	1240.000	4.3784	34.9512	27.7180	9.126
885.000	5.3468	34.9095	27.5718	9.131	1245.000	4.3714	34.9542	27.7212	9.127
890.000	5.3339	34.9076	27.5719	9.131	1250.000	4.3690	34.9524	27.7201	9.127
895.000	5.3130	34.9206	27.5847	9.131	1255.000	4.3624	34.9550	27.7229	9.126
900.000	5.3028	34.9087	27.5765	9.131	1260.000	4.3551	34.9585	27.7265	9.124
905.000	5.2843	34.9062	27.5768	9.132	1265.000	4.3482	34.9599	27.7285	9.121
910.000	5.2654	34.9068	27.5796	9.132	1270.000	4.3434	34.9612	27.7300	9.121
915.000	5.2497	34.9035	27.5789	9.133	1275.000	4.3421	34.9563	27.7263	9.122
920.000	5.2287	34.9061	27.5835	9.133	1280.000	4.3355	34.9585	27.7288	9.122
925.000	5.2173	34.9088	27.5869	9.133	1285.000	4.3326	34.9602	27.7306	9.122
930.000	5.2016	34.9135	27.5926	9.132	1290.000	4.3305	34.9627	27.7328	9.122
935.000	5.1815	34.9095	27.5918	9.132	1295.000	4.3321	34.9580	27.7289	9.122
940.000	5.1622	34.9131	27.5970	9.133	1300.000	4.3292	34.9564	27.7280	9.122
945.000	5.1485	34.9114	27.5973	9.133	1305.000	4.3248	34.9569	27.7290	9.121
950.000	5.1286	34.9146	27.6022	9.132	1310.000	4.3213	34.9565	27.7291	9.122
955.000	5.1109	34.9180	27.6070	9.133	1315.000	4.3168	34.9580	27.7307	9.121
960.000	5.0920	34.9154	27.6072	9.132	1320.000	4.3106	34.9582	27.7317	9.119
965.000	5.0669	34.9218	27.6152	9.133	1325.000	4.3044	34.9590	27.7330	9.121
970.000	5.0470	34.9179	27.6145	9.133	1330.000	4.2991	34.9638	27.7374	9.121
975.000	5.0270	34.9226	27.6205	9.132	1335.000	4.2990	34.9602	27.7346	9.121
980.000	5.0103	34.9268	27.6259	9.133	1340.000	4.2955	34.9608	27.7355	9.120
985.000	4.9975	34.9193	27.6215	9.134	1345.000	4.2958	34.9593	27.7343	9.120
990.000	4.9745	34.9281	27.6311	9.133	1350.000	4.2925	34.9611	27.7362	9.120
995.000	4.9722	34.9170	27.6226	9.132	1355.000	4.2897	34.9605	27.7360	9.119
1000.000	4.9550	34.9179	27.6254	9.131	1360.000	4.2889	34.9614	27.7369	9.119
1005.000	4.9409	34.9192	27.6281	9.131	1365.000	4.2882	34.9605	27.7363	9.119
1010.000	4.9287	34.9316	27.6393	9.131	1370.000	4.2838	34.9622	27.7382	9.117
1015.000	4.9140	34.9173	27.6297	9.132	1375.000	4.2822	34.9614	27.7377	9.117
1020.000	4.8892	34.9329	27.6449	9.132	1380.000	4.2799	34.9608	27.7376	9.117
1025.000	4.8846	34.9210	27.6360	9.132	1385.000	4.2765	34.9636	27.7401	9.116
1030.000	4.8454	34.9248	27.6435	9.131	1390.000	4.2751	34.9634	27.7402	9.117
1035.000	4.8341	34.9261	27.6459	9.133	1395.000	4.2746	34.9626	27.7397	9.117
1040.000	4.8179	34.9316	27.6522	9.135	1400.000	4.2725	34.9651	27.7419	9.116
1045.000	4.8043	34.9187	27.6435	9.136	1405.000	4.2690	34.9678	27.7445	9.114
1050.000	4.7800	34.9221	27.6490	9.136	1410.000	4.2693	34.9648	27.7421	9.114
1055.000	4.7611	34.9244	27.6530	9.136	1415.000	4.2694	34.9606	27.7388	9.112
1060.000	4.7553	34.9241	27.6534	9.136	1420.000	4.2653	34.9617	27.7402	9.111
1065.000	4.7393	34.9257	27.6565	9.136	1425.000	4.2636	34.9628	27.7413	9.111

1430.000	4.2605	34.9659	27.7441	9.112
1435.000	4.2613	34.9627	27.7416	9.111
1440.000	4.2587	34.9651	27.7438	9.110
1445.000	4.2559	34.9665	27.7453	9.110
1450.000	4.2562	34.9646	27.7438	9.110
1455.000	4.2543	34.9636	27.7433	9.109
1460.000	4.2531	34.9642	27.7439	9.109
1465.000	4.2520	34.9646	27.7444	9.110
1470.000	4.2513	34.9647	27.7446	9.110
1475.000	4.2500	34.9648	27.7448	9.108
1480.000	4.2493	34.9650	27.7451	9.109
1485.000	4.2478	34.9658	27.7459	9.107
1490.000	4.2450	34.9686	27.7485	9.107
1495.000	4.2448	34.9663	27.7467	9.107
1500.000	4.2444	34.9663	27.7469	9.106
1505.000	4.2416	34.9660	27.7470	9.105

STN No: 05:

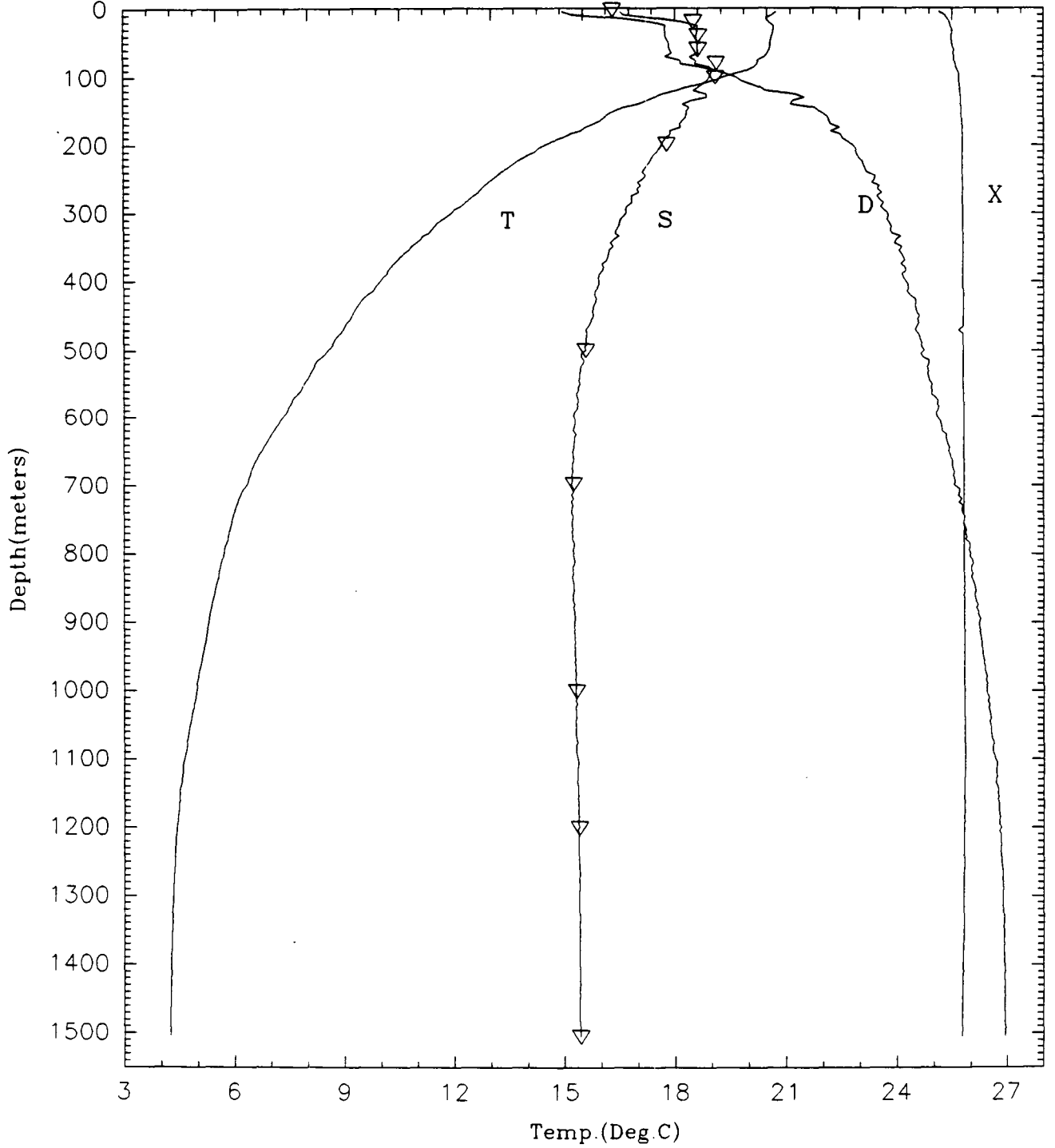
Density(Sigma-theta)

21

22 23 24 25 26 27 28

Salinity(ppt)

30 31 32 33 34 35 36 37 38 39 40



▽ -Indicates bottle salinities.

XSM(Volts)

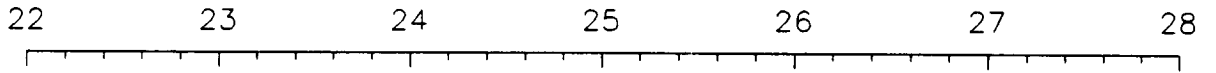
0 1 2 3 4 5 6 7 8 9 10

raw data file = c2g035a.dat					350.000	10.8105	35.2892	27.0435	9.119
meters	temp	salinity	sigmtheta	volts# 0	355.000	10.7030	35.2819	27.0571	9.121
5.000	21.2456	34.5937	24.1112	8.841	360.000	10.6153	35.2741	27.0667	9.121
10.000	21.1047	34.9374	24.4197	8.863	365.000	10.5379	35.2624	27.0713	9.121
15.000	20.8402	35.5816	24.9824	8.906	370.000	10.4323	35.2723	27.0978	9.121
20.000	20.7033	36.1897	25.4831	8.951	375.000	10.3598	35.2380	27.0838	9.121
25.000	20.6102	36.2545	25.5581	8.959	380.000	10.2778	35.2484	27.1063	9.120
30.000	20.5827	36.2526	25.5643	8.960	385.000	10.1619	35.2306	27.1126	9.121
35.000	20.5741	36.2525	25.5668	8.960	390.000	10.0856	35.2331	27.1278	9.121
40.000	20.5646	36.2516	25.5690	8.967	395.000	10.0221	35.2295	27.1359	9.121
45.000	20.5477	36.2502	25.5727	8.977	400.000	9.9750	35.1786	27.1043	9.121
50.000	20.5329	36.2489	25.5760	8.980	405.000	9.8919	35.1824	27.1215	9.121
55.000	20.5217	36.2469	25.5777	8.980	410.000	9.8277	35.1680	27.1212	9.122
60.000	20.5014	36.2405	25.5785	8.968	415.000	9.7295	35.1826	27.1493	9.121
65.000	20.4637	36.2346	25.5845	8.982	420.000	9.6516	35.1781	27.1589	9.121
70.000	20.3517	36.2430	25.6212	8.980	425.000	9.5984	35.1575	27.1517	9.121
75.000	20.2225	36.2937	25.6947	8.997	430.000	9.5424	35.1361	27.1444	9.122
80.000	20.1310	36.3637	25.7728	9.020	435.000	9.4277	35.1384	27.1653	9.120
85.000	19.9151	36.3921	25.8521	9.030	440.000	9.3619	35.1199	27.1617	9.121
90.000	19.6931	36.4709	25.9711	9.045	445.000	9.2855	35.1094	27.1661	9.120
95.000	19.3730	36.4513	26.0401	9.058	450.000	9.2145	35.1185	27.1848	9.121
100.000	19.0738	36.4236	26.0966	9.059	455.000	9.1434	35.0853	27.1705	9.121
105.000	18.7460	36.4065	26.1677	9.071	460.000	9.0608	35.0851	27.1837	9.122
110.000	18.3739	36.3826	26.2439	9.075	465.000	8.9787	35.0775	27.1910	9.122
115.000	18.1337	36.3548	26.2830	9.080	470.000	8.8603	35.0614	27.1973	9.123
120.000	17.8666	36.3462	26.3429	9.083	475.000	8.7706	35.0573	27.2084	9.123
125.000	17.7792	36.3491	26.3669	9.082	480.000	8.7090	35.0582	27.2189	9.123
130.000	17.6554	36.3178	26.3735	9.082	485.000	8.6308	35.0355	27.2134	9.125
135.000	17.4109	36.2935	26.4148	9.088	490.000	8.5544	35.0307	27.2215	9.126
140.000	17.1611	36.2526	26.4440	9.095	495.000	8.4803	35.0233	27.2273	9.126
145.000	16.8381	36.1929	26.4757	9.102	497.350	8.3956	35.0250	27.2417	9.126
150.000	16.4948	36.1655	26.5359	9.103					
155.000	16.2553	36.1084	26.5482	9.107					
160.000	16.0410	36.0903	26.5840	9.107					
165.000	15.8289	36.0546	26.6055	9.109					
170.000	15.6778	36.0138	26.6086	9.110					
175.000	15.4737	36.0019	26.6458	9.111					
180.000	15.3096	35.9885	26.6725	9.111					
185.000	15.1502	35.9541	26.6817	9.111					
190.000	14.9521	35.9492	26.7220	9.112					
195.000	14.8000	35.9041	26.7207	9.112					
200.000	14.6292	35.8870	26.7449	9.113					
205.000	14.3584	35.8959	26.8105	9.113					
210.000	14.2688	35.7942	26.7513	9.115					
215.000	14.1017	35.7760	26.7729	9.115					
220.000	13.9478	35.7914	26.8175	9.114					
225.000	13.8349	35.7353	26.7980	9.115					
230.000	13.7018	35.7050	26.8026	9.115					
235.000	13.5401	35.6854	26.8211	9.116					
240.000	13.3755	35.6891	26.8580	9.116					
245.000	13.2552	35.6514	26.8536	9.116					
250.000	13.1545	35.6290	26.8568	9.116					
255.000	12.9782	35.6076	26.8760	9.117					
260.000	12.8492	35.6546	26.9385	9.116					
265.000	12.7610	35.6335	26.9399	9.116					
270.000	12.6532	35.5577	26.9026	9.116					
275.000	12.4949	35.5313	26.9134	9.116					
280.000	12.3822	35.5210	26.9277	9.116					
285.000	12.2635	35.5148	26.9461	9.116					
290.000	12.1289	35.5206	26.9768	9.117					
295.000	12.0709	35.4782	26.9552	9.117					
300.000	11.9394	35.4978	26.9957	9.117					
305.000	11.8424	35.4679	26.9911	9.117					
310.000	11.7367	35.4477	26.9955	9.117					
315.000	11.6007	35.4203	26.9999	9.116					
320.000	11.5090	35.3741	26.9812	9.118					
325.000	11.3752	35.3598	26.9950	9.118					
330.000	11.2421	35.3636	27.0226	9.118					
335.000	11.1015	35.3854	27.0655	9.118					
340.000	11.0325	35.3159	27.0240	9.119					
345.000	10.8923	35.3298	27.0603	9.118					

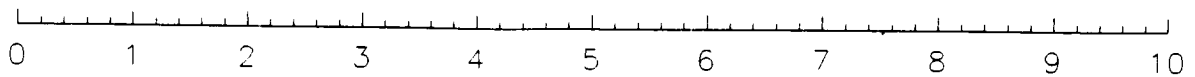
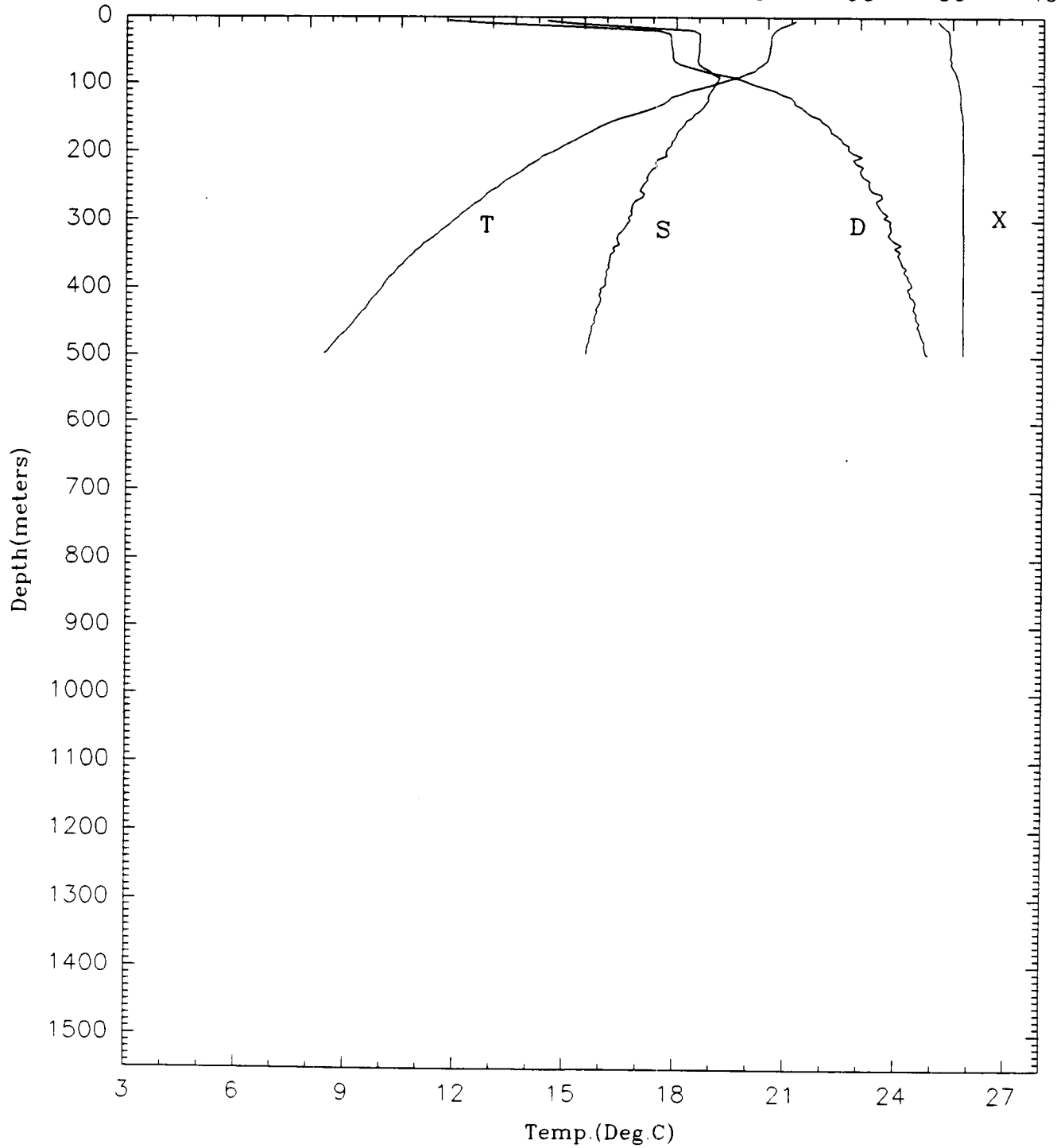
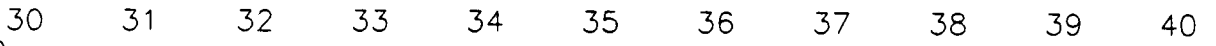
Stn.No.: 5A

Density(Sigma-theta)

23



Salinity(ppt)



XSM(Volts)

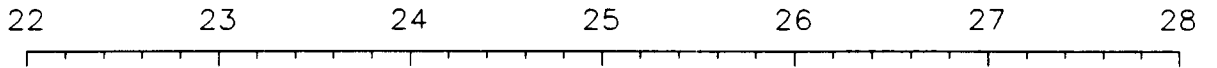
CTD cast at Station 05: Cast 3 of 8 (cast to 95 m)

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raw data file = c2g035b.dat
meters      temp      salinity  sigmtheta  volts# 0
5.000      21.1561   34.2493   23.8818    8.835
10.000     21.1574   34.4188   24.0107    8.843
15.000     20.9654   35.0729   24.5610    8.872
20.000     20.6805   35.4097   24.8949    8.899
25.000     20.5723   35.4456   24.9517    8.935
30.000     20.2413   35.9321   25.4116    8.948
35.000     20.2358   36.0193   25.4798    8.957
40.000     20.1927   36.0670   25.5279    8.956
45.000     20.1914   36.0892   25.5455    8.957
50.000     20.1888   36.0831   25.5417    8.928
55.000     20.1018   36.0589   25.5467    8.926
60.000     19.9782   36.0653   25.5846    8.958
65.000     19.9544   36.0772   25.6002    8.978
70.000     19.9283   36.0898   25.6170    8.992
75.000     19.9841   36.1496   25.6482    9.024
80.000     19.9935   36.1610   25.6546    9.050
85.000     19.7958   36.1315   25.6846    9.058
90.000     19.6715   36.2024   25.7717    9.063
95.000     19.7704   36.3666   25.8713    9.067
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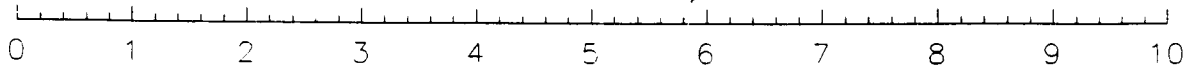
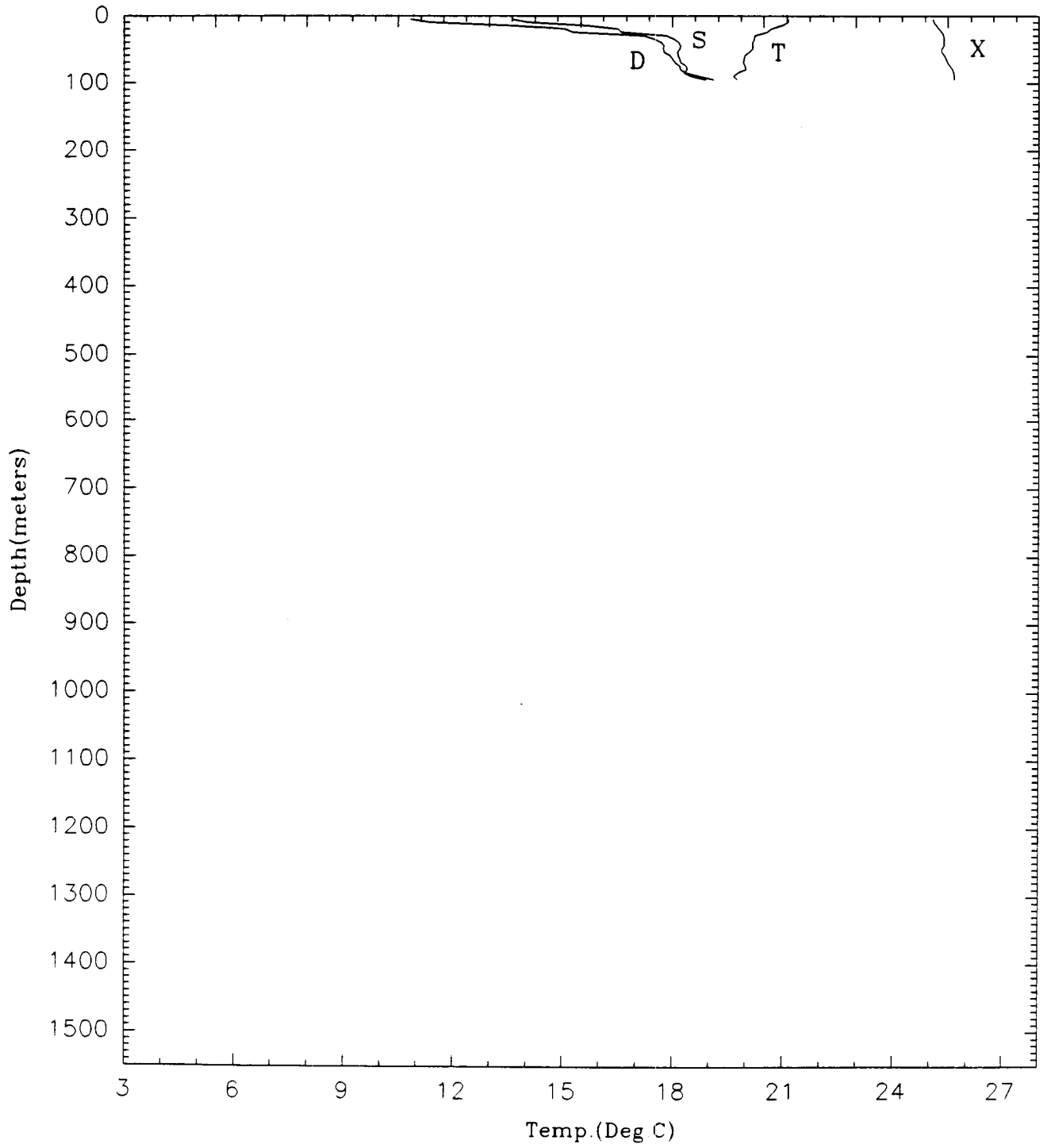
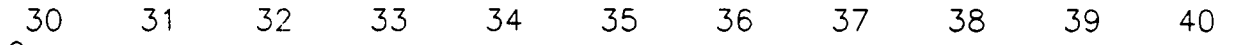
Stn.No.:5B

25

Density(Sigma-theta)



Salinity(ppt)



XSM(Volts)

CTD cast at Station 05: Cast 4 of 8 (cast to 1500 m)

raw data file = c2g035c.dat					350.000	10.8418	35.2934	27.0411	9.126
meters	temp	salinity	sigmtheta	volts# 0	355.000	10.7551	35.2896	27.0538	9.124
5.000	21.1590	34.2709	23.8974	8.838	360.000	10.6794	35.2676	27.0502	9.126
10.000	21.1609	34.3507	23.9579	8.842	365.000	10.5716	35.2533	27.0583	9.126
15.000	21.1297	34.6478	24.1927	8.853	370.000	10.4623	35.2500	27.0751	9.125
20.000	20.8794	35.1724	24.6604	8.886	375.000	10.3761	35.2310	27.0755	9.126
25.000	20.4526	35.4826	25.0119	8.918	380.000	10.2867	35.2248	27.0863	9.126
30.000	20.1562	35.8462	25.3687	8.932	385.000	10.2429	35.2003	27.0749	9.126
35.000	20.2120	36.0558	25.5140	8.933	390.000	10.1358	35.1994	27.0928	9.126
40.000	20.1940	36.0728	25.5320	8.928	395.000	10.0299	35.1749	27.0919	9.127
45.000	20.0864	36.0463	25.5407	8.892	400.000	9.9574	35.1829	27.1107	9.126
50.000	20.0350	36.0907	25.5885	8.906	405.000	9.9053	35.1723	27.1114	9.127
55.000	20.2040	36.1685	25.6031	8.937	410.000	9.8288	35.1591	27.1141	9.128
60.000	20.1615	36.1498	25.6005	8.947	415.000	9.7528	35.1306	27.1047	9.127
65.000	20.0928	36.1664	25.6317	8.999	420.000	9.6395	35.1279	27.1216	9.127
70.000	20.0730	36.1660	25.6369	9.020	425.000	9.5581	35.1296	27.1366	9.127
75.000	20.0052	36.1577	25.6488	9.042	430.000	9.4883	35.1118	27.1343	9.127
80.000	19.8221	36.1324	25.6781	9.052	435.000	9.4143	35.0892	27.1289	9.129
85.000	19.6219	36.1532	25.7468	9.067	440.000	9.3037	35.0966	27.1530	9.129
90.000	19.5625	36.2597	25.8440	9.071	445.000	9.2241	35.0809	27.1537	9.127
95.000	19.6836	36.4223	25.9367	9.071	450.000	9.1407	35.0527	27.1453	9.130
100.000	19.4511	36.4506	26.0195	9.072	455.000	9.0342	35.0627	27.1703	9.130
105.000	19.2560	36.4455	26.0665	9.072	460.000	8.9552	35.0565	27.1782	9.131
110.000	18.8149	36.3946	26.1413	9.079	465.000	8.8977	35.0541	27.1856	9.130
115.000	18.4869	36.3932	26.2238	9.083	470.000	8.8508	35.0381	27.1805	9.130
120.000	18.1598	36.3167	26.2475	9.086	475.000	8.7667	35.0091	27.1712	9.131
125.000	17.6730	36.2855	26.3443	9.092	480.000	8.6498	35.0189	27.1973	9.130
130.000	17.3654	36.2674	26.4056	9.096	485.000	8.5755	35.0315	27.2188	9.129
135.000	17.1054	36.2364	26.4448	9.098	490.000	8.5108	35.0075	27.2101	9.131
140.000	16.8874	36.2100	26.4769	9.101	495.000	8.4591	35.0086	27.2190	9.131
145.000	16.6832	36.1865	26.5075	9.102	500.000	8.4029	35.0212	27.2376	9.131
150.000	16.4363	36.1578	26.5438	9.104	505.000	8.3802	34.9910	27.2175	9.131
155.000	16.0655	36.0865	26.5754	9.107	510.000	8.3170	34.9991	27.2336	9.130
160.000	15.7918	36.0550	26.6140	9.109	515.000	8.2653	34.9673	27.2166	9.131
165.000	15.5636	36.0297	26.6466	9.112	520.000	8.2159	34.9778	27.2325	9.131
170.000	15.4443	36.0265	26.6712	9.112	525.000	8.1613	34.9635	27.2296	9.131
175.000	15.2342	35.9830	26.6850	9.112	530.000	8.0728	34.9514	27.2334	9.131
180.000	15.0302	35.9472	26.7028	9.115	535.000	7.9742	34.9634	27.2576	9.131
185.000	14.8905	35.9531	26.7384	9.112	540.000	7.9164	34.9614	27.2648	9.131
190.000	14.8037	35.9319	26.7412	9.114	545.000	7.8526	34.9552	27.2694	9.132
195.000	14.6648	35.9027	26.7492	9.115	550.000	7.8019	34.9500	27.2728	9.132
200.000	14.4449	35.8755	26.7760	9.115	555.000	7.7607	34.9395	27.2707	9.131
205.000	14.2535	35.8446	26.7933	9.116	560.000	7.7119	34.9408	27.2789	9.132
210.000	14.1279	35.8261	26.8060	9.117	565.000	7.6564	34.9274	27.2765	9.132
215.000	14.0516	35.8155	26.8141	9.116	570.000	7.6003	34.9086	27.2699	9.135
220.000	13.9480	35.7970	26.8218	9.116	575.000	7.5335	34.9318	27.2979	9.135
225.000	13.8592	35.7784	26.8263	9.117	580.000	7.5000	34.9311	27.3022	9.135
230.000	13.7460	35.7566	26.8333	9.117	585.000	7.4617	34.9119	27.2927	9.136
235.000	13.6008	35.7321	26.8447	9.119	590.000	7.3947	34.9036	27.2957	9.135
240.000	13.4852	35.7110	26.8524	9.116	595.000	7.3276	34.9100	27.3104	9.136
245.000	13.3257	35.6899	26.8690	9.119	600.000	7.2852	34.9089	27.3156	9.133
250.000	13.1173	35.6533	26.8832	9.120	605.000	7.2445	34.9051	27.3184	9.135
255.000	12.8988	35.6123	26.8956	9.120	610.000	7.1885	34.8988	27.3214	9.135
260.000	12.7646	35.5957	26.9097	9.121	615.000	7.1172	34.9173	27.3460	9.136
265.000	12.6508	35.5871	26.9258	9.121	620.000	7.0633	34.8797	27.3239	9.136
270.000	12.5633	35.5713	26.9309	9.121	625.000	6.9903	34.8748	27.3302	9.136
275.000	12.4587	35.5579	26.9413	9.121	630.000	6.9438	34.8919	27.3502	9.137
280.000	12.3822	35.5454	26.9467	9.121	635.000	6.8980	34.8937	27.3579	9.135
285.000	12.2942	35.5278	26.9502	9.121	640.000	6.8595	34.8864	27.3575	9.136
290.000	12.1703	35.4836	26.9401	9.121	645.000	6.8130	34.9035	27.3773	9.136
295.000	12.0117	35.4756	26.9645	9.121	650.000	6.7884	34.8937	27.3731	9.136
300.000	11.9203	35.4603	26.9702	9.121	655.000	6.7633	34.8823	27.3675	9.135
305.000	11.7908	35.4287	26.9704	9.122	660.000	6.6928	34.8878	27.3814	9.134
310.000	11.6662	35.4329	26.9973	9.122	665.000	6.6428	34.9058	27.4024	9.135
315.000	11.6031	35.4165	26.9965	9.123	670.000	6.6164	34.8954	27.3978	9.134
320.000	11.5063	35.3890	26.9933	9.123	675.000	6.5999	34.8835	27.3906	9.136
325.000	11.4014	35.3972	27.0193	9.123	680.000	6.5719	34.8738	27.3868	9.136
330.000	11.3311	35.3536	26.9984	9.122	685.000	6.5230	34.8827	27.4004	9.136
335.000	11.1921	35.3532	27.0238	9.126	690.000	6.4747	34.8924	27.4145	9.133
340.000	11.0587	35.3307	27.0308	9.125	695.000	6.4485	34.8920	27.4176	9.134
345.000	10.9628	35.3051	27.0283	9.125	700.000	6.4106	34.8938	27.4242	9.133
					705.000	6.3890	34.8753	27.4124	9.135

710.000	6.3600	34.8834	27.4226	9.136	1070.000	4.7412	34.9266	27.6571	9.145
715.000	6.3300	34.8778	27.4222	9.129	1075.000	4.7273	34.9290	27.6606	9.145
720.000	6.2926	34.8705	27.4214	9.127	1080.000	4.7156	34.9275	27.6608	9.145
725.000	6.2479	34.8723	27.4286	9.126	1085.000	4.7035	34.9320	27.6657	9.146
730.000	6.2034	34.8793	27.4400	9.127	1090.000	4.6931	34.9247	27.6612	9.147
735.000	6.1674	34.8721	27.4390	9.129	1095.000	4.6678	34.9342	27.6716	9.144
740.000	6.1247	34.8696	27.4425	9.129	1100.000	4.6479	34.9441	27.6817	9.147
745.000	6.0712	34.8821	27.4593	9.127	1105.000	4.6400	34.9378	27.6776	9.145
750.000	6.0405	34.8851	27.4657	9.127	1110.000	4.6182	34.9452	27.6860	9.145
755.000	6.0200	34.8751	27.4604	9.126	1115.000	4.6044	34.9482	27.6899	9.146
760.000	5.9877	34.8713	27.4616	9.126	1120.000	4.6007	34.9450	27.6878	9.144
765.000	5.9528	34.8780	27.4713	9.128	1125.000	4.5916	34.9472	27.6906	9.146
770.000	5.9271	34.8724	27.4701	9.127	1130.000	4.5924	34.9385	27.6837	9.145
775.000	5.8838	34.8835	27.4844	9.128	1135.000	4.5818	34.9394	27.6856	9.142
780.000	5.8458	34.8783	27.4851	9.129	1140.000	4.5707	34.9378	27.6856	9.140
785.000	5.8197	34.8770	27.4874	9.128	1145.000	4.5597	34.9407	27.6891	9.142
790.000	5.7853	34.8811	27.4949	9.130	1150.000	4.5503	34.9424	27.6915	9.142
795.000	5.7607	34.8822	27.4990	9.131	1155.000	4.5360	34.9439	27.6943	9.141
800.000	5.7324	34.8803	27.5010	9.131	1160.000	4.5180	34.9523	27.7031	9.141
805.000	5.7008	34.8881	27.5111	9.131	1165.000	4.5136	34.9387	27.6928	9.141
810.000	5.6664	34.8979	27.5231	9.135	1170.000	4.4867	34.9489	27.7038	9.140
815.000	5.6337	34.9043	27.5323	9.137	1175.000	4.4724	34.9537	27.7093	9.140
820.000	5.6066	34.8982	27.5308	9.138	1180.000	4.4627	34.9549	27.7113	9.140
825.000	5.5870	34.8893	27.5262	9.138	1185.000	4.4538	34.9534	27.7111	9.138
830.000	5.5549	34.8945	27.5343	9.138	1190.000	4.4481	34.9486	27.7080	9.140
835.000	5.5268	34.8965	27.5393	9.136	1195.000	4.4339	34.9521	27.7124	9.138
840.000	5.5022	34.8942	27.5406	9.139	1200.000	4.4230	34.9538	27.7149	9.138
845.000	5.4766	34.8930	27.5428	9.139	1205.000	4.4176	34.9537	27.7155	9.136
850.000	5.4515	34.8970	27.5490	9.140	1210.000	4.4098	34.9541	27.7167	9.136
855.000	5.4326	34.8861	27.5427	9.140	1215.000	4.3994	34.9547	27.7183	9.136
860.000	5.3950	34.8968	27.5557	9.141	1220.000	4.3926	34.9550	27.7194	9.136
865.000	5.3782	34.8998	27.5601	9.141	1225.000	4.3897	34.9519	27.7173	9.136
870.000	5.3583	34.8976	27.5608	9.140	1230.000	4.3755	34.9593	27.7247	9.136
875.000	5.3340	34.9038	27.5687	9.140	1235.000	4.3743	34.9546	27.7212	9.136
880.000	5.3119	34.9130	27.5787	9.140	1240.000	4.3696	34.9506	27.7185	9.135
885.000	5.3002	34.9027	27.5720	9.141	1245.000	4.3543	34.9568	27.7251	9.133
890.000	5.2831	34.9024	27.5738	9.140	1250.000	4.3520	34.9568	27.7254	9.133
895.000	5.2681	34.9059	27.5784	9.140	1255.000	4.3497	34.9519	27.7218	9.133
900.000	5.2505	34.9136	27.5866	9.142	1260.000	4.3373	34.9582	27.7282	9.131
905.000	5.2311	34.9188	27.5930	9.141	1265.000	4.3325	34.9618	27.7316	9.131
910.000	5.2275	34.9054	27.5829	9.143	1270.000	4.3302	34.9626	27.7326	9.131
915.000	5.2089	34.9078	27.5870	9.142	1275.000	4.3332	34.9551	27.7263	9.131
920.000	5.1974	34.9085	27.5890	9.142	1280.000	4.3284	34.9572	27.7285	9.131
925.000	5.1823	34.9086	27.5909	9.142	1285.000	4.3259	34.9550	27.7272	9.131
930.000	5.1647	34.9123	27.5960	9.143	1290.000	4.3184	34.9585	27.7308	9.131
935.000	5.1441	34.9140	27.5997	9.141	1295.000	4.3165	34.9561	27.7291	9.130
940.000	5.1271	34.9199	27.6065	9.143	1300.000	4.3143	34.9534	27.7272	9.131
945.000	5.1173	34.9163	27.6048	9.141	1305.000	4.3051	34.9563	27.7305	9.130
950.000	5.1018	34.9118	27.6031	9.142	1310.000	4.2952	34.9613	27.7356	9.130
955.000	5.0860	34.9151	27.6076	9.143	1315.000	4.2915	34.9625	27.7370	9.130
960.000	5.0759	34.9129	27.6071	9.142	1320.000	4.2909	34.9597	27.7349	9.129
965.000	5.0637	34.9167	27.6115	9.142	1325.000	4.2882	34.9623	27.7373	9.129
970.000	5.0511	34.9177	27.6138	9.141	1330.000	4.2868	34.9630	27.7381	9.126
975.000	5.0415	34.9154	27.6132	9.144	1335.000	4.2871	34.9612	27.7366	9.129
980.000	5.0280	34.9194	27.6180	9.141	1340.000	4.2846	34.9615	27.7372	9.127
985.000	5.0201	34.9117	27.6128	9.140	1345.000	4.2806	34.9614	27.7376	9.126
990.000	5.0032	34.9105	27.6139	9.141	1350.000	4.2768	34.9623	27.7388	9.125
995.000	4.9792	34.9153	27.6205	9.141	1355.000	4.2765	34.9610	27.7378	9.126
1000.000	4.9653	34.9181	27.6243	9.140	1360.000	4.2736	34.9629	27.7396	9.126
1005.000	4.9560	34.9183	27.6256	9.142	1365.000	4.2735	34.9593	27.7369	9.126
1010.000	4.9469	34.9177	27.6262	9.140	1370.000	4.2679	34.9632	27.7406	9.123
1015.000	4.9076	34.9415	27.6497	9.142	1375.000	4.2681	34.9629	27.7404	9.124
1020.000	4.9009	34.9202	27.6336	9.142	1380.000	4.2681	34.9609	27.7389	9.123
1025.000	4.8722	34.9207	27.6373	9.141	1385.000	4.2643	34.9616	27.7399	9.123
1030.000	4.8573	34.9295	27.6460	9.142	1390.000	4.2614	34.9622	27.7407	9.122
1035.000	4.8476	34.9227	27.6417	9.144	1395.000	4.2581	34.9644	27.7429	9.121
1040.000	4.8344	34.9233	27.6437	9.142	1400.000	4.2558	34.9657	27.7442	9.121
1045.000	4.8181	34.9263	27.6480	9.143	1405.000	4.2565	34.9642	27.7430	9.122
1050.000	4.7914	34.9360	27.6587	9.142	1410.000	4.2573	34.9631	27.7421	9.121
1055.000	4.7818	34.9294	27.6546	9.145	1415.000	4.2565	34.9631	27.7422	9.120
1060.000	4.7678	34.9253	27.6530	9.144	1420.000	4.2535	34.9625	27.7421	9.118
1065.000	4.7515	34.9298	27.6585	9.145	1425.000	4.2515	34.9632	27.7429	9.120

1430.000	4.2502	34.9632	27.7431	9.117
1435.000	4.2486	34.9634	27.7435	9.116
1440.000	4.2481	34.9634	27.7436	9.118
1445.000	4.2452	34.9664	27.7463	9.117
1450.000	4.2460	34.9645	27.7447	9.117
1455.000	4.2456	34.9644	27.7447	9.110
1460.000	4.2452	34.9645	27.7450	9.118
1465.000	4.2438	34.9662	27.7465	9.116
1470.000	4.2430	34.9662	27.7466	9.115
1475.000	4.2429	34.9662	27.7467	9.116
1480.000	4.2437	34.9657	27.7462	9.117
1485.000	4.2446	34.9646	27.7453	9.116
1490.000	4.2442	34.9651	27.7458	9.116
1495.000	4.2436	34.9652	27.7460	9.115
1500.000	4.2410	34.9655	27.7466	9.115

Stn.No: 5C

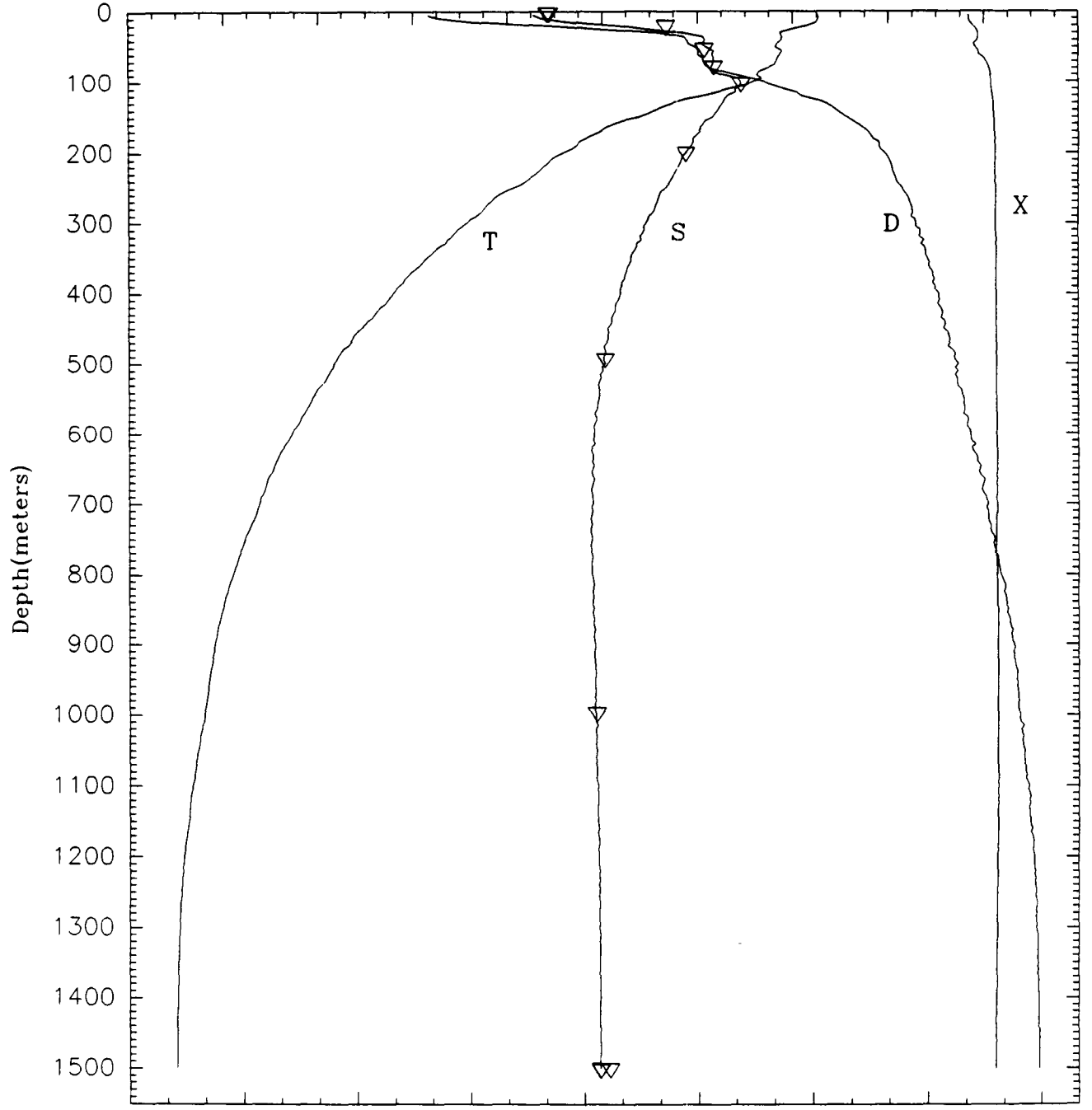
Density(Sigma-theta)

29

22 23 24 25 26 27 28

Salinity(ppt)

30 31 32 33 34 35 36 37 38 39 40



3 6 9 12 15 18 21 24 27

Temp.(Deg.C)

0 1 2 3 4 5 6 7 8 9 10

▽ - Indicates bottle salinities

XSM(Volts)

CTD cast at Station 05: Cast 5 of 8 (cast to 1500 m)

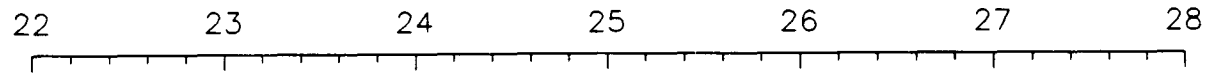
raw data file = c2g035d.dat					350.000	10.8231	35.3122	27.0591	9.121
meters	temp	salinity	sigmtheta	volts# 0	355.000	10.7307	35.2934	27.0611	9.121
5.000	21.1881	34.5254	24.0830	8.874	360.000	10.6077	35.2740	27.0680	9.122
10.000	21.1924	34.8317	24.3153	8.877	365.000	10.5066	35.2676	27.0809	9.121
15.000	20.7988	35.3543	24.8205	8.915	370.000	10.4502	35.2655	27.0893	9.121
20.000	20.3708	35.6245	25.1419	8.950	375.000	10.3840	35.2485	27.0877	9.121
25.000	20.1716	35.7677	25.3045	8.959	380.000	10.2813	35.2297	27.0911	9.122
30.000	20.2409	35.9590	25.4322	8.973	385.000	10.1852	35.2218	27.1017	9.123
35.000	20.3660	36.0812	25.4921	8.976	390.000	10.1209	35.2287	27.1183	9.122
40.000	20.3031	36.1216	25.5401	8.957	395.000	10.0491	35.2013	27.1093	9.123
45.000	20.2575	36.1082	25.5423	8.936	400.000	9.9666	35.1833	27.1094	9.123
50.000	20.1509	36.1001	25.5648	8.914	405.000	9.8858	35.1817	27.1220	9.124
55.000	20.1136	36.1284	25.5967	8.933	410.000	9.8160	35.1796	27.1323	9.123
60.000	20.1831	36.1607	25.6030	8.948	415.000	9.7758	35.1644	27.1272	9.125
65.000	20.1136	36.1642	25.6244	8.990	420.000	9.6990	35.1309	27.1140	9.125
70.000	20.0783	36.1672	25.6364	9.018	425.000	9.5880	35.1431	27.1423	9.125
75.000	19.9732	36.1448	25.6474	9.009	430.000	9.5300	35.1361	27.1465	9.125
80.000	19.8342	36.1404	25.6810	9.036	435.000	9.4679	35.1102	27.1366	9.127
85.000	19.6069	36.2663	25.8372	9.069	440.000	9.3616	35.1000	27.1462	9.127
90.000	19.6836	36.4017	25.9207	9.070	445.000	9.3143	35.1092	27.1612	9.127
95.000	19.5528	36.4685	26.0063	9.076	450.000	9.2279	35.1034	27.1708	9.127
100.000	19.3627	36.4379	26.0327	9.076	455.000	9.1615	35.0911	27.1721	9.126
105.000	18.9827	36.3903	26.0947	9.081	460.000	9.0721	35.0878	27.1840	9.127
110.000	18.5258	36.3569	26.1859	9.083	465.000	9.0142	35.0666	27.1768	9.128
115.000	18.2376	36.3490	26.2526	9.084	470.000	8.9243	35.0678	27.1922	9.128
120.000	17.9551	36.3208	26.3016	9.087	475.000	8.8609	35.0565	27.1935	9.127
125.000	17.7007	36.2357	26.2993	9.092	480.000	8.7918	35.0474	27.1973	9.127
130.000	17.4034	36.2326	26.3697	9.095	485.000	8.6976	35.0369	27.2040	9.129
135.000	17.1319	36.2179	26.4242	9.099	490.000	8.6150	35.0268	27.2091	9.129
140.000	16.9162	36.1868	26.4522	9.101	495.000	8.5514	35.0002	27.1982	9.130
145.000	16.6857	36.1413	26.4722	9.106	500.000	8.4425	35.0086	27.2217	9.129
150.000	16.4840	36.1284	26.5100	9.108	505.000	8.3719	35.0153	27.2378	9.129
155.000	16.3402	36.1269	26.5426	9.107	510.000	8.3114	34.9766	27.2168	9.130
160.000	16.0956	36.0676	26.5540	9.107	515.000	8.2280	34.9909	27.2408	9.130
165.000	15.9014	36.0305	26.5703	9.108	520.000	8.1458	34.9786	27.2436	9.131
170.000	15.6360	36.0040	26.6106	9.111	525.000	8.0544	34.9762	27.2556	9.130
175.000	15.4325	35.9983	26.6523	9.112	530.000	7.9810	34.9858	27.2741	9.130
180.000	15.2763	35.9403	26.6428	9.112	535.000	7.9436	34.9667	27.2648	9.131
185.000	15.0670	35.9320	26.6831	9.115	540.000	7.8859	34.9656	27.2725	9.131
190.000	14.8391	35.8887	26.7001	9.113	545.000	7.8492	34.9556	27.2702	9.131
195.000	14.6985	35.8500	26.7011	9.111	550.000	7.7868	34.9491	27.2743	9.132
200.000	14.4847	35.8112	26.7177	9.114	555.000	7.7203	34.9462	27.2818	9.132
205.000	14.2789	35.8228	26.7710	9.115	560.000	7.6645	34.9452	27.2893	9.131
210.000	14.1373	35.7982	26.7824	9.114	565.000	7.6253	34.9359	27.2877	9.132
215.000	14.0191	35.7765	26.7908	9.115	570.000	7.5696	34.9374	27.2970	9.133
220.000	13.9278	35.7288	26.7733	9.116	575.000	7.5074	34.9339	27.3033	9.133
225.000	13.6509	35.7048	26.8129	9.116	580.000	7.4763	34.9199	27.2968	9.133
230.000	13.5312	35.7055	26.8384	9.117	585.000	7.4033	34.9268	27.3127	9.133
235.000	13.4044	35.6609	26.8301	9.117	590.000	7.3502	34.9260	27.3197	9.134
240.000	13.2481	35.6682	26.8679	9.119	595.000	7.3214	34.9210	27.3199	9.136
245.000	13.2079	35.6621	26.8715	9.118	600.000	7.2805	34.9095	27.3168	9.136
250.000	13.1412	35.6373	26.8660	9.118	605.000	7.2162	34.9084	27.3250	9.136
255.000	13.0614	35.6380	26.8828	9.118	610.000	7.1817	34.9046	27.3269	9.136
260.000	12.9663	35.6049	26.8765	9.119	615.000	7.1273	34.8917	27.3244	9.136
265.000	12.7715	35.5637	26.8837	9.118	620.000	7.0569	34.8986	27.3397	9.136
270.000	12.6376	35.5485	26.8986	9.119	625.000	6.9929	34.9006	27.3502	9.137
275.000	12.4870	35.5401	26.9219	9.118	630.000	6.9469	34.8989	27.3552	9.136
280.000	12.3757	35.5573	26.9572	9.118	635.000	6.8864	34.8909	27.3573	9.137
285.000	12.2900	35.5177	26.9432	9.119	640.000	6.8259	34.9019	27.3742	9.136
290.000	12.2393	35.4914	26.9328	9.121	645.000	6.7805	34.8938	27.3741	9.135
295.000	12.0551	35.4644	26.9474	9.119	650.000	6.7375	34.8963	27.3820	9.135
300.000	11.9162	35.4542	26.9662	9.119	655.000	6.6795	34.8944	27.3883	9.137
305.000	11.7686	35.4342	26.9788	9.121	660.000	6.6384	34.8911	27.3913	9.137
310.000	11.6556	35.4194	26.9887	9.120	665.000	6.5913	34.8876	27.3949	9.137
315.000	11.5433	35.4111	27.0034	9.120	670.000	6.5239	34.8910	27.4066	9.135
320.000	11.4139	35.3600	26.9879	9.121	675.000	6.4741	34.8892	27.4118	9.137
325.000	11.3125	35.3502	26.9992	9.121	680.000	6.4236	34.8893	27.4186	9.136
330.000	11.1927	35.3355	27.0098	9.122	685.000	6.3887	34.8928	27.4260	9.135
335.000	11.1118	35.3365	27.0255	9.121	690.000	6.3735	34.8771	27.4156	9.136
340.000	11.0313	35.3245	27.0309	9.122	695.000	6.3094	34.8784	27.4251	9.136
345.000	10.9429	35.3110	27.0365	9.121	700.000	6.2550	34.8786	27.4324	9.136
					705.000	6.2131	34.8908	27.4476	9.135

710.000	6.1855	34.8880	27.4489	9.136	1070.000	4.7597	34.9245	27.6534	9.150
715.000	6.1472	34.8896	27.4552	9.136	1075.000	4.7332	34.9273	27.6586	9.146
720.000	6.1196	34.8899	27.4590	9.138	1080.000	4.7138	34.9334	27.6657	9.150
725.000	6.1003	34.8875	27.4596	9.137	1085.000	4.7020	34.9350	27.6683	9.150
730.000	6.0748	34.8806	27.4575	9.136	1090.000	4.6885	34.9304	27.6662	9.150
735.000	6.0404	34.8889	27.4685	9.139	1095.000	4.6674	34.9350	27.6723	9.151
740.000	6.0178	34.8920	27.4738	9.136	1100.000	4.6422	34.9459	27.6838	9.150
745.000	5.9901	34.8880	27.4742	9.137	1105.000	4.6249	34.9478	27.6872	9.150
750.000	5.9563	34.8967	27.4854	9.136	1110.000	4.6220	34.9358	27.6780	9.151
755.000	5.9321	34.8845	27.4790	9.137	1115.000	4.6040	34.9398	27.6833	9.152
760.000	5.8938	34.8885	27.4869	9.137	1120.000	4.5915	34.9408	27.6854	9.152
765.000	5.8562	34.8889	27.4920	9.138	1125.000	4.5741	34.9558	27.6993	9.150
770.000	5.8135	34.8871	27.4960	9.139	1130.000	4.5684	34.9448	27.6912	9.150
775.000	5.7890	34.8914	27.5025	9.137	1135.000	4.5566	34.9460	27.6936	9.150
780.000	5.7675	34.8836	27.4991	9.139	1140.000	4.5431	34.9468	27.6958	9.150
785.000	5.7359	34.8957	27.5126	9.139	1145.000	4.5330	34.9438	27.6945	9.150
790.000	5.7151	34.8953	27.5149	9.140	1150.000	4.5179	34.9431	27.6957	9.146
795.000	5.6891	34.8973	27.5198	9.140	1155.000	4.5090	34.9445	27.6978	9.145
800.000	5.6728	34.8975	27.5220	9.140	1160.000	4.5012	34.9470	27.7007	9.146
805.000	5.6493	34.8919	27.5204	9.140	1165.000	4.4920	34.9469	27.7016	9.145
810.000	5.6268	34.8942	27.5251	9.140	1170.000	4.4832	34.9499	27.7050	9.146
815.000	5.6072	34.8893	27.5237	9.140	1175.000	4.4728	34.9520	27.7079	9.145
820.000	5.5666	34.9081	27.5435	9.140	1180.000	4.4656	34.9469	27.7046	9.145
825.000	5.5522	34.9037	27.5419	9.142	1185.000	4.4553	34.9522	27.7100	9.145
830.000	5.5366	34.8871	27.5307	9.142	1190.000	4.4468	34.9505	27.7096	9.144
835.000	5.5022	34.8920	27.5387	9.142	1195.000	4.4370	34.9489	27.7095	9.145
840.000	5.4791	34.8964	27.5451	9.141	1200.000	4.4276	34.9527	27.7135	9.143
845.000	5.4574	34.9052	27.5547	9.142	1205.000	4.4229	34.9547	27.7157	9.142
850.000	5.4429	34.8972	27.5502	9.140	1210.000	4.4204	34.9497	27.7120	9.142
855.000	5.4199	34.9037	27.5581	9.141	1215.000	4.4138	34.9513	27.7141	9.142
860.000	5.4044	34.9003	27.5574	9.141	1220.000	4.4053	34.9521	27.7156	9.141
865.000	5.3833	34.9047	27.5635	9.142	1225.000	4.3996	34.9516	27.7160	9.142
870.000	5.3742	34.9025	27.5628	9.140	1230.000	4.3899	34.9519	27.7172	9.140
875.000	5.3569	34.9027	27.5651	9.140	1235.000	4.3832	34.9536	27.7194	9.140
880.000	5.3374	34.9094	27.5728	9.141	1240.000	4.3779	34.9545	27.7207	9.140
885.000	5.3196	34.9091	27.5747	9.141	1245.000	4.3746	34.9554	27.7219	9.140
890.000	5.3118	34.9045	27.5721	9.141	1250.000	4.3702	34.9553	27.7223	9.140
895.000	5.2965	34.9095	27.5779	9.141	1255.000	4.3632	34.9564	27.7240	9.139
900.000	5.2899	34.9084	27.5779	9.141	1260.000	4.3584	34.9559	27.7241	9.138
905.000	5.2817	34.9075	27.5782	9.141	1265.000	4.3531	34.9556	27.7245	9.137
910.000	5.2643	34.9111	27.5831	9.141	1270.000	4.3478	34.9569	27.7261	9.138
915.000	5.2543	34.9152	27.5876	9.141	1275.000	4.3463	34.9562	27.7258	9.136
920.000	5.2422	34.9157	27.5895	9.140	1280.000	4.3421	34.9573	27.7272	9.137
925.000	5.2156	34.9243	27.5995	9.140	1285.000	4.3393	34.9566	27.7269	9.137
930.000	5.2089	34.9101	27.5891	9.140	1290.000	4.3328	34.9581	27.7289	9.137
935.000	5.1963	34.9129	27.5928	9.141	1295.000	4.3284	34.9573	27.7288	9.136
940.000	5.1887	34.9123	27.5932	9.141	1300.000	4.3226	34.9574	27.7295	9.135
945.000	5.1794	34.9144	27.5961	9.141	1305.000	4.3189	34.9579	27.7304	9.135
950.000	5.1705	34.9133	27.5963	9.140	1310.000	4.3130	34.9588	27.7317	9.133
955.000	5.1596	34.9136	27.5979	9.141	1315.000	4.3045	34.9576	27.7318	9.131
960.000	5.1436	34.9181	27.6034	9.140	1320.000	4.2991	34.9581	27.7327	9.131
965.000	5.1348	34.9091	27.5973	9.142	1325.000	4.2929	34.9600	27.7350	9.131
970.000	5.1151	34.9117	27.6017	9.142	1330.000	4.2906	34.9606	27.7358	9.131
975.000	5.0987	34.9151	27.6063	9.142	1335.000	4.2889	34.9616	27.7367	9.130
980.000	5.0871	34.9156	27.6082	9.143	1340.000	4.2865	34.9627	27.7380	9.130
985.000	5.0750	34.9134	27.6078	9.144	1345.000	4.2869	34.9596	27.7355	9.131
990.000	5.0538	34.9189	27.6147	9.144	1350.000	4.2823	34.9607	27.7369	9.131
995.000	5.0429	34.9162	27.6139	9.145	1355.000	4.2795	34.9623	27.7385	9.131
1000.000	5.0195	34.9274	27.6255	9.145	1360.000	4.2784	34.9610	27.7377	9.130
1005.000	4.9975	34.9394	27.6376	9.145	1365.000	4.2739	34.9613	27.7384	9.130
1010.000	4.9943	34.9240	27.6258	9.145	1370.000	4.2720	34.9623	27.7395	9.129
1015.000	4.9813	34.9148	27.6200	9.145	1375.000	4.2712	34.9618	27.7392	9.128
1020.000	4.9530	34.9170	27.6251	9.145	1380.000	4.2668	34.9653	27.7425	9.129
1025.000	4.9330	34.9229	27.6321	9.146	1385.000	4.2679	34.9605	27.7387	9.128
1030.000	4.9021	34.9279	27.6396	9.146	1390.000	4.2639	34.9634	27.7414	9.127
1035.000	4.8882	34.9145	27.6306	9.150	1395.000	4.2617	34.9641	27.7422	9.127
1040.000	4.8557	34.9403	27.6548	9.150	1400.000	4.2607	34.9622	27.7409	9.128
1045.000	4.8500	34.9223	27.6412	9.150	1405.000	4.2582	34.9634	27.7422	9.127
1050.000	4.8297	34.9215	27.6430	9.149	1410.000	4.2574	34.9625	27.7416	9.126
1055.000	4.8092	34.9228	27.6463	9.150	1415.000	4.2551	34.9631	27.7423	9.126
1060.000	4.7878	34.9277	27.6527	9.150	1420.000	4.2532	34.9627	27.7423	9.126
1065.000	4.7777	34.9252	27.6519	9.150	1425.000	4.2502	34.9639	27.7436	9.126

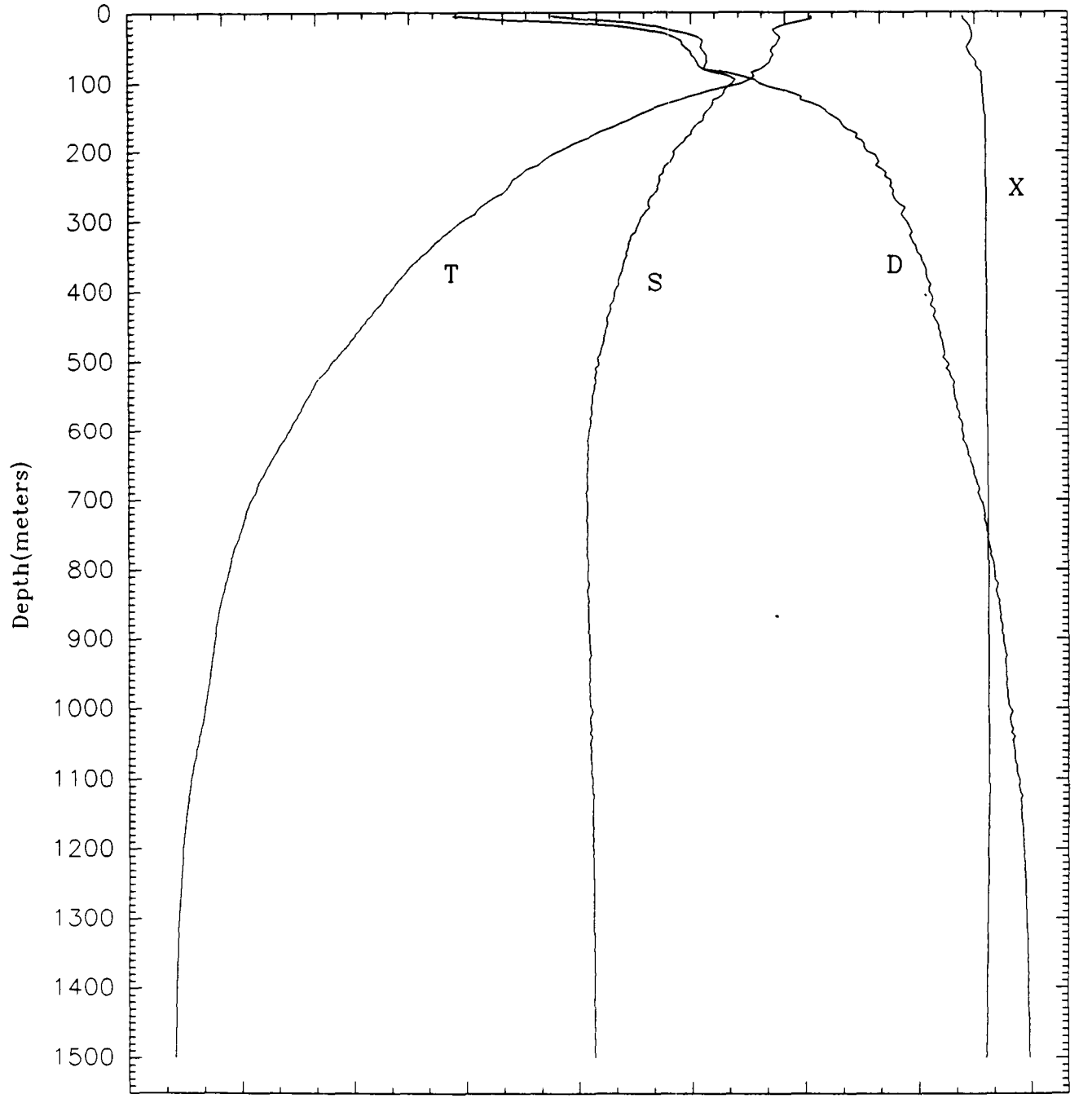
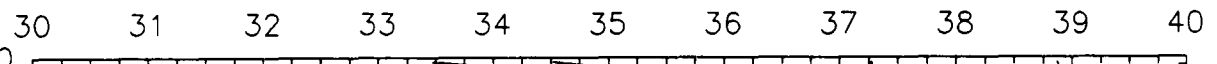
1430.000	4.2495	34.9632	27.7431	9.126
1435.000	4.2462	34.9642	27.7443	9.124
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1445.000	4.2435	34.9644	27.7449	9.124
1450.000	4.2426	34.9642	27.7449	9.123
1455.000	4.2402	34.9650	27.7458	9.121
1460.000	4.2391	34.9657	27.7466	9.121
1465.000	4.2389	34.9646	27.7457	9.121
1470.000	4.2373	34.9645	27.7459	9.120
1475.000	4.2350	34.9655	27.7469	9.121
1480.000	4.2343	34.9657	27.7472	9.120
1485.000	4.2339	34.9643	27.7462	9.117
1490.000	4.2311	34.9651	27.7472	9.117
1495.000	4.2296	34.9656	27.7478	9.119
1500.000	4.2267	34.9668	27.7491	9.116

Stn.No: 5D:

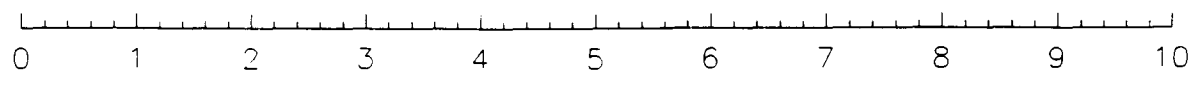
Density(Sigma-theta)



Salinity(ppt)



Temp.(Deg.C)



XSM(Volts)

CTD cast at Station 05: Cast 6 of 8 (cast to 995 m)

raw data file = c2g035e.dat					350.000	10.9942	35.2957	27.0155	9.122
meters	temp	salinity	sigmtheta	volts# 0	355.000	10.8580	35.3154	27.0554	9.121
5.000	21.1839	34.4814	24.0507	8.872	360.000	10.7358	35.3746	27.1236	9.121
10.000	21.1834	34.5300	24.0882	8.873	365.000	10.6909	35.2866	27.0631	9.121
15.000	21.0818	34.9005	24.3980	8.907	370.000	10.6261	35.2407	27.0389	9.121
20.000	20.2439	35.7315	25.2577	8.955	375.000	10.5692	35.1696	26.9936	9.121
25.000	20.2401	35.7566	25.2777	8.971	380.000	10.4189	35.1875	27.0341	9.121
30.000	20.2255	35.8955	25.3878	8.968	385.000	10.3081	35.1734	27.0426	9.122
35.000	20.2141	36.0487	25.5080	8.949	390.000	10.2264	35.1724	27.0561	9.121
40.000	20.2474	36.0937	25.5337	8.945	395.000	10.1290	35.1780	27.0774	9.121
45.000	20.2310	36.1202	25.5585	8.964	400.000	10.0993	35.1607	27.0691	9.122
50.000	20.1840	36.1127	25.5656	8.964	405.000	9.9727	35.1824	27.1078	9.122
55.000	20.1265	36.1408	25.6026	9.000	410.000	9.9241	35.1716	27.1077	9.122
60.000	20.0888	36.1651	25.6315	9.009	415.000	9.8776	35.1304	27.0835	9.121
65.000	20.0245	36.1448	25.6333	9.012	420.000	9.7799	35.1140	27.0873	9.123
70.000	19.9411	36.1329	25.6465	9.022	425.000	9.7053	35.1193	27.1040	9.123
75.000	19.8865	36.1773	25.6951	9.023	430.000	9.6181	35.1524	27.1446	9.123
80.000	19.9041	36.2244	25.7267	9.028	435.000	9.6021	35.0946	27.1022	9.124
85.000	19.7625	36.2622	25.7931	9.048	440.000	9.5117	35.0730	27.1003	9.125
90.000	19.5969	36.2979	25.8642	9.069	445.000	9.4205	35.0802	27.1211	9.125
95.000	19.4927	36.4059	25.9741	9.072	450.000	9.3456	35.0732	27.1280	9.125
100.000	19.3836	36.4346	26.0248	9.077	455.000	9.2621	35.1006	27.1632	9.124
105.000	19.1904	36.3918	26.0424	9.082	460.000	9.2266	35.0624	27.1391	9.124
110.000	18.8513	36.3467	26.0953	9.082	465.000	9.0875	35.0809	27.1762	9.124
115.000	18.5169	36.3077	26.1507	9.084	470.000	9.0567	35.0428	27.1514	9.126
120.000	18.1746	36.2376	26.1832	9.091	475.000	8.9739	35.0223	27.1487	9.126
125.000	17.7582	36.1989	26.2569	9.094	480.000	8.8898	35.0324	27.1700	9.126
130.000	17.4723	36.1986	26.3268	9.097	485.000	8.8609	35.0117	27.1586	9.126
135.000	17.2415	36.1211	26.3235	9.100	490.000	8.7858	35.0168	27.1745	9.126
140.000	16.9844	36.0717	26.3475	9.102	495.000	8.6848	35.0396	27.2083	9.124
145.000	16.6632	36.0820	26.4319	9.105	500.000	8.6499	34.9888	27.1740	9.126
150.000	16.5041	36.0251	26.4258	9.107	505.000	8.5643	34.9910	27.1892	9.126
155.000	16.2954	36.0107	26.4637	9.109	510.000	8.4709	35.0024	27.2126	9.123
160.000	16.0563	35.9968	26.5086	9.109	515.000	8.4018	34.9748	27.2017	9.126
165.000	15.7911	35.9355	26.5223	9.111	520.000	8.3336	34.9467	27.1902	9.127
170.000	15.5314	35.9796	26.6154	9.112	525.000	8.2510	34.9650	27.2171	9.126
175.000	15.4441	35.9599	26.6201	9.112	530.000	8.1913	34.9497	27.2143	9.125
180.000	15.3053	35.9024	26.6071	9.114	535.000	8.1356	34.9535	27.2257	9.126
185.000	15.0738	35.9014	26.6581	9.113	540.000	8.0759	34.9242	27.2117	9.126
190.000	14.9237	35.8959	26.6871	9.116	545.000	7.9737	34.9336	27.2344	9.126
195.000	14.8010	35.8536	26.6815	9.114	550.000	7.9031	34.9555	27.2622	9.128
200.000	14.6844	35.8500	26.7043	9.113	555.000	7.8519	34.9323	27.2516	9.127
205.000	14.4927	35.8896	26.7767	9.113	560.000	7.7850	34.9456	27.2719	9.127
210.000	14.4112	35.8253	26.7448	9.114	565.000	7.7229	34.9273	27.2668	9.127
215.000	14.3044	35.7887	26.7395	9.115	570.000	7.6732	34.9150	27.2644	9.127
220.000	14.1517	35.7665	26.7551	9.115	575.000	7.5960	34.9286	27.2863	9.127
225.000	13.9764	35.6465	26.6996	9.116	580.000	7.5305	34.9561	27.3175	9.128
230.000	13.8158	35.6447	26.7321	9.116	585.000	7.5017	34.9084	27.2842	9.130
235.000	13.6216	35.7137	26.8261	9.117	590.000	7.3970	34.9031	27.2951	9.128
240.000	13.5496	35.6561	26.7966	9.116	595.000	7.3288	34.8920	27.2960	9.130
245.000	13.4555	35.5890	26.7642	9.117	600.000	7.2574	34.9088	27.3195	9.129
250.000	13.2458	35.6500	26.8546	9.118	605.000	7.2251	34.8816	27.3026	9.130
255.000	13.1820	35.6006	26.8294	9.118	610.000	7.1559	34.8989	27.3260	9.130
260.000	13.0444	35.6113	26.8657	9.118	615.000	7.1367	34.8998	27.3295	9.129
265.000	12.9725	35.6063	26.8764	9.119	620.000	7.0843	34.9153	27.3490	9.129
270.000	12.8300	35.5366	26.8511	9.116	625.000	7.0451	34.9045	27.3461	9.129
275.000	12.7359	35.5405	26.8730	9.118	630.000	7.0183	34.8943	27.3418	9.131
280.000	12.5991	35.5721	26.9248	9.117	635.000	6.9362	34.9440	27.3923	9.129
285.000	12.5779	35.5396	26.9039	9.117	640.000	6.9249	34.9160	27.3719	9.129
290.000	12.4969	35.4751	26.8699	9.120	645.000	6.8839	34.9135	27.3756	9.129
295.000	12.3738	35.4374	26.8648	9.119	650.000	6.8492	34.9098	27.3775	9.129
300.000	12.2198	35.4023	26.8676	9.121	655.000	6.8093	34.9036	27.3781	9.130
305.000	11.9661	35.4220	26.9318	9.120	660.000	6.7760	34.9147	27.3914	9.130
310.000	11.7793	35.4718	27.0061	9.120	665.000	6.7442	34.8717	27.3618	9.128
315.000	11.7074	35.3773	26.9463	9.121	670.000	6.6797	34.8764	27.3743	9.128
320.000	11.6161	35.3500	26.9425	9.121	675.000	6.6219	34.8891	27.3921	9.129
325.000	11.4321	35.3969	27.0133	9.120	680.000	6.5863	34.8783	27.3884	9.130
330.000	11.3299	35.3709	27.0121	9.121	685.000	6.5330	34.8598	27.3809	9.130
335.000	11.2215	35.3222	26.9943	9.121	690.000	6.4800	34.8742	27.3994	9.128
340.000	11.1786	35.3123	26.9946	9.122	695.000	6.4452	34.8683	27.3994	9.128
345.000	11.0561	35.2814	26.9930	9.122	700.000	6.4014	34.8649	27.4025	9.129
					705.000	6.3492	34.8690	27.4126	9.128

710.000	6.2910	34.8846	27.4326	9.128
715.000	6.2541	34.8658	27.4226	9.127
720.000	6.2206	34.8575	27.4205	9.127
725.000	6.1726	34.8733	27.4391	9.127
730.000	6.1463	34.8735	27.4428	9.128
735.000	6.1112	34.8815	27.4537	9.127
740.000	6.0963	34.8759	27.4512	9.127
745.000	6.0637	34.8601	27.4429	9.129
750.000	6.0145	34.8774	27.4629	9.126
755.000	5.9767	34.8902	27.4778	9.127
760.000	5.9504	34.8724	27.4671	9.127
765.000	5.8889	34.9021	27.4984	9.127
770.000	5.8798	34.8782	27.4807	9.126
775.000	5.8493	34.8874	27.4918	9.123
780.000	5.8235	34.8853	27.4934	9.127
785.000	5.8029	34.8829	27.4942	9.126
790.000	5.7760	34.8937	27.5061	9.127
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805.000	5.7079	34.8938	27.5148	9.132
810.000	5.6867	34.8719	27.5001	9.131
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820.000	5.6158	34.8815	27.5165	9.131
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855.000	5.4596	34.9000	27.5504	9.132
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870.000	5.4055	34.9147	27.5688	9.131
875.000	5.3943	34.9129	27.5687	9.132
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885.000	5.3562	34.9195	27.5786	9.136
890.000	5.3383	34.9085	27.5721	9.134
895.000	5.3225	34.8989	27.5664	9.135
900.000	5.3057	34.8981	27.5678	9.137
905.000	5.2779	34.9107	27.5811	9.136
910.000	5.2676	34.8976	27.5720	9.138
915.000	5.2437	34.9072	27.5825	9.136
920.000	5.2276	34.9171	27.5923	9.136
925.000	5.2175	34.8991	27.5793	9.136
930.000	5.1767	34.9277	27.6068	9.135
935.000	5.1685	34.9070	27.5913	9.136
940.000	5.1528	34.9195	27.6031	9.137
945.000	5.1461	34.9036	27.5914	9.137
950.000	5.1280	34.9052	27.5948	9.137
955.000	5.1128	34.9046	27.5962	9.137
960.000	5.0941	34.9099	27.6026	9.137
965.000	5.0795	34.9118	27.6059	9.136
970.000	5.0677	34.9122	27.6075	9.137
975.000	5.0499	34.9091	27.6073	9.137
980.000	5.0138	34.9154	27.6164	9.136
985.000	4.9933	34.9149	27.6184	9.137
990.000	4.9733	34.9161	27.6217	9.137
995.000	4.9487	34.9176	27.6258	9.136

Stn.No: 5E

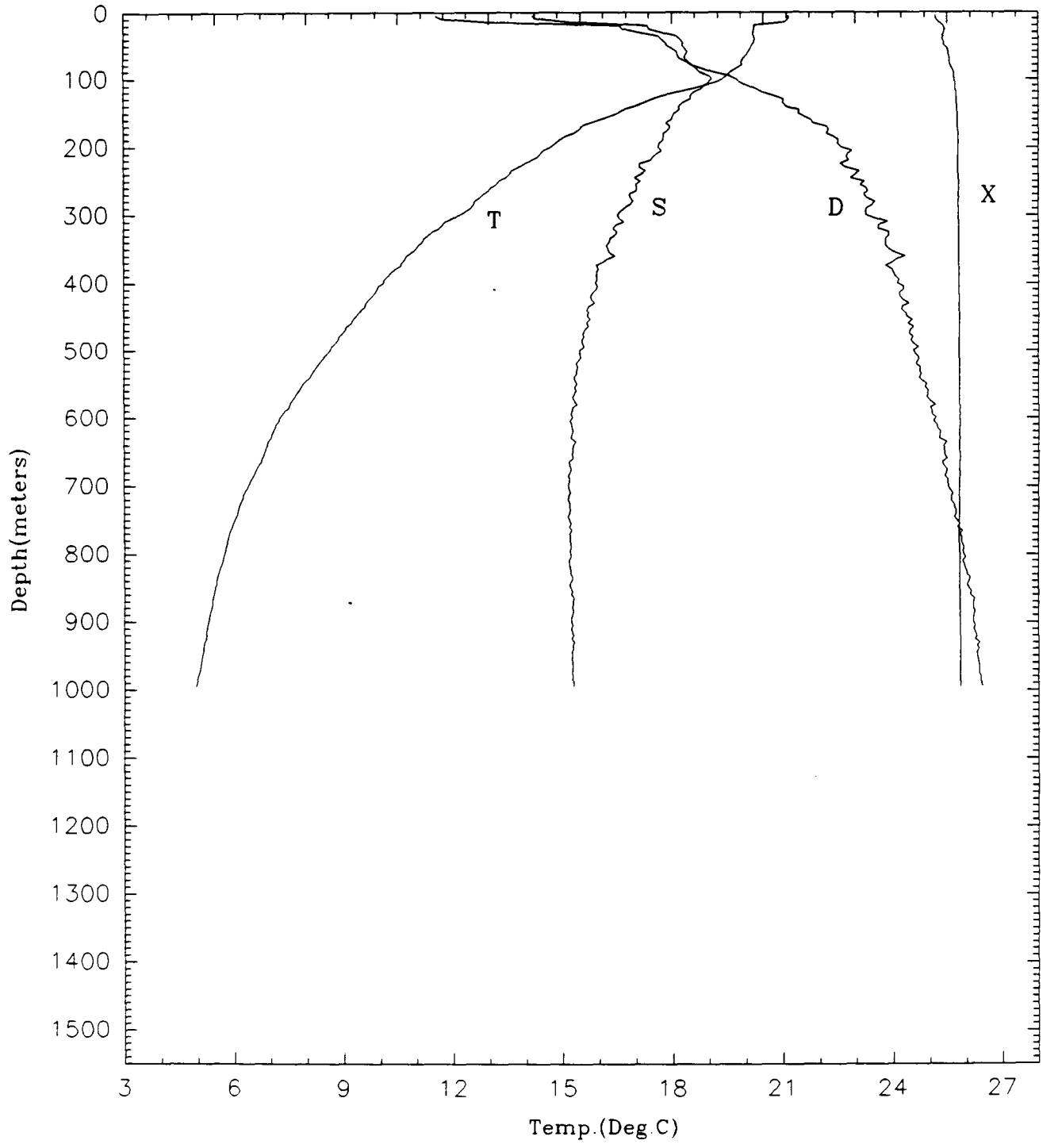
Density(Sigma-theta)

36

22 23 24 25 26 27 28

Salinity(ppt)

30 31 32 33 34 35 36 37 38 39 40



0 1 2 3 4 5 6 7 8 9 10

XSM(Volts)

raw data file = c2g035f.dat					350.000	11.1343	35.3287	27.0156	9.107
meters	temp	salinity	sigmtheta	volts# 0	355.000	11.0499	35.3291	27.0314	9.109
5.000	21.2816	34.3315	23.9124	8.814	360.000	10.9753	35.3169	27.0356	9.109
10.000	21.3097	35.2122	24.5727	8.876	365.000	10.9057	35.3028	27.0373	9.110
15.000	21.5756	35.8018	24.9482	8.912	370.000	10.8124	35.2881	27.0427	9.110
20.000	21.9099	35.9840	24.9937	8.899	375.000	10.6921	35.2844	27.0614	9.110
25.000	20.6681	35.6518	25.0830	8.905	380.000	10.6095	35.2613	27.0582	9.111
30.000	20.3746	35.8927	25.3459	8.912	385.000	10.5421	35.2465	27.0586	9.111
35.000	20.2590	36.0060	25.4634	8.923	390.000	10.4270	35.2306	27.0666	9.110
40.000	20.2491	36.1026	25.5400	8.903	395.000	10.3300	35.2216	27.0767	9.111
45.000	20.1512	36.1093	25.5716	8.899	400.000	10.2243	35.2064	27.0832	9.111
50.000	20.1416	36.1529	25.6076	8.942	405.000	10.1448	35.1696	27.0683	9.111
55.000	20.1294	36.1429	25.6035	8.964	410.000	9.9900	35.1648	27.0912	9.112
60.000	20.0252	36.1289	25.6207	8.985	415.000	9.9013	35.1635	27.1053	9.112
65.000	19.9085	36.1172	25.6429	9.002	420.000	9.8274	35.1467	27.1049	9.112
70.000	19.9502	36.1982	25.6940	9.026	425.000	9.7402	35.1340	27.1096	9.113
75.000	19.9535	36.2367	25.7228	9.029	430.000	9.6687	35.1352	27.1227	9.114
80.000	19.9527	36.2684	25.7474	9.027	435.000	9.5761	35.0897	27.1026	9.113
85.000	19.8438	36.2798	25.7852	9.028	440.000	9.4444	35.0871	27.1225	9.114
90.000	19.6415	36.3258	25.8738	9.036	445.000	9.3490	35.0675	27.1229	9.114
95.000	19.3691	36.3604	25.9716	9.046	450.000	9.2508	35.0596	27.1328	9.116
100.000	19.1557	36.3810	26.0429	9.056	455.000	9.1590	35.0680	27.1544	9.116
105.000	18.9116	36.3989	26.1196	9.047	460.000	9.0750	35.0494	27.1535	9.116
110.000	18.6274	36.3639	26.1655	9.060	465.000	8.9999	35.0530	27.1684	9.115
115.000	18.3336	36.3549	26.2330	9.066	470.000	8.9318	35.0245	27.1570	9.116
120.000	18.0536	36.3157	26.2732	9.072	475.000	8.8185	35.0332	27.1819	9.116
125.000	17.7622	36.3221	26.3504	9.078	480.000	8.7721	35.0175	27.1770	9.116
130.000	17.5945	36.3021	26.3765	9.081	485.000	8.6837	35.0197	27.1927	9.117
135.000	17.4525	36.2889	26.4012	9.081	490.000	8.6359	35.0235	27.2032	9.117
140.000	17.2376	36.2148	26.3965	9.086	495.000	8.5827	35.0079	27.1994	9.117
145.000	16.9354	36.1762	26.4397	9.091	500.000	8.5278	35.0193	27.2169	9.116
150.000	16.7006	36.1665	26.4882	9.091	505.000	8.5068	35.0259	27.2254	9.118
155.000	16.4906	36.1275	26.5079	9.092	510.000	8.4750	34.9928	27.2044	9.116
160.000	16.2609	36.0749	26.5213	9.094	515.000	8.4014	34.9916	27.2150	9.116
165.000	16.0432	36.0871	26.5813	9.096	520.000	8.3287	34.9821	27.2187	9.118
170.000	15.9311	36.0758	26.5986	9.095	525.000	8.2721	34.9849	27.2296	9.117
175.000	15.8038	36.0374	26.5983	9.097	530.000	8.2138	34.9571	27.2167	9.116
180.000	15.5905	35.9870	26.6081	9.097	535.000	8.1189	34.9505	27.2259	9.117
185.000	15.3809	35.9548	26.6307	9.096	540.000	8.0463	34.9442	27.2319	9.120
190.000	15.2566	35.9565	26.6601	9.098	545.000	7.9284	34.9626	27.2640	9.120
195.000	15.1179	35.9255	26.6671	9.099	550.000	7.9266	34.9373	27.2444	9.120
200.000	14.9909	35.8760	26.6573	9.097	555.000	7.8675	34.9392	27.2547	9.119
205.000	14.8144	35.8519	26.6776	9.099	560.000	7.8030	34.9366	27.2623	9.121
210.000	14.6000	35.8188	26.6990	9.101	565.000	7.7416	34.9231	27.2607	9.120
215.000	14.4101	35.7754	26.7066	9.101	570.000	7.6670	34.9216	27.2705	9.122
220.000	14.2048	35.7758	26.7510	9.102	575.000	7.5970	34.9207	27.2800	9.121
225.000	14.0947	35.7734	26.7728	9.101	580.000	7.5244	34.9092	27.2815	9.123
230.000	13.9252	35.7372	26.7807	9.102	585.000	7.4456	34.9131	27.2959	9.123
235.000	13.7627	35.6931	26.7808	9.101	590.000	7.3872	34.9068	27.2993	9.122
240.000	13.5760	35.6398	26.7786	9.106	595.000	7.3395	34.9065	27.3059	9.122
245.000	13.3883	35.6400	26.8175	9.105	600.000	7.2951	34.9132	27.3176	9.122
250.000	13.2680	35.6173	26.8247	9.105	605.000	7.2426	34.8953	27.3110	9.122
255.000	13.0498	35.5720	26.8339	9.106	610.000	7.1890	34.9031	27.3247	9.122
260.000	12.8746	35.5765	26.8729	9.106	615.000	7.1376	34.9047	27.3332	9.122
265.000	12.7761	35.5778	26.8937	9.107	620.000	7.0971	34.9003	27.3354	9.122
270.000	12.6952	35.5149	26.8611	9.107	625.000	7.0447	34.8914	27.3358	9.121
275.000	12.5341	35.5227	26.8991	9.104	630.000	7.0000	34.8918	27.3424	9.121
280.000	12.4302	35.5215	26.9187	9.106	635.000	6.9441	34.8879	27.3470	9.122
285.000	12.3418	35.5160	26.9318	9.107	640.000	6.9036	34.8847	27.3501	9.121
290.000	12.2771	35.5206	26.9481	9.107	645.000	6.8513	34.8783	27.3522	9.122
295.000	12.2298	35.5058	26.9459	9.107	650.000	6.7846	34.8796	27.3624	9.121
300.000	12.1715	35.4919	26.9466	9.108	655.000	6.7205	34.8742	27.3669	9.123
305.000	12.0586	35.4655	26.9479	9.106	660.000	6.6774	34.8793	27.3767	9.122
310.000	11.9604	35.4456	26.9513	9.108	665.000	6.6393	34.8754	27.3789	9.122
315.000	11.8435	35.4348	26.9653	9.107	670.000	6.5884	34.8808	27.3899	9.123
320.000	11.7525	35.4181	26.9697	9.108	675.000	6.5565	34.8778	27.3919	9.123
325.000	11.6669	35.3898	26.9640	9.107	680.000	6.5128	34.8788	27.3986	9.122
330.000	11.5283	35.3892	26.9896	9.104	685.000	6.4669	34.8797	27.4054	9.123
335.000	11.4303	35.3794	27.0003	9.103	690.000	6.4013	34.8900	27.4222	9.122
340.000	11.3478	35.3650	27.0045	9.102	695.000	6.3612	34.8925	27.4295	9.124
345.000	11.2533	35.3350	26.9987	9.103					

Stn.No: 5F

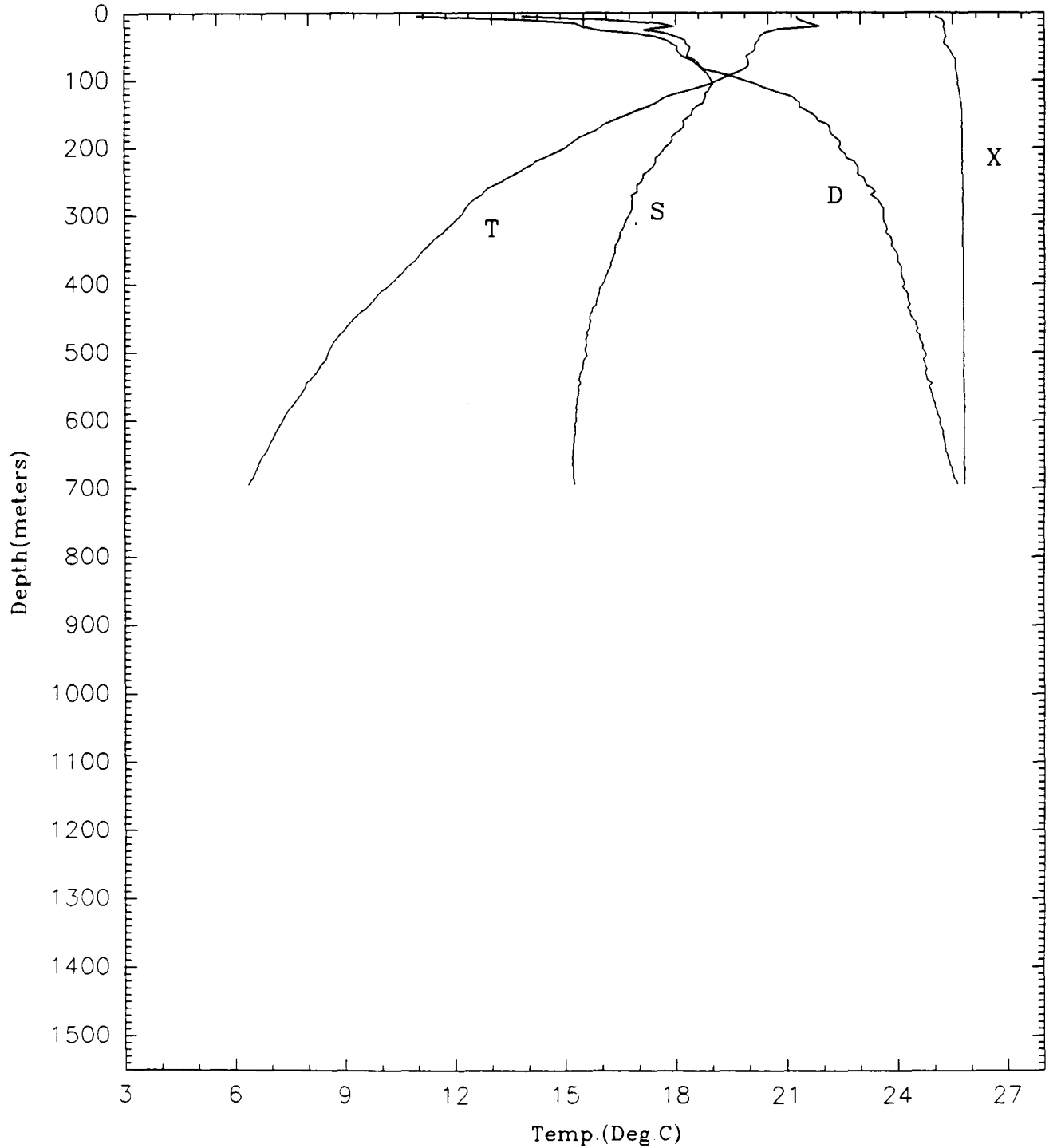
Density(Sigma-theta)

38

22 23 24 25 26 27 28

Salinity(ppt)

30 31 32 33 34 35 36 37 38 39 40



3 6 9 12 15 18 21 24 27

XSM(Volts)

0 1 2 3 4 5 6 7 8 9 10

CTD cast at Station 05: Cast 8 of 8 (cast to 1500 m)

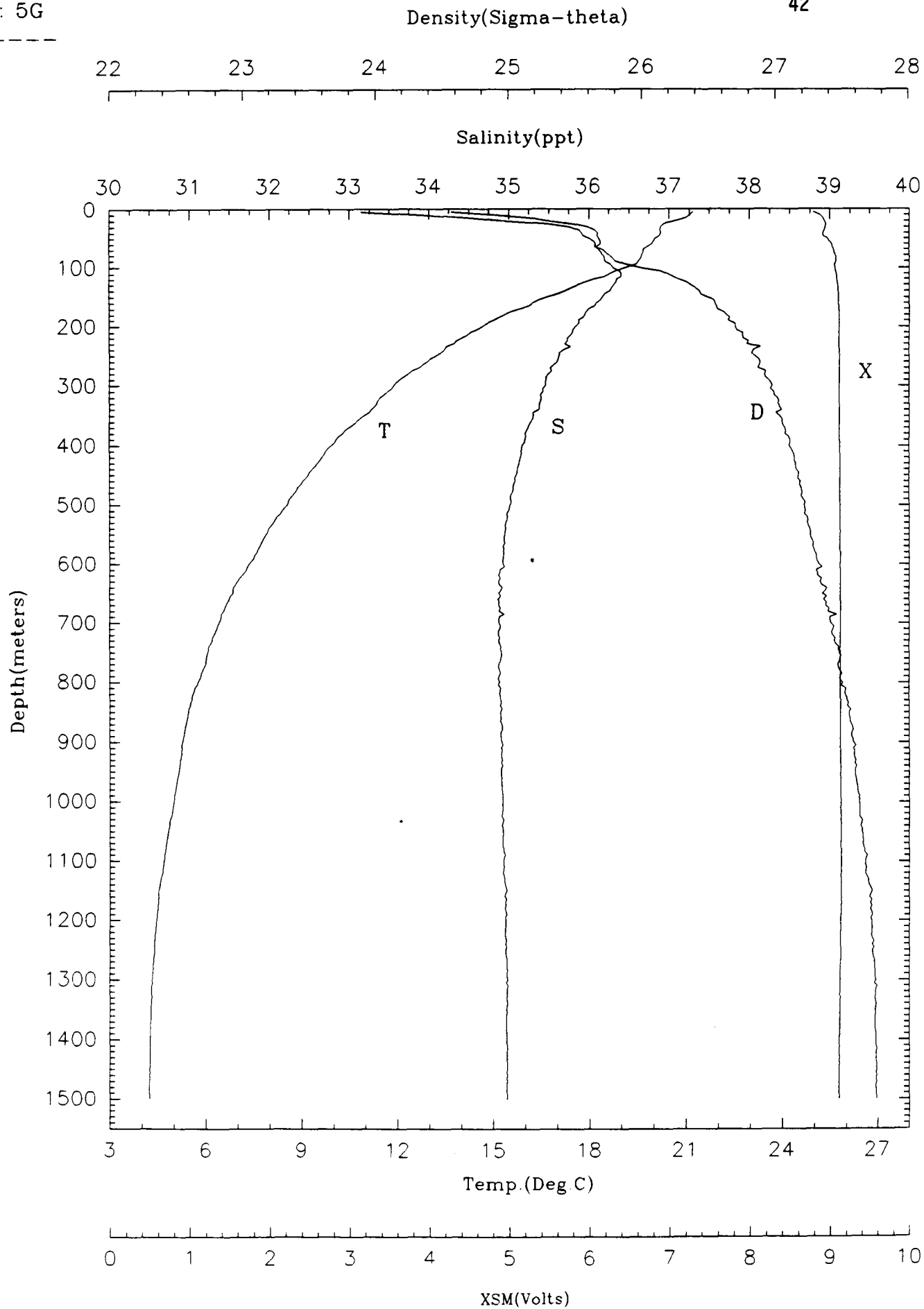
raw data file = c2g035g.dat					350.000	10.9499	35.3015	27.0279	9.121
meters	temp	salinity	sigmtheta	volts# 0	355.000	10.8295	35.2928	27.0430	9.122
5.000	21.2334	34.2782	23.8888	8.798	360.000	10.7280	35.2701	27.0436	9.121
10.000	21.1514	34.7752	24.2835	8.871	365.000	10.6052	35.2510	27.0506	9.120
15.000	21.0267	35.2536	24.6819	8.910	370.000	10.4814	35.2370	27.0616	9.122
20.000	20.6952	35.4847	24.9481	8.931	375.000	10.3686	35.2220	27.0698	9.121
25.000	20.3330	35.8102	25.2938	8.950	380.000	10.2882	35.1999	27.0667	9.122
30.000	20.2323	35.9888	25.4572	8.946	385.000	10.1778	35.2086	27.0927	9.122
35.000	20.2234	36.0739	25.5247	8.933	390.000	10.0897	35.1996	27.1009	9.122
40.000	20.2459	36.1108	25.5472	8.918	395.000	10.0447	35.1929	27.1034	9.124
45.000	20.1961	36.1069	25.5577	8.916	400.000	9.9388	35.1576	27.0940	9.124
50.000	20.0711	36.1231	25.6037	8.971	405.000	9.8440	35.1577	27.1103	9.123
55.000	20.0206	36.1487	25.6368	8.997	410.000	9.7707	35.1574	27.1226	9.125
60.000	19.9626	36.1456	25.6501	9.027	415.000	9.7065	35.1494	27.1272	9.123
65.000	19.8159	36.0889	25.6458	9.030	420.000	9.6359	35.1400	27.1317	9.125
70.000	19.6943	36.1236	25.7045	9.048	425.000	9.5769	35.1256	27.1304	9.124
75.000	19.6967	36.1516	25.7255	9.054	430.000	9.4979	35.1238	27.1422	9.126
80.000	19.6455	36.1723	25.7550	9.072	435.000	9.4326	35.1099	27.1422	9.124
85.000	19.6194	36.1883	25.7743	9.077	440.000	9.3535	35.0975	27.1455	9.126
90.000	19.5504	36.1941	25.7970	9.075	445.000	9.2520	35.0985	27.1630	9.123
95.000	19.4659	36.2684	25.8760	9.061	450.000	9.2087	35.0871	27.1612	9.125
100.000	19.1663	36.3014	25.9793	9.064	455.000	9.1329	35.0673	27.1581	9.126
105.000	18.8112	36.3842	26.1340	9.074	460.000	9.0487	35.0772	27.1794	9.126
110.000	18.6454	36.3968	26.1861	9.082	465.000	8.9923	35.0558	27.1718	9.126
115.000	18.4875	36.3979	26.2272	9.086	470.000	8.8999	35.0510	27.1829	9.126
120.000	18.1765	36.3459	26.2657	9.089	475.000	8.8566	35.0482	27.1876	9.127
125.000	17.9065	36.3371	26.3263	9.094	480.000	8.8001	35.0404	27.1906	9.126
130.000	17.6778	36.3092	26.3615	9.097	485.000	8.7171	35.0162	27.1847	9.128
135.000	17.4442	36.2824	26.3982	9.102	490.000	8.6336	35.0180	27.1993	9.126
140.000	17.2636	36.2605	26.4254	9.106	495.000	8.5897	35.0281	27.2141	9.126
145.000	17.0035	36.1936	26.4368	9.107	500.000	8.5474	35.0072	27.2044	9.128
150.000	16.6847	36.1655	26.4912	9.107	505.000	8.4563	34.9996	27.2126	9.127
155.000	16.4367	36.1440	26.5333	9.110	510.000	8.3894	34.9909	27.2161	9.127
160.000	16.2452	36.0989	26.5435	9.110	515.000	8.3212	34.9686	27.2091	9.126
165.000	16.1138	36.0683	26.5505	9.109	520.000	8.2291	34.9724	27.2262	9.124
170.000	15.8392	35.9973	26.5592	9.110	525.000	8.1715	34.9718	27.2345	9.127
175.000	15.5435	35.9662	26.6026	9.113	530.000	8.1201	34.9587	27.2321	9.126
180.000	15.3620	35.9460	26.6280	9.115	535.000	8.0542	34.9518	27.2366	9.128
185.000	15.2141	35.9332	26.6514	9.116	540.000	7.9702	34.9550	27.2517	9.128
190.000	15.0337	35.8680	26.6413	9.116	545.000	7.9373	34.9514	27.2538	9.130
195.000	14.8103	35.8734	26.6948	9.113	550.000	7.8871	34.9432	27.2549	9.128
200.000	14.6826	35.8334	26.6919	9.115	555.000	7.8374	34.9381	27.2583	9.126
205.000	14.5135	35.7981	26.7015	9.115	560.000	7.7813	34.9420	27.2697	9.127
210.000	14.2897	35.7955	26.7478	9.115	565.000	7.7403	34.9449	27.2781	9.127
215.000	14.1827	35.7657	26.7478	9.116	570.000	7.6931	34.9281	27.2718	9.127
220.000	14.0338	35.7309	26.7526	9.116	575.000	7.6338	34.9327	27.2841	9.127
225.000	13.8621	35.7347	26.7919	9.117	580.000	7.5975	34.9303	27.2875	9.131
230.000	13.7872	35.7027	26.7830	9.116	585.000	7.5330	34.9306	27.2971	9.131
235.000	13.5469	35.7712	26.8862	9.116	590.000	7.5012	34.9266	27.2987	9.131
240.000	13.4982	35.6834	26.8284	9.118	595.000	7.4319	34.9212	27.3044	9.131
245.000	13.3693	35.6353	26.8178	9.120	600.000	7.3544	34.9232	27.3171	9.129
250.000	13.2117	35.6228	26.8404	9.121	605.000	7.2915	34.9398	27.3391	9.129
255.000	13.0339	35.6122	26.8684	9.119	610.000	7.2654	34.8838	27.2988	9.131
260.000	12.9500	35.6006	26.8764	9.120	615.000	7.2054	34.8839	27.3073	9.130
265.000	12.8022	35.5581	26.8732	9.119	620.000	7.1322	34.8715	27.3078	9.131
270.000	12.6872	35.5115	26.8600	9.121	625.000	7.0533	34.8927	27.3356	9.131
275.000	12.4672	35.5344	26.9213	9.119	630.000	6.9933	34.8711	27.3269	9.131
280.000	12.3507	35.4948	26.9135	9.121	635.000	6.9389	34.8756	27.3380	9.131
285.000	12.2269	35.4666	26.9158	9.121	640.000	6.8754	34.9133	27.3765	9.131
290.000	12.0754	35.4650	26.9439	9.121	645.000	6.8524	34.8962	27.3662	9.131
295.000	11.9724	35.4607	26.9604	9.121	650.000	6.8502	34.8675	27.3440	9.131
300.000	11.9025	35.4572	26.9711	9.120	655.000	6.7713	34.8960	27.3772	9.132
305.000	11.8342	35.4218	26.9567	9.122	660.000	6.7488	34.8606	27.3524	9.132
310.000	11.7063	35.4234	26.9824	9.121	665.000	6.6823	34.8707	27.3694	9.131
315.000	11.5985	35.3977	26.9827	9.122	670.000	6.6336	34.8605	27.3679	9.131
320.000	11.4759	35.4016	27.0088	9.122	675.000	6.5935	34.8839	27.3918	9.131
325.000	11.4078	35.3995	27.0199	9.120	680.000	6.5559	34.8672	27.3837	9.130
330.000	11.3613	35.3817	27.0147	9.119	685.000	6.4788	34.9372	27.4493	9.131
335.000	11.2943	35.3728	27.0203	9.122	690.000	6.4787	34.8759	27.4009	9.131
340.000	11.1994	35.3743	27.0390	9.120	695.000	6.4547	34.8698	27.3993	9.131
345.000	11.1122	35.2982	26.9958	9.122	700.000	6.4151	34.8717	27.4061	9.131
					705.000	6.3709	34.8924	27.4283	9.131

710.000	6.3400	34.8795	27.4222	9.131	1070.000	4.7653	34.9231	27.6516	9.139
715.000	6.3070	34.8617	27.4125	9.130	1075.000	4.7475	34.9270	27.6567	9.139
720.000	6.2651	34.8626	27.4187	9.131	1080.000	4.7319	34.9296	27.6606	9.140
725.000	6.2155	34.8805	27.4394	9.130	1085.000	4.7233	34.9281	27.6604	9.140
730.000	6.2031	34.8696	27.4324	9.131	1090.000	4.6997	34.9493	27.6800	9.139
735.000	6.1655	34.8756	27.4420	9.131	1095.000	4.6953	34.9354	27.6694	9.140
740.000	6.0984	34.8960	27.4668	9.130	1100.000	4.6906	34.9317	27.6671	9.140
745.000	6.0816	34.8936	27.4671	9.129	1105.000	4.6766	34.9297	27.6671	9.140
750.000	6.0645	34.8950	27.4704	9.130	1110.000	4.6562	34.9346	27.6733	9.141
755.000	6.0354	34.9017	27.4795	9.131	1115.000	4.6501	34.9310	27.6712	9.143
760.000	6.0154	34.8900	27.4728	9.129	1120.000	4.6435	34.9259	27.6679	9.141
765.000	6.0094	34.8851	27.4698	9.131	1125.000	4.6209	34.9341	27.6770	9.139
770.000	6.0006	34.8897	27.4588	9.131	1130.000	4.5945	34.9465	27.6898	9.141
775.000	5.9489	34.8659	27.4623	9.131	1135.000	4.5792	34.9440	27.6895	9.140
780.000	5.9072	34.8735	27.4736	9.131	1140.000	4.5624	34.9513	27.6972	9.140
785.000	5.8735	34.8892	27.4903	9.132	1145.000	4.5437	34.9649	27.7102	9.142
790.000	5.8461	34.8678	27.4769	9.131	1150.000	4.5191	34.9734	27.7196	9.141
795.000	5.8164	34.8605	27.4749	9.132	1155.000	4.5203	34.9564	27.7060	9.140
800.000	5.7604	34.8810	27.4981	9.134	1160.000	4.5217	34.9468	27.6983	9.140
805.000	5.7463	34.8632	27.4858	9.130	1165.000	4.5079	34.9623	27.7121	9.139
810.000	5.6674	34.8943	27.5202	9.131	1170.000	4.5098	34.9493	27.7017	9.140
815.000	5.6401	34.8844	27.5158	9.133	1175.000	4.4927	34.9596	27.7117	9.137
820.000	5.6119	34.8794	27.5153	9.133	1180.000	4.4871	34.9485	27.7036	9.137
825.000	5.5779	34.8921	27.5296	9.131	1185.000	4.4751	34.9572	27.7118	9.136
830.000	5.5604	34.8887	27.5291	9.135	1190.000	4.4648	34.9679	27.7215	9.136
835.000	5.5304	34.8955	27.5381	9.132	1195.000	4.4641	34.9506	27.7079	9.134
840.000	5.5150	34.8865	27.5329	9.133	1200.000	4.4506	34.9559	27.7136	9.132
845.000	5.4727	34.9079	27.5550	9.132	1205.000	4.4414	34.9552	27.7141	9.134
850.000	5.4614	34.8939	27.5453	9.132	1210.000	4.4352	34.9560	27.7155	9.135
855.000	5.4454	34.8919	27.5457	9.134	1215.000	4.4310	34.9544	27.7147	9.135
860.000	5.4233	34.8974	27.5528	9.134	1220.000	4.4191	34.9538	27.7155	9.131
865.000	5.4034	34.8932	27.5519	9.134	1225.000	4.4139	34.9518	27.7145	9.131
870.000	5.3817	34.9073	27.5657	9.132	1230.000	4.4031	34.9581	27.7208	9.132
875.000	5.3572	34.9109	27.5715	9.132	1235.000	4.3914	34.9698	27.7314	9.132
880.000	5.3386	34.9114	27.5742	9.132	1240.000	4.3915	34.9568	27.7211	9.130
885.000	5.3343	34.8969	27.5633	9.132	1245.000	4.3807	34.9645	27.7284	9.131
890.000	5.3169	34.8977	27.5661	9.133	1250.000	4.3862	34.9510	27.7171	9.131
895.000	5.2950	34.9039	27.5736	9.133	1255.000	4.3800	34.9519	27.7186	9.131
900.000	5.2749	34.9057	27.5775	9.131	1260.000	4.3706	34.9582	27.7246	9.131
905.000	5.2525	34.9266	27.5967	9.134	1265.000	4.3573	34.9682	27.7341	9.130
910.000	5.2556	34.9035	27.5781	9.131	1270.000	4.3525	34.9664	27.7332	9.129
915.000	5.2384	34.9099	27.5853	9.132	1275.000	4.3466	34.9672	27.7345	9.128
920.000	5.2326	34.9031	27.5806	9.131	1280.000	4.3432	34.9670	27.7347	9.128
925.000	5.2157	34.9039	27.5832	9.133	1285.000	4.3359	34.9713	27.7390	9.127
930.000	5.1976	34.9139	27.5933	9.133	1290.000	4.3313	34.9703	27.7387	9.126
935.000	5.1967	34.9047	27.5862	9.134	1295.000	4.3235	34.9702	27.7396	9.126
940.000	5.1727	34.9209	27.6019	9.135	1300.000	4.3136	34.9785	27.7473	9.126
945.000	5.1688	34.9045	27.5894	9.136	1305.000	4.3211	34.9630	27.7342	9.125
950.000	5.1493	34.9020	27.5898	9.135	1310.000	4.3007	34.9866	27.7552	9.123
955.000	5.1360	34.9033	27.5924	9.134	1315.000	4.3025	34.9742	27.7451	9.124
960.000	5.1163	34.9087	27.5991	9.135	1320.000	4.3018	34.9711	27.7428	9.124
965.000	5.1014	34.9087	27.6008	9.136	1325.000	4.2951	34.9756	27.7472	9.121
970.000	5.0828	34.9101	27.6042	9.136	1330.000	4.2966	34.9637	27.7376	9.123
975.000	5.0696	34.9153	27.6099	9.136	1335.000	4.2898	34.9665	27.7406	9.122
980.000	5.0598	34.9132	27.6094	9.136	1340.000	4.2794	34.9723	27.7463	9.121
985.000	5.0442	34.9170	27.6142	9.136	1345.000	4.2751	34.9678	27.7433	9.121
990.000	5.0143	34.9230	27.6225	9.135	1350.000	4.2742	34.9632	27.7398	9.121
995.000	5.0054	34.9176	27.6193	9.136	1355.000	4.2691	34.9665	27.7430	9.121
1000.000	4.9891	34.9173	27.6210	9.135	1360.000	4.2681	34.9626	27.7400	9.121
1005.000	4.9718	34.9176	27.6232	9.136	1365.000	4.2665	34.9637	27.7411	9.121
1010.000	4.9575	34.9167	27.6243	9.130	1370.000	4.2656	34.9621	27.7400	9.121
1015.000	4.9481	34.9159	27.6247	9.138	1375.000	4.2647	34.9623	27.7403	9.121
1020.000	4.9355	34.9114	27.6226	9.139	1380.000	4.2633	34.9627	27.7408	9.121
1025.000	4.9167	34.9093	27.6231	9.140	1385.000	4.2613	34.9645	27.7425	9.120
1030.000	4.8784	34.9283	27.6426	9.139	1390.000	4.2575	34.9678	27.7455	9.118
1035.000	4.8684	34.9248	27.6411	9.140	1395.000	4.2564	34.9663	27.7446	9.116
1040.000	4.8591	34.9152	27.6345	9.140	1400.000	4.2552	34.9668	27.7452	9.115
1045.000	4.8357	34.9226	27.6431	9.140	1405.000	4.2537	34.9659	27.7446	9.115
1050.000	4.8244	34.9218	27.6438	9.140	1410.000	4.2507	34.9673	27.7461	9.114
1055.000	4.8076	34.9276	27.6503	9.140	1415.000	4.2457	34.9737	27.7517	9.112
1060.000	4.7935	34.9239	27.6490	9.140	1420.000	4.2478	34.9652	27.7448	9.111
1065.000	4.7772	34.9262	27.6527	9.140	1425.000	4.2463	34.9666	27.7461	9.111

1430.000	4.2451	34.9680	27.7475	9.113
1435.000	4.2446	34.9677	27.7473	9.111
1440.000	4.2404	34.9714	27.7508	9.113
1445.000	4.2400	34.9710	27.7505	9.111
1450.000	4.2388	34.9719	27.7514	9.112
1455.000	4.2418	34.9675	27.7476	9.112
1460.000	4.2363	34.9741	27.7535	9.111
1465.000	4.2415	34.9657	27.7463	9.111
1470.000	4.2376	34.9713	27.7512	9.111
1475.000	4.2380	34.9657	27.7468	9.112
1480.000	4.2363	34.9659	27.7472	9.111
1485.000	4.2349	34.9665	27.7479	9.110
1490.000	4.2330	34.9671	27.7486	9.110
1495.000	4.2321	34.9669	27.7485	9.109
1500.000	4.2313	34.9664	27.7483	9.109

Stn.No: 5G

42



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5.000	20.5000	36.1281	25.4888	8.954	360.000	11.2720	35.3689	27.0220	9.095
10.000	20.4823	36.1139	25.4846	8.979	365.000	11.1787	35.3430	27.0190	9.094
15.000	20.5097	36.2408	25.5742	8.988	370.000	11.0673	35.3345	27.0329	9.091
20.000	20.5459	36.2963	25.6070	8.999	375.000	10.9870	35.3064	27.0257	9.091
25.000	20.5534	36.2973	25.6061	8.999	380.000	10.9000	35.2673	27.0110	9.093
30.000	20.5481	36.2971	25.6076	8.999	385.000	10.7672	35.2593	27.0287	9.092
35.000	20.5337	36.2939	25.6093	8.996	390.000	10.6591	35.2527	27.0429	9.096
40.000	20.5006	36.2873	25.6134	8.998	395.000	10.5335	35.2130	27.0343	9.097
45.000	20.4687	36.2938	25.6272	8.999	400.000	10.4349	35.2362	27.0698	9.096
50.000	20.4528	36.2922	25.6306	9.006					
55.000	20.4293	36.2949	25.6392	9.013					
60.000	20.4174	36.2957	25.6433	9.013					
65.000	20.4093	36.3003	25.6492	9.018					
70.000	20.4036	36.2878	25.6415	9.019					
75.000	20.3492	36.2378	25.6182	9.032					
80.000	20.1991	36.2434	25.6628	9.036					
85.000	20.0984	36.2169	25.6697	9.040					
90.000	19.8574	36.1451	25.6790	9.041					
95.000	19.5916	36.2234	25.8088	9.025					
100.000	19.3724	36.1291	25.7942	9.015					
105.000	19.2967	36.2706	25.9222	9.059					
110.000	19.2510	36.2970	25.9545	9.055					
115.000	19.1817	36.2998	25.9748	9.054					
120.000	19.0171	36.3368	26.0457	9.061					
125.000	18.8455	36.3033	26.0643	9.059					
130.000	18.4908	36.2898	26.1442	9.056					
135.000	18.3158	36.2647	26.1693	9.067					
140.000	18.1158	36.2508	26.2088	9.072					
145.000	17.8739	36.2082	26.2364	9.072					
150.000	17.6556	36.2560	26.3269	9.078					
155.000	17.4524	36.1960	26.3307	9.083					
160.000	17.1853	36.2397	26.4292	9.083					
165.000	17.1072	36.1268	26.3614	9.086					
170.000	16.8756	36.0405	26.3507	9.089					
175.000	16.6138	36.1651	26.5087	9.090					
180.000	16.3403	36.0624	26.4940	9.087					
185.000	16.1021	36.0614	26.5487	9.089					
190.000	15.9914	36.0109	26.5354	9.090					
195.000	15.8096	36.0220	26.5859	9.094					
200.000	15.6956	35.9752	26.5760	9.096					
205.000	15.5024	35.9435	26.5954	9.096					
210.000	15.3554	35.8714	26.5730	9.096					
215.000	15.1495	35.8147	26.5754	9.095					
220.000	14.9740	35.7995	26.6026	9.082					
225.000	14.7680	35.8224	26.6657	9.076					
230.000	14.6625	35.8265	26.6920	9.076					
235.000	14.4847	35.7286	26.6550	9.072					
240.000	14.2859	35.7671	26.7276	9.075					
245.000	14.1625	35.7552	26.7449	9.077					
250.000	13.9528	35.8195	26.8392	9.081					
255.000	13.8118	35.7652	26.8269	9.087					
260.000	13.6489	35.7365	26.8388	9.092					
265.000	13.5196	35.7042	26.8408	9.094					
270.000	13.3923	35.7148	26.8754	9.095					
275.000	13.3141	35.6887	26.8713	9.096					
280.000	13.2430	35.5949	26.8133	9.096					
285.000	13.0797	35.6501	26.8894	9.094					
290.000	12.9439	35.6525	26.9187	9.096					
295.000	12.8354	35.5040	26.8254	9.097					
300.000	12.7077	35.4752	26.8286	9.099					
305.000	12.5353	35.4551	26.8472	9.101					
310.000	12.3127	35.4967	26.9232	9.101					
315.000	12.2623	35.3860	26.8471	9.102					
320.000	12.0877	35.4526	26.9327	9.103					
325.000	11.9950	35.4579	26.9547	9.101					
330.000	11.9096	35.3941	26.9215	9.101					
335.000	11.7931	35.4004	26.9487	9.101					
340.000	11.6918	35.4078	26.9737	9.103					
345.000	11.6319	35.3860	26.9681	9.101					

Stn.No: 06

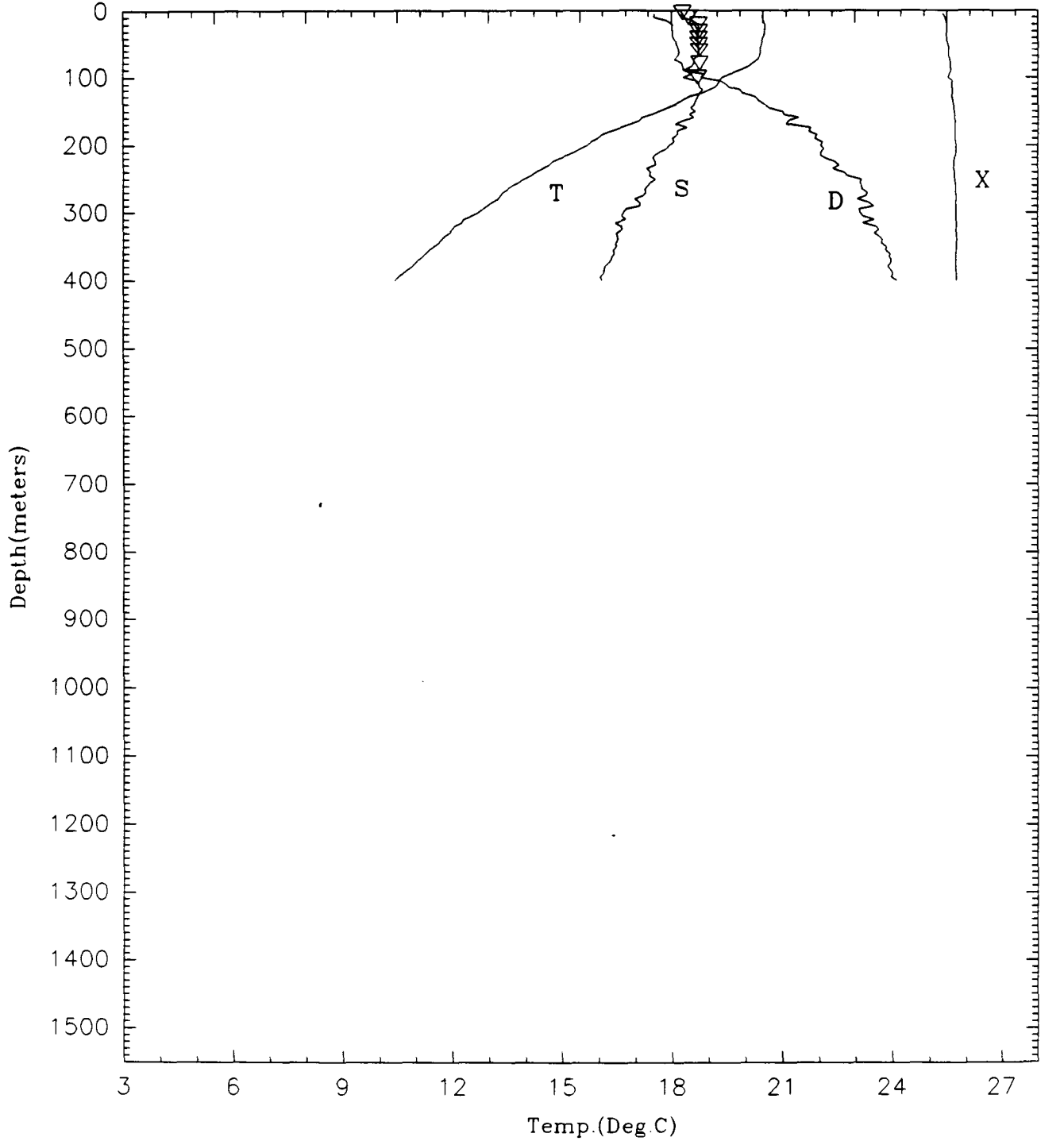
Density(Sigma-theta)

44

22 23 24 25 26 27 28

Salinity(ppt)

30 31 32 33 34 35 36 37 38 39 40

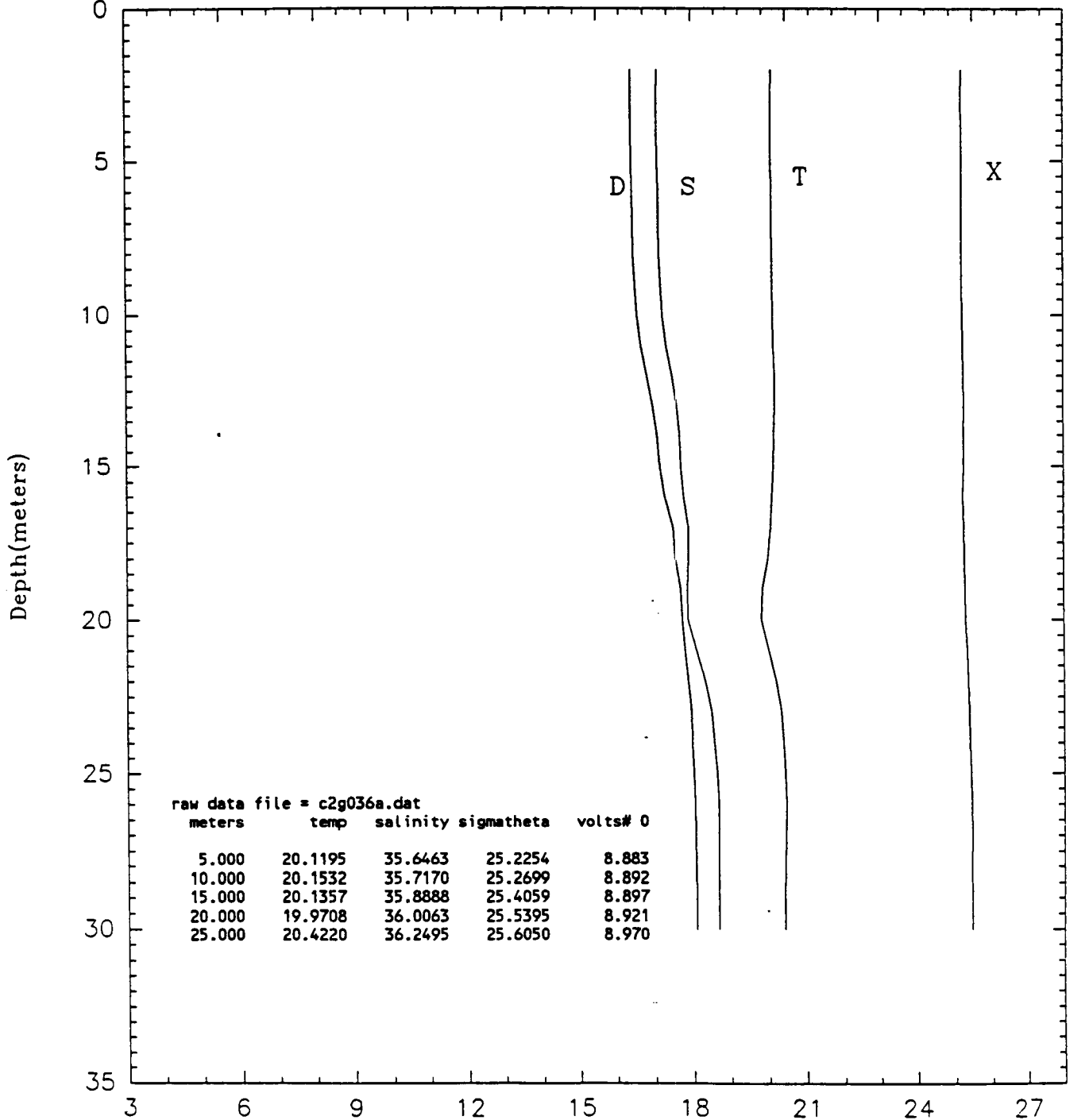


▽ - Indicates bottle salinities

22 23 24 25 26 27 28

Salinity(ppt)

30 31 32 33 34 35 36 37 38 39 40



Temp.(Deg. C)

0 1 2 3 4 5 6 7 8 9 10

XSM(Volts)

▽ - Indicates bottle Salinities.

Cruise: 92G03
 Date: Thu Mar 20 1992, Julian day = 80
 Time: 05:54:41 GMT
 Lat: 27 50.05 N
 Lon: 94 59.87 W
 Stn. 07

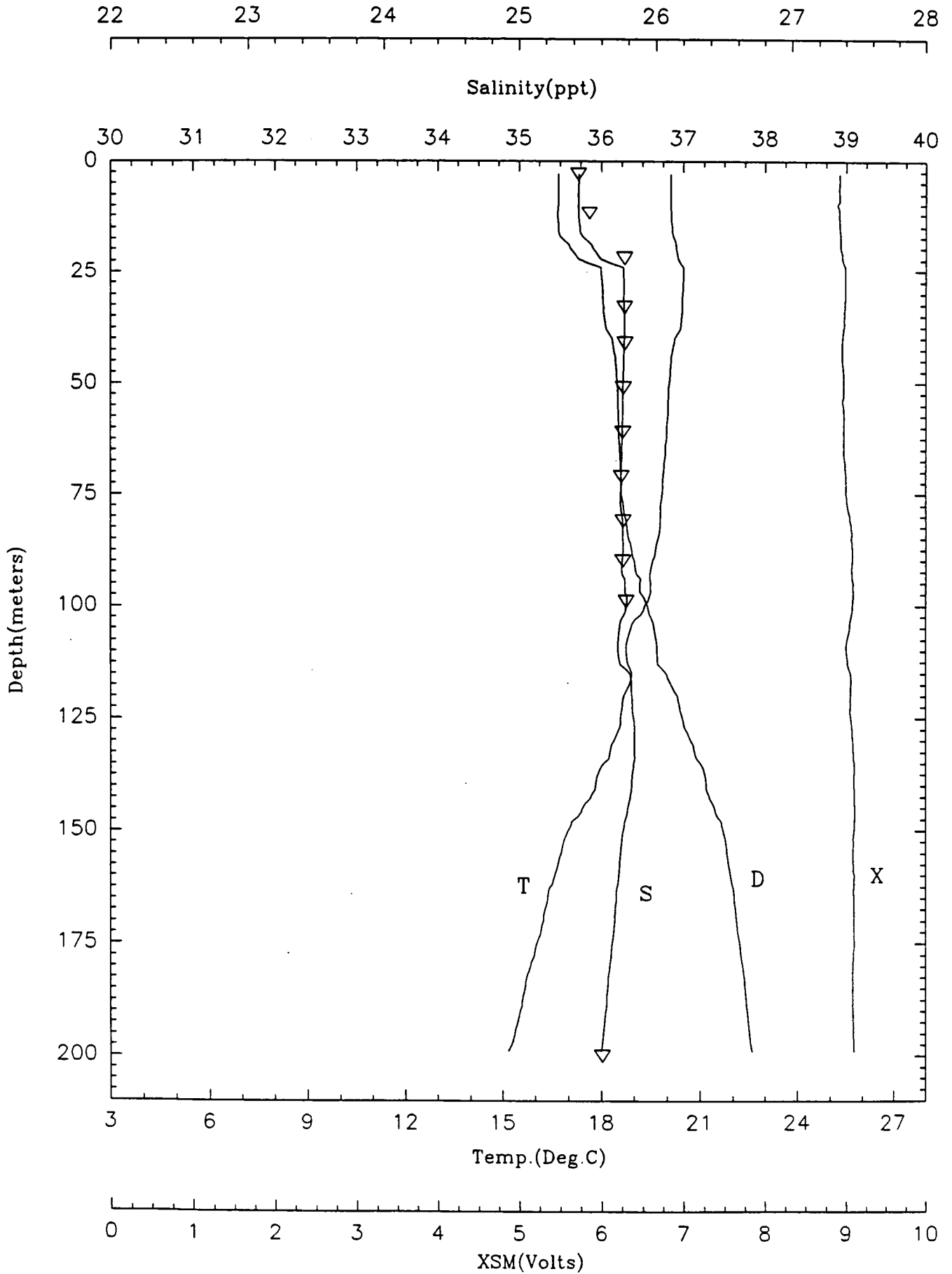
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meters	temp	salinity	sigma- $\bar{\sigma}$	volts# 0
3.000	20.1074	35.7256	25.2882	8.915
4.000	20.1085	35.7256	25.2878	8.916
5.000	20.1079	35.7257	25.2881	8.916
6.000	20.1104	35.7248	25.2867	8.913
7.000	20.1095	35.7247	25.2869	8.911
8.000	20.1095	35.7248	25.2870	8.915
9.000	20.1090	35.7246	25.2870	8.916
10.000	20.1088	35.7243	25.2868	8.892
11.000	20.1109	35.7227	25.2850	8.913
12.000	20.1163	35.7224	25.2834	8.912
13.000	20.1182	35.7217	25.2823	8.911
14.000	20.1255	35.7272	25.2845	8.917
15.000	20.1528	35.7412	25.2880	8.916
16.000	20.1519	35.7409	25.2880	8.923
17.000	20.1788	35.7651	25.2993	8.926
18.000	20.2279	35.8219	25.3295	8.930
19.000	20.2628	35.8754	25.3610	8.930
20.000	20.2748	35.8973	25.3746	8.930
21.000	20.2975	35.9441	25.4042	8.950
22.000	20.3257	35.9874	25.4297	8.948
23.000	20.4023	36.1136	25.5054	8.968
24.000	20.5008	36.2667	25.5956	8.990
25.000	20.4922	36.2647	25.5964	8.990
26.000	20.4959	36.2689	25.5986	8.989
27.000	20.4946	36.2741	25.6030	8.988
28.000	20.4856	36.2744	25.6056	8.989
29.000	20.4727	36.2727	25.6078	8.989
30.000	20.4638	36.2706	25.6086	8.989
31.000	20.4538	36.2683	25.6095	8.990
32.000	20.4465	36.2693	25.6123	8.985
33.000	20.4480	36.2723	25.6141	8.984
34.000	20.4490	36.2747	25.6157	8.980
35.000	20.4445	36.2773	25.6188	8.977
36.000	20.4272	36.2787	25.6246	8.974
37.000	20.4145	36.2785	25.6278	8.977
38.000	20.3931	36.2786	25.6337	8.967
39.000	20.3011	36.2768	25.6571	8.964
40.000	20.2196	36.2757	25.6780	8.954
41.000	20.2008	36.2730	25.6810	8.951
42.000	20.1700	36.2719	25.6884	8.948
43.000	20.1481	36.2693	25.6922	8.950
44.000	20.1120	36.2689	25.7015	8.950
45.000	20.1130	36.2678	25.7004	8.950
46.000	20.0973	36.2658	25.7030	8.955
47.000	20.0818	36.2642	25.7060	8.959
48.000	20.0739	36.2631	25.7072	8.965
49.000	20.0642	36.2623	25.7092	8.965
50.000	20.0492	36.2604	25.7118	8.965
51.000	20.0277	36.2584	25.7159	8.965
52.000	20.0268	36.2579	25.7158	8.965

53.000	20.0234	36.2576	25.7165	8.965
54.000	20.0199	36.2572	25.7171	8.951
55.000	20.0142	36.2563	25.7179	8.964
56.000	20.0098	36.2559	25.7188	8.968
57.000	20.0051	36.2549	25.7193	8.969
58.000	19.9931	36.2532	25.7211	8.973
59.000	19.9805	36.2512	25.7230	8.969
60.000	19.9769	36.2509	25.7237	8.969
62.000	19.9690	36.2497	25.7249	8.969
63.000	19.9568	36.2479	25.7267	8.969
64.000	19.9338	36.2449	25.7305	8.969
65.000	19.9339	36.2453	25.7308	8.969
66.000	19.9236	36.2442	25.7327	8.969
67.000	19.9179	36.2431	25.7334	8.971
68.000	19.8908	36.2396	25.7378	8.983
69.000	19.8875	36.2382	25.7376	8.984
70.000	19.8734	36.2367	25.7403	8.989
71.000	19.8626	36.2339	25.7410	8.995
72.000	19.8515	36.2331	25.7432	8.994
73.000	19.8490	36.2323	25.7434	8.994
74.000	19.8450	36.2313	25.7437	8.994
75.000	19.8382	36.2306	25.7449	8.997
76.000	19.8203	36.2296	25.7489	9.006
77.000	19.7930	36.2312	25.7573	9.003
78.000	19.7926	36.2332	25.7589	9.013
79.000	19.7942	36.2376	25.7619	9.028
80.000	19.7937	36.2486	25.7704	9.041
81.000	19.7840	36.2571	25.7794	9.046
82.000	19.7747	36.2579	25.7825	9.058
83.000	19.7655	36.2579	25.7849	9.062
84.000	19.7512	36.2576	25.7884	9.068
85.000	19.7146	36.2559	25.7968	9.062
86.000	19.6741	36.2592	25.8099	9.074
88.000	19.6240	36.2606	25.8242	9.077
89.000	19.6094	36.2563	25.8248	9.075
90.000	19.5407	36.2522	25.8396	9.076
92.000	19.4946	36.2456	25.8466	9.064
93.000	19.4637	36.2485	25.8569	9.068
94.000	19.4561	36.2822	25.8846	9.074
95.000	19.4846	36.2860	25.8801	9.086
96.000	19.4784	36.2821	25.8787	9.082
97.000	19.4905	36.2854	25.8781	9.085
98.000	19.4503	36.3056	25.9040	9.087
99.000	19.4025	36.3084	25.9186	9.082
100.000	19.3002	36.2948	25.9348	9.077
101.000	19.2666	36.2920	25.9414	9.077
102.000	19.1912	36.2736	25.9469	9.065
103.000	19.0285	36.2414	25.9642	9.054
104.000	18.9263	36.2231	25.9765	9.046
105.000	18.8838	36.2152	25.9814	9.041
106.000	18.8457	36.2099	25.9870	9.033
107.000	18.8020	36.2051	25.9945	9.018
108.000	18.7655	36.2030	26.0022	9.005
109.000	18.7526	36.2019	26.0046	9.001
110.000	18.7521	36.2019	26.0048	9.001
111.000	18.7581	36.2063	26.0066	9.006
112.000	18.7812	36.2164	26.0085	9.017
113.000	18.8002	36.2262	26.0111	9.018
114.000	18.8754	36.2954	26.0449	9.033
115.000	18.9344	36.3511	26.0723	9.055

116.000	18.9213	36.3614	26.0836	9.061
117.000	18.8755	36.3667	26.0994	9.062
118.000	18.8184	36.3673	26.1144	9.057
119.000	18.7547	36.3683	26.1314	9.053
120.000	18.6786	36.3734	26.1548	9.053
121.000	18.6598	36.3740	26.1600	9.048
122.000	18.6350	36.3777	26.1692	9.052
123.000	18.6237	36.3775	26.1718	9.047
124.000	18.6007	36.3841	26.1827	9.051
125.000	18.5870	36.3931	26.1931	9.059
126.000	18.5859	36.3994	26.1982	9.065
127.000	18.5702	36.4034	26.2053	9.074
128.000	18.5050	36.4058	26.2236	9.077
129.000	18.4479	36.4050	26.2375	9.077
130.000	18.3867	36.4017	26.2504	9.083
131.000	18.3097	36.4025	26.2704	9.086
132.000	18.2860	36.4019	26.2759	9.090
133.000	18.2571	36.4044	26.2850	9.092
134.000	18.2258	36.4088	26.2963	9.092
135.000	18.0782	36.3954	26.3230	9.105
136.000	17.9830	36.3910	26.3432	9.104
137.000	17.9271	36.3821	26.3503	9.102
138.000	17.8698	36.3768	26.3604	9.101
139.000	17.8389	36.3720	26.3644	9.101
140.000	17.8259	36.3702	26.3662	9.101
141.000	17.8033	36.3655	26.3682	9.105
142.000	17.7088	36.3559	26.3841	9.106
143.000	17.6436	36.3466	26.3931	9.106
144.000	17.5106	36.3306	26.4134	9.106
145.000	17.4347	36.3236	26.4266	9.111
146.000	17.3832	36.3169	26.4339	9.111
147.000	17.2926	36.3059	26.4475	9.109
148.000	17.1029	36.2814	26.4745	9.106
149.000	17.0760	36.2794	26.4794	9.102
150.000	16.9950	36.2656	26.4883	9.097
151.000	16.9392	36.2587	26.4964	9.091
152.000	16.8757	36.2509	26.5055	9.086
153.000	16.8397	36.2449	26.5096	9.091
154.000	16.8073	36.2402	26.5137	9.088
155.000	16.7830	36.2360	26.5162	9.087
156.000	16.7234	36.2264	26.5230	9.087
157.000	16.7026	36.2241	26.5261	9.087
158.000	16.6757	36.2220	26.5309	9.092
159.000	16.6343	36.2166	26.5365	9.089
160.000	16.5919	36.2121	26.5431	9.102
161.000	16.5485	36.2068	26.5493	9.101
162.000	16.5006	36.1989	26.5545	9.099
163.000	16.4086	36.1849	26.5654	9.092
164.000	16.3771	36.1804	26.5693	9.092
165.000	16.3621	36.1783	26.5711	9.096
166.000	16.3544	36.1764	26.5715	9.096
167.000	16.3074	36.1692	26.5770	9.099
168.000	16.2793	36.1679	26.5825	9.101
169.000	16.2467	36.1618	26.5854	9.101
170.000	16.2382	36.1601	26.5861	9.101
171.000	16.1935	36.1542	26.5920	9.098
173.000	16.1457	36.1468	26.5974	9.096
174.000	16.0875	36.1383	26.6043	9.096
175.000	16.0371	36.1306	26.6100	9.103
176.000	16.0014	36.1241	26.6133	9.101

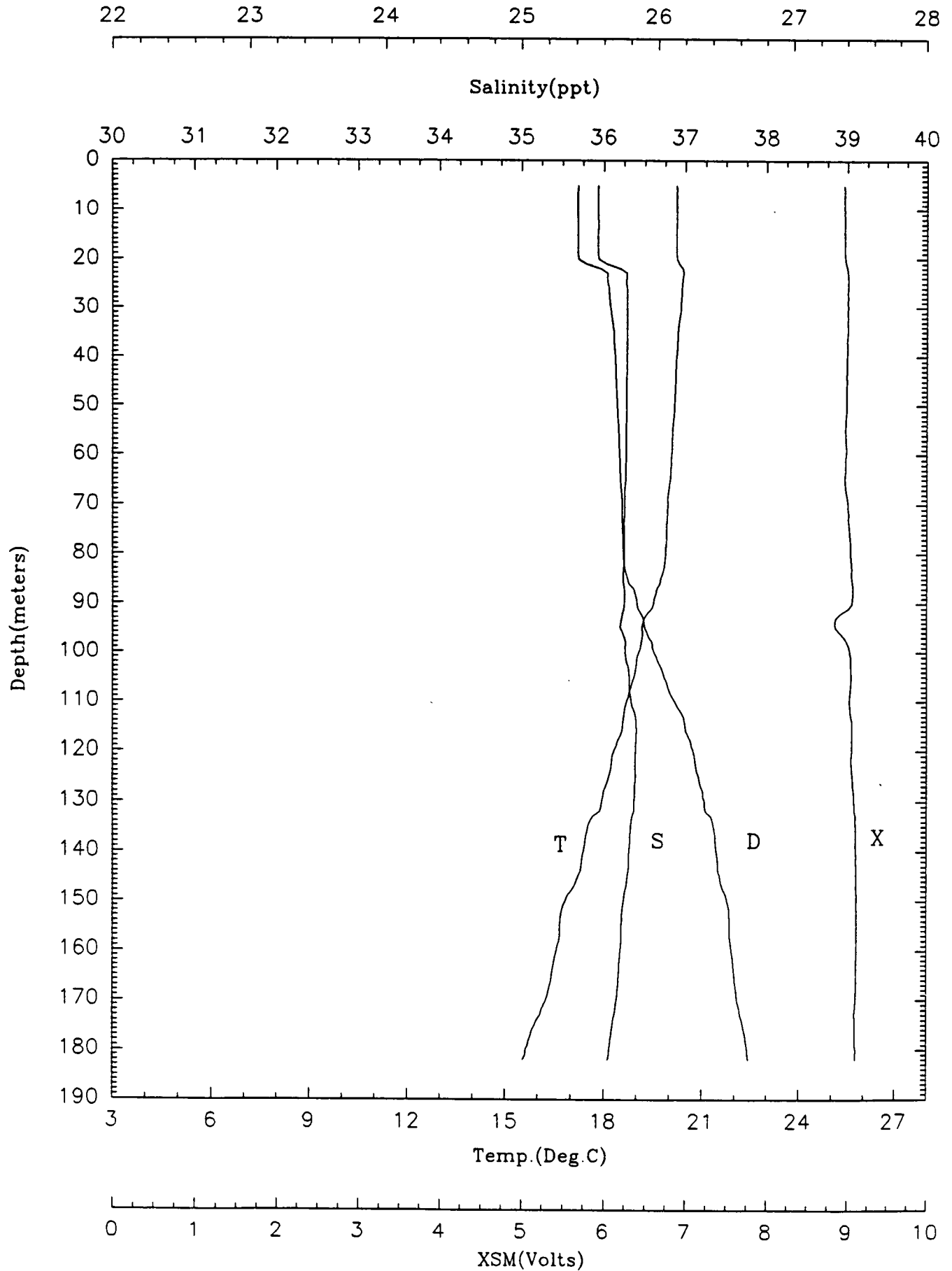
177.000	15.9766	36.1213	26.6169	9.094
178.000	15.9542	36.1186	26.6199	9.093
179.000	15.8789	36.1063	26.6278	9.086
180.000	15.8450	36.1029	26.6329	9.087
181.000	15.7992	36.0947	26.6372	9.084
182.000	15.7521	36.0872	26.6421	9.084
183.000	15.7110	36.0813	26.6469	9.082
184.000	15.6975	36.0792	26.6484	9.082
185.000	15.6828	36.0763	26.6495	9.082
186.000	15.6408	36.0707	26.6548	9.082
187.000	15.6120	36.0655	26.6573	9.082
188.000	15.5898	36.0625	26.6601	9.082
189.000	15.5910	36.0621	26.6594	9.081
190.000	15.5310	36.0527	26.6658	9.086
191.000	15.5003	36.0484	26.6694	9.090
192.000	15.4730	36.0441	26.6723	9.088
193.000	15.4320	36.0379	26.6768	9.092
194.000	15.3918	36.0313	26.6808	9.092
195.000	15.3590	36.0257	26.6838	9.092
196.000	15.3341	36.0219	26.6865	9.094
197.000	15.2950	36.0163	26.6910	9.096
198.000	15.2405	36.0077	26.6965	9.096
199.000	15.1696	35.9977	26.7046	9.098



▽ - Indicates bottle Salinities.

raw data file = c2g037a.dat

meters	temp	salinity	sigmatheta	volts# 0
5.000	20.2263	35.9305	25.4128	8.958
10.000	20.2350	35.9317	25.4119	8.962
15.000	20.2225	35.9266	25.4116	8.961
20.000	20.2848	36.0170	25.4642	8.973
25.000	20.3932	36.2677	25.6266	9.002
30.000	20.3487	36.2826	25.6502	9.003
35.000	20.2684	36.2833	25.6725	9.001
40.000	20.2205	36.2822	25.6847	8.996
45.000	20.1857	36.2798	25.6924	8.990
50.000	20.1532	36.2782	25.7001	8.987
55.000	20.1008	36.2740	25.7111	8.977
60.000	20.0673	36.2708	25.7179	8.981
65.000	20.0180	36.2635	25.7256	8.974
70.000	19.9537	36.2542	25.7359	9.001
75.000	19.9190	36.2492	25.7414	9.020
80.000	19.8837	36.2485	25.7505	9.041
85.000	19.7390	36.2449	25.7861	9.058
90.000	19.4916	36.2483	25.8537	9.016
95.000	19.2140	36.2294	25.9117	8.902
100.000	19.0804	36.2709	25.9781	9.024
105.000	18.9262	36.3117	26.0491	9.045
110.000	18.7167	36.3440	26.1275	9.033
115.000	18.5798	36.3976	26.2036	9.056
120.000	18.3298	36.3907	26.2616	9.057
125.000	18.1639	36.3875	26.3009	9.064
130.000	17.9609	36.3786	26.3448	9.088
135.000	17.5584	36.3394	26.4141	9.109
140.000	17.3980	36.3172	26.4364	9.113
145.000	17.2399	36.2961	26.4587	9.115
150.000	16.8682	36.2486	26.5115	9.118
155.000	16.6973	36.2254	26.5345	9.120
160.000	16.5880	36.2102	26.5488	9.118
165.000	16.4425	36.1896	26.5673	9.116
170.000	16.2571	36.1633	26.5906	9.109
175.000	15.9220	36.1130	26.6295	9.098
180.000	15.6557	36.0716	26.6584	9.102



▽ - Indicates bottle Salinities.

BOTTLE DATA

At each CTD station on cruise 92G-03, 30-liter Niskin bottles mounted on a General Oceanics 12-place rosette multisampler were tripped on the upcast for analysis of nutrients, dissolved oxygen, and chlorophyll + acid degradation products as well as bottle salinity. Autoanalyzer nutrient analyses were done at sea using a 6-channel Alpkem IWA-6 industrial water analyzer, and salinity was checked at each bottle trip depth in the shipboard laboratory with Guildline Autosal model 8400A. Dissolved oxygen was measured by a modified Winkler titration method. Chlorophyll versus phaeopigment composition was estimated at sea by the "Turner" fluorometric method, following the protocols of Parsons et al, 1985.

The following tables summarize temperature, salinity, nutrient, dissolved oxygen, and chlorophyll + phaeopigment concentrations. In the tables, Temp = CTD temp, and Salinity is bottle salinity (90G-15). Concentrations of nutrients are reported as moles/liter, of dissolved oxygen as mls/liter, and of chlorophyll and phaeopigments (PHAEO) as g/liter.

Reference:

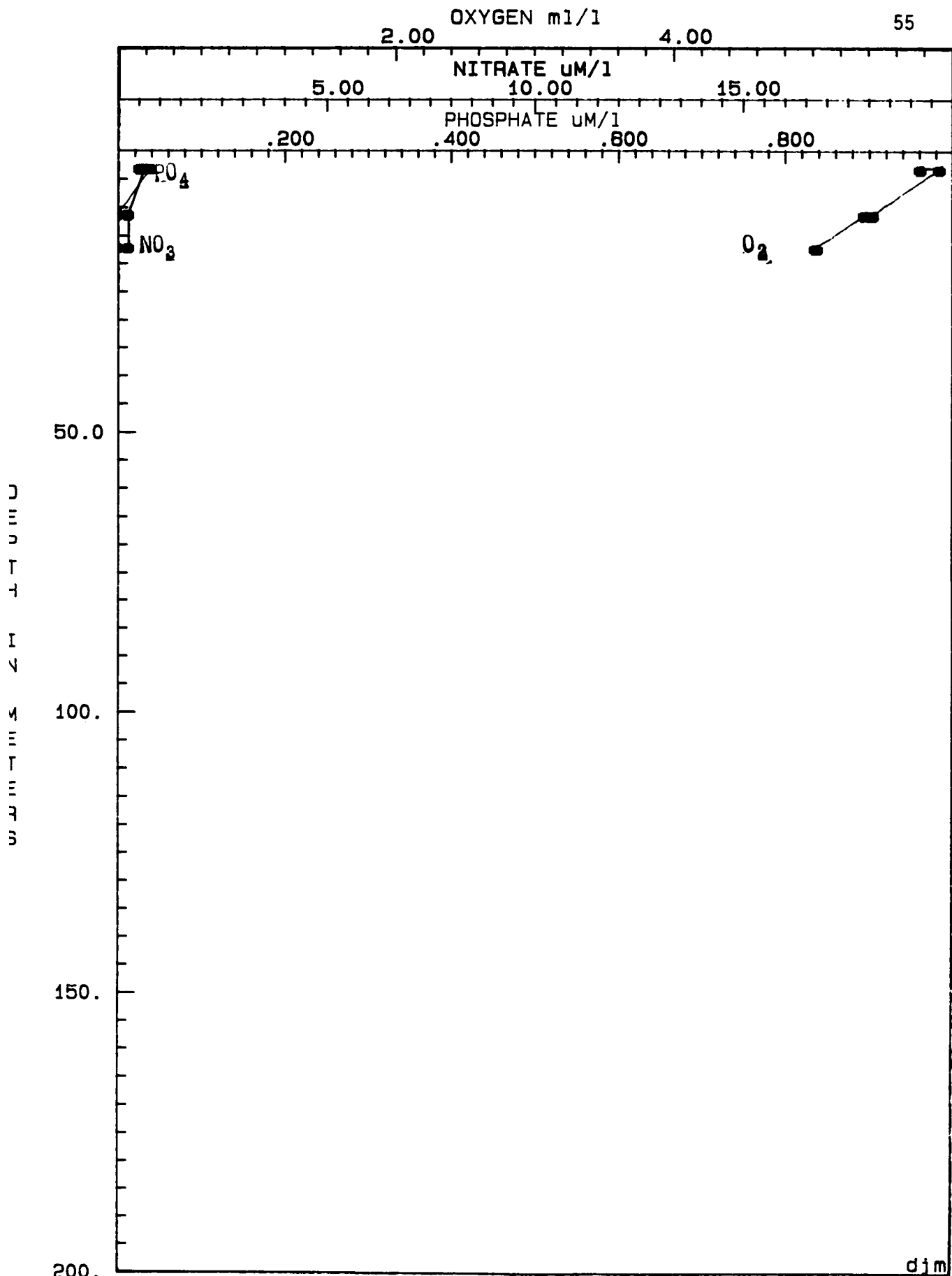
Parsons TR, Maita Y, and Lalli CM (1985) A Manual of Chemical and Biological Methods for Seawater Analysis. Oxford (Pergamon Press).

One liter (or 500mls when concentrations of suspended particles were high) of seawater from each bottle depth was filtered onto 25 mm glass fiber GF/F filters. These were extracted in 10 ml of 90% acetone for 12h at 0°C, then centrifuged the extract for 5 min to clarify the supernatant before measuring fluorescence on a Turner Designs model 10.

TEXAS A&M UNIVERSITY DEPT. of OCEANOGRAPHY HYDROGRAPHIC DATA

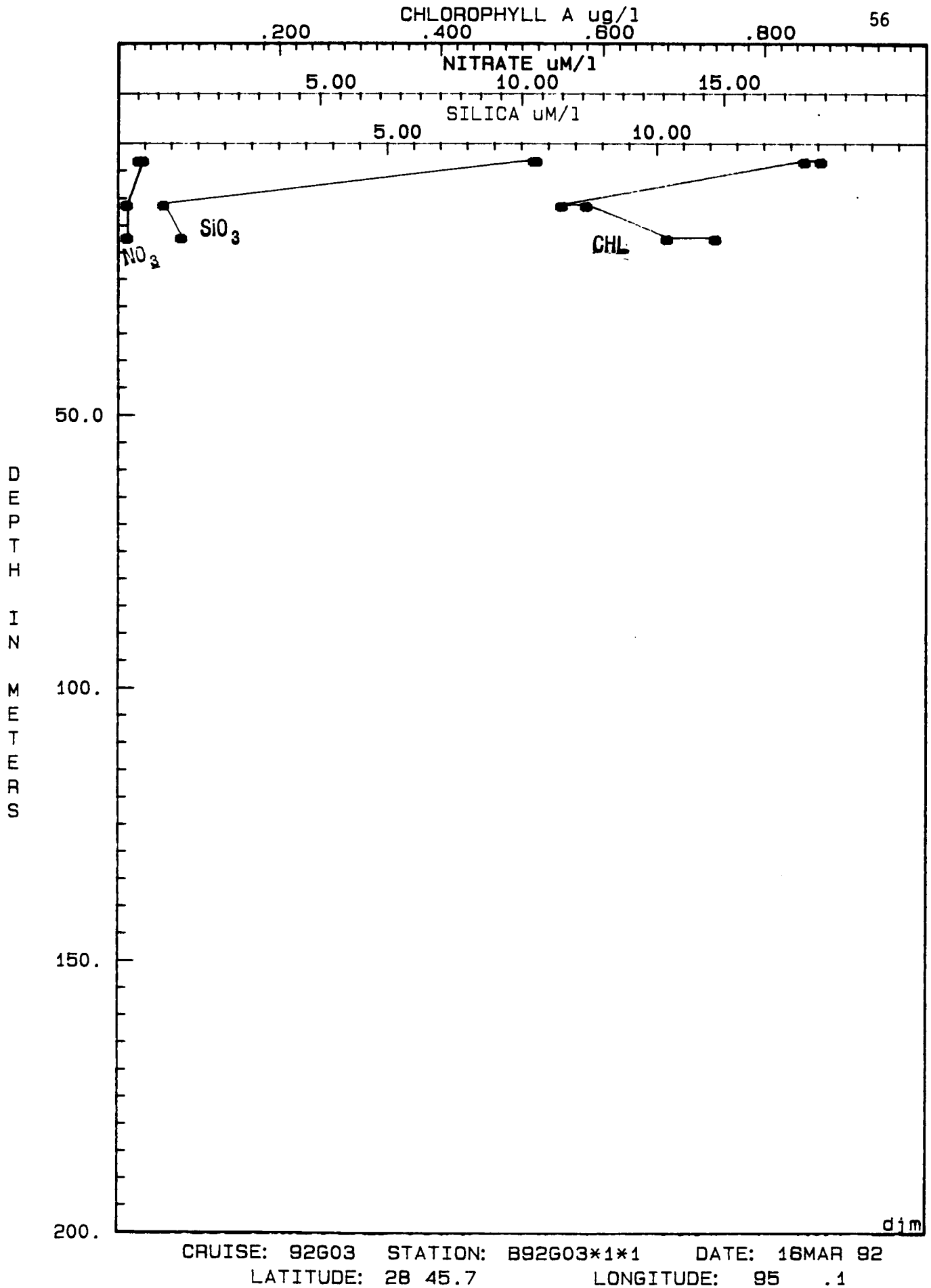
CRUISE	92G03	STATION	001	Date	16MAR
LAT	28 45.78N	LON	95 00.11W	Time	1115 GMT
Samples	6				

Btl	Z (m)	S (ppt)	T (C)	O (ml/l)	NO3 (	NO2 umol/l	NH4)	Urea	PO4	SiO3	Chl (mg/l)	Pha
6	3	28.399	17.81	5.77	0.5	0.03	0.6	0.7	0.04	7.8	0.87	0.02
5	3	28.575	17.81	5.91	0.6	0.02	0.6	0.8	0.04	7.7	0.85	0.00
4	11	32.661	16.86	5.43	0.2	0.00	0.3	0.7	-0.00	0.9	0.55	0.10
3	11	33.090	16.86	5.37	NA	NA	NA	NA	NA	NA	0.58	0.11
2	17	34.443	17.35	5.02	0.2	0.00	0.1	0.7	0.00	1.2	0.68	0.15
1	17	34.432	17.35	5.03	NA	NA	NA	NA	NA	NA	0.74	0.13



CRUISE: 92G03 STATION: B92G03*1*1 DATE: 16MAR 92
 LATITUDE: 28 45.7 LONGITUDE: 95 .1

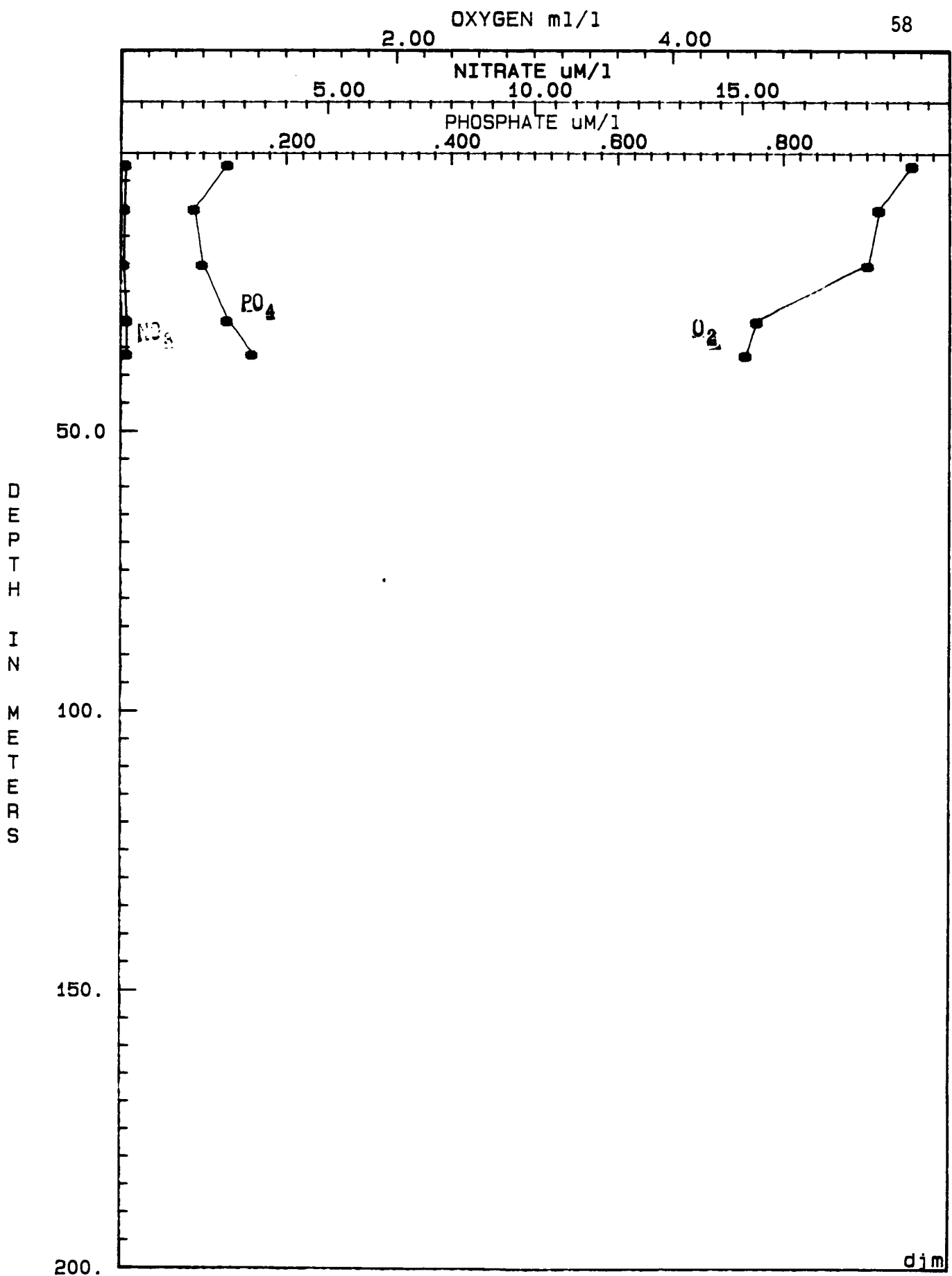
djm



TEXAS A&M UNIVERSITY DEPT. of OCEANOGRAPHY HYDROGRAPHIC DATA

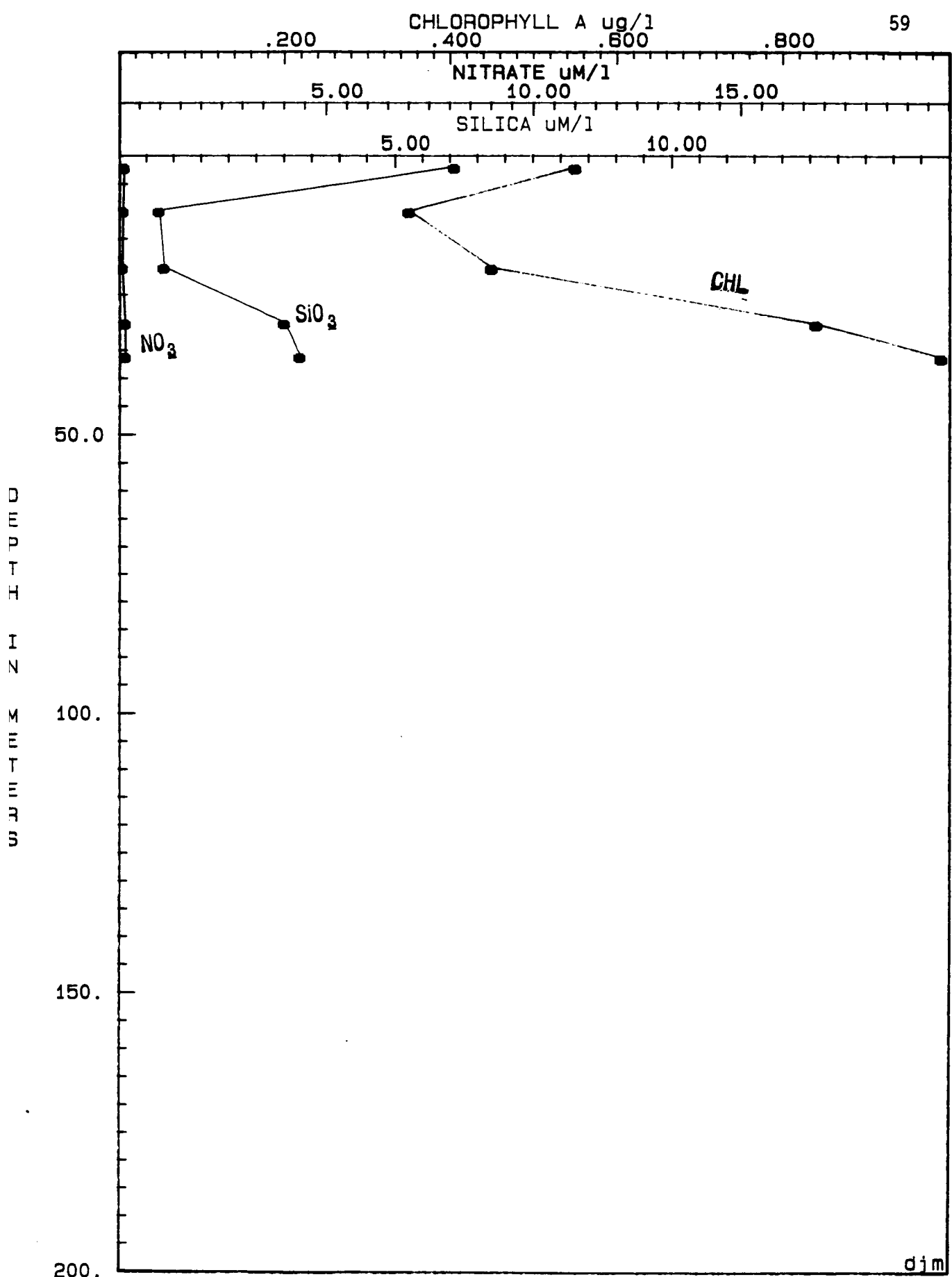
CRUISE	92G03	STATION	002	Date	16MAR
LAT	28 26.49N	LON	94 59.60W	Time	1755 GMT
Samples	5				

Btl	Z (m)	S (ppt)	T (C)	O (ml/l)	NO3 (	NO2 umol/l	NH4)	Urea	PO4	SiO3	Chl (mg/l)	Pha
3	2	31.245	18.53	5.73	0.1	0.03	0.3	0.4	0.13	6.1	0.55	0.08
1	10	34.229	17.60	5.49	0.1	0.00	0.1	0.2	0.09	0.7	0.35	0.05
11	20	34.776	17.48	5.41	0.1	0.00	0.2	0.0	0.10	0.8	0.45	0.08
9	30	35.652	17.57	4.61	0.1	0.08	0.0	0.1	0.13	3.0	0.84	0.14
7	36	35.689	17.56	4.53	0.1	0.10	0.0	0.3	0.16	3.3	0.99	0.07



CRUISE: 92G03 STATION: B92G03*2*1 DATE: 16MAR 92
 LATITUDE: 28 26.4 LONGITUDE: 94 59.6

djm

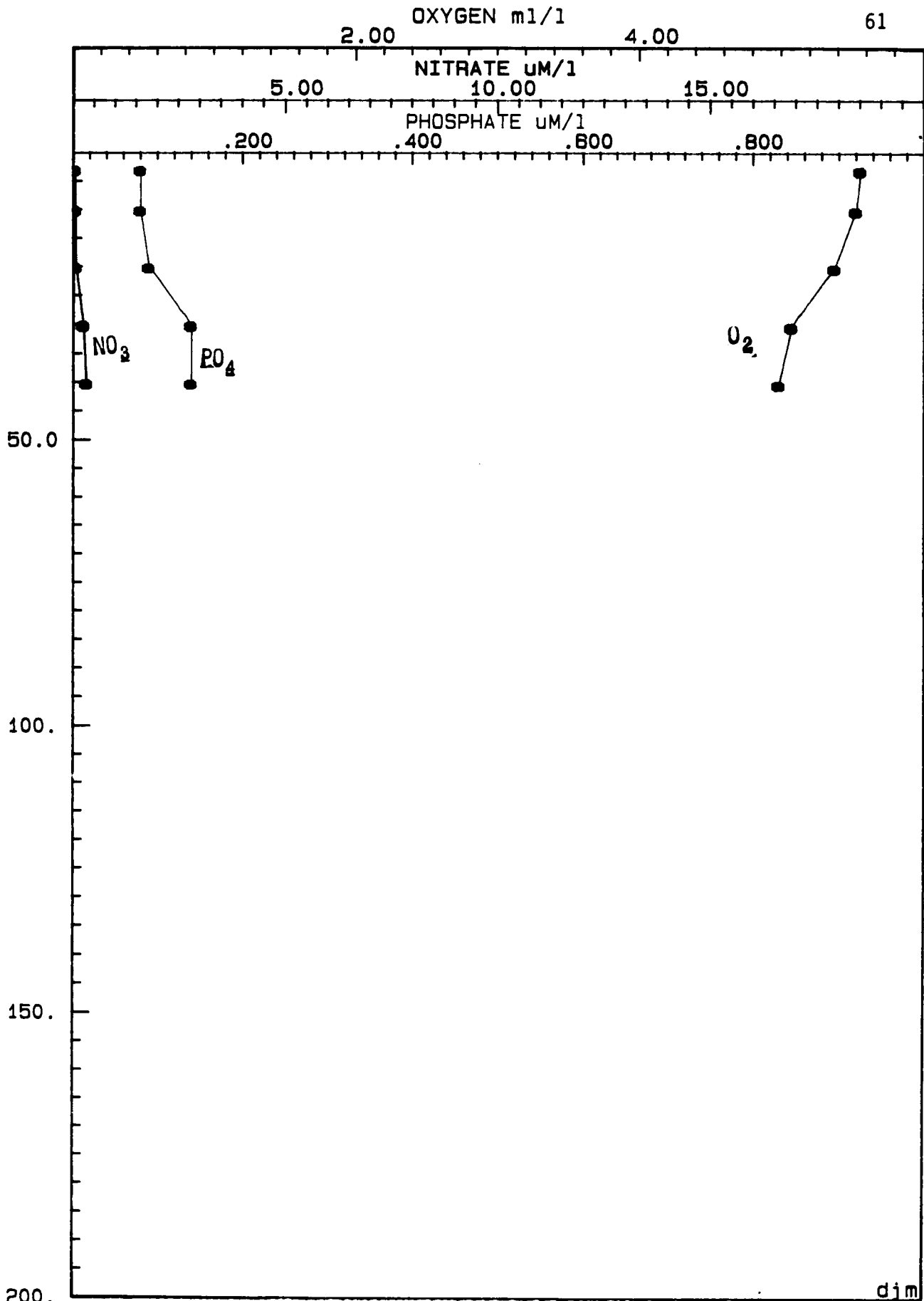


CRUISE: 92G03 STATION: B92G03*2*1 DATE: 16MAR 92
 LATITUDE: 28 26.4 LONGITUDE: 94 59.6

TEXAS A&M UNIVERSITY DEPT. of OCEANOGRAPHY HYDROGRAPHIC DATA

CRUISE	92G03	STATION	003	Date	16MAR
LAT	28 12.60N	LON	95 00.20W	Time	2317 GMT
Samples	12				

Btl	Z (m)	S (ppt)	T (C)	O (ml/l)	NO3 (	NO2 umol/l	NH4)	Urea	PO4	SiO3	Chl (mg/l)	Pha
11	3	34.539	18.70	5.55	<0.1	0.01	0.4	0.6	0.08	1.0	0.16	0.01
9	10	34.684	18.70	5.52	<0.1	0.02	0.3	0.6	0.08	1.0	0.18	0.02
7	20	35.288	18.57	5.37	<0.1	0.04	0.2	0.5	0.09	1.0	0.32	0.03
5	30	36.107	18.78	5.07	0.2	0.55	0.7	0.5	0.14	1.2	0.66	0.10
3	40	36.086	18.76	4.98	0.3	0.50	0.5	0.5	0.14	1.4	0.60	0.05
1	43	36.082	18.74	4.95	0.4	0.51	0.4	0.5	0.15	1.4	0.53	0.11



CRUISE: 92G03 STATION: B92G03*3*1 DATE: 16MAR 92
 LATITUDE: 28 12.6 LONGITUDE: 95 .2

djm

CHLOROPHYLL A ug/l

62

.200

.400

.600

.800

NITRATE $\mu\text{M}/\text{l}$

5.00

10.00

15.00

SILICA $\mu\text{M}/\text{l}$

5.00

10.00

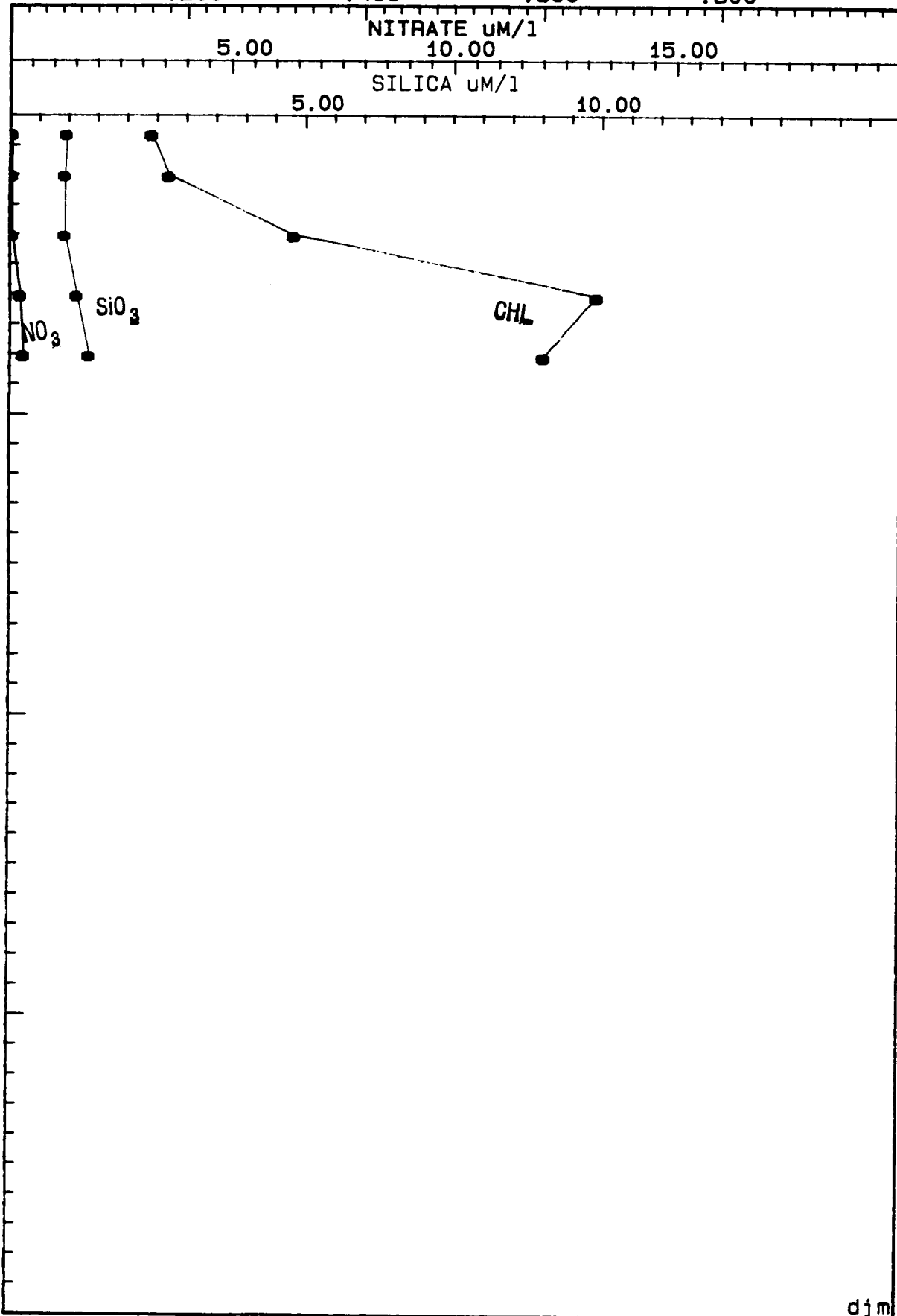
DEPTH
IN
METERS

50.0

100.

150.

200.



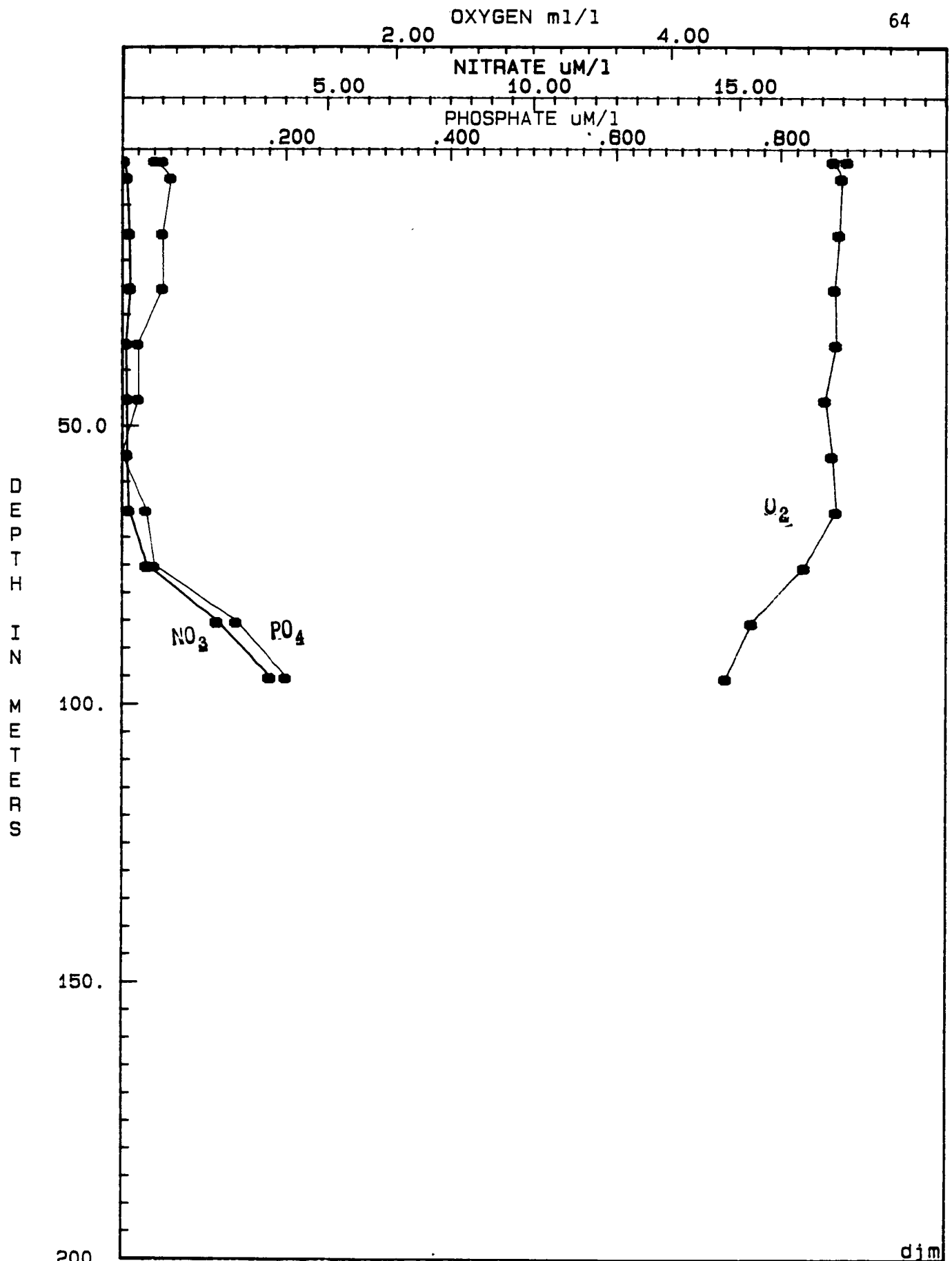
CRUISE: 92G03 STATION: B92G03*3*1 DATE: 16MAR 92
 LATITUDE: 28 12.6 LONGITUDE: 95 .2

djm

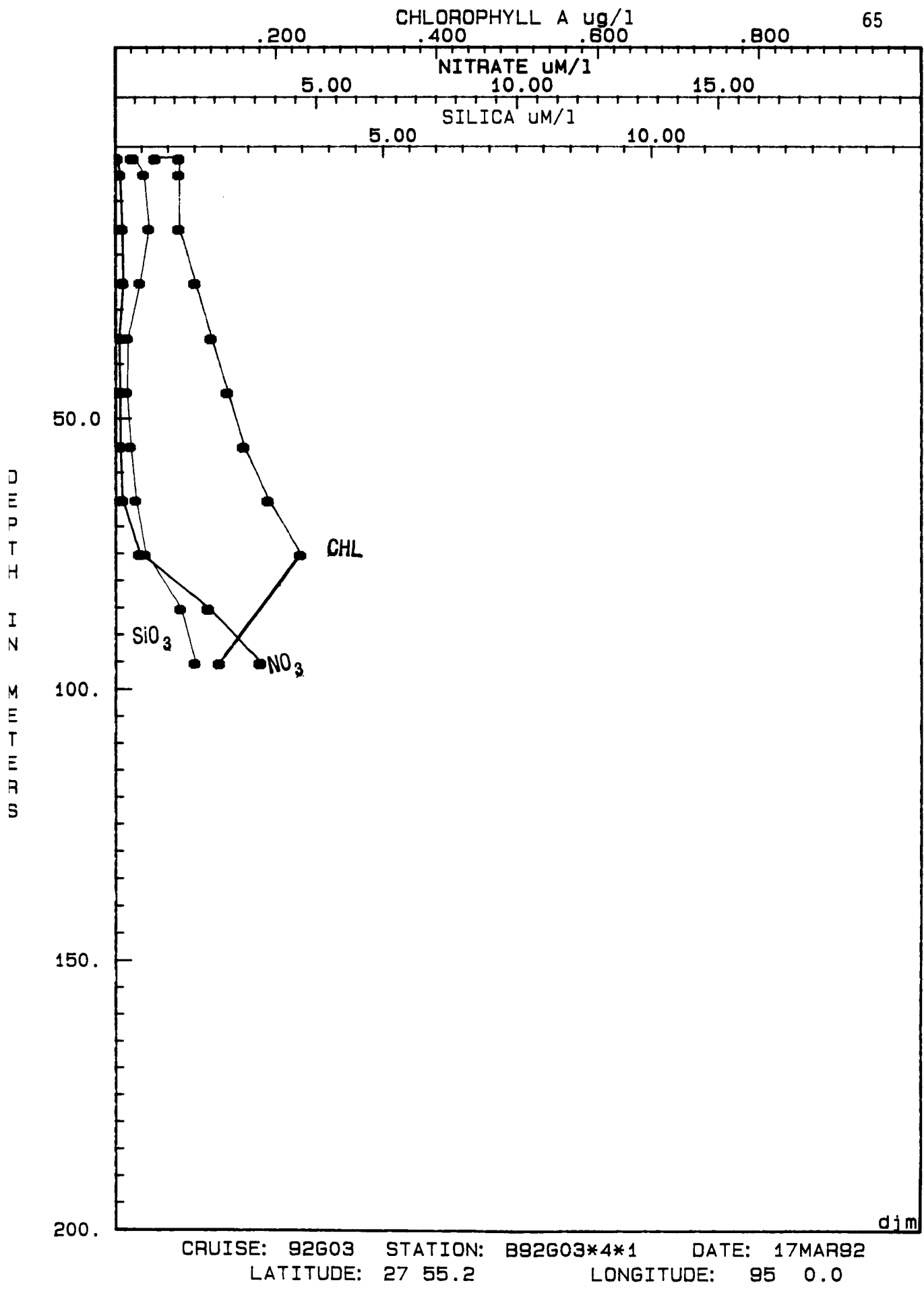
TEXAS A&M UNIVERSITY DEPT. of OCEANOGRAPHY HYDROGRAPHIC DATA

CRUISE 92G03 STATION 004 Date 17MAR
 LAT 27 55.28N LON 95 00.02W Time 156 GMT
 Samples 12

Btl	Z (m)	S (ppt)	T (C)	O (ml/l)	NO3 (	NO2 umol/l	NH4)	Urea	PO4	SiO3	Chl (mg/l)	Pha
12	2	36.280	20.47	5.28	< 0.1	0.00	0.1	0.5	0.05	0.3	0.05	0.02
11	2	36.280	20.47	5.18	< 0.1	0.02	0.1	0.4	0.04	0.3	0.08	0.02
10	5	36.281	20.47	5.24	0.1	0.01	0.2	0.4	0.06	0.5	0.08	0.03
9	15	36.280	20.47	5.22	0.2	0.01	0.2	0.2	0.05	0.6	0.08	0.02
8	25	36.278	20.44	5.19	0.2	0.00	0.2	0.2	0.05	0.5	0.10	0.03
7	35	36.276	20.40	5.20	0.1	0.04	0.2	0.1	0.02	0.2	0.12	0.05
6	45	36.279	20.39	5.12	0.1	0.00	0.2	0.3	0.02	0.2	0.14	0.04
5	55	36.273	20.37	5.17	0.1	0.00	0.3	0.2	0.00	0.3	0.16	0.04
4	65	36.271	20.35	5.20	0.2	0.02	0.4	0.4	0.03	0.4	0.19	0.07
3	75	36.219	20.28	4.97	0.6	0.37	0.3	0.4	0.04	0.6	0.23	0.11
2	85	36.257	19.49	4.59	2.3	0.22	0.3	0.4	0.14	1.2	NA	NA
1	95	36.290	19.33	4.40	3.6	0.07	0.3	0.5	0.20	1.5	0.13	0.06



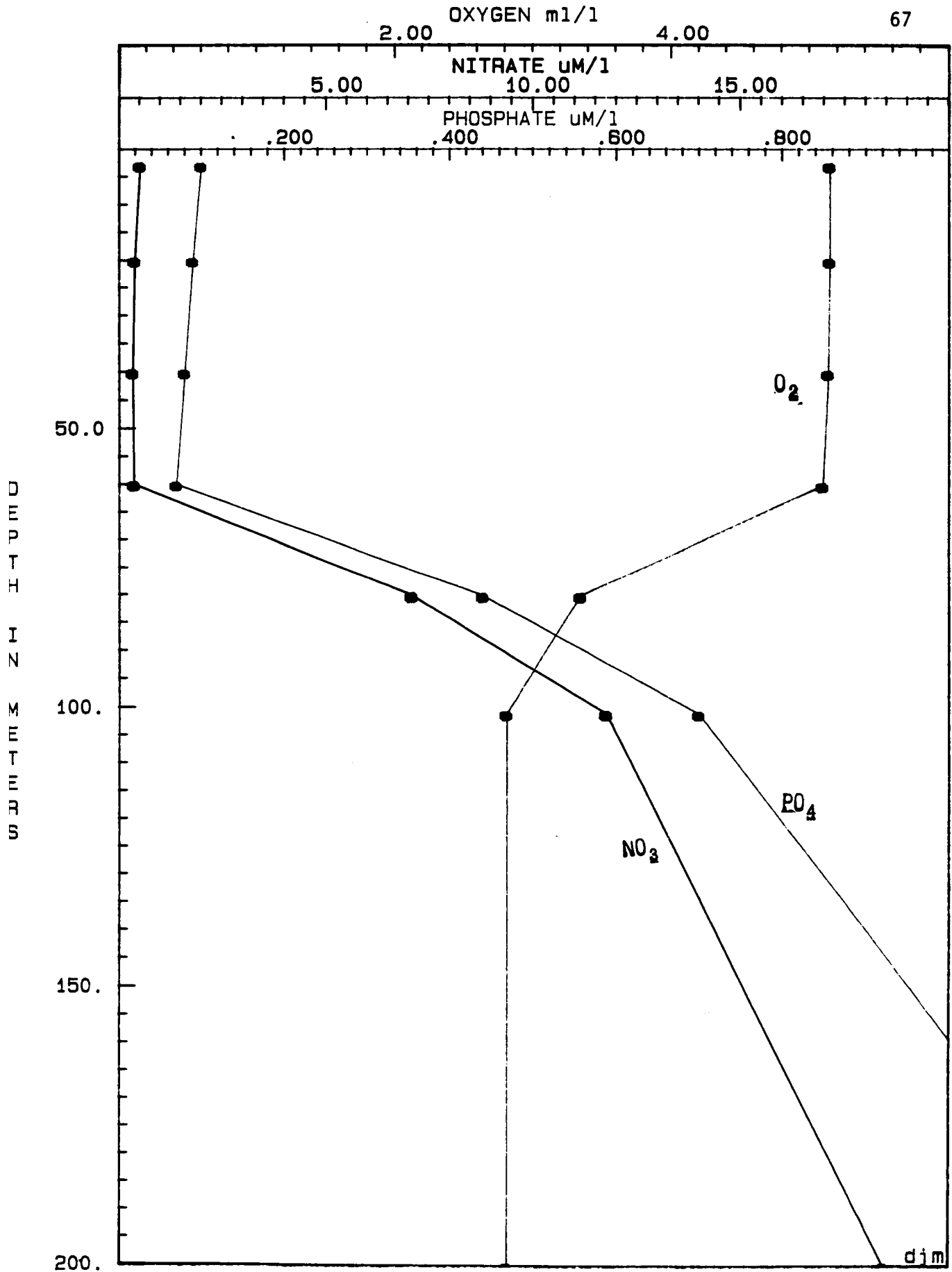
CRUISE: 92603 STATION: B92G03*4*1 DATE: 17MAR92
LATITUDE: 27 55.2 LONGITUDE: 95 0.0



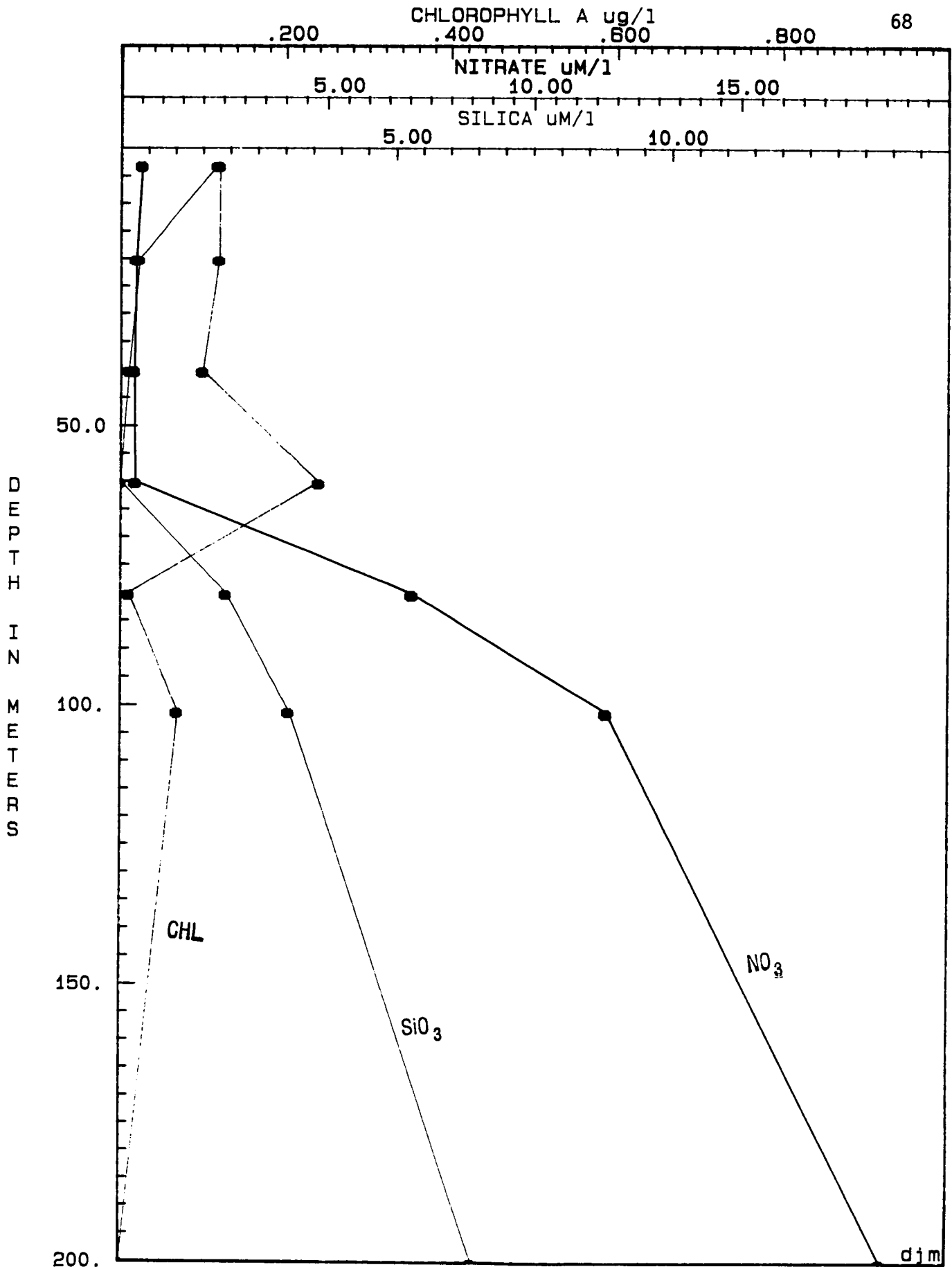
TEXAS A&M UNIVERSITY DEPT. of OCEANOGRAPHY HYDROGRAPHIC DATA

CRUISE	92G03	STATION	005	Date	17MAR
LAT	26 41.14N	LON	94 59.50W	Time	1500 GMT
Samples	12				

Btl	Z (m)	S (ppt)	T (C)	O (ml/l)	NO3 (	NO2 umol/l	NH4)	Urea	PO4	SiO3	Chl (mg/l)	Pha
12	3	35.323	20.77	5.14	0.5	0.01	0.1	0.1	0.10	1.8	0.12	0.01
11	20	36.202	20.59	5.14	0.4	0.00	0.1	0.1	0.09	0.3	0.12	0.03
10	40	36.258	20.63	5.13	0.3	0.00	0.0	0.0	0.08	0.2	0.10	0.03
9	60	36.258	20.57	5.09	0.4	0.00	0.0	0.2	0.07	-0.0	0.24	0.08
8	80	36.454	20.20	3.34	7.1	0.20	0.0	0.1	0.44	1.9	0.01	0.01
7	101	36.442	19.26	2.81	11.7	0.03	0.0	0.1	0.70	3.1	0.07	0.10
6	200	35.915	14.49	2.81	18.4	0.00	0.1	0.2	1.21	6.4	0.00	0.02
5	501	35.029	8.56	2.70	30.4	0.01	0.0	0.1	1.95	18.0	0.00	0.01
4	699	34.897	6.34	3.27	30.7	0.01	0.0	0.1	2.05	23.8	0.00	0.01
3	1002	34.930	4.95	4.15	27.2	0.01	0.1	0.2	1.84	25.7	0.00	0.01
2	1202	34.958	4.44	4.63	24.7	0.02	0.0	0.1	1.68	25.5	0.00	0.01
1	1506	34.971	4.24	4.91	23.6	0.02	0.1	0.2	1.60	24.9	0.00	0.01



CRUISE: 92G03 STATION: B92G03*5*1 DATE: 17MAR 92
LATITUDE: 26 41.1 LONGITUDE: 94 59.5



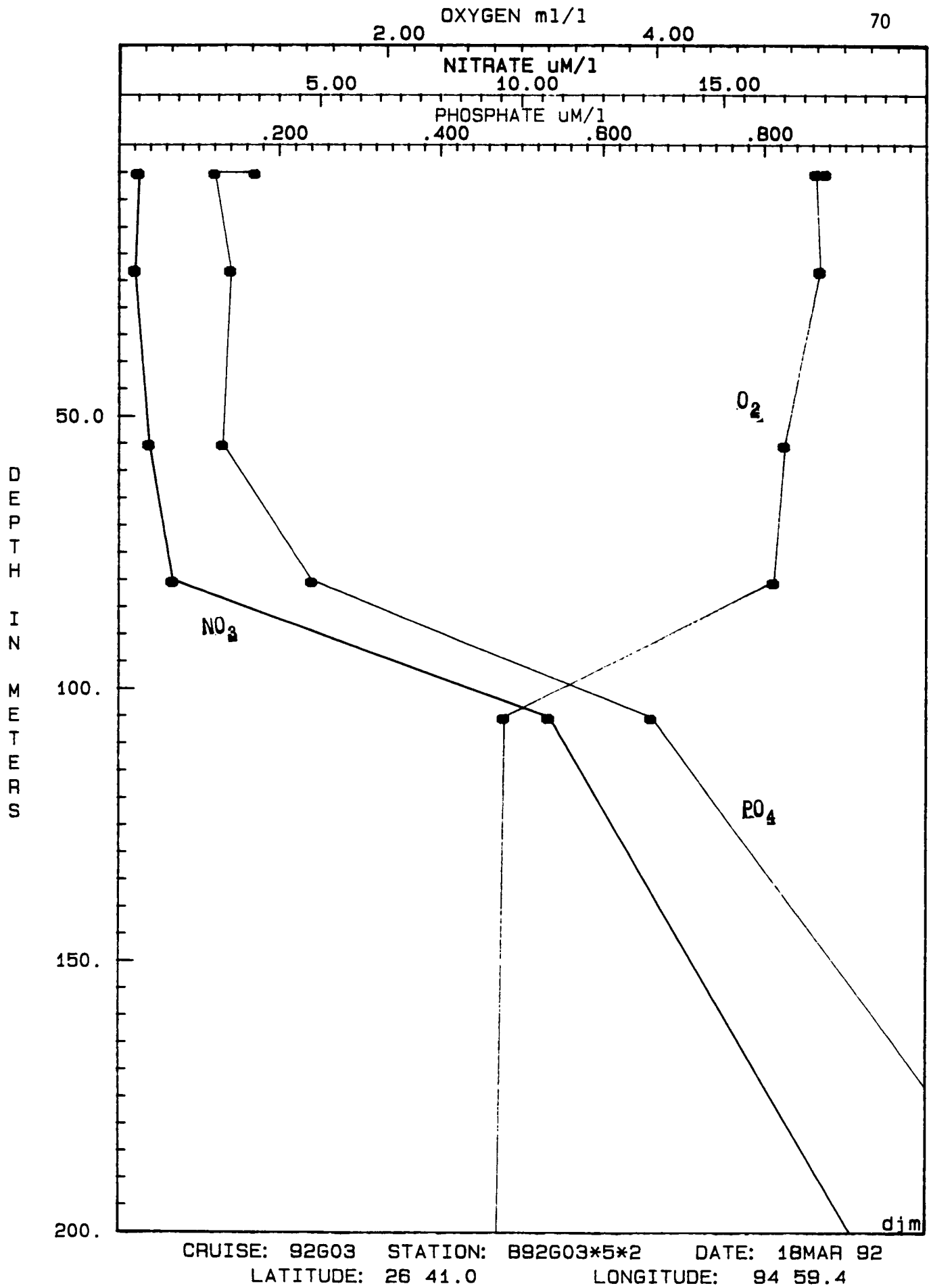
CRUISE: 92G03 STATION: B92G03*5*1 DATE: 17MAR 92
 LATITUDE: 26 41.1 LONGITUDE: 94 59.5

TEXAS A&M UNIVERSITY DEPT. of OCEANOGRAPHY HYDROGRAPHIC DATA

CRUISE 92G03 STATION 005C Date 18MAR
 LAT 26 41.05N LON 94 59.45W Time 215 GMT

Samples 12

Btl	Z (m)	S (ppt)	T (C)	O (ml/l)	NO3 ()	NO2 (umol/l)	NH4 ()	Urea ()	PO4 ()	SiO3 ()	Chl (mg/l)	Pha (mg/l)
12	5	34.419	21.16	5.25	0.5	0.00	1.0	0.5	0.17	2.4	0.12	0.01
11	5	34.439	21.16	5.18	0.5	0.00	2.0	0.2	0.12	2.1	0.10	0.02
10	23	35.668	20.66	5.21	0.4	0.09	1.6	0.1	0.14	1.0	0.13	0.05
9	55	36.071	20.19	4.95	0.8	0.17	1.1	0.6	0.13	1.0	0.29	0.11
8	80	36.174	19.81	4.87	1.3	0.03	1.6	0.1	0.24	0.8	0.12	0.04
7	105	36.455	19.27	2.87	10.7	0.01	0.0	0.0	0.66	3.0	0.09	0.11
6	203	35.877	14.32	2.82	18.4	0.00	0.1	0.0	1.15	6.5	0.00	0.02
5	496	35.024	8.45	2.69	30.2	0.01	0.1	0.0	1.94	18.0	0.00	0.01
4	1000	34.932	4.97	4.15	26.9	0.01	0.1	0.2	1.80	25.2	0.00	0.01
3	1503	NA	4.24	NA	NA	NA	NA	NA	NA	NA	NA	NA
2	1504	34.970	4.24	4.90	23.6	0.00	0.1	0.1	1.57	24.0	0.00	0.01
1	1503	34.971	4.24	4.90	23.9	0.00	0.1	0.1	1.57	24.3	0.00	0.01



CHLOROPHYLL A ug/l

71

.200 .400 .600 .800

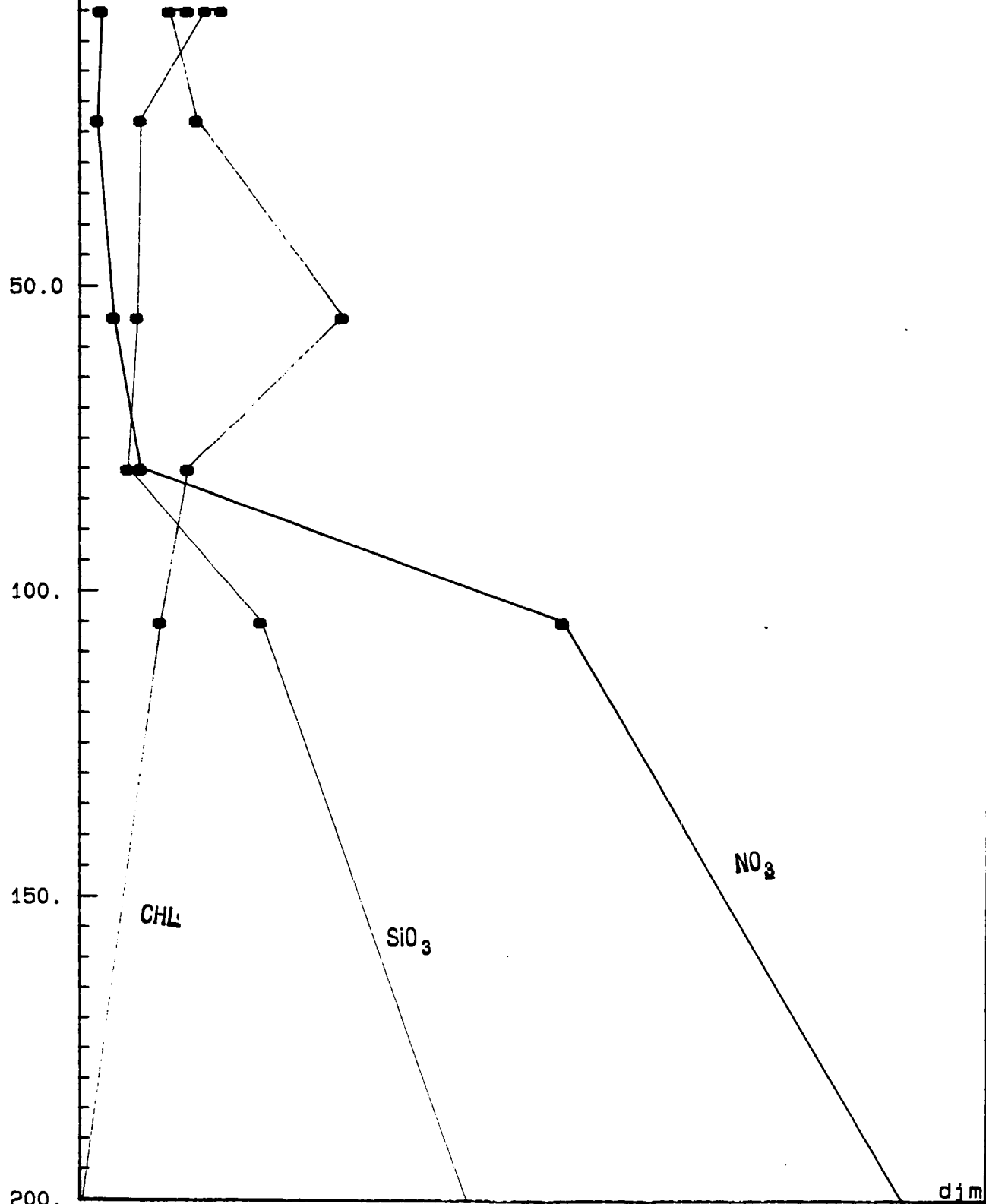
NITRATE uM/l

5.00 10.00 15.00

SILICA uM/l

5.00 10.00

DEPTH METERS

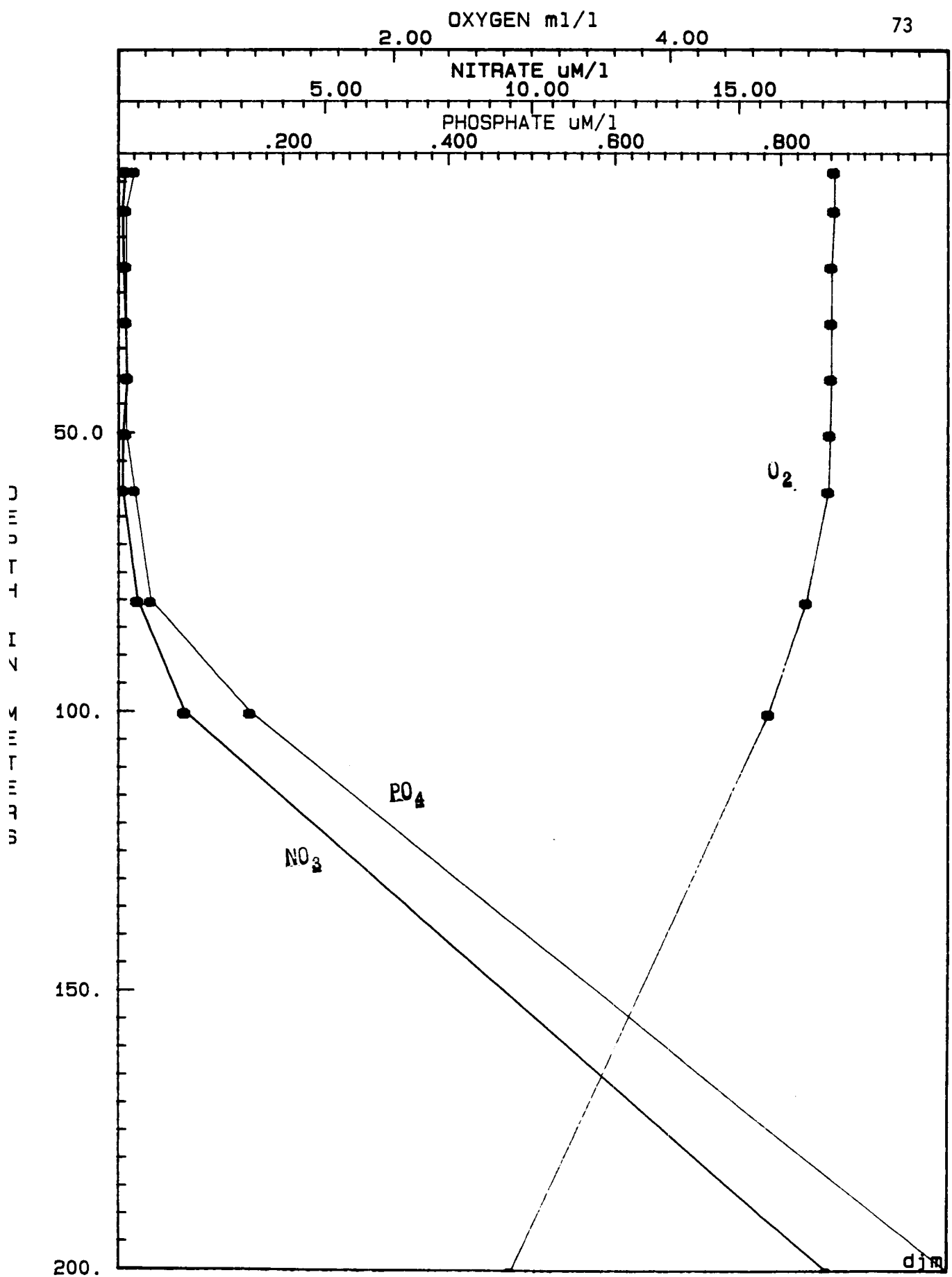


CRUISE: 92G03 STATION: B92G03*5*2 DATE: 18MAR 92
 LATITUDE: 26 41.0 LONGITUDE: 94 59.4

TEXAS A&M UNIVERSITY DEPT. of OCEANOGRAPHY HYDROGRAPHIC DATA

CRUISE 92G03 STATION 006 Date 19MAR
 LAT 27 37.10N LON 95 00.08W Time 1536 GMT
 Samples 12

Btl	Z (m)	S (ppt)	T (C)	O (ml/l)	NO3 ()	NO2 umol/l	NH4 ()	Urea ()	PO4	SiO3	Chl (mg/l)	Pha
12	3	36.122	20.57	5.18	0.2	0.02	0.0	0.1	0.02	0.6	0.11	0.01
11	10	36.191	20.47	5.18	0.1	0.02	0.1	0.1	0.01	0.2	0.12	0.02
10	20	36.300	20.54	5.16	0.1	0.01	0.0	0.1	0.01	0.2	0.10	0.02
9	30	36.303	20.55	5.16	0.2	0.03	0.0	0.1	0.01	0.2	0.10	0.03
8	40	36.301	20.51	5.16	0.2	0.02	0.0	0.1	0.01	0.2	0.13	0.04
7	50	36.302	20.46	5.15	0.1	0.02	0.1	0.1	0.01	0.1	0.16	0.06
6	60	36.302	20.42	5.14	0.1	0.02	0.0	0.1	0.02	0.1	0.18	0.06
5	80	36.304	20.19	4.98	0.5	0.23	0.0	0.1	0.04	0.5	0.16	0.08
4	100	36.285	19.33	4.71	1.6	0.51	0.0	0.1	0.16	1.2	0.09	0.06
3	200	36.216	15.75	2.85	17.1	0.03	0.1	0.0	1.00	5.8	0.00	0.01
2	300	36.023	12.74	2.73	23.2	0.02	0.1	0.0	1.40	10.4	0.00	0.01
1	400	35.552	10.36	2.64	27.2	0.02	0.1	0.0	1.73	13.9	0.00	0.01



CRUISE: 92603 STATION: B92603*6*1 DATE: 19MAR 92
 LATITUDE: 27 37.1 LONGITUDE: 95 0.0

djm

CHLOROPHYLL A $\mu\text{g}/\text{l}$

74

.200

.400

.600

.800

NITRATE $\mu\text{M}/\text{l}$

5.00

10.00

15.00

SILICA $\mu\text{M}/\text{l}$

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10.00

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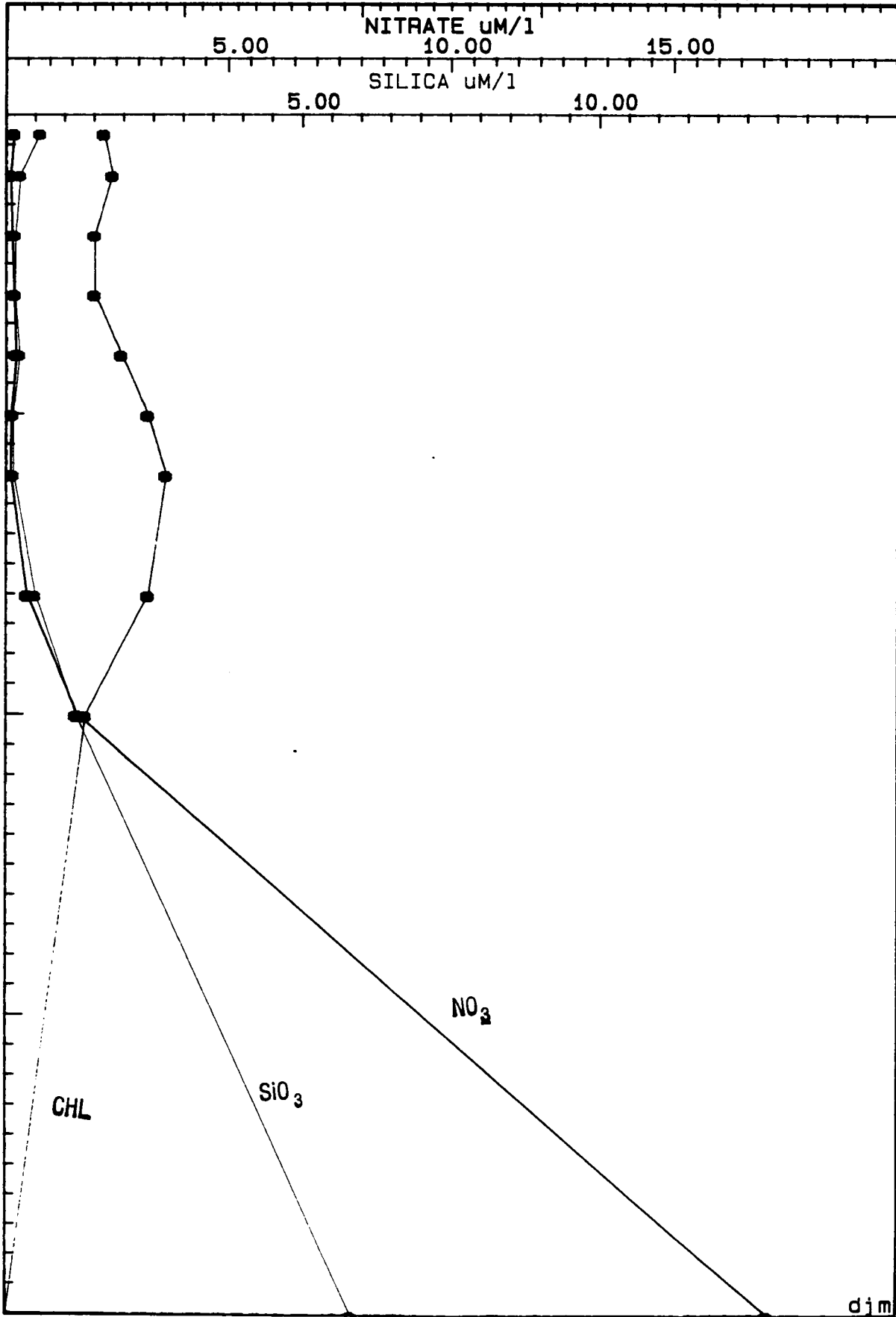
M
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S

50.0

100.

150.

200.



CHL

SiO₃

NO₃

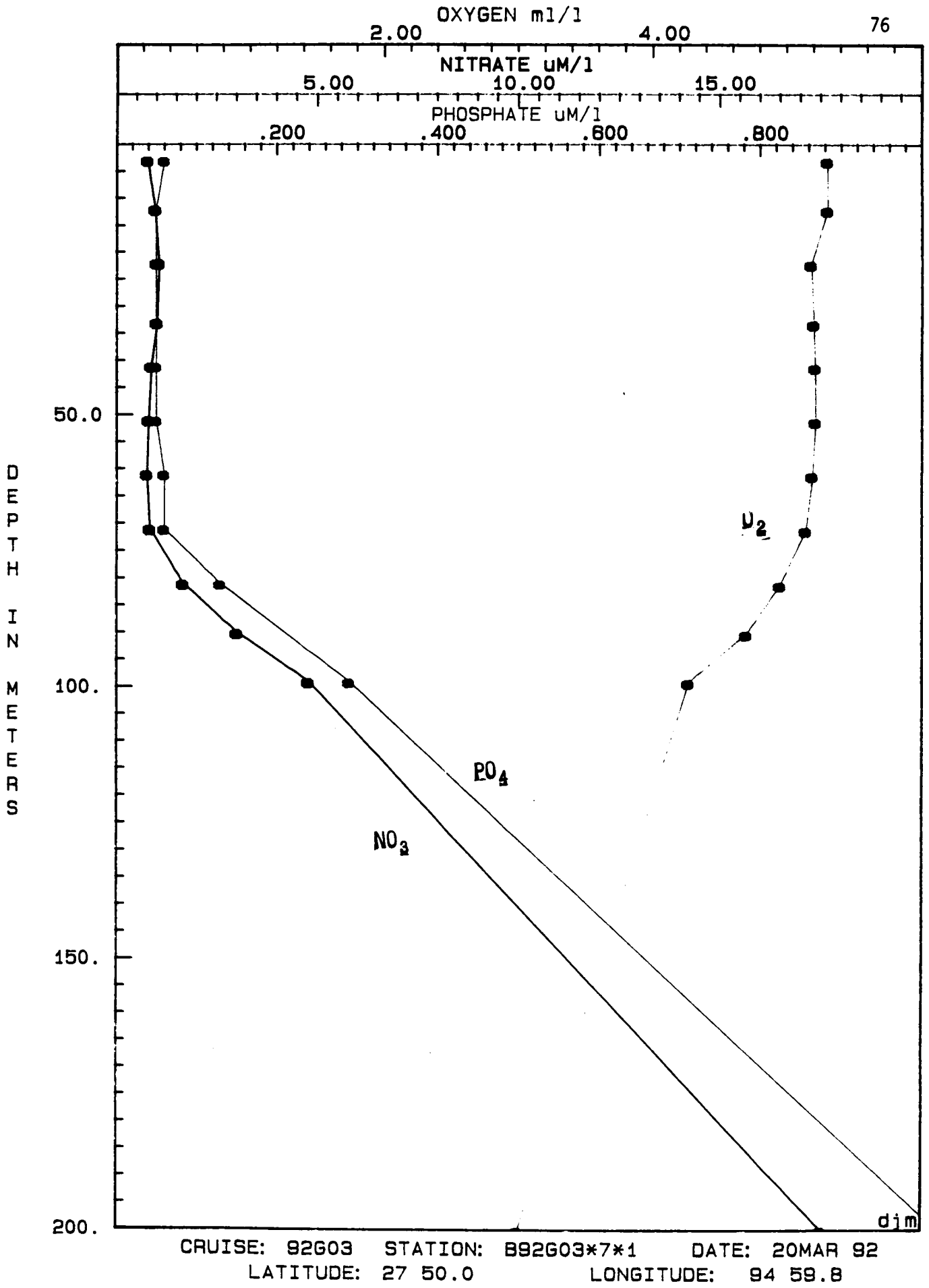
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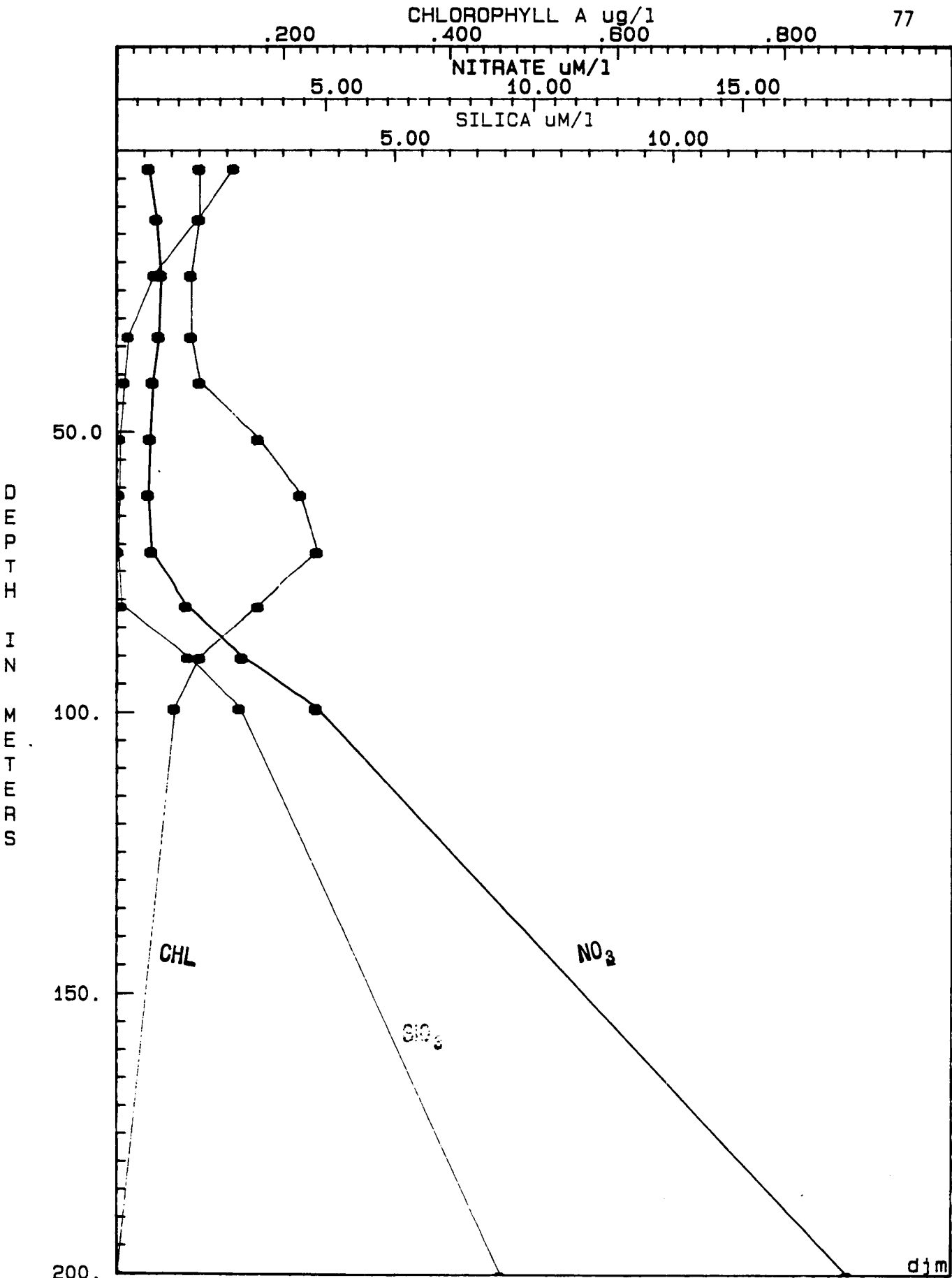
CRUISE: 92603 STATION: B92603*6*1 DATE: 19MAR 92
 LATITUDE: 27 37.1 LONGITUDE: 95 0.0

TEXAS A&M UNIVERSITY DEPT. of OCEANOGRAPHY HYDROGRAPHIC DATA

CRUISE 92G03 STATION 007 Date 20MAR
 LAT 27 50.06N LON 94 59.87W Time 554 GMT
 Samples 12

Btl	Z (m)	S (ppt)	T (C)	O (ml/l)	NO3 (	NO2 umol/l	NH4)	Urea	PO4	SiO3	Chl (mg/l)	Pha
12	3	35.722	20.11	5.30	0.8	0.07	0.2	0.0	0.06	2.1	0.10	0.00
11	12	35.854	20.12	5.30	1.0	0.05	0.0	0.0	0.05	1.5	0.10	0.02
10	22	36.282	20.33	5.18	1.1	0.04	0.0	0.0	0.05	0.7	0.09	0.02
9	33	36.283	20.45	5.20	1.0	0.02	0.1	0.1	0.05	0.2	0.09	0.02
8	41	36.284	20.20	5.21	0.9	0.01	0.0	0.1	0.05	0.1	0.10	0.02
7	51	36.265	20.03	5.21	0.8	0.00	0.0	0.1	0.05	0.1	0.17	0.05
6	61	36.259	19.97	5.19	0.8	0.02	0.0	0.3	0.06	0.0	0.22	0.09
5	71	36.238	19.86	5.14	0.8	0.10	0.1	0.2	0.06	0.0	0.24	0.12
4	81	36.263	19.78	4.95	1.7	0.29	0.1	0.1	0.13	0.1	0.17	0.07
3	90	36.259	19.54	4.70	3.0	0.06	0.5	0.0	0.29	1.3	0.10	0.05
2	99	36.300	19.40	4.27	4.8	0.06	0.1	0.0	0.29	2.2	0.07	0.04
1	200	36.012	15.17	3.00	17.5	0.04	0.2	0.2	1.02	6.9	0.00	0.01





CRUISE: 92G03 STATION: B92G03*7*1 DATE: 20MAR 92
LATITUDE: 27 50.0 LONGITUDE: 94 59.8

NITRATE $\mu\text{M}/\text{l}$

78

10.00

20.00

30.00

92-G-03
Composite Plot of All Stations

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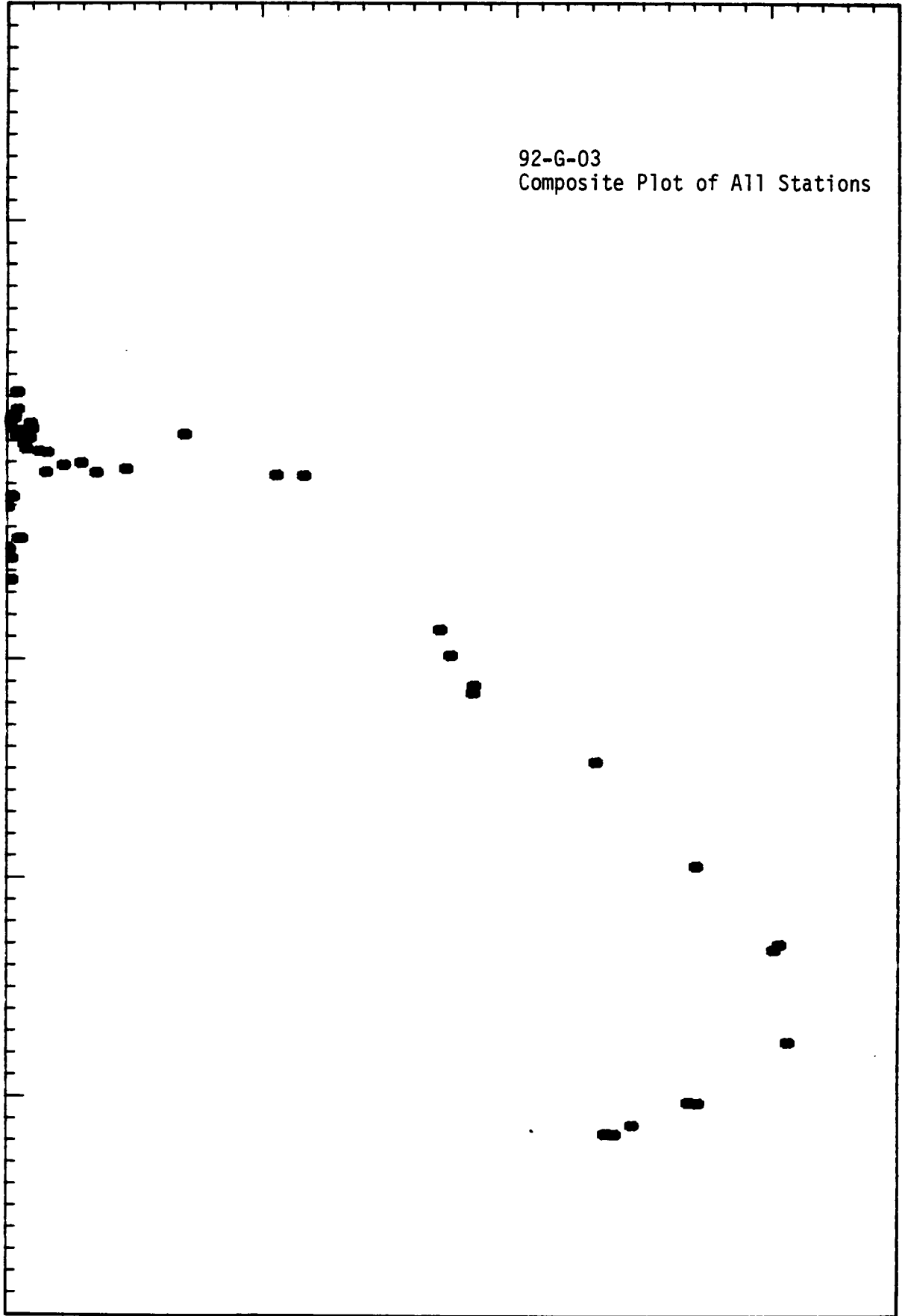
20.0

15.0

10.0

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1.00

1.50

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2.50

92-G-03
Composite Plot of All Stations

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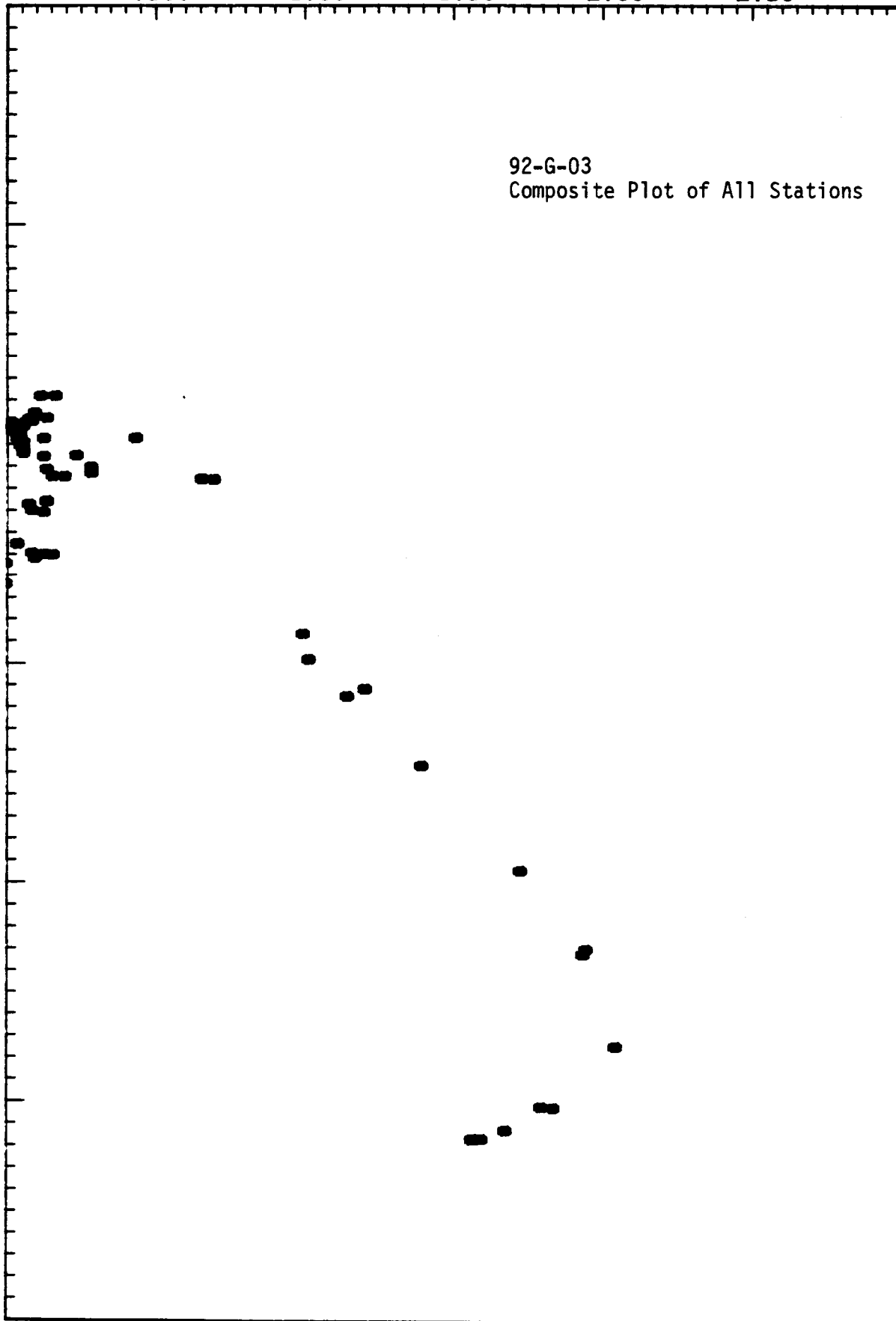
20.0

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SILICA $\mu\text{M}/1$

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20.00

30.00

80

92-G-03
Composite Plot of All Stations

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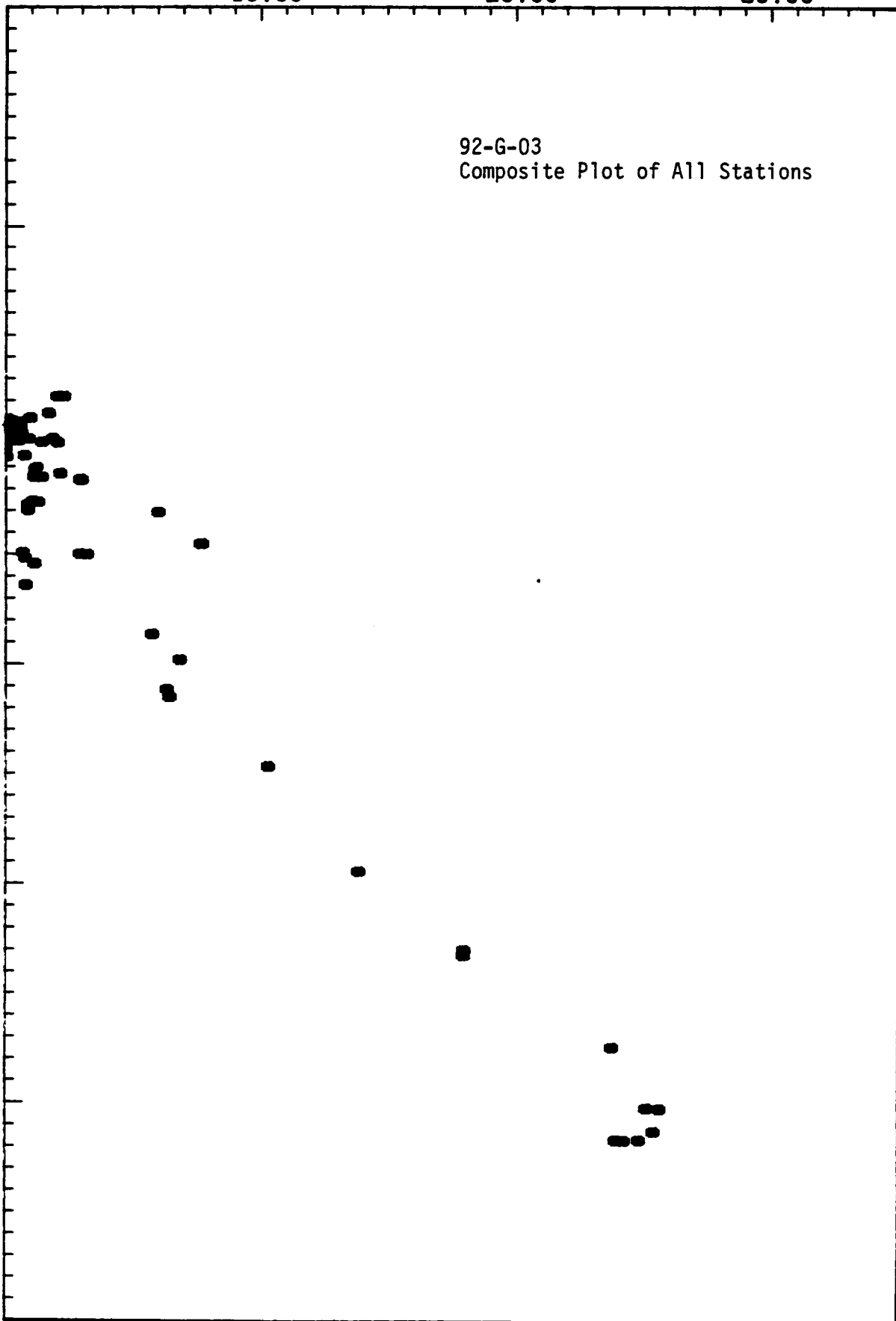
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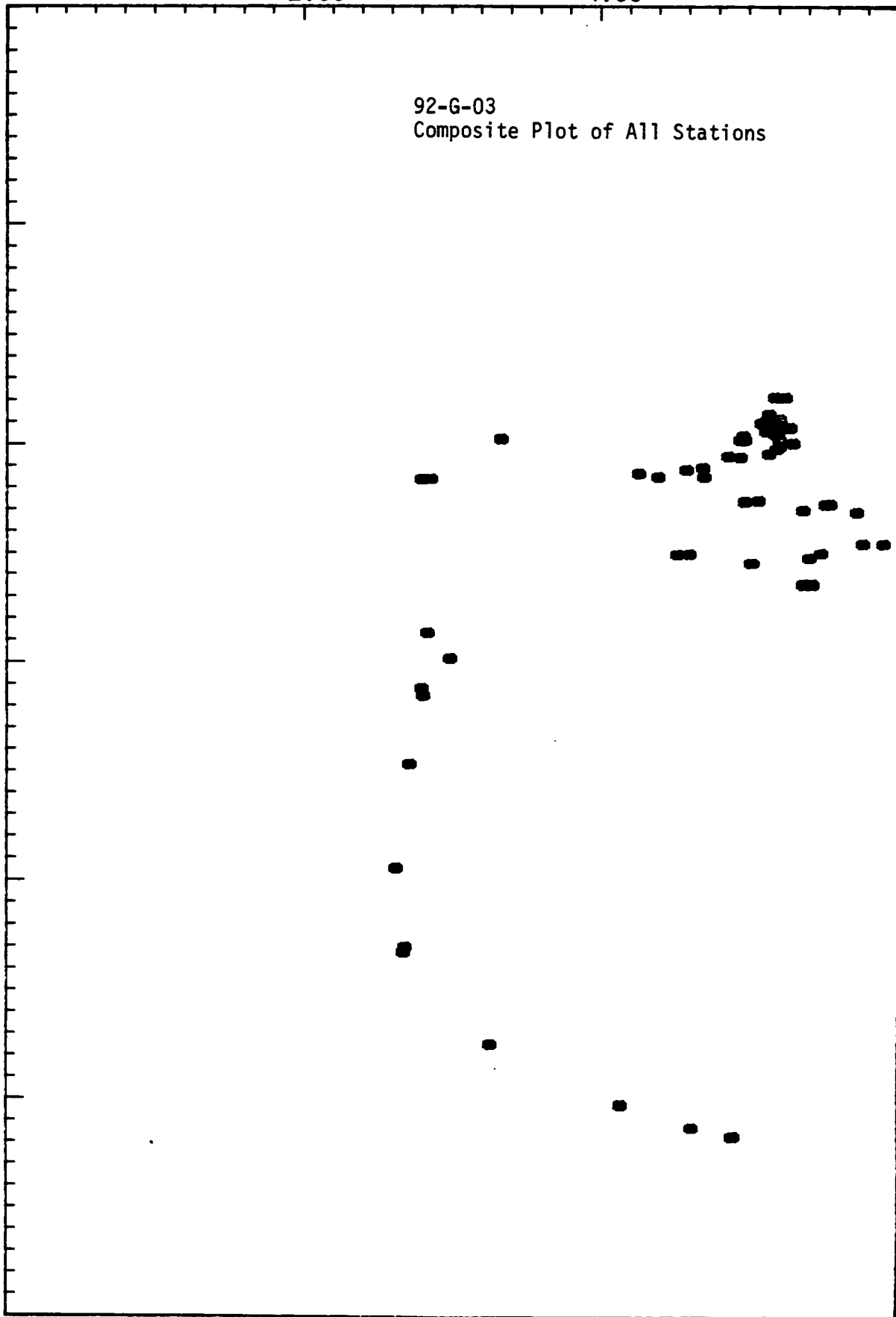
2.00

4.00

92-G-03
Composite Plot of All Stations

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UNDERWAY SAMPLING OVER THE INNER SHELF OFF GALVESTON

Samples for nutrient and chlorophyll analysis were drawn every 15 minutes from a flow-through line in GYRE's main lab on the night of 16 March, from 03:00 GMT to 07:45 GMT while GYRE was underway from Pelican Island in Galveston Bay to Station 01. This series of 20 samples, which were analyzed on board ship, show that nutrient and chlorophyll concentrations decreased sharply from inside Galveston Bay to the inner continental shelf of the Gulf of Mexico, but they also show that chlorophyll and most other nutrient concentrations increased again seaward of 29° 02' N. Within this region of increase in chlorophyll and nutrient concentrations, the surface salinity decreased from 28.8 PSU (sample 13) to 25.3 PSU (sample 20) before rising again to 25.9 PSU at Station 01 (CTD at $z = 2\text{m}$). Temperature also decreased within this frontal zone, falling from 20.6°C (sample 13) to 19.5°C (sample 20) to a local low of 17.8°C at Station 01 (CTD at $z = 2\text{m}$).

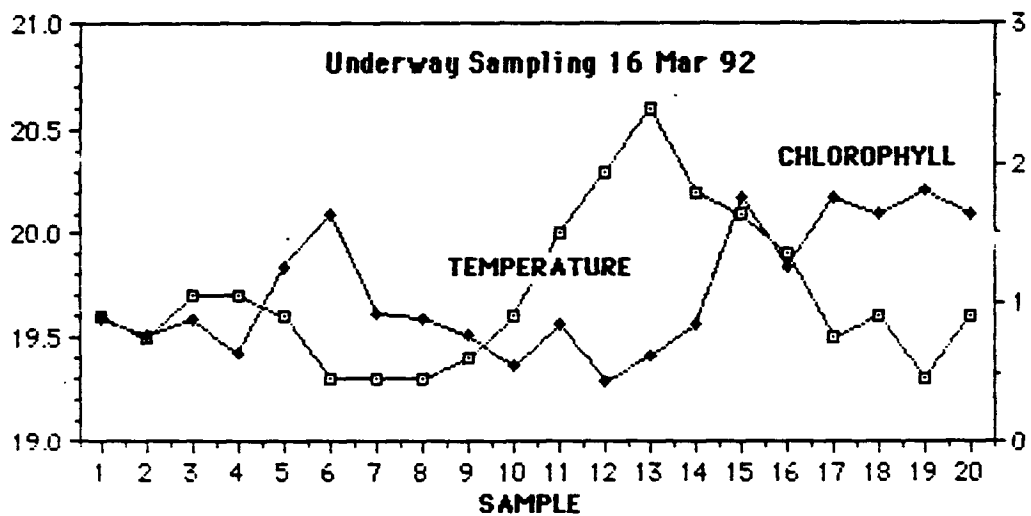
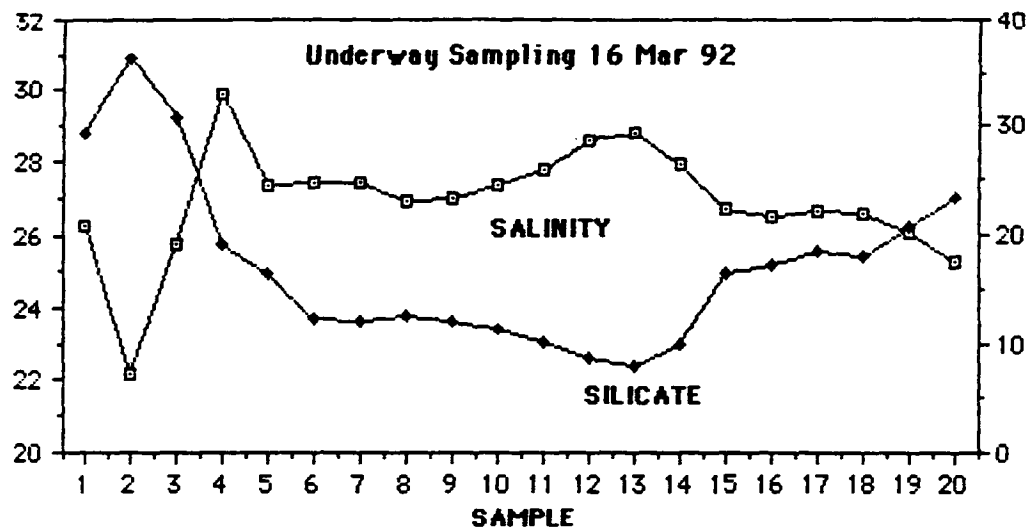
In summary, the zone of anomalously low salinity/high chlorophyll/high nutrient water extended from about 15 miles north of Station 01 to about midway between Stations 01 and 02. However, even though the temperature at the inshore edge of the cold water zone at 29° 02' N was almost 2°C warmer than was the surface temperature at Station 01, this inner shelf cold plume does not show up in the remotely-sensed sea surface temperature field summarized in the 7 March or 16 March AVHRR sea surface temperature maps that are presented elsewhere in this report.

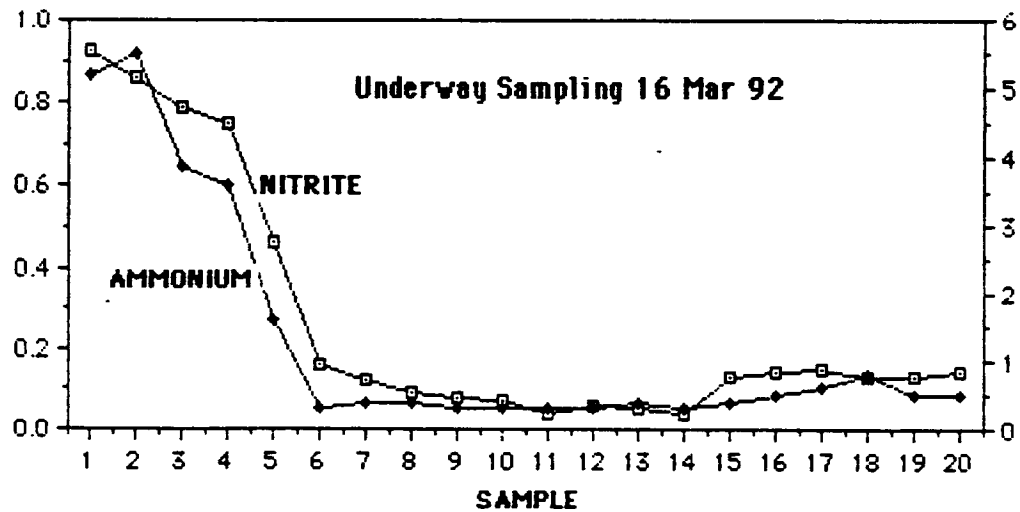
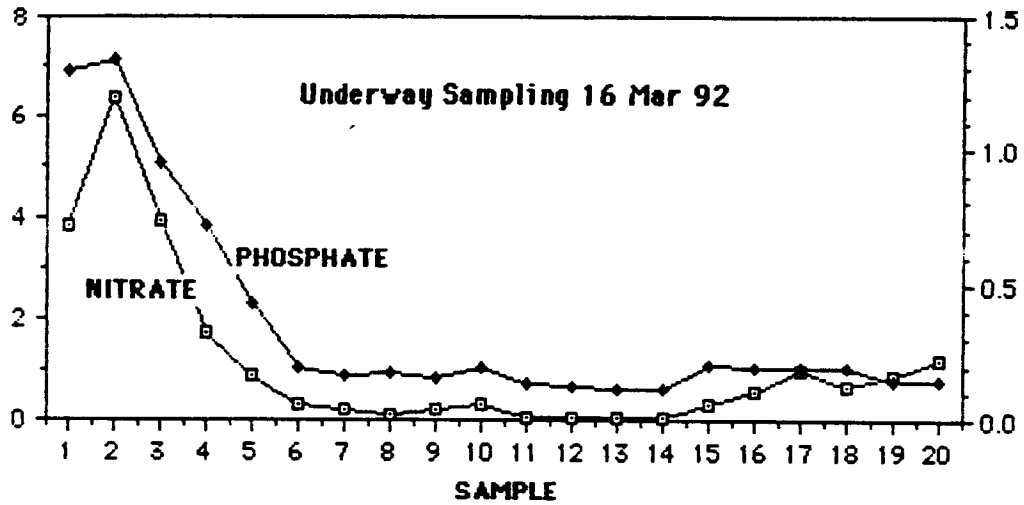
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CRUISE 92G03 UNDERWAY 16 MAR 92

Samples 20

GMT	LAT	LON	S (ppt)	T (C)	NO3 (NO2 umol/l	NH4)	Urea	PO4	SiO3	Chl (mg/l)	Pha
0256	29 18.6	94 48.3	26.249	19.6	3.8	0.92	5.2	5.0	1.29	29.3	0.88	0.56
0311	29 19.7	94 46.6	22.174	19.5	6.4	0.86	5.5	4.2	1.33	36.4	0.77	0.44
0326	29 20.6	94 43.9	25.719	19.7	3.9	0.79	3.9	4.0	0.95	30.7	0.88	0.33
0342	29 20.2	94 40.8	29.858	19.7	1.7	0.75	3.6	3.1	0.72	19.2	0.64	0.41
0357	29 18.5	94 39.1	27.353	19.6	0.9	0.46	1.6	1.65	0.43	16.4	1.26	0.25
0412	29 16.5	94 40.4	27.389	19.3	0.3	0.16	0.3	0.67	0.20	12.4	1.64	0.02
0427	29 14.5	94 41.6	27.427	19.3	0.2	0.12	0.4	0.74	0.17	12.1	0.93	0.21
0446	29 12.0	94 42.5	26.881	19.3	0.1	0.09	0.4	0.81	0.18	12.6	0.88	0.18
0457	29.10.6	94 44.2	27.011	19.4	0.2	0.08	0.3	0.87	0.16	12.2	0.77	0.18
0512	29 08.5	94 45.4	27.347	19.6	0.3	0.07	0.3	0.91	0.20	11.3	0.55	0.09
0527	29 06.5	94 46.8	27.749	20.0	<0.1	0.04	0.3	1.01	0.14	10.1	0.84	0.05
0542	29 04.4	94 48.2	28.581	20.3	<0.1	0.06	0.3	0.98	0.13	8.7	0.44	0.08
0557	29 02.3	94 49.6	28.821	20.6	<0.1	0.05	0.4	1.05	NA	7.9	0.63	0.06
0612	29 00.5	94 50.9	27.952	20.2	<0.1	0.04	0.3	1.01	0.12	9.9	0.85	0.06
0627	28 57.8	94 52.3	26.503	20.1	0.3	0.13	0.4	1.24	0.21	16.4	1.75	0.01
0642	28 55.6	94 53.5	26.703	19.9	0.6	0.14	0.5	1.01	0.20	17.3	1.26	0.18
0657	28 53.3	94 54.9	26.615	19.5	1.0	0.15	0.6	0.89	0.20	18.5	1.75	0.06
0712	28 51.1	94 56.1	26.561	19.6	0.7	0.13	0.8	1.01	0.20	17.9	1.64	0.17
0727	28 49.0	94 57.5	26.027	19.3	0.9	0.13	0.5	0.90	0.15	20.7	1.81	0.23
0742	28 46.9	94 58.9	25.251	19.6	1.2	0.14	0.5	0.96	0.15	23.2	1.64	0.17





GALVESTON BAY SAMPLING

The week prior to GYRE cruise 92G-03, on 10 March 92 and again on 12 March 92, samples for salinity, nutrient, and chlorophyll analysis were also collected from various locations within Galveston Bay. Our colleagues Larry Griffin and Andy Landry and their students from Texas A&M University at Galveston sampled A) Dickinson Bayou, B) Highland Bayou Diversionary Canal, and C) Houston Ship Channel from small boats. These estuarine samples were filtered through GF/F filters and frozen for analysis on board GYRE during cruise 92G-03. Volumes filtered for most of these samples were 125 ml or 250 ml. However, concentrations of CHL and PHAEO that are reported in the summary tables which follow have been extrapolated to μg per liter (x8 or x4) so that they may be compared directly to the rest of the data in this report.

L. L. GRIFFIN and A. M. LANDRY

GALVESTON BAY SAMPLING: 10 MARCH 1992 AFTER RAIN AND NORTHER
and again on 12 MARCH 1992

A) DICKINSON BAYOU (10 March 92, with one duplicate on 12 March 92)

SAMPLE #	SALINITY	DEPTH(m)	TEMP (C)	LOCATION
33	3.5	0.3	14.0	Dickinson Bay (Galveston Bay) 3-12-92
34	4.1	2.0	n/m	"
32	3.7	.3	13.0	Dickinson Bayou: C. Marker #29 (3-12-92)
2	3.2	.3	17.5	Dickinson Bayou: C. Marker #29 (3-10-92)
3	1.3	0.3	17.0	ca. 3 km upstream
4	1.3	ca. 1	n/m	"
5	0.5	0.3	19.0	about 4 km farther upstream
6	0.5	1	n/m	"
7	0.4	0.3	20	about 3 km upstream near Country Club
8	2.7	3.5	n/m	"
9	0.3	0.3	20.0	about 3 km upstream, midstream, near Dickinson sewage treatment effluent
10	1.0	2.0	n/m	"

GALVESTON BAY SAMPLING
 L. L. Griffin and A. M. Landry
 12 March 1992

B) HIGHLAND BAYOU DIVERSIONARY CANAL

SAMPLE #	SALINITY	DEPTH(m)	TEMP (C)	LOCATION
11	15.8	0.3	11.2	ICWW near Jone's Lake
12	11.4	0.3	17.0	Jones' Lake, piling ca. .5 km from HBDC
13	11.0	2.5	n/m	" , near bottom
14	8.7	0.3	19.0	inside mouth of Diversionary Canal
15	8.7	2.5	n/m	" , near bottom
16	3.8	0.3	19.0	about 5 km upstream of mouth
17	16.2	2.5	n/m	" , near bottom
18	3.2	0.3	19.0	ca. 3 km further upstream, midstream near effluent of Hitchcock treatment plant
19	12.0	2.5	n/m	" , near bottom

GALVESTON BAY SAMPLING
 L. L. Griffin and A. M. Landry
 12 March 1992

C) GALVESTON BAY- within 100m of Houston Ship Channel Markers
 NOTE: SAMPLE NUMBERS in Bay are NOT sequential

SAMPLE #	SALINITY	DEPTH(m)	TEMP (C)	LOCATION
21	4.8	0.3	14.0	HSCM #10 (surf)
22	15.2	5	n/m	HSCM #10 (5m)
20	2.9	0.3	14.0	HSCM #16 (surf)
23	15.8	5	n/m	" (5m)
24	1.8	0.3	14.0	HSCM #26 (5m), upstream of intersection with ICWW
25	13.5	5	n/m	" (5m)
26	3.1	0.3	14.8	HSCM #44 (surf)
27	10.4	5	n/m	" (5m)
28	2.0	0.3	14.2	HSCM #56 (surf)
29	13.0	5	n/m	" (5m)
30	1.8	0.3	15.0	HSCM #62 (surf)
31	10.7	5	n/m	" (5m)

TEXAS A&M UNIVERSITY DEPT. of OCEANOGRAPHY HYDROGRAPHIC DATA

Samples collected 10 March and 12 March 1992 by Griffin & Landry
GALVESTON BAY

Samples analyzed = 33

Station Code	Salin (ppt)	NO3 ()	NO2 (umol/l)	NH4 ()	Urea	PO4	SiO3	Chl (mg/l)	Pha
2	3.2	16.7	1.46	13.8	2.3	4.05	122	1.9	1.1
3	1.3	14.0	1.52	9.8	3.3	3.85	145	1.4	1.3
4	1.3	14.2	1.50	10.7	3.0	3.79	146	1.2	3.4
5	0.5	19.1	1.25	9.7	4.0	4.11	156	0.9	1.4
6	0.5	19.3	1.17	9.6	3.6	3.95	151	0.8	1.8
7	0.4	14.3	0.91	8.8	3.6	3.93	155	0.6	1.1
8	2.7	15.0	1.08	13.1	3.1	3.88	153	0.9	4.6
9	0.3	11.4	0.71	9.3	3.4	4.04	165	0.6	1.0
10	1.0	10.3	0.52	100.0	3.2	75.59	187	0.7	2.8
11	15.0	1.3	0.21	4.8	0.9	1.12	59	3.3	1.8
12	11.4	0.8	0.15	2.1	0.5	0.75	55	4.8	1.2
13	11.0	1.4	0.15	2.6	1.5	0.73	54	2.6	1.4
14	8.7	3.6	0.53	4.3	0.9	1.76	58	7.7	1.4
15	8.7	4.1	0.50	6.0	3.0	1.90	68	3.5	1.6
16	3.8	8.0	0.81	6.3	1.0	2.58	98	9.0	1.9
17	16.2	2.8	0.54	9.1	0.9	3.45	61	1.7	2.1
18	3.3	13.2	0.87	5.2	1.1	3.41	109	7.7	3.5
19	12.0	1.8	0.39	27.1	1.8	3.37	69	1.2	2.4
20	2.9	30.8	0.71	3.3	1.9	2.59	66	1.1	2.5
21	4.8	28.9	0.60	3.1	1.8	2.49	58	1.1	1.8
22	15.2	10.4	0.40	3.1	0.8	1.33	51	0.8	1.3
23	15.8	10.1	0.41	4.1	0.7	1.43	51	0.8	0.8
24	1.8	30.6	0.59	1.2	1.4	2.56	85	1.3	2.9
25	13.5	14.3	0.42	3.3	0.4	1.71	62	0.8	1.1
26	3.1	24.3	0.64	4.8	1.1	2.98	64	1.3	1.6
27	10.4	16.8	0.58	4.8	0.8	2.37	63	0.8	1.7
28	2.0	21.2	1.05	9.4	2.1	3.37	54	1.2	1.6
29	13.0	19.8	0.81	8.2	1.1	2.66	51	0.2	0.4
30	1.8	29.3	0.99	6.4	2.0	3.57	65	1.2	1.9
31	10.7	20.9	0.81	7.2	1.0	2.77	53	0.6	1.3
32	3.7	28.5	1.37	7.7	2.7	3.93	71	2.3	1.1
33	3.5	27.6	1.42	7.2	1.9	3.82	70	3.3	1.2
34	4.1	27.3	1.45	0.5	2.0	3.74	65	1.7	1.4

ACKNOWLEDGMENTS

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The Department of the Interior Mission

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.



The Minerals Management Service Mission

As a bureau of the Department of the Interior, the Minerals Management Service's (MMS) primary responsibilities are to manage the mineral resources located on the Nation's Outer Continental Shelf (OCS), collect revenue from the Federal OCS and onshore Federal and Indian lands, and distribute those revenues.

Moreover, in working to meet its responsibilities, the **Offshore Minerals Management Program** administers the OCS competitive leasing program and oversees the safe and environmentally sound exploration and production of our Nation's offshore natural gas, oil and other mineral resources. The MMS **Minerals Revenue Management** meets its responsibilities by ensuring the efficient, timely and accurate collection and disbursement of revenue from mineral leasing and production due to Indian tribes and allottees, States and the U.S. Treasury.

The MMS strives to fulfill its responsibilities through the general guiding principles of: (1) being responsive to the public's concerns and interests by maintaining a dialogue with all potentially affected parties and (2) carrying out its programs with an emphasis on working to enhance the quality of life for all Americans by lending MMS assistance and expertise to economic development and environmental protection.