

Data Report of the First Cruise of the Marion Off-shore Ecological Study (MOES-I)

C M Duncombe Rae

A report on physical and chemical data collected during the April 1987 MOES-I research cruise, organized under the auspices of the Southern Ocean Sciences Programme Committee of the South African Scientific Committee for Antarctic Research (SASCAR) and supported logistically by the Department of Environment Affairs

SOUTH AFRICAN NATIONAL SCIENTIFIC PROGRAMMES REPORT NO

159

1989

Issued by

Foundation for Research Development (FRD)
Council for Scientific and Industrial Research (CSIR)
P O Box 395
PRETORIA
0001

from whom copies of reports in this series are available on request.

Printed in the Republic of South Africa by Scientia Printers
of the Technical Support Services Group of the CSIR.

ISBN 0 7988 4512 0

Prepared by

C M Duncombe Rae
Department of Zoology
Rhodes University
GRAHAMSTOWN
6140

ABSTRACT

The first cruise of the Marion Off-shore Ecological Study (MOES-I), during April and May 1987, was a multi-disciplinary effort aimed at gaining a further understanding of the relationships between productivity and the environment in the vicinity of the Prince Edward Islands in the Southern Ocean. The report presents physical and chemical data collected on the cruise in the form of data listings and graphs.

SAMEVATTING

Die eerste vaart van die "Marion Off-shore Ecological Study (MOES-I)" wat gedurende April en Mei 1987 plaasgevind het, was 'n multi-dissiplinêre poging om 'n beter begrip te verkry oor die verwantskappe tussen produktiwiteit en die omgewing in die nabyheid van die Prins Edward-eilande in die Suidelike Oseaan. In die vorm van datalyste en grafieke bied die verslag fisiese en chemiese data, wat tydens die vaart versamel is, aan.

ACKNOWLEDGEMENTS

The hard work and dedication of all the participants is gratefully acknowledged. Dr Brian Boden gave permission to use the primary production and chlorophyll-a results in this report. The support and tolerance of the staff of the Rhodes University Computing Centre during the plotting of the figures are appreciated. The assistance of Captain Leith and the crew of *SA Agulhas* during the data collection was a great help. Participation in this cruise was made possible through the support and funding of the Department of Environment Affairs and the South African Scientific Committee for Antarctic Research (SASCAR).

TABLE OF CONTENTS

	Page
Abstract/Summary	(iii)
Acknowledgements	(iii)
Introduction	1
Objectives	1
Data Collection	2
CTD Data	2
Recording	2
Data Reduction	2
Sensors	2
Calculations	3
Bottle and Surface Data	3
Nutrient Analyses	3
Chlorophyll-a Determinations	3
Primary Production Estimations	3
Plankton Collections	4
Data Report Format	4
Station Distribution Charts	4
Station Information Listing	4
Data Listings	5
Headers	5
CTD Data	6
Bottle Data	6
Production Data	6
Underway Surface Data	7
Plots	7
References	8
Ship-based Participants in MOES-I	9
Station Distribution Charts	11
Station Information Listing	21
Data Listings and Plots	31
Salinity Plots	305
Surface Data Listing	373
Recent Titles in this series	379

INTRODUCTION

During the April 1987 Marion Island Base Relief voyage three projects supported by SASCAR, namely "The origins and distribution of potential energy production in the Prince Edward Island seas", "Survey of the benthos of the Prince Edward Islands", and "Characterization of the physical and chemical environment of the Prince Edward Island seas" utilized time on board *SA Agulhas*, the South African Antarctic research and supply vessel, to collect data in the vicinity of the islands.

This was the first cruise on which dedicated scientific time on *SA Agulhas* was made available to the Marion Off-shore Ecological Study (MOES) which was established in 1986. The research effort of the MOES programme was split into two components, biological and physical, because logistical factors involved in supplying the island base limited the time available on this cruise. Because island based activities required the vessel to remain in the vicinity of the islands, this first dedicated cruise was assigned to the biological component of the study, most of whose requirements were inshore. Despite the emphasis on the biological investigations, the cruise was strongly multi-disciplinary in nature.

A large number of surface and hydrographic stations were occupied in the vicinity of the Prince Edward Islands, both inshore and oceanic, at which conductivity, temperature and depth (CTD) measurements, Niskin bottle samples, plankton net hauls, benthic photographs and benthic dredge samples were taken between 12 April and 17 May 1987.

It is the results of the physical and chemical observations, done in support of the biological investigations, which are presented here.

OBJECTIVES

The objectives of the MOES programme are two-fold, namely "to obtain an understanding of the taxonomy, distribution and abundance of selected biotic components ... in the Prince Edward Islands' marine ecosystem" and "to obtain an understanding of the productivity of the Prince Edward Islands' marine ecosystem" (SASCAR, 1987, p11). This particular cruise was to address two of the key questions relating to these objectives, namely (KQ 1) to determine whether or not an island mass effect is operating at the Prince Edward Islands and if so to determine its basic chemical physical and biological expressions and (KQ 2) to determine whether near-shore productivity is in fact elevated and if so, the reasons for this elevation (SASCAR, 1987, pp 12, 13).

DATA COLLECTION

CTD DATA

The temperature and salinity profiles of the water column in the vicinity of the islands were determined using a Neil Brown Instruments Systems Mk III CTD. Each cast was done to 1000 db or within 20 m of the bottom. In some cases it was difficult to fulfil the second condition since the bottom topography is highly irregular in the vicinity of the islands and drifting a short distance on the surface may mean a change of hundreds of metres in the water column depth (cf. Station 13 - depth 880 m and 840 m at the beginning and end of the station, cast done to only 230 m due to the bottom rising rapidly to 300- m and falling off again, vessel on station for 53 minutes, distance drifted 1.6 km).

Recording

Data were recorded onto magnetic tape using a Hewlett Packard HP 85 with software written at the National Research Institute for Oceanology, Stellenbosch. This combination of software and hardware records one reading per second and the sensor was lowered at about one metre per second resulting in a data collection frequency of approximately one reading per decibar (metre). The data were transferred to the CYBER at Rhodes University and all further calculations and data manipulations were done there.

Data Reduction

Repeat data points at the surface and the bottom of the cast were removed by eye. The data were then passed through a 5 point median filter to remove spikes. Because of wave action and the roll of the ship, the first stable readings were obtained at typically 3 m depth at most stations. These stable results were used to extrapolate back to the surface values recorded here.

Sensors

After the cruise the pressure sensor was calibrated against a Budenberg Dead Weight Tester (Model 280D), the temperature sensor against a calibrated Hewlett Packard 1804A Quartz Thermometer and the conductivity sensor against IAPSO Standard Sea Water P103 85-10-11. The calibrations were done at the National Research Institute for Oceanology, Stellenbosch. No corrections were made for sensor response times.

Calculations

Depth of the sensor and the salinities were calculated from the pressure and conductivity respectively using UNESCO, 1983. Densities were calculated according to the International Equation of State for Sea-Water 1980 (Millero *et al.*, 1980; Millero and Poisson, 1981).

BOTTLE AND SURFACE DATA

Water samples through the water column for chemical, chlorophyll-a and productivity analyses were taken using 8 l plastic Niskin bottles in line on a steel hydrographic wire, triggered by brass messenger. Near-surface samples were taken at depths indicated by the light regime, at 100%, 50%, 25%, 10%, and 1% incident light levels. No water samples were taken below 200 m depth. The depth was estimated by wire-out. Water samples taken while underway were from the scientific sea-cock, the inlet of which is at about three metres depth. Surface samples on station were taken with a plastic bucket on a nylon rope.

Nutrient Analyses

Chemical analyses for the micronutrient ions nitrate, nitrite, phosphate and silicate followed the methods of Mostert (1983). Determinations were performed using a Technicon AutoAnalyser II system. Samples were stored frozen at -18°C when analysis could not be done within 3 hours of sampling. No samples were stored for longer than 36 hours before analysis.

Chlorophyll-a Determinations

Chlorophyll-a concentrations were determined immediately after collection following SCOR/UNESCO (1966).

Primary Productivity Estimations

Primary production potential was estimated by determining the uptake of ^{14}C -labelled sodium bicarbonate in incubated samples of phytoplankton. Initial carbonate content of the sample was calculated from the alkalinity, determined following Strickland and Parsons (1968). The method followed was that used at Rhodes University, outlined by Parker (1984), with the following changes. Samples were incubated for six hours on deck instead of in the Gargas-Lonholdt incubator. After incubation samples were differentially filtered through various pore size membrane filters to obtain estimates of the pico-, nano-, micro- and net-plankton productions.

Time	Time (GMT or Universal Time) at which the station commenced.
Station	Station number as recorded in the laboratory log books. Due to a misunderstanding affecting the numbering of the CTD stations, all underway stations up to the first CTD station have been renumbered by adding 200 to the station number. This was the simplest method of re-establishing a unique numbering system on the voyage. To maintain identity with the station log books, this numbering system has been retained here.
Latitude(S)	Latitude in degrees and minutes South.
Longitude(E)	Longitude in degrees and minutes East.
Pos	Station position or type. I indicates station done at the Prince Edward Islands; U indicates surface station done while underway.
CTD	Conductivity temperature depth cast done.
Chl	Chlorophyll-a determination done.
Sil	Silicate analysis done.
NO3	Nitrate analysis done.
NO2	Nitrite analysis done.
PO4	Phosphate analysis done.
Lig	Light meter cast done. In addition, secchi disk readings were taken at all production stations.
PPP	Primary production potential estimated. Secchi disk readings were taken at all production stations.
Net	WP-2 net haul done.
Dre	Benthic dredge sample taken.

DATA LISTINGS

Headers

Indicated at the top of each listing page is:

Ship	M/V <i>SA Agulhas</i> .
Cruise	Two letter ship identifier (AG) followed by the voyage number (49) and the acronym of the cruise (MOES-I).
Date	Given in year.month.day format.
Station	The station number as recorded in the laboratory log books. For an explanation of the numbering system see the note under Station Information Listing, above.
Cast	The type of cast for which data is presented, either CTD or BOTTLE. In all cases the CTD data were recorded on the up cast.

Time Universal (GMT) time at the start of the station.
 Position The latitude (South) and longitude (East) of the station position in degrees and minutes.
 Depth Water column depth (meters) at station beginning and station end are both given if different, separated by /.

CTD Data

CTD readings and various calculated parameters are listed for various standard depths under the column headings:

Depth Depth (metres).
 Press Pressure (decibars).
 Temp In situ temperature ($^{\circ}\text{C}$).
 θ Potential temperature ($^{\circ}\text{C}$).
 Salt Salinity (practical salinity units, psu).
 Density Density using in situ temperature (kg.m^{-3}).
 σ_t σ_t using in situ temperature (kg.m^{-3}). Note that this is calculated according to Gill (1982) who gives $\sigma = (-1000) + 0.025$.
 Pot.Dens Potential density (kg.m^{-3}), the density calculated using the potential temperature.
 σ_{θ} $\sigma_{\theta} = \text{potential density} - 1000 + 0.025$ (kg.m^{-3}). This is given for consistency with the plotted values.

Bottle Data

The results of analyses carried out on samples collected using the Niskin bottle samplers are indicated under the following column headings. Physical parameters are obtained from the CTD readings at the bottle wire-out depth.

Depth Depth by wire-out (metres).
 Temp In situ temperature ($^{\circ}\text{C}$) from CTD at wire-out depth.
 θ Potential temperature ($^{\circ}\text{C}$).
 Salt Salinity from CTD at wire-out depth (practical salinity units, psu).
 Chl-a Chlorophyll-a concentration (mg.m^{-3}).
 SiO_2 Silicate concentration (mmol.m^{-3}).
 NO_3 Nitrate concentration (mmol.m^{-3}).
 NO_2 Nitrite concentration (mmol.m^{-3}).
 PO_4 Phosphate concentration (mmol.m^{-3}).

Production Data

Results of the production incubations are indicated under the following column headings:

Filter size	Pore size of the filter through which the sample was passed after incubation.
Carbon Uptake	Calculated amount of carbon utilized by phytoplankton ($\text{mg(C).m}^{-3}.\text{hr}^{-1}$). Values have not been adjusted in any way to account for negative values.
Total	The sum of the carbon taken up by the filtered fractions.
Areal Production	Areal production = Maximum carbon uptake (P_{max}) x 10% light depth ($Z_{0.1}$).
Depth	The wire-out depth at which the sample was taken.
Light	The percentage of the incident light intensity at which the sample was incubated.

Underway Surface Data

The results of the underway nutrient determinations are listed after the main data listings and plots under the following headings:

Date	Date on which the station commenced according to Universal Time (GMT).
Time	Time (GMT or Universal Time) at which the station commenced.
Stn	Station number as recorded in the laboratory log books. For an explanation of the numbering system see the note under Station Information Listing, above.
Latitude	Latitude in degrees and minutes South.
Longitude	Longitude in degrees and minutes East.
Pos	Station position or type. I indicates station done at the Prince Edward Islands; U indicates surface station done while underway.
Chl-a	Chlorophyll-a concentration (mmol.m^{-3}).
SiO ₂	Silicate concentration (mmol.m^{-3}).
NO ₃	Nitrate concentration (mmol.m^{-3}).
NO ₂	Nitrite concentration (mmol.m^{-3}).
PO ₄	Phosphate concentration (mmol.m^{-3}).

Plots

Each set of CTD and bottle data listings is followed by three plots: potential temperature ($^{\circ}\text{C}$) and salinity (psu) against pressure (decibar); σ_{θ} (kg.m^{-3}) against pressure (decibar); and salinity (psu) against potential temperature ($^{\circ}\text{C}$). Lines of constant σ_{θ} are indicated in the θS plots.

REFERENCES

- GILL, A.E. 1982. Atmosphere-Ocean Dynamics. Academic Press, London, 662 pp.
- MILLERO, F.J., C.T. CHEN, A. BRADSHAW and K. SCHLEICHER, 1980. A new high pressure equation of state for seawater. *Deep-Sea Research* 27A: 255-264.
- MILLERO, F.J. and A. POISSON, 1981. International one-atmosphere equation of state for seawater. *Deep-Sea Research* 28A: 625-629.
- MOSTERT, S.A. 1983. Procedures used in South Africa for the automatic photometric determination of micronutrients in seawater. *S. Afr. J. Mar. Sci.*, 1: 189-198.
- PARKER, L.D. 1984. A Contribution to the Oceanology of the Prince Edward Islands. MSc thesis, Rhodes University, Grahamstown, 97 pp.
- SASCAR, 1987. South African Southern Ocean Research Programme. *S. Afr. Natl Sci. Progr. Rep.* 134, 58 pp.
- SCOR/UNESCO WORKING GROUP 17, 1966. Determination of photosynthetic pigments in seawater. UNESCO Monographs on Oceanographic Methodology, 1, 69 pp.
- STRICKLAND, J.D.H. and T.R. PARSONS, 1968. A Practical Handbook of Seawater Analysis. Bulletin 168, Fisheries Research Board of Canada, Ottawa, 311 pp.
- UNESCO, 1983. Algorithms for computation of fundamental properties of seawater. Unesco Technical Papers in Marine Science, 44, 53 pp.

SHIP-BASED PARTICIPANTS IN MOES-I

Contributor	Affiliation	Principal responsibility
Mr C.M. Duncombe Rae*	Rhodes	Chief Scientist, CTD data.
Dr B.P. Boden	Rhodes	Underway bioluminescence & fluorescence, chlorophyll-a determinations, plankton.
Ms H.M. Barber	Rhodes	Nutrient analysis, primary production determinations.
Mr N. Tarr-Graham	Rhodes	Winch operator, laboratory assistant.
Dr M. Lucas*	UCT	Microbial production, ammonia analysis.
Mr M. Taylor	UCT	Sample collection, laboratory assistant.
Ms J. Burbidge	UCT	Laboratory assistant.
Ms D. Gianakouras*	UCT	Benthic sampling.
Mr C. Claydem	UCT	Benthic sampling.
Mr C. Rohleder	SFRI	Camera technician.

* Team leader

Institute Addresses

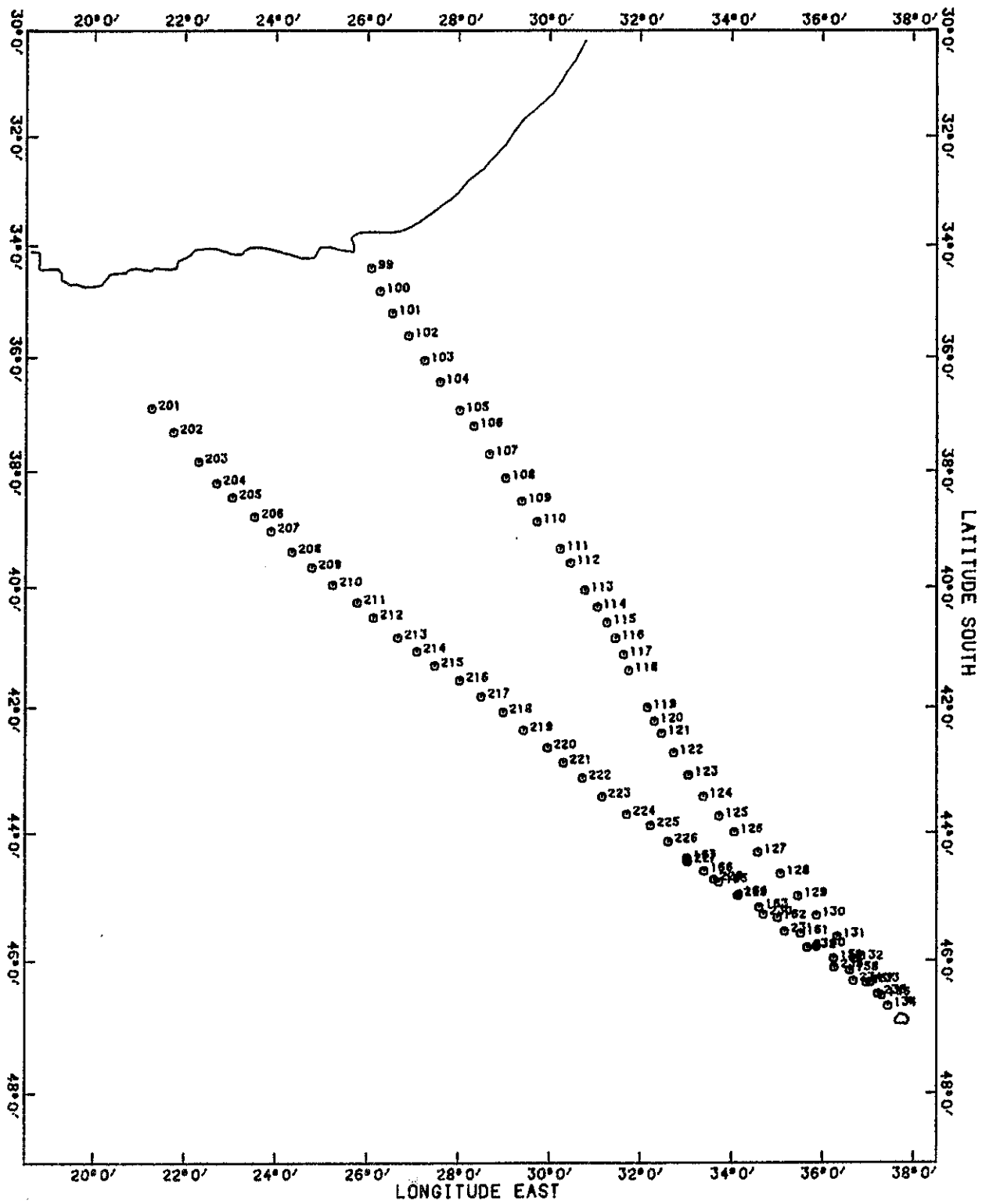
Rhodes Southern Oceans Group, Zoology Department, Rhodes University, P.O. Box 94, 6140 GRAHAMSTOWN, South Africa.

UCT Marine Biology Unit, Zoology Department, University of Cape Town, Private Bag, 7700 RONDEBOSCH, Cape Town, South Africa.

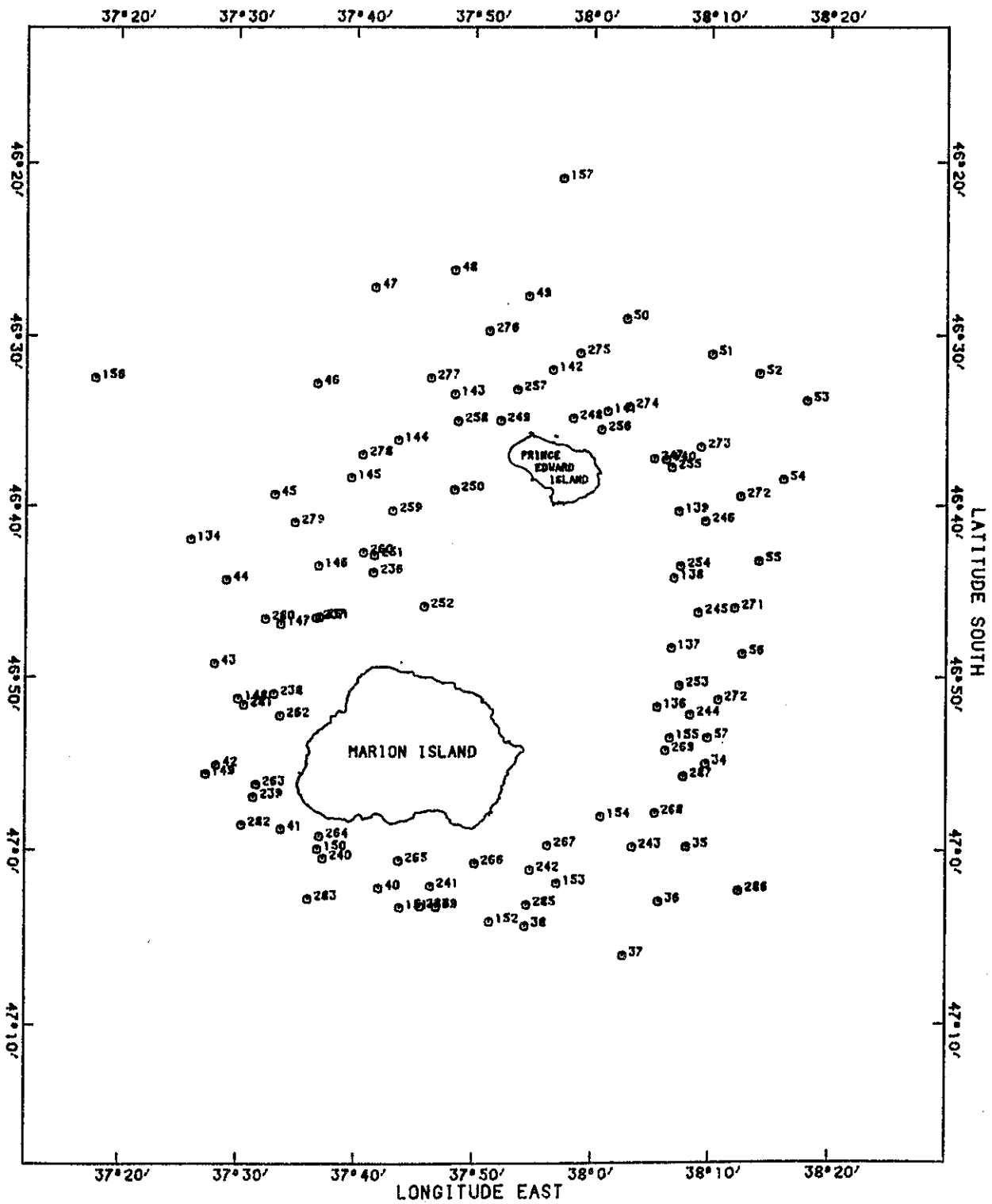
SFRI Sea Fisheries Research Institute, Private Bag X2, 8012 ROGGEBAAI, Cape Town, South Africa.

Station Distribution Charts

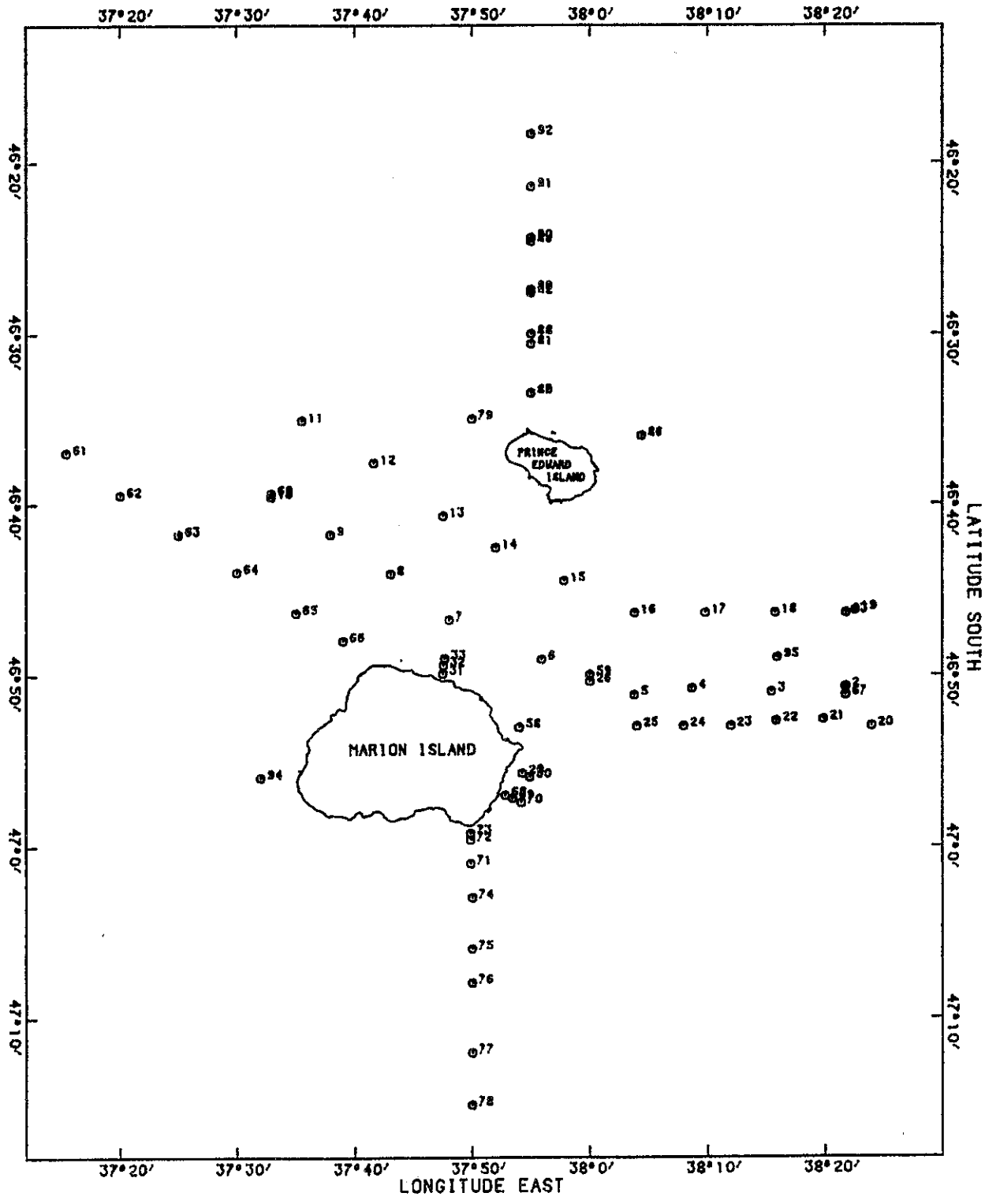
SA AGULHAS V49 (MOES 1) UNDERWAY STATIONS



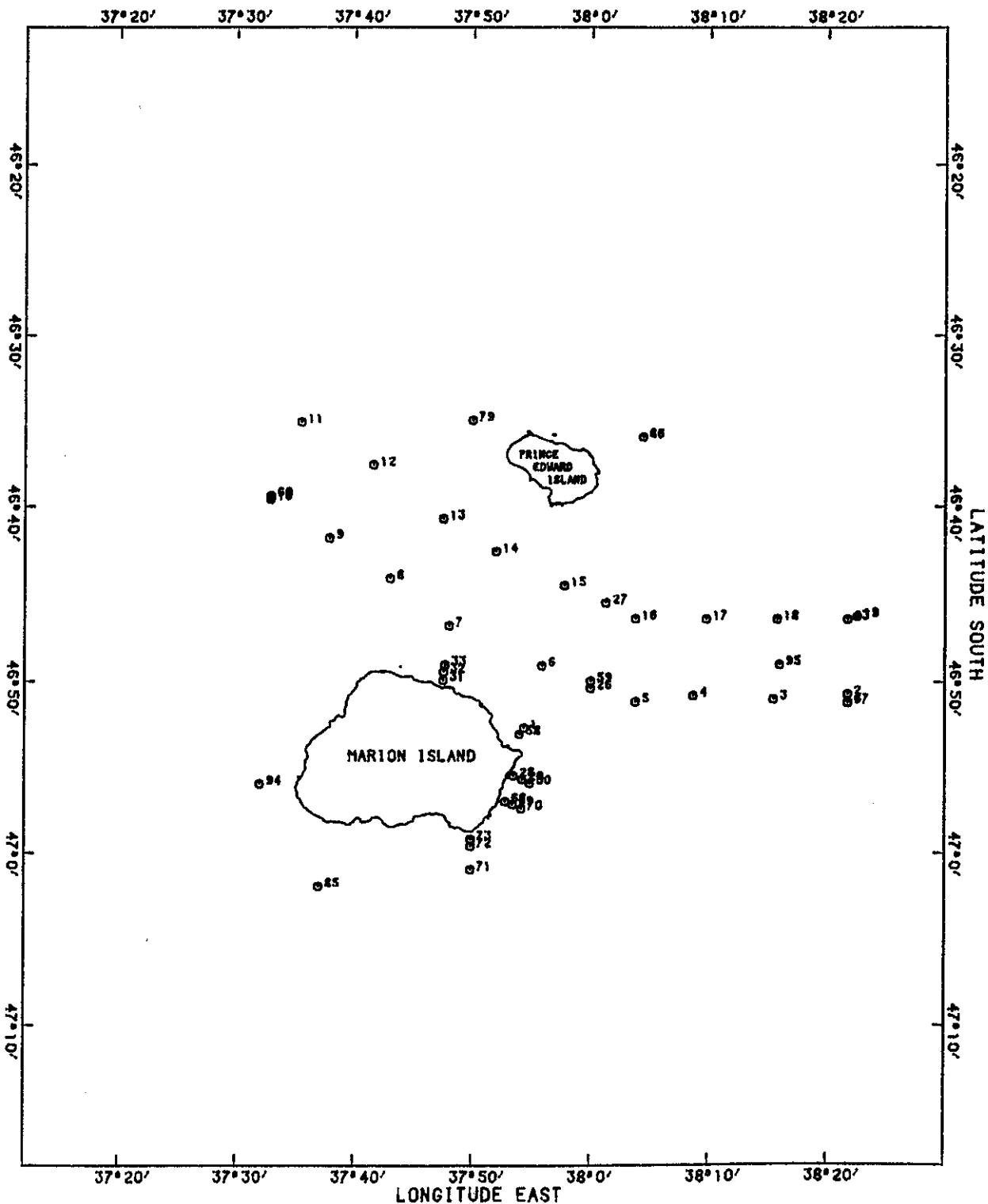
SA AGULHAS V49 (MOES 1) SURFACE SAMPLES



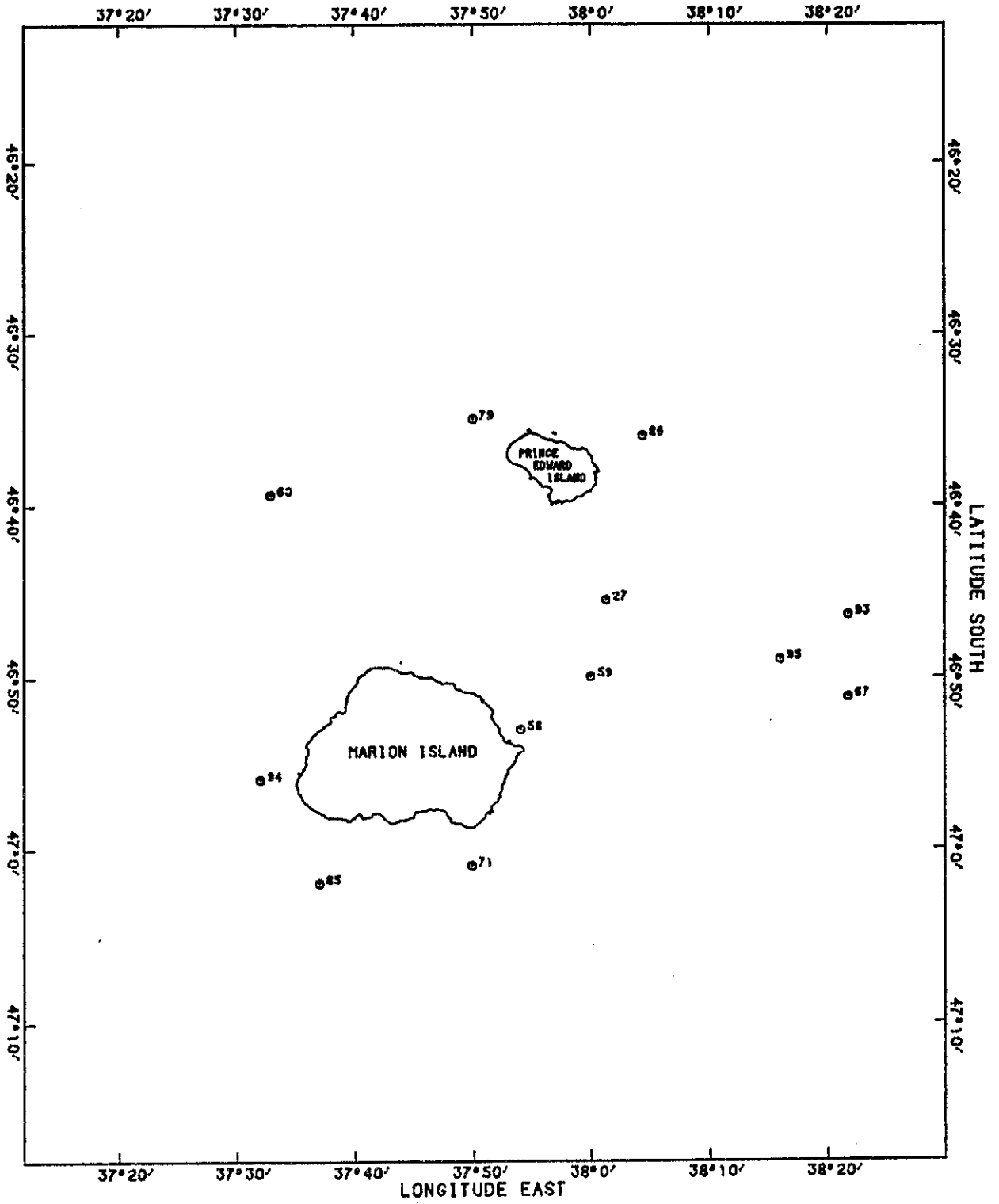
SA AGULHAS V49 (MOES 1) CTD CASTS



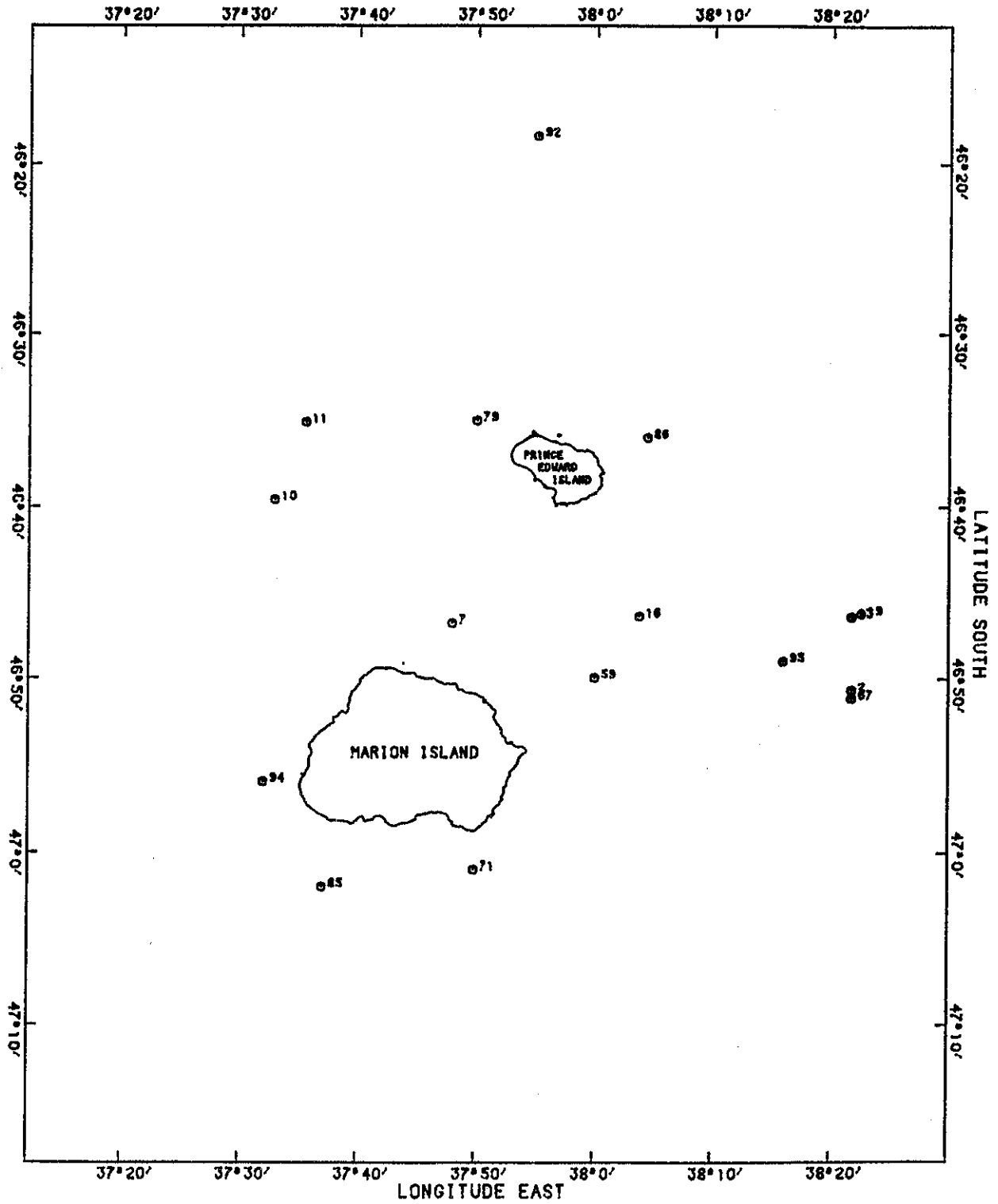
SA AGULHAS V49 (MOES 1) BOTTLE CASTS



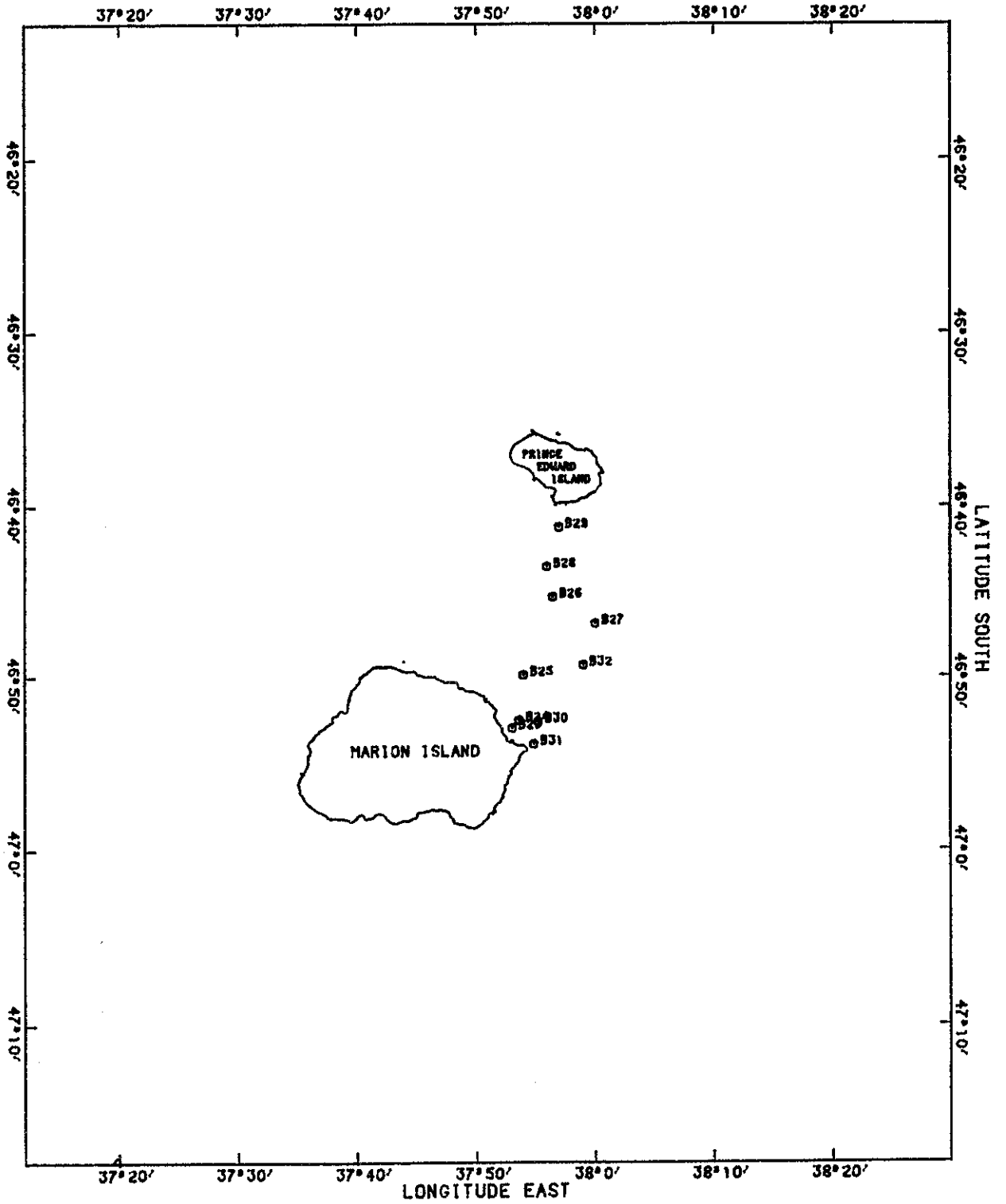
SA AGULHAS V49 (MOES 1) PRODUCTION STATIONS



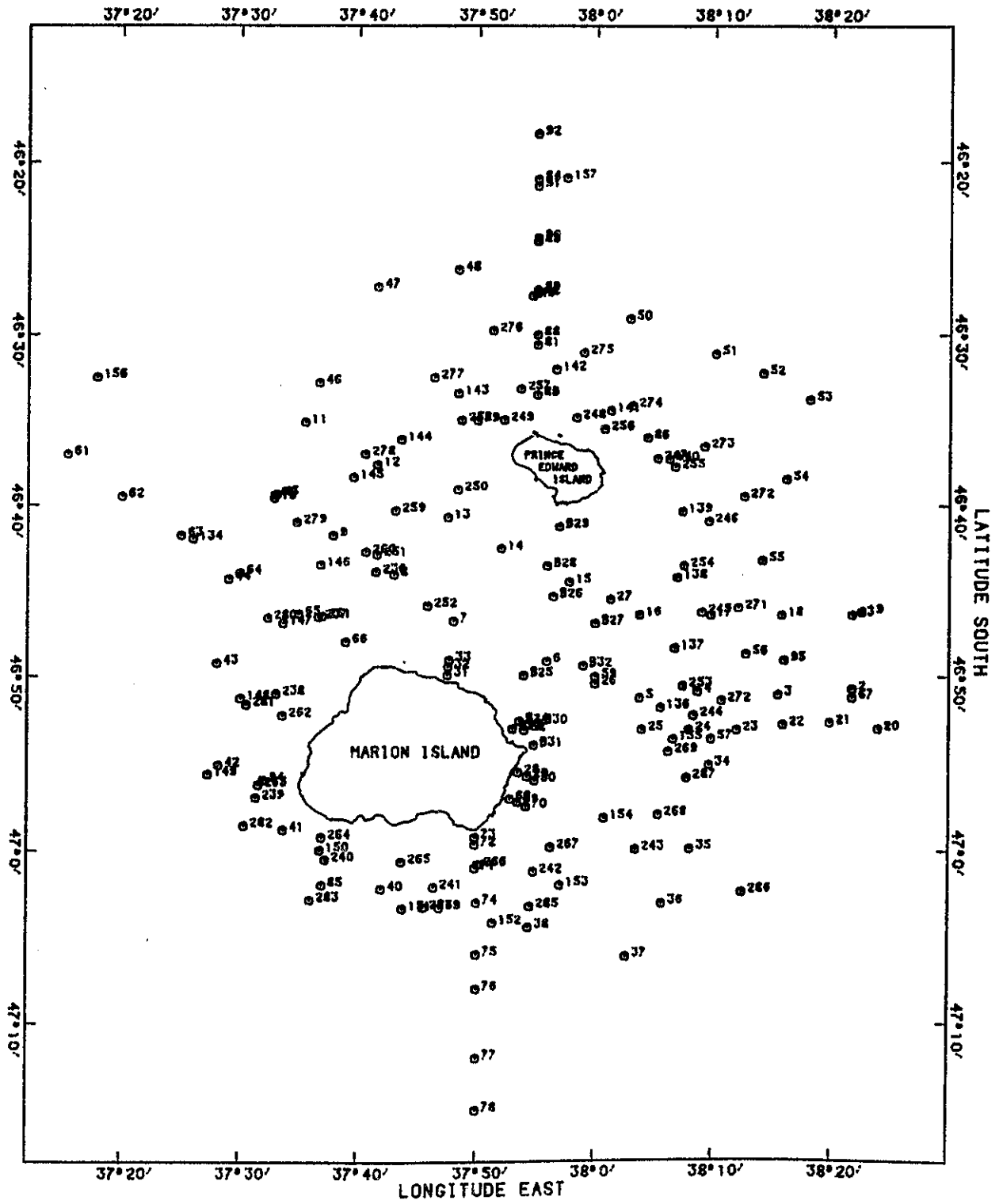
SA AGULHAS V49 (MOES 1) PLANKTON NET HAULS



SA AGULHAS V49 (MOES 1) BENTHIC DREDGES



SA AGULHAS V49 (MOES 1) ALL SAMPLES AND STATIONS



Station Information Listing

Date	Time	Station	Latitude(S)	Longitude(E)	Pos	CTD	Chl	Sil	NO3	NO2	PO4	Lig	PPP	Net	Dre
87.04.09	09h10	201	36°03.571'	21°15.563'	U	/	/								
87.04.09	11h39	202	37°18.657'	21°44.234'	U	/	/								
87.04.09	14h29	203	37°49.690'	22°17.522'	U	/	/								
87.04.09	18h15	204	38°12.390'	22°41.410'	U	/	/								
87.04.09	20h00	205	38°27.532'	23°02.655'	U	/	/								
87.04.09	22h15	206	38°47.505'	23°31.900'	U	/	/								
87.04.09	23h45	207	39°02.705'	23°53.500'	U	/	/								
87.04.10	00h08	208	39°23.759'	24°21.147'	U	/	/								
87.04.10	02h06	209	39°39.835'	24°47.298'	U	/	/								
87.04.10	04h09	210	39°57.711'	25°14.691'	U	/	/								
87.04.10	06h00	211	40°15.847'	25°46.761'	U	/	/								
87.04.10	08h12	212	40°31.000'	26°08.000'	U	/	/								
87.04.10	10h29	213	40°51.000'	26°39.700'	U	/	/								
87.04.10	12h11	214	41°04.795'	27°04.698'	U	/									
87.04.10	13h58	215	41°19.058'	27°28.361'	U	/	/	/	/						
87.04.10	16h03	216	41°33.410'	28°01.450'	U	/	/	/	/						
87.04.10	18h06	217	41°49.374'	28°29.954'	U	/	/	/	/						
87.04.10	20h00	218	42°04.615'	28°58.850'	U	/	/	/	/						
87.04.10	22h05	219	42°22.320'	29°25.600'	U	/	/	/	/						
87.04.11	00h20	220	42°39.380'	29°57.140'	U	/	/	/	/						
87.04.11	02h02	221	42°53.400'	30°18.200'	U	/	/	/	/						
87.04.11	03h54	222	43°08.099'	30°43.730'	U	/	/	/	/						
87.04.11	05h54	223	43°25.563'	31°09.500'	U	/	/	/	/						
87.04.11	08h05	224	43°42.261'	31°41.944'	U	/	/	/	/						
87.04.11	10h00	225	43°52.911'	32°13.621'	U	/	/	/	/						
87.04.11	12h00	226	44°08.000'	32°37.000'	U	/	/	/	/						
87.04.11	13h55	227	44°27.000'	33°02.000'	U	/	/	/	/						
87.04.11	16h02	228	44°43.735'	33°35.897'	U	/	/	/	/						
87.04.11	18h00	229	44°58.996'	34°07.804'	U	/	/	/	/						
87.04.11	20h10	230	45°16.750'	34°41.639'	U	/	/	/	/						
87.04.11	22h04	231	45°32.725'	35°09.498'	U	/	/	/	/						
87.04.12	00h14	232	45°47.960'	35°39.560'	U	/	/	/	/						
87.04.12	02h12	233	46°06.530'	36°15.230'	U	/	/	/	/						
87.04.12	04h11	234	46°19.070'	36°40.300'	U	/	/	/	/						
87.04.12	06h05	235	46°31.100'	37°12.600'	U	/	/	/	/						
87.04.12	16h00	236	46°43.926'	37°41.520'	UI	/	/	/	/	/					
87.04.12	16h30	237	46°46.578'	37°36.684'	UI	/	/	/	/	/					

Date	Time	Station	Latitude(S)	Longitude(E)	Pos	CTD	Chl	Si1	NO3	NO2	PO4	Lig	PPP	Net	Dre
87.04.12	17h00	238	46°51.006'	37°33.084'	UI	/	/	/	/	/					
87.04.12	17h30	239	46°56.994'	37°31.368'	UI	/	/	/	/	/					
87.04.12	18h01	240	47°00.534'	37°37.296'	UI	/	/	/	/	/					
87.04.12	18h31	241	47°02.106'	37°46.392'	UI	/	/	/	/	/					
87.04.12	19h00	242	47°01.176'	37°54.810'	UI	/	/	/	/	/					
87.04.12	19h30	243	46°59.850'	38°03.468'	UI	/									
87.04.12	20h00	244	46°52.164'	38°08.370'	UI	/	/	/	/	/					
87.04.12	20h30	245	46°46.236'	38°09.030'	UI	/	/	/	/	/					
87.04.12	21h00	246	46°40.920'	38°09.606'	UI	/	/	/	/	/					
87.04.12	21h30	247	46°37.230'	38°05.250'	UI	/	/	/	/	/					
87.04.12	22h00	248	46°34.830'	37°58.320'	UI	/	/	/	/	/					
87.04.12	22h30	249	46°34.962'	37°52.188'	UI	/	/	/	/	/					
87.04.12	23h00	250	46°39.066'	37°48.324'	UI	/	/	/	/	/					
87.04.12	23h30	251	46°42.930'	37°41.586'	UI	/	/	/	/	/					
87.04.13	00h00	252	46°45.900'	37°45.804'	UI	/	/	/	/	/					
87.04.15	15h15	253	46°50.484'	38°07.458'	UI	/	/	/	/	/					
87.04.15	15h46	254	46°43.530'	38°07.536'	UI	/	/	/	/	/					
87.04.15	16h18	255	46°37.740'	38°06.750'	UI	/	/	/	/	/					
87.04.15	16h46	256	46°35.490'	38°00.738'	UI	/	/	/	/	/					
87.04.15	17h20	257	46°33.144'	37°53.598'	UI	/	/	/	/	/					
87.04.15	17h46	258	46°34.980'	37°48.612'	UI	/	/	/	/	/					
87.04.15	18h26	259	46°40.314'	37°43.110'	UI	/	/	/	/	/					
87.04.15	18h45	260	46°42.762'	37°40.650'	UI	/	/	/	/	/					
87.04.15	19h15	261	46°46.524'	37°36.984'	UI	/	/	/	/	/					
87.04.15	19h45	262	46°52.260'	37°33.624'	UI	/	/	/	/	/					
87.04.15	20h15	263	46°56.250'	37°31.584'	UI	/	/	/	/	/					
87.04.15	20h50	264	46°59.268'	37°36.996'	UI	/	/	/	/	/					
87.04.15	21h15	265	47°00.660'	37°43.698'	UI	/	/	/	/	/					
87.04.15	21h42	266	47°00.798'	37°50.130'	UI	/	/	/	/	/					
87.04.15	22h12	267	46°59.760'	37°56.262'	UI	/	/	/	/	/					
87.04.15	22h46	268	46°57.888'	38°05.388'	UI	/	/	/	/	/					
87.04.16		B23	46°53.000'	37°53.000'	I										/
87.04.17	12h30	1	46°52.700'	37°54.400'	I	/	/	/		/					
87.04.17	15h00	269	46°54.264'	38°06.270'	UI	/	/	/	/	/					
87.04.17	15h30	270	46°51.312'	38°10.728'	UI	/									
87.04.17	16h00	271	46°45.984'	38°12.144'	UI	/	/	/	/	/					
87.04.17	16h30	272	46°39.462'	38°12.582'	UI	/	/	/	/	/					

Date	Time	Station	Latitude(S)	Longitude(E)	Pos	CTD	Ch1	Sil	NO3	NO2	PO4	Lig	PPP	Net	Dre
87.05.03	12h48	91	46°21.402'	37°55.002'	I	/									
87.05.03	13h45	92	46°18.348'	37°55.002'	I	/									/
87.05.04	04h50	93	46°46.398'	38°21.798'	I	/	/	/	/	/	/	/	/	/	
87.05.04		831	46°53.920'	37°54.820'	I										/
87.05.06	04h45	94	46°55.998'	37°31.998'	I	/	/	/	/	/	/	/	/	/	/
87.05.07	04h50	95	46°49.002'	38°16.002'	I	/	/	/	/	/	/		/	/	
87.05.07		832	46°49.350'	37°58.980'	I										/
87.05.07	14h00	96	46°24.000'	37°43.000'	U		/	/	/	/	/				
87.05.07	16h05	97	46°08.132'	37°38.832'	U		/								
87.05.07	18h00	98	45°47.792'	37°31.716'	U										
87.05.11	12h00	99	34°24.978'	26°04.330'	U		/	/	/	/	/				
87.05.11	14h00	100	34°49.752'	26°15.881'	U		/	/	/	/	/				
87.05.11	16h00	101	35°13.000'	26°32.000'	U		/	/	/	/	/				
87.05.11	18h00	102	35°37.000'	26°53.000'	U		/	/	/	/	/				
87.05.11	20h00	103	36°03.500'	27°14.280'	U		/	/	/	/	/				
87.05.11	22h00	104	36°26.540'	27°34.694'	U		/	/	/	/	/				
87.05.12	00h13	105	36°56.260'	28°01.190'	U		/	/	/	/	/				
87.05.12	02h00	106	37°12.900'	28°19.500'	U		/	/	/	/	/				
87.05.12	04h00	107	37°42.309'	28°40.299'	U		/	/	/	/	/				
87.05.12	06h00	108	38°07.339'	29°01.775'	U		/	/	/	/	/				
87.05.12	08h00	109	38°32.000'	29°23.000'	U		/	/	/	/	/				
87.05.12	10h00	110	38°53.000'	29°43.000'	U		/	/	/	/	/				
87.05.12	12h30	111	39°20.841'	30°14.070'	U		/	/	/	/	/				
87.05.12	14h00	112	39°35.400'	30°27.414'	U		/	/	/	/	/				
87.05.12	16h05	113	40°03.450'	30°46.450'	U		/	/	/	/	/				
87.05.12	18h04	114	40°20.540'	31°02.830'	U		/	/	/	/	/				
87.05.12	20h01	115	40°36.093'	31°15.909'	U		/	/	/	/	/				
87.05.12	22h00	116	40°51.669'	31°27.162'	U		/	/	/	/	/				
87.05.13	00h05	117	41°08.000'	31°38.000'	U		/	/	/	/	/				
87.05.13	02h00	118	41°24.000'	31°25.000'	U		/	/	/	/	/				
87.05.13	05h30	119	42°00.130'	32°09.145'	U		/	/	/	/	/				
87.05.13	06h45	120	42°13.594'	32°18.430'	U		/	/	/	/	/				
87.05.13	08h00	121	42°25.540'	32°28.470'	U		/	/	/	/	/				
87.05.13	10h00	122	42°44.200'	32°43.850'	U		/	/	/	/	/				
87.05.13	12h00	123	43°05.174'	33°03.191'	U		/	/	/	/	/				
87.05.13	14h00	124	43°25.774'	33°22.218'	U		/	/	/	/	/				
87.05.13	16h00	125	43°44.000'	33°43.000'	U		/	/	/	/	/				

Data Listings and Plots

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.17
Station: 1 Cast: Time: 12.30 Z
Position: Lat: 46°54.890'S Long: 37°55.840'E Depth: 120 m

NO CTD CAST

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.17
Station: 1 Cast: BOTTLE Time: 12.30 Z
Position: Lat: 46°54.890'S Long: 37°55.840'E Depth: 120 m

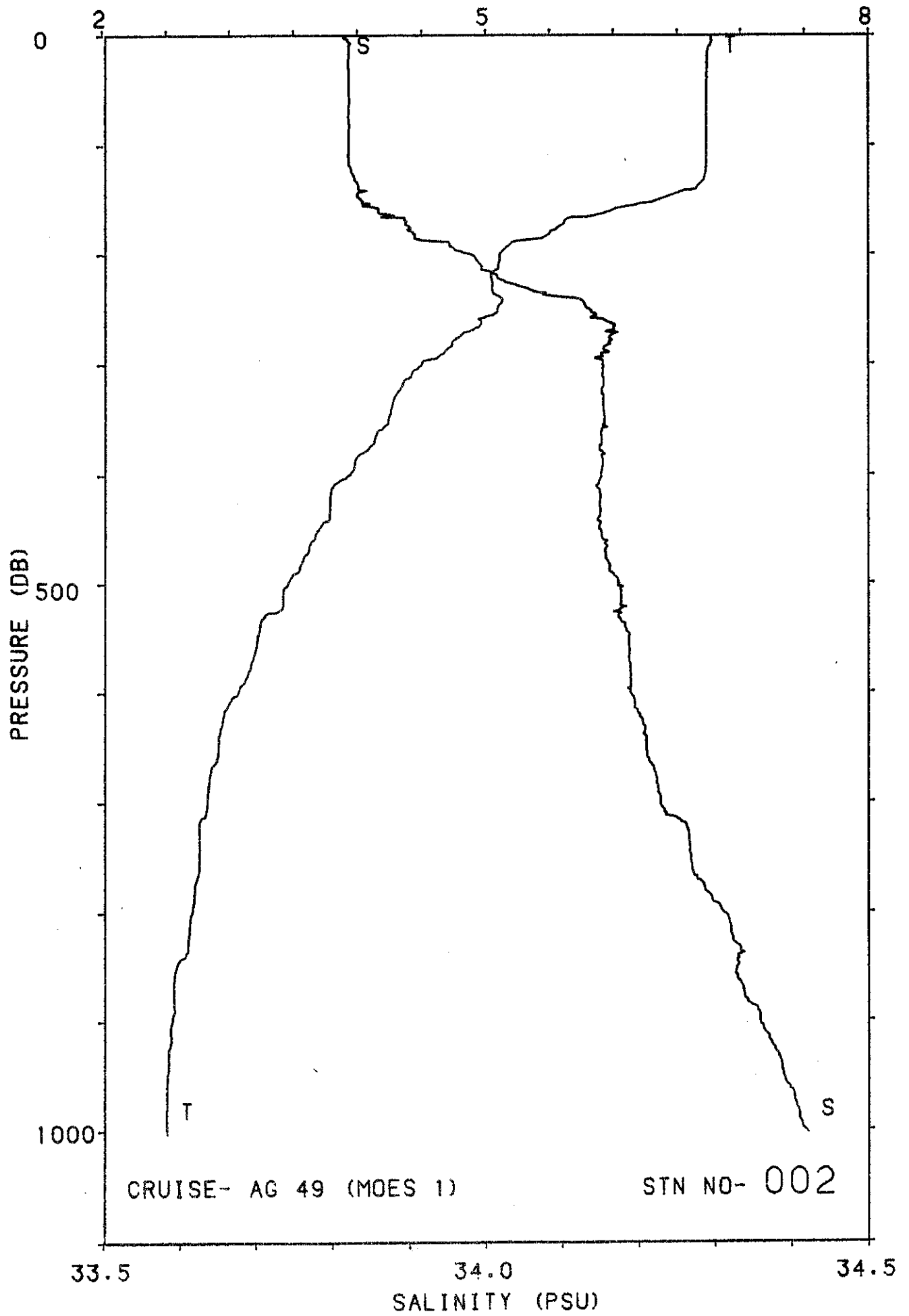
Bottle Data

Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
.0				.118	.96	14.22		.28
20.0				.104	.26	9.82		.22
40.0				.250	.28	10.41		.21
80.0				.180	.58	11.88		.26
100.0				.201	1.83	15.49		.36

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.18
 Station: 2 Cast: CTD UP Time: 8.47 Z
 Position: Lat: 46°50.700'S Long: 38°21.800'E Depth: 2600 m/2700 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.763	6.763	33.813	1026.516	26.541	1026.516	26.541
4.96	5.0	6.772	6.771	33.821	1026.544	26.546	1026.544	26.546
9.92	10.0	6.760	6.759	33.822	1026.570	26.549	1026.570	26.549
19.83	20.0	6.738	6.737	33.823	1026.619	26.552	1026.619	26.552
24.79	25.0	6.739	6.737	33.822	1026.641	26.551	1026.642	26.552
29.75	30.0	6.740	6.737	33.822	1026.664	26.551	1026.665	26.552
39.66	40.0	6.739	6.735	33.822	1026.711	26.552	1026.711	26.552
49.58	50.0	6.738	6.733	33.823	1026.757	26.552	1026.758	26.553
59.49	60.0	6.738	6.733	33.823	1026.803	26.552	1026.804	26.553
69.41	70.0	6.738	6.732	33.823	1026.849	26.552	1026.850	26.553
74.37	75.0	6.739	6.732	33.822	1026.871	26.551	1026.872	26.552
79.32	80.0	6.739	6.732	33.823	1026.895	26.552	1026.896	26.553
89.23	90.0	6.740	6.732	33.822	1026.940	26.552	1026.941	26.552
99.15	100.0	6.741	6.732	33.822	1026.986	26.551	1026.987	26.552
118.97	120.0	6.743	6.732	33.824	1027.079	26.553	1027.080	26.554
123.93	125.0	6.739	6.728	33.826	1027.104	26.555	1027.105	26.556
138.79	140.0	6.663	6.651	33.836	1027.191	26.572	1027.192	26.574
148.70	150.0	6.369	6.356	33.839	1027.278	26.613	1027.280	26.615
158.61	160.0	6.002	5.989	33.860	1027.390	26.677	1027.391	26.678
173.48	175.0	5.589	5.575	33.901	1027.543	26.760	1027.545	26.762
178.43	180.0	5.521	5.507	33.906	1027.579	26.772	1027.580	26.774
198.25	200.0	5.132	5.117	33.979	1027.776	26.876	1027.778	26.877
218.06	220.0	5.057	5.040	34.015	1027.906	26.913	1027.908	26.915
237.87	240.0	5.140	5.122	34.115	1028.067	26.982	1028.069	26.985
247.78	250.0	5.114	5.094	34.134	1028.132	27.001	1028.134	27.003
257.68	260.0	4.975	4.955	34.155	1028.211	27.034	1028.214	27.036
277.49	280.0	4.766	4.745	34.161	1028.333	27.061	1028.336	27.064
297.30	300.0	4.523	4.501	34.153	1028.448	27.082	1028.450	27.085
317.10	320.0	4.372	4.349	34.154	1028.559	27.100	1028.561	27.102
336.91	340.0	4.290	4.265	34.154	1028.660	27.108	1028.663	27.111
346.81	350.0	4.268	4.243	34.155	1028.710	27.111	1028.713	27.114
356.71	360.0	4.189	4.163	34.153	1028.763	27.118	1028.766	27.121
376.51	380.0	4.067	4.040	34.153	1028.870	27.131	1028.873	27.133
396.30	400.0	3.961	3.933	34.151	1028.972	27.140	1028.976	27.143
445.79	450.0	3.728	3.697	34.148	1029.228	27.161	1029.231	27.164
495.26	500.0	3.490	3.456	34.174	1029.505	27.205	1029.509	27.208
544.72	550.0	3.256	3.219	34.187	1029.772	27.238	1029.776	27.241
594.17	600.0	3.106	3.067	34.188	1030.020	27.252	1030.025	27.256
643.60	650.0	2.950	2.909	34.210	1030.285	27.284	1030.290	27.288
693.03	700.0	2.867	2.822	34.228	1030.540	27.306	1030.545	27.310
742.44	750.0	2.806	2.758	34.268	1030.809	27.343	1030.814	27.347
791.84	800.0	2.752	2.701	34.310	1031.079	27.381	1031.085	27.386
841.23	850.0	2.633	2.579	34.329	1031.338	27.407	1031.343	27.412
890.61	900.0	2.602	2.545	34.358	1031.594	27.433	1031.601	27.438
939.98	950.0	2.566	2.505	34.388	1031.853	27.460	1031.859	27.465
989.33	1000.0	2.563	2.499	34.417	1032.106	27.483	1032.113	27.489

POTENTIAL TEMPERATURE (°C)



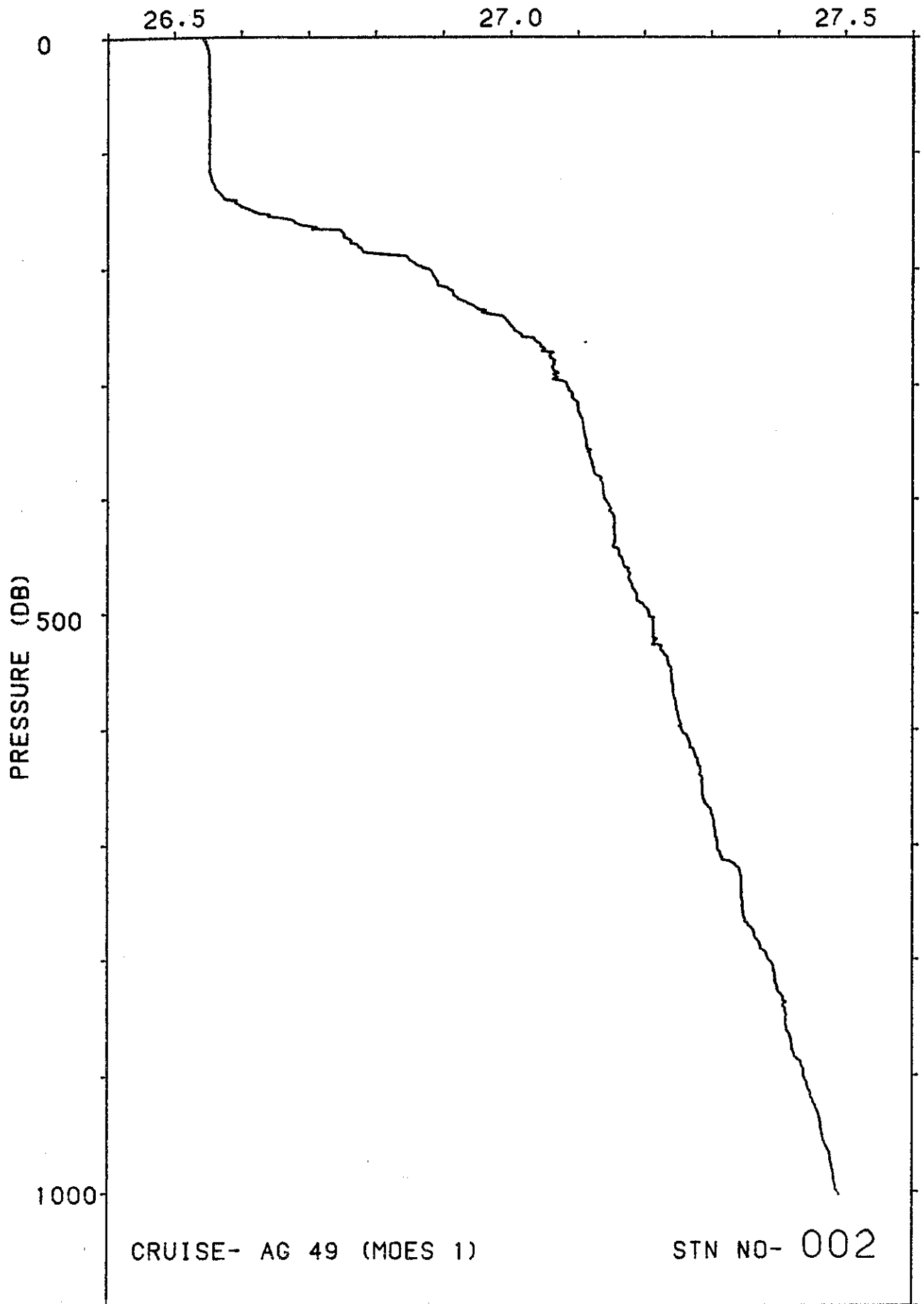
Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.18
 Station: 2 Cast: BOTTLE Time: 8.47 Z
 Position: Lat: 46°50.700'S Long: 38°21.800'E Depth: 2600 m/2700 m

Bottle Data

Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
3.0	6.77	6.77	33.819	1.954		16.75	.36	.34
50.0	6.74	6.73	33.823	1.802		16.59	.37	.34
100.0	6.74	6.73	33.822	1.786		16.69	.36	.36
150.0	6.34	6.33	33.840	.307		19.08	.43	.42
160.0	5.97	5.96	33.861	.230		19.69	.43	.43
170.0	5.63	5.62	33.896	.150		20.16	.39	.42
200.0	5.13	5.11	33.984	.069		20.81	.13	.44

37

POTENTIAL DENSITY (σ_θ)



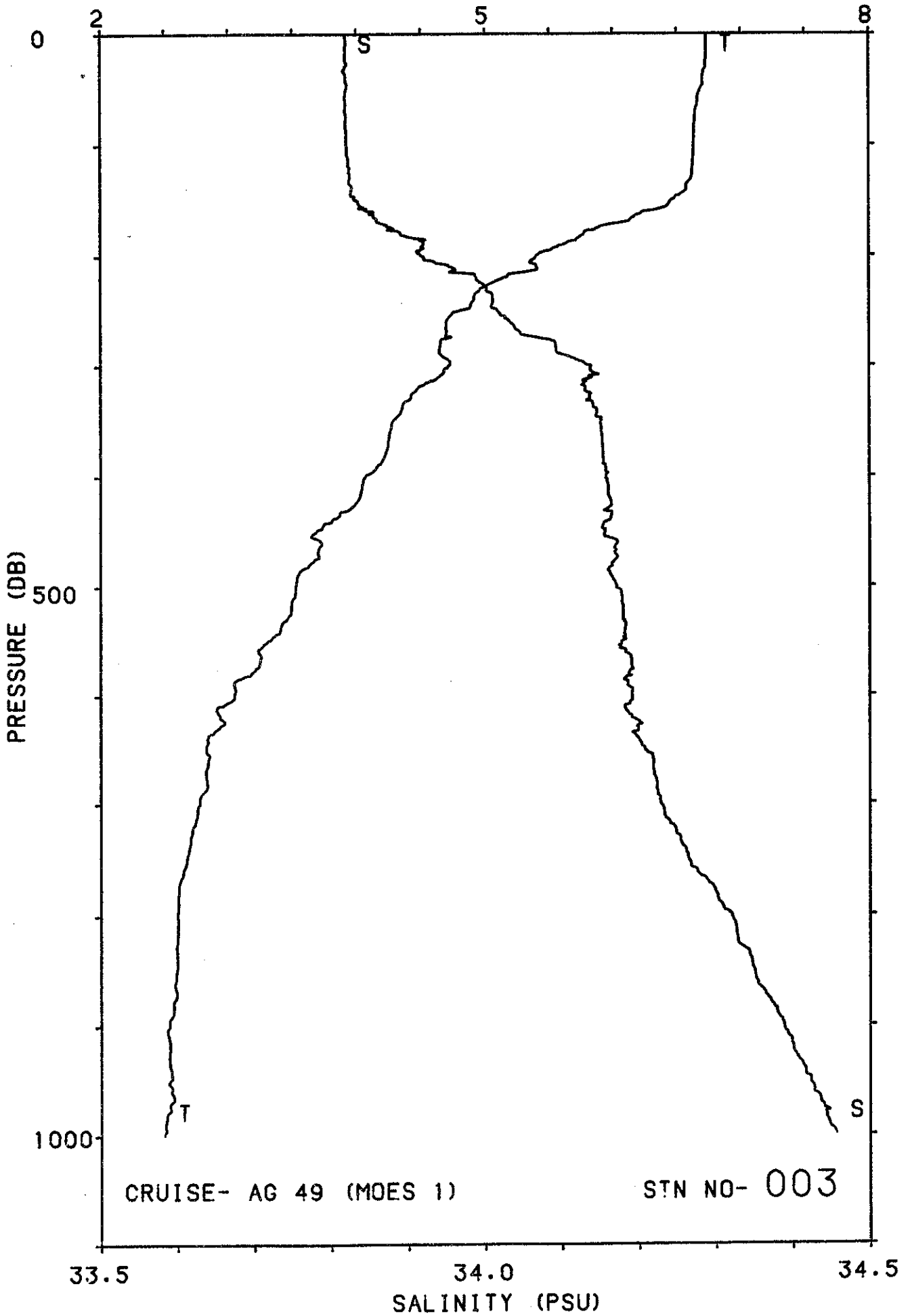
CRUISE- AG 49 (MOES 1)

STN NO- 002

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.18
 Station: 3 Cast: CTD UP Time: 11.05 Z
 Position: Lat: 46°51.000'S Long: 38°15.500'E Depth: 2700 m/2400 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.736	6.736	33.818	1026.524	26.549	1026.524	26.549
4.96	5.0	6.734	6.734	33.819	1026.548	26.550	1026.548	26.550
9.92	10.0	6.735	6.734	33.820	1026.571	26.550	1026.571	26.550
19.83	20.0	6.738	6.736	33.819	1026.616	26.549	1026.616	26.549
24.79	25.0	6.729	6.727	33.820	1026.641	26.551	1026.641	26.551
29.75	30.0	6.733	6.730	33.818	1026.662	26.549	1026.662	26.549
39.66	40.0	6.708	6.705	33.819	1026.712	26.553	1026.712	26.553
49.58	50.0	6.690	6.686	33.820	1026.761	26.557	1026.762	26.557
59.49	60.0	6.671	6.666	33.819	1026.809	26.558	1026.810	26.559
69.41	70.0	6.654	6.647	33.818	1026.857	26.560	1026.857	26.560
74.36	75.0	6.652	6.646	33.820	1026.881	26.562	1026.882	26.562
79.32	80.0	6.651	6.643	33.819	1026.904	26.561	1026.905	26.562
89.23	90.0	6.644	6.636	33.821	1026.952	26.563	1026.953	26.564
99.15	100.0	6.643	6.634	33.821	1026.998	26.563	1026.999	26.564
118.97	120.0	6.635	6.624	33.825	1027.094	26.567	1027.096	26.569
123.93	125.0	6.635	6.624	33.824	1027.116	26.567	1027.118	26.568
138.79	140.0	6.589	6.576	33.828	1027.195	26.576	1027.196	26.578
148.70	150.0	6.470	6.457	33.835	1027.262	26.597	1027.264	26.599
158.61	160.0	6.247	6.233	33.856	1027.354	26.643	1027.356	26.644
173.48	175.0	5.885	5.870	33.881	1027.490	26.708	1027.492	26.710
178.43	180.0	5.789	5.774	33.891	1027.533	26.728	1027.535	26.730
198.25	200.0	5.418	5.402	33.918	1027.693	26.794	1027.695	26.796
218.06	220.0	5.169	5.152	33.989	1027.872	26.879	1027.874	26.881
237.87	240.0	4.934	4.916	34.010	1028.009	26.923	1028.011	26.925
247.78	250.0	4.817	4.798	34.016	1028.074	26.941	1028.076	26.943
257.68	260.0	4.718	4.698	34.032	1028.145	26.965	1028.147	26.967
277.49	280.0	4.677	4.656	34.092	1028.289	27.017	1028.291	27.019
297.30	300.0	4.741	4.718	34.139	1028.411	27.047	1028.414	27.050
317.10	320.0	4.502	4.479	34.131	1028.525	27.067	1028.528	27.069
336.91	340.0	4.378	4.354	34.146	1028.643	27.092	1028.647	27.095
346.81	350.0	4.309	4.283	34.151	1028.702	27.103	1028.705	27.106
356.71	360.0	4.289	4.263	34.152	1028.751	27.106	1028.754	27.109
376.51	380.0	4.254	4.226	34.154	1028.849	27.112	1028.852	27.115
396.30	400.0	4.097	4.068	34.159	1028.964	27.132	1028.967	27.135
445.79	450.0	3.717	3.686	34.157	1029.236	27.169	1029.239	27.172
495.26	500.0	3.562	3.529	34.172	1029.496	27.197	1029.499	27.200
544.72	550.0	3.342	3.305	34.179	1029.756	27.223	1029.761	27.227
594.17	600.0	3.089	3.050	34.191	1030.024	27.256	1030.029	27.260
643.60	650.0	2.871	2.830	34.208	1030.292	27.289	1030.297	27.293
693.03	700.0	2.821	2.776	34.228	1030.545	27.310	1030.550	27.314
742.44	750.0	2.726	2.678	34.264	1030.814	27.347	1030.820	27.351
791.84	800.0	2.652	2.602	34.321	1031.098	27.399	1031.104	27.403
841.23	850.0	2.650	2.596	34.350	1031.352	27.422	1031.358	27.427
890.61	900.0	2.596	2.539	34.388	1031.619	27.458	1031.625	27.462
939.98	950.0	2.602	2.541	34.423	1031.876	27.485	1031.883	27.490

POTENTIAL TEMPERATURE (°C)



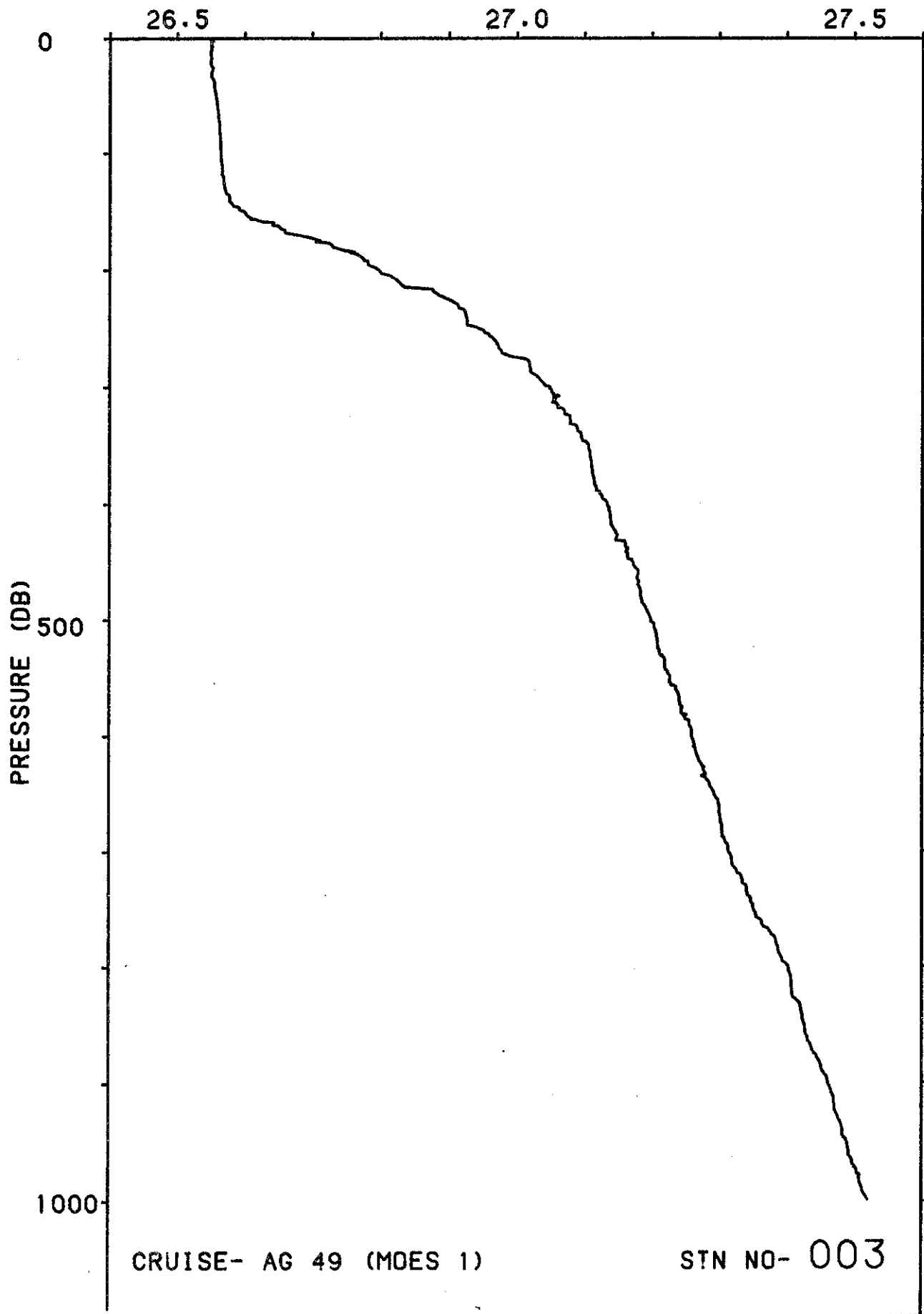
Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.18
 Station: 3 Cast: BOTTLE Time: 11.05 Z
 Position: Lat: 46°51.000'S Long: 38°15.500'E Depth: 2700 m/2400 m

Bottle Data

Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
3.0	6.73	6.73	33.819	1.955	.14	15.42		.37
50.0	6.69	6.69	33.820	2.066	.22	15.19		.36
100.0	6.64	6.63	33.821	2.008	.50	15.20		.38
140.0	6.59	6.57	33.827	.536	1.74	15.87		.39
160.0	6.24	6.22	33.850	.198	2.55	15.80		.40
180.0	5.77	5.76	33.896	.135	3.01	14.80		.41
200.0	5.41	5.39	33.921	.159	5.21	14.07		.42

41

POTENTIAL DENSITY (σ_t)



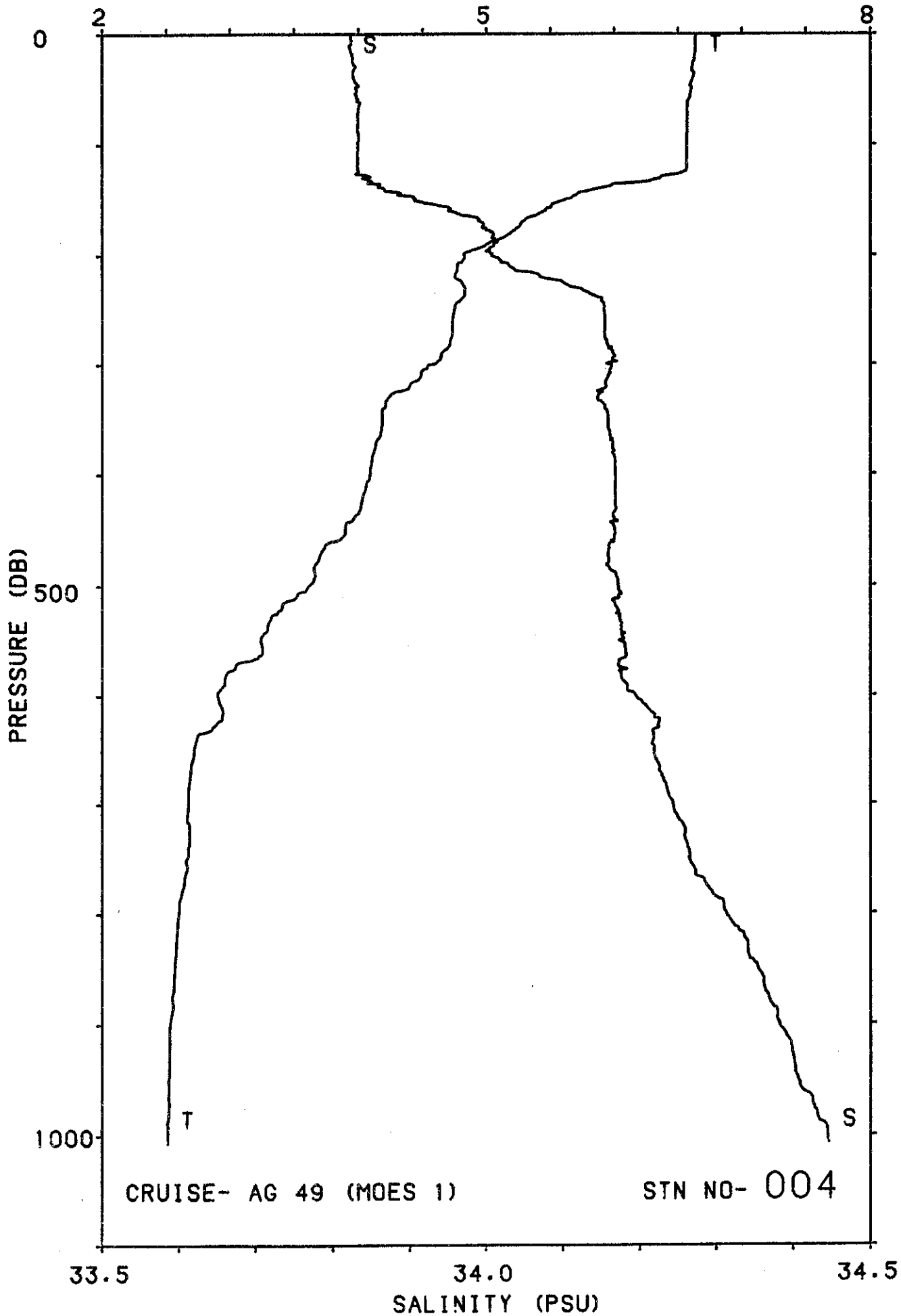
CRUISE- AG 49 (MOES 1)

STN NO- 003

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.18
 Station: 4 Cast: CTD UP Time: 13.34 Z
 Position: Lat: 46°50.800'S Long: 38° 8.700'E Depth: 1490 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.709	6.709	33.815	1026.525	26.550	1026.525	26.550
4.96	5.0	6.666	6.665	33.813	1026.552	26.554	1026.552	26.554
9.92	10.0	6.637	6.636	33.823	1026.587	26.566	1026.587	26.566
19.83	20.0	6.631	6.629	33.824	1026.635	26.568	1026.635	26.568
24.79	25.0	6.627	6.624	33.825	1026.658	26.568	1026.659	26.569
29.75	30.0	6.612	6.609	33.830	1026.688	26.575	1026.688	26.575
39.66	40.0	6.621	6.617	33.827	1026.730	26.571	1026.731	26.571
49.58	50.0	6.607	6.603	33.830	1026.780	26.575	1026.781	26.576
59.49	60.0	6.586	6.580	33.831	1026.830	26.579	1026.831	26.580
69.41	70.0	6.575	6.569	33.834	1026.879	26.582	1026.880	26.583
74.37	75.0	6.578	6.571	33.832	1026.901	26.581	1026.902	26.581
79.32	80.0	6.579	6.572	33.833	1026.924	26.581	1026.925	26.582
89.23	90.0	6.577	6.570	33.833	1026.970	26.581	1026.971	26.582
99.15	100.0	6.576	6.567	33.832	1027.016	26.581	1027.017	26.582
118.97	120.0	6.577	6.566	33.831	1027.107	26.580	1027.108	26.581
123.93	125.0	6.549	6.538	33.833	1027.135	26.586	1027.137	26.587
138.79	140.0	5.860	5.848	33.866	1027.320	26.699	1027.322	26.701
148.70	150.0	5.620	5.608	33.907	1027.429	26.761	1027.430	26.762
158.61	160.0	5.469	5.456	33.952	1027.529	26.815	1027.531	26.816
173.48	175.0	5.266	5.252	33.994	1027.657	26.872	1027.658	26.874
178.43	180.0	5.205	5.190	34.008	1027.698	26.891	1027.700	26.892
198.25	200.0	4.838	4.823	34.007	1027.833	26.932	1027.835	26.933
218.06	220.0	4.771	4.755	34.071	1027.984	26.990	1027.986	26.992
237.87	240.0	4.826	4.808	34.152	1028.134	27.048	1028.136	27.050
247.78	250.0	4.772	4.753	34.153	1028.188	27.055	1028.190	27.057
257.68	260.0	4.757	4.737	34.155	1028.237	27.058	1028.239	27.060
277.49	280.0	4.740	4.718	34.157	1028.333	27.062	1028.336	27.064
297.30	300.0	4.602	4.580	34.159	1028.444	27.079	1028.446	27.081
317.10	320.0	4.424	4.400	34.157	1028.554	27.096	1028.557	27.099
336.91	340.0	4.229	4.205	34.154	1028.667	27.114	1028.670	27.117
346.81	350.0	4.209	4.184	34.159	1028.719	27.120	1028.722	27.123
356.71	360.0	4.203	4.178	34.159	1028.767	27.121	1028.769	27.124
376.51	380.0	4.147	4.120	34.167	1028.872	27.133	1028.875	27.136
396.30	400.0	4.118	4.089	34.168	1028.968	27.137	1028.971	27.140
445.79	450.0	3.927	3.896	34.167	1029.220	27.156	1029.224	27.159
495.26	500.0	3.654	3.619	34.172	1029.486	27.188	1029.489	27.191
544.72	550.0	3.277	3.241	34.173	1029.759	27.224	1029.763	27.228
594.17	600.0	2.942	2.904	34.194	1030.043	27.272	1030.046	27.275
643.60	650.0	2.763	2.722	34.218	1030.312	27.307	1030.316	27.311
693.03	700.0	2.721	2.677	34.243	1030.568	27.331	1030.572	27.334
742.44	750.0	2.711	2.663	34.265	1030.817	27.349	1030.822	27.353
791.84	800.0	2.651	2.601	34.313	1031.092	27.392	1031.098	27.397
841.23	850.0	2.623	2.569	34.354	1031.359	27.428	1031.364	27.432
890.61	900.0	2.590	2.533	34.383	1031.615	27.454	1031.622	27.459
939.98	950.0	2.580	2.519	34.406	1031.865	27.473	1031.872	27.478
989.33	1000.0	2.577	2.513	34.445	1032.126	27.504	1032.133	27.510

POTENTIAL TEMPERATURE (°C)

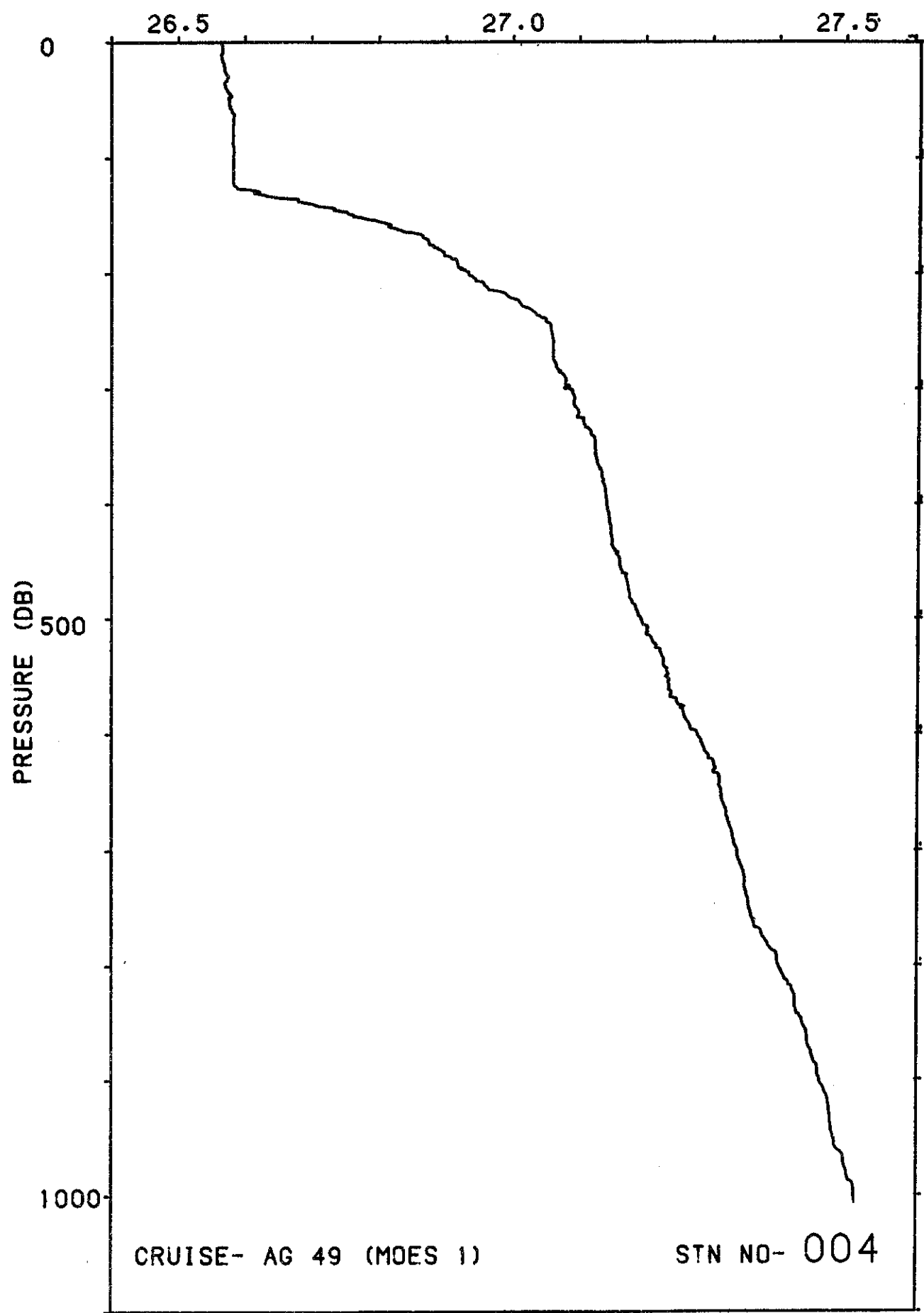


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.18
 Station: 4 Cast: BOTTLE Time: 13.34 Z
 Position: Lat: 46°50.800'S Long: 38° 8.700'E Depth: 1490 m

Bottle Data

Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
3.0	6.64	6.63	33.824	.493	2.72	12.46	.29	.30
50.0	6.61	6.60	33.830	.493	.90	7.15	.22	.22
100.0	6.58	6.57	33.833	.469	.84	7.35	.22	.20
110.0	6.58	6.57	33.832	.137	2.42	10.98	.27	.30
120.0	6.58	6.57	33.832	.149	2.32	10.52	.28	.29
130.0	6.34	6.32	33.842	.144	3.03	10.87	.30	.31
150.0	5.58	5.57	33.914	.124	6.79	14.29	.25	.38

POTENTIAL DENSITY (σ_θ)

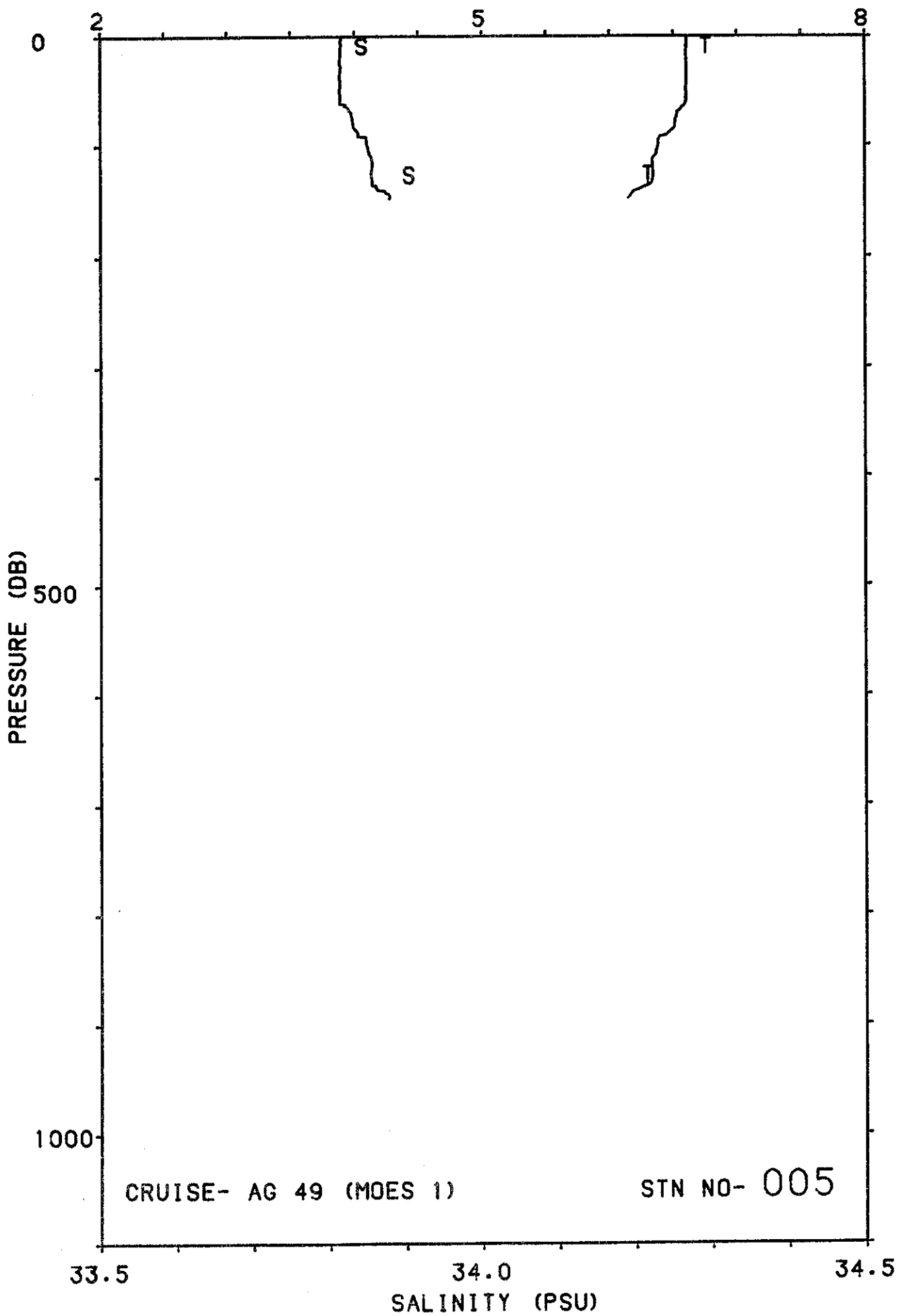


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.18
 Station: 5 Cast: CTD UP Time: 16.30 Z
 Position: Lat: 46°51.200'S Long: 38° 3.800'E Depth: 166 m/170 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.607	6.607	33.818	1026.541	26.566	1026.541	26.566
4.96	5.0	6.608	6.607	33.815	1026.562	26.564	1026.561	26.563
9.92	10.0	6.606	6.605	33.815	1026.585	26.564	1026.585	26.564
19.83	20.0	6.604	6.602	33.815	1026.631	26.564	1026.631	26.564
24.79	25.0	6.607	6.605	33.814	1026.653	26.563	1026.653	26.563
29.75	30.0	6.607	6.605	33.816	1026.677	26.564	1026.677	26.564
39.66	40.0	6.608	6.604	33.815	1026.722	26.563	1026.723	26.564
49.58	50.0	6.608	6.604	33.815	1026.768	26.563	1026.769	26.564
59.49	60.0	6.608	6.603	33.815	1026.814	26.563	1026.815	26.564
69.41	70.0	6.540	6.534	33.829	1026.880	26.583	1026.881	26.584
74.36	75.0	6.534	6.527	33.830	1026.905	26.585	1026.906	26.586
79.32	80.0	6.524	6.517	33.831	1026.930	26.587	1026.931	26.588
89.23	90.0	6.466	6.459	33.839	1026.990	26.601	1026.991	26.602
99.15	100.0	6.392	6.383	33.849	1027.054	26.619	1027.055	26.619
118.97	120.0	6.349	6.338	33.857	1027.158	26.630	1027.159	26.632
123.93	125.0	6.353	6.342	33.855	1027.179	26.628	1027.180	26.630
138.79	140.0	6.244	6.232	33.864	1027.269	26.649	1027.270	26.651

47

POTENTIAL TEMPERATURE (°C)



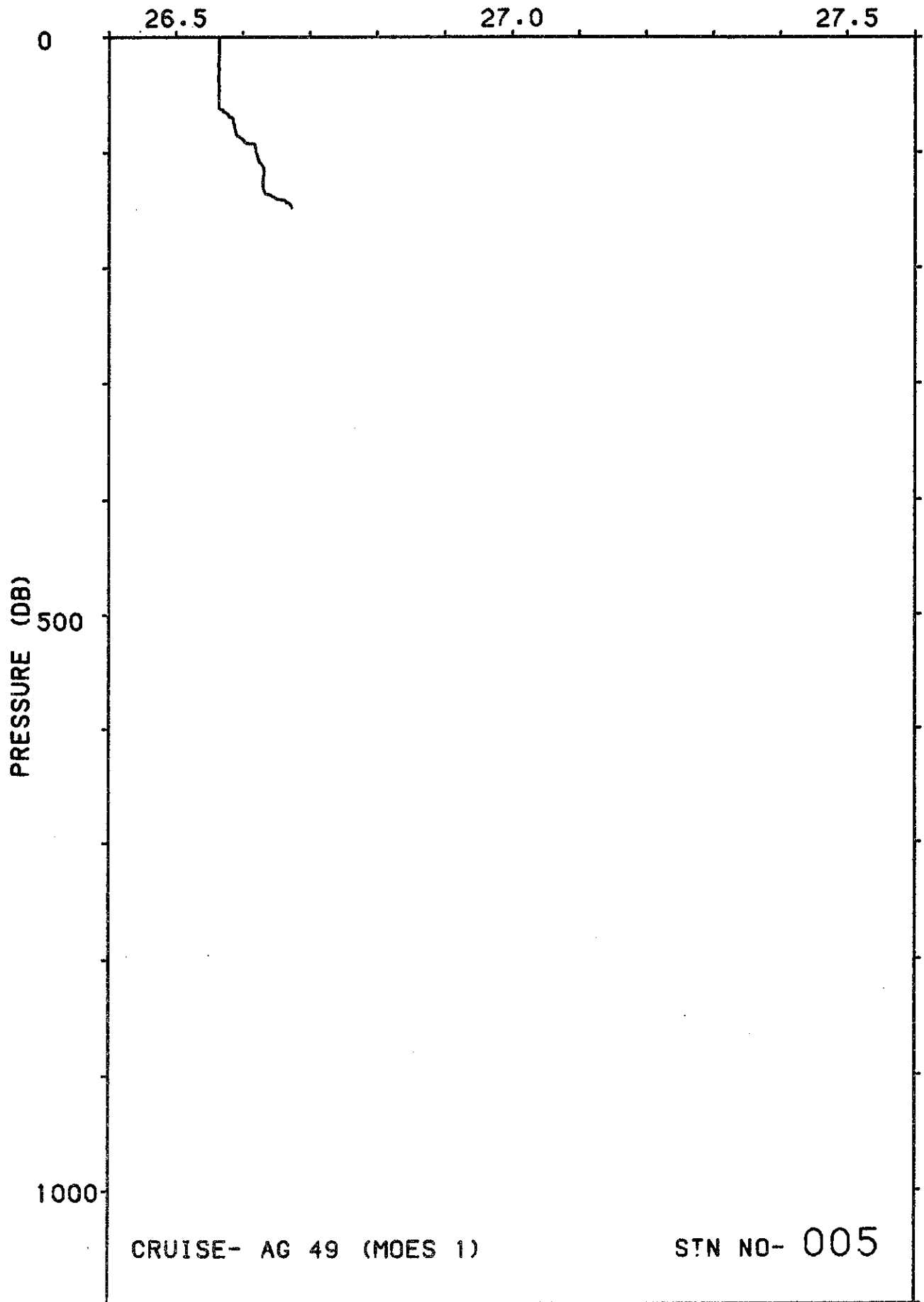
Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.18
 Station: 5 Cast: BOTTLE Time: 16.30 Z
 Position: Lat: 46°51.200'S Long: 38° 3.800'E Depth: 166 m/170 m

Bottle Data

Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
3.0	6.61	6.61	33.816	.976	1.23	18.28	.30	.78
50.0	6.61	6.60	33.815	1.055	.47	14.92	.30	.62
80.0	6.52	6.52	33.831	1.098	.49	15.11	.29	.70
90.0	6.46	6.45	33.839	.797	1.31	17.83	.35	.79
100.0	6.39	6.38	33.850	.784	.44	14.54	.28	.58
120.0	6.35	6.34	33.857	.520	1.57	17.99	.35	.79
140.0	6.21	6.20	33.873	.620	2.00	18.63	.33	.81

49

POTENTIAL DENSITY (σ_θ)

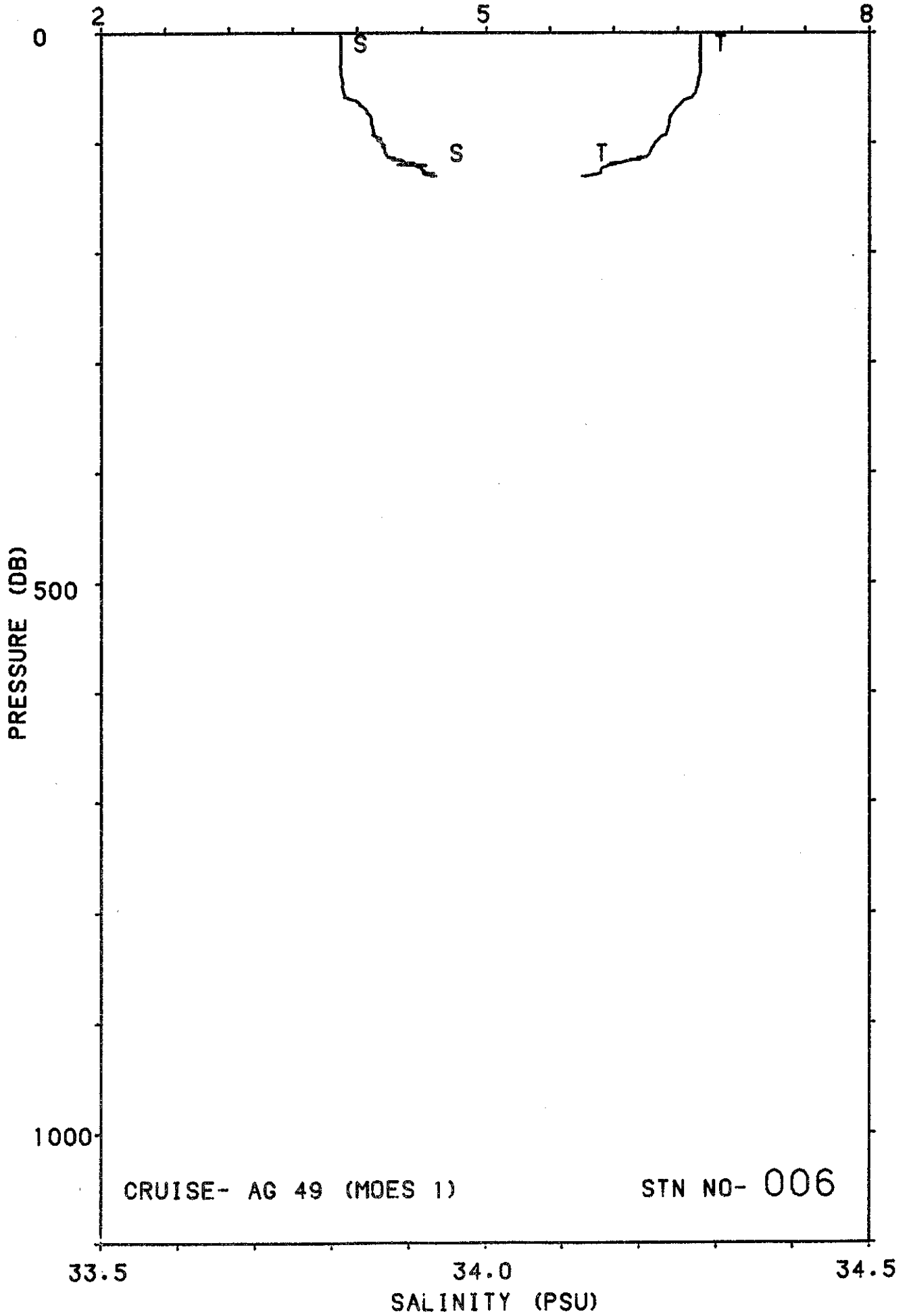


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.19
 Station: 6 Cast: CTD UP Time: 4.55 Z
 Position: Lat: 46°49.100'S Long: 37°55.900'E Depth: 144 m/145 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.690	6.690	33.810	1026.523	26.548	1026.523	26.548
4.96	5.0	6.674	6.674	33.812	1026.550	26.552	1026.550	26.552
9.92	10.0	6.674	6.673	33.812	1026.573	26.552	1026.573	26.552
19.83	20.0	6.676	6.674	33.812	1026.619	26.552	1026.619	26.552
24.79	25.0	6.675	6.673	33.813	1026.642	26.552	1026.643	26.553
29.75	30.0	6.677	6.674	33.812	1026.665	26.552	1026.665	26.552
39.66	40.0	6.670	6.666	33.813	1026.712	26.553	1026.713	26.554
49.58	50.0	6.654	6.650	33.814	1026.762	26.557	1026.762	26.557
59.49	60.0	6.579	6.574	33.823	1026.825	26.574	1026.825	26.574
69.41	70.0	6.483	6.477	33.844	1026.900	26.603	1026.901	26.603
74.37	75.0	6.454	6.448	33.850	1026.931	26.611	1026.932	26.612
79.32	80.0	6.441	6.435	33.852	1026.957	26.614	1026.958	26.615
89.24	90.0	6.419	6.412	33.855	1027.008	26.619	1027.010	26.620
99.15	100.0	6.332	6.323	33.865	1027.074	26.639	1027.075	26.640
118.97	120.0	5.985	5.975	33.910	1027.247	26.718	1027.248	26.720
123.93	125.0	5.911	5.900	33.918	1027.286	26.734	1027.287	26.735

51

POTENTIAL TEMPERATURE (°C)



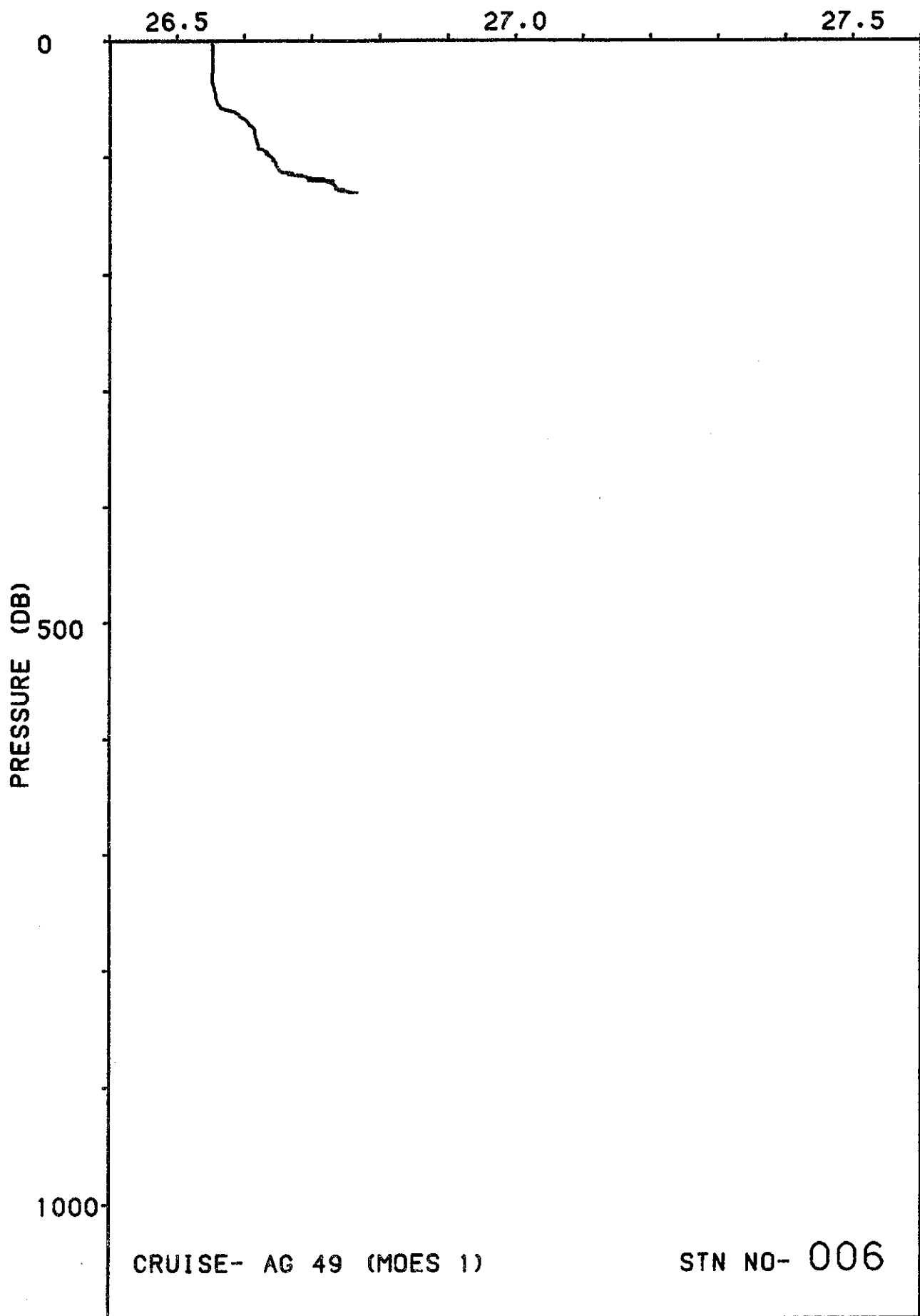
Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.19
 Station: 6 Cast: BOTTLE Time: 4.55 Z
 Position: Lat: 46°49.100'S Long: 37°55.900'E Depth: 144 m/145 m

Bottle Data

Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
3.0	6.68	6.68	33.812	2.015	.14	16.12	.30	.70
25.0	6.67	6.67	33.813	1.973	.04	15.55	.30	.70
45.0	6.66	6.65	33.815	1.485	.01	14.80	.32	.65
55.0	6.64	6.63	33.816	1.705	.06	15.34	.31	.66
100.0	6.33	6.32	33.865	1.148	1.45	17.33	.21	.77
130.0				.315	4.16	19.10	.30	.82

53

POTENTIAL DENSITY (σ_t)

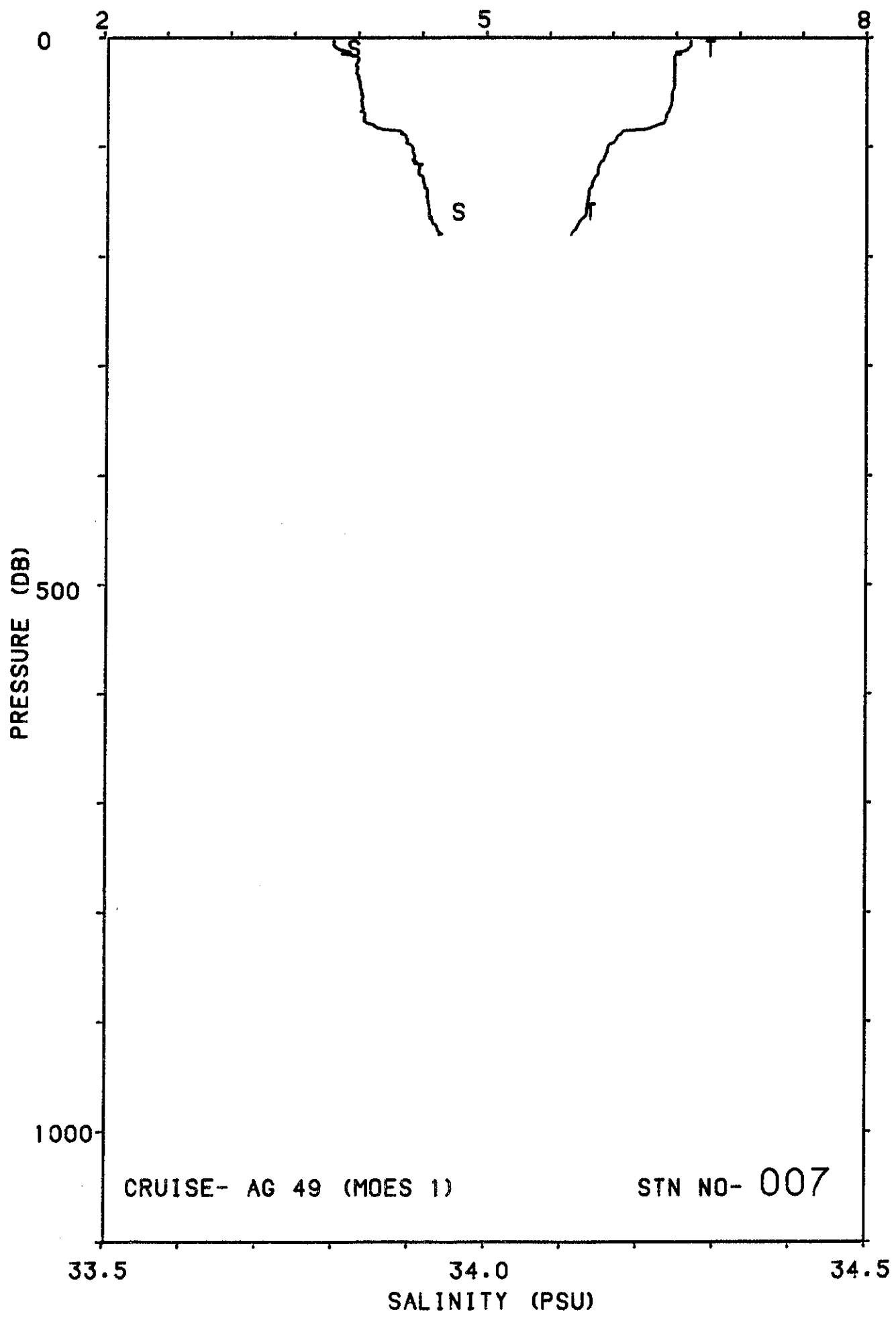


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.19
 Station: 7 Cast: CTD UP Time: 6.35 Z
 Position: Lat: 46°46.800'S Long: 37°48.000'E Depth: 192 m/190 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.622	6.622	33.795	1026.520	26.545	1026.521	26.546
4.96	5.0	6.616	6.615	33.801	1026.549	26.551	1026.549	26.551
9.92	10.0	6.593	6.592	33.805	1026.578	26.557	1026.578	26.557
19.83	20.0	6.486	6.484	33.833	1026.660	26.593	1026.661	26.594
24.79	25.0	6.490	6.488	33.830	1026.681	26.590	1026.681	26.591
29.75	30.0	6.489	6.487	33.831	1026.705	26.591	1026.705	26.592
39.66	40.0	6.486	6.483	33.834	1026.754	26.594	1026.754	26.595
49.58	50.0	6.475	6.471	33.837	1026.803	26.598	1026.804	26.599
59.49	60.0	6.467	6.462	33.837	1026.850	26.599	1026.851	26.600
69.41	70.0	6.431	6.425	33.841	1026.904	26.607	1026.905	26.608
74.37	75.0	6.422	6.416	33.840	1026.928	26.608	1026.928	26.608
79.32	80.0	6.361	6.354	33.853	1026.969	26.626	1026.970	26.626
89.24	90.0	6.051	6.043	33.894	1027.088	26.698	1027.089	26.698
99.15	100.0	5.970	5.961	33.903	1027.151	26.715	1027.152	26.716
118.97	120.0	5.892	5.882	33.913	1027.261	26.733	1027.262	26.734
123.93	125.0	5.894	5.883	33.912	1027.283	26.731	1027.284	26.733
138.79	140.0	5.822	5.810	33.923	1027.370	26.749	1027.371	26.750
148.70	150.0	5.814	5.801	33.924	1027.418	26.751	1027.419	26.752
158.61	160.0	5.802	5.789	33.926	1027.467	26.754	1027.469	26.755
173.48	175.0	5.722	5.708	33.937	1027.554	26.772	1027.557	26.774
178.43	180.0	5.679	5.665	33.943	1027.588	26.782	1027.590	26.784

55

POTENTIAL TEMPERATURE (°C)



CRUISE- AG 49 (MOES 1)

STN NO- 007

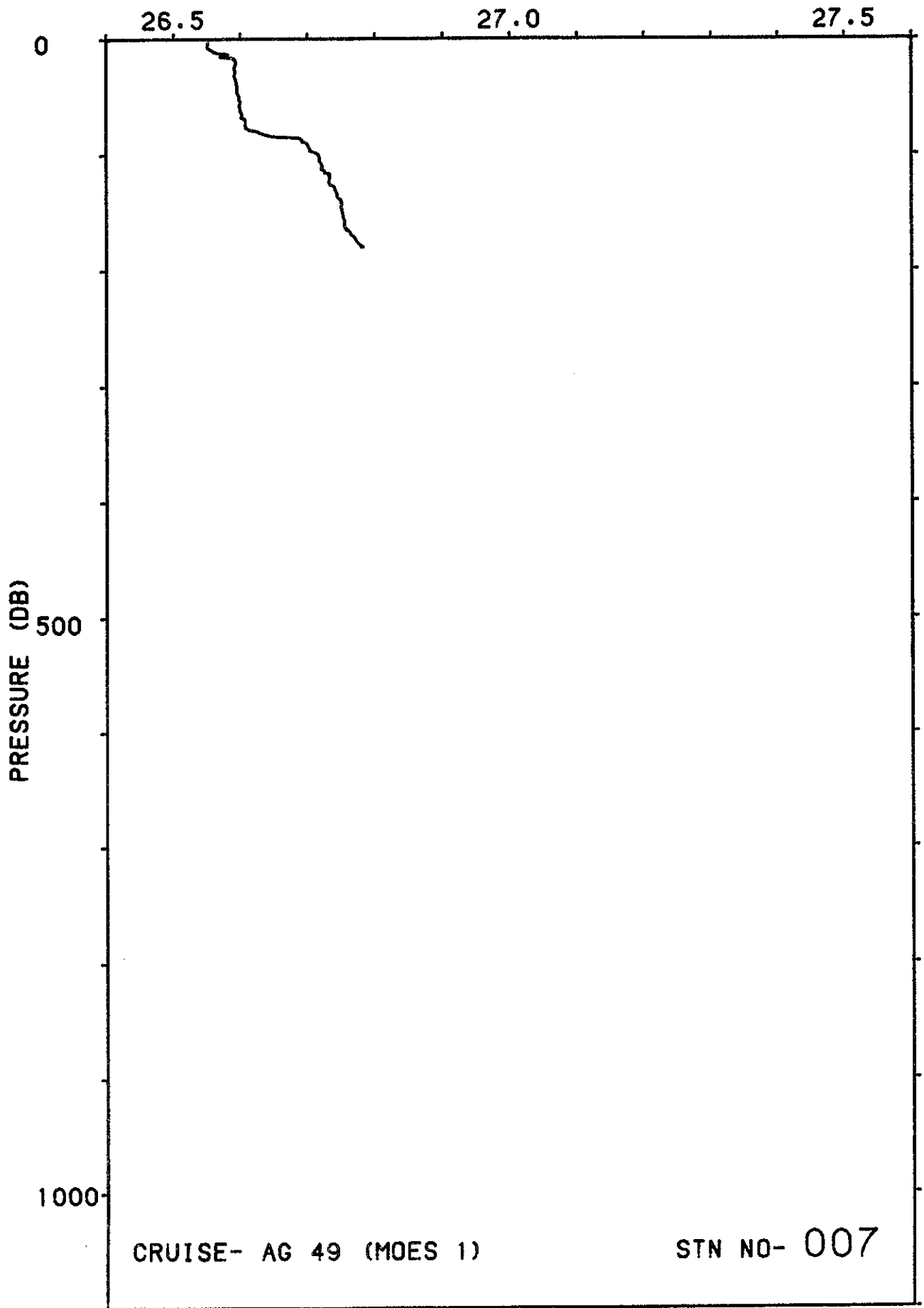
Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.19
 Station: 7 Cast: BOTTLE Time: 6.35 Z
 Position: Lat: 46°46.800'S Long: 37°48.000'E Depth: 192 m/190 m

Bottle Data

Depth m	Temp °C	θ °C	Salt psu	Chl- <i>a</i> mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
3.0	6.61	6.61	33.801	2.078	2.00	17.50	.38	.52
50.0	6.47	6.47	33.838	1.193	2.86	17.60	.38	.39
80.0	6.35	6.34	33.852	1.020	3.37	18.40	.36	.40
90.0	6.04	6.03	33.896	.783	4.69	18.80	.34	.42
100.0	5.97	5.96	33.904	.777	5.31	19.00	.32	.44
110.0	5.94	5.93	33.907	.612	5.51	19.10	.32	.44
150.0	5.81	5.80	33.924	.573	6.28	19.80	.30	.44

57

POTENTIAL DENSITY (σ_θ)

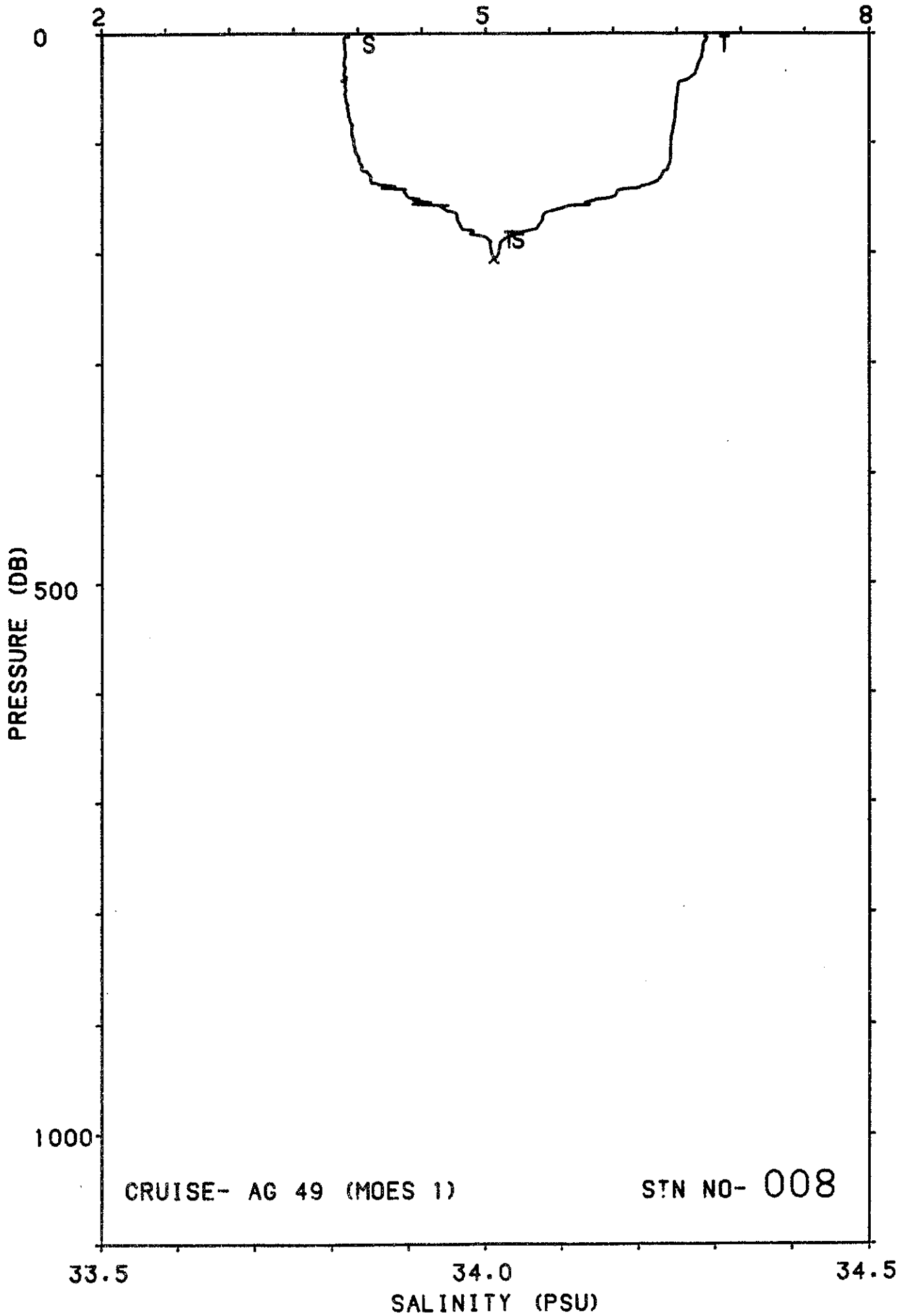


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.19
 Station: 8 Cast: CTD UP Time: 8.18 Z
 Position: Lat: 46°44.100'S Long: 37°43.000'E Depth: 270 m/270 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.574	6.574	33.860	1026.579	26.604	1026.578	26.603
4.96	5.0	6.736	6.735	33.816	1026.545	26.547	1026.545	26.547
9.92	10.0	6.709	6.708	33.816	1026.572	26.551	1026.572	26.551
19.83	20.0	6.700	6.698	33.817	1026.620	26.553	1026.620	26.553
24.79	25.0	6.686	6.684	33.816	1026.644	26.553	1026.644	26.554
29.75	30.0	6.668	6.665	33.816	1026.669	26.556	1026.669	26.556
39.67	40.0	6.612	6.608	33.820	1026.725	26.566	1026.726	26.567
49.58	50.0	6.515	6.511	33.818	1026.783	26.578	1026.784	26.578
59.49	60.0	6.504	6.499	33.818	1026.830	26.579	1026.831	26.580
69.41	70.0	6.497	6.491	33.821	1026.879	26.582	1026.881	26.583
74.37	75.0	6.494	6.488	33.821	1026.903	26.583	1026.904	26.584
79.32	80.0	6.489	6.482	33.824	1026.929	26.586	1026.930	26.587
89.24	90.0	6.475	6.467	33.825	1026.978	26.589	1026.979	26.590
99.15	100.0	6.462	6.453	33.828	1027.028	26.593	1027.029	26.594
118.97	120.0	6.449	6.438	33.838	1027.129	26.602	1027.131	26.604
123.93	125.0	6.423	6.412	33.839	1027.157	26.607	1027.158	26.608
138.79	140.0	6.222	6.210	33.878	1027.283	26.663	1027.284	26.665
148.70	150.0	5.990	5.978	33.903	1027.378	26.712	1027.380	26.714
158.61	160.0	5.589	5.576	33.946	1027.510	26.796	1027.511	26.797
173.48	175.0	5.435	5.421	33.967	1027.615	26.831	1027.616	26.832
178.43	180.0	5.344	5.329	33.984	1027.662	26.855	1027.664	26.857
198.25	200.0	5.123	5.107	34.008	1027.800	26.900	1027.802	26.902

59

POTENTIAL TEMPERATURE (°C)



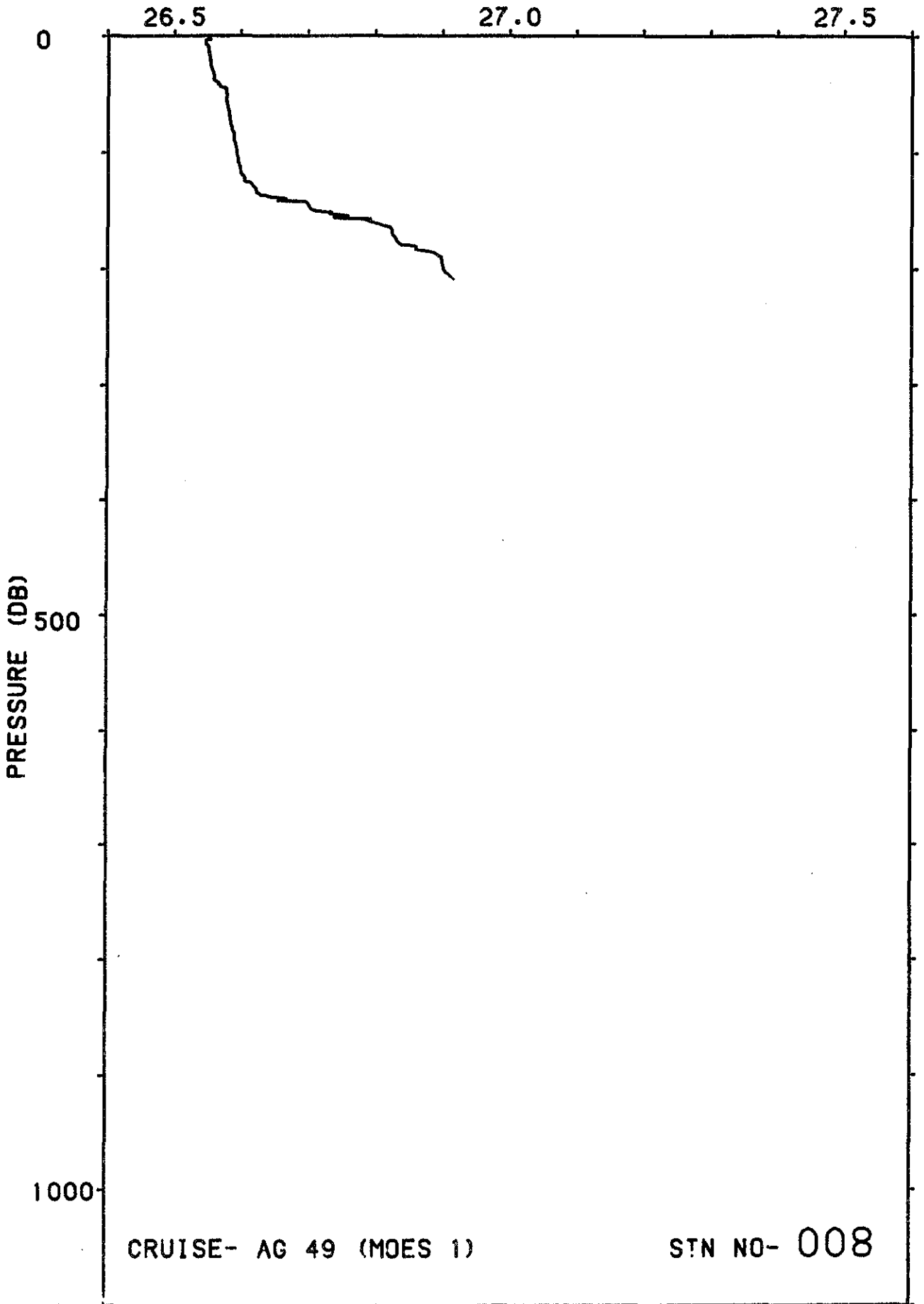
Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.19
 Station: 8 Cast: BOTTLE Time: 8.18 Z
 Position: Lat: 46°44.100'S Long: 37°43.000'E Depth: 270 m/270 m

Bottle Data

Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
3.0	6.73	6.73	33.819	1.663	2.55	18.10	.30	.39
20.0	6.70	6.70	33.817	1.711	2.35	17.20	.37	.39
30.0	6.67	6.67	33.817	2.156	2.35	17.00	.38	.40
50.0	6.51	6.51	33.818	1.809	2.50	17.30	.37	.42
120.0	6.44	6.43	33.839	1.015	3.98	18.40	.38	.43
130.0	6.39	6.37	33.851	.730	4.39	18.50	.39	.43
150.0	5.89	5.87	33.913	.223	6.63	19.40	.31	.44

61

POTENTIAL DENSITY (σ_t)



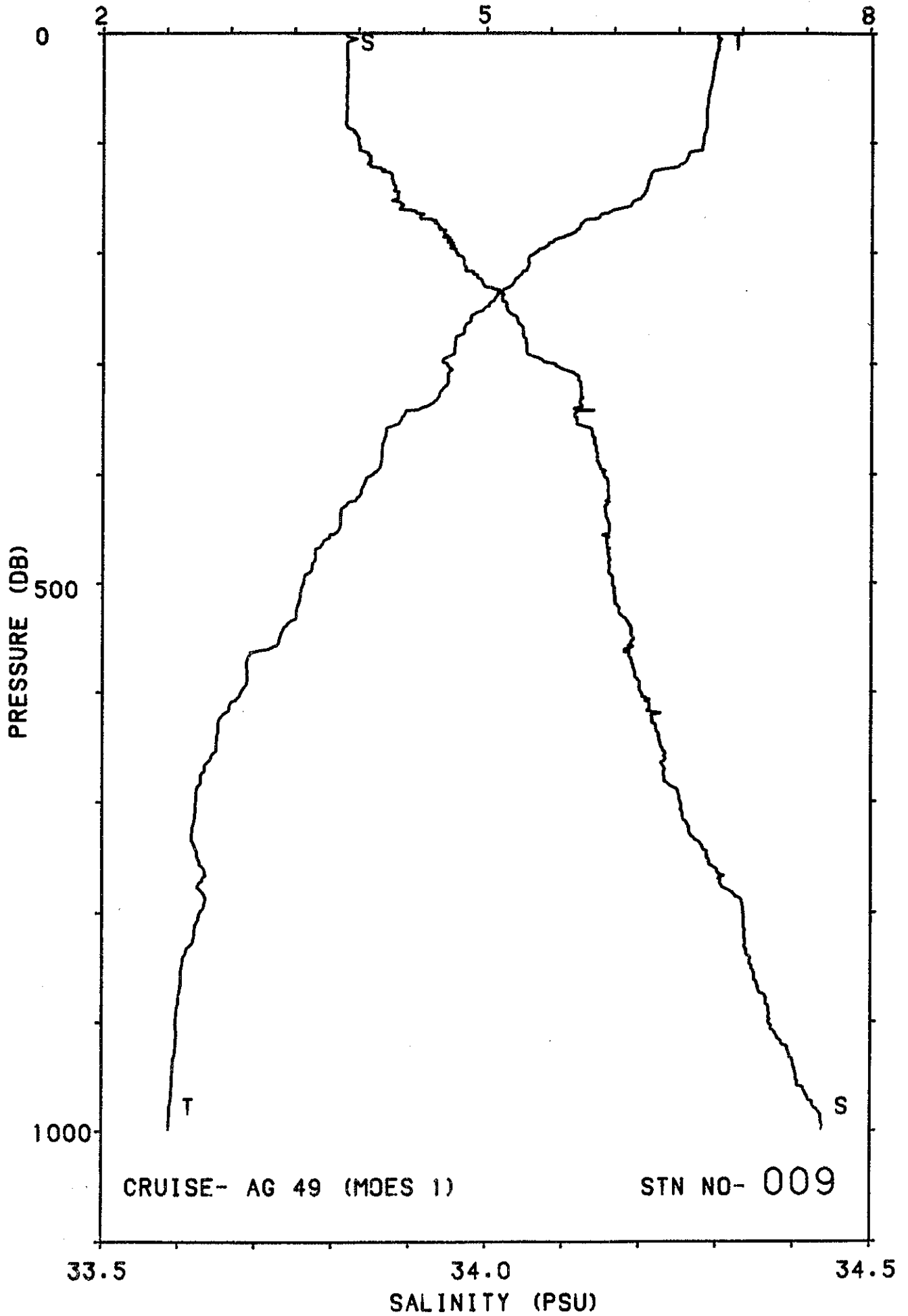
CRUISE- AG 49 (MOES 1)

STN NO- 008

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.19
 Station: 9 Cast: CTD UP Time: 9.55 Z
 Position: Lat: 46°41.800'S Long: 37°37.900'E Depth: 1500 m/1500 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.811	6.811	33.818	1026.514	26.539	1026.514	26.539
4.96	5.0	6.831	6.831	33.830	1026.543	26.545	1026.543	26.545
9.92	10.0	6.815	6.814	33.818	1026.559	26.538	1026.559	26.538
19.83	20.0	6.799	6.797	33.818	1026.607	26.540	1026.607	26.540
24.79	25.0	6.789	6.787	33.820	1026.633	26.543	1026.633	26.543
29.75	30.0	6.786	6.783	33.818	1026.655	26.542	1026.655	26.542
39.67	40.0	6.774	6.770	33.819	1026.703	26.544	1026.704	26.545
49.58	50.0	6.758	6.754	33.818	1026.751	26.546	1026.751	26.546
59.49	60.0	6.738	6.733	33.818	1026.799	26.548	1026.800	26.549
69.41	70.0	6.727	6.720	33.818	1026.846	26.550	1026.848	26.551
74.37	75.0	6.727	6.720	33.818	1026.870	26.550	1026.871	26.551
79.32	80.0	6.727	6.720	33.818	1026.892	26.550	1026.893	26.551
89.24	90.0	6.721	6.713	33.827	1026.946	26.558	1026.947	26.559
99.15	100.0	6.700	6.691	33.833	1027.000	26.565	1027.001	26.566
118.97	120.0	6.512	6.502	33.849	1027.130	26.603	1027.131	26.604
123.93	125.0	6.334	6.323	33.866	1027.189	26.639	1027.191	26.641
138.79	140.0	6.266	6.254	33.881	1027.279	26.660	1027.281	26.661
148.71	150.0	6.214	6.201	33.884	1027.335	26.669	1027.336	26.671
158.61	160.0	6.053	6.040	33.886	1027.403	26.691	1027.405	26.693
173.48	175.0	5.743	5.729	33.937	1027.552	26.769	1027.554	26.771
178.43	180.0	5.710	5.695	33.946	1027.586	26.781	1027.588	26.783
198.25	200.0	5.395	5.379	33.961	1027.730	26.831	1027.732	26.833
218.06	220.0	5.278	5.260	33.987	1027.857	26.865	1027.859	26.867
237.88	240.0	5.090	5.071	34.020	1027.998	26.913	1028.001	26.915
247.78	250.0	5.004	4.984	34.026	1028.060	26.928	1028.062	26.930
257.69	260.0	4.896	4.876	34.039	1028.129	26.950	1028.131	26.953
277.50	280.0	4.777	4.756	34.051	1028.245	26.973	1028.247	26.976
297.30	300.0	4.714	4.691	34.089	1028.375	27.011	1028.377	27.013
317.11	320.0	4.705	4.681	34.122	1028.494	27.037	1028.497	27.040
336.91	340.0	4.504	4.479	34.113	1028.603	27.053	1028.606	27.055
346.81	350.0	4.361	4.336	34.117	1028.669	27.071	1028.672	27.074
356.71	360.0	4.242	4.216	34.137	1028.745	27.100	1028.748	27.102
376.51	380.0	4.214	4.186	34.143	1028.845	27.107	1028.848	27.110
396.31	400.0	4.142	4.113	34.153	1028.953	27.123	1028.957	27.126
445.79	450.0	3.888	3.857	34.161	1029.220	27.155	1029.223	27.158
495.27	500.0	3.611	3.577	34.165	1029.484	27.186	1029.489	27.189
544.73	550.0	3.428	3.391	34.191	1029.757	27.224	1029.761	27.228
594.18	600.0	3.127	3.088	34.201	1030.028	27.261	1030.033	27.264
643.61	650.0	2.935	2.893	34.227	1030.301	27.299	1030.305	27.303
693.04	700.0	2.782	2.738	34.253	1030.569	27.333	1030.573	27.337
742.45	750.0	2.794	2.746	34.288	1030.826	27.360	1030.831	27.364
791.85	800.0	2.822	2.770	34.335	1031.092	27.396	1031.097	27.400
841.24	850.0	2.681	2.627	34.346	1031.346	27.417	1031.352	27.421
890.62	900.0	2.637	2.579	34.368	1031.599	27.438	1031.605	27.443
939.99	950.0	2.618	2.557	34.404	1031.860	27.468	1031.866	27.474

POTENTIAL TEMPERATURE (°C)

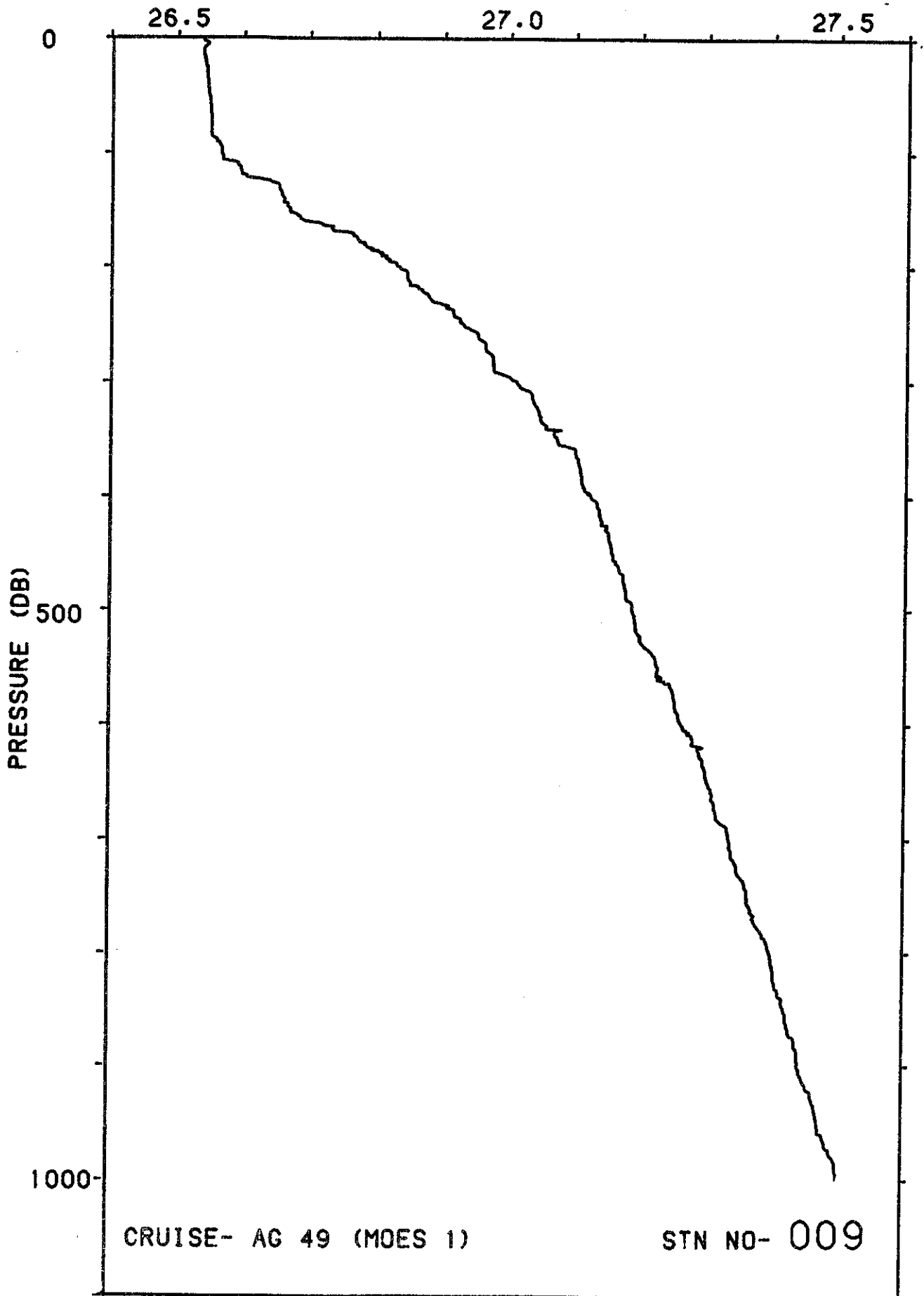


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.19
 Station: 9 Cast: BOTTLE Time: 9.55 Z
 Position: Lat: 46°41.800'S Long: 37°37.900'E Depth: 1500 m/1500 m

Bottle Data

Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
3.0	6.81	6.81	33.819	1.490				
50.0	6.75	6.75	33.818	1.578	2.46	18.03	.37	.43
80.0	6.73	6.72	33.817	1.179	2.57	17.67	.38	.43
100.0	6.70	6.69	33.832	.706	2.60	17.60	.38	.43
110.0	6.59	6.58	33.845	1.244	3.09	17.81	.40	.45
120.0	6.51	6.50	33.849	.287	4.01	18.43	.41	.46
130.0	6.29	6.28	33.876	.178	4.48	18.66	.41	.46

POTENTIAL DENSITY (σ_θ)



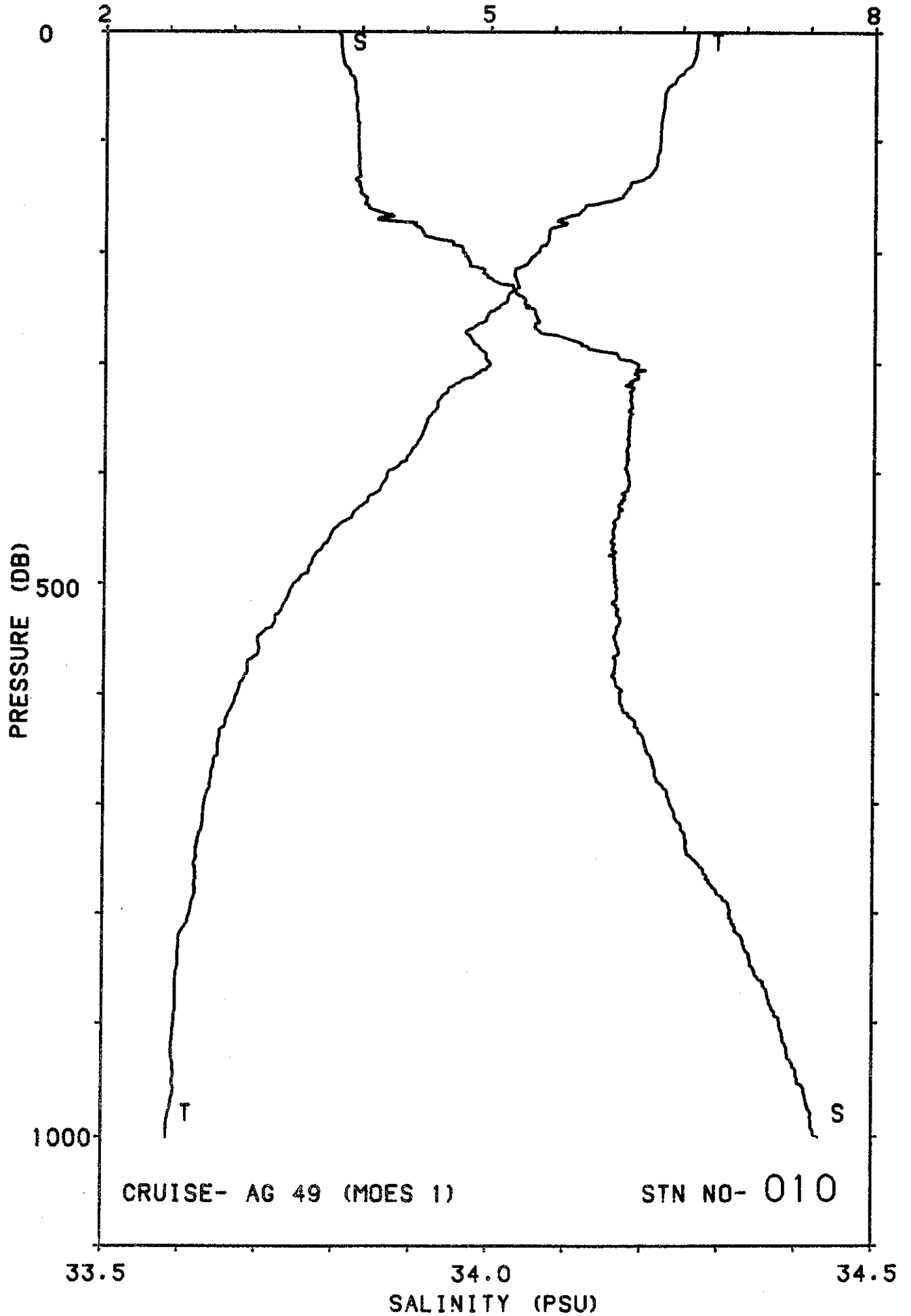
CRUISE- AG 49 (MOES 1)

STN NO- 009

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.19
 Station: 10 Cast: CTD UP Time: 11.30 Z
 Position: Lat: 46°39.600'S Long: 37°32.900'E Depth: 2276 m/2271 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.624	6.624	33.798	1026.522	26.547	1026.523	26.548
4.96	5.0	6.613	6.612	33.805	1026.553	26.555	1026.553	26.555
9.92	10.0	6.604	6.603	33.806	1026.578	26.557	1026.578	26.557
19.83	20.0	6.598	6.596	33.807	1026.626	26.558	1026.626	26.558
24.79	25.0	6.589	6.587	33.809	1026.651	26.561	1026.651	26.561
29.75	30.0	6.569	6.566	33.811	1026.678	26.565	1026.679	26.566
39.67	40.0	6.474	6.470	33.819	1026.743	26.584	1026.744	26.584
49.58	50.0	6.396	6.391	33.825	1026.804	26.599	1026.805	26.599
59.50	60.0	6.362	6.357	33.826	1026.856	26.604	1026.856	26.605
69.41	70.0	6.358	6.352	33.826	1026.902	26.604	1026.903	26.605
74.37	75.0	6.349	6.342	33.828	1026.928	26.607	1026.929	26.608
79.32	80.0	6.341	6.334	33.828	1026.952	26.608	1026.953	26.609
89.24	90.0	6.332	6.324	33.829	1027.000	26.610	1027.001	26.611
99.15	100.0	6.329	6.321	33.830	1027.047	26.611	1027.048	26.612
118.97	120.0	6.306	6.296	33.830	1027.142	26.615	1027.143	26.616
123.93	125.0	6.292	6.281	33.830	1027.167	26.616	1027.168	26.618
138.80	140.0	6.102	6.090	33.831	1027.261	26.641	1027.263	26.643
148.71	150.0	6.044	6.031	33.838	1027.320	26.654	1027.322	26.656
158.62	160.0	5.749	5.736	33.843	1027.408	26.695	1027.410	26.696
173.48	175.0	5.603	5.589	33.901	1027.541	26.758	1027.543	26.760
178.43	180.0	5.477	5.462	33.911	1027.588	26.782	1027.590	26.783
198.25	200.0	5.384	5.368	33.965	1027.735	26.835	1027.736	26.837
218.06	220.0	5.203	5.186	33.995	1027.873	26.880	1027.875	26.882
237.88	240.0	5.157	5.138	34.042	1028.008	26.923	1028.010	26.925
247.78	250.0	5.077	5.058	34.052	1028.071	26.940	1028.074	26.942
257.69	260.0	4.992	4.972	34.061	1028.135	26.957	1028.137	26.959
277.50	280.0	4.888	4.866	34.113	1028.281	27.010	1028.283	27.012
297.30	300.0	5.019	4.996	34.191	1028.418	27.056	1028.421	27.059
317.11	320.0	4.744	4.720	34.178	1028.534	27.077	1028.537	27.080
336.91	340.0	4.620	4.595	34.186	1028.647	27.098	1028.650	27.100
346.81	350.0	4.547	4.521	34.183	1028.699	27.103	1028.703	27.106
356.71	360.0	4.524	4.497	34.182	1028.747	27.105	1028.751	27.108
376.51	380.0	4.423	4.395	34.178	1028.849	27.113	1028.852	27.116
396.31	400.0	4.237	4.208	34.179	1028.963	27.133	1028.967	27.137
445.79	450.0	3.837	3.806	34.164	1029.228	27.163	1029.231	27.166
495.27	500.0	3.522	3.489	34.164	1029.494	27.194	1029.497	27.197
544.73	550.0	3.241	3.205	34.164	1029.755	27.220	1029.759	27.224
594.18	600.0	3.086	3.047	34.171	1030.009	27.240	1030.013	27.244
643.62	650.0	2.939	2.897	34.205	1030.283	27.281	1030.287	27.285
693.04	700.0	2.840	2.795	34.236	1030.549	27.315	1030.554	27.319
742.45	750.0	2.780	2.732	34.266	1030.811	27.344	1030.816	27.348
791.86	800.0	2.739	2.687	34.314	1031.084	27.386	1031.089	27.390
841.25	850.0	2.642	2.588	34.345	1031.350	27.419	1031.355	27.424
890.63	900.0	2.622	2.565	34.380	1031.610	27.449	1031.616	27.454
939.99	950.0	2.620	2.559	34.403	1031.858	27.467	1031.865	27.473
989.35	1000.0	2.575	2.510	34.429	1032.114	27.492	1032.121	27.498

POTENTIAL TEMPERATURE (°C)

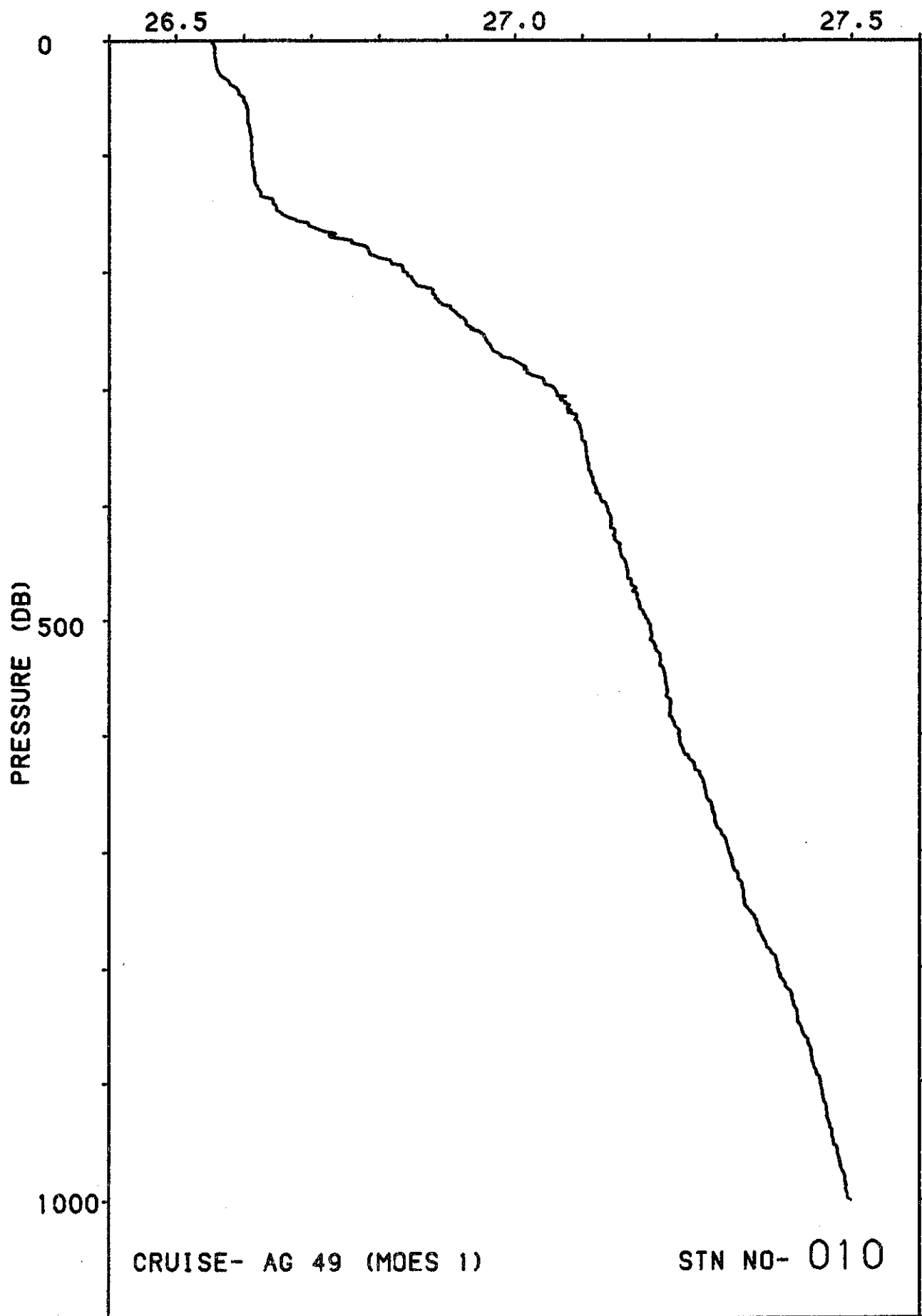


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.19
Station: 10 Cast: BOTTLE Time: 11.30 Z
Position: Lat: 46°39.600'S Long: 37°32.900'E Depth: 2276 m/2271 m

Bottle Data

Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
3.0	6.61	6.61	33.806	.266	3.25	17.87	.39	.44
40.0	6.47	6.47	33.820	.258	3.69	18.22	.43	.45
50.0	6.39	6.39	33.825	.217	3.76	18.04	.44	.45
60.0	6.36	6.36	33.827	.237	3.78	17.63	.44	.46
140.0	6.10	6.09	33.831	.116	4.02	18.24	.46	.46
150.0	6.03	6.02	33.840	.118	4.10	18.22	.46	.46
160.0	5.74	5.73	33.847	.105	4.21	18.58	.45	.46

POTENTIAL DENSITY (σ_t)

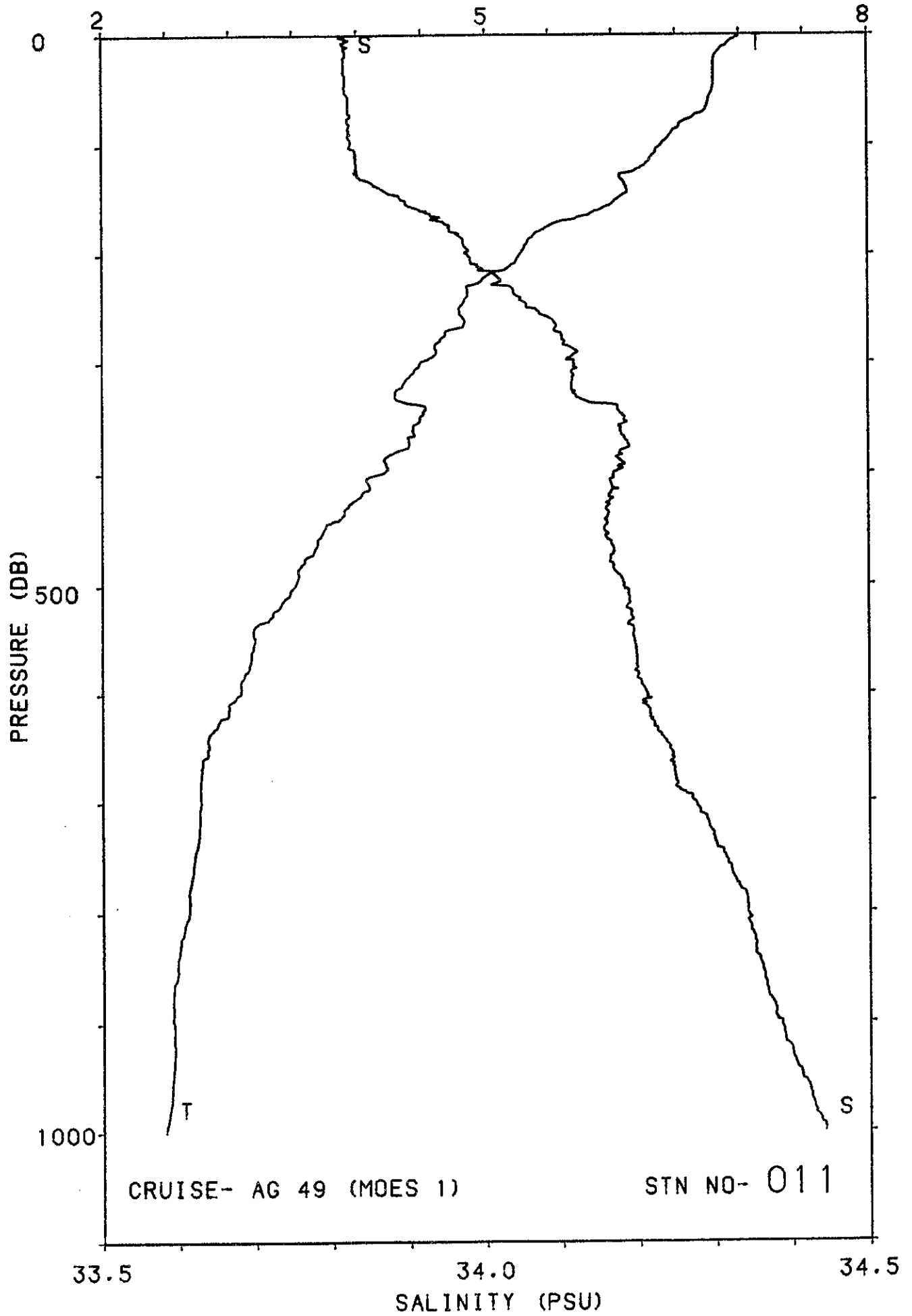


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.20
 Station: 11 Cast: CTD UP Time: 9.47 Z
 Position: Lat: 46°35.100'S Long: 37°35.500'E Depth: 2300 m/2300 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ _t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ _θ kg.m ⁻³
.00	.0	6.981	6.981	33.824	1026.495	26.520	1026.495	26.520
4.96	5.0	6.940	6.940	33.821	1026.521	26.523	1026.521	26.523
9.92	10.0	6.901	6.900	33.817	1026.547	26.526	1026.547	26.526
19.83	20.0	6.813	6.811	33.818	1026.605	26.538	1026.605	26.539
24.79	25.0	6.801	6.799	33.816	1026.628	26.538	1026.629	26.539
29.75	30.0	6.806	6.803	33.817	1026.651	26.539	1026.652	26.539
39.67	40.0	6.807	6.803	33.819	1026.698	26.540	1026.699	26.540
49.58	50.0	6.798	6.794	33.819	1026.746	26.541	1026.746	26.542
59.50	60.0	6.767	6.762	33.823	1026.799	26.548	1026.800	26.549
69.41	70.0	6.724	6.717	33.823	1026.851	26.554	1026.852	26.555
74.37	75.0	6.640	6.634	33.822	1026.885	26.565	1026.885	26.565
79.32	80.0	6.548	6.541	33.824	1026.921	26.578	1026.922	26.579
89.24	90.0	6.474	6.466	33.826	1026.978	26.589	1026.980	26.591
99.15	100.0	6.398	6.389	33.825	1027.034	26.599	1027.035	26.600
118.97	120.0	6.241	6.231	33.834	1027.153	26.626	1027.155	26.627
123.93	125.0	6.146	6.135	33.831	1027.187	26.636	1027.188	26.637
138.80	140.0	6.125	6.113	33.866	1027.286	26.666	1027.288	26.668
148.71	150.0	6.047	6.035	33.894	1027.364	26.698	1027.366	26.699
158.62	160.0	5.898	5.885	33.919	1027.449	26.736	1027.451	26.738
173.48	175.0	5.500	5.486	33.952	1027.595	26.811	1027.596	26.813
178.43	180.0	5.418	5.404	33.963	1027.636	26.829	1027.638	26.831
198.25	200.0	5.298	5.282	33.977	1027.754	26.855	1027.756	26.857
218.07	220.0	5.034	5.017	34.015	1027.909	26.916	1027.911	26.918
237.88	240.0	4.877	4.859	34.046	1028.044	26.958	1028.046	26.960
247.78	250.0	4.817	4.798	34.058	1028.107	26.974	1028.109	26.976
257.69	260.0	4.851	4.831	34.086	1028.172	26.993	1028.174	26.995
277.50	280.0	4.669	4.648	34.103	1028.298	27.026	1028.301	27.029
297.31	300.0	4.518	4.495	34.116	1028.419	27.054	1028.422	27.056
317.11	320.0	4.379	4.356	34.114	1028.526	27.066	1028.528	27.069
336.91	340.0	4.551	4.526	34.174	1028.645	27.095	1028.649	27.099
346.81	350.0	4.516	4.490	34.183	1028.703	27.107	1028.706	27.110
356.71	360.0	4.463	4.437	34.177	1028.751	27.108	1028.754	27.111
376.51	380.0	4.353	4.325	34.178	1028.857	27.120	1028.860	27.123
396.31	400.0	4.226	4.198	34.168	1028.956	27.126	1028.959	27.129
445.80	450.0	3.778	3.747	34.156	1029.228	27.162	1029.231	27.165
495.27	500.0	3.548	3.515	34.182	1029.505	27.206	1029.509	27.209
544.73	550.0	3.235	3.199	34.195	1029.780	27.246	1029.785	27.249
594.18	600.0	3.123	3.083	34.211	1030.036	27.269	1030.041	27.273
643.62	650.0	2.878	2.836	34.242	1030.319	27.316	1030.323	27.320
693.05	700.0	2.816	2.771	34.273	1030.581	27.347	1030.586	27.350
742.46	750.0	2.768	2.720	34.313	1030.849	27.382	1030.854	27.387
791.86	800.0	2.729	2.678	34.341	1031.106	27.409	1031.112	27.413
841.25	850.0	2.641	2.587	34.361	1031.362	27.432	1031.368	27.437
890.63	900.0	2.611	2.554	34.385	1031.615	27.454	1031.621	27.459
940.00	950.0	2.608	2.547	34.412	1031.867	27.475	1031.873	27.481
989.36	1000.0	2.555	2.491	34.443	1032.127	27.505	1032.134	27.510

71

POTENTIAL TEMPERATURE (°C)



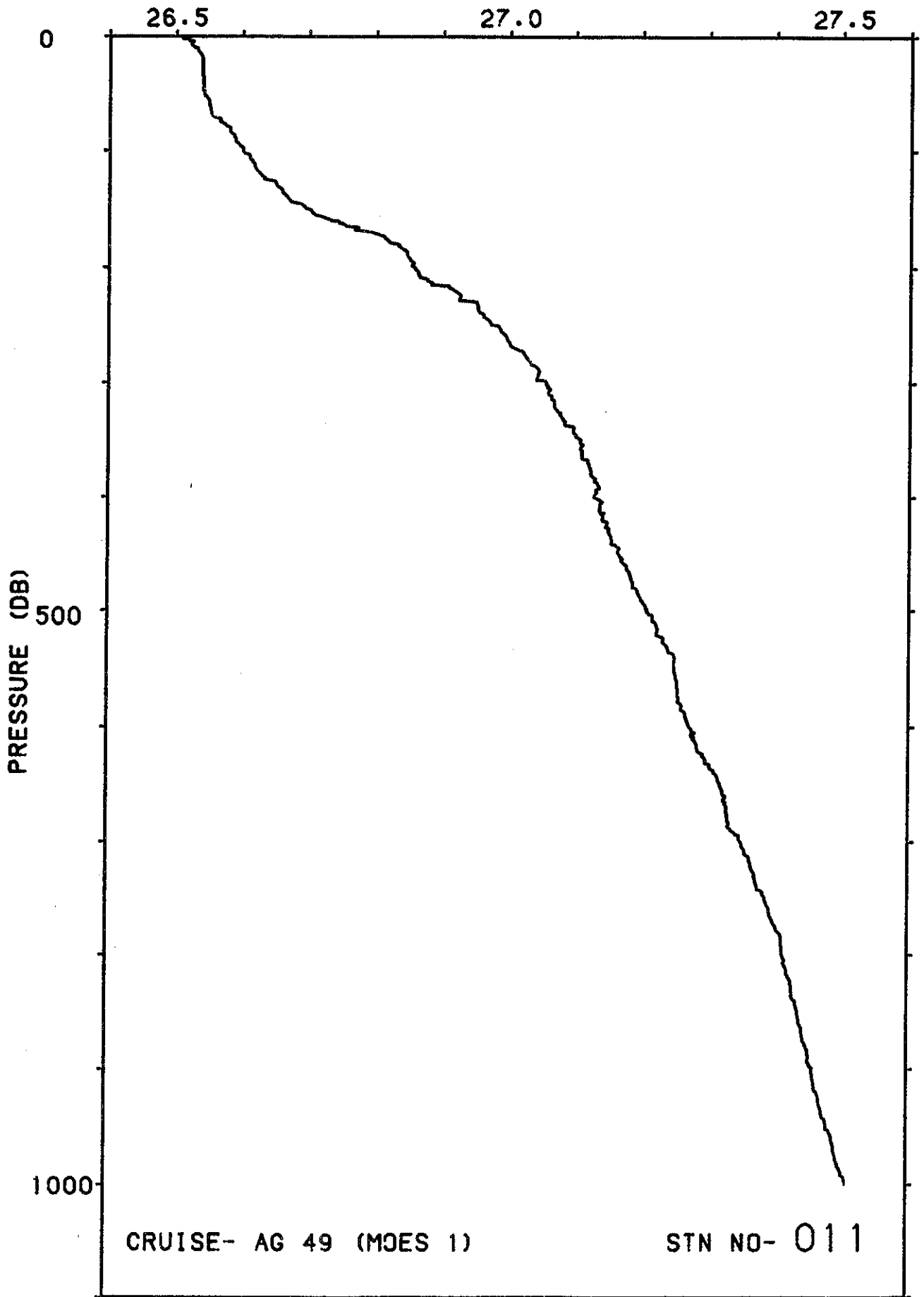
Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.20
 Station: 11 Cast: BOTTLE Time: 9.47 Z
 Position: Lat: 46°35.100'S Long: 37°35.500'E Depth: 2300 m/2300 m

Bottle Data

Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
3.0	6.98	6.98	33.817	1.178	1.60	15.79	.30	.39
10.0	6.90	6.90	33.818	1.804	1.50	15.66	.32	.38
50.0	6.80	6.79	33.818	1.548	1.60	16.15	.33	.40
60.0	6.77	6.76	33.823	1.367	1.98	16.41	.34	.41
120.0	6.23	6.22	33.834	.251	3.10	17.81	.35	.43
150.0	6.03	6.02	33.896	.169	4.17	18.44	.41	.45

73

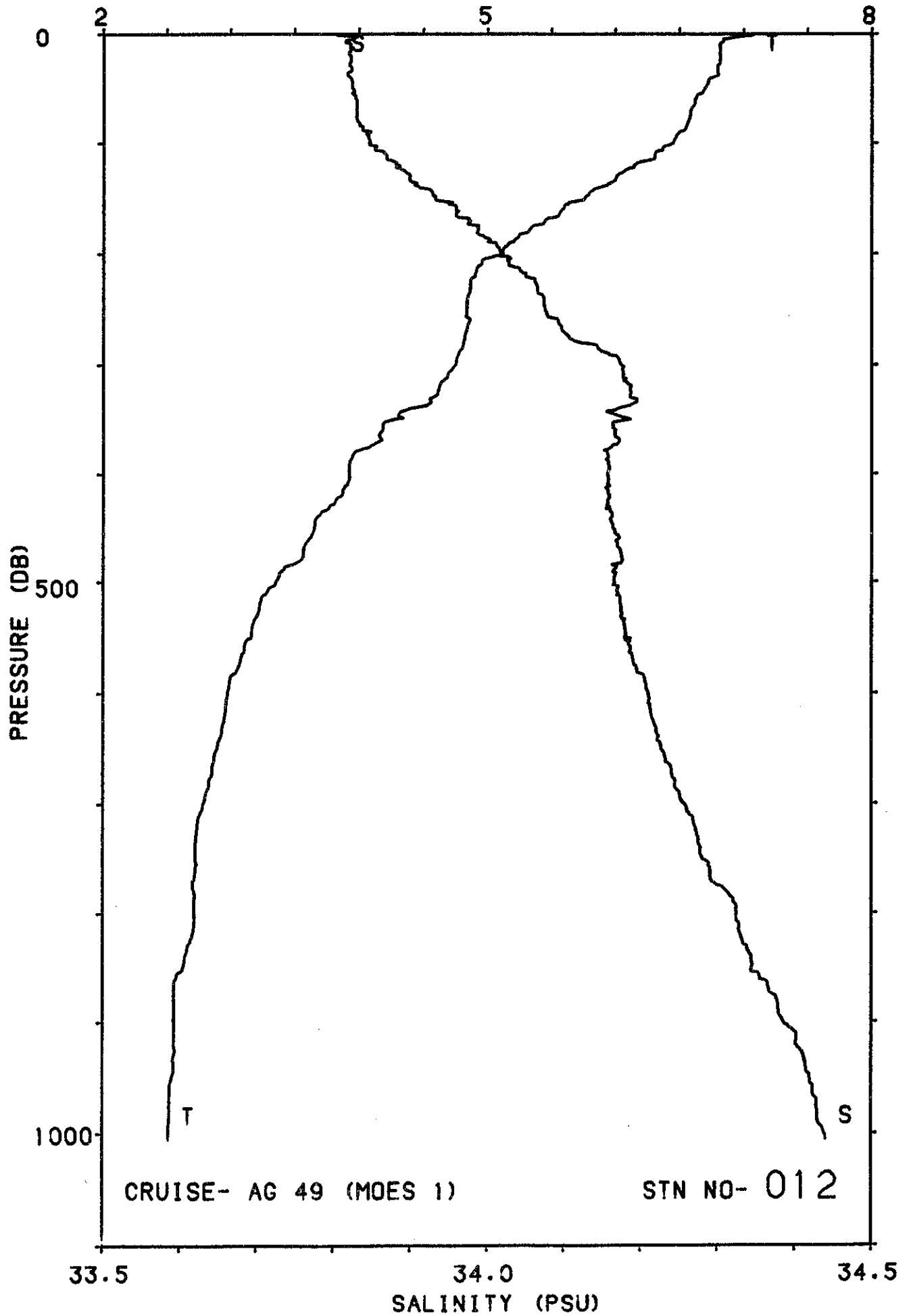
POTENTIAL DENSITY (σ_θ)



Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.20
 Station: 12 Cast: CTD UP Time: 12.03 Z
 Position: Lat: 46°37.600'S Long: 37°41.600'E Depth: 1200 m/1440 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ _t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ _θ kg.m ⁻³
.00	.0	7.188	7.188	33.777	1026.430	26.455	1026.430	26.455
4.96	5.0	6.836	6.836	33.825	1026.539	26.541	1026.539	26.541
9.92	10.0	6.811	6.810	33.823	1026.563	26.542	1026.564	26.543
19.83	20.0	6.818	6.816	33.822	1026.608	26.541	1026.608	26.541
24.79	25.0	6.817	6.815	33.823	1026.631	26.541	1026.632	26.542
29.75	30.0	6.799	6.796	33.822	1026.657	26.544	1026.657	26.544
39.67	40.0	6.749	6.745	33.822	1026.709	26.550	1026.709	26.551
49.58	50.0	6.702	6.698	33.825	1026.763	26.558	1026.764	26.559
59.50	60.0	6.625	6.620	33.830	1026.824	26.573	1026.824	26.573
69.41	70.0	6.588	6.582	33.829	1026.874	26.577	1026.875	26.578
74.37	75.0	6.591	6.585	33.831	1026.898	26.578	1026.899	26.579
79.32	80.0	6.577	6.570	33.831	1026.923	26.580	1026.924	26.581
89.24	90.0	6.504	6.496	33.847	1026.992	26.602	1026.992	26.603
99.15	100.0	6.454	6.446	33.847	1027.044	26.609	1027.045	26.610
118.97	120.0	6.157	6.147	33.884	1027.204	26.676	1027.205	26.677
123.93	125.0	6.085	6.074	33.892	1027.243	26.691	1027.244	26.693
138.80	140.0	5.895	5.883	33.911	1027.351	26.730	1027.353	26.732
148.71	150.0	5.775	5.762	33.931	1027.429	26.761	1027.430	26.763
158.62	160.0	5.600	5.587	33.960	1027.519	26.805	1027.521	26.807
173.48	175.0	5.367	5.353	33.989	1027.640	26.856	1027.642	26.858
178.43	180.0	5.336	5.322	33.988	1027.666	26.859	1027.668	26.861
198.25	200.0	5.113	5.098	34.020	1027.811	26.911	1027.813	26.912
218.07	220.0	4.918	4.902	34.049	1027.950	26.956	1027.951	26.958
237.88	240.0	4.863	4.844	34.074	1028.068	26.981	1028.070	26.984
247.78	250.0	4.858	4.839	34.075	1028.115	26.983	1028.118	26.985
257.69	260.0	4.883	4.863	34.091	1028.172	26.993	1028.174	26.995
277.50	280.0	4.840	4.818	34.120	1028.292	27.021	1028.295	27.023
297.30	300.0	4.776	4.753	34.174	1028.435	27.071	1028.437	27.073
317.11	320.0	4.651	4.627	34.187	1028.552	27.095	1028.555	27.098
336.91	340.0	4.421	4.396	34.170	1028.657	27.106	1028.661	27.109
346.81	350.0	4.289	4.263	34.184	1028.730	27.132	1028.733	27.135
356.71	360.0	4.208	4.182	34.168	1028.773	27.128	1028.776	27.131
376.51	380.0	3.998	3.971	34.156	1028.880	27.140	1028.883	27.143
396.31	400.0	3.954	3.926	34.157	1028.978	27.145	1028.981	27.148
445.80	450.0	3.688	3.657	34.164	1029.244	27.177	1029.248	27.181
495.27	500.0	3.393	3.359	34.165	1029.508	27.207	1029.512	27.210
544.73	550.0	3.201	3.165	34.179	1029.772	27.236	1029.776	27.240
594.18	600.0	3.015	2.976	34.210	1030.048	27.278	1030.052	27.282
643.62	650.0	2.937	2.895	34.227	1030.300	27.299	1030.305	27.303
693.04	700.0	2.834	2.789	34.257	1030.566	27.332	1030.571	27.336
742.46	750.0	2.776	2.728	34.280	1030.822	27.356	1030.827	27.360
791.86	800.0	2.771	2.720	34.324	1031.088	27.391	1031.094	27.395
841.25	850.0	2.685	2.631	34.344	1031.344	27.415	1031.350	27.419
890.63	900.0	2.616	2.558	34.385	1031.614	27.453	1031.621	27.458
940.00	950.0	2.603	2.542	34.419	1031.873	27.482	1031.880	27.487
989.35	1000.0	2.583	2.518	34.439	1032.121	27.499	1032.128	27.505

POTENTIAL TEMPERATURE (°C)



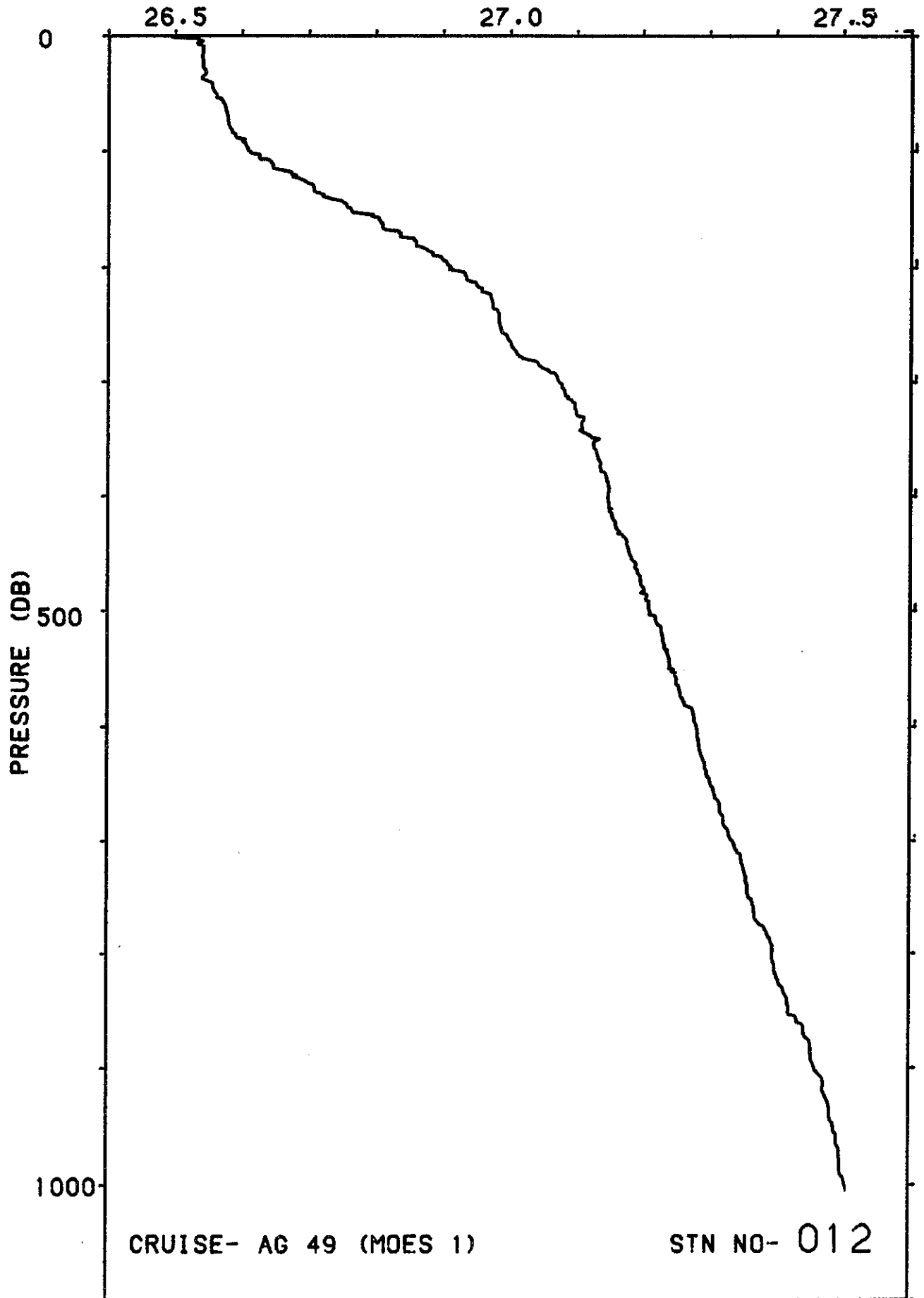
Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.20
 Station: 12 Cast: BOTTLE Time: 12.03 Z
 Position: Lat: 46°37.600'S Long: 37°41.600'E Depth: 1200 m/1440 m

Bottle Data

Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
3.0	7.06	7.06	33.841	1.747	.32	16.72	.35	.37
20.0	6.82	6.82	33.822	1.982	.53	16.58	.34	.38
30.0	6.80	6.80	33.823	1.770	.60	16.92	.35	.39
50.0	6.70	6.70	33.825	1.856	1.11	17.22	.34	.39
70.0	6.60	6.59	33.830	.991	1.93	17.82	.35	.39
100.0	6.44	6.43	33.848	.414	2.69	18.31	.33	.42
120.0	6.15	6.14	33.885	.475	3.30	18.70	.32	.42

77

POTENTIAL DENSITY (σ_t)

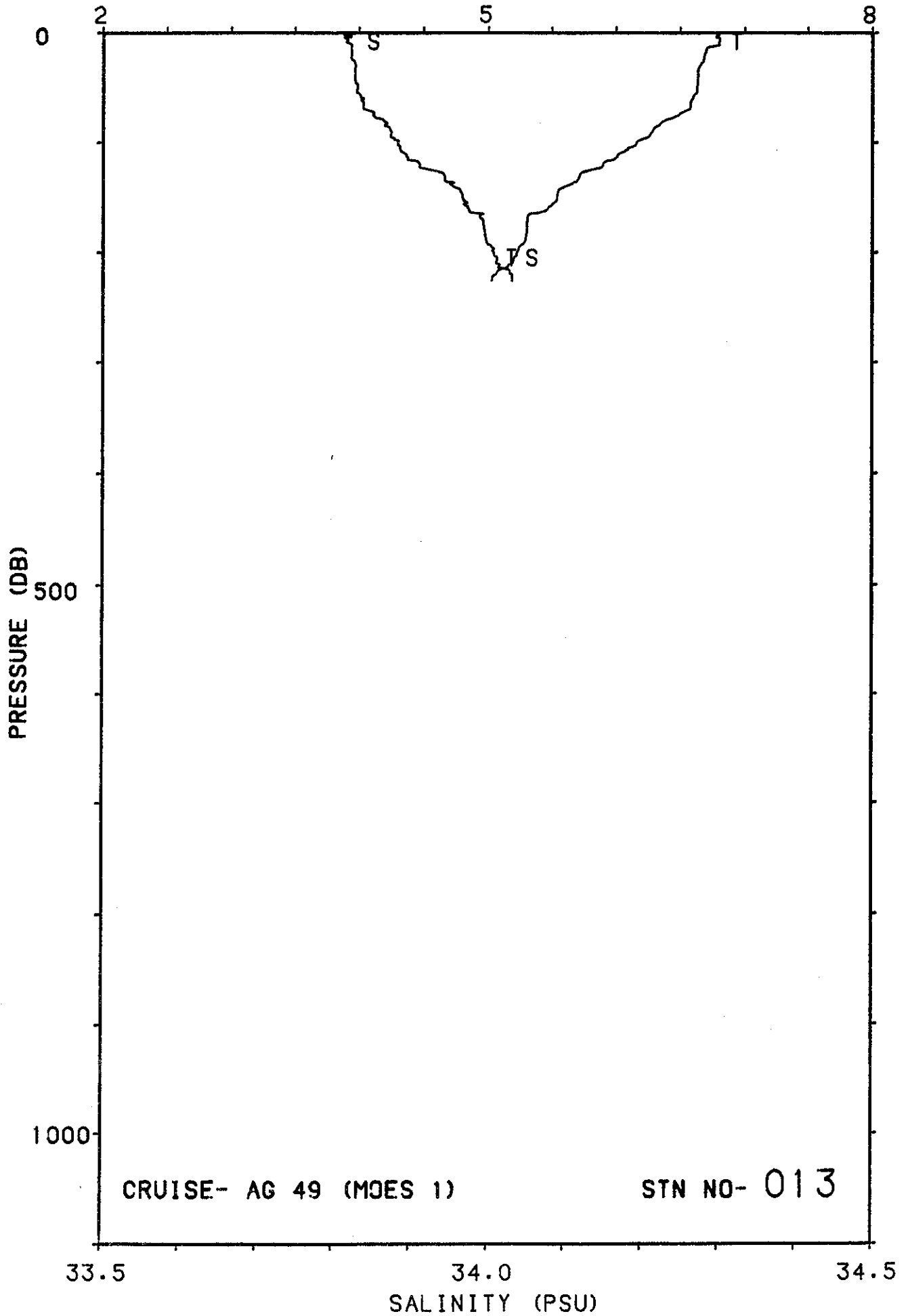


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.20
 Station: 13 Cast: CTD UP Time: 14.22 Z
 Position: Lat: 46°40.700'S Long: 37°47.500'E Depth: 880 m/840 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ _t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ _θ kg.m ⁻³
.00	.0	6.767	6.767	33.836	1026.534	26.559	1026.534	26.559
4.96	5.0	6.807	6.806	33.815	1026.535	26.537	1026.535	26.537
9.92	10.0	6.806	6.805	33.821	1026.562	26.541	1026.563	26.542
19.83	20.0	6.695	6.693	33.824	1026.626	26.559	1026.626	26.559
24.79	25.0	6.687	6.685	33.826	1026.651	26.561	1026.652	26.562
29.75	30.0	6.657	6.654	33.830	1026.681	26.568	1026.682	26.569
39.67	40.0	6.644	6.640	33.828	1026.728	26.569	1026.728	26.569
49.58	50.0	6.635	6.630	33.832	1026.778	26.573	1026.779	26.574
59.50	60.0	6.600	6.594	33.840	1026.835	26.584	1026.836	26.585
69.41	70.0	6.567	6.561	33.842	1026.887	26.590	1026.888	26.591
74.37	75.0	6.494	6.487	33.851	1026.927	26.607	1026.928	26.608
79.32	80.0	6.382	6.375	33.865	1026.976	26.633	1026.977	26.633
89.24	90.0	6.287	6.280	33.875	1027.042	26.652	1027.043	26.653
99.15	100.0	6.169	6.161	33.884	1027.111	26.675	1027.111	26.676
118.97	120.0	5.914	5.904	33.912	1027.258	26.729	1027.259	26.730
123.93	125.0	5.807	5.797	33.928	1027.307	26.755	1027.308	26.756
138.79	140.0	5.616	5.605	33.956	1027.422	26.800	1027.423	26.802
148.71	150.0	5.558	5.546	33.967	1027.484	26.816	1027.485	26.817
158.62	160.0	5.487	5.474	33.973	1027.544	26.830	1027.545	26.831
173.48	175.0	5.321	5.307	33.994	1027.649	26.865	1027.651	26.867
178.43	180.0	5.322	5.308	33.995	1027.674	26.867	1027.675	26.868
198.25	200.0	5.244	5.228	34.007	1027.785	26.885	1027.787	26.887
218.06	220.0	5.079	5.062	34.032	1027.916	26.924	1027.919	26.926

79

POTENTIAL TEMPERATURE (°C)



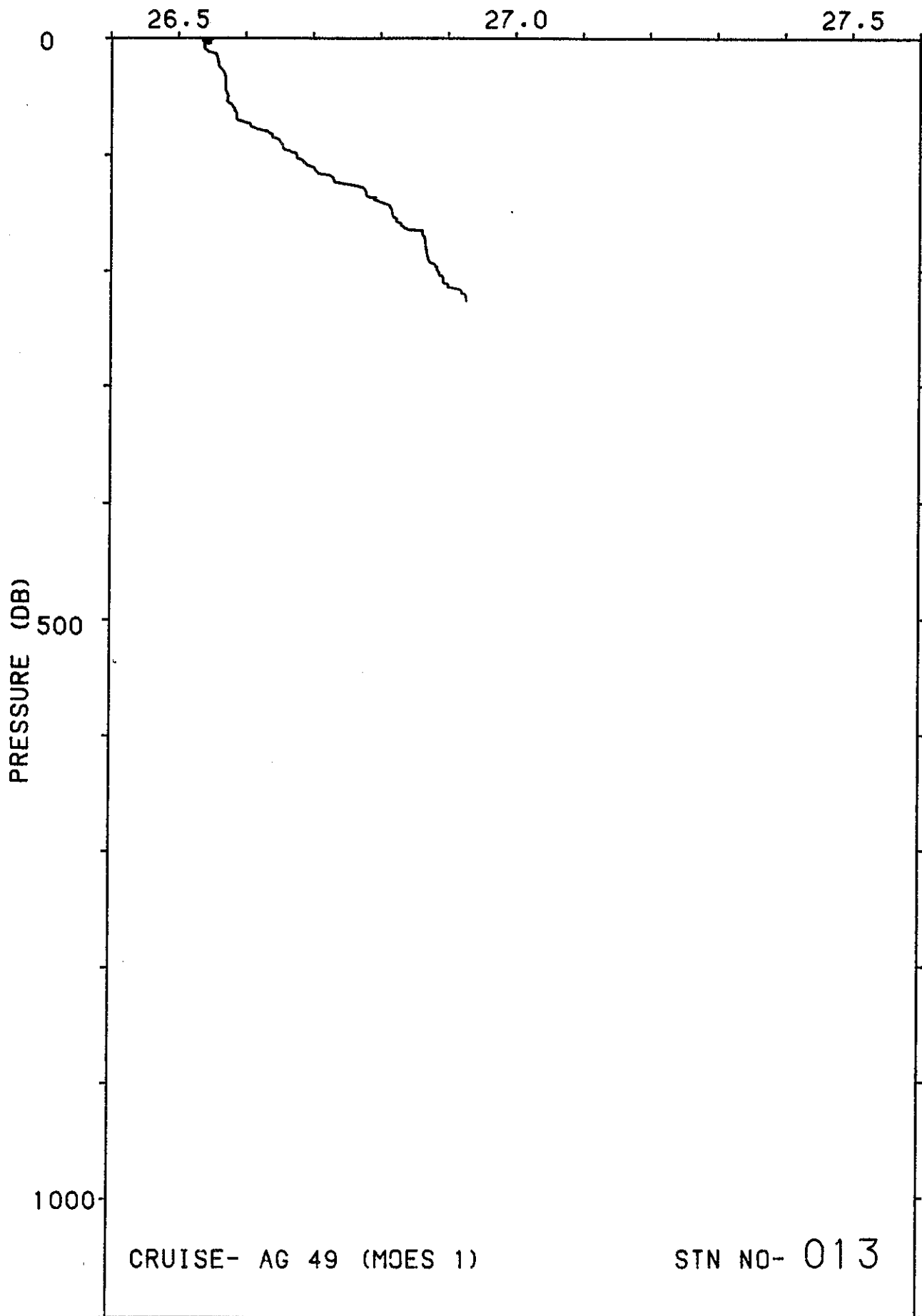
Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.20
 Station: 13 Cast: BOTTLE Time: 14.22 Z
 Position: Lat: 46°40.700'S Long: 37°47.500'E Depth: 880 m/840 m

Bottle Data

Depth	Temp	θ	Salt	Chl-a	SiO ₂	NO ₃	NO ₂	PO ₄
m	°C	°C	psu	mg.m ⁻³	mmol.m ⁻³	mmol.m ⁻³	mmol.m ⁻³	mmol.m ⁻³
3.0	6.78	6.78	33.822	1.995	.02	16.52	.34	.47
10.0	6.81	6.81	33.821	2.031	.43	16.78	.34	.46
20.0	6.70	6.69	33.824	1.579	.70	17.17	.34	.47
30.0	6.66	6.65	33.830	1.458	.59	17.21	.33	.50
50.0	6.63	6.63	33.832	.794	1.03	17.37	.32	.45
75.0	6.48	6.47	33.852	.377	1.37	17.39	.29	.48
100.0	6.17	6.16	33.885	.353	2.42	18.13	.27	.46

81

POTENTIAL DENSITY (σ_θ)

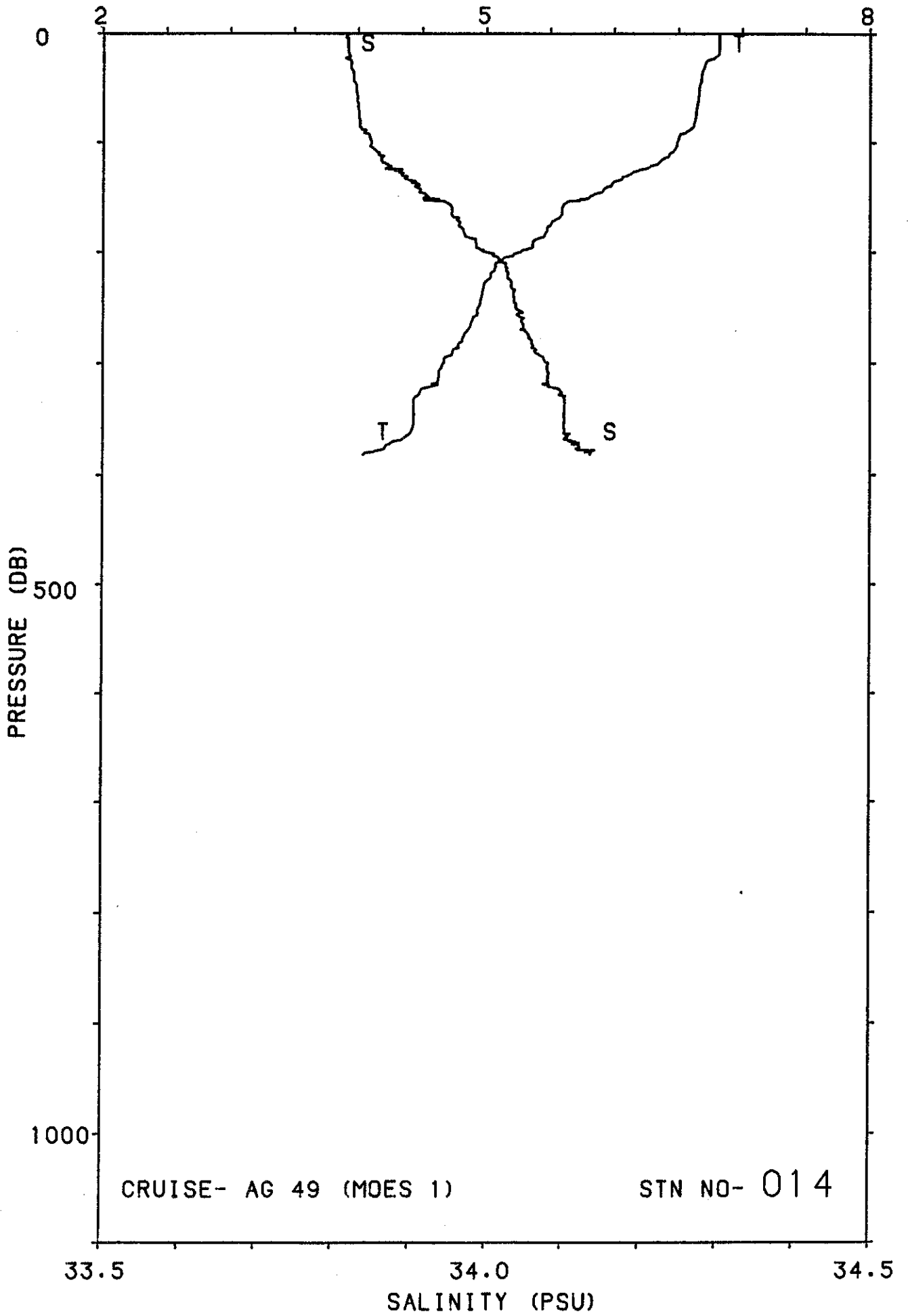


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.20
 Station: 14 Cast: CTD UP Time: 15.50 Z
 Position: Lat: 46°42.550'S Long: 37°52.000'E Depth: 400 m/400 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.815	6.815	33.820	1026.515	26.540	1026.515	26.540
4.96	5.0	6.820	6.820	33.820	1026.537	26.539	1026.537	26.539
9.92	10.0	6.820	6.819	33.820	1026.560	26.539	1026.560	26.539
19.83	20.0	6.803	6.801	33.822	1026.610	26.543	1026.610	26.543
24.79	25.0	6.723	6.721	33.824	1026.645	26.555	1026.645	26.555
29.75	30.0	6.708	6.705	33.824	1026.670	26.557	1026.670	26.557
39.67	40.0	6.684	6.680	33.828	1026.722	26.563	1026.723	26.564
49.58	50.0	6.669	6.665	33.831	1026.773	26.568	1026.773	26.568
59.49	60.0	6.660	6.655	33.833	1026.821	26.570	1026.822	26.571
69.41	70.0	6.647	6.640	33.834	1026.870	26.573	1026.871	26.574
74.37	75.0	6.643	6.637	33.834	1026.894	26.574	1026.894	26.574
79.32	80.0	6.635	6.628	33.836	1026.919	26.576	1026.920	26.577
89.24	90.0	6.571	6.563	33.842	1026.978	26.589	1026.979	26.590
99.15	100.0	6.496	6.487	33.851	1027.042	26.606	1027.043	26.608
118.97	120.0	6.330	6.320	33.871	1027.171	26.644	1027.172	26.645
123.93	125.0	6.195	6.184	33.888	1027.225	26.674	1027.227	26.676
138.79	140.0	5.969	5.957	33.909	1027.340	26.720	1027.342	26.721
148.70	150.0	5.818	5.806	33.925	1027.418	26.751	1027.420	26.752
158.61	160.0	5.609	5.596	33.955	1027.514	26.800	1027.516	26.802
173.48	175.0	5.520	5.506	33.965	1027.602	26.819	1027.604	26.821
178.43	180.0	5.490	5.475	33.970	1027.633	26.827	1027.635	26.828
198.25	200.0	5.279	5.263	33.999	1027.774	26.875	1027.776	26.876
218.06	220.0	5.052	5.035	34.028	1027.917	26.924	1027.919	26.926
237.88	240.0	4.985	4.967	34.035	1028.023	26.937	1028.025	26.939
247.78	250.0	4.962	4.942	34.038	1028.074	26.942	1028.076	26.944
257.69	260.0	4.918	4.898	34.049	1028.134	26.956	1028.137	26.958
277.50	280.0	4.837	4.816	34.059	1028.244	26.973	1028.247	26.975
297.30	300.0	4.692	4.670	34.081	1028.371	27.006	1028.374	27.009
317.11	320.0	4.626	4.602	34.082	1028.472	27.014	1028.475	27.017
336.91	340.0	4.460	4.435	34.103	1028.600	27.049	1028.603	27.052
346.81	350.0	4.463	4.437	34.103	1028.646	27.049	1028.649	27.052
356.71	360.0	4.449	4.422	34.103	1028.694	27.050	1028.697	27.053
376.51	380.0	4.113	4.086	34.135	1028.850	27.111	1028.853	27.114

83

POTENTIAL TEMPERATURE (°C)



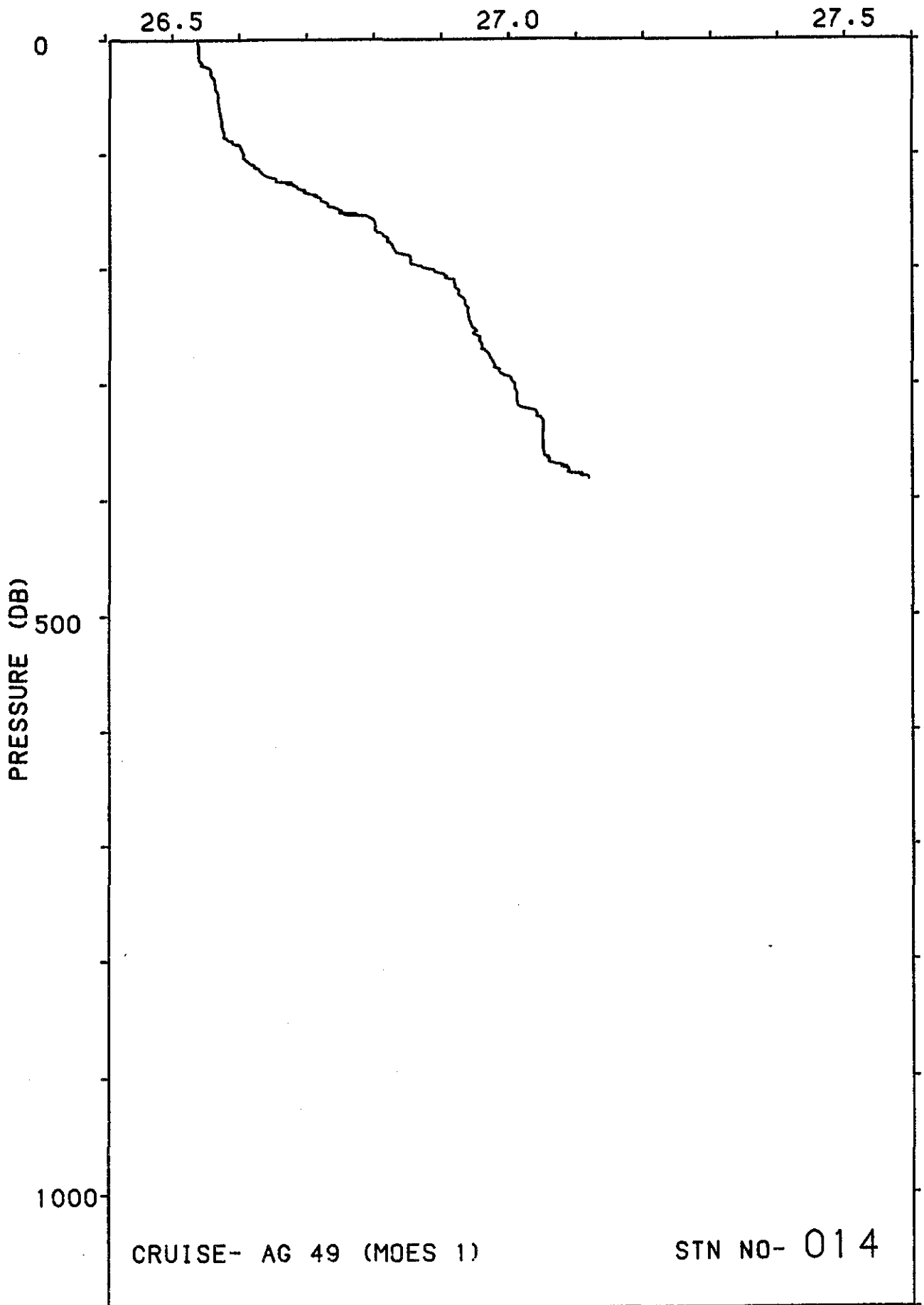
Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.20
 Station: 14 Cast: BOTTLE Time: 15.50 Z
 Position: Lat: 46°42.550'S Long: 37°52.000'E Depth: 400 m/400 m

Bottle Data

Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
3.0	6.82	6.82	33.817	2.149	.04		.32	.53
20.0	6.80	6.80	33.822	1.864	.02		.33	.50
30.0	6.71	6.70	33.824	1.878	.01		.32	.51
50.0	6.67	6.66	33.831	1.620				
65.0	6.65	6.65	33.834	.993	.95		.32	.54
100.0	6.50	6.49	33.851	.143	1.77		.31	.59
130.0	6.09	6.07	33.896	.154	2.53		.32	.53

85

POTENTIAL DENSITY (σ_θ)

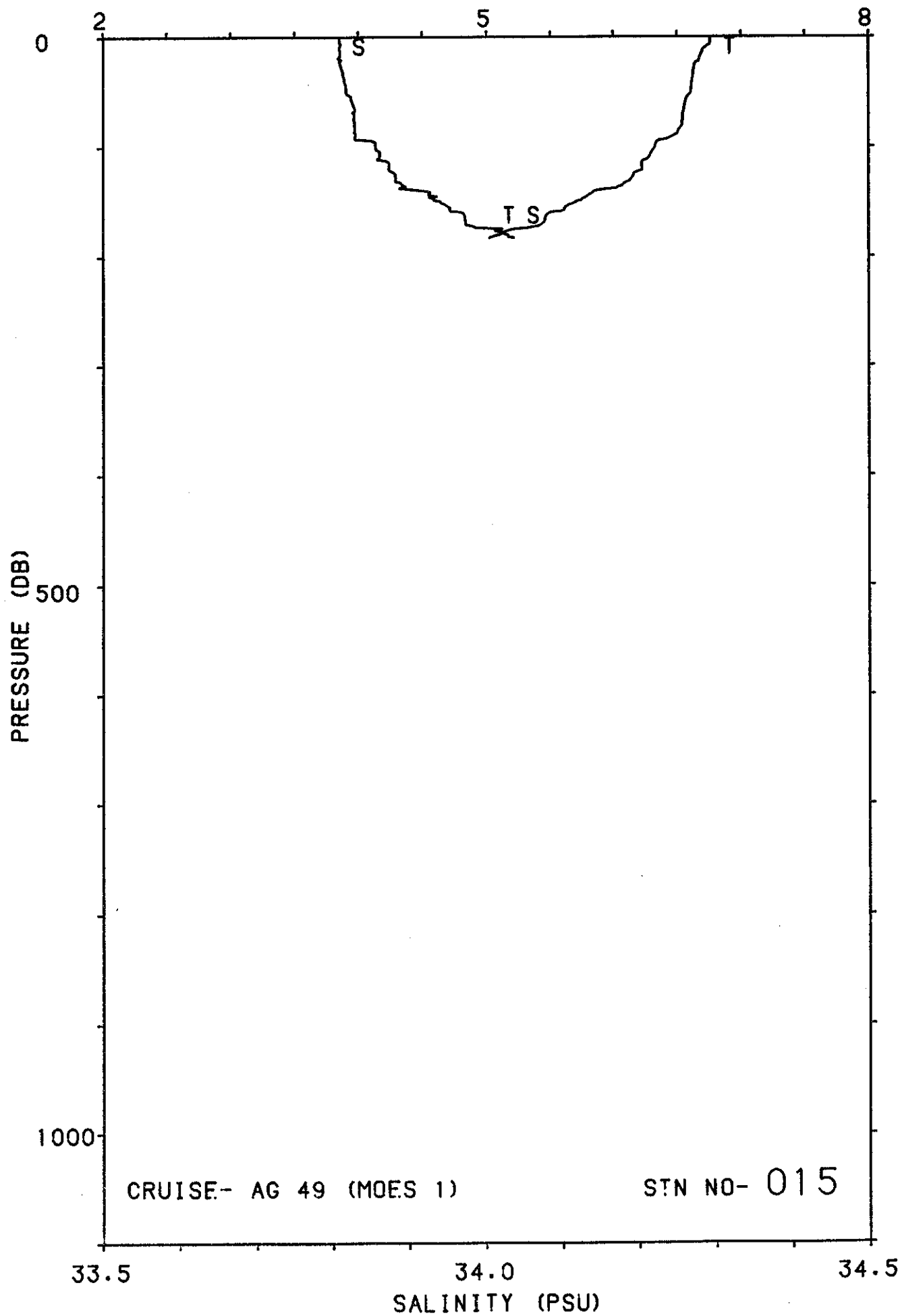


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.20
 Station: 15 Cast: CTD UP Time: 17.40 Z
 Position: Lat: 46°44.500'S Long: 37°57.800'E Depth: 205 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.757	6.757	33.807	1026.512	26.537	1026.512	26.537
4.96	5.0	6.760	6.760	33.809	1026.536	26.538	1026.536	26.538
9.92	10.0	6.717	6.716	33.808	1026.565	26.544	1026.564	26.543
19.83	20.0	6.679	6.677	33.809	1026.616	26.549	1026.616	26.549
24.79	25.0	6.644	6.641	33.810	1026.644	26.554	1026.645	26.555
29.75	30.0	6.635	6.632	33.812	1026.670	26.557	1026.671	26.558
39.67	40.0	6.622	6.619	33.815	1026.720	26.561	1026.721	26.562
49.58	50.0	6.613	6.608	33.818	1026.770	26.565	1026.771	26.566
59.49	60.0	6.569	6.564	33.826	1026.828	26.577	1026.829	26.578
69.41	70.0	6.551	6.545	33.828	1026.878	26.581	1026.879	26.582
74.37	75.0	6.552	6.545	33.827	1026.900	26.580	1026.901	26.581
79.32	80.0	6.547	6.540	33.828	1026.925	26.582	1026.926	26.582
89.24	90.0	6.476	6.468	33.830	1026.981	26.592	1026.983	26.593
99.15	100.0	6.336	6.327	33.856	1027.067	26.631	1027.068	26.632
118.97	120.0	6.236	6.226	33.874	1027.186	26.658	1027.187	26.659
123.93	125.0	6.172	6.161	33.882	1027.223	26.672	1027.225	26.674
138.79	140.0	5.866	5.855	33.922	1027.363	26.743	1027.365	26.744
148.70	150.0	5.712	5.700	33.941	1027.444	26.777	1027.446	26.778
158.61	160.0	5.504	5.491	33.969	1027.538	26.824	1027.540	26.826
173.48	175.0	5.210	5.196	34.018	1027.683	26.898	1027.684	26.899
178.43	180.0	5.112	5.098	34.026	1027.724	26.916	1027.725	26.917

87

POTENTIAL TEMPERATURE (°C)



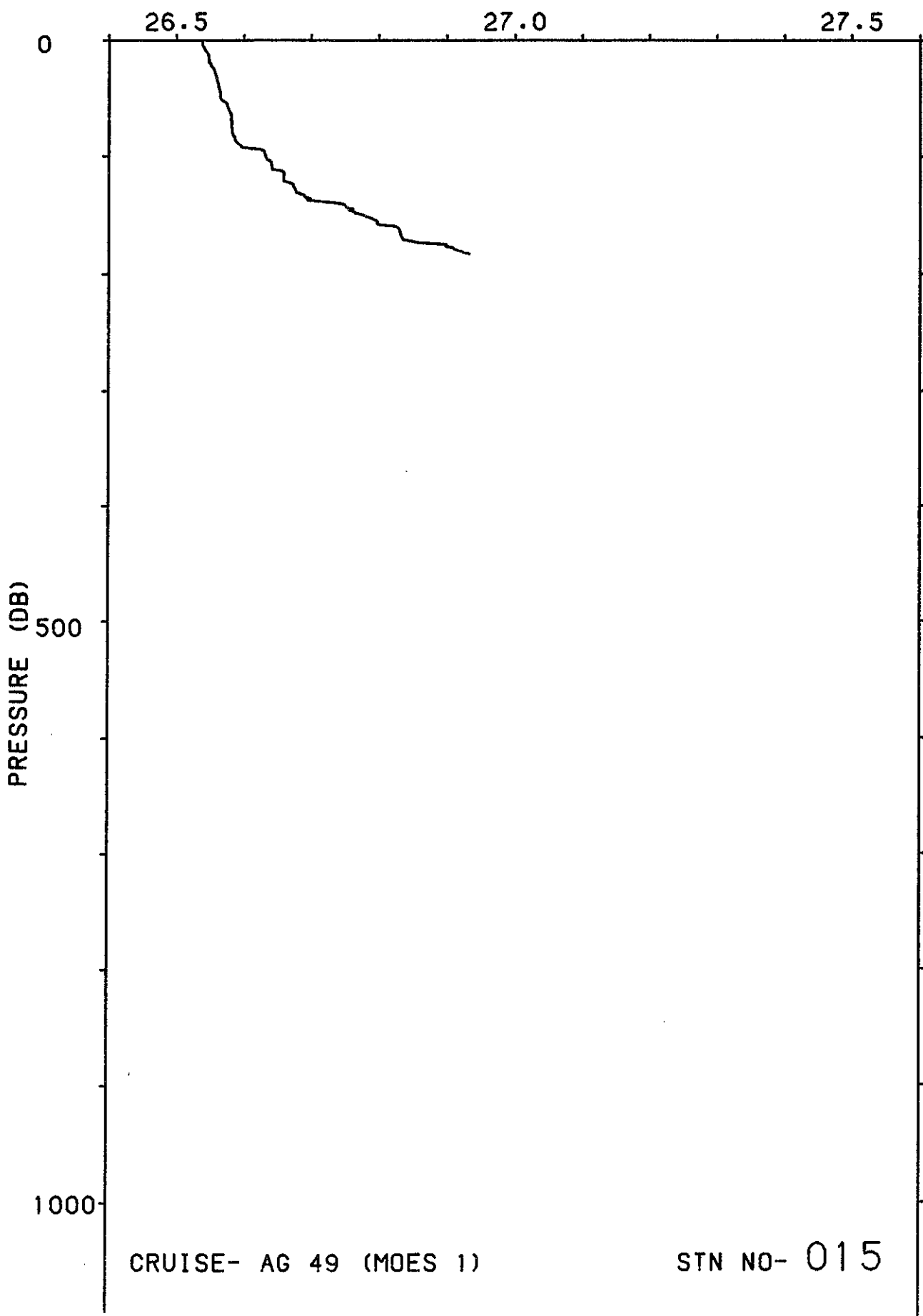
Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.20
 Station: 15 Cast: BOTTLE Time: 17.40 Z
 Position: Lat: 46°44.500'S Long: 37°57.800'E Depth: 205 m

Bottle Data

Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
3.0	6.76	6.76	33.810	2.218	.04	15.96	.32	.52
15.0	6.70	6.69	33.810	2.097	.09	15.46	.32	.53
30.0	6.63	6.63	33.812	1.979	.06	12.16	.25	.42
40.0	6.62	6.62	33.815	1.549	.12	14.03	.28	.46
50.0	6.61	6.61	33.818	1.190	.91	17.28	.32	.55
75.0	6.55	6.55	33.827	.205	.84	16.13	.30	.53
100.0	6.33	6.32	33.856	.171	1.44	14.92	.26	.50

89

POTENTIAL DENSITY (σ_θ)

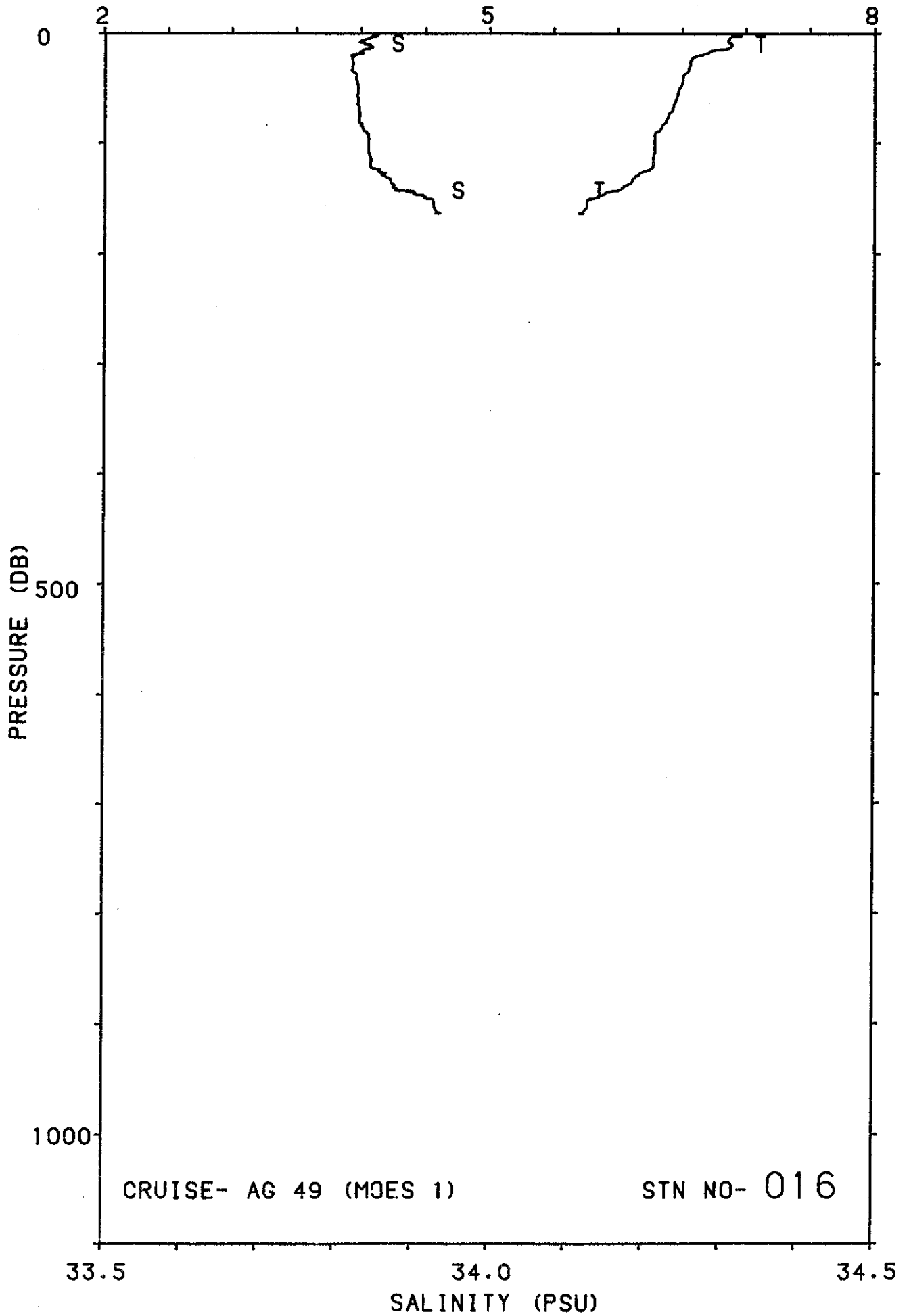


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.21
 Station: 16 Cast: CTD UP Time: 4.55 Z
 Position: Lat: 46°46.400'S Long: 38° 3.800'E Depth: 180 m/185 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	7.651	7.651	33.865	1026.434	26.459	1026.434	26.459
4.96	5.0	6.872	6.872	33.841	1026.546	26.548	1026.546	26.548
9.92	10.0	6.886	6.885	33.839	1026.566	26.545	1026.566	26.545
19.83	20.0	6.632	6.630	33.822	1026.633	26.566	1026.633	26.566
24.79	25.0	6.569	6.567	33.822	1026.664	26.574	1026.664	26.574
29.75	30.0	6.563	6.561	33.822	1026.688	26.575	1026.688	26.575
39.66	40.0	6.512	6.509	33.827	1026.744	26.585	1026.745	26.586
49.58	50.0	6.485	6.481	33.830	1026.796	26.591	1026.797	26.592
59.49	60.0	6.461	6.456	33.829	1026.845	26.594	1026.845	26.594
69.41	70.0	6.429	6.423	33.831	1026.897	26.599	1026.897	26.600
74.37	75.0	6.399	6.393	33.831	1026.924	26.603	1026.924	26.604
79.32	80.0	6.385	6.378	33.830	1026.948	26.604	1026.949	26.605
89.24	90.0	6.306	6.298	33.841	1027.012	26.623	1027.014	26.624
99.15	100.0	6.294	6.285	33.843	1027.062	26.626	1027.063	26.627
118.97	120.0	6.285	6.275	33.845	1027.157	26.629	1027.158	26.630
123.93	125.0	6.238	6.227	33.856	1027.194	26.644	1027.196	26.645
138.79	140.0	6.059	6.047	33.873	1027.300	26.680	1027.302	26.681
148.70	150.0	5.835	5.822	33.915	1027.408	26.741	1027.410	26.743
158.61	160.0	5.760	5.747	33.928	1027.474	26.761	1027.475	26.762

91

POTENTIAL TEMPERATURE (°C)



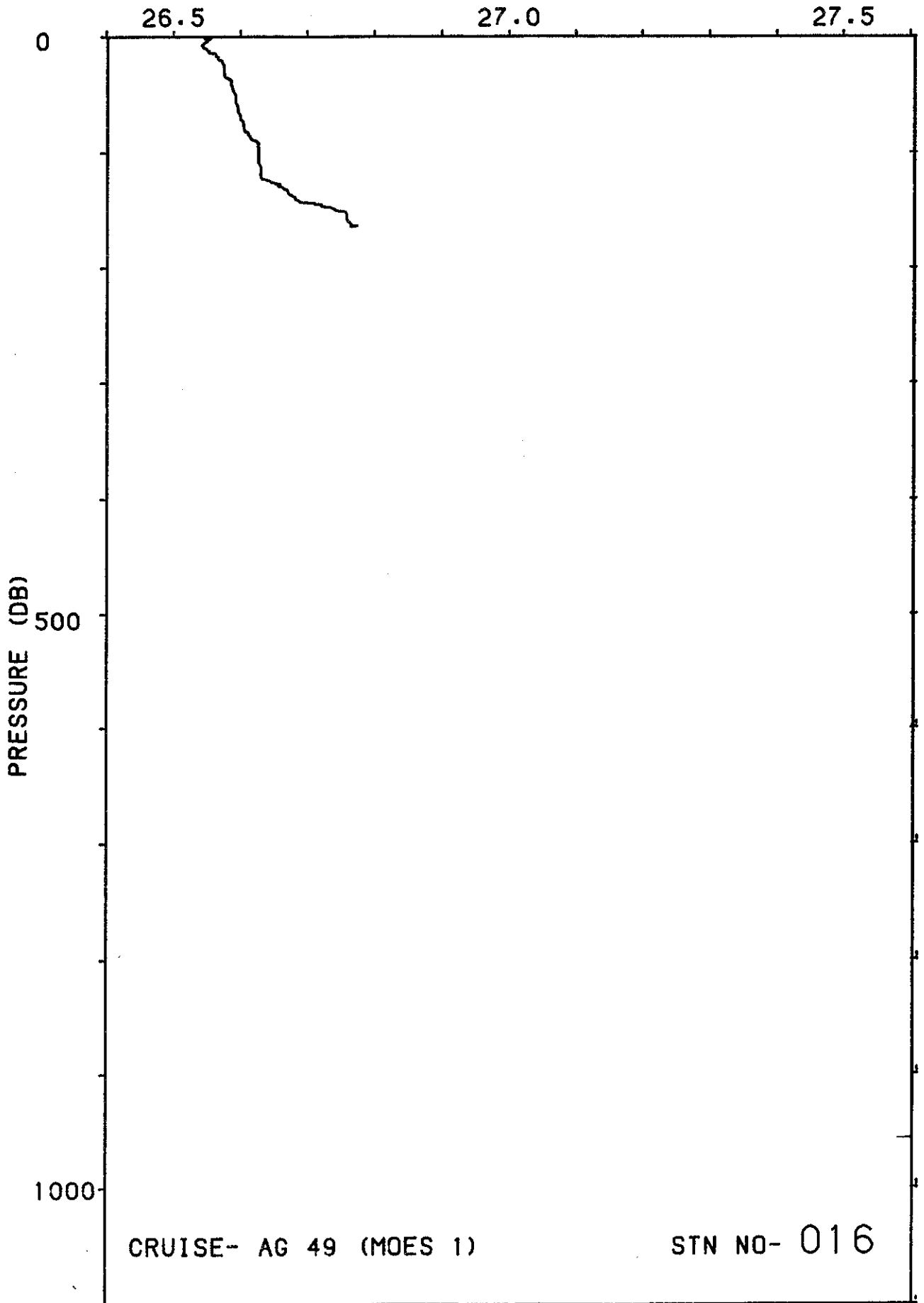
Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.21
 Station: 16 Cast: BOTTLE Time: 4.55 Z
 Position: Lat: 46°46.400'S Long: 38° 3.800'E Depth: 180 m/185 m

Bottle Data

Depth m	Temp °C	σ _t °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
3.0	7.07	7.07	33.761	.519	1.60	18.67	.34	.58
10.0	6.89	6.89	33.840	.758	1.54	17.82	.36	.57
20.0	6.62	6.62	33.821	.606	1.69	17.76	.35	.58
30.0	6.56	6.56	33.822	1.031	1.82	17.80	.37	.59
50.0	6.48	6.48	33.830	.453	1.81	17.62	.37	.58
75.0	6.40	6.39	33.831	.311	1.85	17.37	.41	.59
100.0	6.29	6.29	33.843	.275	2.43	17.92	.36	.61

93

POTENTIAL DENSITY (σ_θ)

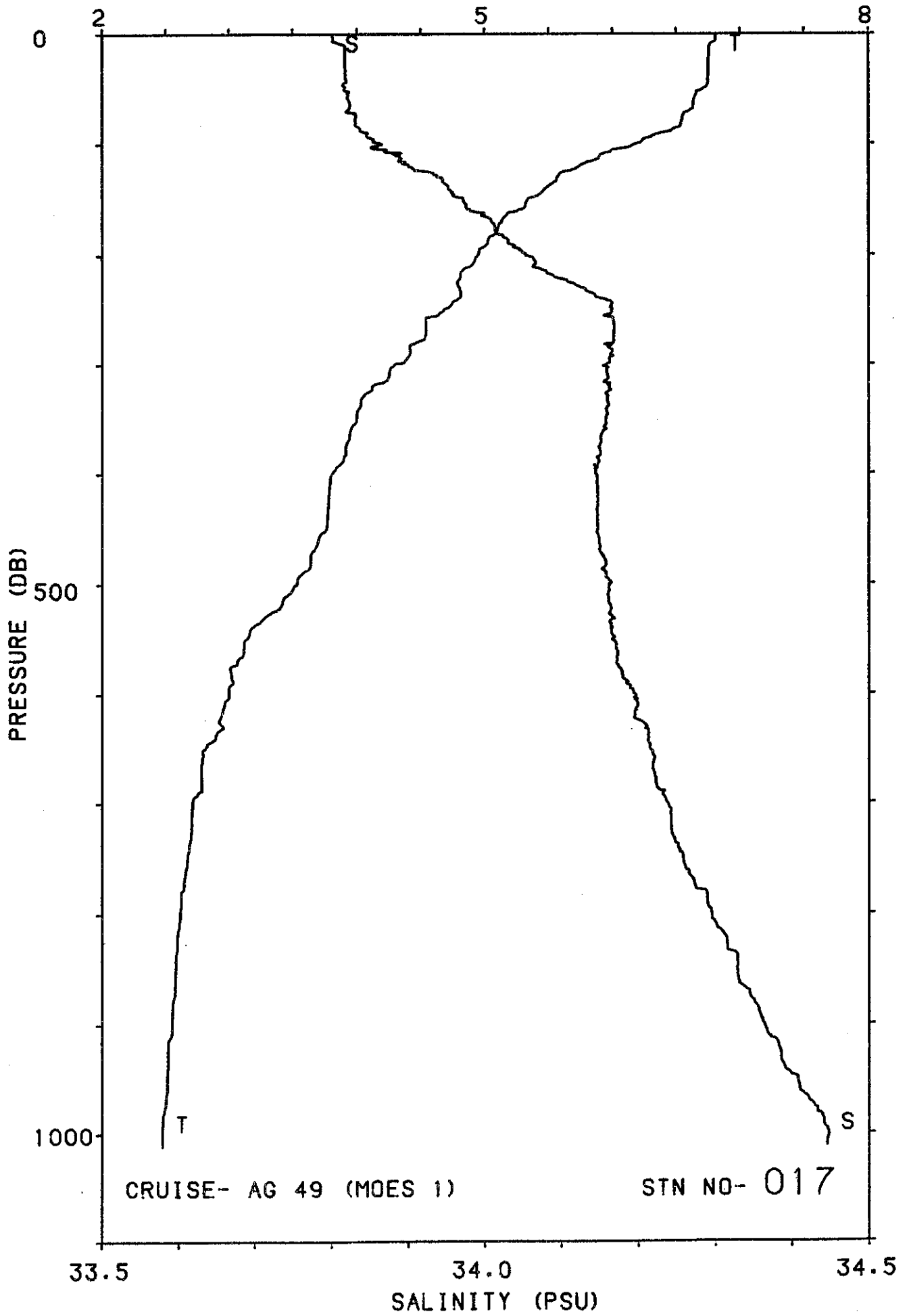


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.21
 Station: 17 Cast: CTD UP Time: 6.26 Z
 Position: Lat: 46°46.400'S Long: 38° 9.800'E Depth: 1320 m/1280 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot. Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.814	6.814	33.800	1026.499	26.524	1026.499	26.524
4.96	5.0	6.811	6.811	33.804	1026.525	26.527	1026.525	26.527
9.92	10.0	6.766	6.765	33.816	1026.564	26.543	1026.564	26.543
19.83	20.0	6.761	6.759	33.819	1026.613	26.546	1026.613	26.546
24.79	25.0	6.755	6.753	33.818	1026.636	26.546	1026.636	26.546
29.75	30.0	6.754	6.751	33.818	1026.659	26.546	1026.660	26.547
39.66	40.0	6.754	6.750	33.819	1026.706	26.547	1026.706	26.547
49.58	50.0	6.713	6.709	33.818	1026.756	26.551	1026.757	26.552
59.49	60.0	6.644	6.639	33.822	1026.815	26.564	1026.816	26.565
69.41	70.0	6.611	6.605	33.821	1026.864	26.567	1026.865	26.568
74.37	75.0	6.558	6.552	33.832	1026.904	26.583	1026.904	26.584
79.32	80.0	6.552	6.545	33.832	1026.927	26.584	1026.928	26.585
89.24	90.0	6.395	6.387	33.846	1027.005	26.615	1027.006	26.617
99.15	100.0	6.193	6.184	33.865	1027.093	26.657	1027.094	26.658
118.97	120.0	5.754	5.744	33.901	1027.269	26.740	1027.270	26.741
123.93	125.0	5.628	5.618	33.927	1027.328	26.776	1027.329	26.777
138.79	140.0	5.489	5.478	33.953	1027.435	26.813	1027.437	26.814
148.70	150.0	5.349	5.337	33.972	1027.514	26.845	1027.515	26.846
158.61	160.0	5.272	5.259	33.983	1027.577	26.862	1027.579	26.864
173.48	175.0	5.126	5.112	34.014	1027.689	26.904	1027.691	26.906
178.43	180.0	5.111	5.097	34.015	1027.715	26.907	1027.716	26.908
198.25	200.0	4.972	4.957	34.054	1027.855	26.954	1027.856	26.955
218.06	220.0	4.830	4.813	34.094	1027.995	27.001	1027.997	27.003
237.87	240.0	4.815	4.797	34.155	1028.138	27.051	1028.140	27.053
247.78	250.0	4.700	4.681	34.167	1028.207	27.073	1028.209	27.076
257.69	260.0	4.562	4.543	34.168	1028.270	27.090	1028.272	27.092
277.49	280.0	4.487	4.466	34.168	1028.371	27.098	1028.374	27.100
297.30	300.0	4.319	4.297	34.160	1028.476	27.109	1028.479	27.112
317.10	320.0	4.150	4.127	34.163	1028.591	27.130	1028.593	27.132
336.91	340.0	4.048	4.024	34.160	1028.692	27.138	1028.695	27.141
346.81	350.0	4.025	4.000	34.159	1028.740	27.139	1028.743	27.142
356.71	360.0	3.980	3.955	34.158	1028.791	27.143	1028.794	27.146
376.51	380.0	3.939	3.912	34.151	1028.882	27.142	1028.885	27.145
396.30	400.0	3.838	3.811	34.144	1028.981	27.147	1028.984	27.149
445.79	450.0	3.797	3.766	34.148	1029.219	27.154	1029.223	27.157
495.26	500.0	3.569	3.535	34.162	1029.487	27.188	1029.491	27.191
544.72	550.0	3.168	3.132	34.166	1029.765	27.229	1029.769	27.232
594.17	600.0	3.038	2.999	34.195	1030.033	27.264	1030.037	27.268
643.61	650.0	2.856	2.815	34.214	1030.299	27.296	1030.303	27.299
693.03	700.0	2.763	2.719	34.237	1030.559	27.323	1030.563	27.326
742.45	750.0	2.723	2.675	34.259	1030.811	27.343	1030.816	27.347
791.85	800.0	2.668	2.618	34.296	1031.077	27.378	1031.082	27.382
841.24	850.0	2.636	2.582	34.329	1031.337	27.407	1031.343	27.411
890.62	900.0	2.608	2.551	34.364	1031.599	27.437	1031.605	27.442
939.98	950.0	2.577	2.516	34.408	1031.867	27.475	1031.874	27.480
989.34	1000.0	2.541	2.477	34.448	1032.132	27.510	1032.140	27.515

95

POTENTIAL TEMPERATURE (°C)



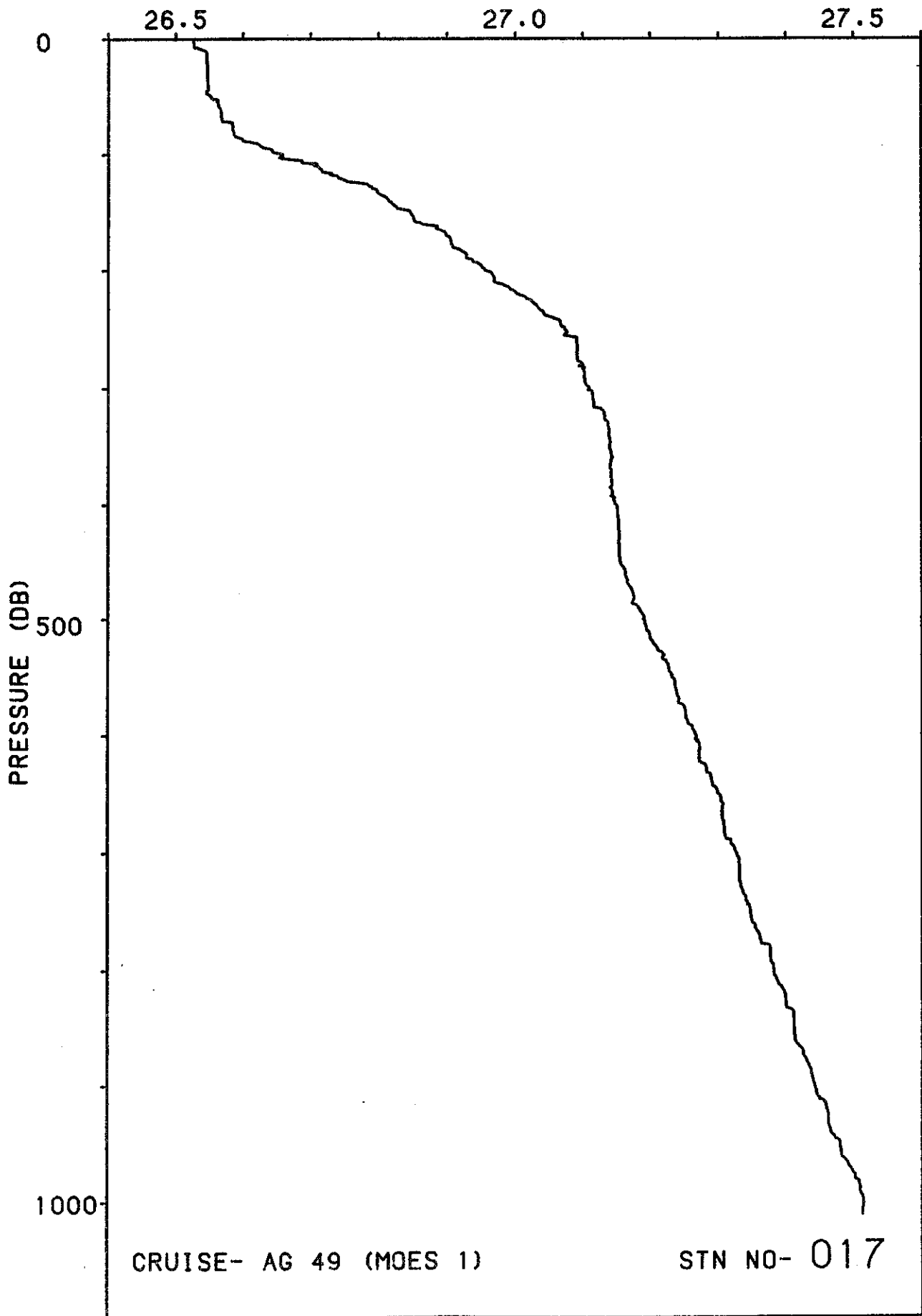
Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.21
 Station: 17 Cast: BOTTLE Time: 6.26 Z
 Position: Lat: 46°46.400'S Long: 38° 9.800'E Depth: 1320 m/1280 m

Bottle Data

Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
3.0	6.81	6.81	33.802	2.079	.12	15.32	.32	.53
10.0	6.77	6.77	33.816	1.760				
20.0	6.76	6.76	33.818	2.090	.12	15.83	.32	.51
30.0	6.75	6.75	33.818	2.239	.25	15.87	.32	.52
50.0	6.71	6.70	33.817	2.194	.37	15.82	.32	.51
75.0	6.55	6.55	33.833	1.370	1.20	16.88	.34	.55
100.0	6.17	6.16	33.863	.374	2.50	18.22	.35	.59

97

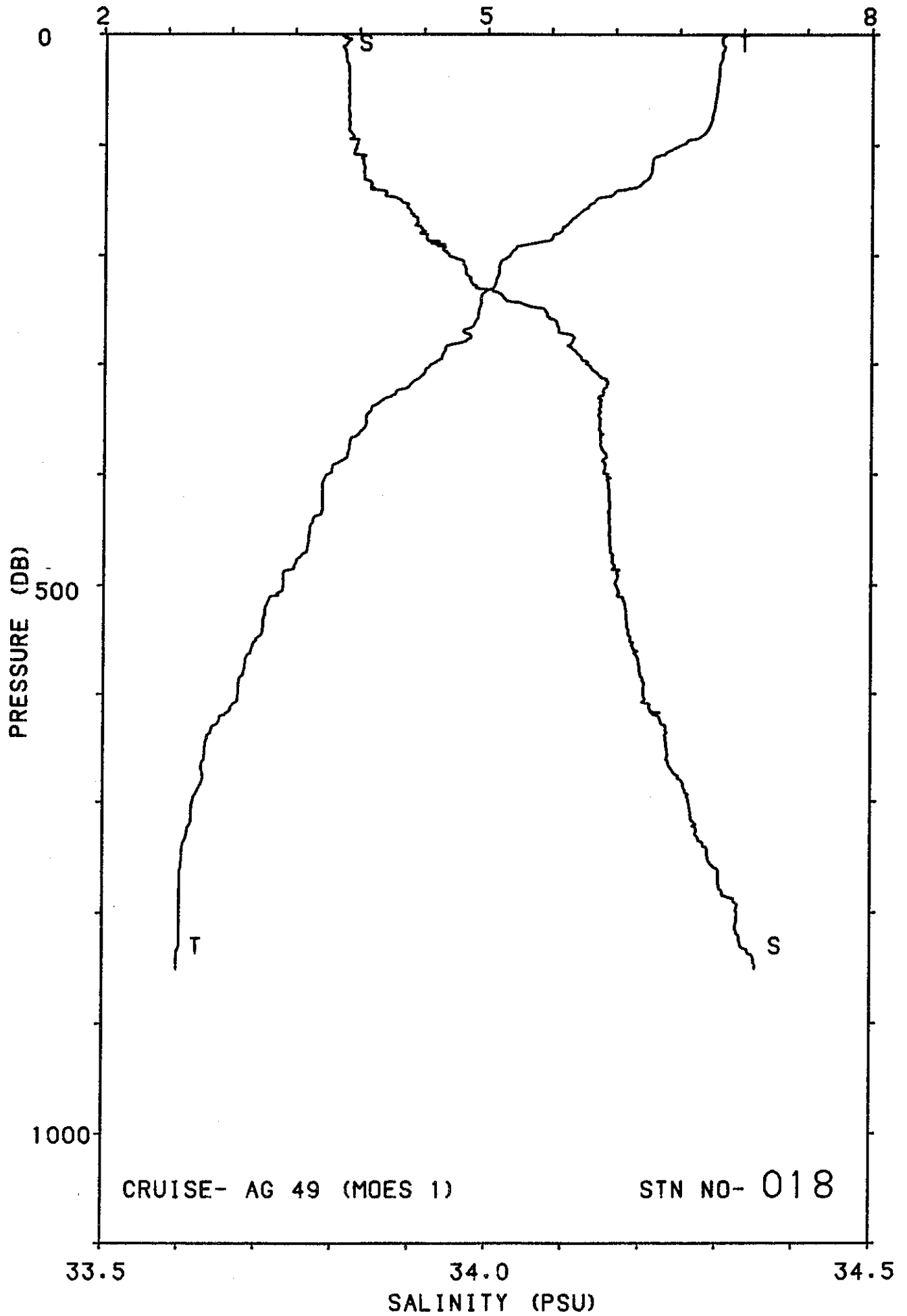
POTENTIAL DENSITY (σ_θ)



Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.21
 Station: 18 Cast: CTD UP Time: 9.55 Z
 Position: Lat: 46°46.400'S Long: 38°15.800'E Depth: 890 m/890 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot. Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.837	6.837	33.823	1026.514	26.539	1026.514	26.539
4.96	5.0	6.828	6.827	33.822	1026.537	26.539	1026.537	26.540
9.92	10.0	6.836	6.835	33.816	1026.554	26.533	1026.555	26.534
19.83	20.0	6.830	6.828	33.816	1026.601	26.534	1026.602	26.535
24.79	25.0	6.822	6.820	33.816	1026.626	26.536	1026.626	26.536
29.75	30.0	6.811	6.808	33.819	1026.652	26.539	1026.653	26.540
39.66	40.0	6.804	6.801	33.819	1026.699	26.540	1026.700	26.541
49.58	50.0	6.795	6.791	33.819	1026.747	26.542	1026.747	26.542
59.49	60.0	6.783	6.778	33.820	1026.794	26.544	1026.795	26.545
69.41	70.0	6.768	6.762	33.819	1026.842	26.545	1026.843	26.546
74.37	75.0	6.758	6.752	33.820	1026.867	26.547	1026.868	26.548
79.32	80.0	6.746	6.739	33.820	1026.892	26.549	1026.892	26.550
89.24	90.0	6.694	6.686	33.823	1026.947	26.558	1026.948	26.559
99.15	100.0	6.513	6.504	33.830	1027.023	26.587	1027.024	26.589
118.97	120.0	6.290	6.279	33.840	1027.152	26.624	1027.153	26.626
123.93	125.0	6.284	6.273	33.839	1027.175	26.624	1027.176	26.626
138.79	140.0	6.076	6.065	33.852	1027.281	26.661	1027.283	26.663
148.70	150.0	5.850	5.838	33.887	1027.384	26.717	1027.386	26.719
158.61	160.0	5.747	5.734	33.900	1027.453	26.740	1027.455	26.742
173.48	175.0	5.602	5.588	33.914	1027.551	26.768	1027.554	26.770
178.43	180.0	5.556	5.541	33.915	1027.582	26.775	1027.583	26.777
198.25	200.0	5.190	5.175	33.950	1027.746	26.846	1027.748	26.848
218.06	220.0	5.094	5.077	33.977	1027.872	26.879	1027.873	26.881
237.87	240.0	4.968	4.949	34.023	1028.015	26.929	1028.018	26.932
247.78	250.0	4.954	4.935	34.075	1028.104	26.972	1028.107	26.974
257.69	260.0	4.931	4.911	34.088	1028.164	26.985	1028.166	26.987
277.49	280.0	4.823	4.802	34.110	1028.286	27.015	1028.289	27.017
297.30	300.0	4.591	4.569	34.130	1028.422	27.056	1028.424	27.059
317.10	320.0	4.418	4.394	34.156	1028.554	27.096	1028.557	27.098
336.91	340.0	4.124	4.100	34.147	1028.673	27.120	1028.676	27.122
346.81	350.0	4.081	4.057	34.148	1028.725	27.125	1028.728	27.128
356.71	360.0	4.056	4.031	34.146	1028.773	27.126	1028.776	27.129
376.51	380.0	3.948	3.921	34.152	1028.882	27.142	1028.885	27.145
396.30	400.0	3.783	3.755	34.159	1028.998	27.164	1029.002	27.167
445.79	450.0	3.652	3.621	34.160	1029.245	27.178	1029.248	27.181
495.26	500.0	3.449	3.416	34.169	1029.505	27.205	1029.509	27.208
544.72	550.0	3.240	3.204	34.187	1029.774	27.239	1029.778	27.242
594.17	600.0	3.102	3.063	34.204	1030.034	27.266	1030.038	27.269
643.61	650.0	2.845	2.804	34.234	1030.316	27.312	1030.320	27.316
693.03	700.0	2.757	2.713	34.263	1030.580	27.344	1030.584	27.347
742.45	750.0	2.675	2.628	34.289	1030.840	27.371	1030.845	27.375
791.85	800.0	2.656	2.605	34.327	1031.102	27.403	1031.108	27.408
841.24	850.0	2.641	2.587	34.351	1031.354	27.424	1031.360	27.429

POTENTIAL TEMPERATURE (°C)



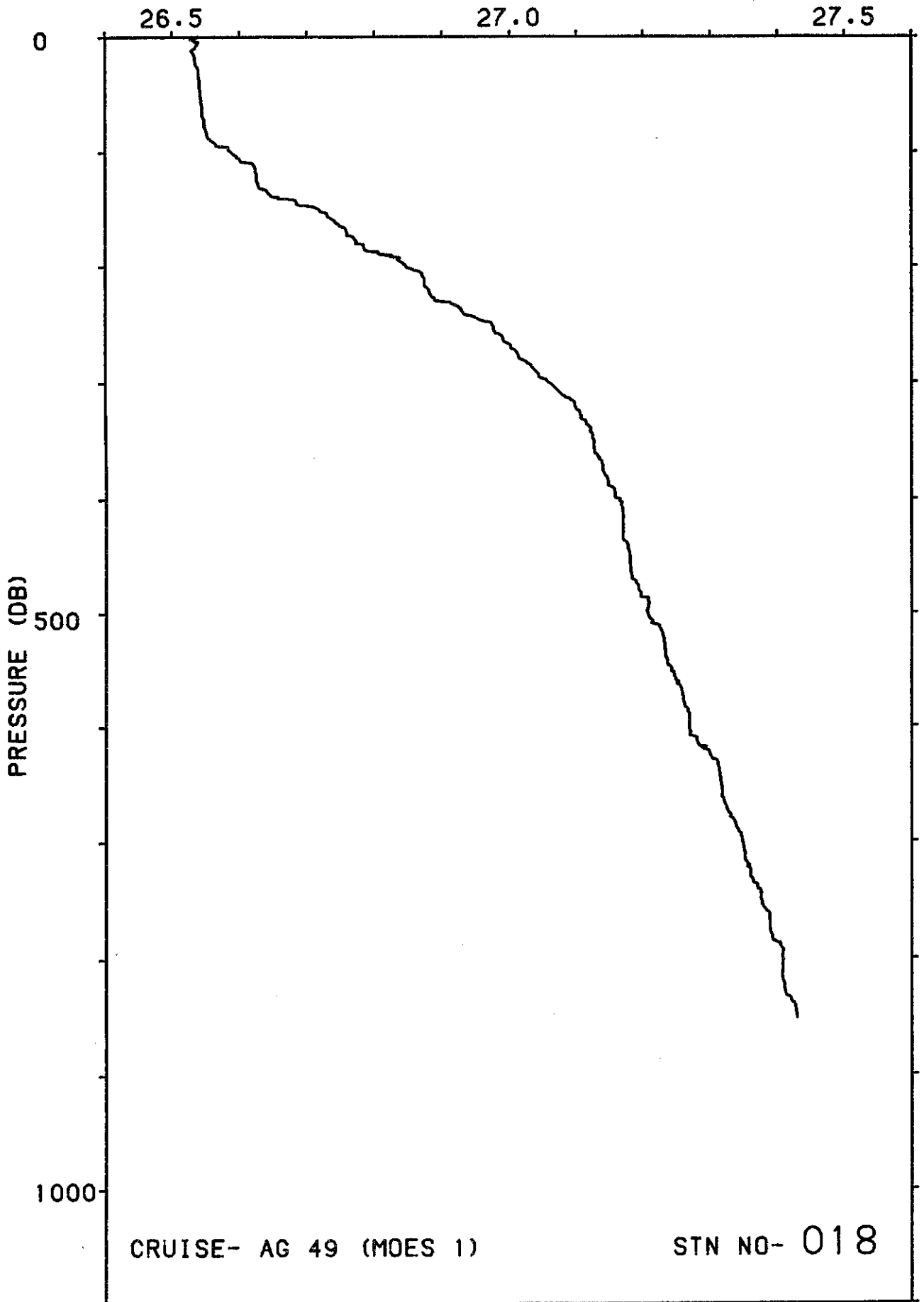
Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.21
 Station: 18 Cast: BOTTLE Time: 9.55 Z
 Position: Lat: 46°46.400'S Long: 38°15.800'E Depth: 890 m/890 m

Bottle Data

Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
3.0	6.84	6.83	33.815	2.375	.03	16.93	.34	.52
10.0	6.84	6.84	33.816	2.046	.04	15.98	.34	.48
20.0	6.83	6.83	33.816	2.143	.01	15.77	.34	.49
30.0	6.81	6.81	33.819	2.034	.00	15.80	.34	.50
50.0	6.80	6.79	33.819	1.878	.01	15.95	.34	.50
75.0	6.76	6.75	33.820	2.338	.01	16.31	.34	.53
100.0	6.50	6.49	33.829	1.647	.79	17.01	.35	.54

101

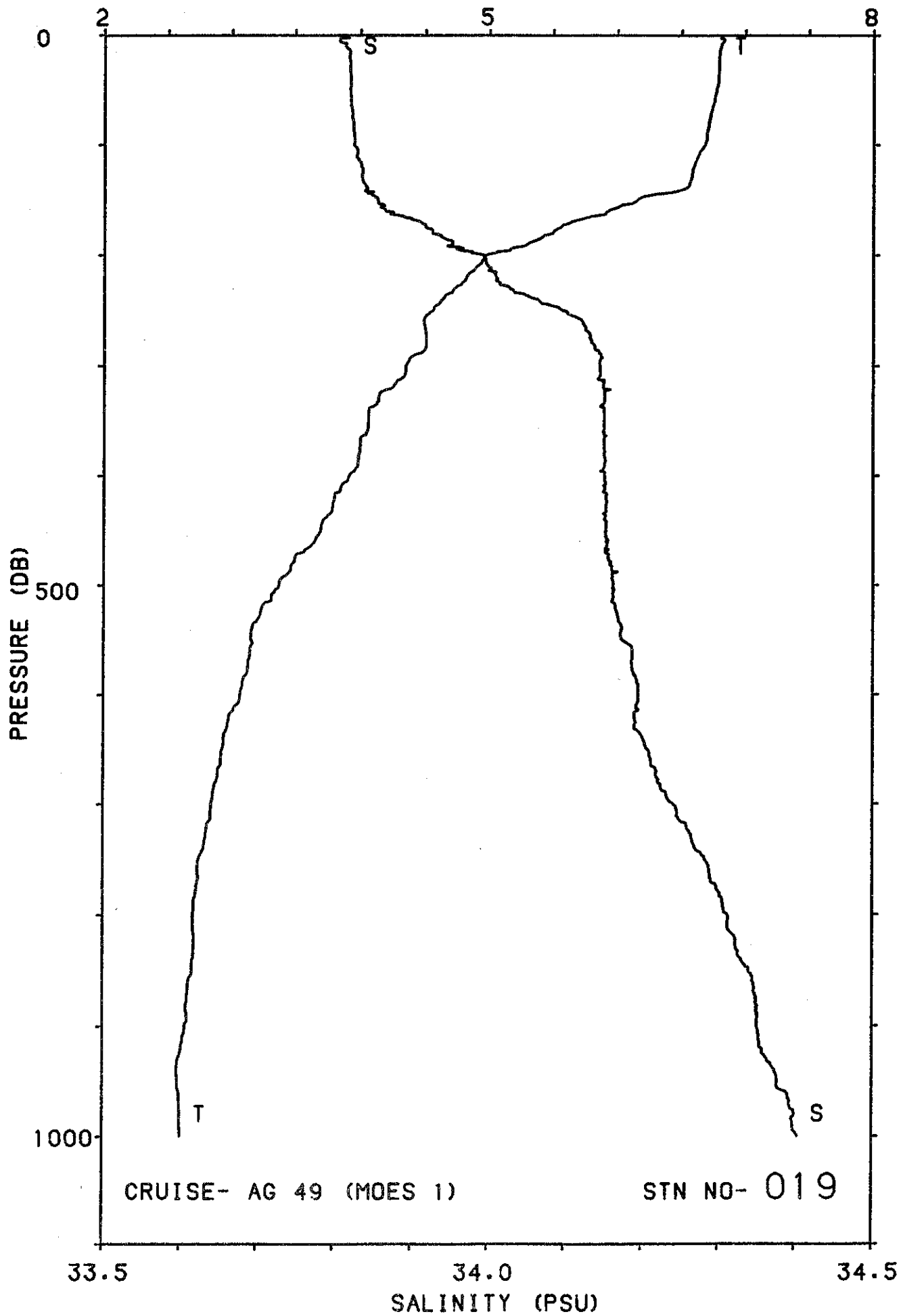
POTENTIAL DENSITY (σ_θ)



Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.21
 Station: 19 Cast: CTD UP Time: 13.24 Z
 Position: Lat: 46°46.250'S Long: 38°22.600'E Depth: 1430 m/1435 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.712	6.712	33.835	1026.540	26.565	1026.540	26.565
4.96	5.0	6.833	6.832	33.807	1026.525	26.527	1026.525	26.527
9.92	10.0	6.811	6.810	33.814	1026.556	26.535	1026.556	26.535
19.83	20.0	6.796	6.794	33.819	1026.608	26.541	1026.609	26.542
24.79	25.0	6.795	6.793	33.820	1026.632	26.542	1026.632	26.542
29.75	30.0	6.794	6.792	33.820	1026.655	26.542	1026.656	26.543
39.66	40.0	6.791	6.787	33.821	1026.702	26.543	1026.703	26.544
49.58	50.0	6.776	6.771	33.820	1026.750	26.545	1026.750	26.545
59.49	60.0	6.761	6.756	33.820	1026.798	26.547	1026.798	26.547
69.41	70.0	6.737	6.731	33.823	1026.849	26.552	1026.850	26.553
74.37	75.0	6.729	6.723	33.822	1026.872	26.553	1026.873	26.553
79.32	80.0	6.721	6.713	33.824	1026.898	26.555	1026.899	26.556
89.24	90.0	6.708	6.700	33.825	1026.947	26.558	1026.948	26.559
99.15	100.0	6.693	6.684	33.825	1026.994	26.560	1026.996	26.561
118.97	120.0	6.605	6.595	33.834	1027.105	26.578	1027.107	26.580
123.93	125.0	6.593	6.582	33.836	1027.131	26.581	1027.133	26.583
138.79	140.0	6.534	6.522	33.842	1027.213	26.594	1027.215	26.596
148.70	150.0	6.166	6.154	33.855	1027.318	26.652	1027.320	26.654
158.61	160.0	5.946	5.933	33.865	1027.400	26.688	1027.402	26.689
173.48	175.0	5.574	5.560	33.917	1027.557	26.774	1027.559	26.776
178.43	180.0	5.509	5.494	33.926	1027.596	26.790	1027.598	26.791
198.25	200.0	4.992	4.977	33.992	1027.803	26.902	1027.805	26.904
218.06	220.0	4.839	4.822	34.009	1027.927	26.933	1027.929	26.935
237.87	240.0	4.652	4.634	34.064	1028.085	26.997	1028.087	26.999
247.78	250.0	4.579	4.561	34.097	1028.166	27.032	1028.168	27.034
257.69	260.0	4.507	4.488	34.122	1028.240	27.059	1028.242	27.061
277.49	280.0	4.529	4.508	34.135	1028.340	27.067	1028.343	27.069
297.30	300.0	4.373	4.351	34.145	1028.458	27.092	1028.461	27.094
317.11	320.0	4.264	4.241	34.149	1028.567	27.107	1028.569	27.109
336.91	340.0	4.090	4.066	34.151	1028.680	27.126	1028.683	27.129
346.81	350.0	4.087	4.062	34.150	1028.726	27.126	1028.729	27.129
356.71	360.0	4.076	4.050	34.150	1028.774	27.127	1028.777	27.130
376.51	380.0	4.020	3.993	34.150	1028.873	27.133	1028.876	27.136
396.30	400.0	3.945	3.917	34.151	1028.974	27.142	1028.977	27.144
445.79	450.0	3.730	3.699	34.152	1029.230	27.164	1029.234	27.167
495.26	500.0	3.409	3.375	34.162	1029.505	27.203	1029.508	27.206
544.72	550.0	3.191	3.156	34.173	1029.768	27.233	1029.772	27.236
594.17	600.0	3.110	3.071	34.195	1030.025	27.257	1030.030	27.261
643.61	650.0	2.970	2.928	34.206	1030.281	27.279	1030.285	27.283
693.03	700.0	2.889	2.844	34.241	1030.548	27.314	1030.553	27.318
742.45	750.0	2.794	2.746	34.282	1030.822	27.356	1030.827	27.360
791.85	800.0	2.753	2.702	34.311	1031.080	27.382	1031.085	27.387
841.24	850.0	2.751	2.696	34.339	1031.333	27.405	1031.339	27.410
890.62	900.0	2.699	2.641	34.350	1031.578	27.418	1031.584	27.423
939.98	950.0	2.642	2.580	34.377	1031.835	27.445	1031.842	27.450
989.34	1000.0	2.669	2.603	34.404	1032.083	27.464	1032.091	27.470

POTENTIAL TEMPERATURE (°C)



CRUISE- AG 49 (MOES 1)

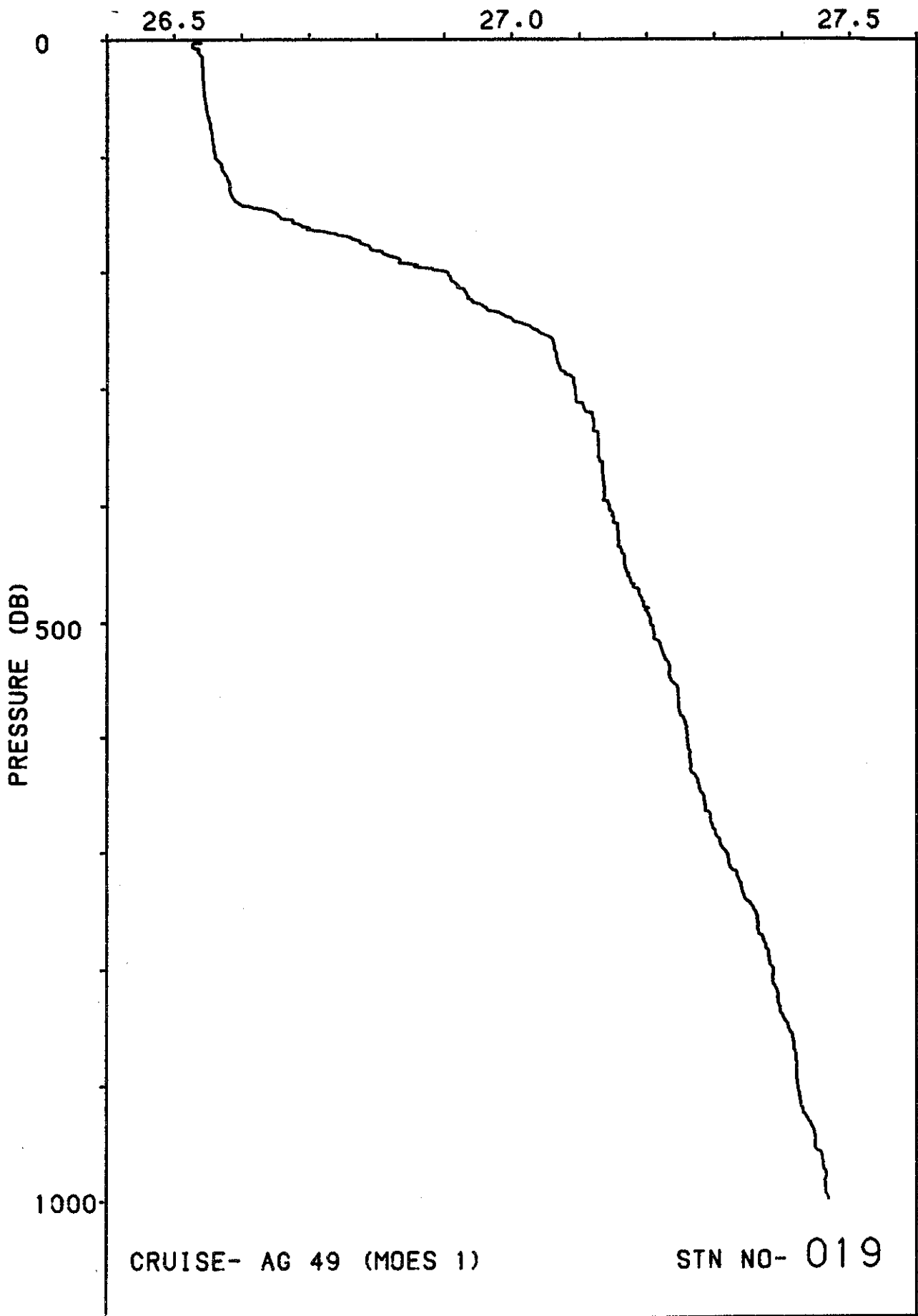
STN NO- 019

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.21
 Station: 19 Cast: BOTTLE Time: 13.24 Z
 Position: Lat: 46°46.250'S Long: 38°22.600'E Depth: 1430 m/1435 m

Bottle Data

Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
3.0	6.83	6.83	33.807	1.984	.01	15.90	.34	.51
10.0	6.81	6.81	33.814	2.248	.01	15.63	.36	.47
20.0	6.80	6.79	33.819	2.257	.02	15.96	.35	.48
35.0	6.79	6.79	33.820	2.318	.02	16.30	.35	.50
65.0	6.75	6.74	33.822	1.812	.22	16.85	.35	.52
100.0	6.69	6.68	33.825	1.731	.69	17.09	.34	.54
130.0	6.59	6.58	33.835	.412	1.85	18.79	.38	.66

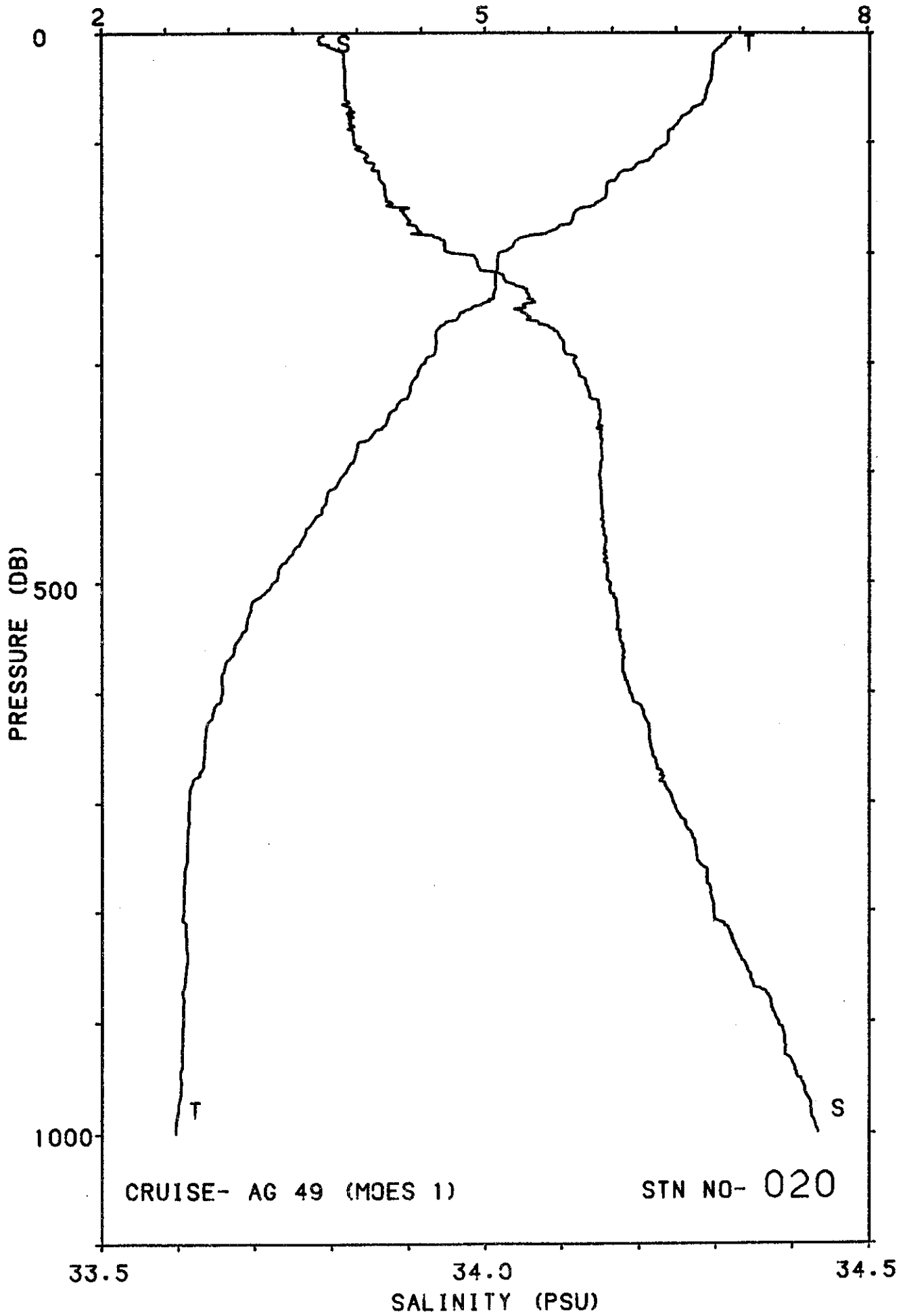
POTENTIAL DENSITY (σ_θ)



Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.21
 Station: 20 Cast: CTD UP Time: 16.13 Z
 Position: Lat: 46°53.000'S Long: 38°24.000'E Depth:

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ _t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ _θ kg.m ⁻³
.00	.0	6.905	6.905	33.803	1026.489	26.514	1026.489	26.514
4.96	5.0	6.912	6.911	33.785	1026.497	26.499	1026.497	26.499
9.92	10.0	6.880	6.879	33.786	1026.525	26.504	1026.525	26.504
19.83	20.0	6.796	6.794	33.816	1026.606	26.539	1026.606	26.539
24.79	25.0	6.794	6.792	33.816	1026.629	26.539	1026.629	26.539
29.75	30.0	6.791	6.788	33.817	1026.653	26.540	1026.654	26.541
39.66	40.0	6.783	6.779	33.817	1026.701	26.542	1026.701	26.542
49.58	50.0	6.755	6.751	33.818	1026.751	26.546	1026.751	26.547
59.49	60.0	6.735	6.730	33.819	1026.800	26.549	1026.801	26.550
69.41	70.0	6.629	6.622	33.824	1026.865	26.568	1026.865	26.568
74.36	75.0	6.578	6.571	33.825	1026.895	26.575	1026.896	26.576
79.32	80.0	6.534	6.527	33.825	1026.924	26.581	1026.925	26.582
89.23	90.0	6.448	6.440	33.828	1026.984	26.595	1026.985	26.595
99.15	100.0	6.438	6.430	33.830	1027.032	26.597	1027.034	26.598
118.97	120.0	6.198	6.188	33.855	1027.176	26.648	1027.177	26.649
123.93	125.0	6.156	6.145	33.853	1027.203	26.652	1027.204	26.653
138.79	140.0	5.967	5.955	33.869	1027.309	26.688	1027.310	26.690
148.70	150.0	5.954	5.941	33.872	1027.359	26.692	1027.361	26.694
158.61	160.0	5.746	5.733	33.891	1027.446	26.733	1027.448	26.735
173.48	175.0	5.594	5.580	33.910	1027.550	26.767	1027.551	26.768
178.43	180.0	5.513	5.498	33.916	1027.588	26.781	1027.589	26.783
198.25	200.0	5.121	5.106	33.968	1027.768	26.868	1027.771	26.870
218.06	220.0	5.099	5.082	34.024	1027.908	26.916	1027.910	26.917
237.87	240.0	5.082	5.063	34.058	1028.029	26.944	1028.032	26.946
247.78	250.0	4.906	4.887	34.039	1028.082	26.949	1028.084	26.951
257.68	260.0	4.796	4.776	34.055	1028.153	26.974	1028.156	26.976
277.49	280.0	4.639	4.618	34.103	1028.302	27.029	1028.305	27.032
297.30	300.0	4.539	4.517	34.117	1028.417	27.052	1028.420	27.054
317.10	320.0	4.441	4.418	34.132	1028.533	27.074	1028.536	27.077
336.90	340.0	4.332	4.307	34.148	1028.651	27.099	1028.653	27.101
346.80	350.0	4.266	4.241	34.151	1028.707	27.108	1028.710	27.111
356.71	360.0	4.207	4.181	34.148	1028.757	27.112	1028.760	27.115
376.50	380.0	4.023	3.996	34.152	1028.874	27.134	1028.877	27.137
396.30	400.0	3.936	3.908	34.150	1028.975	27.142	1028.978	27.144
445.78	450.0	3.648	3.617	34.153	1029.240	27.173	1029.243	27.176
495.26	500.0	3.374	3.341	34.163	1029.509	27.208	1029.513	27.210
544.72	550.0	3.119	3.084	34.176	1029.778	27.241	1029.782	27.245
594.17	600.0	2.987	2.948	34.189	1030.034	27.264	1030.038	27.267
643.60	650.0	2.850	2.808	34.216	1030.301	27.298	1030.305	27.301
693.03	700.0	2.732	2.688	34.245	1030.568	27.332	1030.572	27.335
742.44	750.0	2.719	2.672	34.276	1030.825	27.358	1030.830	27.361
791.84	800.0	2.695	2.644	34.298	1031.075	27.377	1031.081	27.381
841.23	850.0	2.721	2.666	34.341	1031.337	27.409	1031.344	27.414
890.61	900.0	2.699	2.641	34.382	1031.603	27.444	1031.609	27.449
939.97	950.0	2.676	2.614	34.408	1031.856	27.466	1031.863	27.472

POTENTIAL TEMPERATURE (°C)

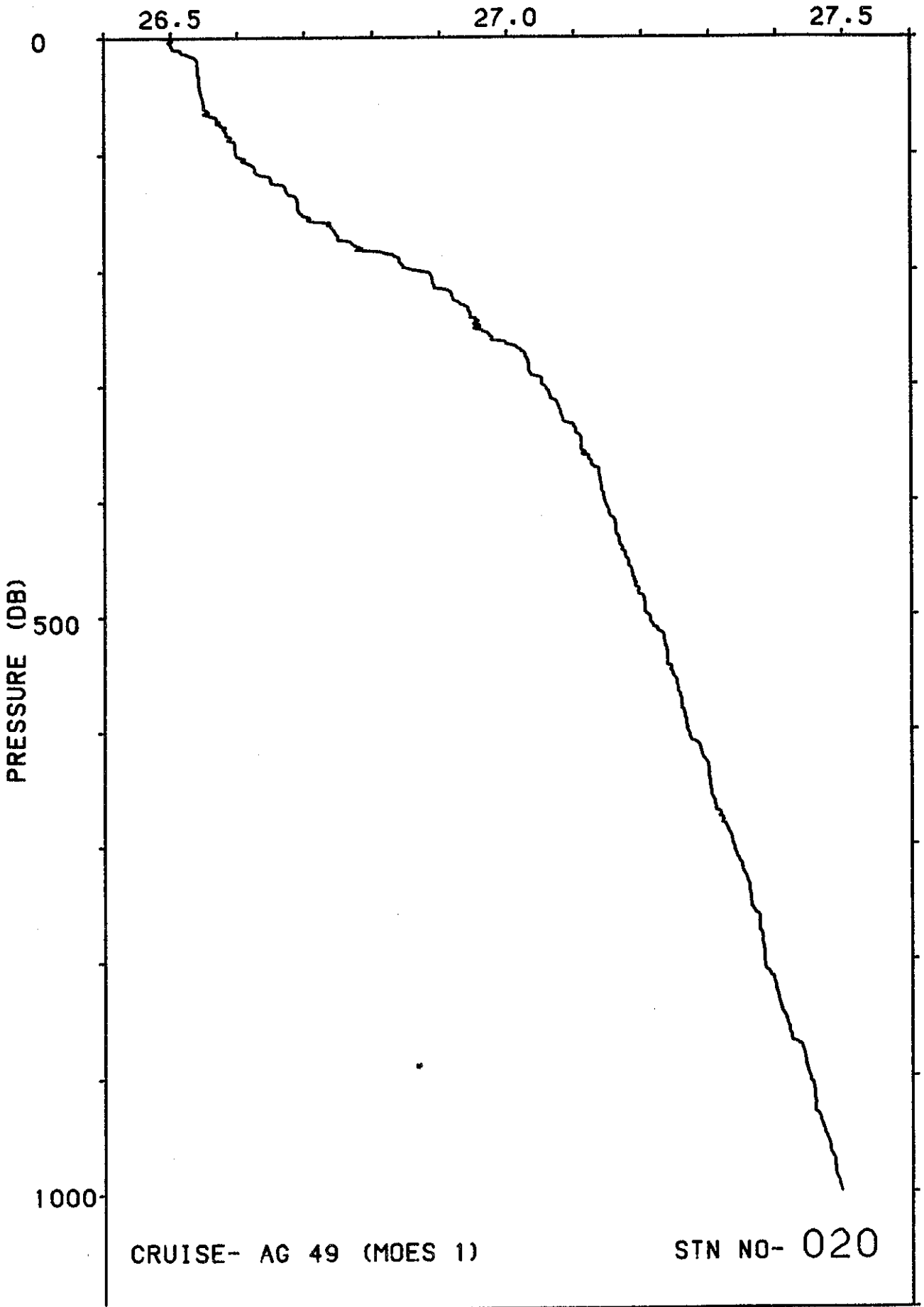


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.21
Station: 20 Cast: BOTTLE Time: 16.13 Z
Position: Lat: 46°53.000'S Long: 38°24.000'E Depth:

NO BOTTLE DATA

109

POTENTIAL DENSITY (σ_θ)

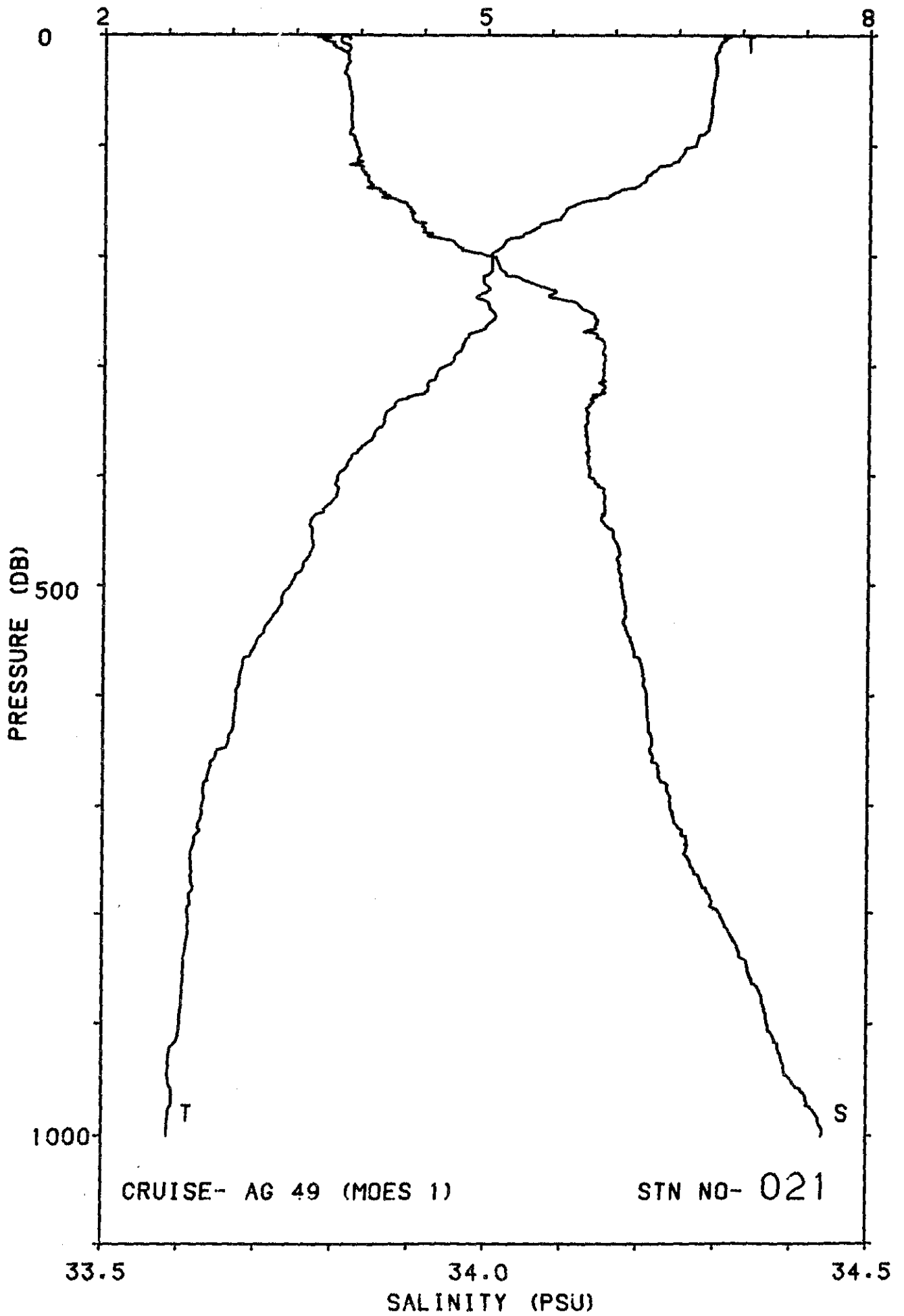


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.21
 Station: 21 Cast: CTD UP Time: 17.46 Z
 Position: Lat: 46°52.600'S Long: 38°19.900'E Depth: 2990 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ _t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ _θ kg.m ⁻³
.00	.0	6.921	6.921	33.807	1026.490	26.515	1026.490	26.515
4.96	5.0	6.859	6.858	33.788	1026.506	26.508	1026.507	26.509
9.92	10.0	6.819	6.818	33.800	1026.545	26.524	1026.544	26.523
19.83	20.0	6.786	6.784	33.818	1026.609	26.542	1026.609	26.542
24.79	25.0	6.788	6.786	33.819	1026.632	26.542	1026.633	26.543
29.75	30.0	6.796	6.793	33.815	1026.651	26.538	1026.652	26.539
39.66	40.0	6.787	6.783	33.817	1026.700	26.541	1026.700	26.541
49.58	50.0	6.778	6.773	33.820	1026.750	26.545	1026.750	26.545
59.49	60.0	6.765	6.760	33.823	1026.799	26.548	1026.800	26.549
69.41	70.0	6.763	6.757	33.822	1026.845	26.548	1026.846	26.549
74.36	75.0	6.759	6.752	33.821	1026.868	26.548	1026.869	26.549
79.32	80.0	6.746	6.739	33.822	1026.893	26.550	1026.894	26.551
89.23	90.0	6.687	6.679	33.822	1026.947	26.558	1026.948	26.559
99.15	100.0	6.632	6.623	33.829	1027.006	26.571	1027.007	26.572
118.97	120.0	6.347	6.336	33.837	1027.142	26.614	1027.144	26.616
123.93	125.0	6.289	6.278	33.840	1027.175	26.625	1027.177	26.626
138.79	140.0	6.054	6.042	33.861	1027.291	26.671	1027.293	26.673
148.70	150.0	5.781	5.769	33.884	1027.391	26.723	1027.392	26.725
158.61	160.0	5.622	5.609	33.901	1027.470	26.756	1027.471	26.758
173.48	175.0	5.381	5.368	33.917	1027.582	26.798	1027.583	26.799
178.43	180.0	5.297	5.283	33.928	1027.624	26.816	1027.625	26.818
198.25	200.0	5.042	5.026	34.004	1027.807	26.906	1027.809	26.908
218.06	220.0	4.989	4.972	34.043	1027.937	26.943	1027.938	26.945
237.87	240.0	4.987	4.969	34.102	1028.075	26.990	1028.078	26.992
247.78	250.0	5.058	5.038	34.132	1028.137	27.005	1028.139	27.008
257.68	260.0	5.045	5.025	34.141	1028.192	27.014	1028.194	27.016
277.49	280.0	4.837	4.816	34.154	1028.319	27.048	1028.322	27.051
297.30	300.0	4.686	4.664	34.154	1028.429	27.065	1028.432	27.067
317.10	320.0	4.561	4.538	34.154	1028.537	27.079	1028.539	27.081
336.90	340.0	4.254	4.229	34.130	1028.646	27.093	1028.648	27.095
346.81	350.0	4.220	4.195	34.133	1028.698	27.098	1028.701	27.101
356.71	360.0	4.150	4.125	34.131	1028.750	27.104	1028.753	27.107
376.50	380.0	3.983	3.956	34.133	1028.863	27.123	1028.866	27.126
396.30	400.0	3.862	3.834	34.134	1028.970	27.136	1028.973	27.139
445.78	450.0	3.668	3.637	34.165	1029.248	27.181	1029.251	27.183
495.26	500.0	3.503	3.470	34.177	1029.506	27.206	1029.510	27.209
544.72	550.0	3.253	3.216	34.189	1029.774	27.240	1029.778	27.243
594.17	600.0	3.093	3.054	34.210	1030.040	27.271	1030.043	27.275
643.60	650.0	2.944	2.902	34.215	1030.290	27.289	1030.295	27.292
693.03	700.0	2.834	2.789	34.242	1030.555	27.320	1030.559	27.324
742.44	750.0	2.748	2.701	34.267	1030.815	27.347	1030.820	27.352
791.84	800.0	2.730	2.679	34.308	1031.079	27.381	1031.085	27.386
841.23	850.0	2.702	2.648	34.345	1031.342	27.413	1031.349	27.419
890.61	900.0	2.676	2.618	34.370	1031.596	27.436	1031.602	27.441
939.97	950.0	2.593	2.532	34.401	1031.860	27.468	1031.866	27.473
989.33	1000.0	2.588	2.523	34.441	1032.122	27.500	1032.129	27.506

111

POTENTIAL TEMPERATURE (°C)

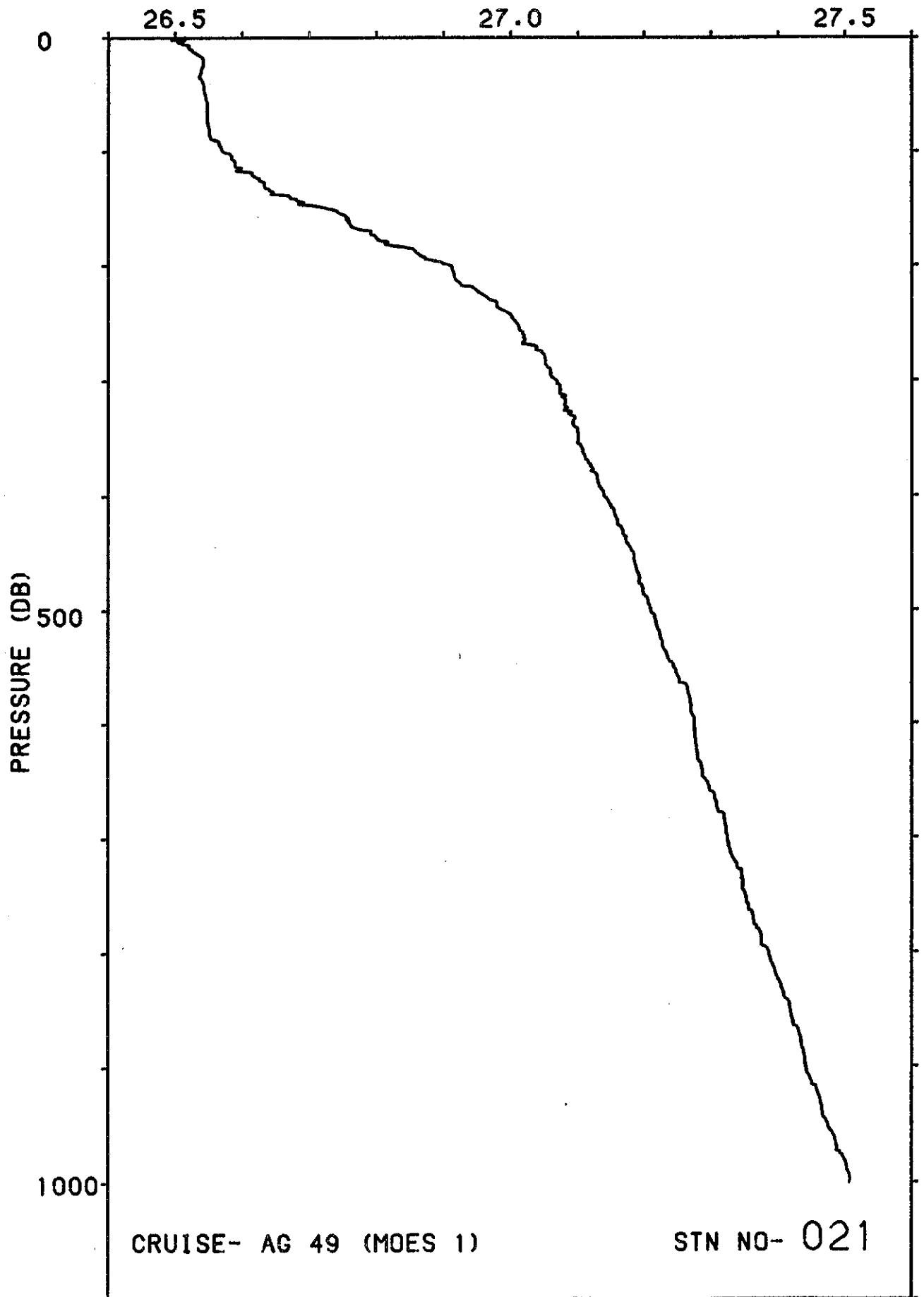


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.21
Station: 21 Cast: BOTTLE Time: 17.46 Z
Position: Lat: 46°52.600'S Long: 38°19.900'E Depth: 2990 m

NO BOTTLE DATA

113

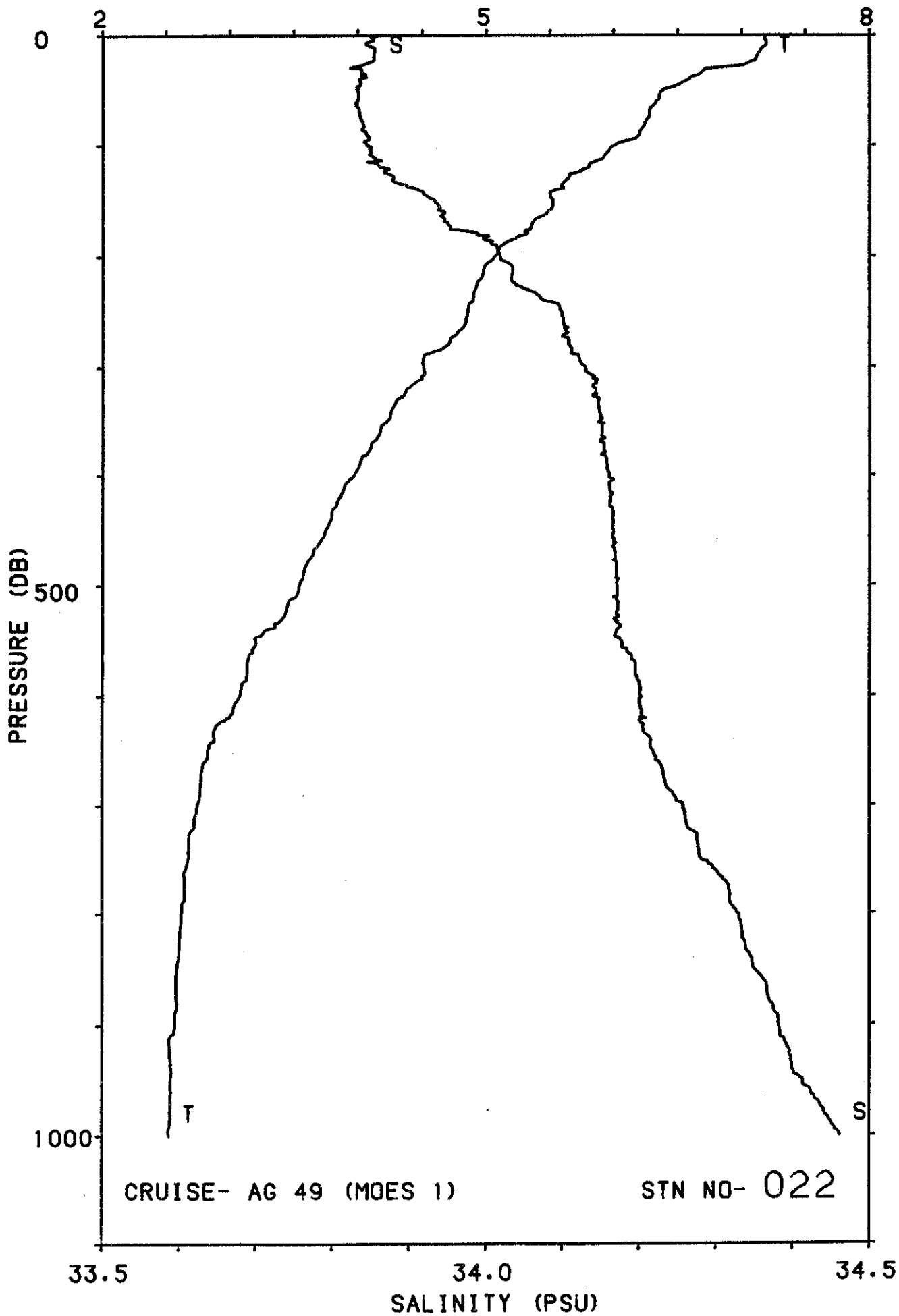
POTENTIAL DENSITY (σ_θ)



Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.21
 Station: 22 Cast: CTD UP Time: 18.13 Z
 Position: Lat: 46°52.700'S Long: 38°15.900'E Depth: 2730 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	7.194	7.194	33.869	1026.501	26.526	1026.501	26.526
4.96	5.0	7.189	7.189	33.853	1026.512	26.514	1026.512	26.514
9.92	10.0	7.182	7.181	33.849	1026.534	26.513	1026.533	26.512
19.83	20.0	7.117	7.115	33.853	1026.592	26.525	1026.592	26.525
24.79	25.0	7.067	7.064	33.849	1026.618	26.528	1026.618	26.529
29.75	30.0	6.810	6.807	33.825	1026.657	26.544	1026.657	26.545
39.66	40.0	6.596	6.592	33.836	1026.740	26.581	1026.741	26.582
49.58	50.0	6.394	6.390	33.832	1026.810	26.605	1026.810	26.605
59.49	60.0	6.345	6.340	33.832	1026.862	26.611	1026.863	26.612
69.41	70.0	6.286	6.280	33.836	1026.919	26.621	1026.920	26.623
74.36	75.0	6.283	6.276	33.837	1026.943	26.623	1026.944	26.624
79.32	80.0	6.254	6.248	33.840	1026.973	26.629	1026.973	26.630
89.23	90.0	6.212	6.204	33.844	1027.028	26.638	1027.028	26.639
99.15	100.0	6.019	6.011	33.845	1027.099	26.663	1027.100	26.664
118.97	120.0	5.813	5.803	33.864	1027.232	26.703	1027.234	26.705
123.93	125.0	5.707	5.696	33.869	1027.272	26.720	1027.274	26.722
138.79	140.0	5.564	5.552	33.911	1027.393	26.771	1027.394	26.772
148.70	150.0	5.533	5.521	33.933	1027.460	26.792	1027.462	26.794
158.61	160.0	5.493	5.480	33.945	1027.521	26.807	1027.522	26.808
173.48	175.0	5.362	5.348	33.953	1027.612	26.828	1027.614	26.830
178.43	180.0	5.332	5.318	33.989	1027.667	26.860	1027.669	26.862
198.25	200.0	5.087	5.072	34.018	1027.812	26.912	1027.814	26.914
218.06	220.0	4.975	4.958	34.033	1027.930	26.936	1027.932	26.939
237.87	240.0	4.916	4.898	34.077	1028.064	26.978	1028.066	26.980
247.78	250.0	4.874	4.855	34.099	1028.133	27.000	1028.135	27.003
257.68	260.0	4.860	4.840	34.100	1028.182	27.003	1028.184	27.005
277.49	280.0	4.713	4.692	34.109	1028.298	27.026	1028.301	27.029
297.30	300.0	4.531	4.509	34.129	1028.428	27.063	1028.430	27.065
317.10	320.0	4.406	4.382	34.143	1028.546	27.087	1028.548	27.089
336.90	340.0	4.289	4.264	34.148	1028.656	27.104	1028.658	27.106
346.81	350.0	4.255	4.230	34.150	1028.707	27.108	1028.710	27.111
356.71	360.0	4.200	4.174	34.152	1028.762	27.116	1028.764	27.119
376.50	380.0	4.103	4.076	34.154	1028.866	27.128	1028.869	27.130
396.30	400.0	4.003	3.975	34.162	1028.976	27.144	1028.980	27.147
445.78	450.0	3.783	3.752	34.166	1029.235	27.170	1029.239	27.173
495.26	500.0	3.577	3.543	34.171	1029.493	27.194	1029.497	27.197
544.72	550.0	3.235	3.199	34.176	1029.766	27.231	1029.770	27.234
594.17	600.0	3.116	3.077	34.201	1030.030	27.262	1030.034	27.265
643.60	650.0	2.868	2.827	34.217	1030.300	27.297	1030.304	27.301
693.03	700.0	2.790	2.746	34.257	1030.571	27.336	1030.576	27.340
742.44	750.0	2.724	2.677	34.280	1030.828	27.360	1030.832	27.364
791.84	800.0	2.675	2.624	34.327	1031.101	27.402	1031.106	27.406
841.23	850.0	2.644	2.590	34.349	1031.352	27.422	1031.358	27.427
890.61	900.0	2.630	2.572	34.382	1031.610	27.450	1031.617	27.455
939.97	950.0	2.600	2.539	34.413	1031.869	27.477	1031.875	27.482
989.33	1000.0	2.592	2.527	34.460	1032.136	27.515	1032.144	27.521

POTENTIAL TEMPERATURE (°C)

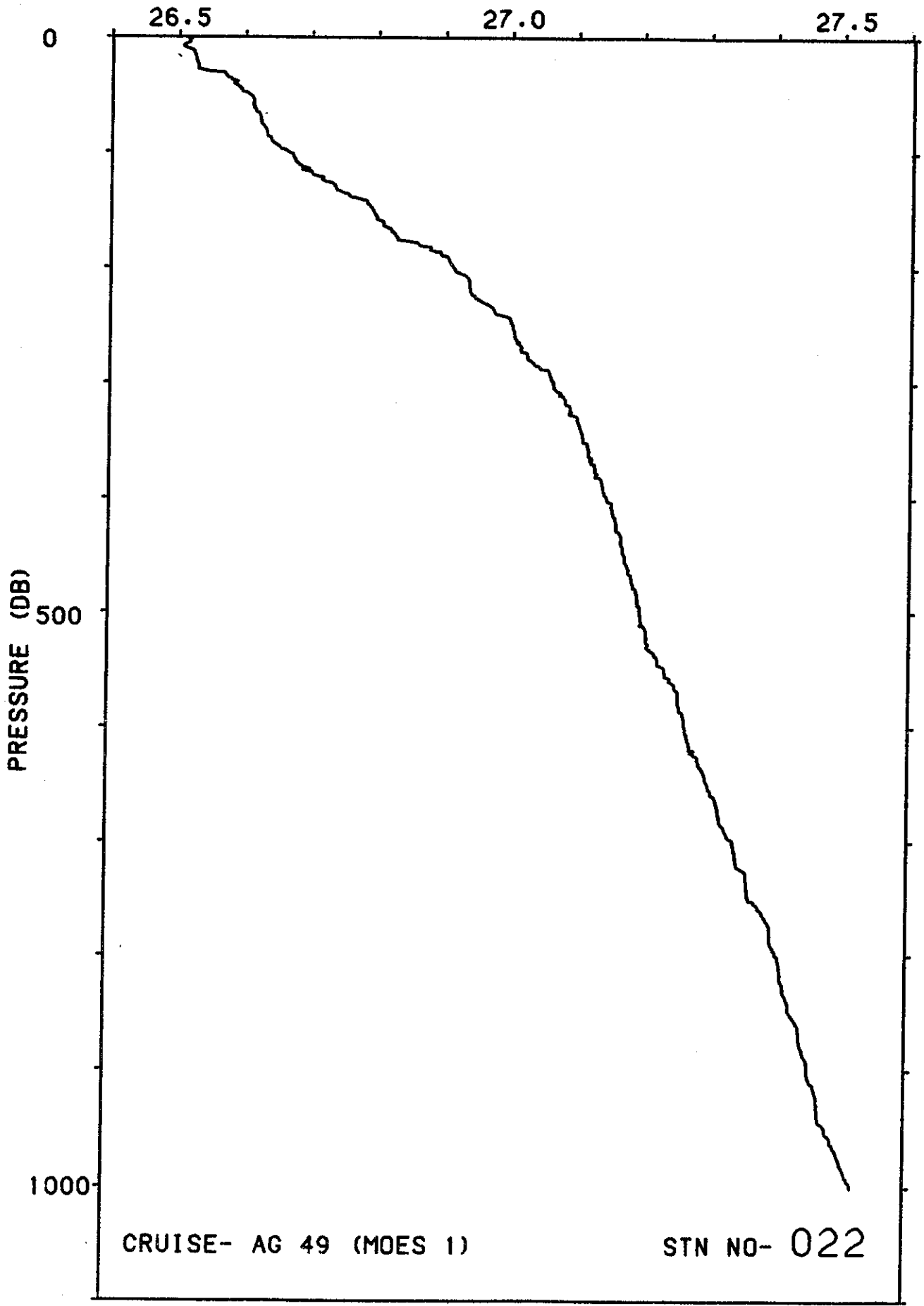


Ship: SA Aguihas Cruise: AG 49 (MOES 1) Date: 1987.04.21
Station: 22 Cast: BOTTLE Time: 18.13 Z
Position: Lat: 46°52.700'S Long: 38°15.900'E Depth: 2730 m

NO BOTTLE DATA

117

POTENTIAL DENSITY (σ_θ)



CRUISE- AG 49 (MOES 1)

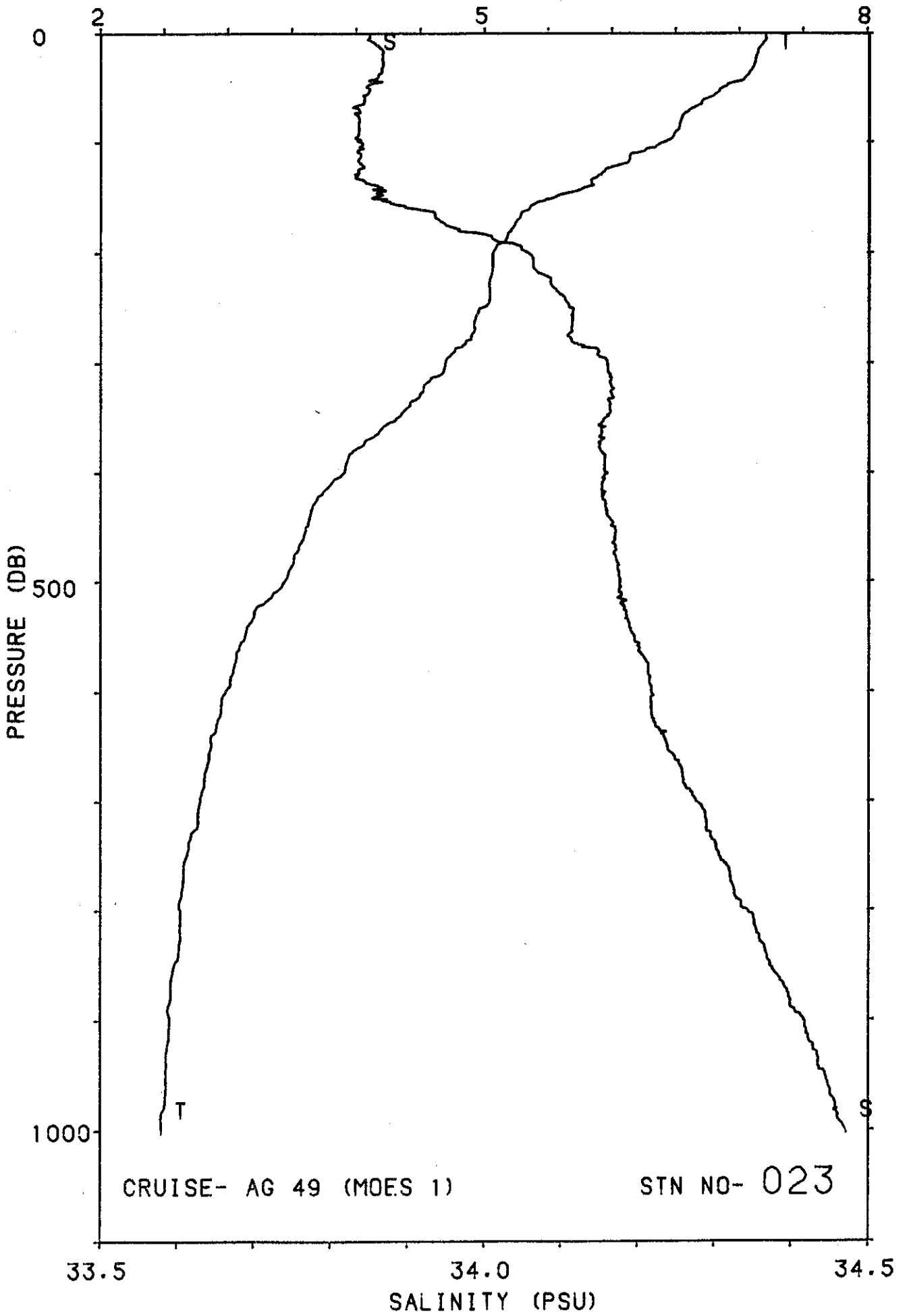
STN NO- 022

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.21
 Station: 23 Cast: CTD UP Time: 19.12 Z
 Position: Lat: 46°53.000'S Long: 38°12.000'E Depth: 2240 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	7.212	7.212	33.850	1026.484	26.509	1026.484	26.509
4.96	5.0	7.210	7.210	33.850	1026.507	26.509	1026.507	26.509
9.92	10.0	7.183	7.182	33.858	1026.540	26.519	1026.540	26.519
19.83	20.0	7.139	7.137	33.868	1026.600	26.533	1026.600	26.533
24.79	25.0	7.133	7.131	33.867	1026.623	26.533	1026.623	26.533
29.75	30.0	7.117	7.114	33.869	1026.649	26.537	1026.650	26.537
39.66	40.0	7.055	7.052	33.862	1026.699	26.540	1026.699	26.540
49.58	50.0	6.867	6.862	33.848	1026.760	26.555	1026.760	26.555
59.49	60.0	6.746	6.741	33.845	1026.819	26.568	1026.820	26.569
69.41	70.0	6.620	6.614	33.837	1026.876	26.579	1026.877	26.580
74.36	75.0	6.567	6.560	33.834	1026.904	26.583	1026.905	26.585
79.32	80.0	6.550	6.543	33.838	1026.932	26.589	1026.933	26.590
89.23	90.0	6.509	6.502	33.837	1026.982	26.593	1026.984	26.594
99.15	100.0	6.410	6.401	33.839	1027.043	26.608	1027.045	26.609
118.97	120.0	6.082	6.072	33.840	1027.179	26.651	1027.180	26.652
123.93	125.0	5.961	5.951	33.836	1027.214	26.663	1027.216	26.664
138.79	140.0	5.826	5.814	33.862	1027.321	26.700	1027.323	26.702
148.70	150.0	5.558	5.546	33.856	1027.396	26.728	1027.398	26.730
158.61	160.0	5.365	5.353	33.908	1027.507	26.792	1027.509	26.794
173.48	175.0	5.253	5.239	33.950	1027.623	26.839	1027.625	26.840
178.43	180.0	5.223	5.209	33.967	1027.663	26.856	1027.665	26.857
198.25	200.0	5.087	5.072	34.057	1027.843	26.943	1027.845	26.944
218.06	220.0	5.074	5.057	34.079	1027.954	26.962	1027.957	26.964
237.87	240.0	5.061	5.043	34.105	1028.069	26.984	1028.071	26.986
247.78	250.0	4.990	4.971	34.116	1028.133	27.001	1028.135	27.003
257.68	260.0	4.955	4.935	34.117	1028.183	27.005	1028.186	27.008
277.49	280.0	4.881	4.859	34.114	1028.282	27.012	1028.285	27.014
297.30	300.0	4.720	4.698	34.160	1028.430	27.066	1028.433	27.068
317.10	320.0	4.556	4.532	34.166	1028.546	27.089	1028.549	27.091
336.90	340.0	4.432	4.407	34.164	1028.652	27.101	1028.655	27.103
346.80	350.0	4.345	4.320	34.158	1028.703	27.105	1028.706	27.108
356.71	360.0	4.221	4.195	34.154	1028.760	27.115	1028.763	27.118
376.50	380.0	4.006	3.979	34.153	1028.876	27.137	1028.880	27.140
396.30	400.0	3.937	3.909	34.160	1028.982	27.150	1028.985	27.152
445.78	450.0	3.645	3.614	34.170	1029.254	27.187	1029.257	27.190
495.26	500.0	3.479	3.446	34.178	1029.509	27.209	1029.513	27.212
544.72	550.0	3.173	3.137	34.195	1029.787	27.252	1029.791	27.255
594.17	600.0	3.023	2.984	34.218	1030.053	27.284	1030.057	27.287
643.60	650.0	2.913	2.872	34.240	1030.313	27.311	1030.318	27.315
693.03	700.0	2.832	2.787	34.277	1030.582	27.348	1030.587	27.352
742.44	750.0	2.733	2.685	34.306	1030.847	27.380	1030.852	27.384
791.84	800.0	2.684	2.633	34.344	1031.113	27.415	1031.119	27.419
841.23	850.0	2.639	2.585	34.373	1031.372	27.442	1031.378	27.446
890.61	900.0	2.604	2.547	34.417	1031.641	27.480	1031.647	27.485
939.97	950.0	2.580	2.519	34.444	1031.895	27.504	1031.902	27.509
989.33	1000.0	2.547	2.483	34.471	1032.150	27.528	1032.157	27.533

119

POTENTIAL TEMPERATURE (°C)

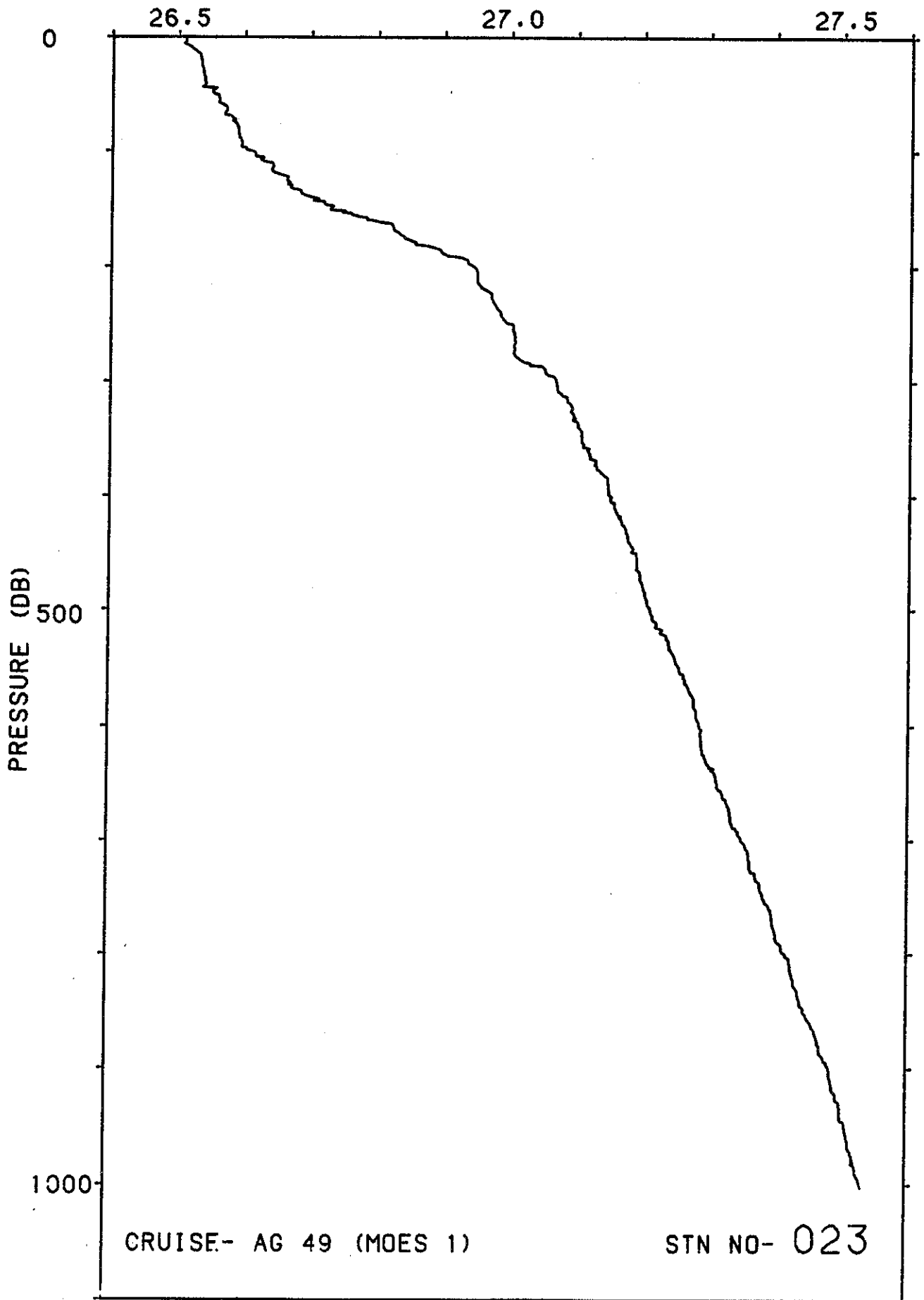


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.21
Station: 23 Cast: BOTTLE Time: 19.12 Z
Position: Lat: 46°53.000'S Long: 38°12.000'E Depth: 2240 m

NO BOTTLE DATA

121

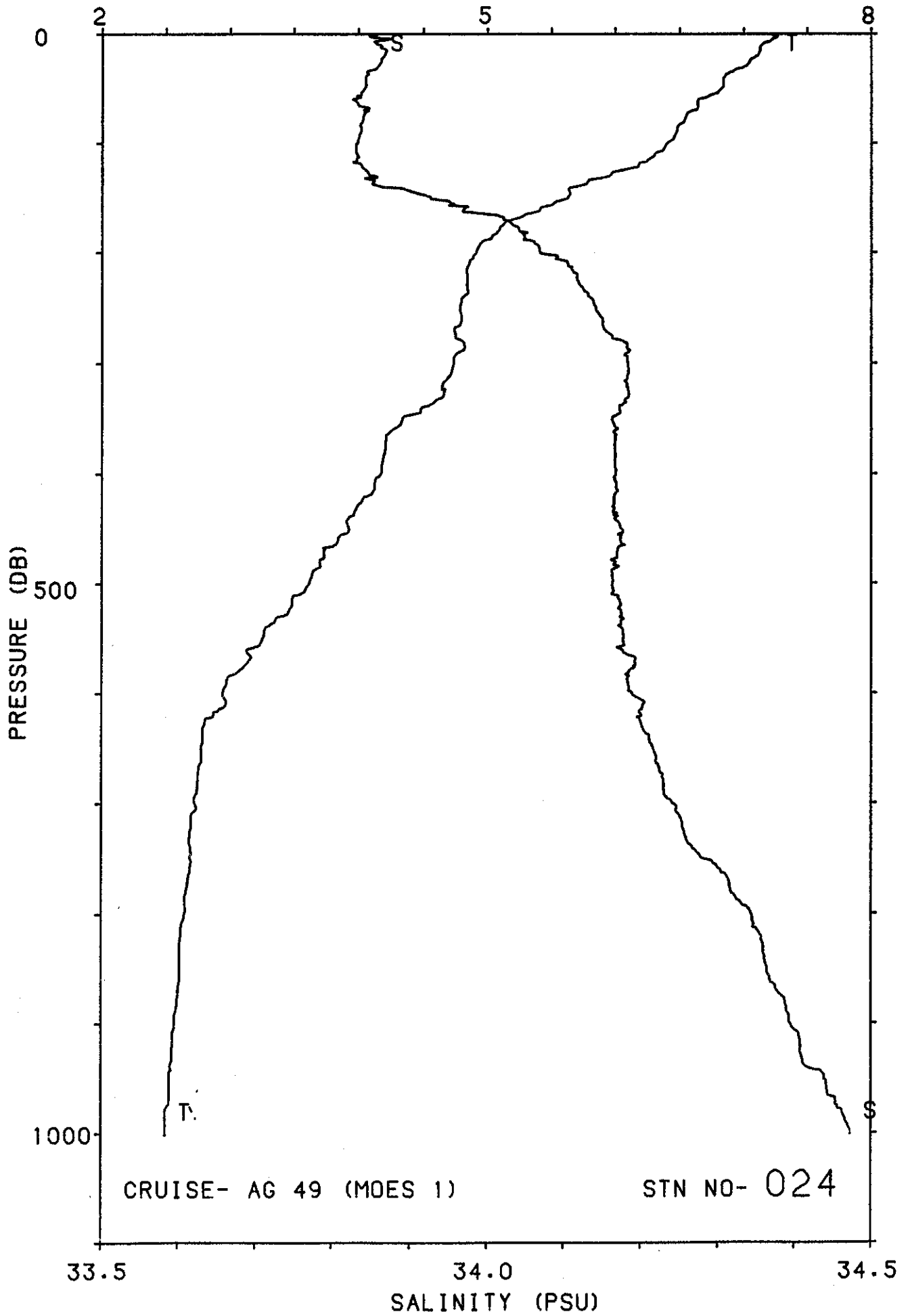
POTENTIAL DENSITY (σ_θ)



Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.21
 Station: 24 Cast: CTD UP Time: 20.15 Z
 Position: Lat: 46°53.000'S Long: 38° 8.000'E Depth: 1500 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_ρ kg.m ⁻³
.00	.0	7.198	7.198	33.862	1026.496	26.521	1026.495	26.520
4.96	5.0	7.227	7.227	33.873	1026.523	26.525	1026.523	26.525
9.92	10.0	7.145	7.144	33.860	1026.547	26.526	1026.547	26.526
19.83	20.0	7.107	7.105	33.867	1026.603	26.537	1026.604	26.537
24.79	25.0	7.047	7.044	33.863	1026.632	26.542	1026.632	26.542
29.75	30.0	7.004	7.001	33.858	1026.657	26.544	1026.657	26.544
39.66	40.0	6.849	6.845	33.843	1026.712	26.553	1026.712	26.554
49.58	50.0	6.828	6.824	33.841	1026.759	26.555	1026.760	26.555
59.49	60.0	6.648	6.643	33.827	1026.819	26.568	1026.819	26.568
69.41	70.0	6.602	6.596	33.847	1026.886	26.589	1026.887	26.590
74.36	75.0	6.557	6.550	33.840	1026.910	26.590	1026.911	26.591
79.32	80.0	6.540	6.533	33.839	1026.934	26.591	1026.935	26.592
89.23	90.0	6.479	6.471	33.837	1026.987	26.597	1026.988	26.599
99.15	100.0	6.410	6.401	33.832	1027.038	26.603	1027.039	26.604
118.97	120.0	6.190	6.179	33.838	1027.163	26.635	1027.165	26.637
123.93	125.0	6.072	6.061	33.843	1027.206	26.654	1027.207	26.656
138.79	140.0	5.707	5.696	33.863	1027.337	26.716	1027.338	26.717
148.70	150.0	5.636	5.624	33.927	1027.443	26.775	1027.444	26.776
158.61	160.0	5.421	5.408	33.971	1027.550	26.835	1027.552	26.837
173.48	175.0	5.133	5.119	34.033	1027.704	26.919	1027.705	26.920
178.43	180.0	5.097	5.083	34.041	1027.737	26.929	1027.739	26.931
198.25	200.0	4.919	4.903	34.069	1027.872	26.971	1027.875	26.973
218.06	220.0	4.850	4.833	34.117	1028.012	27.018	1028.013	27.019
237.87	240.0	4.830	4.812	34.133	1028.119	27.032	1028.121	27.034
247.78	250.0	4.796	4.777	34.142	1028.176	27.043	1028.178	27.045
257.68	260.0	4.809	4.789	34.150	1028.227	27.048	1028.229	27.050
277.49	280.0	4.807	4.786	34.177	1028.341	27.069	1028.343	27.072
297.30	300.0	4.747	4.724	34.183	1028.445	27.081	1028.448	27.084
317.10	320.0	4.661	4.637	34.184	1028.548	27.091	1028.551	27.094
336.90	340.0	4.488	4.463	34.173	1028.652	27.102	1028.655	27.105
346.80	350.0	4.344	4.318	34.163	1028.708	27.110	1028.710	27.112
356.71	360.0	4.271	4.245	34.169	1028.767	27.122	1028.770	27.125
376.50	380.0	4.212	4.185	34.167	1028.864	27.127	1028.867	27.129
396.30	400.0	4.188	4.159	34.167	1028.960	27.129	1028.963	27.132
445.78	450.0	3.948	3.917	34.175	1029.224	27.160	1029.227	27.163
495.26	500.0	3.643	3.609	34.164	1029.481	27.182	1029.484	27.185
544.72	550.0	3.282	3.245	34.178	1029.762	27.228	1029.766	27.231
594.17	600.0	2.973	2.934	34.189	1030.035	27.265	1030.039	27.269
643.60	650.0	2.810	2.769	34.216	1030.305	27.301	1030.310	27.305
693.03	700.0	2.760	2.716	34.241	1030.562	27.326	1030.566	27.329
742.44	750.0	2.731	2.683	34.281	1030.828	27.360	1030.833	27.364
791.84	800.0	2.692	2.641	34.344	1031.112	27.414	1031.118	27.418
841.23	850.0	2.659	2.605	34.364	1031.362	27.433	1031.368	27.437
890.61	900.0	2.623	2.565	34.394	1031.621	27.460	1031.627	27.465
939.97	950.0	2.589	2.528	34.439	1031.890	27.499	1031.897	27.504
989.33	1000.0	2.557	2.493	34.474	1032.151	27.529	1032.159	27.535

POTENTIAL TEMPERATURE (°C)

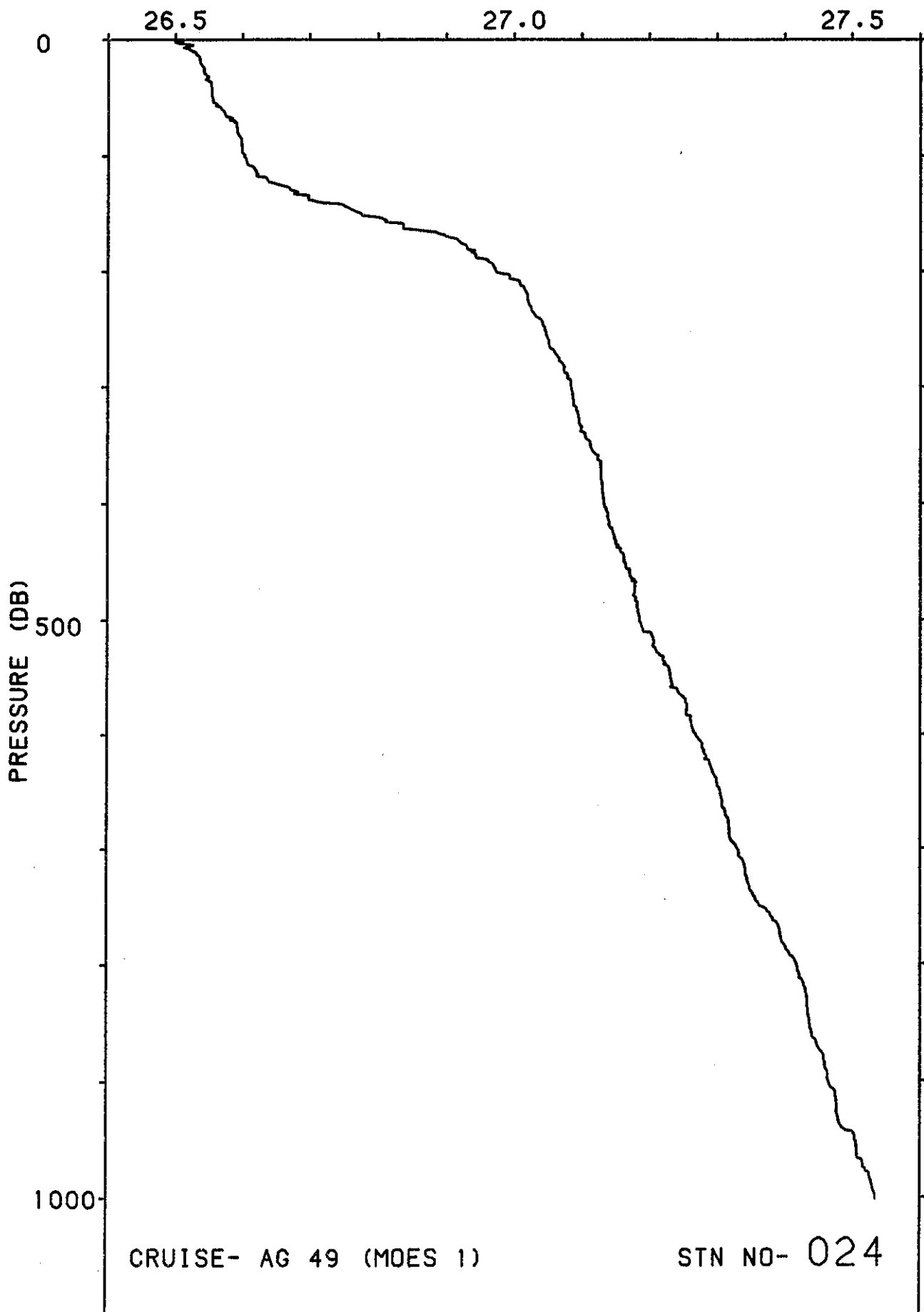


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.21
Station: 24 Cast: BOTTLE Time: 20.15 Z
Position: Lat: 46°53.000'S Long: 38° 8.000'E Depth: 1500 m

NO BOTTLE DATA

125

POTENTIAL DENSITY (σ_θ)

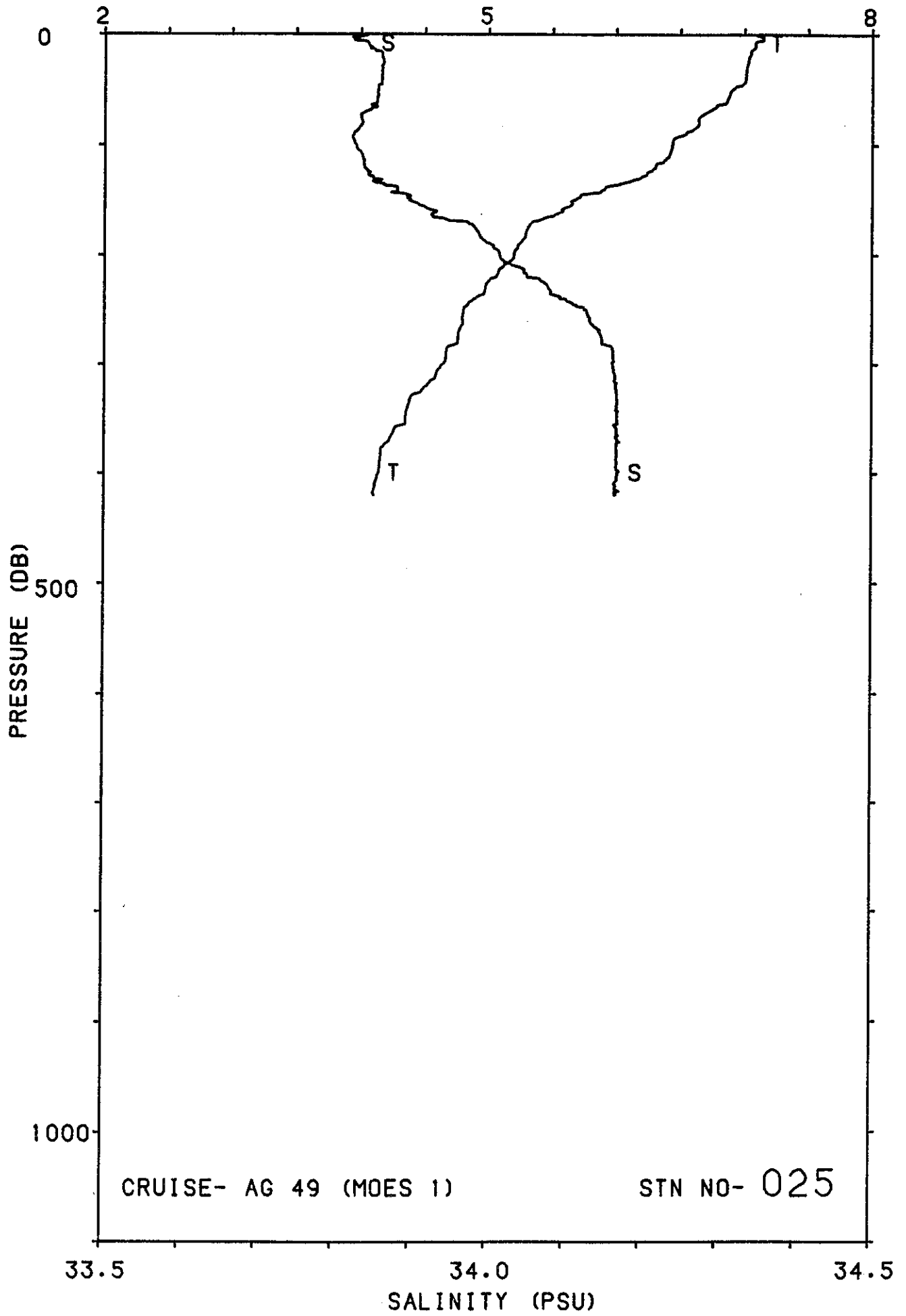


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.21
 Station: 25 Cast: CTD UP Time: 21.26 Z
 Position: Lat: 46°53.000'S Long: 38° 4.000'E Depth: 463 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	7.061	7.061	33.850	1026.505	26.530	1026.505	26.530
4.96	5.0	7.144	7.144	33.829	1026.499	26.501	1026.500	26.502
9.92	10.0	7.084	7.084	33.844	1026.543	26.522	1026.543	26.522
19.83	20.0	7.040	7.038	33.861	1026.608	26.541	1026.608	26.542
24.79	25.0	7.034	7.031	33.863	1026.633	26.544	1026.634	26.544
29.75	30.0	7.021	7.019	33.861	1026.656	26.544	1026.657	26.544
39.66	40.0	7.013	7.009	33.861	1026.704	26.545	1026.704	26.546
49.58	50.0	6.914	6.909	33.856	1026.759	26.554	1026.760	26.555
59.49	60.0	6.872	6.867	33.855	1026.810	26.559	1026.811	26.560
69.41	70.0	6.726	6.720	33.839	1026.863	26.567	1026.864	26.567
74.36	75.0	6.660	6.653	33.835	1026.892	26.572	1026.893	26.573
79.32	80.0	6.655	6.648	33.836	1026.916	26.573	1026.917	26.574
89.23	90.0	6.550	6.542	33.825	1026.968	26.579	1026.969	26.580
99.15	100.0	6.445	6.436	33.827	1027.029	26.594	1027.031	26.595
118.97	120.0	6.314	6.304	33.838	1027.147	26.620	1027.149	26.621
123.93	125.0	6.252	6.242	33.846	1027.185	26.634	1027.186	26.635
138.79	140.0	5.916	5.904	33.880	1027.324	26.704	1027.326	26.705
148.70	150.0	5.682	5.670	33.896	1027.412	26.744	1027.414	26.746
158.61	160.0	5.592	5.579	33.932	1027.498	26.784	1027.500	26.786
173.48	175.0	5.322	5.309	33.983	1027.640	26.856	1027.642	26.858
178.43	180.0	5.307	5.293	33.987	1027.669	26.861	1027.671	26.863
198.25	200.0	5.216	5.201	34.014	1027.794	26.894	1027.795	26.895
218.06	220.0	5.075	5.058	34.049	1027.931	26.938	1027.933	26.940
237.87	240.0	4.911	4.892	34.096	1028.080	26.994	1028.082	26.996
247.78	250.0	4.828	4.809	34.127	1028.160	27.027	1028.163	27.030
257.68	260.0	4.820	4.800	34.132	1028.212	27.033	1028.214	27.035
277.49	280.0	4.782	4.760	34.148	1028.321	27.050	1028.324	27.052
297.30	300.0	4.664	4.642	34.162	1028.439	27.074	1028.441	27.076
317.10	320.0	4.538	4.514	34.167	1028.549	27.092	1028.552	27.094
336.90	340.0	4.395	4.370	34.169	1028.660	27.108	1028.663	27.111
346.80	350.0	4.382	4.356	34.168	1028.707	27.109	1028.710	27.112
356.71	360.0	4.294	4.268	34.168	1028.763	27.118	1028.766	27.121
376.50	380.0	4.192	4.165	34.168	1028.868	27.130	1028.870	27.132
396.30	400.0	4.176	4.147	34.168	1028.961	27.131	1028.965	27.134

127

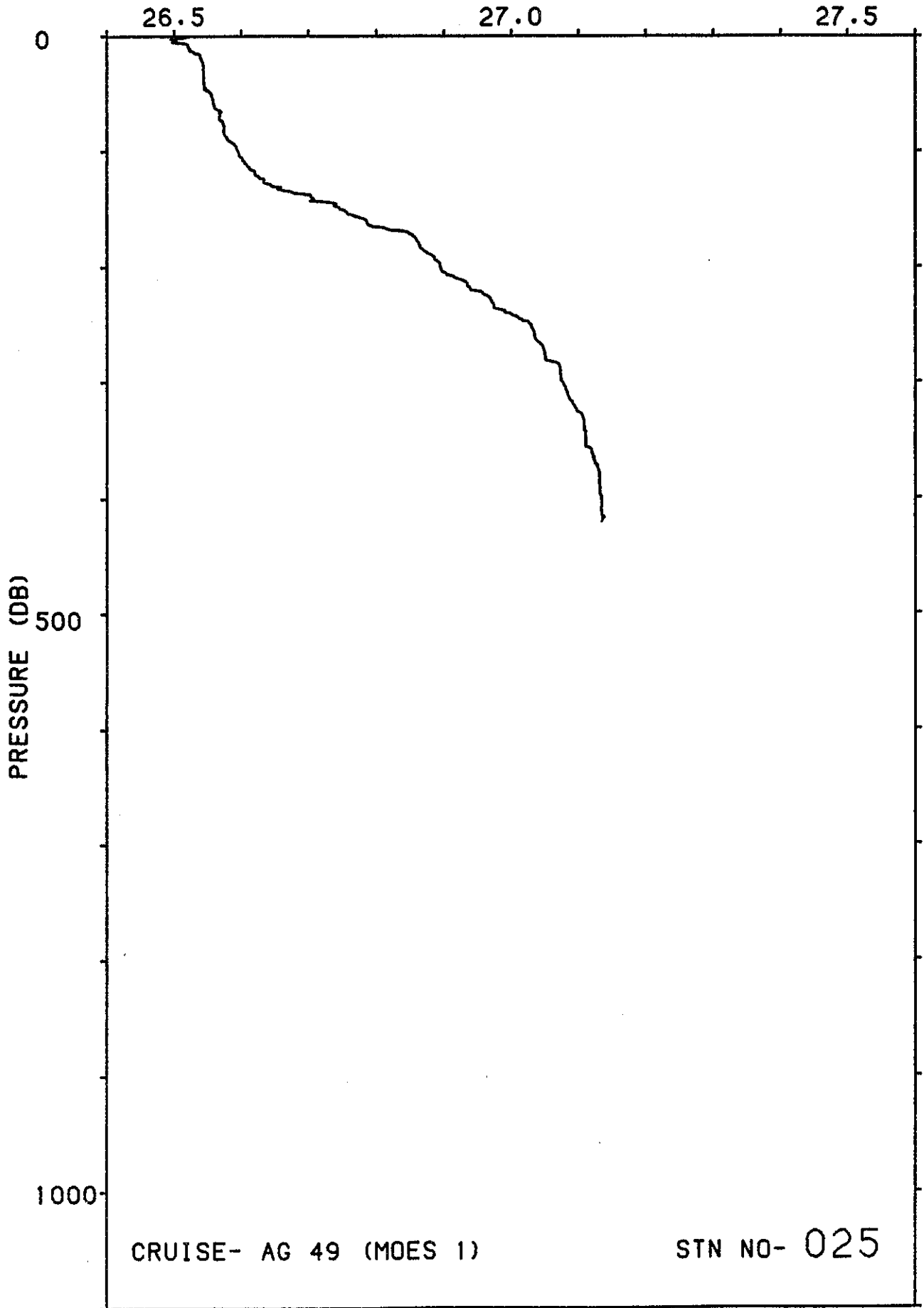
POTENTIAL TEMPERATURE (°C)



Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.21
Station: 25 Cast: BOTTLE Time: 21.26 Z
Position: Lat: 46°53.000'S Long: 38° 4.000'E Depth: 463 m

NO BOTTLE DATA

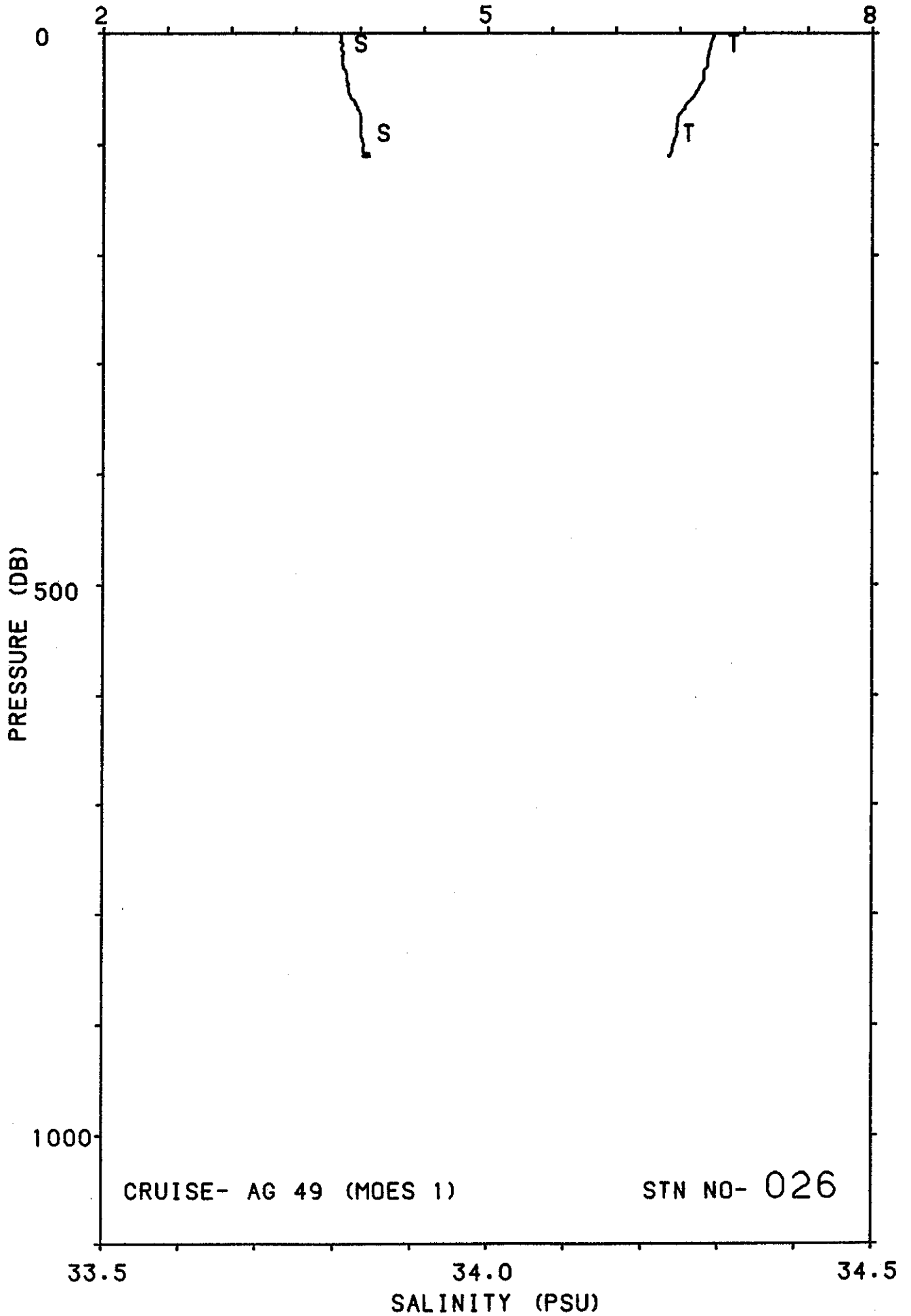
POTENTIAL DENSITY (σ_θ)



Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.22
 Station: 26 Cast: CTD UP Time: 5.51 Z
 Position: Lat: 46°50.400'S Long: 38° .000'E Depth: 130 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.785	6.785	33.788	1026.493	26.518	1026.493	26.518
4.96	5.0	6.757	6.757	33.808	1026.536	26.538	1026.536	26.538
9.92	10.0	6.741	6.740	33.810	1026.563	26.542	1026.563	26.542
19.83	20.0	6.724	6.722	33.810	1026.611	26.544	1026.611	26.544
24.79	25.0	6.720	6.717	33.810	1026.634	26.544	1026.635	26.545
29.75	30.0	6.715	6.712	33.811	1026.659	26.546	1026.659	26.546
39.66	40.0	6.687	6.683	33.816	1026.712	26.553	1026.713	26.554
49.58	50.0	6.645	6.641	33.818	1026.765	26.560	1026.766	26.561
59.49	60.0	6.583	6.578	33.824	1026.825	26.574	1026.825	26.574
69.41	70.0	6.520	6.513	33.831	1026.885	26.588	1026.885	26.588
74.37	75.0	6.486	6.480	33.834	1026.914	26.594	1026.915	26.595
79.32	80.0	6.485	6.478	33.833	1026.937	26.594	1026.938	26.594
89.23	90.0	6.479	6.471	33.834	1026.984	26.595	1026.985	26.596
99.15	100.0	6.451	6.442	33.838	1027.037	26.602	1027.038	26.603

POTENTIAL TEMPERATURE (°C)



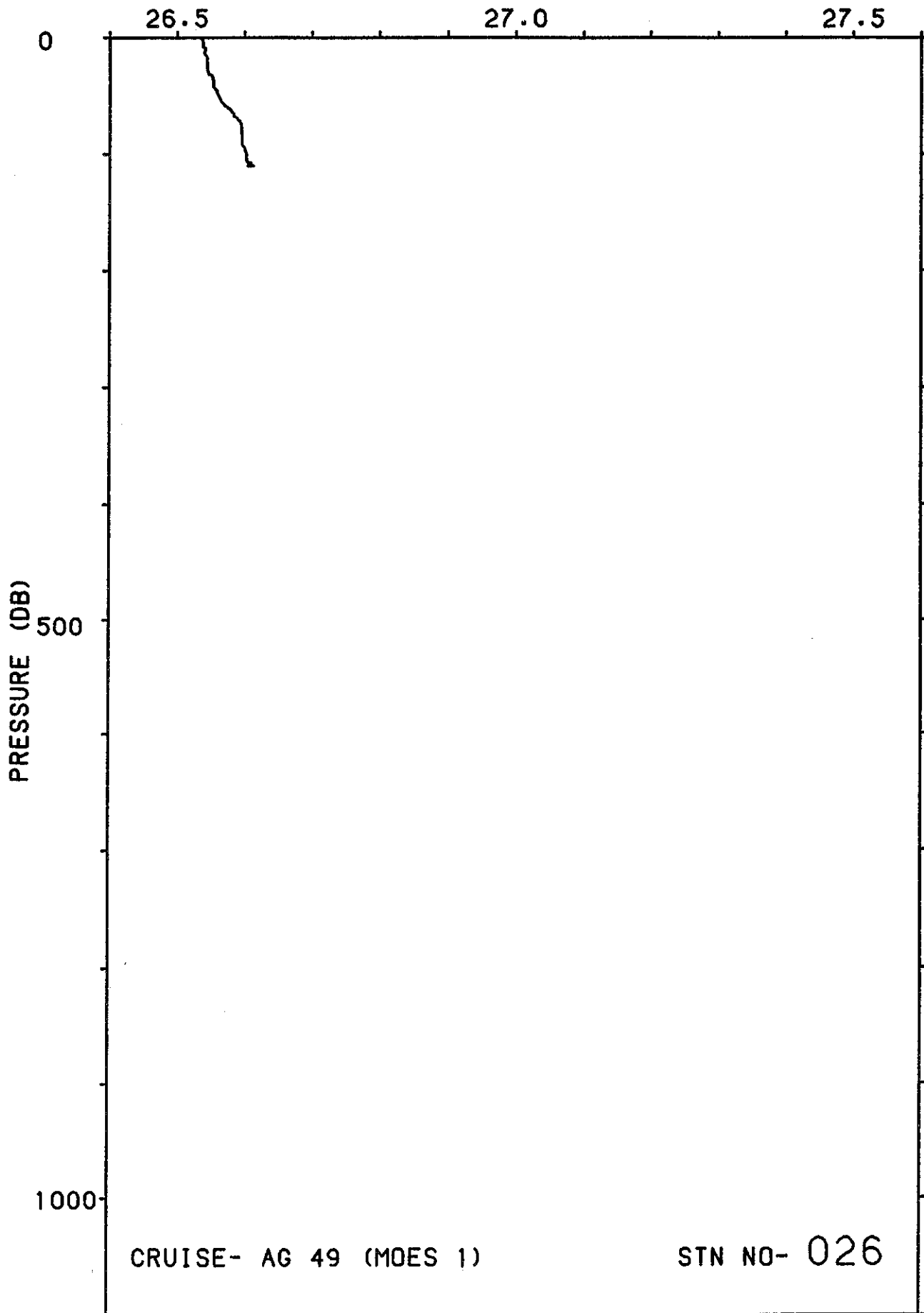
Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.22
 Station: 26 Cast: BOTTLE Time: 5.51 Z
 Position: Lat: 46°50.400'S Long: 38° .000'E Depth: 130 m

Bottle Data

Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
.0	6.79	6.79	33.788	2.182	.02	20.25	.34	.58
3.0	6.76	6.76	33.808	2.580	.01	16.25	.35	.57
7.0	6.75	6.75	33.808	2.318	.01	16.24	.36	.58
11.0	6.74	6.74	33.811	1.616	.00	15.86	.34	.56
14.0	6.74	6.74	33.807	2.194	.00	16.05	.34	.63
22.0	6.72	6.72	33.810	2.193	.00	15.86	.34	.60

133

POTENTIAL DENSITY (σ_θ)



Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.23
Station: 27 Cast: Time: 4.50 Z
Position: Lat: 46°45.760'S Long: 38° 0.340'E Depth: 190 m

NO CTD CAST

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.23
 Station: 27 Cast: BOTTLE Time: 4.50 Z
 Position: Lat: 46°45.760'S Long: 38° 0.340'E Depth: 190 m

Bottle Data

Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
.0				1.092	.52	17.12	.36	.77
4.0				1.239	.50	16.45	.34	.73
13.0				.915	.64	16.50	.35	.75
27.0				1.088	.85	16.62	.38	.78
50.0				.274	1.57	17.51	.37	.82
100.0				.365	2.68	17.99	.32	.86

Production Data

Depth m	Filter size: Light %	Carbon Uptake		Total	Areal Production mg(C).m ⁻² .hr ⁻¹
		0.45µm	mg(C).m ⁻³ .hr ⁻¹		
.0	100	.513		.513	8.72
4.0	50	.303		.303	
13.0	10	.268		.268	
27.0	1	.075		.075	

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.24
Station: 28 Cast: Time: 5.10 Z
Position: Lat: 47°55.500'S Long: 37°53.500'E Depth: 43 m

NO CTD CAST

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.24
 Station: 28 Cast: BOTTLE Time: 5.10 Z
 Position: Lat: 47°55.500'S Long: 37°53.500'E Depth: 43 m

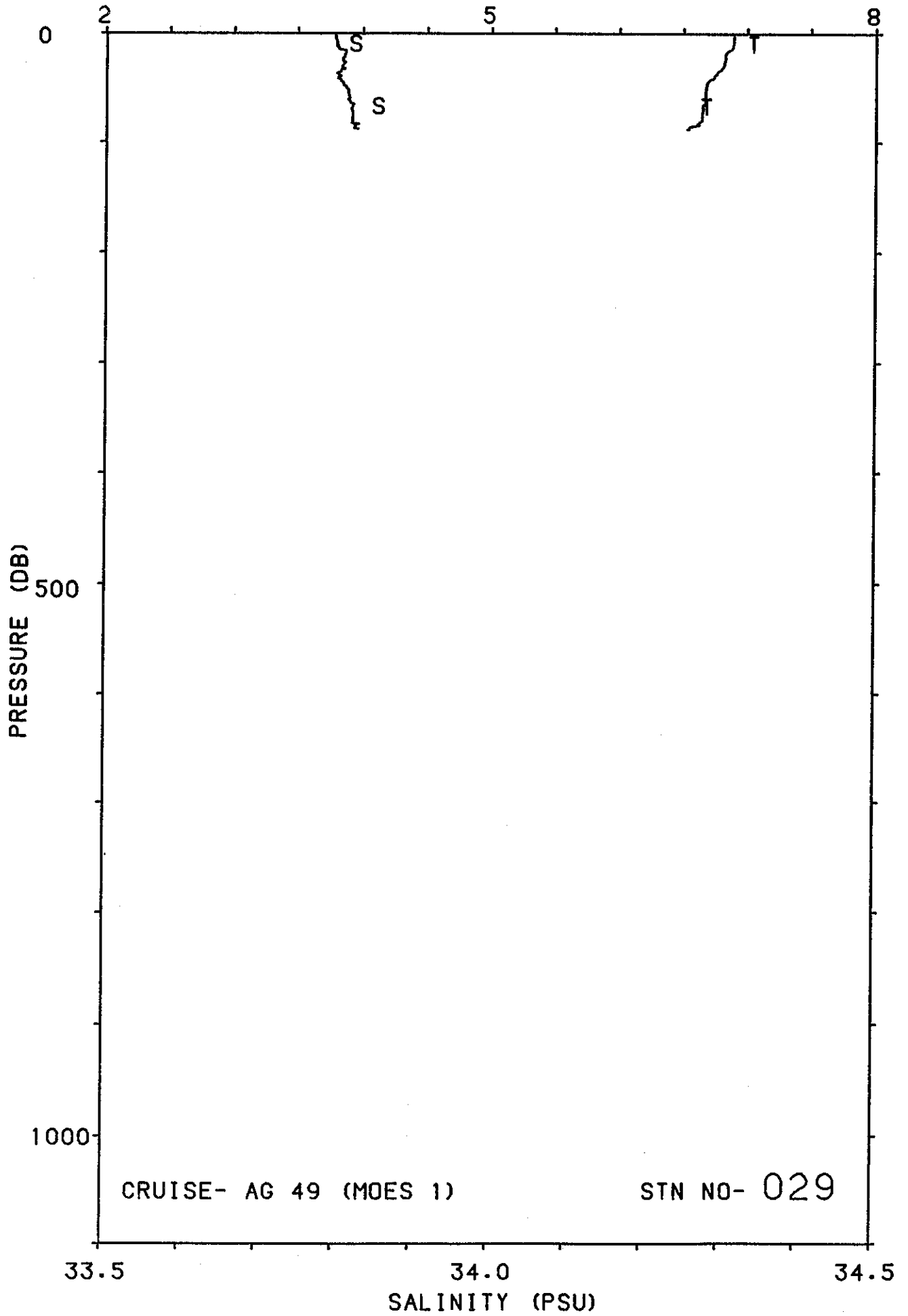
Bottle Data

Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
.0				.309	30.06	17.56	3.56	7.10
10.0				.323	1.28	23.06	1.34	.79
20.0				.458	1.23	23.47	.39	.82
30.0				.291	1.34	23.06	.41	.82

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.24
 Station: 29 Cast: CTD UP Time: 6.29 Z
 Position: Lat: 46°55.720'S Long: 37°54.250'E Depth: 98 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.894	6.894	33.799	1026.488	26.513	1026.487	26.512
4.96	5.0	6.893	6.893	33.799	1026.510	26.512	1026.510	26.512
9.92	10.0	6.892	6.891	33.799	1026.533	26.512	1026.534	26.513
19.83	20.0	6.829	6.827	33.810	1026.597	26.530	1026.597	26.530
24.79	25.0	6.829	6.826	33.807	1026.618	26.528	1026.618	26.528
29.75	30.0	6.817	6.815	33.807	1026.642	26.529	1026.642	26.529
39.66	40.0	6.743	6.740	33.803	1026.695	26.536	1026.695	26.536
49.58	50.0	6.680	6.676	33.812	1026.757	26.552	1026.757	26.552
59.49	60.0	6.677	6.672	33.816	1026.806	26.555	1026.806	26.556
69.41	70.0	6.660	6.654	33.819	1026.856	26.559	1026.857	26.560
74.36	75.0	6.653	6.646	33.820	1026.881	26.561	1026.882	26.562
79.32	80.0	6.653	6.646	33.820	1026.904	26.561	1026.905	26.562

POTENTIAL TEMPERATURE (°C)



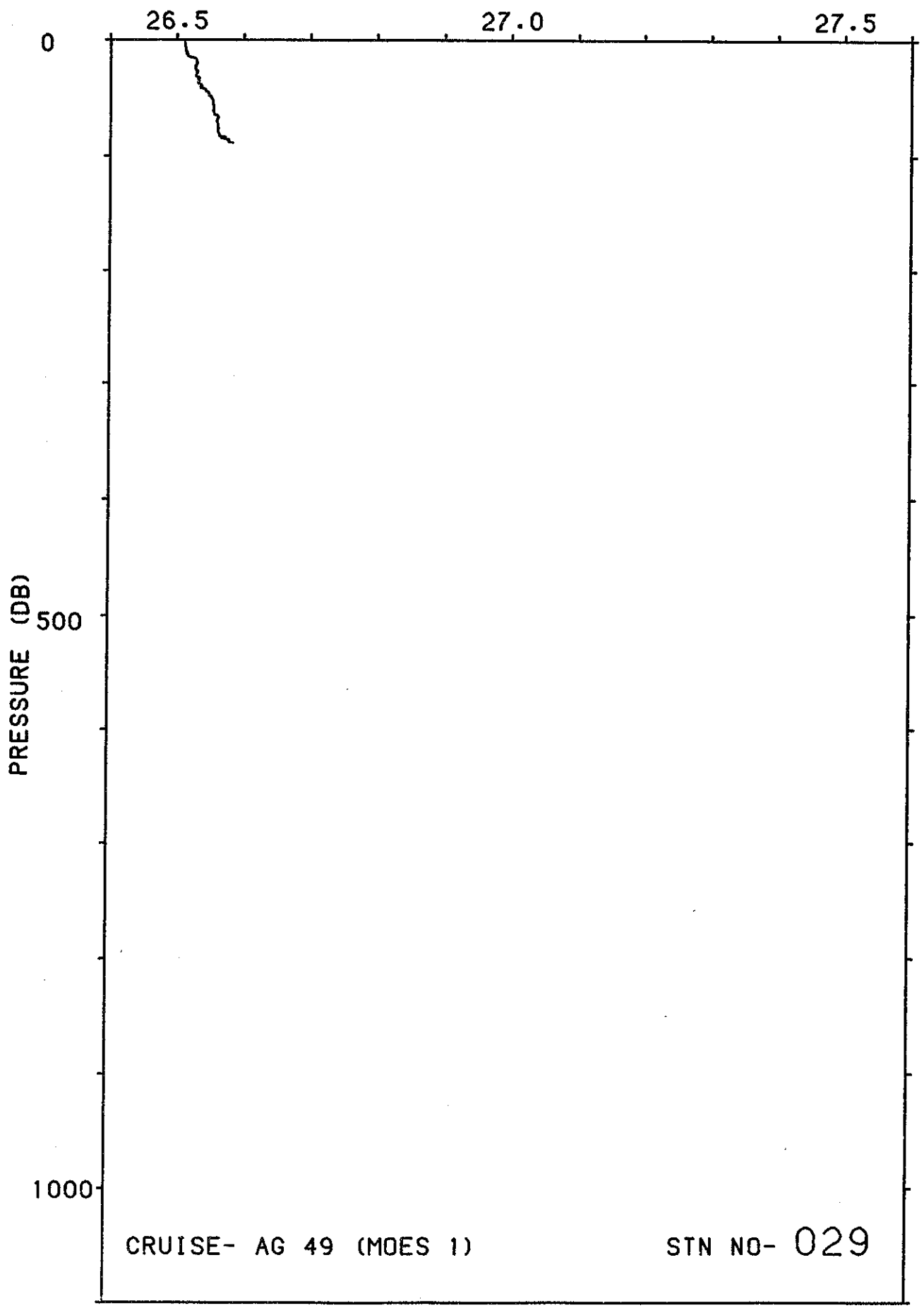
Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.24
 Station: 29 Cast: BOTTLE Time: 6.29 Z
 Position: Lat: 46°55.720'S Long: 37°54.250'E Depth: 98 m

Bottle Data

Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
.0	6.89	6.89	33.799	.304	1.00	21.31	.40	.78
20.0	6.83	6.83	33.810	.334	1.00	20.42	.45	.79
40.0	6.74	6.74	33.802	.308	1.07	20.81	.39	.80
60.0	6.68	6.67	33.815	.369	1.13	20.33	.39	.81
80.0	6.65	6.64	33.820	.246	1.39	20.19	.38	.82

141

POTENTIAL DENSITY (σ_θ)

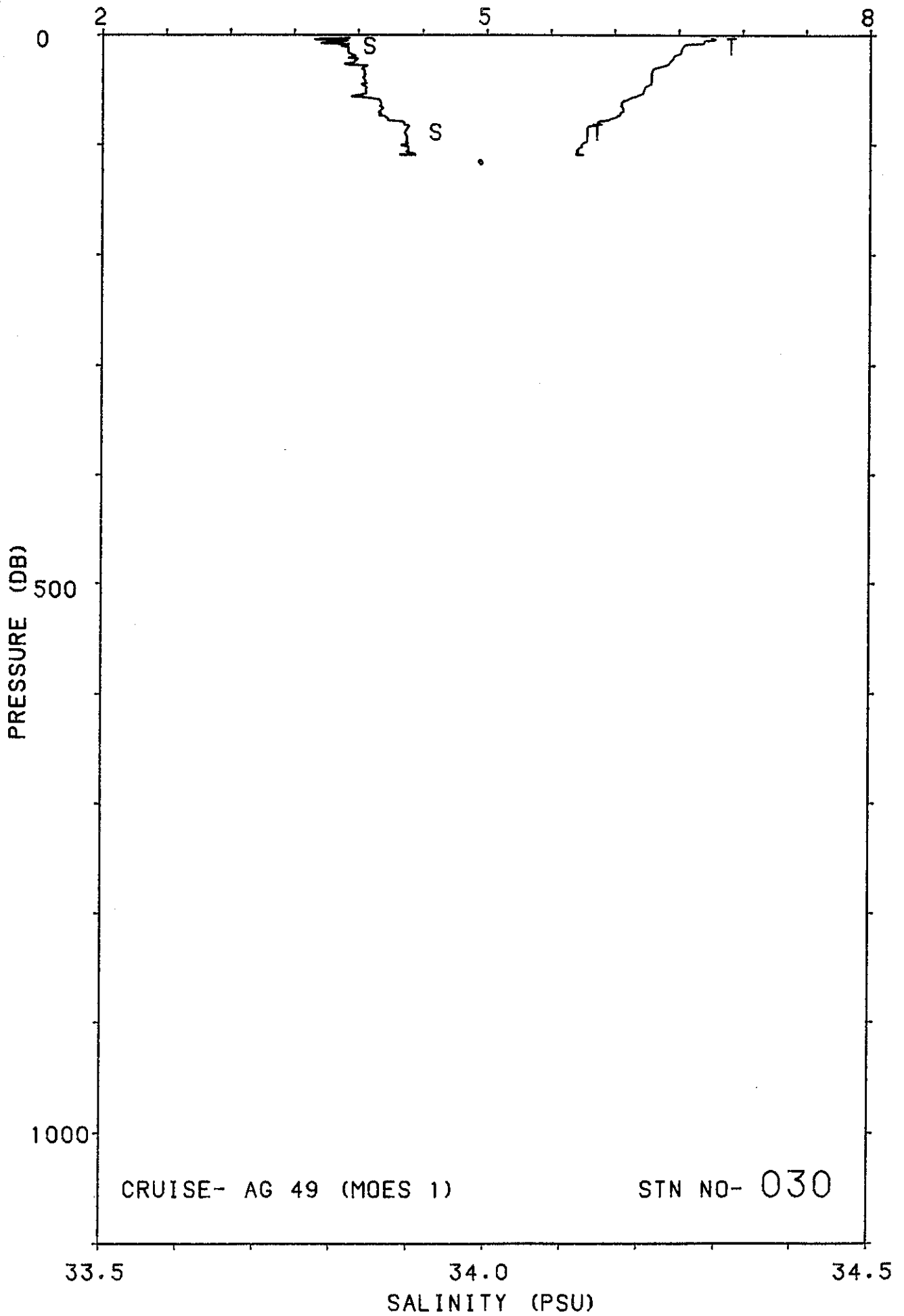


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.24
 Station: 30 Cast: CTD UP Time: 7.10 Z
 Position: Lat: 46°55.950'S Long: 37°54.900'E Depth: 120 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.676	6.676	33.938	1026.626	26.651	1026.626	26.651
4.96	5.0	6.707	6.707	33.816	1026.549	26.551	1026.549	26.551
9.92	10.0	6.541	6.540	33.812	1026.590	26.569	1026.591	26.570
19.83	20.0	6.459	6.458	33.825	1026.658	26.591	1026.658	26.591
24.79	25.0	6.430	6.428	33.828	1026.687	26.596	1026.687	26.597
29.75	30.0	6.319	6.317	33.839	1026.733	26.620	1026.733	26.620
39.66	40.0	6.292	6.289	33.841	1026.784	26.625	1026.785	26.625
49.58	50.0	6.233	6.229	33.843	1026.839	26.634	1026.840	26.635
59.49	60.0	6.076	6.071	33.862	1026.920	26.669	1026.921	26.670
69.41	70.0	6.061	6.055	33.860	1026.967	26.669	1026.968	26.670
74.36	75.0	6.014	6.007	33.869	1027.004	26.683	1027.004	26.683
79.32	80.0	5.875	5.868	33.893	1027.063	26.719	1027.064	26.720
89.23	90.0	5.794	5.787	33.893	1027.119	26.729	1027.120	26.730
99.15	100.0	5.749	5.741	33.890	1027.168	26.732	1027.170	26.733

143

POTENTIAL TEMPERATURE (°C)



Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.24
Station: 30 Cast: BOTTLE Time: 7.10 Z
Position: Lat: 46°55.950'S Long: 37°54.900'E Depth: 120 m

Bottle Data

Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
.0	6.68	6.68	33.938	.184	.89	19.67	.38	.74
20.0	6.46	6.46	33.824	.197	.94	19.46	.38	.79
40.0	6.29	6.29	33.841	.151	.92	19.10	.36	.78
60.0	6.07	6.06	33.861	.155	1.21	18.26	.37	.78
80.0	5.88	5.87	33.893	.129	1.40	17.13	.38	.74

145

POTENTIAL DENSITY (σ_θ)

26.5

27.0

27.5

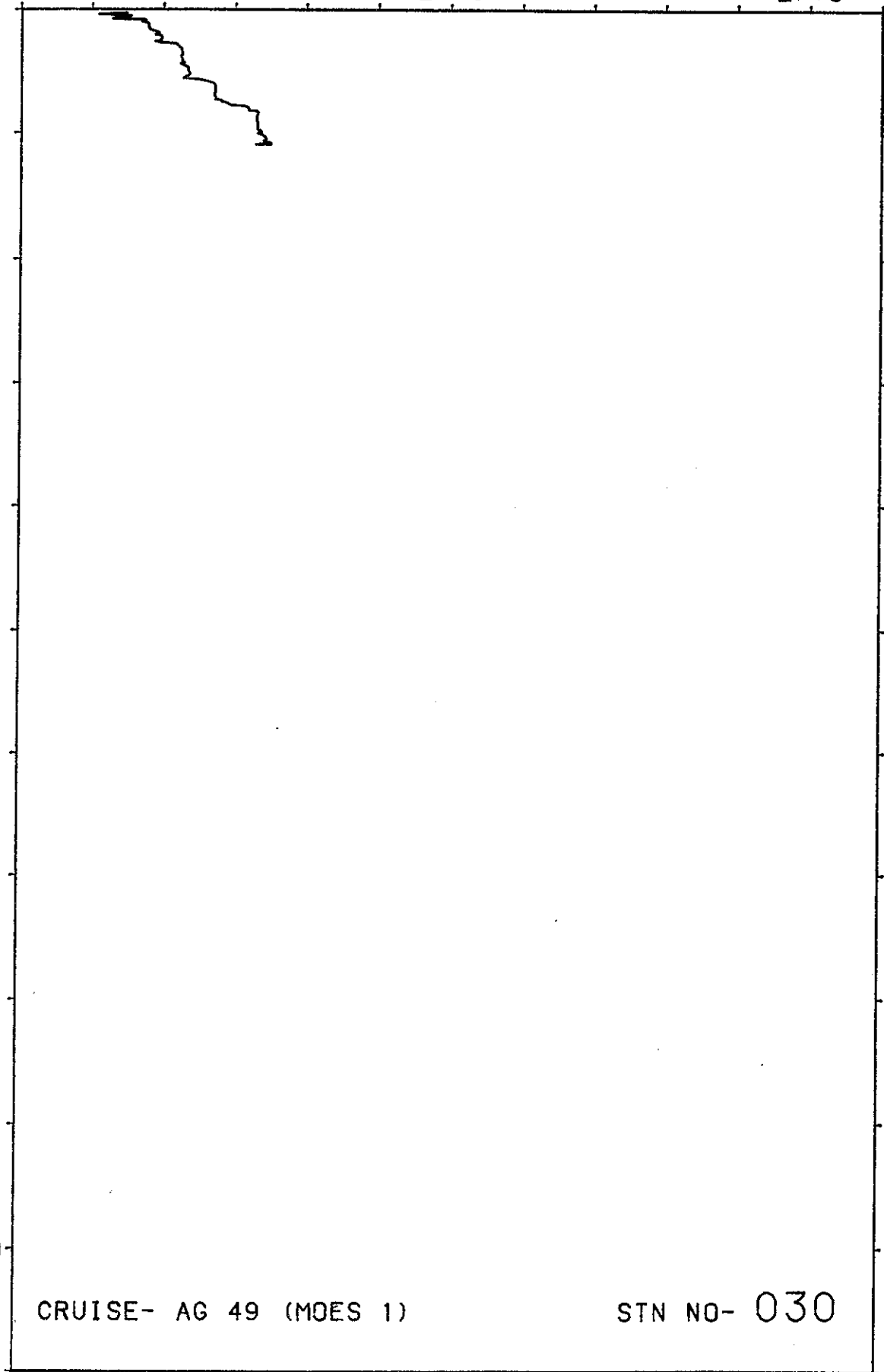
0

PRESSURE (DB)
500

1000

CRUISE- AG 49 (MOES 1)

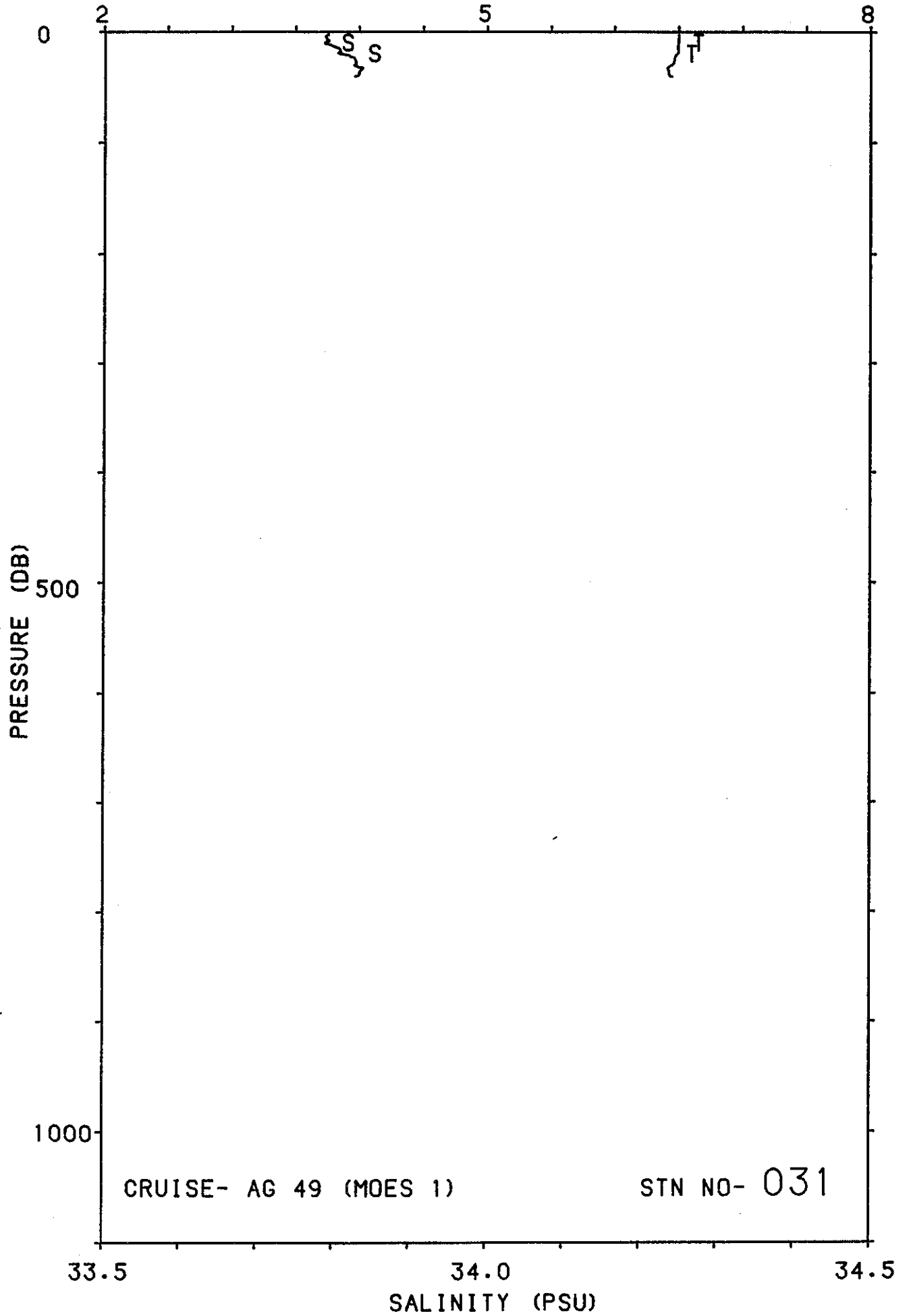
STN NO- 030



Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.24
 Station: 31 Cast: CTD UP Time: 8.45 Z
 Position: Lat: 46°49.950'S Long: 37°47.500'E Depth: 50 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.496	6.496	33.803	1026.543	26.568	1026.543	26.568
4.96	5.0	6.503	6.502	33.789	1026.554	26.556	1026.555	26.557
9.92	10.0	6.500	6.499	33.789	1026.578	26.557	1026.578	26.557
19.83	20.0	6.490	6.488	33.810	1026.642	26.575	1026.642	26.575
24.79	25.0	6.471	6.469	33.827	1026.681	26.591	1026.681	26.591
29.75	30.0	6.451	6.448	33.827	1026.707	26.593	1026.707	26.594
39.66	40.0	6.427	6.424	33.831	1026.759	26.600	1026.759	26.600

POTENTIAL TEMPERATURE (°C)



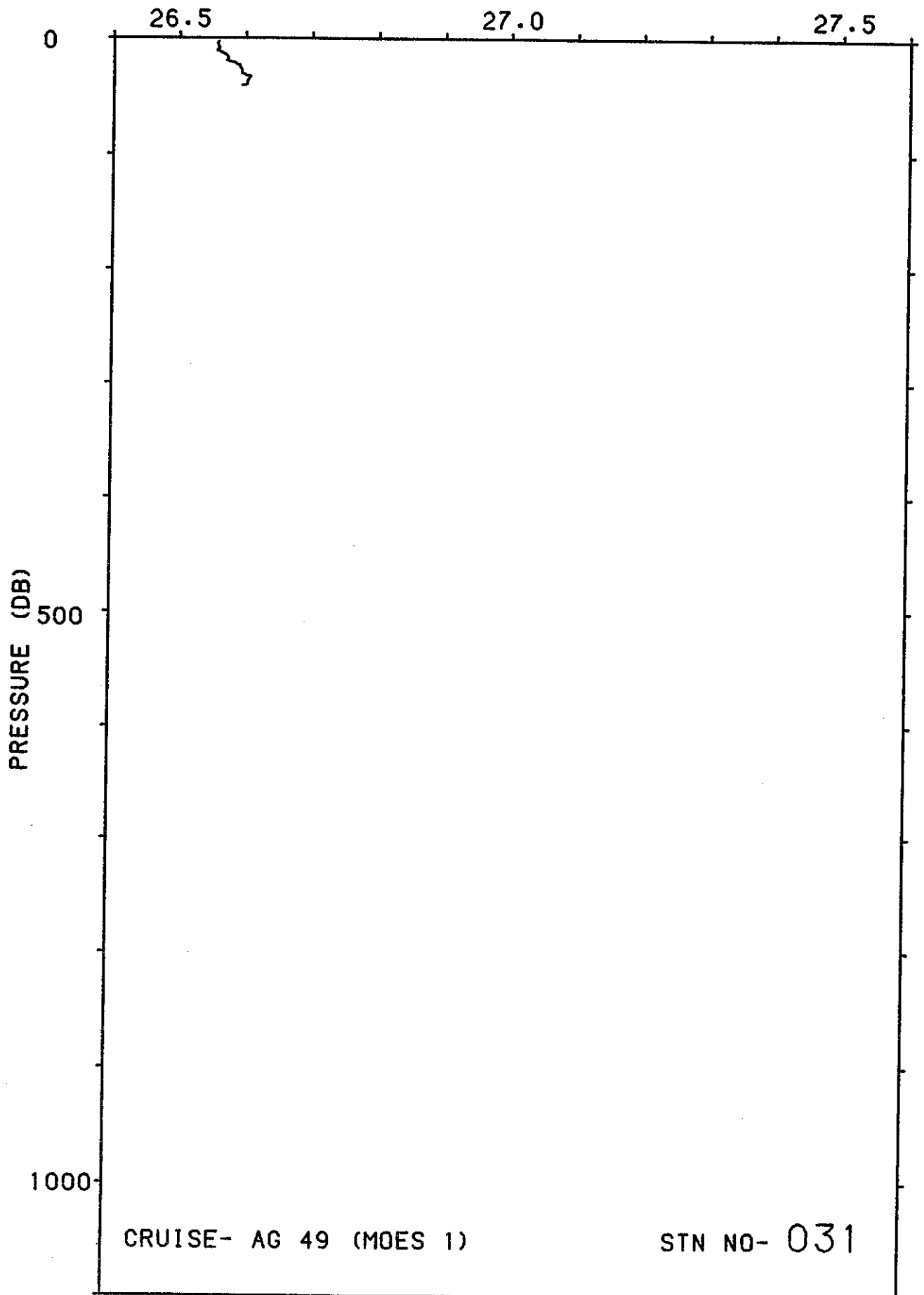
Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.24
Station: 31 Cast: BOTTLE Time: 8.45 Z
Position: Lat: 46°49.950'S Long: 37°47.500'E Depth: 50 m

Bottle Data

Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
.0	6.50	6.50	33.803	1.097	1.68	21.31	.32	.80
20.0	6.49	6.49	33.811	.788	1.61	19.95	.33	.79
40.0	6.43	6.43	33.830	.984	2.36	20.61	.30	.82

149

POTENTIAL DENSITY (σ_θ)

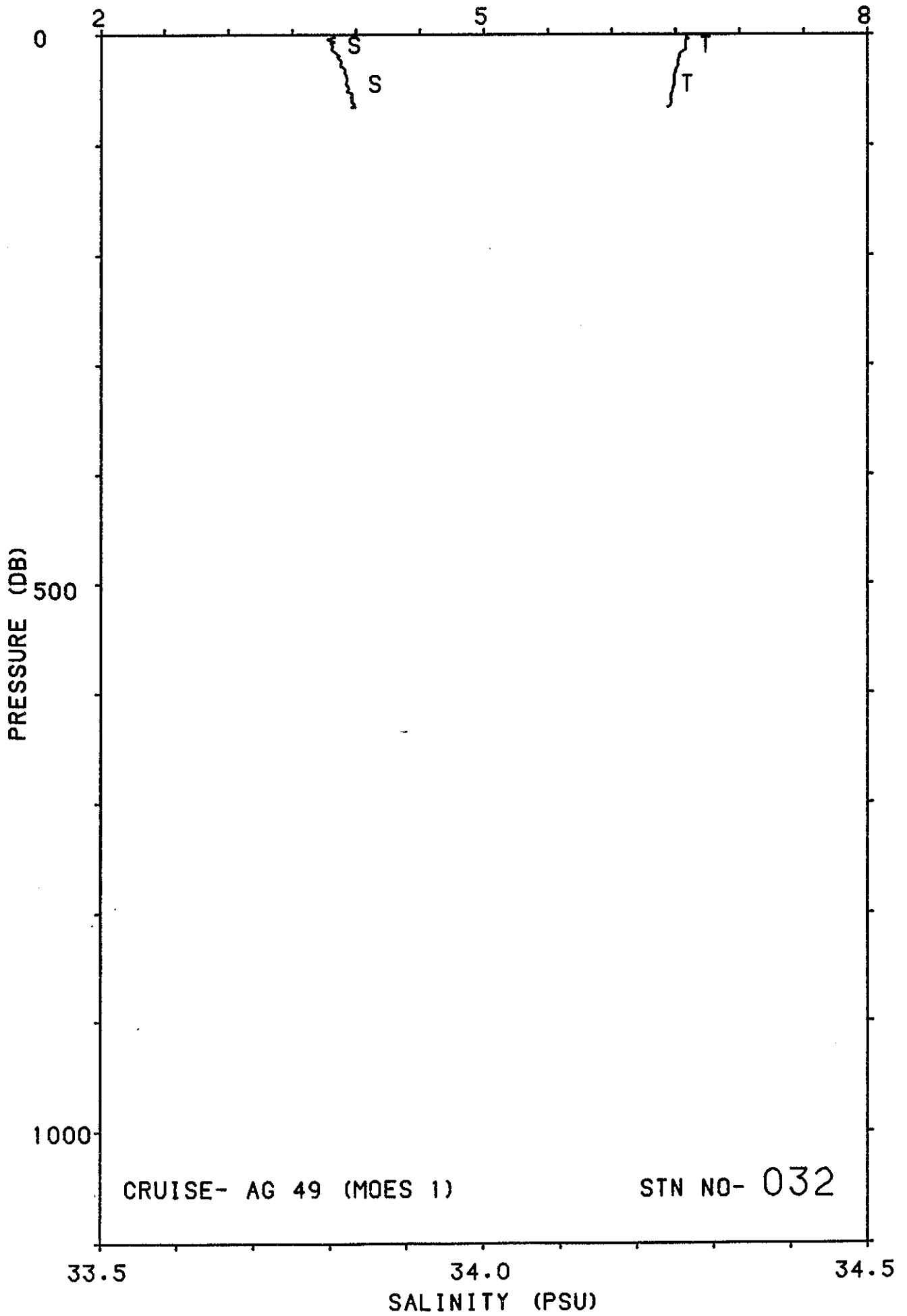


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.24
 Station: 32 Cast: CTD UP Time: 9.44 Z
 Position: Lat: 46°49.450'S Long: 37°47.550'E Depth: 76 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.544	6.544	33.820	1026.550	26.575	1026.551	26.576
4.96	5.0	6.583	6.582	33.799	1026.552	26.554	1026.552	26.554
9.92	10.0	6.582	6.581	33.802	1026.578	26.557	1026.578	26.557
19.83	20.0	6.532	6.530	33.810	1026.637	26.570	1026.637	26.570
24.79	25.0	6.523	6.521	33.814	1026.664	26.574	1026.664	26.574
29.75	30.0	6.519	6.516	33.817	1026.689	26.576	1026.690	26.577
39.66	40.0	6.495	6.492	33.822	1026.743	26.583	1026.743	26.584
49.58	50.0	6.484	6.480	33.824	1026.792	26.586	1026.792	26.587
59.49	60.0	6.473	6.468	33.828	1026.843	26.591	1026.843	26.592

151

POTENTIAL TEMPERATURE (°C)



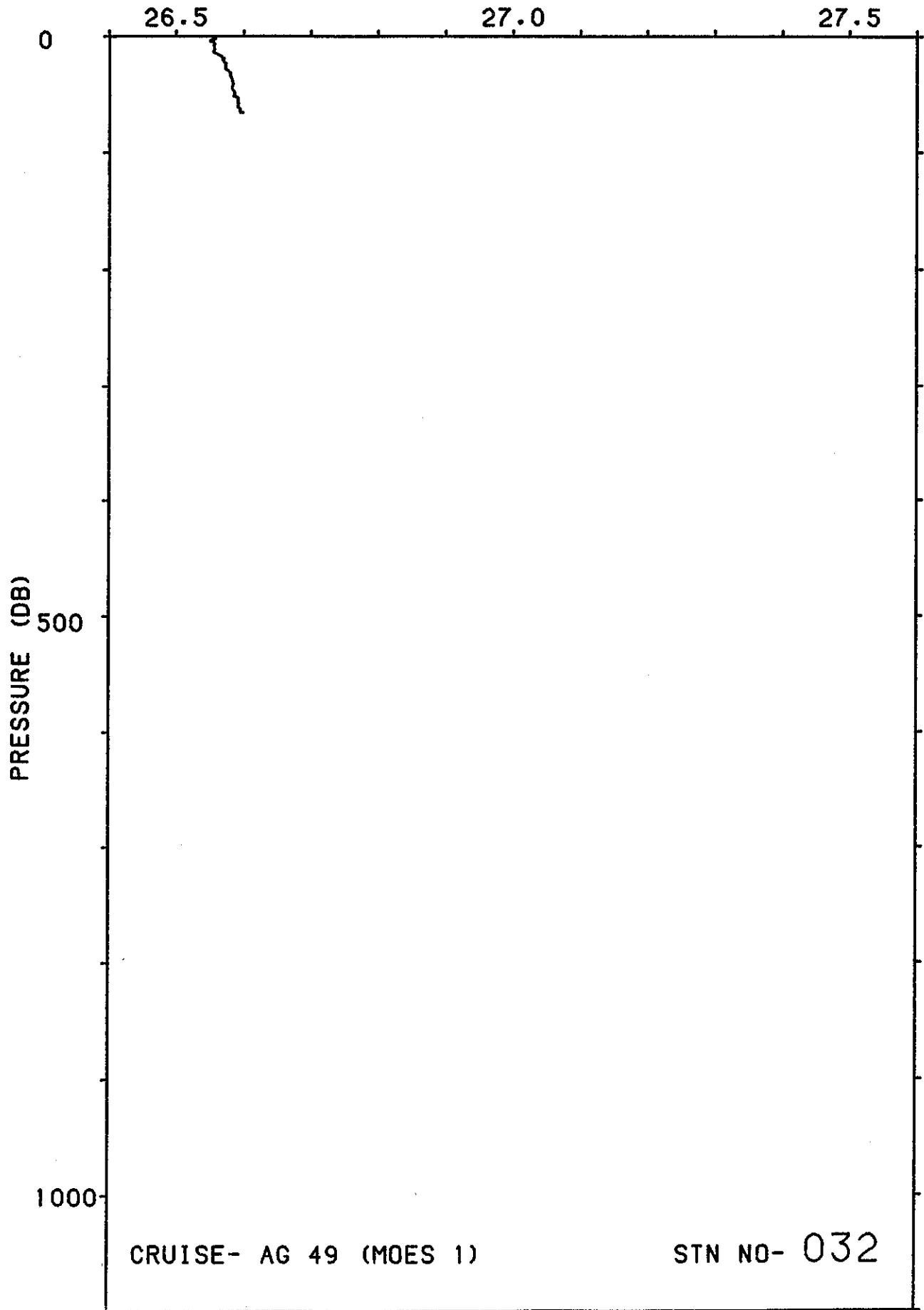
Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.24
 Station: 32 Cast: BOTTLE Time: 9.44 Z
 Position: Lat: 46°49.450'S Long: 37°47.550'E Depth: 76 m

Bottle Data

Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
.0	6.54	6.54	33.820	1.507	1.47	19.06	.39	.87
25.0	6.52	6.52	33.814	1.425	1.56	17.61	.35	.82
50.0	6.48	6.48	33.824	1.129	1.85	17.19	.32	.81

153

POTENTIAL DENSITY (σ_θ)

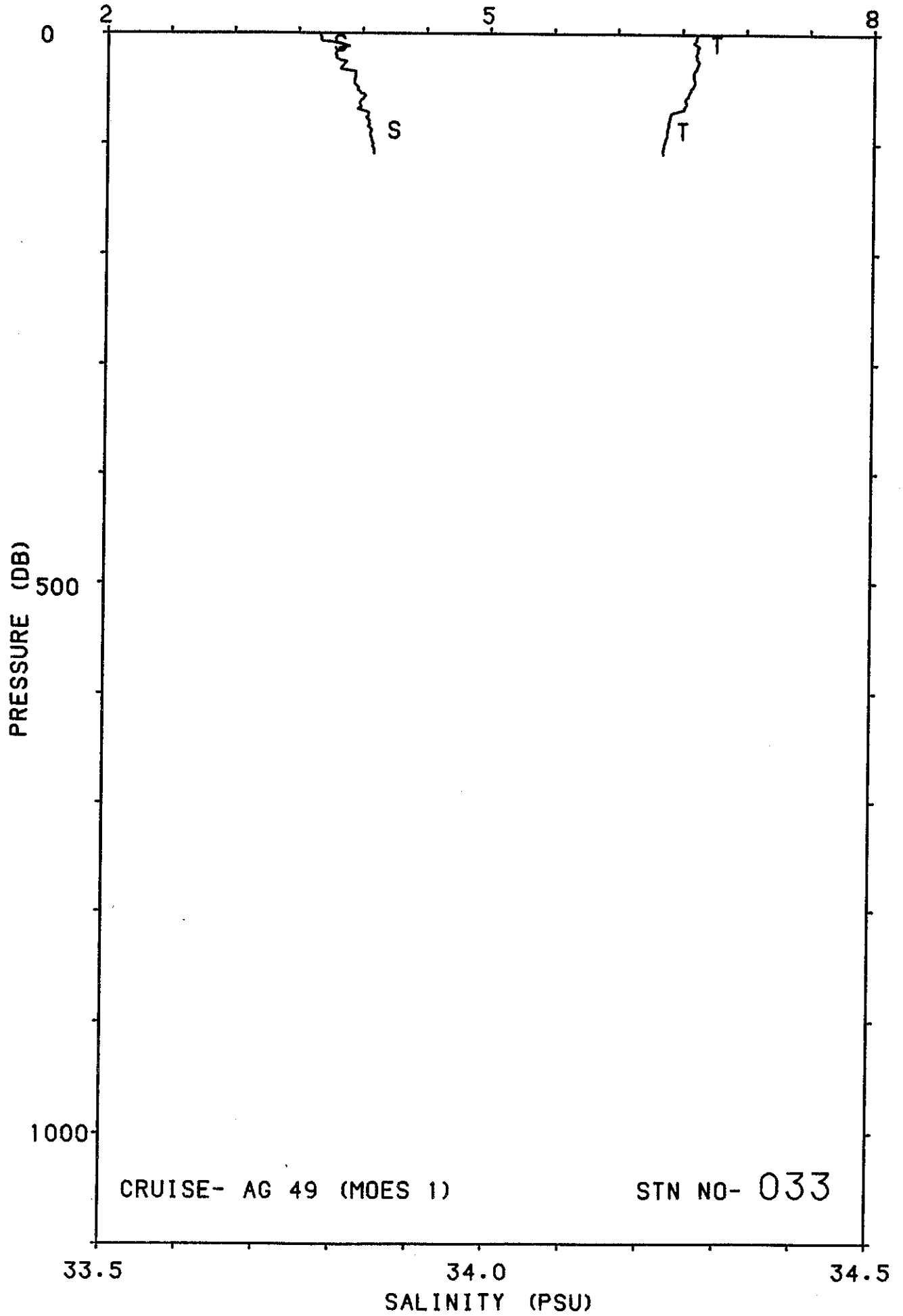


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.24
 Station: 33 Cast: CTD UP Time: 10.24 Z
 Position: Lat: 46°49.050'S Long: 37°47.650'E Depth: 110 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.622	6.622	33.776	1026.506	26.531	1026.506	26.531
4.96	5.0	6.607	6.607	33.779	1026.533	26.535	1026.533	26.535
9.92	10.0	6.610	6.609	33.806	1026.577	26.556	1026.577	26.556
19.83	20.0	6.611	6.609	33.799	1026.617	26.550	1026.618	26.550
24.79	25.0	6.625	6.623	33.807	1026.645	26.555	1026.645	26.555
29.75	30.0	6.619	6.616	33.807	1026.669	26.556	1026.669	26.556
39.66	40.0	6.593	6.590	33.824	1026.731	26.572	1026.732	26.573
49.58	50.0	6.569	6.564	33.828	1026.784	26.579	1026.784	26.579
59.49	60.0	6.524	6.519	33.834	1026.840	26.589	1026.841	26.590
69.41	70.0	6.484	6.478	33.832	1026.890	26.593	1026.891	26.594
74.37	75.0	6.411	6.404	33.841	1026.930	26.609	1026.931	26.610
79.32	80.0	6.404	6.397	33.842	1026.954	26.611	1026.955	26.612
89.24	90.0	6.390	6.382	33.844	1027.004	26.615	1027.005	26.616
99.15	100.0	6.370	6.361	33.846	1027.055	26.619	1027.055	26.620

155

POTENTIAL TEMPERATURE (°C)



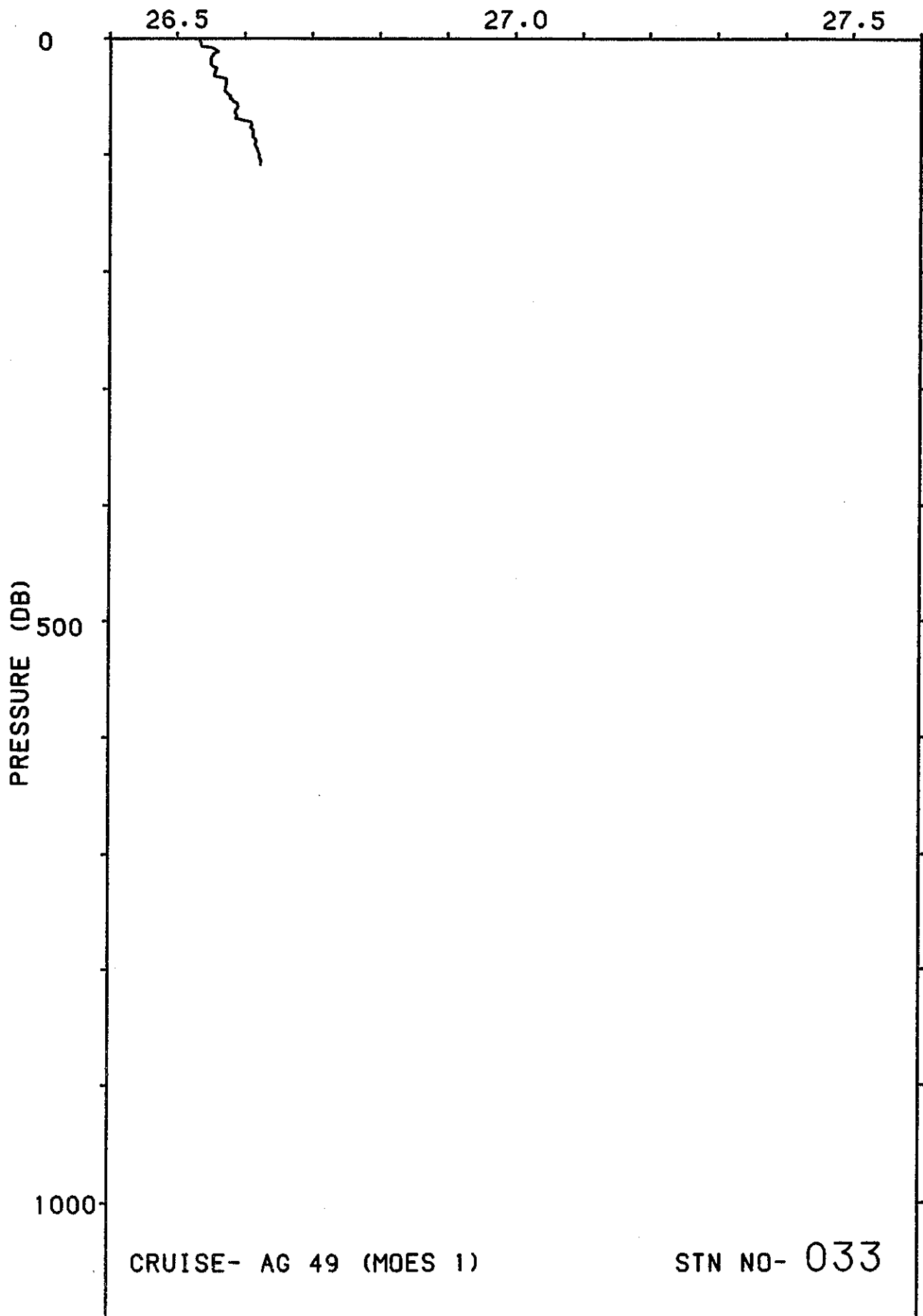
Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.24
 Station: 33 Cast: BOTTLE Time: 10.24 Z
 Position: Lat: 46°49.050'S Long: 37°47.650'E Depth: 110 m

Bottle Data

Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
.0	6.62	6.62	33.776	1.462	.83	15.69	.32	.77
30.0	6.62	6.62	33.807	1.712	.48	15.22	.33	.76
60.0	6.53	6.52	33.833	.784	1.28	14.90	.31	.78
90.0	6.39	6.38	33.843	.717	2.03	14.69	.30	.79

157

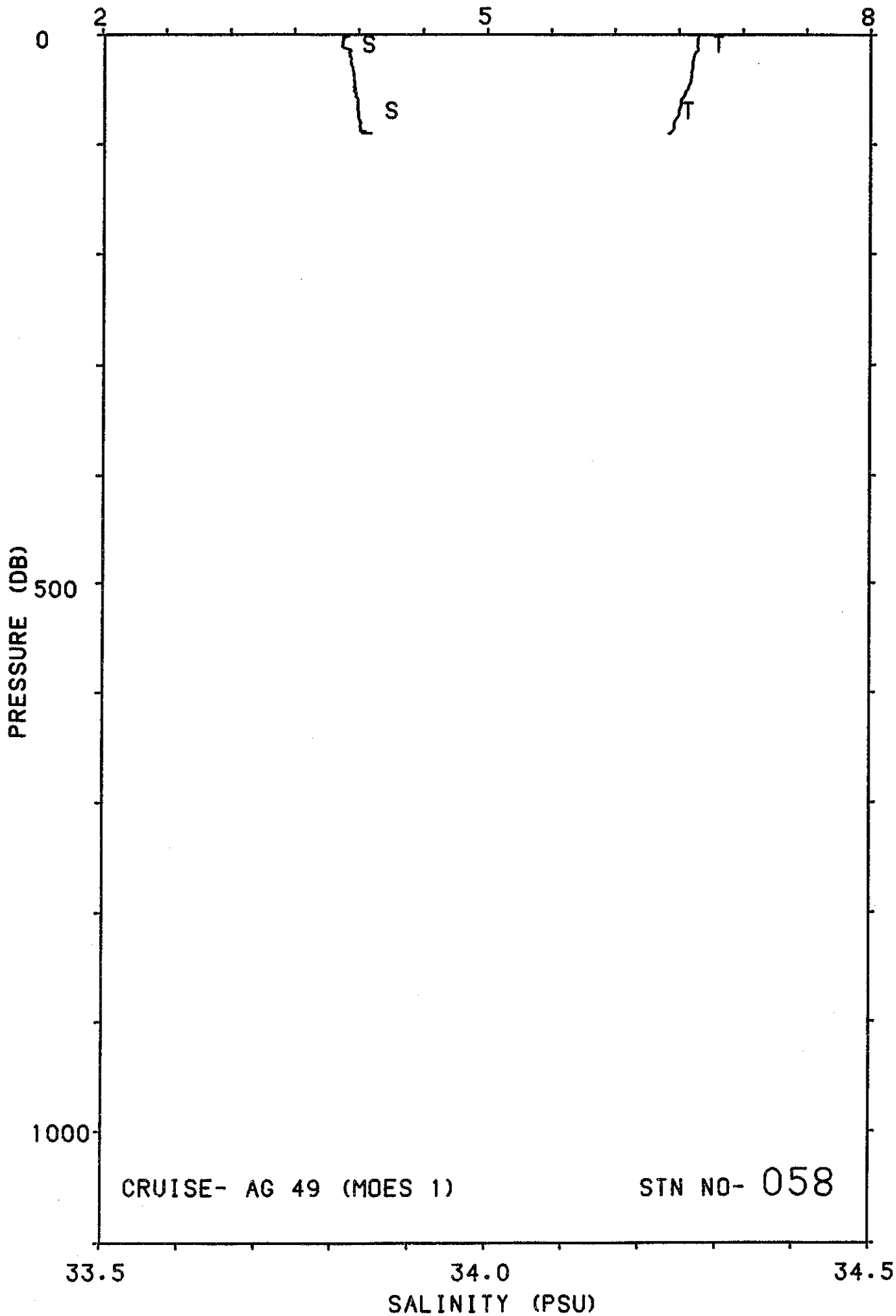
POTENTIAL DENSITY (σ_t)



Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.25
 Station: 58 Cast: CTD UP Time: 6.07 Z
 Position: Lat: 46°53.070'S Long: 37°54.000'E Depth: 100 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot. Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.656	6.656	33.840	1026.551	26.576	1026.552	26.577
4.96	5.0	6.646	6.646	33.813	1026.555	26.557	1026.555	26.557
9.92	10.0	6.643	6.642	33.812	1026.577	26.556	1026.577	26.556
19.83	20.0	6.620	6.618	33.822	1026.634	26.567	1026.634	26.567
24.79	25.0	6.609	6.607	33.824	1026.661	26.571	1026.660	26.570
29.75	30.0	6.607	6.604	33.826	1026.685	26.572	1026.685	26.572
39.66	40.0	6.596	6.592	33.828	1026.734	26.575	1026.735	26.576
49.58	50.0	6.567	6.562	33.829	1026.785	26.580	1026.785	26.580
59.49	60.0	6.524	6.518	33.833	1026.840	26.588	1026.840	26.589
69.41	70.0	6.507	6.501	33.833	1026.888	26.591	1026.889	26.591
74.36	75.0	6.497	6.490	33.833	1026.913	26.592	1026.913	26.593
79.32	80.0	6.468	6.461	33.836	1026.941	26.598	1026.942	26.599
89.23	90.0	6.441	6.433	33.839	1026.994	26.604	1026.994	26.605

POTENTIAL TEMPERATURE (°C)



Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.25
 Station: 58 Cast: BOTTLE Time: 6.07 Z
 Position: Lat: 46°53.070'S Long: 37°54.000'E Depth: 100 m

Bottle Data

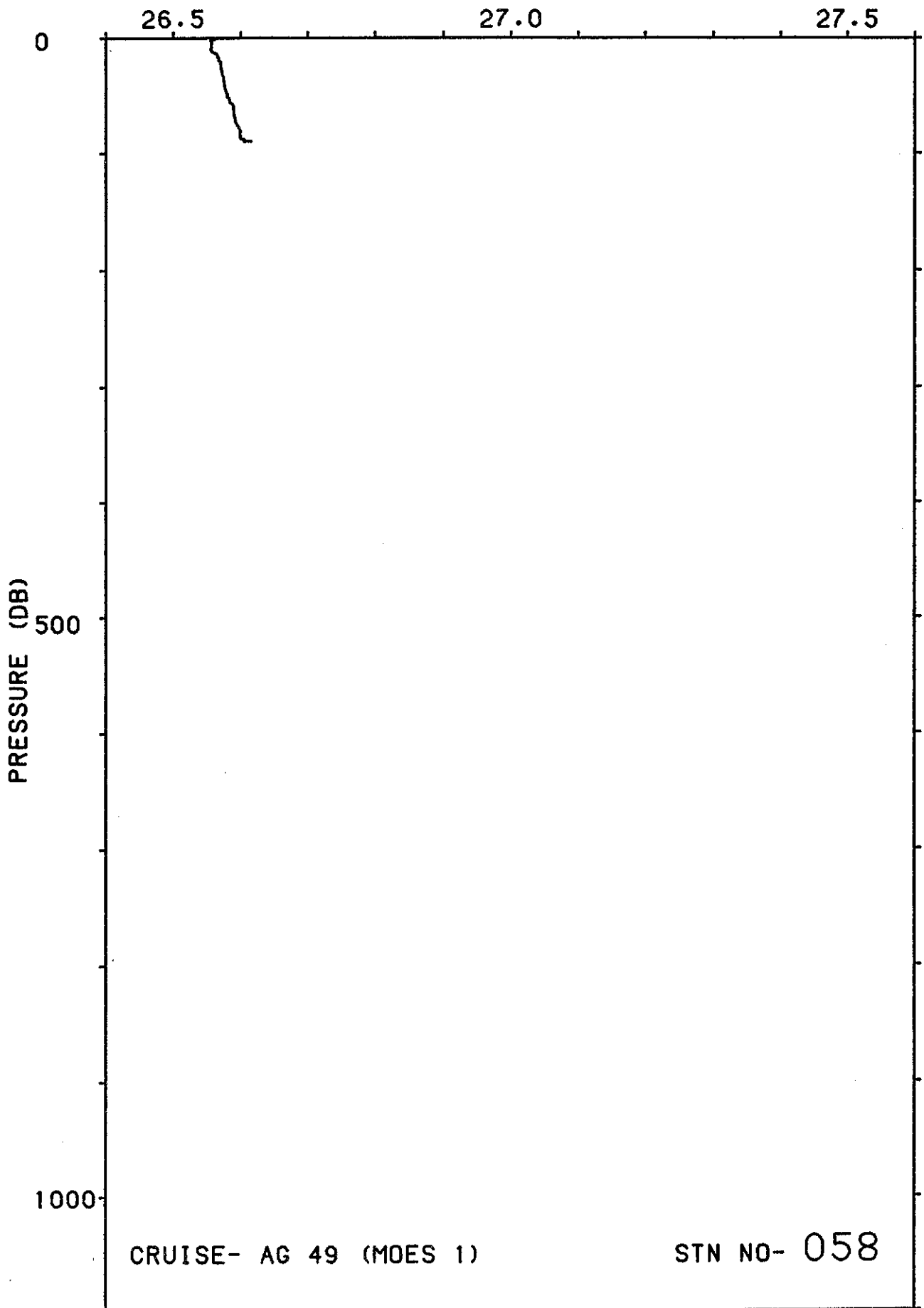
Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
.0	6.66	6.66	33.840	.573	4.41	17.87	.57	.81
6.0	6.64	6.64	33.813	.527	3.73	17.83	.56	.85
21.0	6.61	6.61	33.824	.283	3.68	17.74	.57	.82
28.0	6.61	6.60	33.824	.231	3.83	17.56	.56	.84
43.0	6.59	6.59	33.829	.280	4.02	17.79	.57	.82

Production Data

Depth m	Filter size: Light %	Carbon Uptake				Total	Areal Production mg(C).m ⁻² .hr ⁻¹
		0.2μm	2μm	20μm			
		mg(C).m ⁻³ .hr ⁻¹					
.0	100	.027	.057	.340	.423	11.84	
6.0	50			.111	.111		
21.0	25			.042	.042		
28.0	10	.021	.038	.048	.108		
43.0	1	.006	.009	.012	.027		

161

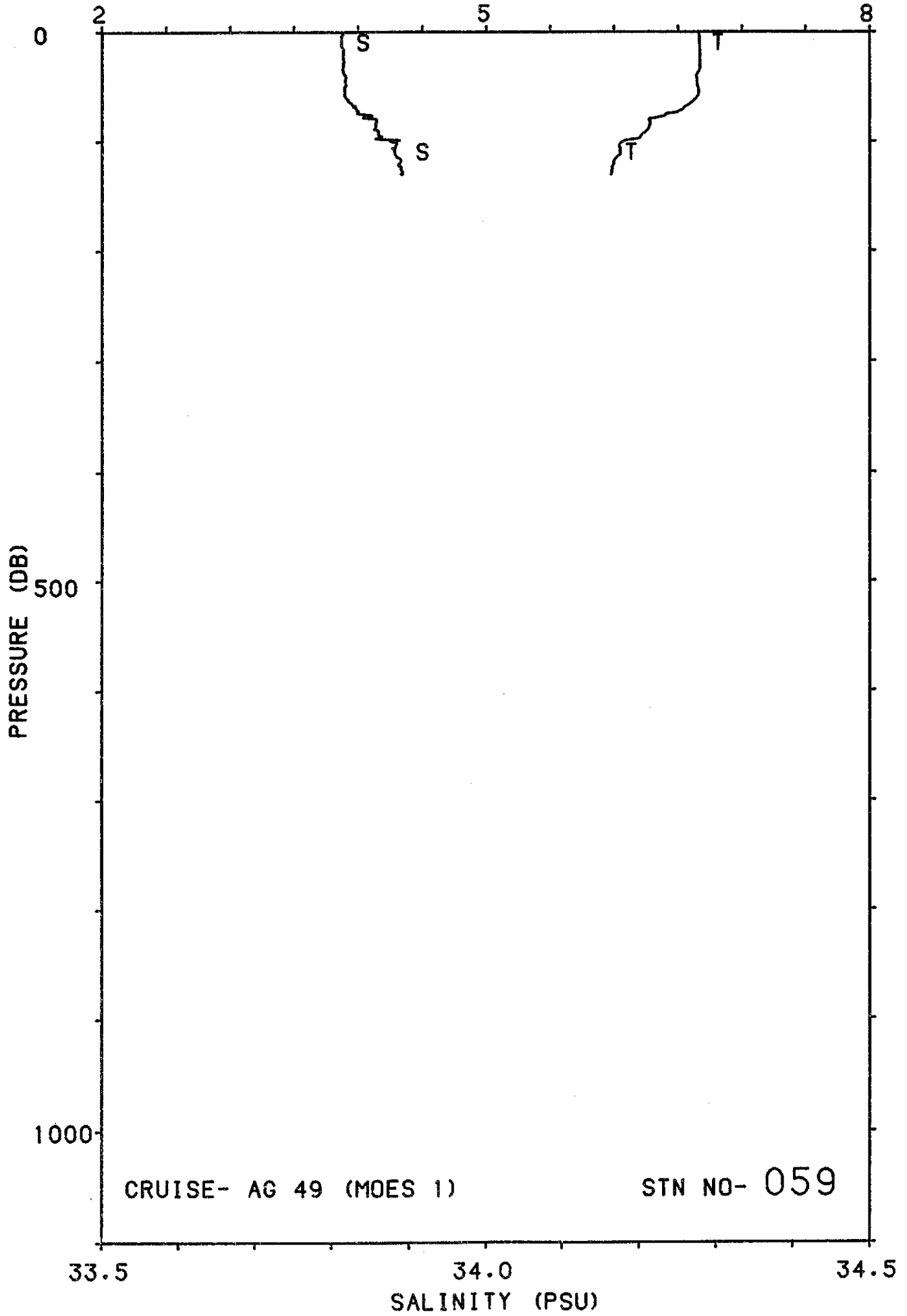
POTENTIAL DENSITY (σ_t)



Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.26
 Station: 59 Cast: CTD UP Time: 4.40 Z
 Position: Lat: 46°50.000'S Long: 38° .000'E Depth: 143 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.656	6.656	33.819	1026.535	26.560	1026.535	26.560
4.96	5.0	6.667	6.666	33.812	1026.551	26.553	1026.551	26.553
9.92	10.0	6.669	6.668	33.813	1026.574	26.553	1026.575	26.554
19.83	20.0	6.673	6.671	33.815	1026.621	26.554	1026.622	26.555
24.79	25.0	6.674	6.672	33.815	1026.645	26.555	1026.645	26.555
29.75	30.0	6.673	6.671	33.815	1026.667	26.554	1026.668	26.555
39.66	40.0	6.646	6.643	33.818	1026.719	26.560	1026.720	26.561
49.58	50.0	6.660	6.655	33.816	1026.762	26.557	1026.763	26.558
59.49	60.0	6.652	6.647	33.818	1026.811	26.560	1026.811	26.560
69.41	70.0	6.551	6.545	33.831	1026.880	26.583	1026.881	26.584
74.37	75.0	6.413	6.407	33.837	1026.926	26.606	1026.927	26.607
79.32	80.0	6.278	6.271	33.857	1026.983	26.639	1026.984	26.640
89.23	90.0	6.265	6.257	33.859	1027.032	26.643	1027.033	26.644
99.15	100.0	6.083	6.075	33.875	1027.115	26.679	1027.115	26.679
118.97	120.0	6.011	6.001	33.888	1027.226	26.698	1027.227	26.699
123.93	125.0	6.000	5.990	33.889	1027.251	26.699	1027.253	26.701

POTENTIAL TEMPERATURE (°C)



Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.26
 Station: 59 Cast: BOTTLE Time: 4.40 Z
 Position: Lat: 46°50.000'S Long: 38° .000'E Depth: 143 m

Bottle Data

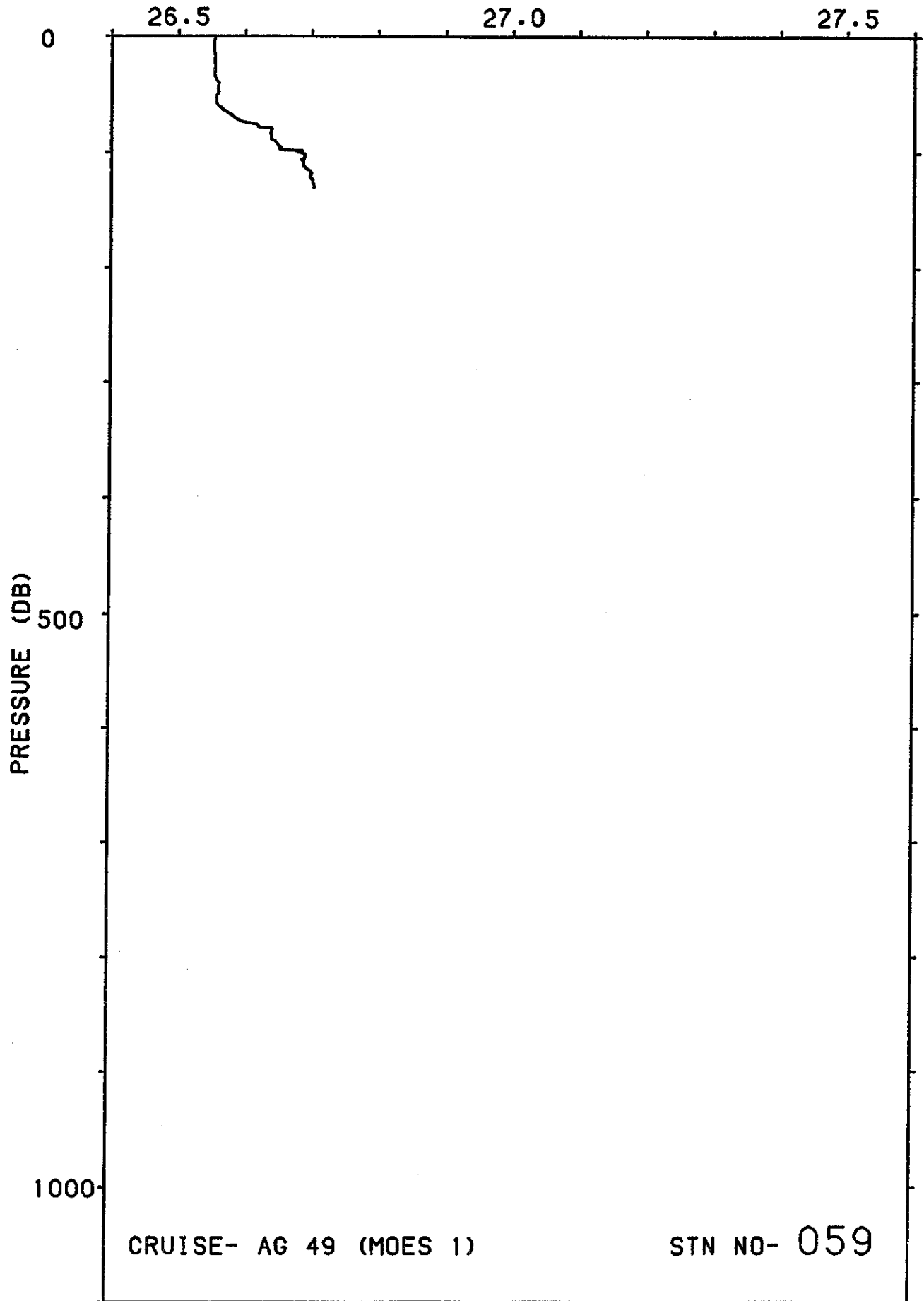
Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
.0	6.66	6.66	33.819	.283	2.45	19.31	.37	.78
6.0	6.67	6.66	33.813	.792	2.56	18.47	.37	.82
11.0	6.67	6.67	33.813	.567	2.60	18.30	.37	.84
19.0	6.67	6.67	33.815	.590	2.62	18.31	.37	.84
39.0	6.65	6.64	33.817	.776	2.55	18.09	.38	.87
70.0	6.55	6.54	33.832	.954	2.28	17.90	.38	.88

Production Data

Depth m	Filter size: Light %	Carbon Uptake				Total	Areal Production mg(C).m ⁻² .hr ⁻¹
		0.2 μ m	2 μ m	20 μ m			
		mg(C).m ⁻³ .hr ⁻¹					
.0	100	-.018	-.237	1.093	.838	25.93	
6.0	50	.244	-.279	2.195	2.161		
11.0	25	.035	.038	1.953	2.027		
19.0	10	.018	-.173	.525	.370		
39.0	1	.006	-.144	-.299	-.438		

165

POTENTIAL DENSITY (σ_θ)



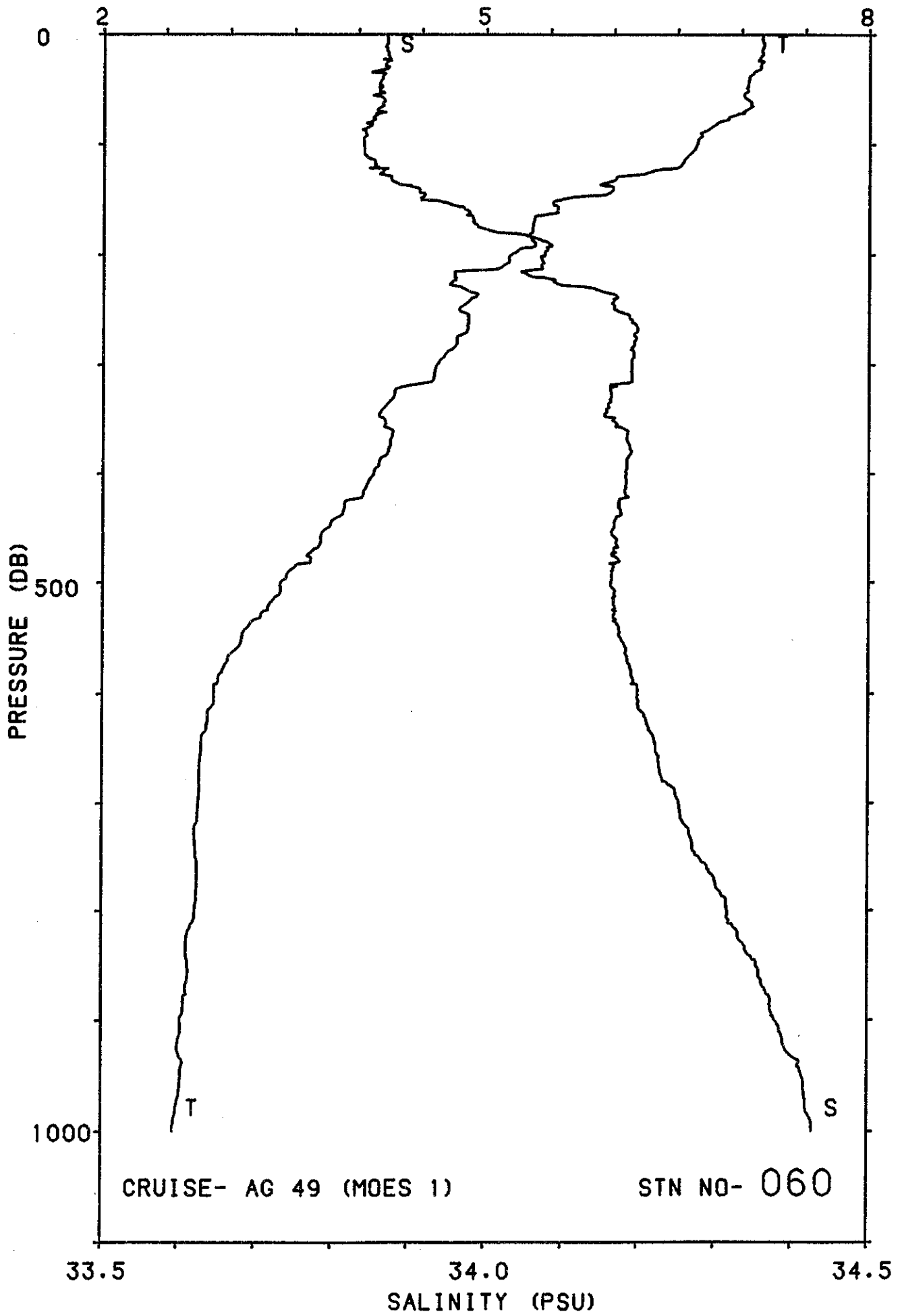
CRUISE- AG 49 (MOES 1)

STN NO- 059

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.27
 Station: 60 Cast: CTD UP Time: 4.45 Z
 Position: Lat: 46°39.400'S Long: 37°32.900'E Depth: 2300 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ _t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ _θ kg.m ⁻³
.00	.0	7.163	7.163	33.864	1026.502	26.527	1026.502	26.527
4.96	5.0	7.159	7.158	33.871	1026.531	26.533	1026.531	26.533
9.92	10.0	7.172	7.171	33.870	1026.551	26.530	1026.551	26.530
19.83	20.0	7.153	7.151	33.872	1026.601	26.535	1026.601	26.535
24.79	25.0	7.170	7.168	33.871	1026.621	26.531	1026.621	26.532
29.75	30.0	7.150	7.147	33.873	1026.648	26.535	1026.649	26.536
39.67	40.0	7.064	7.060	33.864	1026.699	26.540	1026.700	26.541
49.58	50.0	7.046	7.042	33.861	1026.745	26.541	1026.746	26.541
59.50	60.0	7.057	7.051	33.867	1026.794	26.544	1026.795	26.545
69.41	70.0	7.022	7.016	33.858	1026.837	26.541	1026.839	26.542
74.37	75.0	6.919	6.913	33.854	1026.871	26.552	1026.873	26.553
79.32	80.0	6.832	6.824	33.850	1026.904	26.561	1026.905	26.562
89.24	90.0	6.683	6.675	33.842	1026.963	26.575	1026.964	26.576
99.15	100.0	6.661	6.652	33.840	1027.011	26.576	1027.012	26.577
118.97	120.0	6.531	6.520	33.854	1027.131	26.604	1027.133	26.606
123.93	125.0	6.292	6.281	33.866	1027.195	26.644	1027.197	26.646
138.80	140.0	6.002	5.990	33.912	1027.338	26.718	1027.340	26.719
148.71	150.0	5.595	5.583	33.916	1027.439	26.771	1027.440	26.773
158.62	160.0	5.561	5.548	33.976	1027.537	26.823	1027.538	26.824
173.48	175.0	5.374	5.360	33.991	1027.641	26.857	1027.643	26.859
178.43	180.0	5.366	5.352	34.020	1027.688	26.881	1027.690	26.883
198.25	200.0	5.211	5.196	34.075	1027.843	26.943	1027.844	26.944
218.06	220.0	4.770	4.753	34.062	1027.977	26.983	1027.979	26.985
237.88	240.0	4.904	4.886	34.166	1028.136	27.050	1028.138	27.052
247.78	250.0	4.808	4.789	34.168	1028.195	27.062	1028.197	27.065
257.69	260.0	4.885	4.865	34.191	1028.250	27.072	1028.253	27.074
277.50	280.0	4.798	4.777	34.194	1028.356	27.085	1028.358	27.087
297.30	300.0	4.644	4.622	34.191	1028.464	27.099	1028.466	27.101
317.11	320.0	4.372	4.349	34.166	1028.568	27.109	1028.570	27.111
336.91	340.0	4.223	4.199	34.158	1028.671	27.118	1028.674	27.121
346.81	350.0	4.234	4.209	34.166	1028.722	27.123	1028.725	27.126
356.71	360.0	4.294	4.267	34.183	1028.775	27.131	1028.778	27.133
376.51	380.0	4.267	4.240	34.190	1028.876	27.139	1028.879	27.142
396.31	400.0	4.154	4.125	34.184	1028.976	27.146	1028.980	27.149
445.79	450.0	3.803	3.771	34.168	1029.235	27.169	1029.238	27.173
495.27	500.0	3.432	3.399	34.164	1029.503	27.202	1029.507	27.206
544.73	550.0	3.136	3.100	34.176	1029.776	27.240	1029.780	27.243
594.18	600.0	2.920	2.881	34.198	1030.048	27.277	1030.052	27.281
643.62	650.0	2.826	2.785	34.223	1030.309	27.305	1030.313	27.309
693.04	700.0	2.808	2.764	34.253	1030.566	27.331	1030.571	27.335
742.45	750.0	2.792	2.744	34.280	1030.820	27.354	1030.825	27.358
791.86	800.0	2.791	2.740	34.317	1031.080	27.384	1031.086	27.388
841.25	850.0	2.735	2.680	34.355	1031.347	27.419	1031.353	27.424
890.63	900.0	2.681	2.623	34.379	1031.602	27.443	1031.609	27.448
939.99	950.0	2.690	2.628	34.415	1031.860	27.471	1031.867	27.476
989.35	1000.0	2.632	2.567	34.428	1032.107	27.486	1032.114	27.492

POTENTIAL TEMPERATURE (°C)



Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.27
 Station: 60 Cast: BOTTLE Time: 4.45 Z
 Position: Lat: 46°39.400'S Long: 37°32.900'E Depth: 2300 m

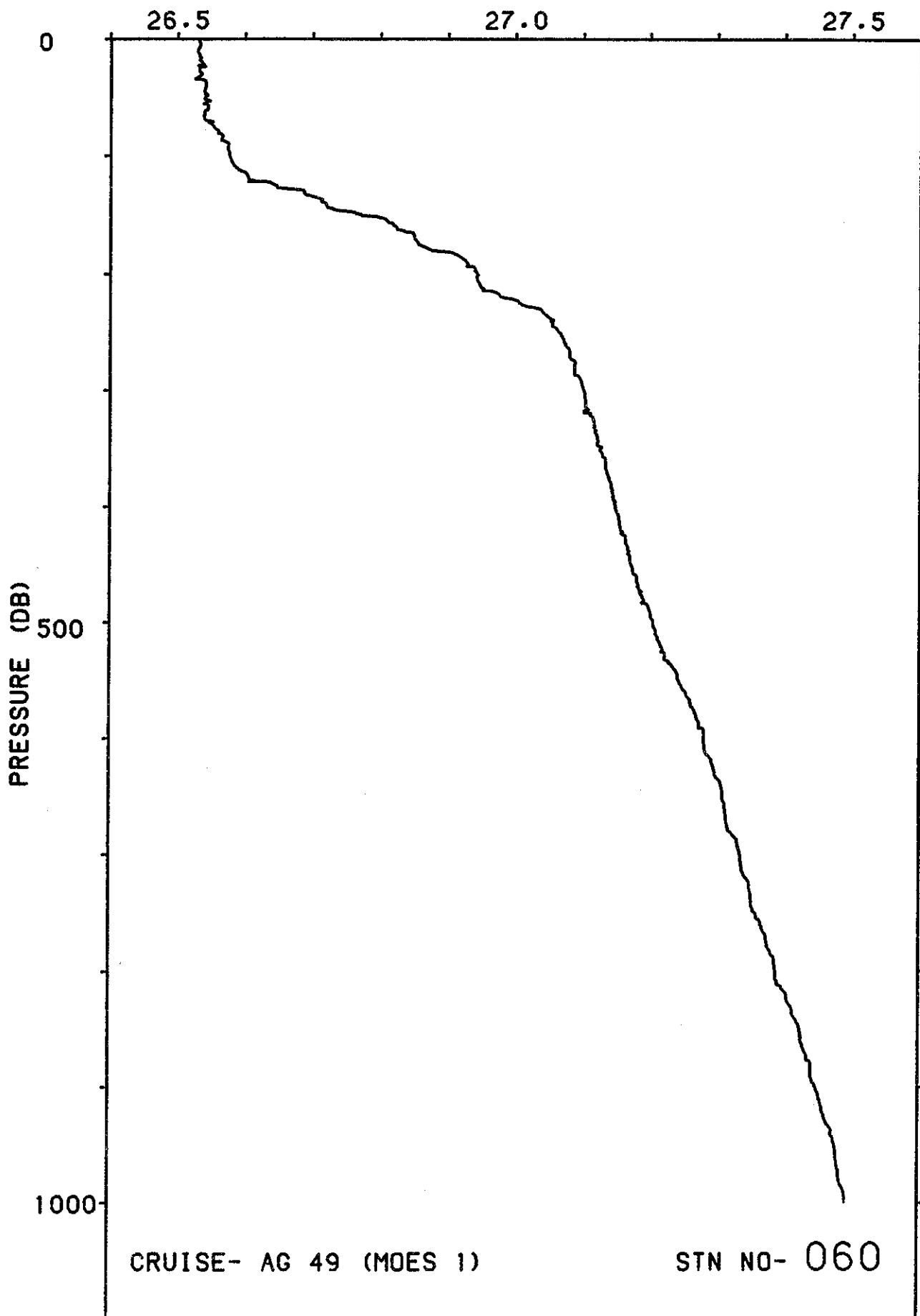
Bottle Data

Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
.0	7.16	7.16	33,864	.188	2.47	16.42	.39	.91
6.0	7.16	7.16	33.871	.224	2.48	15.58	.39	.92
12.0	7.17	7.17	33.869	.176	2.48	15.54	.39	.93
20.0	7.15	7.15	33.873	.182	2.47	15.42	.39	.93
40.0	7.06	7.06	33.865	.235	2.49	15.43	.39	.94
70.0	7.02	7.01	33.863	.136	2.55	15.61	.40	.96

Production Data

Depth m	Filter size: Light %	Carbon Uptake				Total	Areal Production mg(C).m ⁻² .hr ⁻¹
		0.2μm	2μm	20μm			
		mg(C).m ⁻³ .hr ⁻¹					
.0	100	.379	.193	.080	.653	13.88	
6.0	50	.178	.422	.094	.694		
12.0	25	.196	.226	.078	.499		
20.0	10	.080	.113	.032	.224		
40.0	1	.062	.034	.016	.111		

POTENTIAL DENSITY (σ_t)

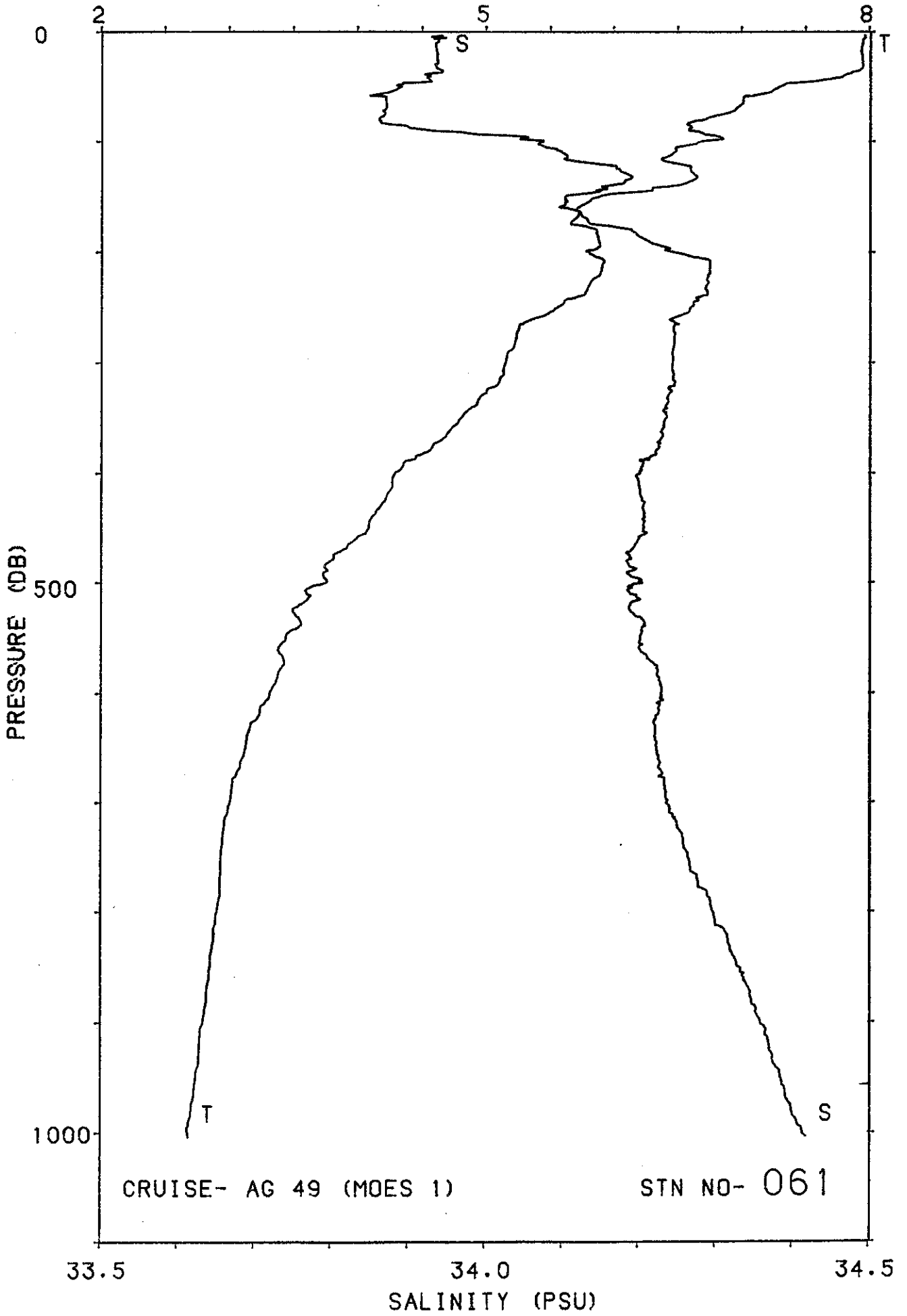


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.27
 Station: 61 Cast: CTD UP Time: 8.05 Z
 Position: Lat: 46°37.000'S Long: 37°15.400'E Depth: 3292 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_{θ} kg.m ⁻³
.00	.0	7.937	7.937	33.979	1026.482	26.507	1026.482	26.507
4.96	5.0	7.971	7.970	33.942	1026.470	26.472	1026.470	26.473
9.92	10.0	7.949	7.948	33.936	1026.492	26.471	1026.492	26.471
19.83	20.0	7.943	7.941	33.937	1026.539	26.473	1026.539	26.473
24.79	25.0	7.949	7.947	33.937	1026.561	26.472	1026.561	26.472
29.75	30.0	7.956	7.953	33.935	1026.581	26.469	1026.582	26.470
39.67	40.0	7.808	7.804	33.926	1026.642	26.484	1026.642	26.484
49.58	50.0	7.310	7.305	33.890	1026.731	26.527	1026.732	26.527
59.50	60.0	7.019	7.013	33.870	1026.802	26.551	1026.803	26.552
69.41	70.0	6.967	6.961	33.870	1026.855	26.559	1026.856	26.559
74.37	75.0	6.865	6.859	33.869	1026.891	26.571	1026.892	26.572
79.32	80.0	6.723	6.716	33.862	1026.928	26.585	1026.929	26.586
89.24	90.0	6.606	6.598	33.931	1027.044	26.655	1027.045	26.656
99.15	100.0	6.687	6.678	34.075	1027.192	26.758	1027.193	26.759
118.97	120.0	6.502	6.492	34.143	1027.362	26.836	1027.364	26.837
123.93	125.0	6.615	6.604	34.174	1027.395	26.846	1027.396	26.847
138.80	140.0	6.484	6.472	34.159	1027.469	26.851	1027.471	26.852
148.71	150.0	5.897	5.885	34.103	1027.548	26.882	1027.550	26.883
158.62	160.0	5.726	5.713	34.107	1027.619	26.906	1027.621	26.908
173.48	175.0	5.722	5.707	34.147	1027.721	26.938	1027.723	26.940
178.43	180.0	5.885	5.870	34.191	1027.757	26.953	1027.759	26.955
198.25	200.0	5.813	5.796	34.245	1027.902	27.005	1027.904	27.007
218.07	220.0	5.912	5.893	34.290	1028.016	27.028	1028.019	27.030
237.88	240.0	5.743	5.723	34.281	1028.123	27.042	1028.125	27.044
247.78	250.0	5.579	5.559	34.268	1028.179	27.051	1028.182	27.054
257.69	260.0	5.406	5.385	34.244	1028.228	27.053	1028.231	27.056
277.50	280.0	5.255	5.233	34.246	1028.341	27.073	1028.344	27.076
297.30	300.0	5.179	5.156	34.244	1028.441	27.080	1028.444	27.083
317.11	320.0	5.119	5.093	34.246	1028.542	27.089	1028.545	27.092
336.91	340.0	4.918	4.892	34.234	1028.649	27.103	1028.652	27.105
346.81	350.0	4.830	4.804	34.235	1028.707	27.113	1028.710	27.116
356.71	360.0	4.757	4.730	34.231	1028.758	27.118	1028.762	27.121
376.51	380.0	4.583	4.555	34.222	1028.864	27.130	1028.868	27.133
396.31	400.0	4.325	4.296	34.202	1028.971	27.142	1028.975	27.146
445.80	450.0	4.125	4.092	34.208	1029.230	27.168	1029.234	27.172
495.27	500.0	3.786	3.751	34.204	1029.496	27.200	1029.500	27.203
544.73	550.0	3.484	3.447	34.202	1029.759	27.228	1029.763	27.231
594.18	600.0	3.365	3.325	34.228	1030.024	27.260	1030.028	27.264
643.62	650.0	3.181	3.138	34.223	1030.271	27.273	1030.276	27.277
693.04	700.0	3.062	3.016	34.237	1030.526	27.295	1030.531	27.300
742.46	750.0	2.995	2.946	34.265	1030.786	27.324	1030.792	27.328
791.86	800.0	2.967	2.914	34.297	1031.045	27.352	1031.051	27.357
841.25	850.0	2.917	2.861	34.331	1031.308	27.383	1031.314	27.389
890.63	900.0	2.867	2.808	34.359	1031.566	27.410	1031.572	27.416
940.00	950.0	2.813	2.750	34.384	1031.822	27.435	1031.829	27.441
989.35	1000.0	2.749	2.683	34.413	1032.081	27.464	1032.089	27.470

171

POTENTIAL TEMPERATURE (°C)

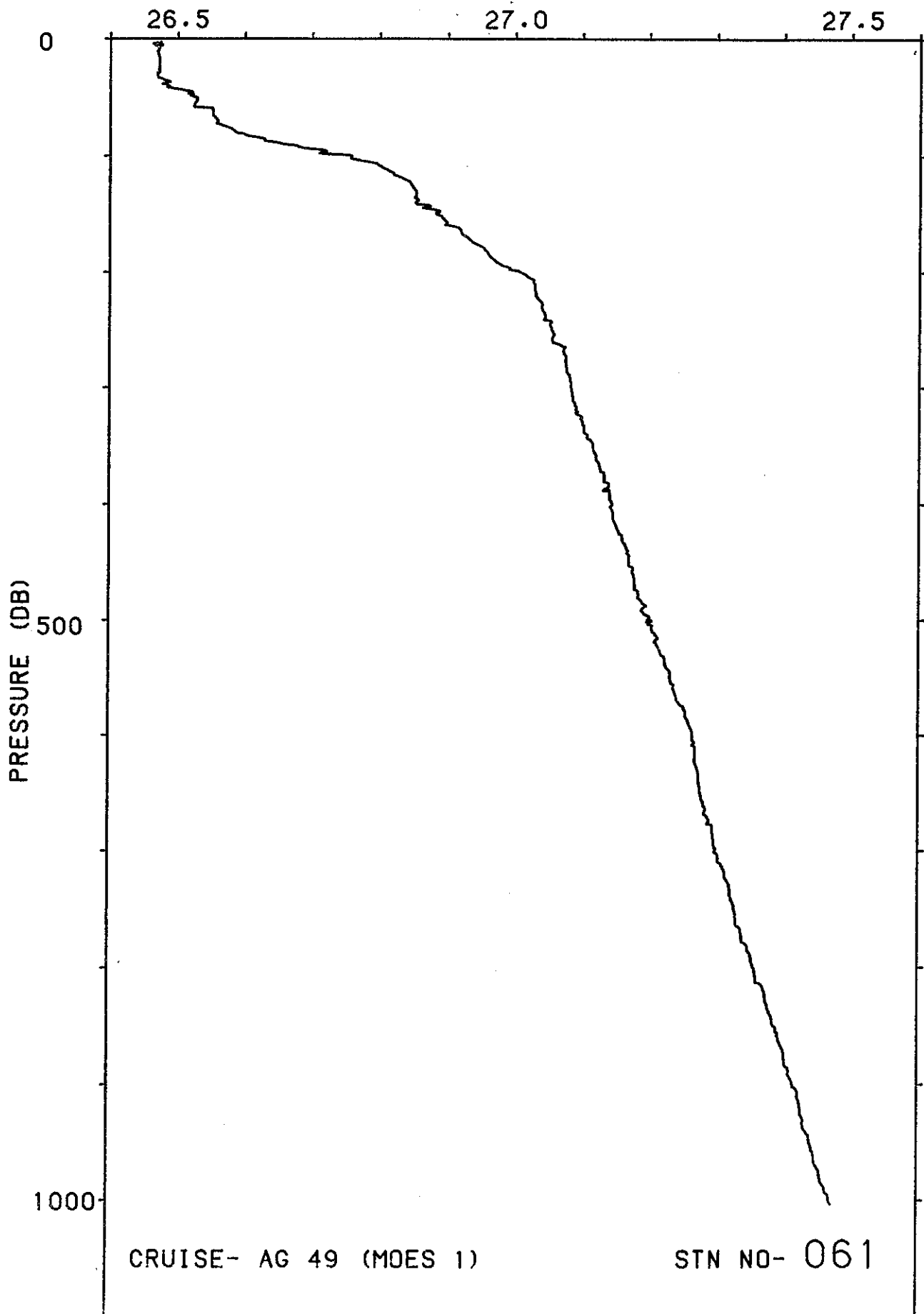


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.27
Station: 61 Cast: BOTTLE Time: 8.05 Z
Position: Lat: 46°37.000'S Long: 37°15.400'E Depth: 3292 m

NO BOTTLE DATA

173

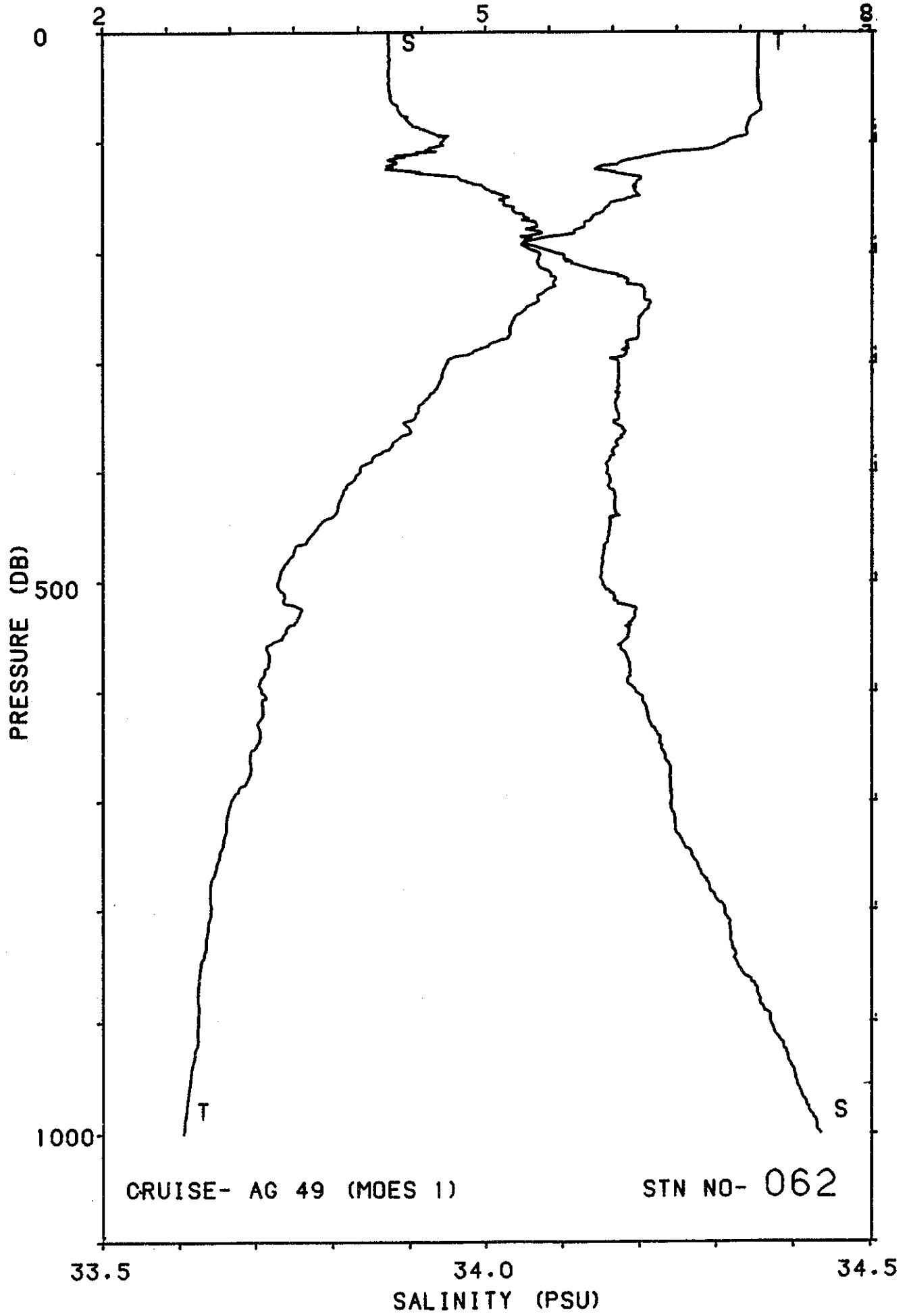
POTENTIAL DENSITY (σ_θ)



Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.27
 Station: 62 Cast: CTD UP Time: 9.45 Z
 Position: Lat: 46°39.500'S Long: 37°20.000'E Depth: 3300 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ _t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ _ρ kg.m ⁻³
.00	.0	7.146	7.146	33.874	1026.512	26.537	1026.512	26.537
4.96	5.0	7.146	7.146	33.872	1026.533	26.535	1026.533	26.535
9.92	10.0	7.140	7.139	33.873	1026.558	26.537	1026.558	26.537
19.83	20.0	7.142	7.140	33.873	1026.604	26.537	1026.604	26.537
24.79	25.0	7.142	7.140	33.875	1026.628	26.538	1026.628	26.539
29.75	30.0	7.143	7.140	33.874	1026.650	26.537	1026.650	26.538
39.67	40.0	7.139	7.136	33.872	1026.695	26.537	1026.695	26.537
49.58	50.0	7.141	7.137	33.873	1026.742	26.537	1026.742	26.537
59.50	60.0	7.147	7.141	33.874	1026.787	26.537	1026.788	26.538
69.41	70.0	7.167	7.161	33.885	1026.839	26.543	1026.840	26.544
74.37	75.0	7.119	7.112	33.889	1026.872	26.553	1026.873	26.553
79.32	80.0	7.082	7.075	33.897	1026.906	26.563	1026.907	26.565
89.24	90.0	7.055	7.047	33.924	1026.977	26.589	1026.978	26.590
99.15	100.0	6.907	6.898	33.942	1027.057	26.623	1027.059	26.624
118.97	120.0	6.043	6.033	33.878	1027.214	26.686	1027.215	26.687
123.93	125.0	5.924	5.913	33.883	1027.257	26.705	1027.258	26.706
138.80	140.0	6.169	6.157	33.996	1027.383	26.763	1027.384	26.765
148.71	150.0	6.148	6.135	34.029	1027.457	26.791	1027.459	26.793
158.62	160.0	5.945	5.932	34.035	1027.535	26.822	1027.536	26.824
173.48	175.0	5.790	5.775	34.066	1027.648	26.866	1027.650	26.868
178.43	180.0	5.708	5.693	34.066	1027.681	26.876	1027.683	26.878
198.25	200.0	5.429	5.413	34.092	1027.829	26.930	1027.831	26.932
218.06	220.0	5.532	5.514	34.174	1027.973	26.983	1027.975	26.985
237.88	240.0	5.426	5.407	34.208	1028.105	27.022	1028.108	27.025
247.78	250.0	5.337	5.317	34.213	1028.167	27.037	1028.169	27.039
257.69	260.0	5.243	5.223	34.201	1028.215	27.039	1028.217	27.041
277.50	280.0	5.115	5.093	34.185	1028.310	27.041	1028.313	27.044
297.30	300.0	4.723	4.700	34.174	1028.441	27.077	1028.444	27.079
317.11	320.0	4.658	4.634	34.173	1028.540	27.083	1028.543	27.086
336.91	340.0	4.500	4.475	34.170	1028.649	27.098	1028.651	27.101
346.81	350.0	4.472	4.446	34.174	1028.701	27.105	1028.704	27.107
356.71	360.0	4.420	4.394	34.180	1028.758	27.115	1028.761	27.118
376.51	380.0	4.264	4.236	34.166	1028.858	27.121	1028.861	27.123
396.31	400.0	4.041	4.013	34.159	1028.970	27.138	1028.973	27.141
445.79	450.0	3.719	3.688	34.163	1029.240	27.173	1029.244	27.177
495.27	500.0	3.411	3.377	34.152	1029.497	27.195	1029.500	27.198
544.73	550.0	3.449	3.412	34.186	1029.750	27.218	1029.754	27.222
594.18	600.0	3.285	3.245	34.195	1030.007	27.242	1030.011	27.245
643.62	650.0	3.248	3.205	34.230	1030.269	27.272	1030.274	27.277
693.04	700.0	3.055	3.009	34.242	1030.531	27.300	1030.536	27.304
742.45	750.0	2.968	2.919	34.269	1030.792	27.330	1030.798	27.334
791.86	800.0	2.903	2.851	34.312	1031.064	27.370	1031.070	27.374
841.25	850.0	2.828	2.772	34.328	1031.316	27.389	1031.322	27.394
890.63	900.0	2.810	2.751	34.371	1031.582	27.425	1031.588	27.430
939.99	950.0	2.752	2.690	34.404	1031.844	27.456	1031.851	27.462
989.35	1000.0	2.698	2.633	34.437	1032.107	27.488	1032.114	27.493

POTENTIAL TEMPERATURE (°C)

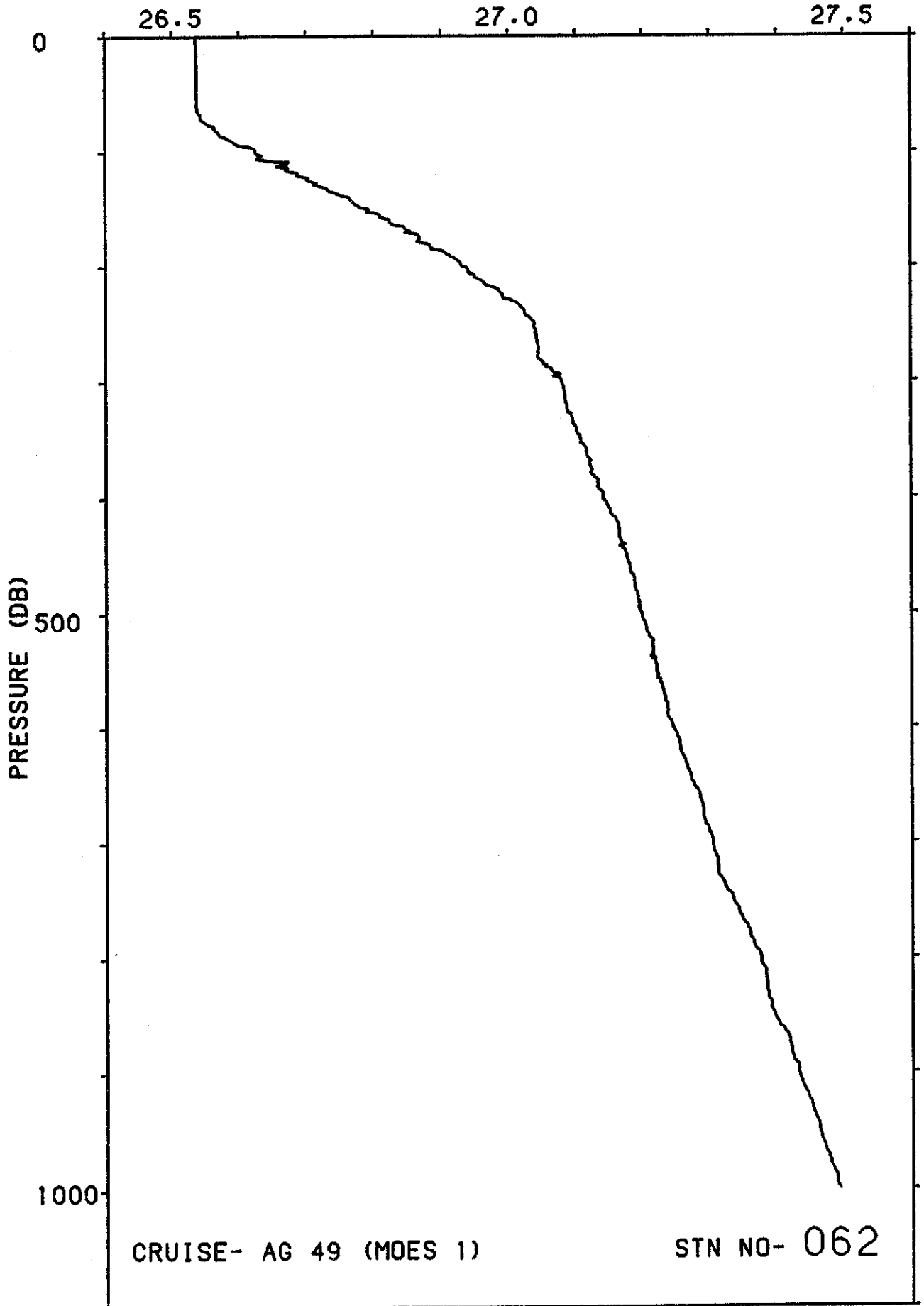


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.27
Station: 62 Cast: BOTTLE Time: 9.45 Z
Position: Lat: 46°39.500'S Long: 37°20.000'E Depth: 3300 m

NO BOTTLE DATA

177

POTENTIAL DENSITY (σ_θ)



CRUISE- AG 49 (MOES 1)

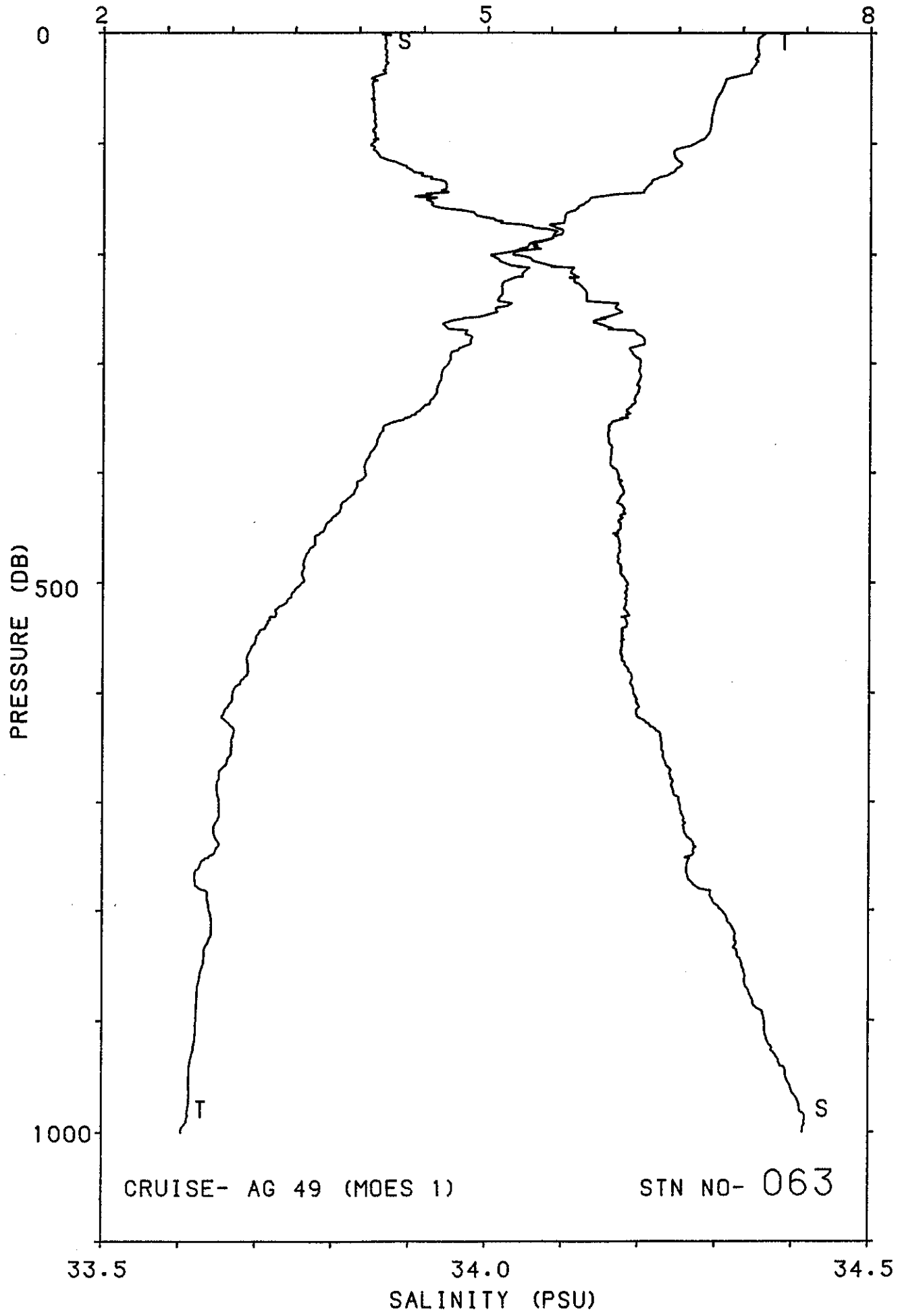
STN NO- 062

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.27
 Station: 63 Cast: CTD UP Time: 11.06 Z
 Position: Lat: 46°41.800'S Long: 37°25.000'E Depth: 3150 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	7.173	7.173	33.868	1026.504	26.529	1026.503	26.528
4.96	5.0	7.126	7.125	33.866	1026.531	26.533	1026.531	26.534
9.92	10.0	7.120	7.119	33.868	1026.557	26.536	1026.557	26.536
19.83	20.0	7.125	7.123	33.868	1026.602	26.535	1026.602	26.535
24.79	25.0	7.103	7.101	33.868	1026.628	26.538	1026.628	26.538
29.75	30.0	7.097	7.094	33.867	1026.651	26.538	1026.651	26.539
39.67	40.0	6.953	6.949	33.856	1026.708	26.549	1026.709	26.550
49.58	50.0	6.848	6.844	33.850	1026.764	26.559	1026.764	26.559
59.49	60.0	6.802	6.797	33.850	1026.815	26.565	1026.816	26.566
69.41	70.0	6.778	6.772	33.852	1026.867	26.570	1026.867	26.571
74.37	75.0	6.765	6.759	33.854	1026.893	26.573	1026.894	26.574
79.32	80.0	6.762	6.755	33.852	1026.915	26.572	1026.916	26.573
89.24	90.0	6.742	6.734	33.853	1026.964	26.575	1026.965	26.576
99.15	100.0	6.630	6.621	33.850	1027.023	26.588	1027.024	26.589
118.97	120.0	6.515	6.504	33.893	1027.164	26.637	1027.165	26.638
123.93	125.0	6.475	6.464	33.903	1027.200	26.650	1027.202	26.652
138.79	140.0	6.255	6.243	33.946	1027.332	26.713	1027.334	26.714
148.71	150.0	5.817	5.805	33.922	1027.416	26.749	1027.417	26.750
158.61	160.0	5.692	5.679	33.968	1027.514	26.801	1027.516	26.802
173.48	175.0	5.546	5.532	34.060	1027.674	26.891	1027.676	26.893
178.43	180.0	5.605	5.590	34.088	1027.712	26.906	1027.714	26.908
198.25	200.0	5.069	5.054	34.034	1027.827	26.927	1027.829	26.928
218.06	220.0	5.297	5.280	34.116	1027.957	26.965	1027.959	26.967
237.88	240.0	5.110	5.091	34.130	1028.083	26.998	1028.085	27.000
247.78	250.0	5.082	5.063	34.170	1028.164	27.033	1028.166	27.035
257.69	260.0	4.771	4.752	34.144	1028.227	27.048	1028.229	27.050
277.50	280.0	4.895	4.873	34.206	1028.353	27.083	1028.356	27.085
297.30	300.0	4.720	4.698	34.200	1028.462	27.098	1028.464	27.100
317.11	320.0	4.642	4.618	34.196	1028.561	27.104	1028.563	27.106
336.91	340.0	4.530	4.505	34.189	1028.660	27.110	1028.663	27.113
346.81	350.0	4.407	4.381	34.184	1028.717	27.119	1028.720	27.122
356.71	360.0	4.213	4.187	34.159	1028.766	27.120	1028.768	27.123
376.51	380.0	4.138	4.111	34.164	1028.870	27.132	1028.873	27.135
396.31	400.0	4.081	4.052	34.171	1028.975	27.143	1028.978	27.146
445.79	450.0	3.774	3.743	34.176	1029.244	27.179	1029.248	27.182
495.27	500.0	3.600	3.566	34.184	1029.501	27.203	1029.505	27.206
544.73	550.0	3.239	3.203	34.178	1029.767	27.232	1029.771	27.235
594.18	600.0	3.057	3.018	34.193	1030.029	27.261	1030.034	27.264
643.61	650.0	3.051	3.009	34.229	1030.290	27.290	1030.294	27.294
693.04	700.0	2.956	2.911	34.252	1030.550	27.317	1030.554	27.321
742.45	750.0	2.887	2.838	34.267	1030.800	27.335	1030.805	27.340
791.85	800.0	2.887	2.835	34.308	1031.063	27.368	1031.068	27.373
841.24	850.0	2.843	2.788	34.335	1031.319	27.393	1031.325	27.398
890.62	900.0	2.792	2.733	34.364	1031.578	27.421	1031.585	27.426
939.99	950.0	2.746	2.684	34.392	1031.836	27.448	1031.842	27.453
989.35	1000.0	2.684	2.619	34.415	1032.090	27.471	1032.098	27.477

179

POTENTIAL TEMPERATURE (°C)



180

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.27
Station: 63 Cast: BOTTLE Time: 11.06 Z
Position: Lat: 46°41.800'S Long: 37°25.000'E Depth: 3150 m

NO BOTTLE DATA

181

POTENTIAL DENSITY (σ_θ)

26.5

27.0

27.5

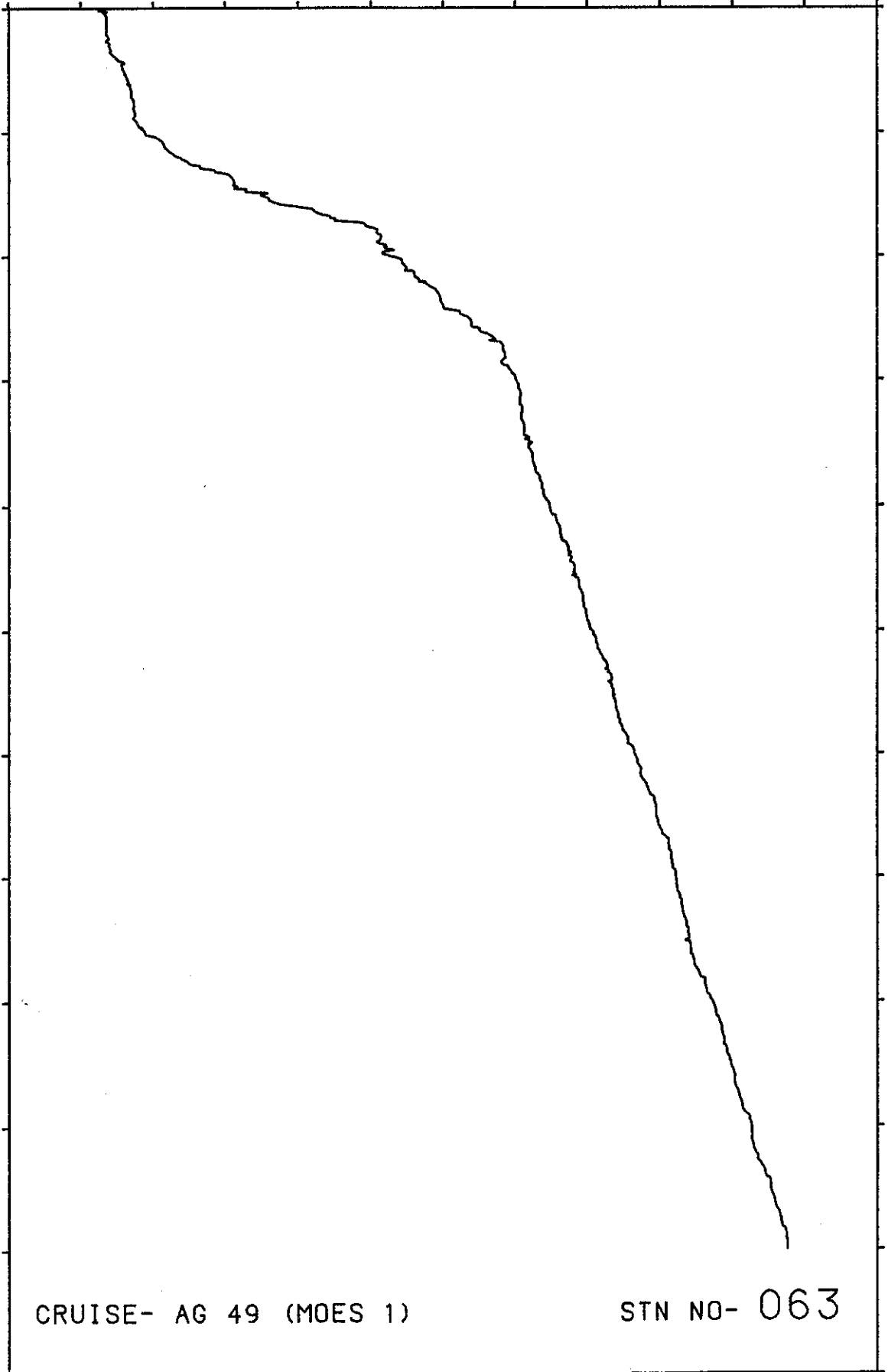
0

PRESSURE (DB)
500

1000

CRUISE- AG 49 (MOES 1)

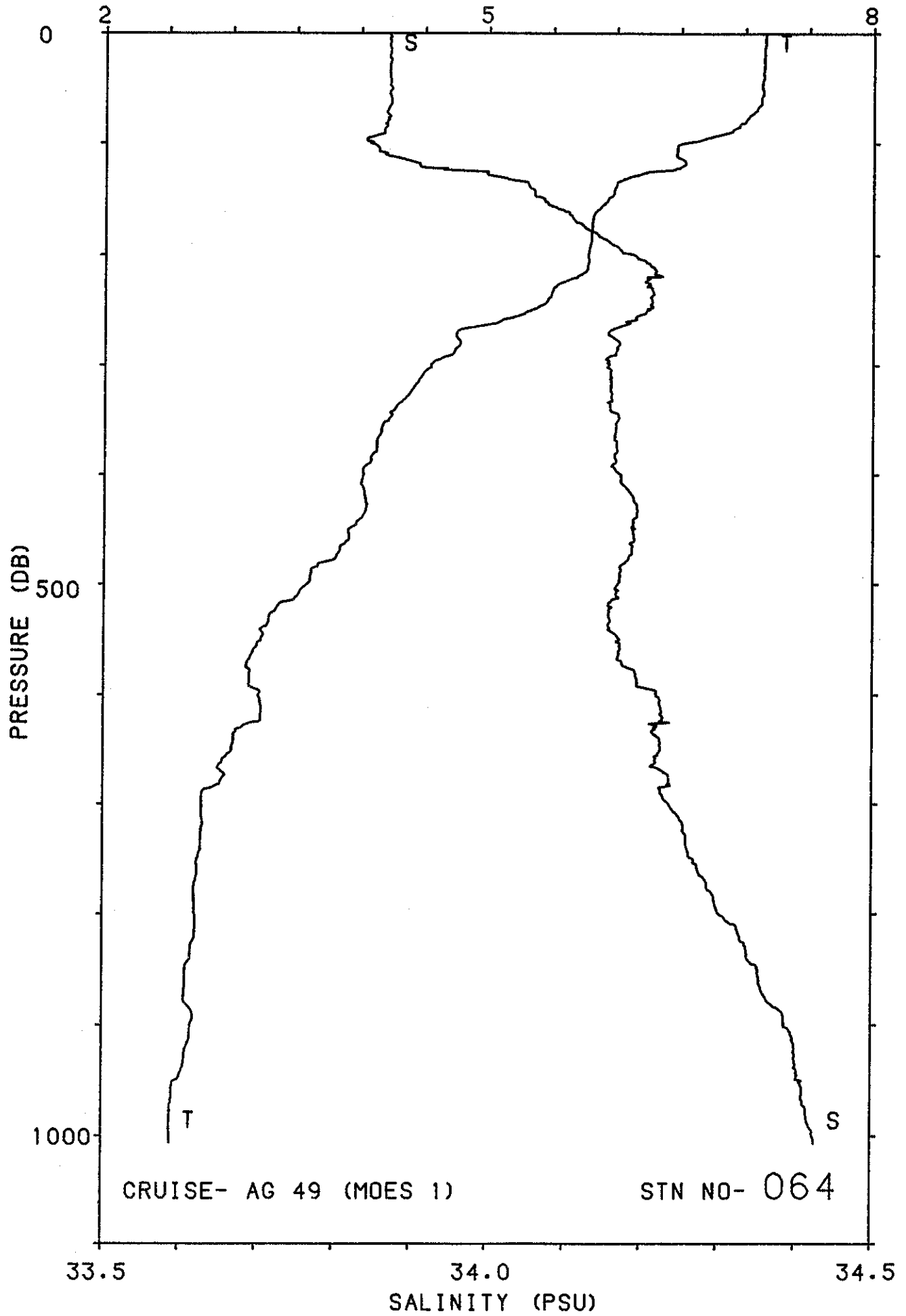
STN NO- 063



Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.27
 Station: 64 Cast: CTD UP Time: 12.30 Z
 Position: Lat: 46°44.000'S Long: 37°30.000'E Depth: 2300 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_{θ} kg.m ⁻³
.00	.0	7.157	7.157	33.867	1026.505	26.530	1026.505	26.530
4.96	5.0	7.152	7.152	33.870	1026.531	26.533	1026.531	26.533
9.92	10.0	7.154	7.153	33.870	1026.553	26.533	1026.554	26.533
19.83	20.0	7.148	7.147	33.870	1026.600	26.533	1026.600	26.534
24.79	25.0	7.145	7.142	33.872	1026.625	26.536	1026.626	26.536
29.75	30.0	7.147	7.144	33.870	1026.647	26.534	1026.647	26.534
39.67	40.0	7.145	7.142	33.870	1026.692	26.534	1026.693	26.534
49.58	50.0	7.132	7.127	33.873	1026.743	26.538	1026.743	26.539
59.49	60.0	7.126	7.120	33.873	1026.789	26.539	1026.790	26.540
69.41	70.0	7.092	7.085	33.867	1026.836	26.539	1026.836	26.540
74.37	75.0	7.036	7.030	33.870	1026.868	26.549	1026.869	26.550
79.32	80.0	7.007	6.999	33.867	1026.893	26.551	1026.894	26.552
89.24	90.0	6.877	6.869	33.863	1026.954	26.565	1026.955	26.566
99.15	100.0	6.509	6.500	33.847	1027.037	26.602	1027.038	26.603
118.97	120.0	6.517	6.506	33.910	1027.177	26.650	1027.179	26.652
123.93	125.0	6.264	6.253	33.996	1027.302	26.751	1027.303	26.752
138.79	140.0	5.994	5.982	34.055	1027.452	26.832	1027.454	26.833
148.70	150.0	5.939	5.926	34.072	1027.519	26.852	1027.520	26.854
158.61	160.0	5.855	5.842	34.098	1027.596	26.884	1027.598	26.885
173.48	175.0	5.821	5.806	34.125	1027.690	26.908	1027.693	26.911
178.43	180.0	5.814	5.799	34.140	1027.727	26.922	1027.728	26.923
198.25	200.0	5.788	5.771	34.190	1027.861	26.964	1027.863	26.966
218.06	220.0	5.708	5.690	34.205	1027.976	26.986	1027.978	26.988
237.88	240.0	5.478	5.458	34.212	1028.102	27.019	1028.105	27.022
247.78	250.0	5.348	5.328	34.205	1028.159	27.030	1028.161	27.032
257.69	260.0	5.102	5.082	34.178	1028.214	27.037	1028.216	27.039
277.49	280.0	4.802	4.781	34.171	1028.336	27.065	1028.339	27.068
297.30	300.0	4.574	4.552	34.155	1028.444	27.079	1028.446	27.081
317.11	320.0	4.442	4.418	34.159	1028.554	27.096	1028.557	27.098
336.91	340.0	4.296	4.271	34.158	1028.663	27.111	1028.666	27.113
346.81	350.0	4.245	4.220	34.170	1028.724	27.125	1028.727	27.128
356.71	360.0	4.191	4.165	34.166	1028.773	27.128	1028.776	27.131
376.51	380.0	4.137	4.110	34.167	1028.873	27.134	1028.876	27.137
396.31	400.0	4.058	4.030	34.173	1028.979	27.147	1028.982	27.150
445.79	450.0	3.944	3.912	34.189	1029.236	27.172	1029.239	27.175
495.26	500.0	3.620	3.586	34.169	1029.487	27.189	1029.491	27.192
544.72	550.0	3.268	3.232	34.172	1029.759	27.225	1029.763	27.228
594.17	600.0	3.252	3.212	34.219	1030.029	27.264	1030.034	27.267
643.61	650.0	3.050	3.007	34.225	1030.287	27.287	1030.291	27.291
693.04	700.0	2.822	2.777	34.236	1030.551	27.317	1030.556	27.320
742.45	750.0	2.787	2.739	34.269	1030.812	27.345	1030.817	27.350
791.85	800.0	2.774	2.722	34.303	1031.071	27.374	1031.077	27.379
841.24	850.0	2.707	2.652	34.353	1031.348	27.419	1031.355	27.425
890.62	900.0	2.754	2.696	34.386	1031.600	27.442	1031.606	27.447
939.99	950.0	2.628	2.567	34.410	1031.863	27.472	1031.870	27.477
989.34	1000.0	2.597	2.532	34.424	1032.107	27.486	1032.115	27.492

POTENTIAL TEMPERATURE (°C)

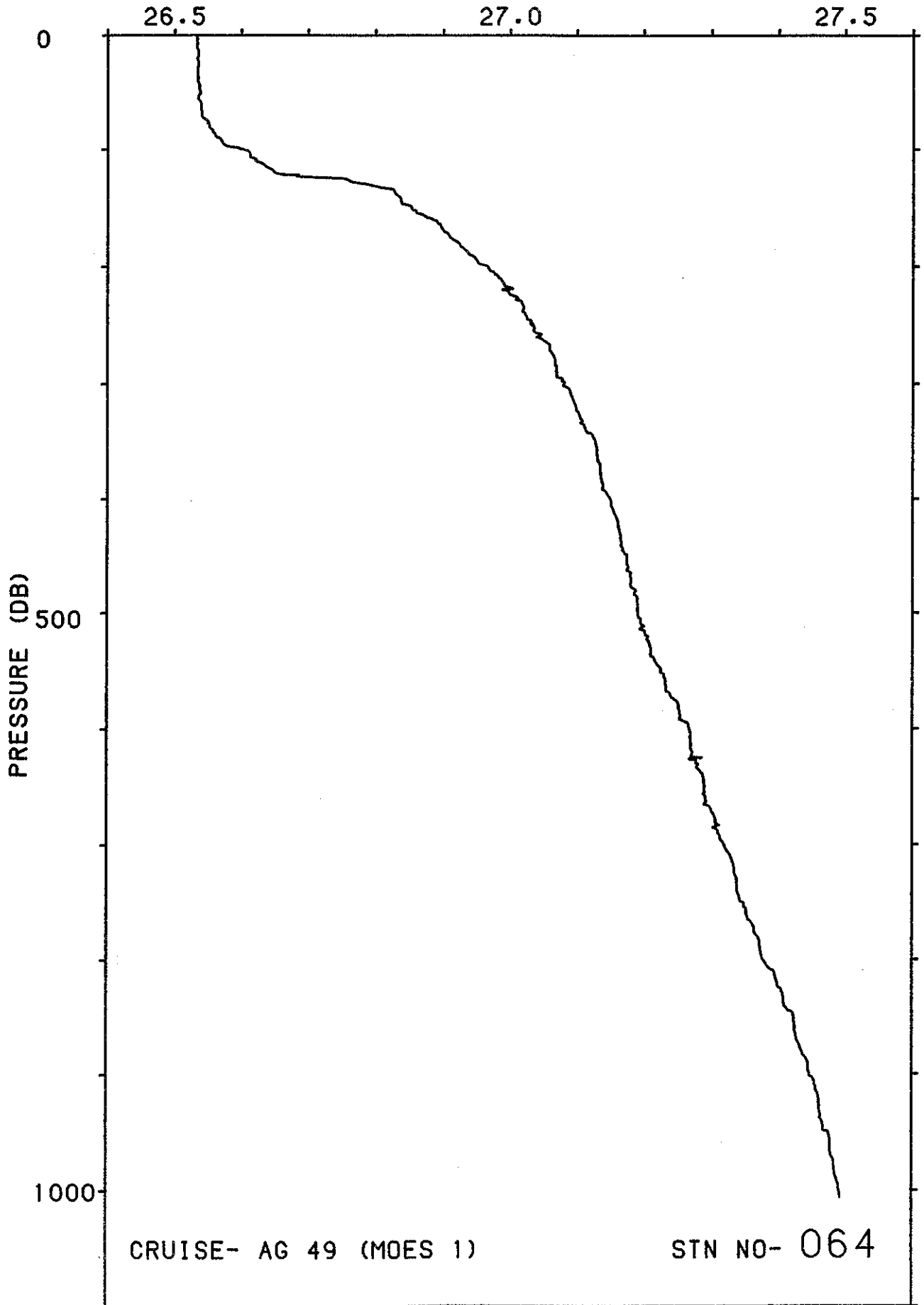


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.27
Station: 64 Cast: BOTTLE Time: 12.30 Z
Position: Lat: 46°44.000'S Long: 37°30.000'E Depth: 2300 m

NO BOTTLE DATA

185

POTENTIAL DENSITY (σ_θ)

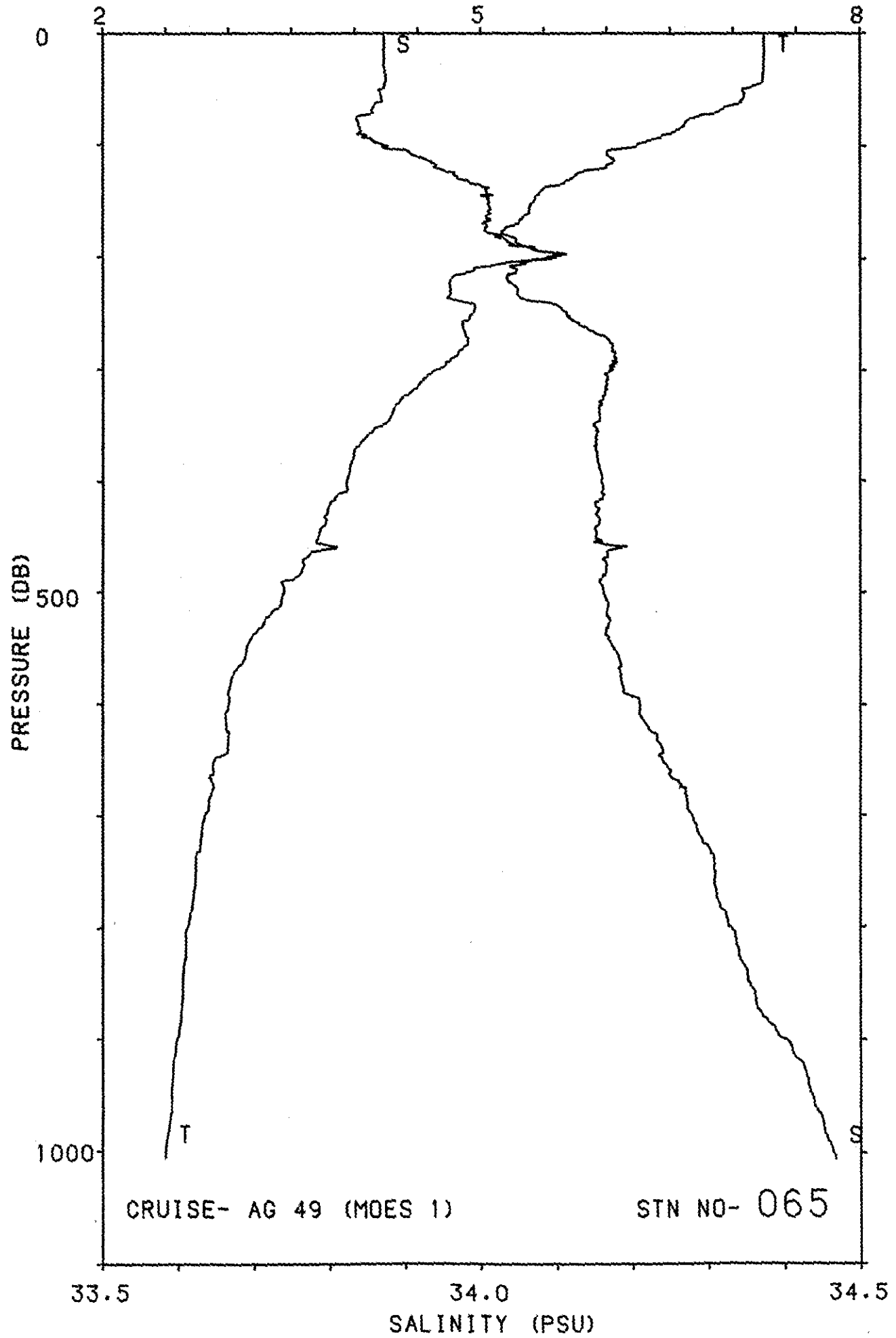


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.27
 Station: 65 Cast: CTD UP Time: 14.21 Z
 Position: Lat: 46°46.400'S Long: 37°35.000'E Depth: 1760 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ _t kg.m ⁻³	Pot. Dens kg.m ⁻³	σ _θ kg.m ⁻³
.00	.0	7.255	7.255	33.864	1026.489	26.514	1026.489	26.514
4.96	5.0	7.246	7.246	33.872	1026.519	26.521	1026.519	26.521
9.92	10.0	7.245	7.244	33.872	1026.543	26.522	1026.543	26.522
19.83	20.0	7.247	7.245	33.872	1026.588	26.521	1026.588	26.522
24.79	25.0	7.248	7.246	33.872	1026.611	26.521	1026.611	26.521
29.75	30.0	7.246	7.243	33.871	1026.634	26.521	1026.634	26.521
39.66	40.0	7.241	7.237	33.874	1026.682	26.524	1026.683	26.524
49.58	50.0	7.109	7.105	33.870	1026.743	26.539	1026.744	26.539
59.49	60.0	7.081	7.075	33.869	1026.792	26.542	1026.793	26.543
69.41	70.0	6.900	6.893	33.856	1026.853	26.556	1026.854	26.557
74.37	75.0	6.719	6.712	33.839	1026.887	26.567	1026.888	26.568
79.32	80.0	6.630	6.623	33.838	1026.921	26.578	1026.922	26.579
89.24	90.0	6.517	6.509	33.839	1026.984	26.594	1026.984	26.595
99.15	100.0	6.253	6.245	33.868	1027.087	26.652	1027.088	26.652
118.97	120.0	6.005	5.995	33.940	1027.268	26.740	1027.269	26.741
123.93	125.0	5.787	5.777	33.964	1027.338	26.786	1027.339	26.787
138.79	140.0	5.501	5.489	34.006	1027.476	26.854	1027.477	26.855
148.70	150.0	5.430	5.418	34.010	1027.534	26.866	1027.535	26.867
158.61	160.0	5.395	5.382	34.009	1027.584	26.869	1027.585	26.870
173.48	175.0	5.200	5.187	34.006	1027.674	26.889	1027.675	26.891
178.43	180.0	5.207	5.193	34.027	1027.712	26.905	1027.714	26.907
198.25	200.0	5.544	5.528	34.098	1027.820	26.921	1027.822	26.923
218.06	220.0	4.778	4.761	34.035	1027.955	26.961	1027.957	26.962
237.87	240.0	4.901	4.883	34.085	1028.072	26.986	1028.074	26.988
247.78	250.0	4.957	4.937	34.113	1028.134	27.002	1028.136	27.004
257.69	260.0	4.877	4.857	34.130	1028.203	27.024	1028.205	27.027
277.49	280.0	4.897	4.875	34.174	1028.328	27.057	1028.330	27.060
297.30	300.0	4.680	4.657	34.172	1028.444	27.080	1028.447	27.083
317.10	320.0	4.472	4.448	34.164	1028.555	27.096	1028.557	27.099
336.91	340.0	4.320	4.295	34.156	1028.659	27.107	1028.661	27.109
346.81	350.0	4.247	4.221	34.149	1028.707	27.108	1028.710	27.111
356.71	360.0	4.117	4.091	34.152	1028.771	27.125	1028.774	27.127
376.51	380.0	4.013	3.986	34.154	1028.876	27.137	1028.880	27.140
396.30	400.0	3.966	3.938	34.160	1028.979	27.146	1028.982	27.149
445.79	450.0	3.745	3.714	34.153	1029.229	27.163	1029.233	27.166
495.26	500.0	3.475	3.441	34.162	1029.497	27.197	1029.501	27.200
544.72	550.0	3.181	3.145	34.175	1029.771	27.235	1029.775	27.238
594.17	600.0	3.042	3.003	34.210	1030.044	27.276	1030.049	27.279
643.61	650.0	2.933	2.891	34.239	1030.310	27.309	1030.315	27.312
693.03	700.0	2.856	2.811	34.278	1030.581	27.347	1030.586	27.351
742.45	750.0	2.785	2.737	34.309	1030.844	27.377	1030.849	27.382
791.85	800.0	2.724	2.672	34.328	1031.097	27.399	1031.102	27.403
841.24	850.0	2.688	2.634	34.355	1031.352	27.423	1031.358	27.428
890.62	900.0	2.652	2.594	34.401	1031.623	27.463	1031.629	27.468
939.98	950.0	2.608	2.547	34.437	1031.886	27.495	1031.893	27.501
989.34	1000.0	2.567	2.502	34.464	1032.142	27.521	1032.150	27.526

187

POTENTIAL TEMPERATURE (°C)

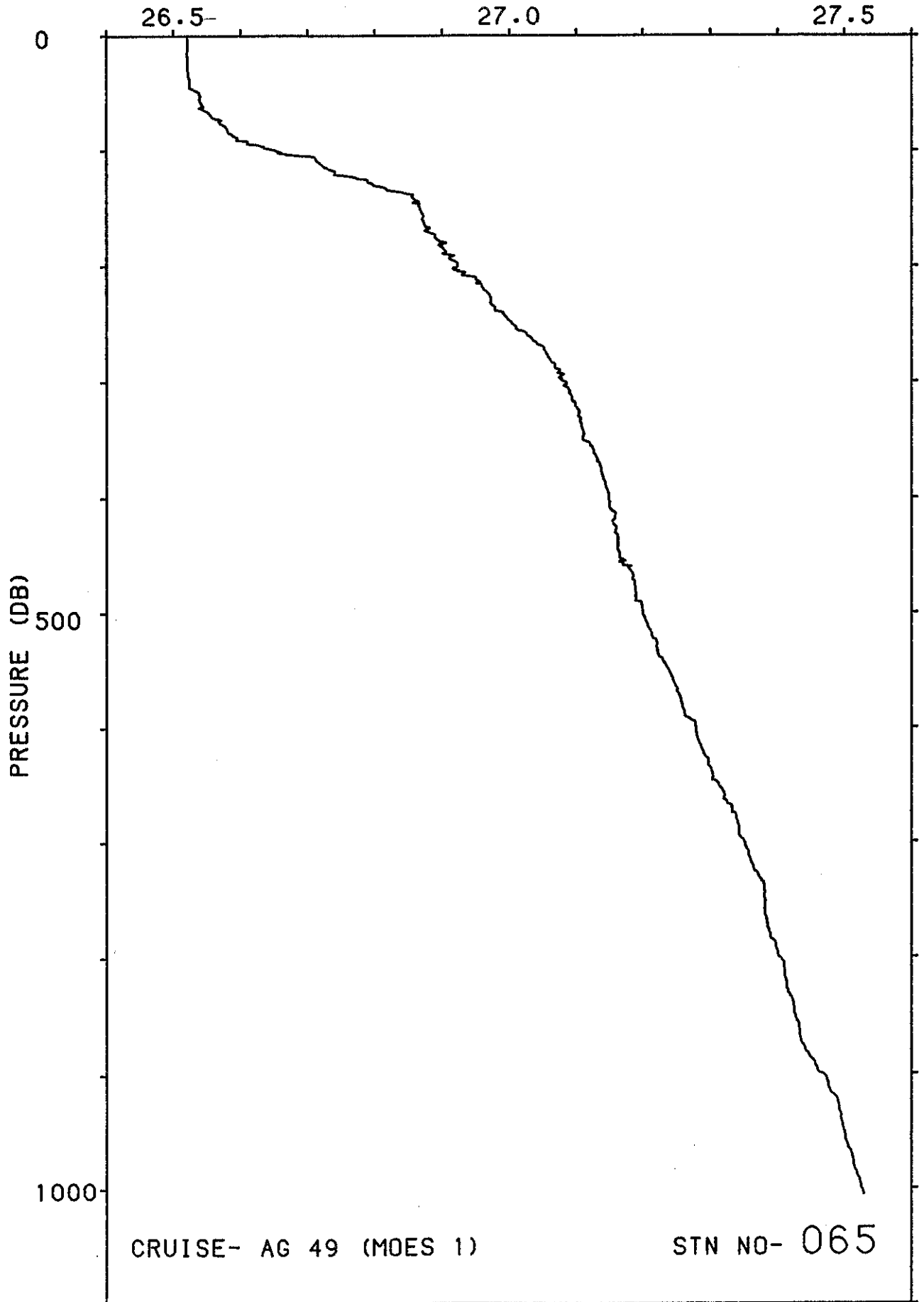


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.27
Station: 65 Cast: BOTTLE Time: 14.21 Z
Position: Lat: 46°46.400'S Long: 37°35.000'E Depth: 1760 m

NO BOTTLE DATA

189

POTENTIAL DENSITY (σ_θ)

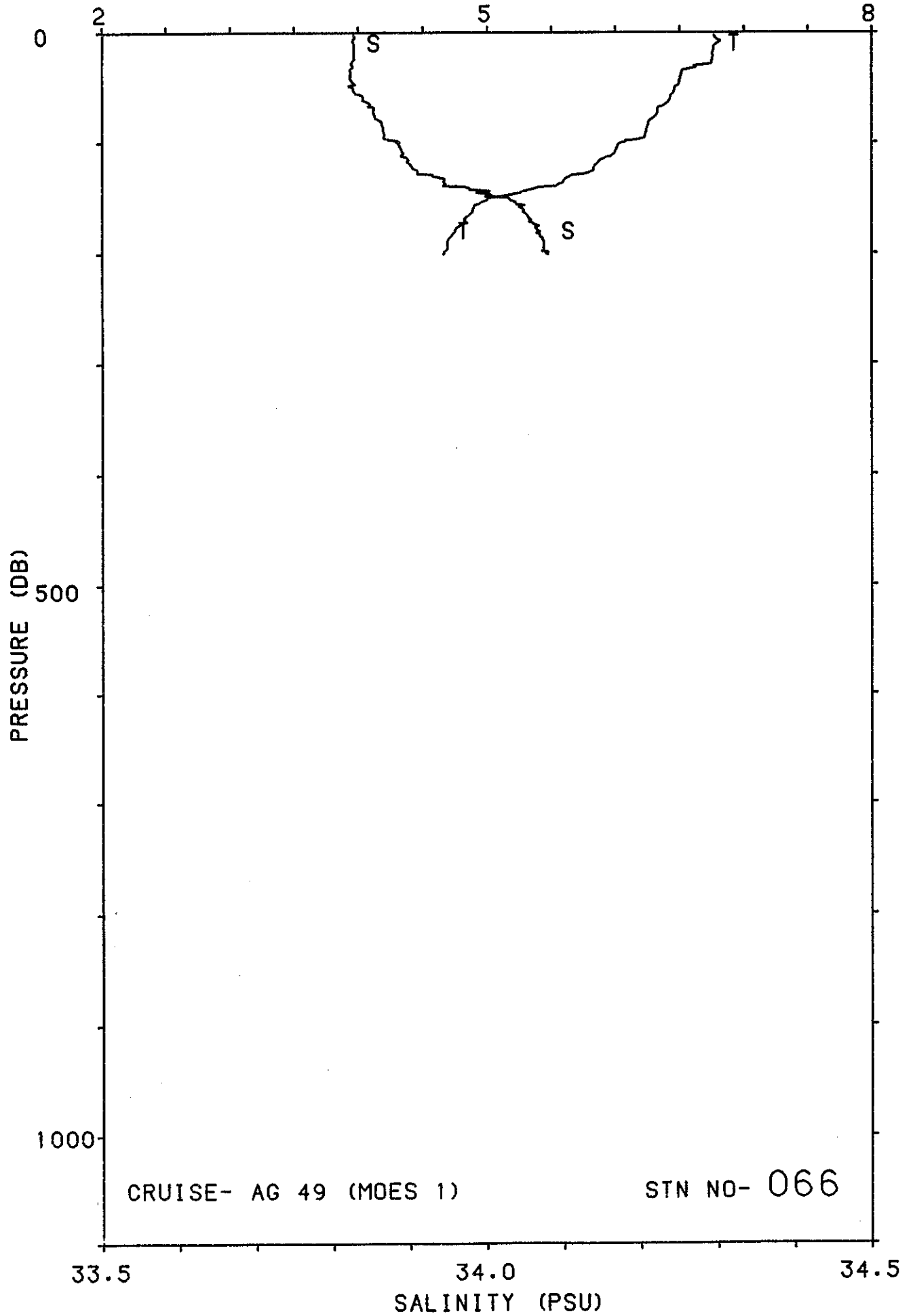


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.27
 Station: 66 Cast: CTD UP Time: 15.30 Z
 Position: Lat: 46°48.000'S Long: 37°39.000'E Depth: 240 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot. Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.748	6.748	33.820	1026.524	26.549	1026.524	26.549
4.96	5.0	6.782	6.782	33.829	1026.549	26.551	1026.549	26.551
9.92	10.0	6.799	6.798	33.827	1026.569	26.548	1026.568	26.547
19.83	20.0	6.756	6.755	33.829	1026.621	26.554	1026.622	26.555
24.79	25.0	6.757	6.755	33.828	1026.644	26.554	1026.644	26.554
29.75	30.0	6.659	6.657	33.826	1026.678	26.565	1026.678	26.565
39.66	40.0	6.514	6.510	33.824	1026.742	26.583	1026.742	26.583
49.58	50.0	6.472	6.468	33.826	1026.795	26.590	1026.795	26.590
59.49	60.0	6.432	6.427	33.840	1026.857	26.606	1026.858	26.607
69.41	70.0	6.336	6.330	33.853	1026.926	26.629	1026.927	26.629
74.37	75.0	6.329	6.322	33.854	1026.951	26.631	1026.952	26.631
79.32	80.0	6.281	6.274	33.860	1026.985	26.641	1026.986	26.642
89.24	90.0	6.250	6.242	33.866	1027.040	26.650	1027.041	26.651
99.15	100.0	6.089	6.081	33.885	1027.121	26.685	1027.123	26.687
118.97	120.0	5.865	5.855	33.900	1027.254	26.726	1027.255	26.727
123.93	125.0	5.841	5.831	33.908	1027.286	26.734	1027.288	26.736
138.79	140.0	5.478	5.467	33.966	1027.447	26.825	1027.448	26.826
148.70	150.0	5.039	5.028	34.025	1027.592	26.923	1027.594	26.924
158.61	160.0	4.908	4.896	34.046	1027.671	26.954	1027.672	26.956
173.48	175.0	4.815	4.802	34.065	1027.767	26.980	1027.768	26.981
178.43	180.0	4.763	4.750	34.067	1027.797	26.987	1027.798	26.989
198.25	200.0	4.677	4.662	34.078	1027.908	27.006	1027.910	27.007

191

POTENTIAL TEMPERATURE (°C)

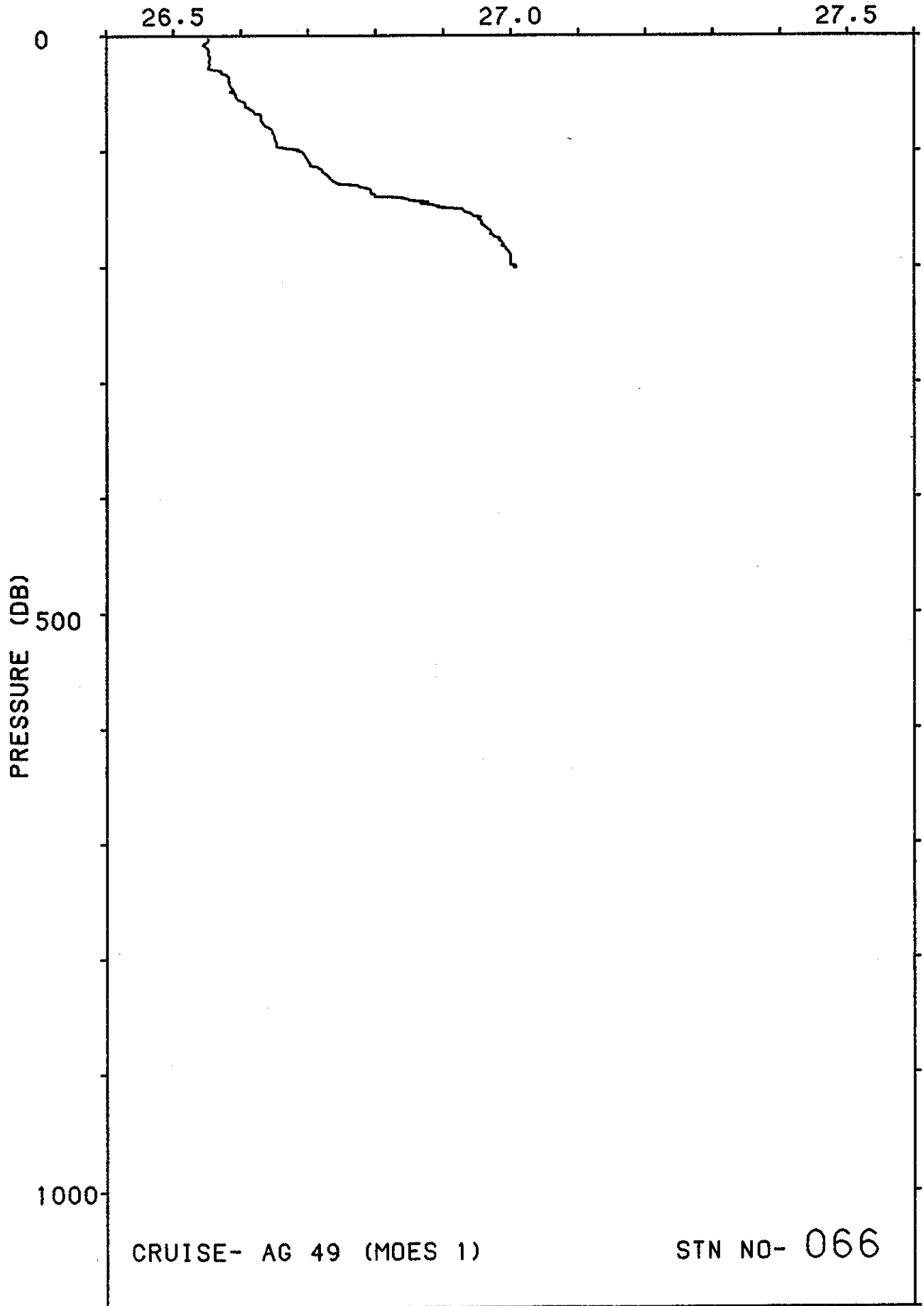


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.27
Station: 66 Cast: BOTTLE Time: 15.30 Z
Position: Lat: 46°48.000'S Long: 37°39.000'E Depth: 240 m

NO BOTTLE DATA

193

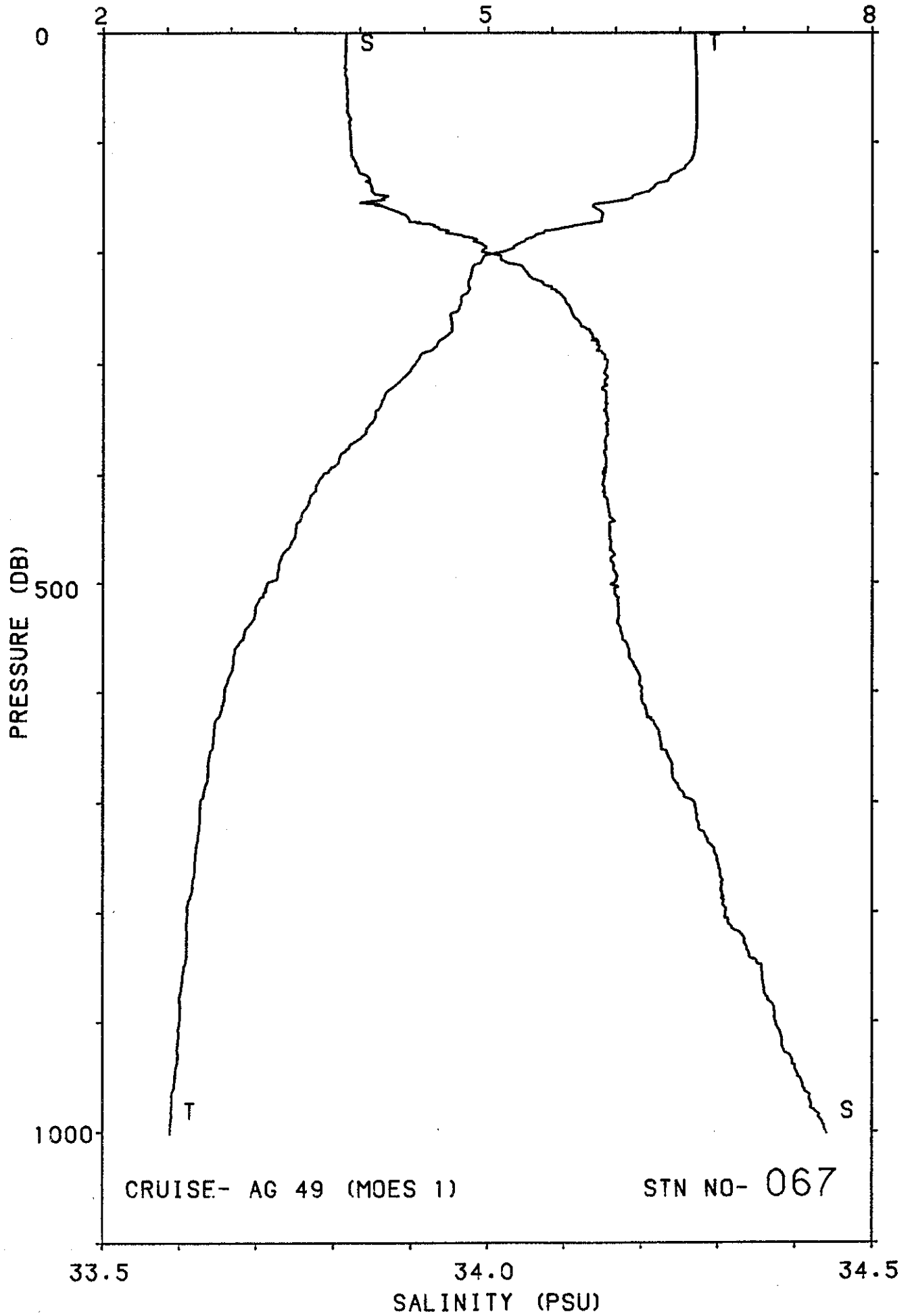
POTENTIAL DENSITY (σ_θ)



Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.28
 Station: 67 Cast: CTD UP Time: 4.45 Z
 Position: Lat: 46°51.200'S Long: 38°21.800'E Depth: 2700 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ _t kg.m ⁻³	Pot. Dens kg.m ⁻³	σ _θ kg.m ⁻³
.00	.0	6.620	6.620	33.817	1026.538	26.563	1026.538	26.563
4.96	5.0	6.621	6.621	33.816	1026.560	26.562	1026.560	26.562
9.92	10.0	6.621	6.620	33.815	1026.583	26.562	1026.583	26.562
19.83	20.0	6.627	6.625	33.815	1026.627	26.560	1026.628	26.561
24.79	25.0	6.629	6.627	33.816	1026.651	26.561	1026.652	26.561
29.75	30.0	6.628	6.626	33.814	1026.673	26.560	1026.673	26.560
39.66	40.0	6.631	6.628	33.815	1026.719	26.560	1026.720	26.561
49.58	50.0	6.634	6.630	33.817	1026.766	26.561	1026.767	26.562
59.49	60.0	6.636	6.631	33.818	1026.813	26.562	1026.814	26.563
69.41	70.0	6.636	6.630	33.817	1026.858	26.561	1026.859	26.562
74.36	75.0	6.639	6.632	33.819	1026.882	26.562	1026.883	26.563
79.32	80.0	6.638	6.631	33.819	1026.906	26.563	1026.906	26.563
89.23	90.0	6.638	6.630	33.821	1026.953	26.564	1026.954	26.565
99.15	100.0	6.632	6.623	33.822	1027.000	26.565	1027.002	26.567
118.97	120.0	6.570	6.559	33.829	1027.106	26.579	1027.108	26.581
123.93	125.0	6.524	6.513	33.831	1027.137	26.587	1027.138	26.588
138.79	140.0	6.309	6.297	33.848	1027.248	26.628	1027.249	26.630
148.70	150.0	6.141	6.128	33.866	1027.330	26.664	1027.332	26.666
158.61	160.0	5.853	5.840	33.870	1027.416	26.703	1027.418	26.705
173.48	175.0	5.741	5.727	33.928	1027.545	26.763	1027.547	26.765
178.43	180.0	5.505	5.491	33.943	1027.610	26.803	1027.612	26.805
198.25	200.0	5.112	5.096	33.995	1027.791	26.891	1027.793	26.893
218.06	220.0	4.887	4.871	34.053	1027.956	26.962	1027.958	26.964
237.87	240.0	4.810	4.792	34.098	1028.093	27.007	1028.095	27.009
247.78	250.0	4.797	4.778	34.107	1028.148	27.015	1028.150	27.018
257.68	260.0	4.731	4.711	34.115	1028.209	27.029	1028.211	27.031
277.49	280.0	4.639	4.618	34.141	1028.332	27.060	1028.335	27.062
297.30	300.0	4.452	4.430	34.155	1028.458	27.092	1028.460	27.094
317.10	320.0	4.289	4.266	34.153	1028.567	27.107	1028.570	27.110
336.91	340.0	4.174	4.149	34.154	1028.673	27.120	1028.676	27.123
346.81	350.0	4.137	4.112	34.156	1028.725	27.125	1028.728	27.128
356.71	360.0	4.079	4.053	34.155	1028.778	27.131	1028.780	27.134
376.50	380.0	3.891	3.864	34.151	1028.888	27.147	1028.891	27.150
396.30	400.0	3.746	3.719	34.150	1028.996	27.161	1028.998	27.163
445.79	450.0	3.544	3.514	34.159	1029.256	27.188	1029.259	27.191
495.26	500.0	3.318	3.285	34.165	1029.517	27.214	1029.520	27.217
544.72	550.0	3.137	3.101	34.176	1029.776	27.240	1029.780	27.243
594.17	600.0	2.992	2.954	34.199	1030.041	27.272	1030.045	27.275
643.60	650.0	2.902	2.860	34.226	1030.304	27.301	1030.308	27.305
693.03	700.0	2.811	2.766	34.269	1030.578	27.343	1030.583	27.347
742.44	750.0	2.773	2.725	34.298	1030.837	27.370	1030.842	27.374
791.84	800.0	2.713	2.662	34.310	1031.084	27.385	1031.089	27.389
841.23	850.0	2.690	2.636	34.356	1031.353	27.424	1031.359	27.428
890.61	900.0	2.660	2.602	34.375	1031.601	27.441	1031.608	27.446
939.98	950.0	2.631	2.570	34.404	1031.858	27.467	1031.865	27.472
989.33	1000.0	2.594	2.530	34.440	1032.121	27.499	1032.128	27.505

POTENTIAL TEMPERATURE (°C)



Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.28
 Station: 67 Cast: BOTTLE Time: 4.45 Z
 Position: Lat: 46°51.200'S Long: 38°21.800'E Depth: 2700 m

Bottle Data

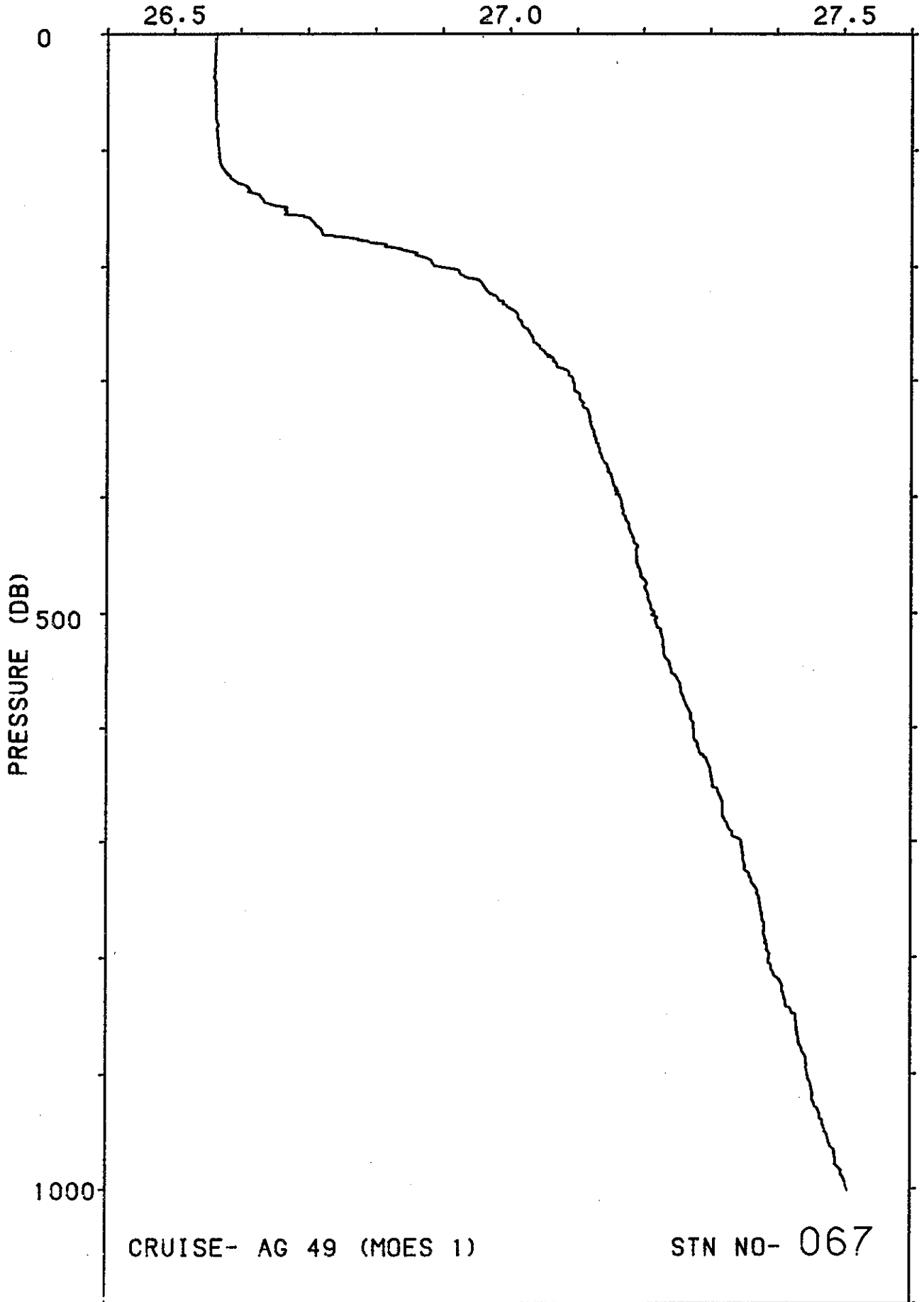
Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
.0	6.62	6.62	33.817		2.57	15.97	.41	.88
5.0	6.62	6.62	33.816	.237	2.54	15.37	.41	.91
11.0	6.62	6.62	33.816	.184	2.52	15.37	.41	.92
18.0	6.63	6.62	33.815	.196	2.48	15.32	.41	.90
36.0	6.63	6.63	33.814	1.015	1.96	15.40	.39	.96
50.0	6.63	6.63	33.817	1.300	1.84	15.34	.39	.91

Production Data

Depth m	Filter size: Light %	Carbon Uptake				Total	Areal Production mg(C).m ⁻² .hr ⁻¹
		0.2μm	2μm	20μm	mg(C).m ⁻³ .hr ⁻¹		
.0	100	.014	.117	.215	.346	33.52	
5.0	50	.236	.483	.264	.984		
11.0	25	.399	.231	.559	1.189		
18.0	10	.163	.707	.933	1.803		
36.0	1	.153	.146	1.563	1.862		

197

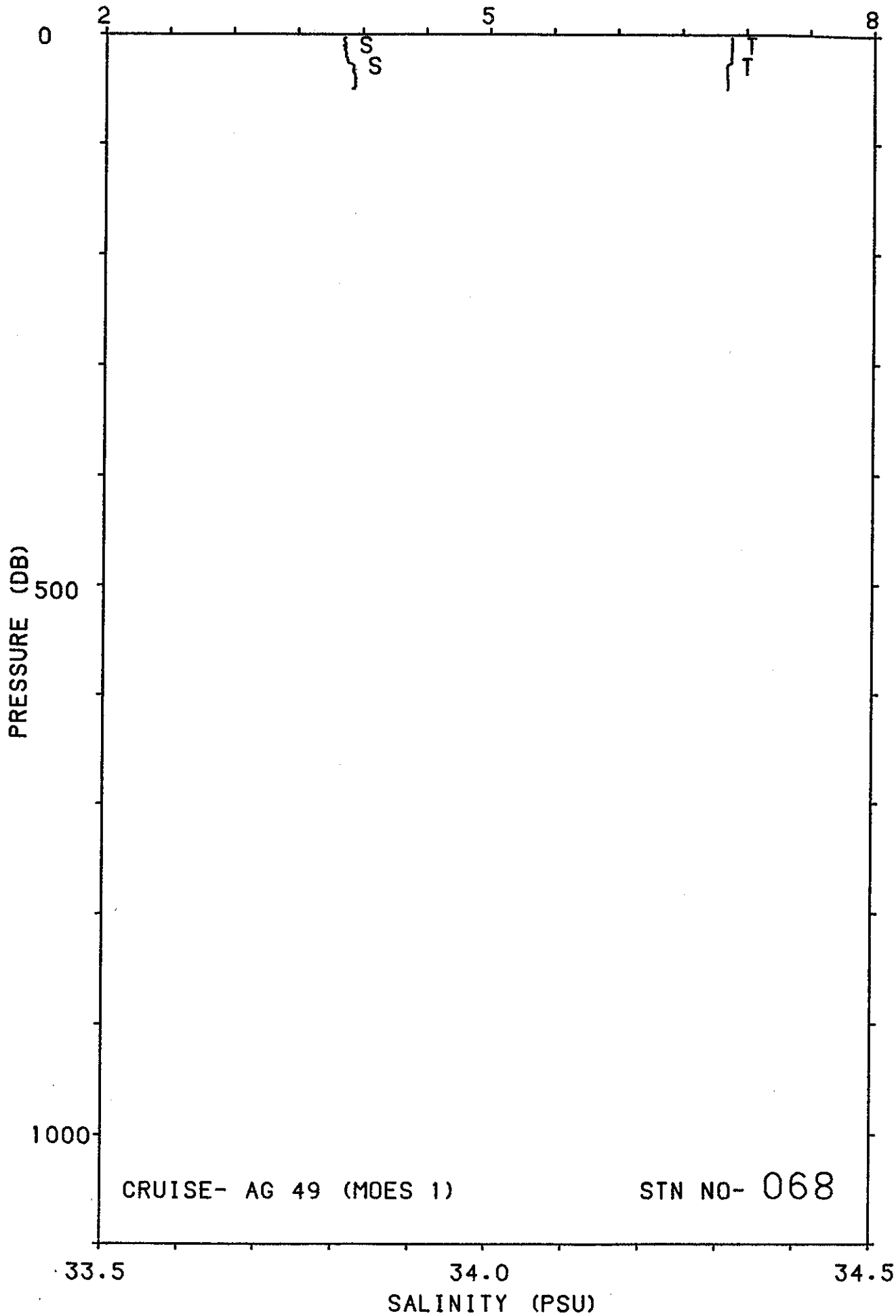
POTENTIAL DENSITY (σ_θ)



Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.28
 Station: 68 Cast: CTD UP Time: 13.20 Z
 Position: Lat: 46°57.020'S Long: 37°52.800'E Depth: 55 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.881	6.881	33.817	1026.503	26.528	1026.503	26.528
4.96	5.0	6.888	6.888	33.809	1026.519	26.521	1026.519	26.521
9.92	10.0	6.886	6.885	33.811	1026.544	26.523	1026.544	26.523
19.83	20.0	6.884	6.882	33.812	1026.590	26.524	1026.591	26.524
24.79	25.0	6.883	6.881	33.815	1026.616	26.526	1026.617	26.527
29.75	30.0	6.848	6.845	33.822	1026.650	26.537	1026.650	26.537
39.66	40.0	6.851	6.848	33.824	1026.697	26.538	1026.697	26.538
49.58	50.0	6.854	6.850	33.820	1026.739	26.534	1026.740	26.535

POTENTIAL TEMPERATURE (°C)



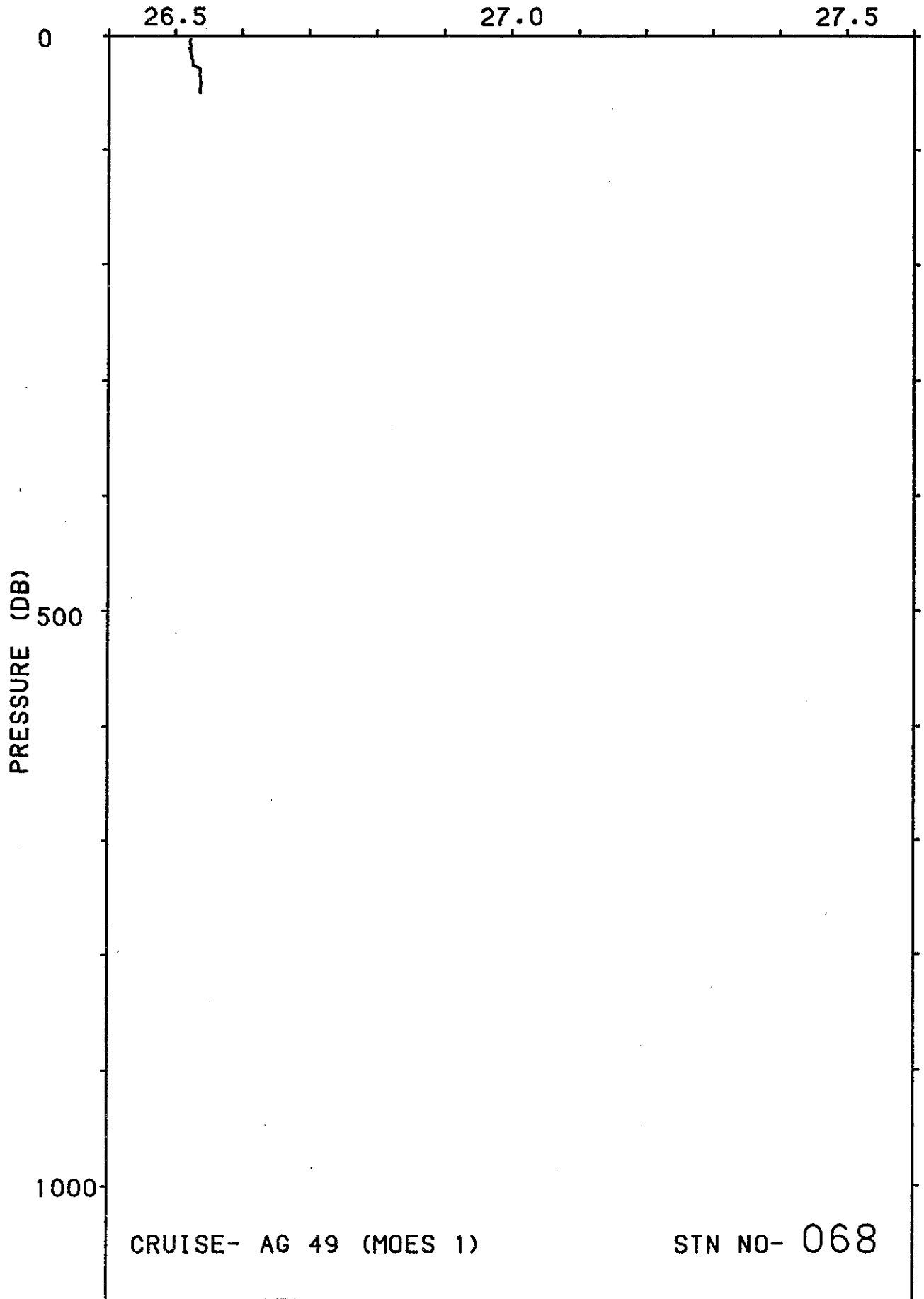
Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.28
Station: 68 Cast: BOTTLE Time: 13.20 Z
Position: Lat: 46°57.020'S Long: 37°52.800'E Depth: 55 m

Bottle Data

Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
.0	6.88	6.88	33.817	.195	1.56	13.84	.36	.74
15.0	6.89	6.89	33.810	.251	2.12	14.79	.36	.84
30.0	6.85	6.85	33.822	.272	.33	8.90	.23	.46
45.0	6.86	6.85	33.823	.210	1.10	11.27	.29	.62

201

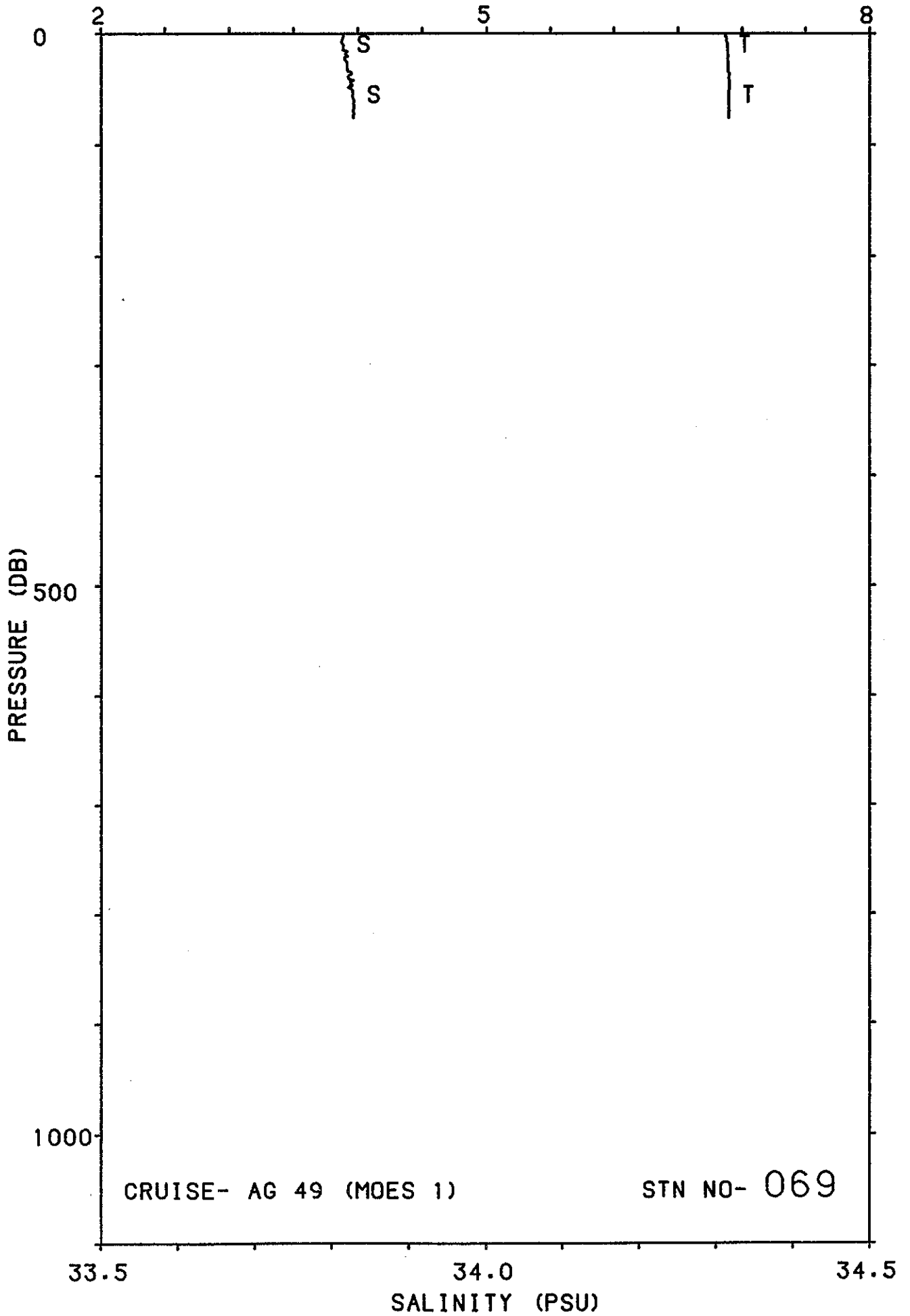
POTENTIAL DENSITY (σ_θ)



Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.28
 Station: 69 Cast: CTD UP Time: 14.11 Z
 Position: Lat: 46°57.200'S Long: 37°53.430'E Depth: 85 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.850	6.850	33.814	1026.505	26.530	1026.505	26.530
4.96	5.0	6.882	6.882	33.814	1026.524	26.526	1026.524	26.526
9.92	10.0	6.888	6.887	33.815	1026.547	26.526	1026.547	26.526
19.83	20.0	6.895	6.894	33.820	1026.596	26.529	1026.596	26.529
24.79	25.0	6.895	6.893	33.819	1026.618	26.528	1026.618	26.528
29.75	30.0	6.896	6.893	33.820	1026.642	26.529	1026.642	26.529
39.66	40.0	6.905	6.901	33.822	1026.688	26.529	1026.688	26.530
49.58	50.0	6.910	6.905	33.825	1026.735	26.531	1026.736	26.531
59.49	60.0	6.905	6.900	33.829	1026.785	26.534	1026.786	26.535
69.41	70.0	6.910	6.903	33.828	1026.829	26.533	1026.831	26.534
74.36	75.0	6.909	6.902	33.827	1026.852	26.533	1026.853	26.533

POTENTIAL TEMPERATURE (°C)



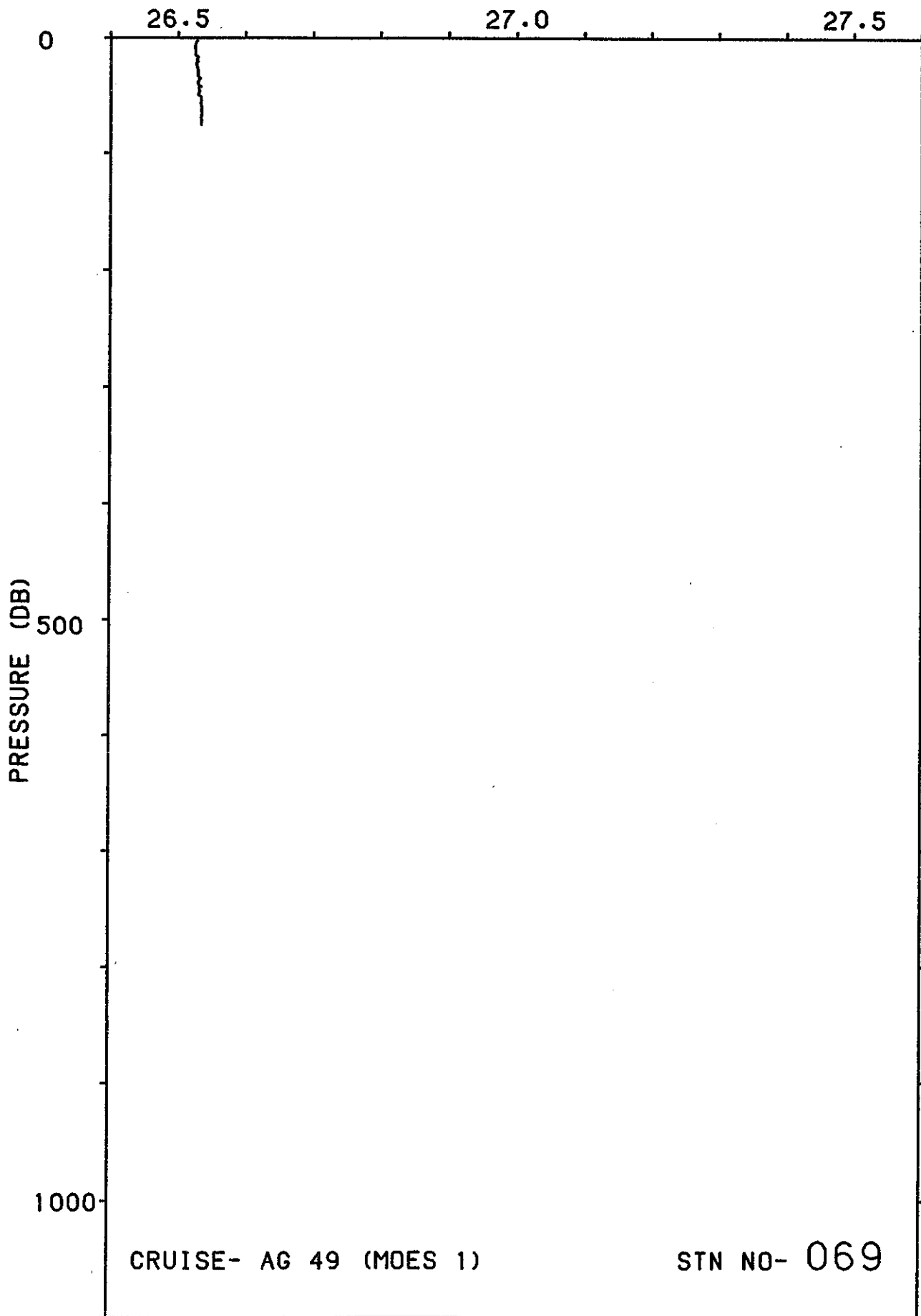
Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.28
Station: 69 Cast: BOTTLE Time: 14.11 Z
Position: Lat: 46°57.200'S Long: 37°53.430'E Depth: 85 m

Bottle Data

Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
.0	6.85	6.85	33.814	.173	.59	9.58	.25	.48
25.0	6.90	6.89	33.819	.257	.96	10.32	.28	.57
50.0	6.91	6.90	33.826	.180	1.38	11.04	.31	.65
75.0	6.91	6.90	33.828	.220	.45	8.17	.25	.51

205

POTENTIAL DENSITY (σ_θ)

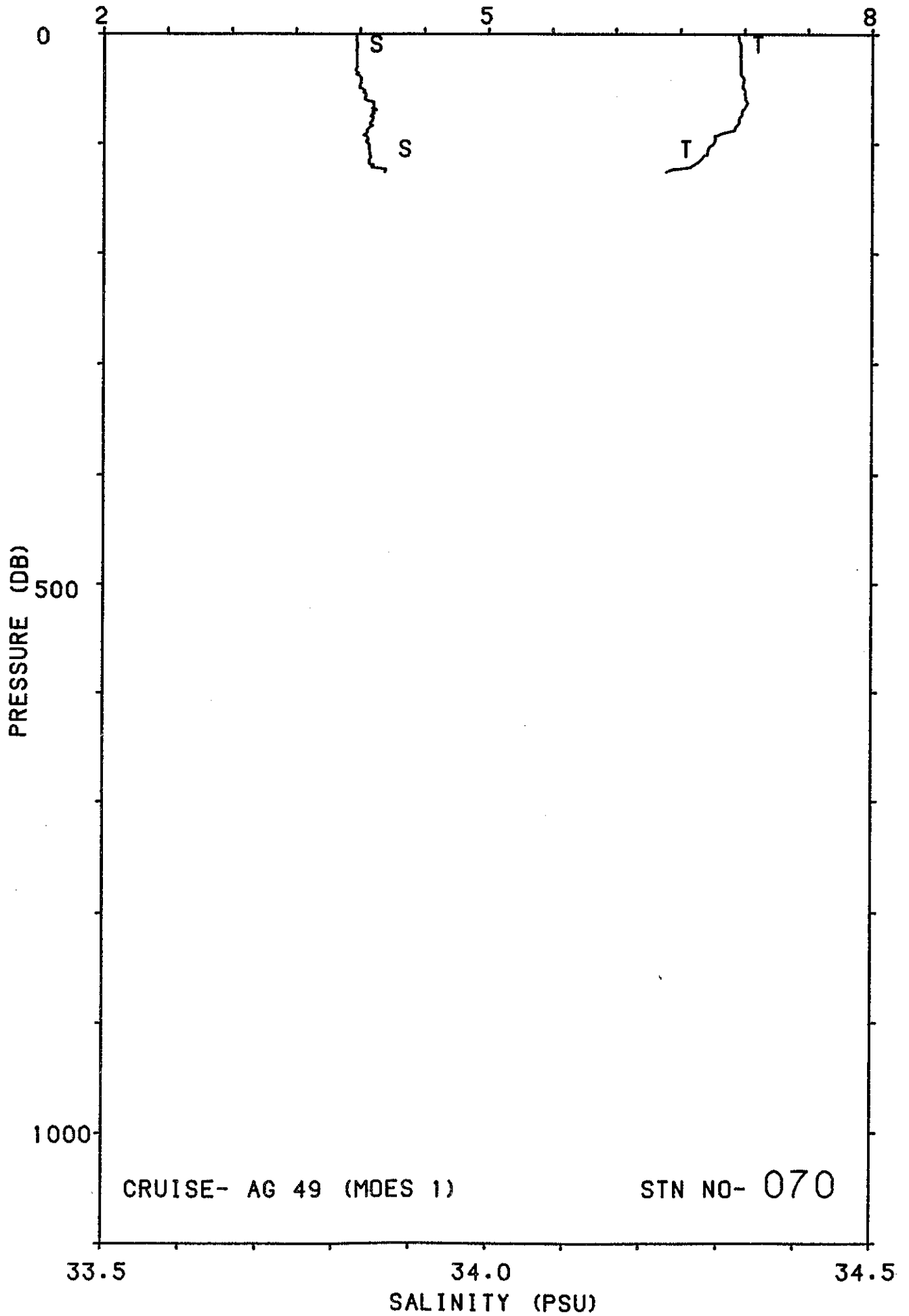


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.28
 Station: 70 Cast: CTD UP Time: 15.00 Z
 Position: Lat: 46°57.450'S Long: 37°54.170'E Depth: 135 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot. Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.948	6.948	33.826	1026.502	26.527	1026.501	26.526
4.96	5.0	6.955	6.954	33.828	1026.525	26.527	1026.525	26.527
9.92	10.0	6.969	6.968	33.829	1026.547	26.526	1026.547	26.526
19.83	20.0	6.966	6.964	33.829	1026.593	26.526	1026.593	26.526
24.79	25.0	6.969	6.967	33.829	1026.615	26.526	1026.616	26.526
29.75	30.0	6.973	6.970	33.829	1026.638	26.525	1026.638	26.526
39.66	40.0	6.992	6.988	33.834	1026.685	26.527	1026.686	26.527
49.58	50.0	6.994	6.990	33.835	1026.732	26.527	1026.732	26.528
59.49	60.0	7.012	7.006	33.841	1026.780	26.529	1026.781	26.530
69.41	70.0	6.988	6.981	33.852	1026.837	26.541	1026.839	26.542
74.36	75.0	6.970	6.964	33.847	1026.859	26.540	1026.860	26.541
79.32	80.0	6.962	6.955	33.848	1026.884	26.542	1026.885	26.543
89.23	90.0	6.847	6.839	33.842	1026.941	26.553	1026.942	26.554
99.15	100.0	6.766	6.757	33.843	1026.999	26.564	1027.000	26.565
118.97	120.0	6.601	6.591	33.851	1027.119	26.592	1027.121	26.594
123.93	125.0	6.439	6.428	33.868	1027.177	26.627	1027.179	26.629

207

POTENTIAL TEMPERATURE (°C)



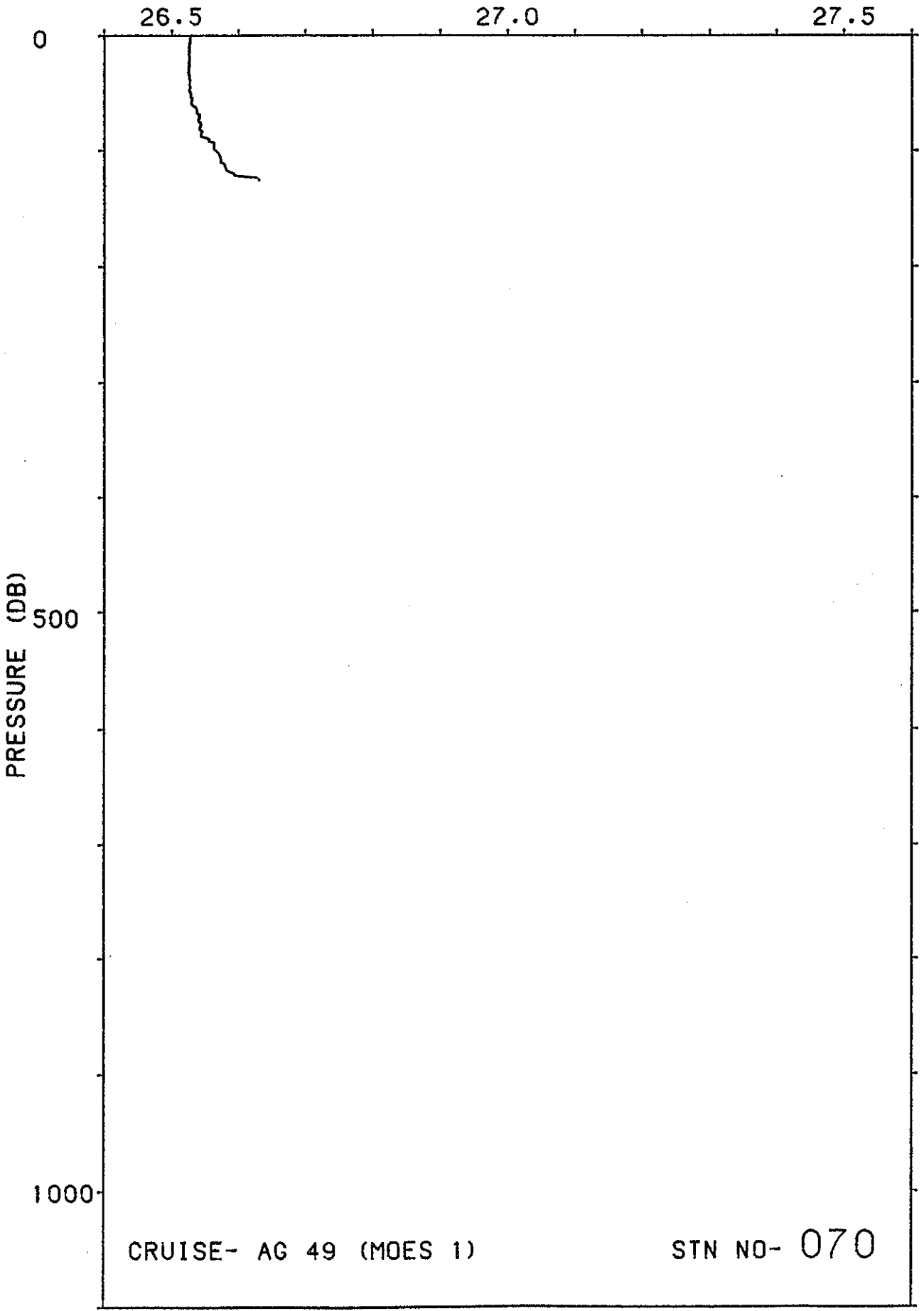
Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.28
 Station: 70 Cast: BOTTLE Time: 15.00 Z
 Position: Lat: 46°57.450'S Long: 37°54.170'E Depth: 135 m

Bottle Data

Depth	Temp	θ	Salt	Chl-a	SiO ₂	NO ₃	NO ₂	PO ₄
m	°C	°C	psu	mg.m ⁻³	mmol.m ⁻³	mmol.m ⁻³	mmol.m ⁻³	mmol.m ⁻³
.0	6.95	6.95	33.826		.07	5.81	.19	.39
40.0	6.99	6.99	33.835	.156	2.08	10.82	.38	.88
80.0	6.97	6.96	33.847	.156	1.77	10.14	.36	.82
120.0	6.59	6.58	33.849	.231	2.19	9.93	.27	.76

209

POTENTIAL DENSITY (σ_θ)



CRUISE- AG 49 (MOES 1)

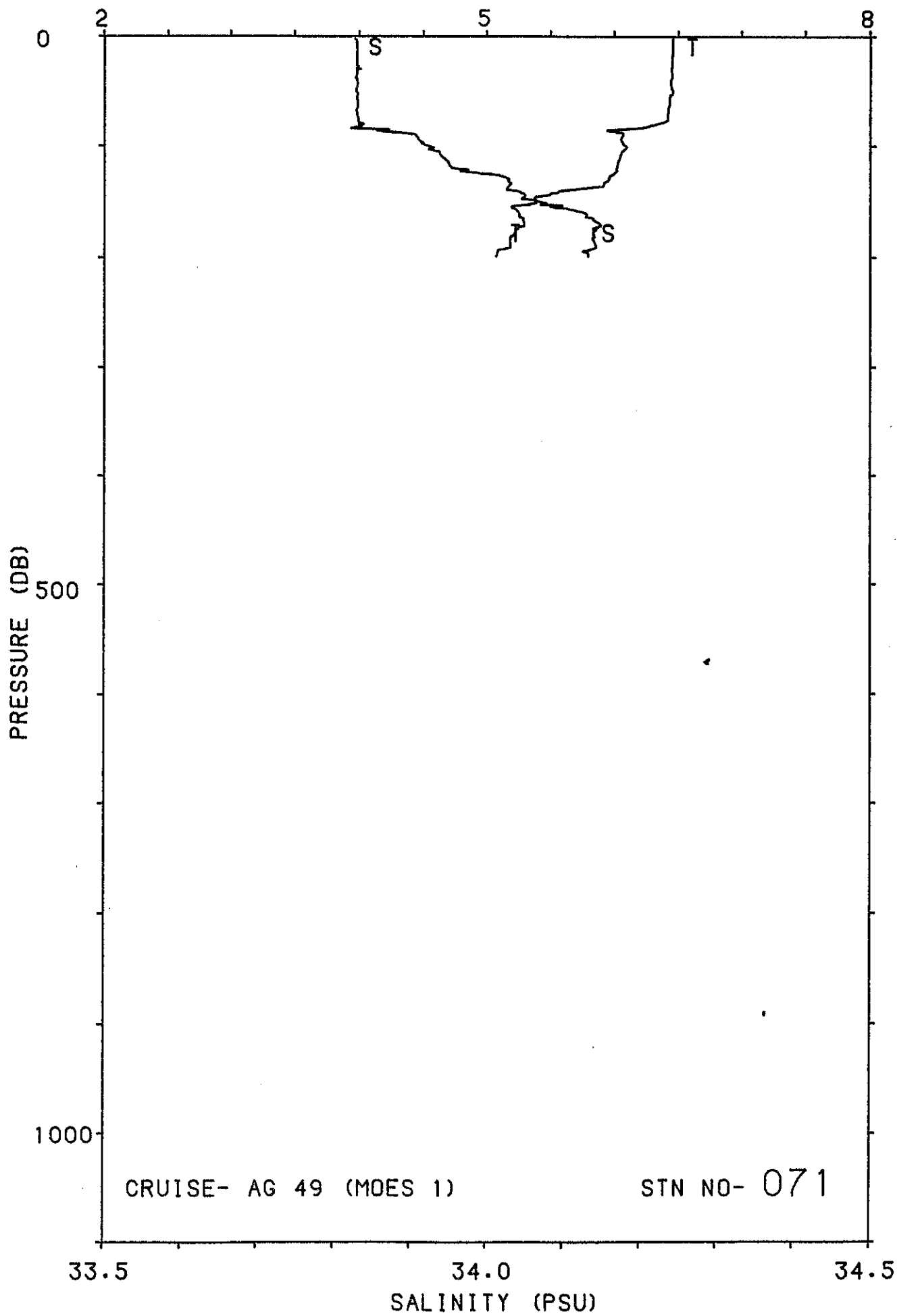
STN NO- 070

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.29
 Station: 71 Cast: CTD UP Time: 4.41 Z
 Position: Lat: 47° 1.000'S Long: 37° 49.850'E Depth: 220 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.463	6.463	33.822	1026.563	26.588	1026.563	26.588
4.96	5.0	6.457	6.457	33.830	1026.593	26.595	1026.593	26.595
9.92	10.0	6.459	6.458	33.831	1026.616	26.595	1026.617	26.596
19.83	20.0	6.454	6.452	33.831	1026.663	26.596	1026.663	26.596
24.79	25.0	6.456	6.454	33.831	1026.686	26.595	1026.686	26.596
29.75	30.0	6.447	6.444	33.835	1026.714	26.600	1026.714	26.600
39.66	40.0	6.445	6.441	33.831	1026.757	26.597	1026.757	26.598
49.58	50.0	6.460	6.455	33.830	1026.800	26.594	1026.800	26.595
59.49	60.0	6.438	6.432	33.832	1026.850	26.599	1026.851	26.600
69.41	70.0	6.425	6.419	33.831	1026.897	26.599	1026.898	26.601
74.36	75.0	6.425	6.418	33.832	1026.921	26.601	1026.922	26.602
79.32	80.0	6.338	6.331	33.837	1026.959	26.616	1026.960	26.617
89.23	90.0	6.079	6.071	33.907	1027.094	26.704	1027.095	26.705
99.15	100.0	6.094	6.086	33.924	1027.152	26.716	1027.153	26.717
118.97	120.0	6.032	6.022	33.959	1027.279	26.751	1027.281	26.752
123.92	125.0	6.005	5.995	34.007	1027.344	26.792	1027.345	26.794
138.79	140.0	5.599	5.587	34.038	1027.489	26.867	1027.490	26.869
148.70	150.0	5.402	5.390	34.070	1027.585	26.916	1027.586	26.918
158.61	160.0	5.267	5.254	34.128	1027.693	26.978	1027.695	26.980
173.47	175.0	5.251	5.237	34.141	1027.775	26.991	1027.776	26.992
178.43	180.0	5.228	5.213	34.139	1027.799	26.991	1027.801	26.993

211

POTENTIAL TEMPERATURE (°C)



Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.29
 Station: 71 Cast: BOTTLE Time: 4.41 Z
 Position: Lat: 47° 1.000'S Long: 37°49.850'E Depth: 220 m

Bottle Data

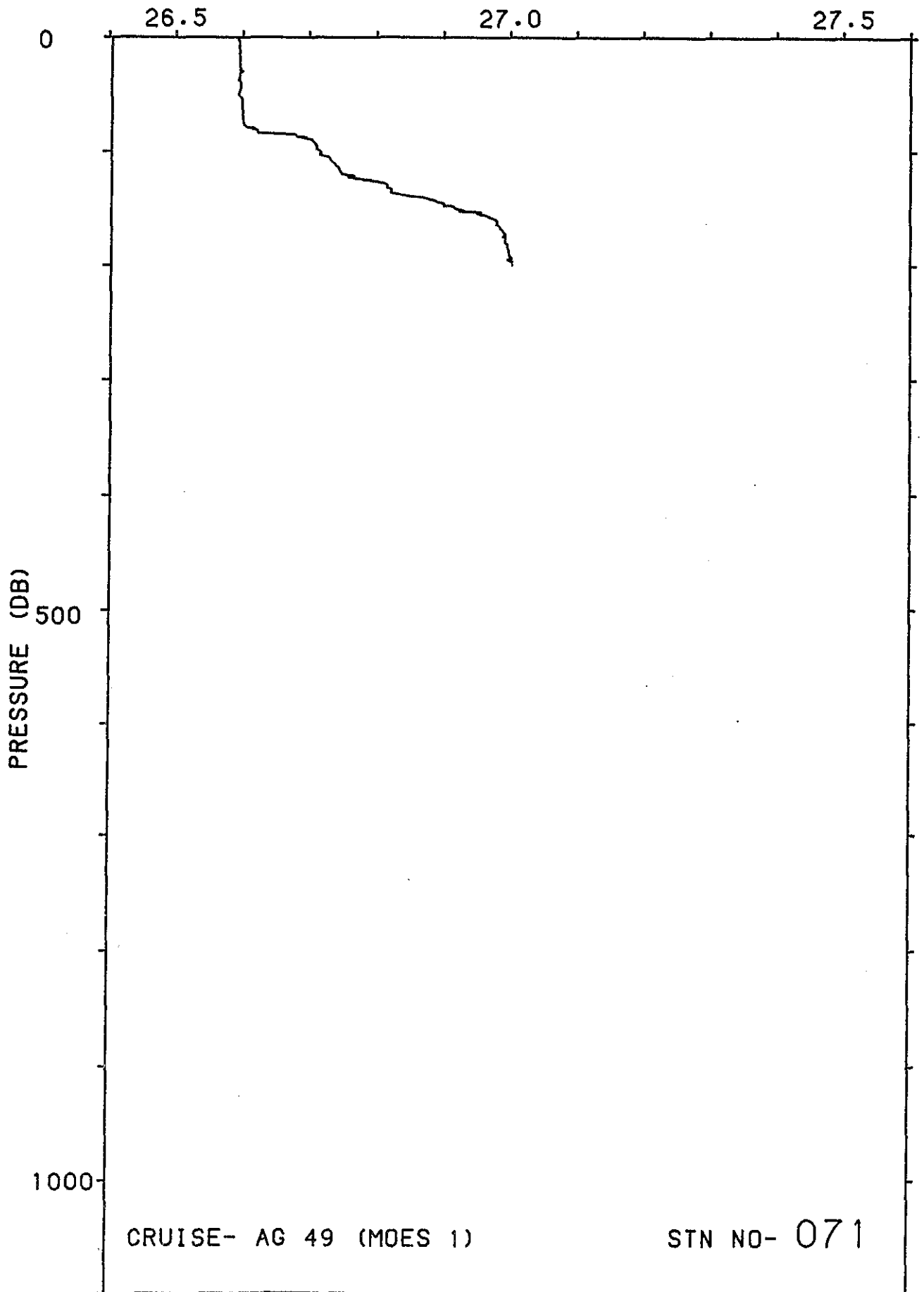
Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
.0	6.46	6.46	33.822	.167	2.37	16.79	.41	.99
6.0	6.46	6.46	33.830	.208	2.39	15.59	.42	1.00
11.0	6.46	6.46	33.831	.131	2.41	15.05	.42	.98
19.0	6.45	6.45	33.831	.063	2.43	14.50	.42	.98
38.0	6.45	6.45	33.831	.150	2.48	14.11	.43	1.02

Production Data

Depth m	Filter size: Light %	Carbon Uptake				Total	Areal Production mg(C).m ⁻² .hr ⁻¹
		0.2 μm	2 μm	20 μm			
		mg(C).m ⁻³ .hr ⁻¹					
.0	100	.228	.048	.128	.404	16.13	
6.0	50	.098	.173	.056	.327		
11.0	25	.187	.367	.134	.689		
19.0	10	.284	.372	.193	.849		
38.0	1	.118	.174	.040	.331		

213

POTENTIAL DENSITY (σ_θ)



CRUISE- AG 49 (MOES 1)

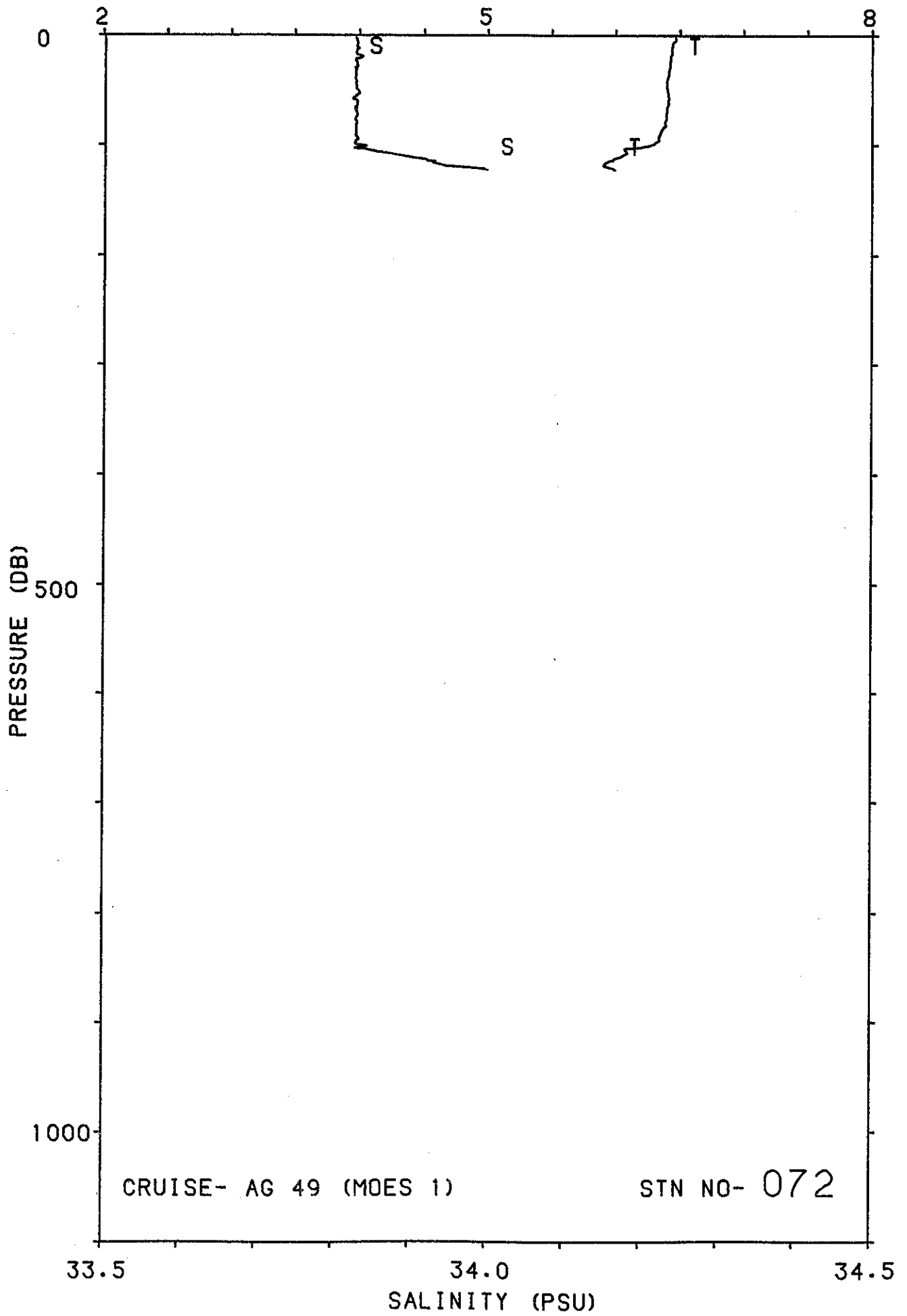
STN NO- 071

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.29
 Station: 72 Cast: CTD UP Time: 6.55 Z
 Position: Lat: 46°59.650'S Long: 37°49.850'E Depth: 143 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_{θ} kg.m ⁻³
.00	.0	6.461	6.461	33.821	1026.562	26.587	1026.562	26.587
4.96	5.0	6.465	6.465	33.830	1026.591	26.593	1026.592	26.594
9.92	10.0	6.443	6.442	33.830	1026.618	26.597	1026.618	26.597
19.83	20.0	6.426	6.424	33.836	1026.671	26.604	1026.671	26.604
24.79	25.0	6.424	6.422	33.830	1026.689	26.599	1026.690	26.599
29.75	30.0	6.425	6.422	33.829	1026.711	26.598	1026.712	26.599
39.66	40.0	6.406	6.403	33.828	1026.759	26.600	1026.760	26.600
49.58	50.0	6.404	6.400	33.830	1026.807	26.602	1026.808	26.602
59.49	60.0	6.414	6.408	33.831	1026.852	26.601	1026.853	26.602
69.41	70.0	6.403	6.397	33.829	1026.898	26.601	1026.899	26.602
74.36	75.0	6.398	6.391	33.829	1026.922	26.602	1026.923	26.603
79.32	80.0	6.386	6.379	33.830	1026.948	26.604	1026.948	26.605
89.23	90.0	6.355	6.347	33.829	1026.997	26.607	1026.998	26.608
99.15	100.0	6.285	6.276	33.835	1027.057	26.621	1027.058	26.622
118.97	120.0	5.948	5.938	33.977	1027.304	26.776	1027.306	26.777

215

POTENTIAL TEMPERATURE (°C)



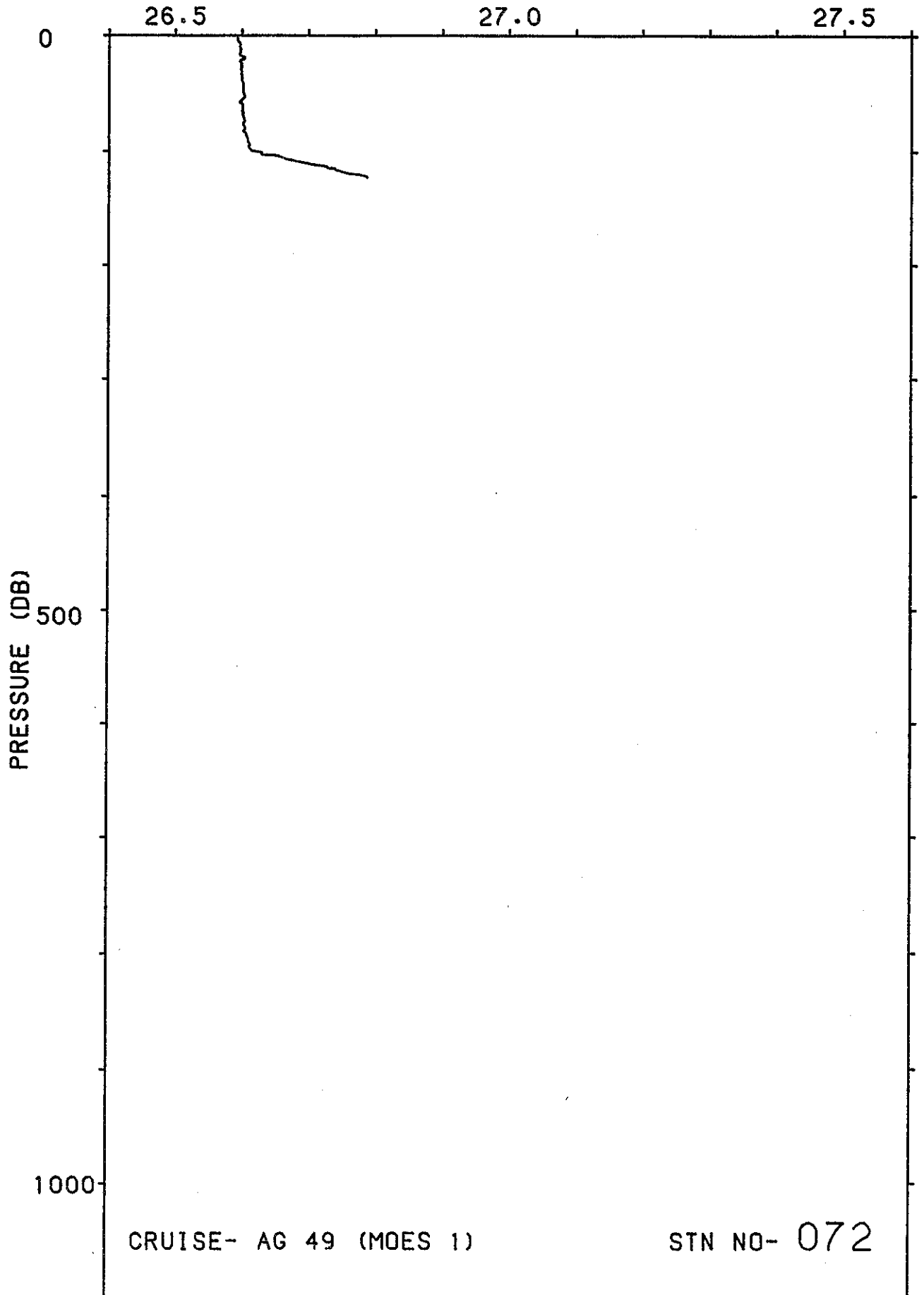
Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.29
Station: 72 Cast: BOTTLE Time: 6.55 Z
Position: Lat: 46°59.650'S Long: 37°49.850'E Depth: 143 m

Bottle Data

Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
.0	6.46	6.46	33.821	.169	2.51	16.30	.44	1.05
40.0	6.41	6.40	33.828	.251	2.47	15.25	.44	1.09
80.0	6.39	6.38	33.830	.112	2.46	14.65	.44	1.07
120.0	5.97	5.96	33.989	.116	2.46	14.29	.43	1.13

217

POTENTIAL DENSITY (σ_θ)

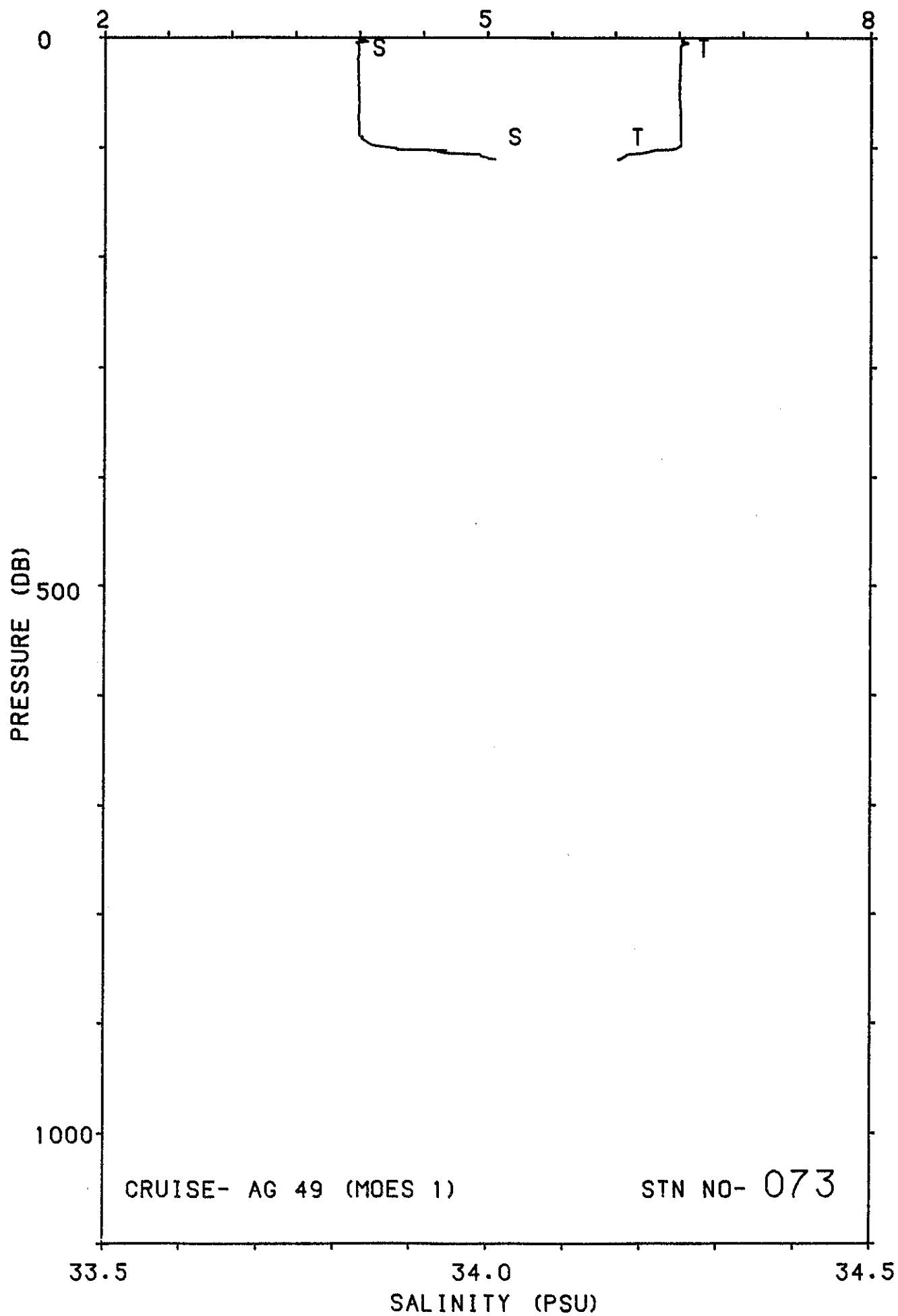


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.29
 Station: 73 Cast: CTD UP Time: 7.42 Z
 Position: Lat: 46°59.240'S Long: 37°49.850'E Depth: 130 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_ρ kg.m ⁻³
.00	.0	6.646	6.646	33.846	1026.557	26.582	1026.558	26.583
4.96	5.0	6.562	6.561	33.829	1026.578	26.580	1026.578	26.580
9.92	10.0	6.514	6.513	33.832	1026.610	26.589	1026.610	26.589
19.83	20.0	6.515	6.513	33.830	1026.655	26.588	1026.655	26.588
24.79	25.0	6.513	6.511	33.831	1026.678	26.588	1026.679	26.589
29.75	30.0	6.512	6.509	33.832	1026.702	26.589	1026.703	26.590
39.66	40.0	6.508	6.505	33.831	1026.748	26.589	1026.749	26.589
49.58	50.0	6.509	6.505	33.832	1026.795	26.590	1026.795	26.590
59.49	60.0	6.513	6.508	33.833	1026.841	26.590	1026.842	26.591
69.41	70.0	6.518	6.511	33.832	1026.886	26.588	1026.887	26.589
74.36	75.0	6.521	6.514	33.831	1026.908	26.587	1026.908	26.588
79.32	80.0	6.522	6.515	33.833	1026.931	26.588	1026.933	26.590
89.23	90.0	6.524	6.516	33.836	1026.980	26.591	1026.981	26.592
99.15	100.0	6.494	6.485	33.873	1027.059	26.624	1027.060	26.625

219

POTENTIAL TEMPERATURE (°C)



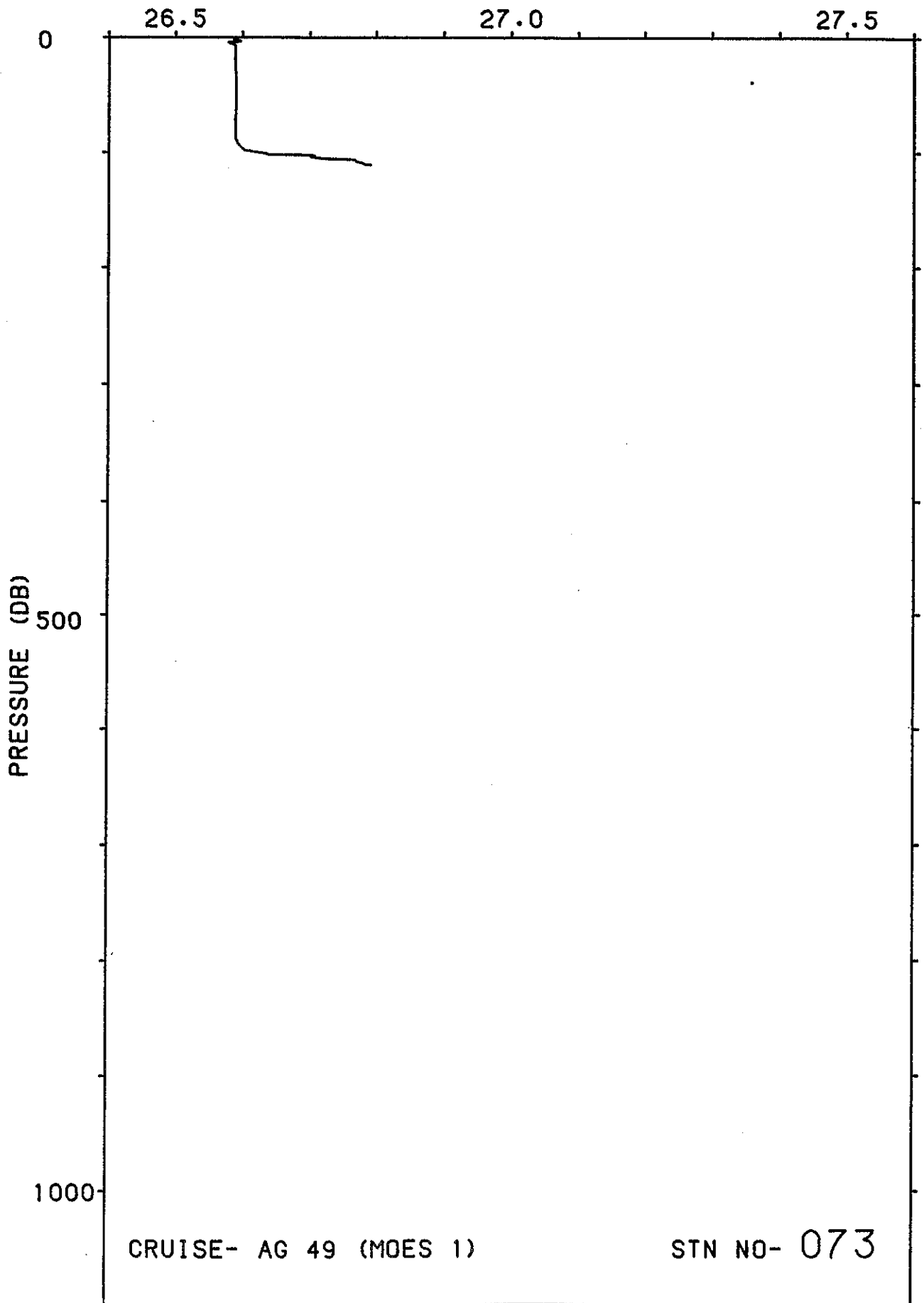
Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.29
 Station: 73 Cast: BOTTLE Time: 7.42 Z
 Position: Lat: 46°59.240'S Long: 37°49.850'E Depth: 130 m

Bottle Data

Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
.0	6.65	6.65	33.846		2.92	13.05	.45	1.11
25.0	6.51	6.51	33.831		2.73	12.19	.45	1.08
50.0	6.51	6.50	33.832		2.76	12.03	.47	1.14
75.0	6.52	6.51	33.832		2.77	11.92	.45	1.11

221

POTENTIAL DENSITY (σ_θ)



CRUISE- AG 49 (MOES 1)

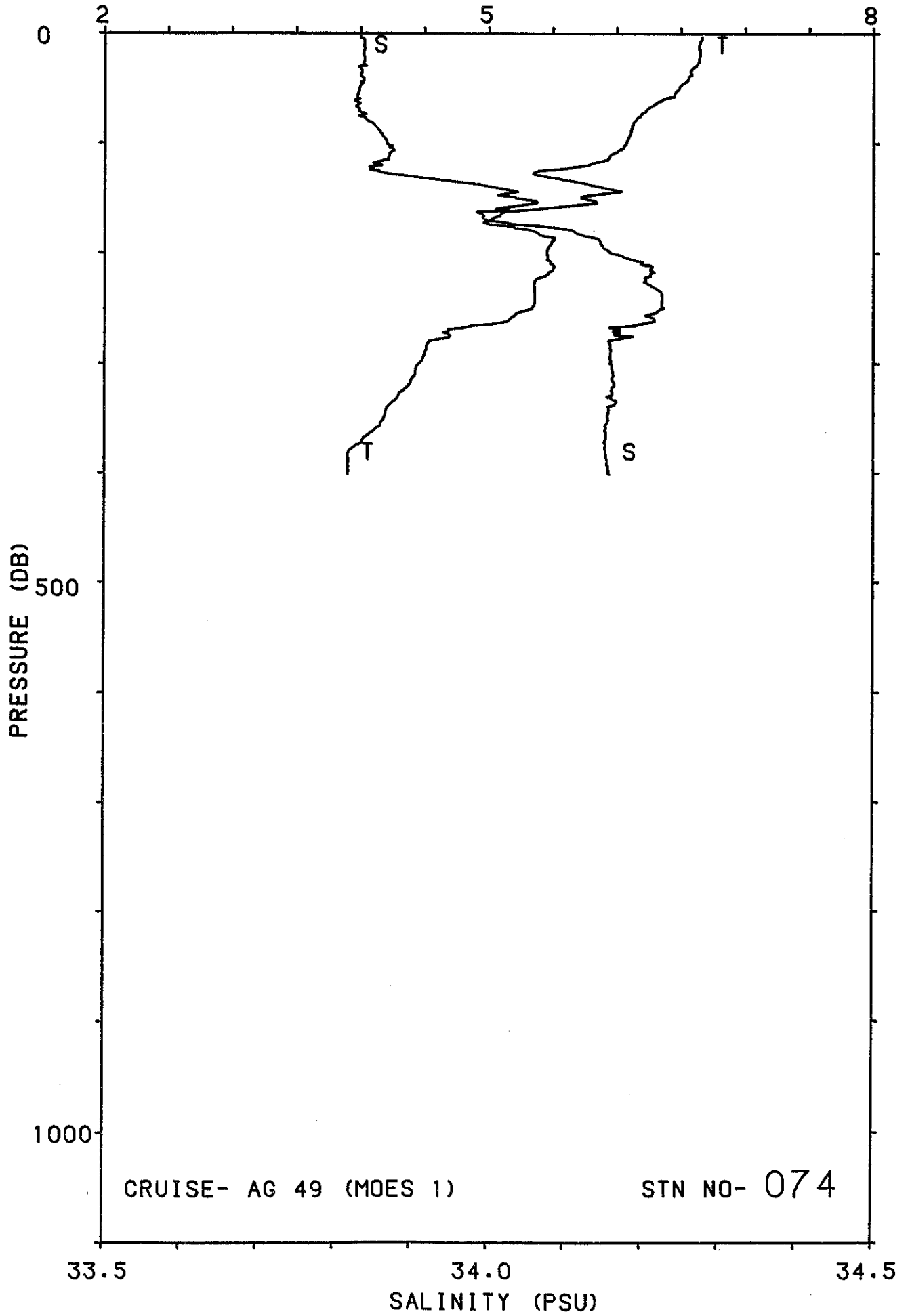
STN NO- 073

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.29
 Station: 74 Cast: CTD UP Time: 10.47 Z
 Position: Lat: 47° 3.000'S Long: 37° 50.000'E Depth: 420 m

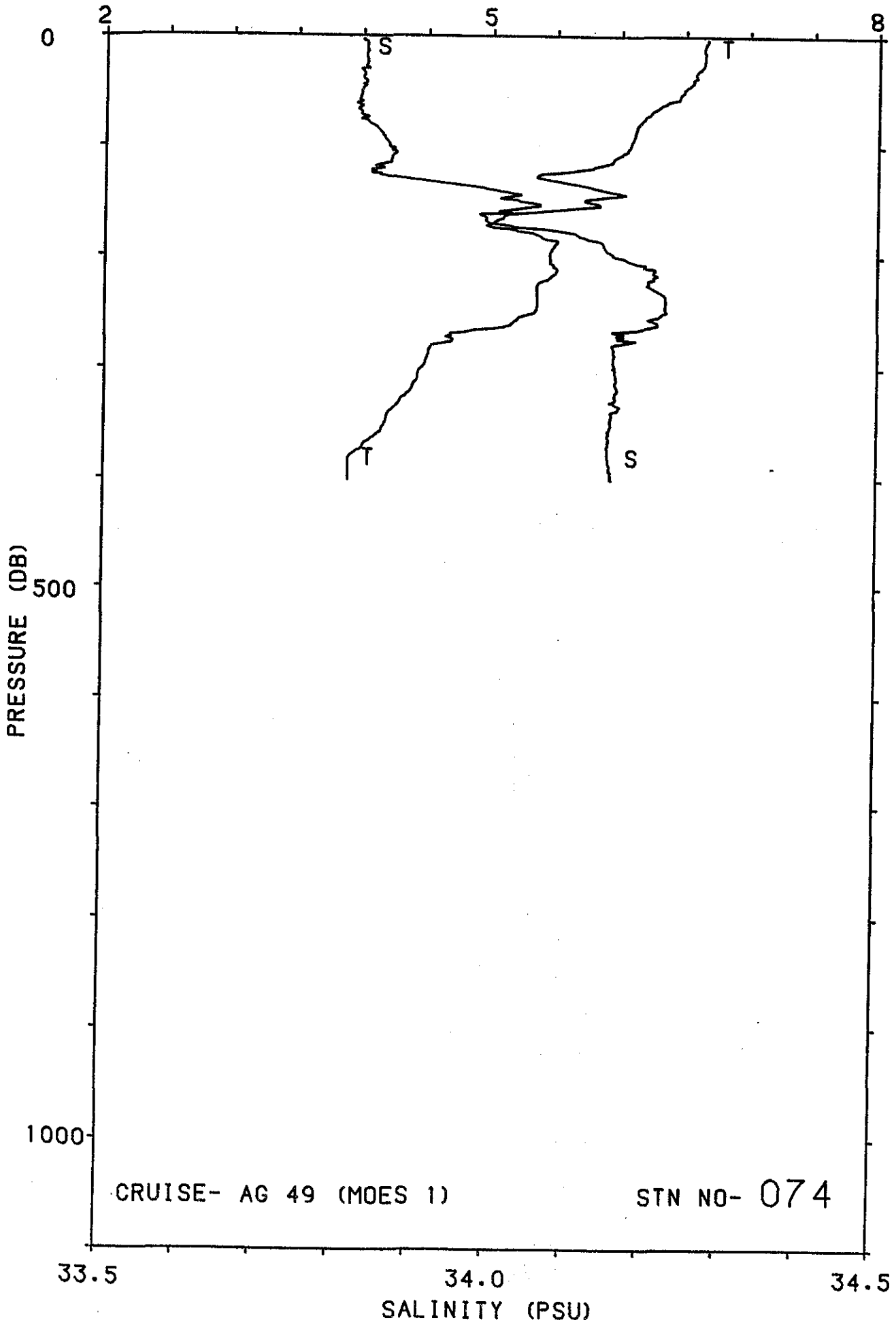
Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_{θ} kg.m ⁻³
.00	.0	6.659	6.659	33.834	1026.546	26.571	1026.546	26.571
4.96	5.0	6.665	6.665	33.837	1026.571	26.573	1026.571	26.573
9.92	10.0	6.646	6.645	33.838	1026.597	26.576	1026.597	26.576
19.83	20.0	6.647	6.645	33.837	1026.643	26.576	1026.643	26.576
24.79	25.0	6.642	6.639	33.838	1026.667	26.577	1026.667	26.577
29.75	30.0	6.612	6.609	33.836	1026.692	26.579	1026.693	26.580
39.66	40.0	6.562	6.558	33.836	1026.745	26.586	1026.745	26.586
49.58	50.0	6.490	6.485	33.832	1026.797	26.592	1026.798	26.593
59.49	60.0	6.357	6.352	33.829	1026.859	26.607	1026.859	26.608
69.41	70.0	6.237	6.231	33.831	1026.922	26.624	1026.922	26.625
74.36	75.0	6.190	6.184	33.833	1026.953	26.632	1026.953	26.632
79.32	80.0	6.147	6.140	33.843	1026.989	26.645	1026.990	26.646
89.23	90.0	6.118	6.110	33.859	1027.052	26.662	1027.052	26.662
99.15	100.0	6.082	6.074	33.868	1027.109	26.673	1027.110	26.674
118.97	120.0	5.797	5.787	33.860	1027.231	26.702	1027.232	26.703
123.92	125.0	5.452	5.442	33.849	1027.288	26.735	1027.289	26.736
138.79	140.0	5.861	5.850	34.001	1027.427	26.806	1027.428	26.807
148.70	150.0	5.736	5.724	34.035	1027.515	26.848	1027.517	26.850
158.61	160.0	5.412	5.399	34.009	1027.581	26.867	1027.583	26.868
173.47	175.0	5.072	5.059	34.047	1027.722	26.937	1027.723	26.938
178.43	180.0	5.348	5.334	34.109	1027.760	26.953	1027.762	26.955
198.24	200.0	5.473	5.457	34.159	1027.876	26.978	1027.879	26.980
218.06	220.0	5.472	5.454	34.210	1028.009	27.019	1028.011	27.021
237.87	240.0	5.378	5.359	34.226	1028.126	27.042	1028.128	27.045
247.77	250.0	5.362	5.342	34.227	1028.175	27.046	1028.177	27.048
257.68	260.0	5.186	5.165	34.215	1028.233	27.056	1028.235	27.059
277.49	280.0	4.561	4.540	34.157	1028.354	27.081	1028.356	27.083
297.29	300.0	4.487	4.465	34.158	1028.456	27.090	1028.458	27.092
317.10	320.0	4.404	4.381	34.163	1028.562	27.103	1028.564	27.105
336.90	340.0	4.237	4.213	34.155	1028.667	27.114	1028.670	27.117
346.80	350.0	4.210	4.185	34.155	1028.717	27.117	1028.719	27.120
356.70	360.0	4.144	4.119	34.153	1028.768	27.123	1028.771	27.125
376.50	380.0	3.942	3.916	34.152	1028.883	27.143	1028.886	27.145
396.29	400.0	3.937	3.909	34.156	1028.979	27.146	1028.982	27.149

223

POTENTIAL TEMPERATURE (°C)



POTENTIAL TEMPERATURE (°C)



CRUISE- AG 49 (MOES 1)

STN NO- 074

225

POTENTIAL DENSITY (σ_θ)

26.5

27.0

27.5

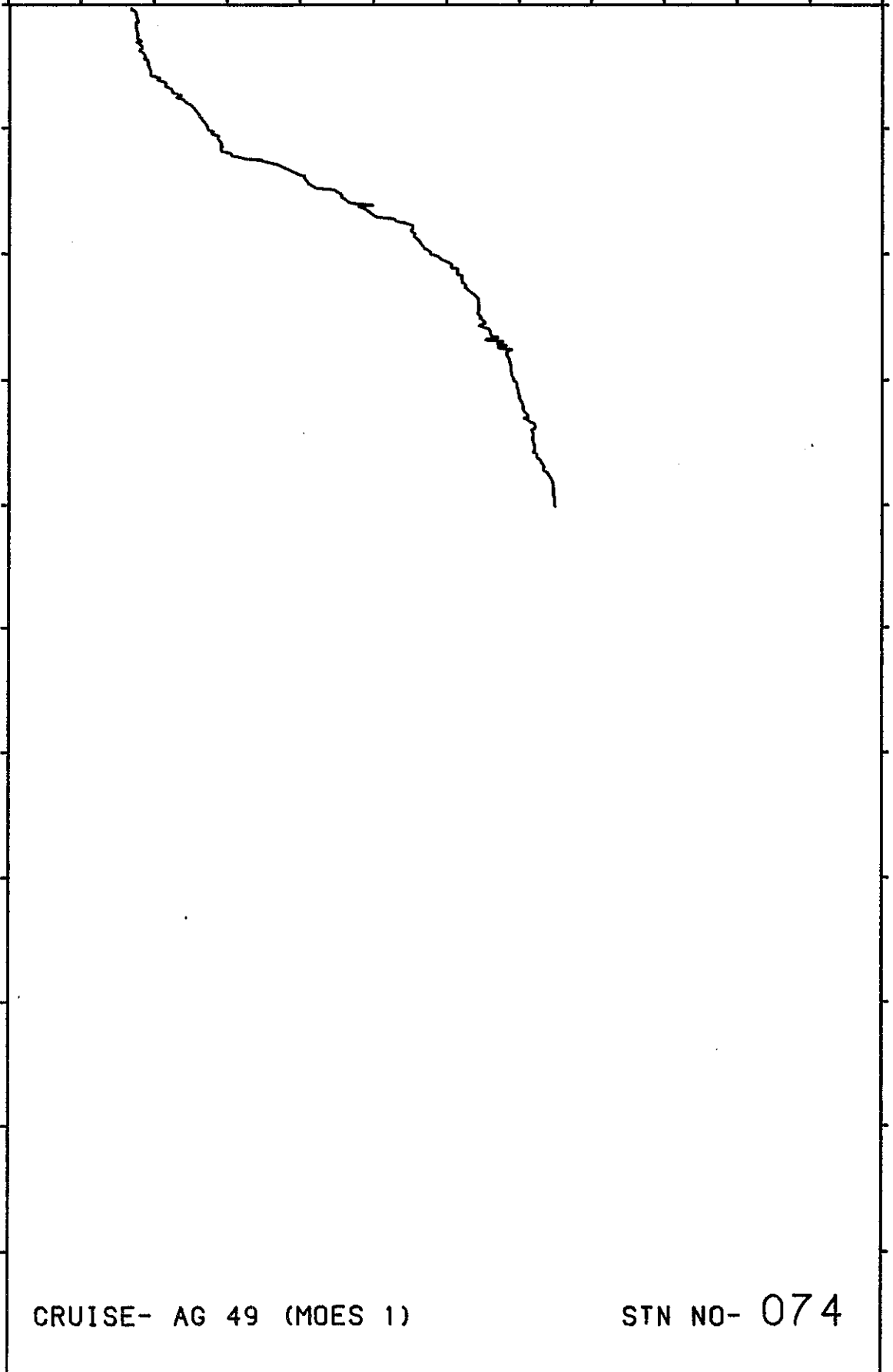
0

PRESSURE (DB)
500

1000

CRUISE- AG 49 (MOES 1)

STN NO- 074

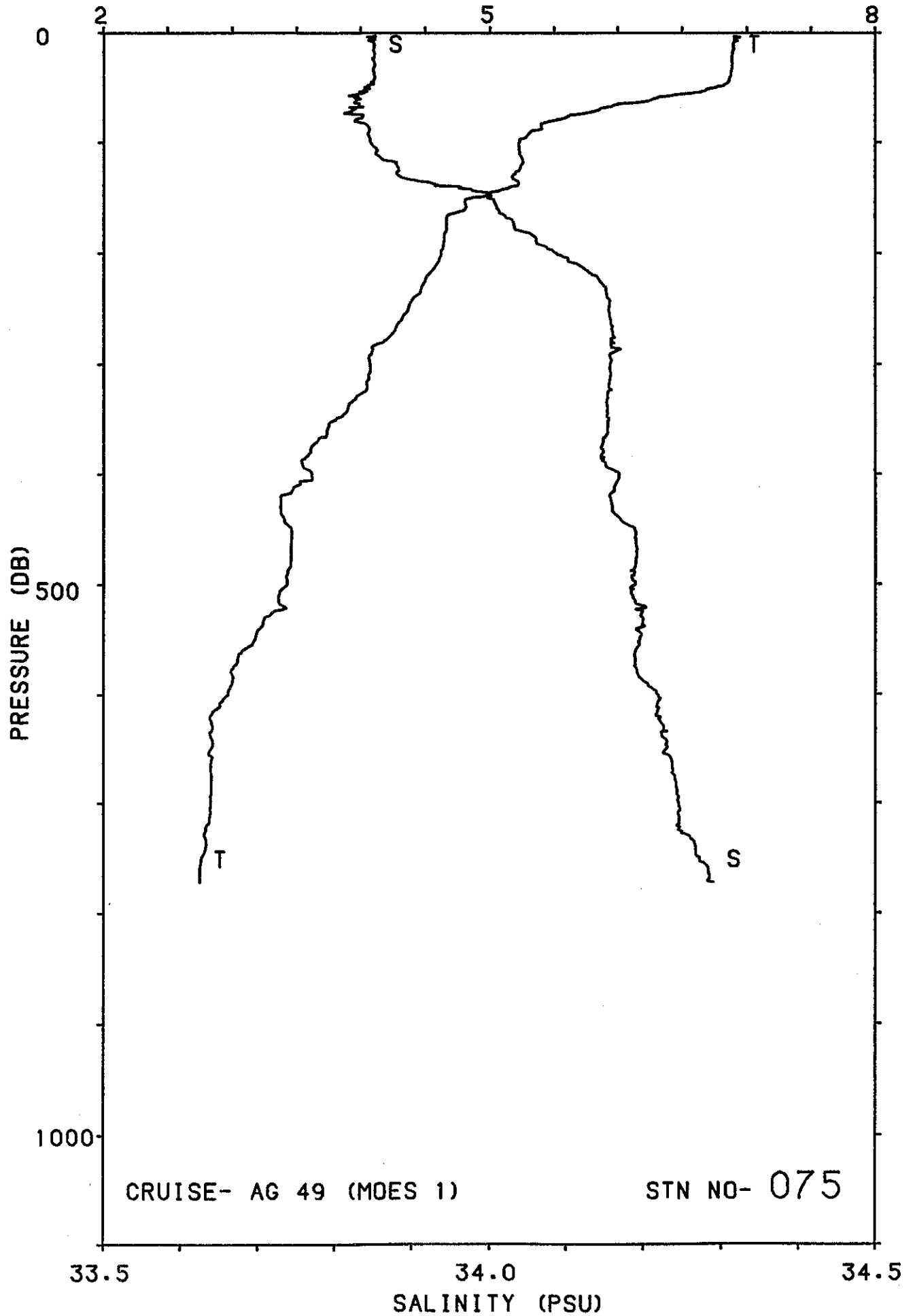


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.29
 Station: 75 Cast: CTD UP Time: 11.50 Z
 Position: Lat: 47° 6.000'S Long: 37° 50.000'E Depth: 790 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.668	6.668	33.910	1026.605	26.630	1026.605	26.630
4.96	5.0	6.913	6.912	33.849	1026.547	26.549	1026.547	26.549
9.92	10.0	6.899	6.898	33.850	1026.573	26.552	1026.573	26.552
19.83	20.0	6.890	6.888	33.851	1026.621	26.554	1026.621	26.554
24.79	25.0	6.889	6.887	33.850	1026.643	26.553	1026.643	26.553
29.75	30.0	6.892	6.889	33.852	1026.667	26.554	1026.668	26.555
39.66	40.0	6.878	6.875	33.851	1026.715	26.556	1026.715	26.556
49.58	50.0	6.763	6.758	33.839	1026.767	26.562	1026.767	26.562
59.49	60.0	6.289	6.284	33.830	1026.868	26.617	1026.869	26.617
69.41	70.0	5.860	5.854	33.826	1026.965	26.667	1026.967	26.668
74.36	75.0	5.643	5.637	33.837	1027.024	26.703	1027.025	26.704
79.32	80.0	5.504	5.498	33.827	1027.057	26.712	1027.057	26.712
89.23	90.0	5.328	5.321	33.845	1027.138	26.747	1027.139	26.748
99.15	100.0	5.233	5.225	33.847	1027.197	26.759	1027.198	26.760
118.97	120.0	5.254	5.245	33.880	1027.313	26.783	1027.315	26.784
123.92	125.0	5.233	5.224	33.883	1027.342	26.788	1027.343	26.789
138.79	140.0	5.167	5.156	33.962	1027.481	26.858	1027.483	26.860
148.70	150.0	4.867	4.856	33.998	1027.591	26.921	1027.593	26.922
158.61	160.0	4.825	4.813	34.009	1027.652	26.935	1027.653	26.936
173.47	175.0	4.681	4.668	34.031	1027.755	26.968	1027.756	26.969
178.43	180.0	4.681	4.668	34.039	1027.784	26.974	1027.786	26.976
198.24	200.0	4.641	4.626	34.086	1027.918	27.016	1027.920	27.018
218.06	220.0	4.545	4.529	34.133	1028.059	27.064	1028.061	27.066
237.87	240.0	4.432	4.414	34.152	1028.180	27.091	1028.182	27.093
247.77	250.0	4.391	4.373	34.155	1028.233	27.098	1028.235	27.100
257.68	260.0	4.338	4.319	34.157	1028.287	27.105	1028.289	27.107
277.49	280.0	4.202	4.182	34.157	1028.395	27.120	1028.397	27.122
297.29	300.0	4.097	4.076	34.157	1028.499	27.130	1028.502	27.133
317.10	320.0	4.075	4.052	34.154	1028.592	27.131	1028.595	27.133
336.90	340.0	3.930	3.907	34.153	1028.700	27.145	1028.702	27.147
346.80	350.0	3.839	3.815	34.154	1028.757	27.155	1028.760	27.157
356.70	360.0	3.767	3.743	34.153	1028.810	27.161	1028.813	27.163
376.50	380.0	3.638	3.612	34.148	1028.913	27.170	1028.916	27.172
396.29	400.0	3.647	3.620	34.169	1029.021	27.185	1029.024	27.188
445.78	450.0	3.492	3.462	34.188	1029.285	27.216	1029.288	27.219
495.25	500.0	3.460	3.427	34.188	1029.520	27.219	1029.523	27.222
544.71	550.0	3.219	3.183	34.195	1029.782	27.247	1029.786	27.251
594.15	600.0	3.009	2.971	34.218	1030.054	27.285	1030.058	27.289
643.59	650.0	2.882	2.841	34.230	1030.309	27.306	1030.313	27.310
693.01	700.0	2.884	2.839	34.245	1030.552	27.318	1030.556	27.322
742.42	750.0	2.817	2.769	34.272	1030.811	27.345	1030.816	27.350

227

POTENTIAL TEMPERATURE (°C)

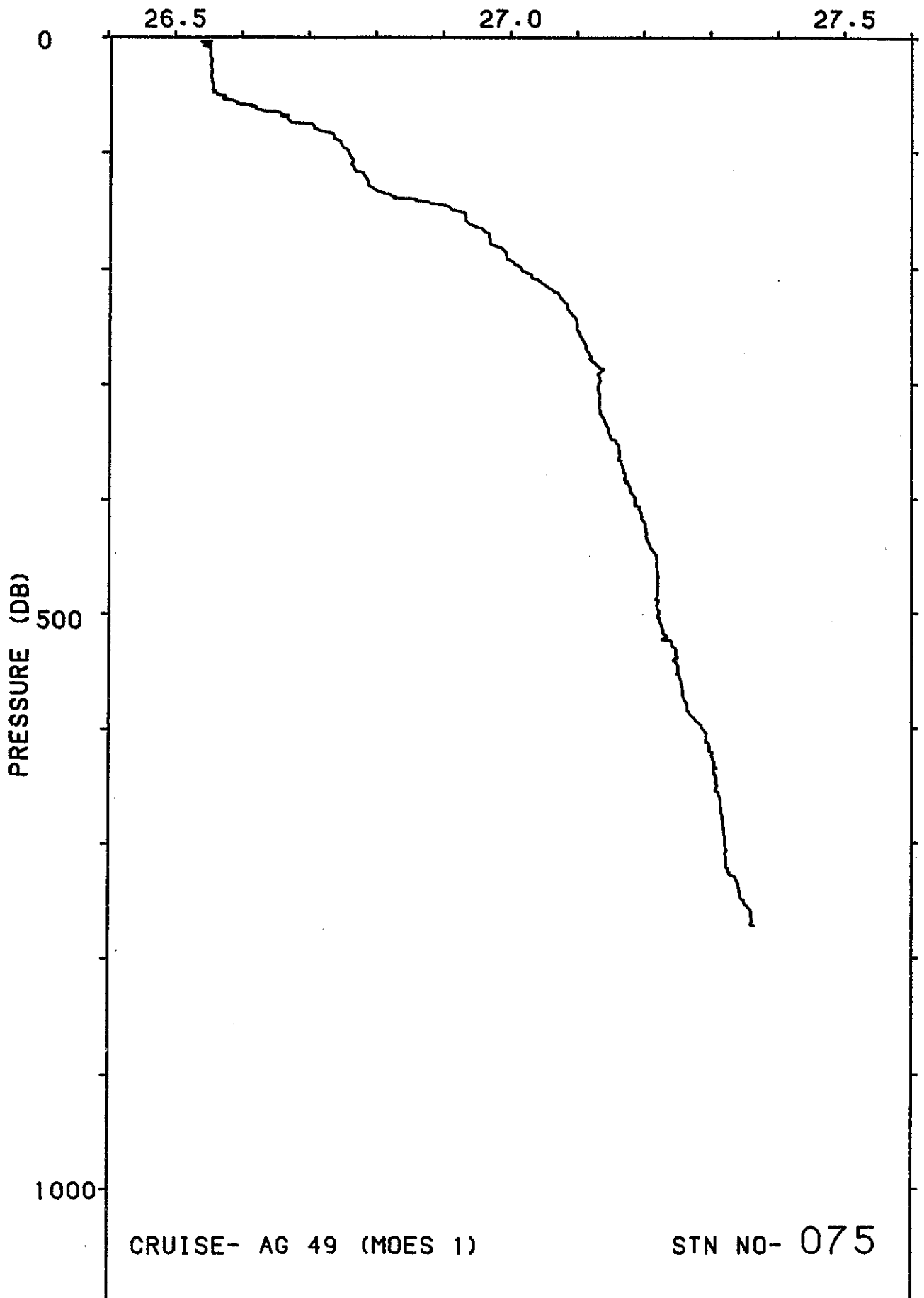


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.29
Station: 75 Cast: BOTTLE Time: 11.50 Z
Position: Lat: 47° 6.000'S Long: 37° 50.000'E Depth: 790 m

NO BOTTLE DATA

229

POTENTIAL DENSITY (σ_t)



CRUISE- AG 49 (MOES 1)

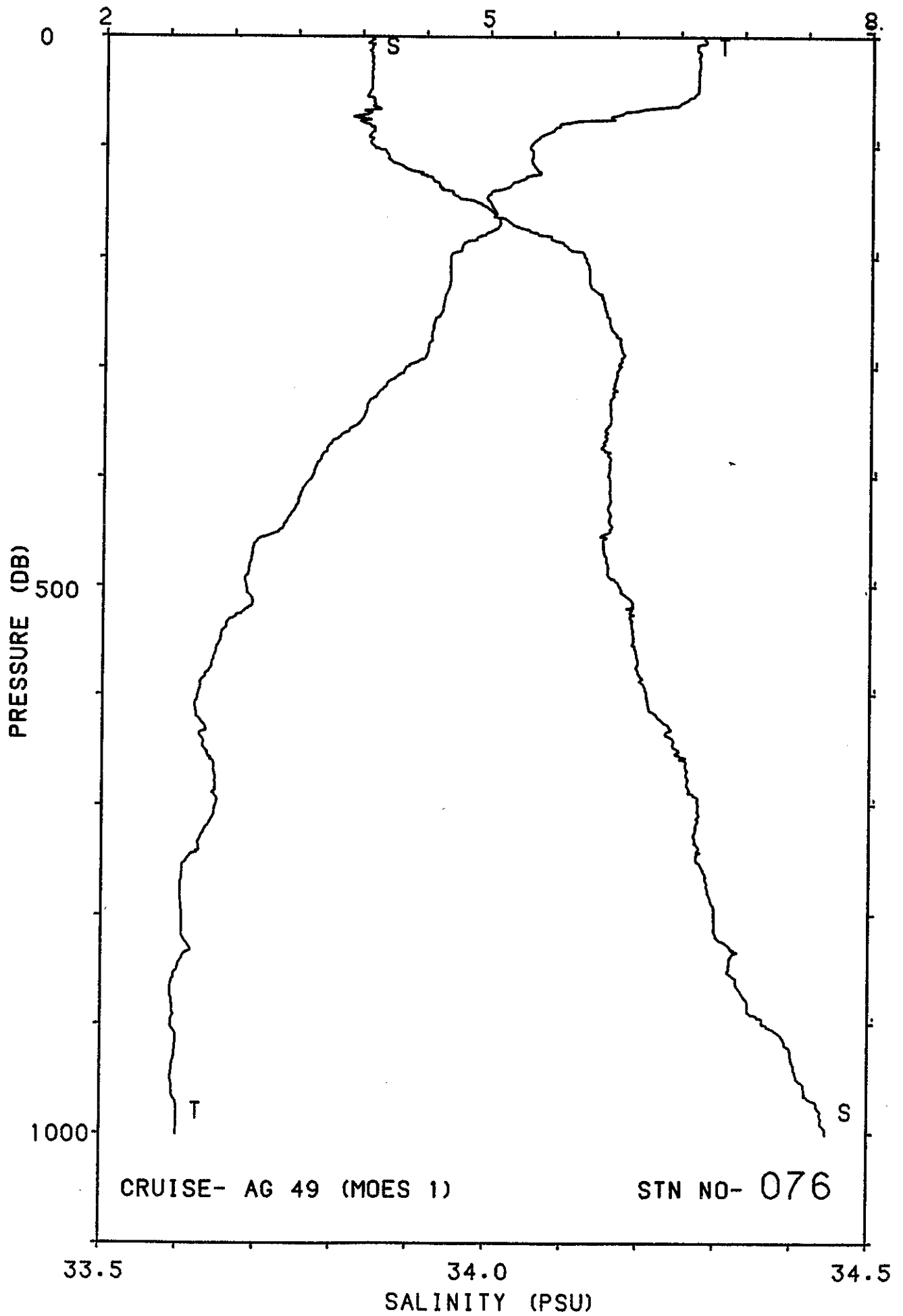
STN NO- 075

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.29
 Station: 76 Cast: CTD UP Time: 12.56 Z
 Position: Lat: 47° 8.000'S Long: 37° 50.000'E Depth: 2200 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.684	6.684	33.842	1026.549	26.574	1026.549	26.574
4.96	5.0	6.697	6.697	33.844	1026.572	26.574	1026.572	26.574
9.92	10.0	6.628	6.627	33.845	1026.605	26.584	1026.605	26.584
19.83	20.0	6.643	6.642	33.845	1026.650	26.583	1026.649	26.582
24.79	25.0	6.648	6.646	33.847	1026.673	26.583	1026.673	26.583
29.75	30.0	6.647	6.644	33.847	1026.697	26.584	1026.697	26.584
39.66	40.0	6.642	6.639	33.846	1026.742	26.583	1026.743	26.584
49.58	50.0	6.641	6.637	33.843	1026.786	26.581	1026.786	26.581
59.49	60.0	6.512	6.507	33.849	1026.854	26.602	1026.854	26.603
69.41	70.0	6.056	6.050	33.843	1026.955	26.657	1026.955	26.657
74.36	75.0	5.985	5.979	33.839	1026.984	26.663	1026.984	26.663
79.32	80.0	5.554	5.548	33.843	1027.063	26.718	1027.064	26.719
89.23	90.0	5.414	5.407	33.843	1027.127	26.735	1027.127	26.736
99.14	100.0	5.323	5.315	33.850	1027.189	26.751	1027.190	26.752
118.97	120.0	5.377	5.368	33.893	1027.309	26.779	1027.310	26.780
123.92	125.0	5.362	5.352	33.916	1027.352	26.799	1027.353	26.800
138.79	140.0	5.033	5.023	33.952	1027.489	26.865	1027.490	26.867
148.70	150.0	5.013	5.001	33.985	1027.564	26.895	1027.565	26.896
158.61	160.0	5.066	5.054	34.006	1027.621	26.905	1027.622	26.906
173.47	175.0	5.042	5.029	34.052	1027.729	26.944	1027.731	26.945
178.43	180.0	4.952	4.938	34.075	1027.781	26.972	1027.783	26.974
198.24	200.0	4.710	4.695	34.126	1027.942	27.040	1027.944	27.042
218.06	220.0	4.715	4.699	34.132	1028.039	27.044	1028.041	27.046
237.87	240.0	4.666	4.648	34.151	1028.152	27.065	1028.154	27.067
247.77	250.0	4.646	4.628	34.155	1028.204	27.070	1028.206	27.072
257.68	260.0	4.592	4.573	34.159	1028.260	27.080	1028.262	27.081
277.48	280.0	4.553	4.533	34.173	1028.368	27.095	1028.370	27.097
297.29	300.0	4.376	4.354	34.173	1028.480	27.114	1028.483	27.116
317.09	320.0	4.193	4.170	34.166	1028.588	27.128	1028.591	27.130
336.90	340.0	4.073	4.049	34.161	1028.690	27.136	1028.693	27.139
346.80	350.0	4.024	3.999	34.162	1028.742	27.142	1028.746	27.145
356.70	360.0	3.896	3.871	34.157	1028.800	27.152	1028.802	27.154
376.50	380.0	3.731	3.705	34.158	1028.910	27.168	1028.914	27.171
396.29	400.0	3.654	3.626	34.160	1029.014	27.178	1029.016	27.181
445.77	450.0	3.396	3.366	34.162	1029.274	27.204	1029.278	27.207
495.25	500.0	3.151	3.118	34.173	1029.541	27.236	1029.544	27.239
544.70	550.0	2.956	2.921	34.193	1029.808	27.270	1029.812	27.273
594.15	600.0	2.786	2.748	34.208	1030.070	27.297	1030.074	27.300
643.59	650.0	2.846	2.805	34.251	1030.329	27.326	1030.334	27.330
693.01	700.0	2.936	2.891	34.278	1030.573	27.340	1030.577	27.344
742.42	750.0	2.713	2.666	34.276	1030.826	27.358	1030.830	27.362
791.82	800.0	2.682	2.631	34.299	1031.078	27.379	1031.083	27.383
841.21	850.0	2.653	2.599	34.319	1031.327	27.397	1031.333	27.402
890.59	900.0	2.614	2.556	34.363	1031.597	27.436	1031.603	27.441
939.95	950.0	2.613	2.552	34.408	1031.863	27.471	1031.870	27.477
989.31	1000.0	2.666	2.601	34.446	1032.117	27.497	1032.124	27.503

231

POTENTIAL TEMPERATURE (°C)

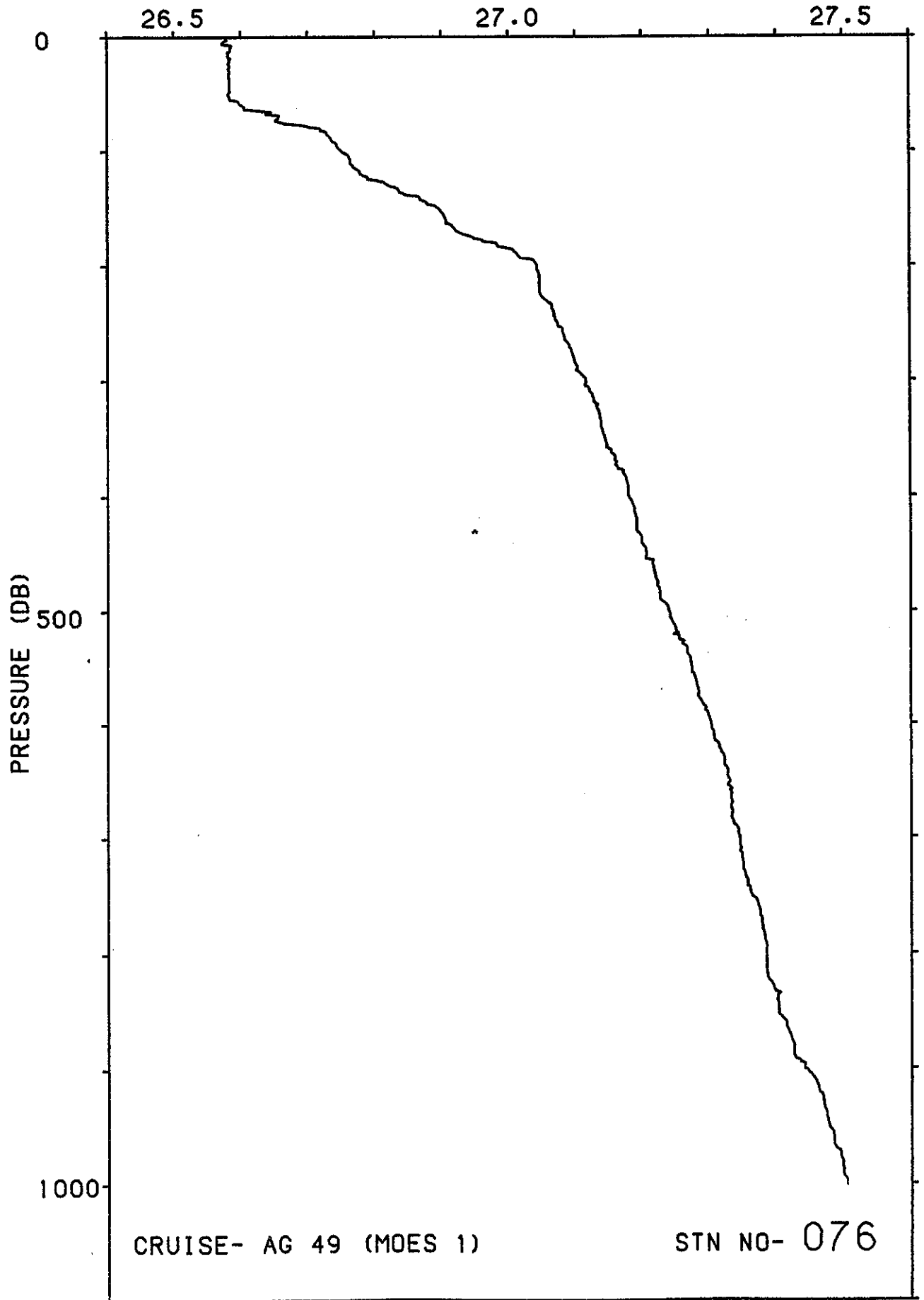


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.29
Station: 76 Cast: BOTTLE Time: 12.56 Z
Position: Lat: 47° 8.000'S Long: 37°50.000'E Depth: 2200 m

NO BOTTLE DATA

233

POTENTIAL DENSITY (σ_θ)



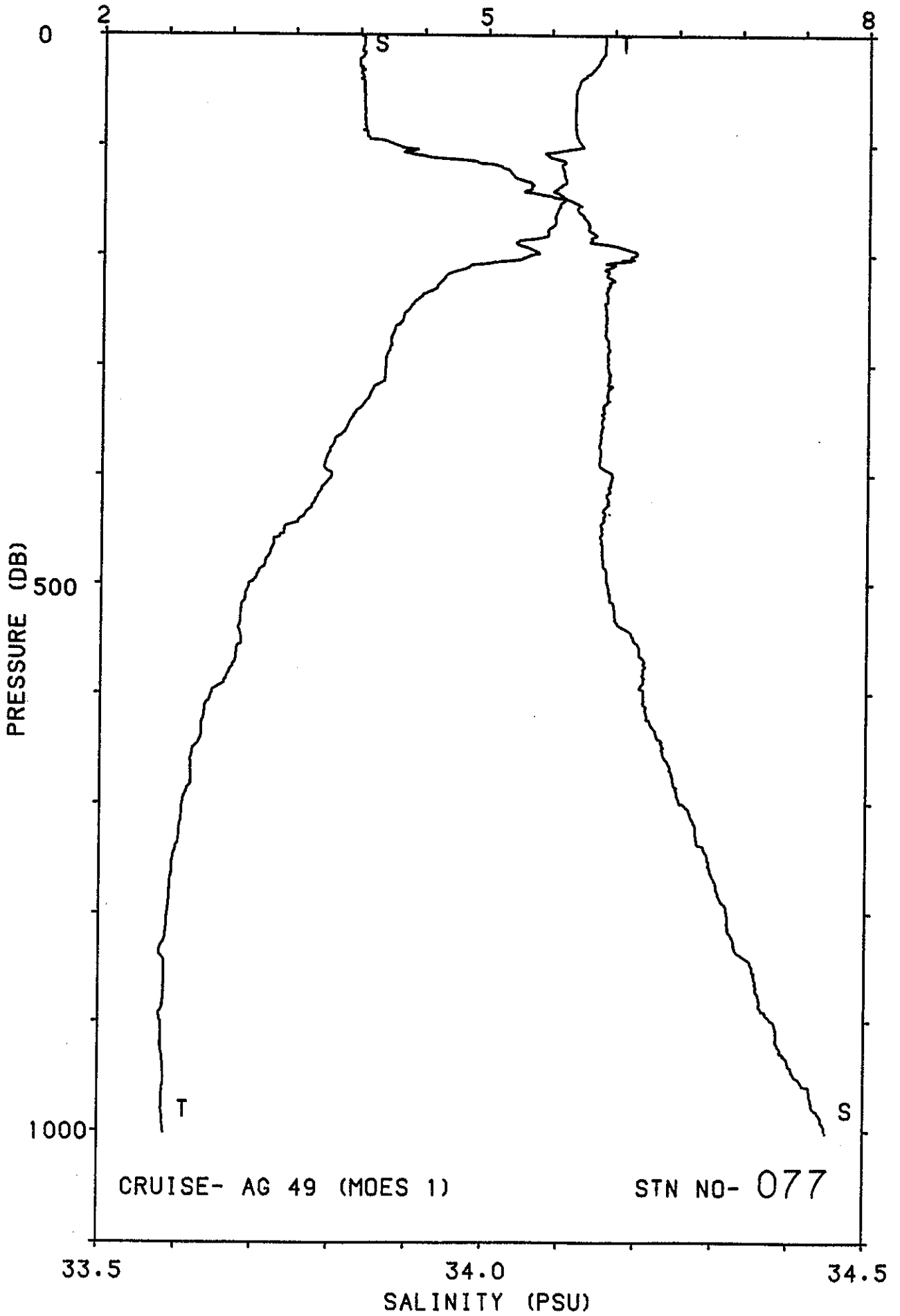
CRUISE- AG 49 (MOES 1)

STN NO- 076

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.29
 Station: 77 Cast: CTD UP Time: 14.36 Z
 Position: Lat: 47°12.000'S Long: 37°50.000'E Depth: 3000 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ _t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ _ρ kg.m ⁻³
.00	.0	5.932	5.932	33.831	1026.638	26.663	1026.638	26.663
4.96	5.0	5.926	5.926	33.838	1026.667	26.669	1026.667	26.669
9.92	10.0	5.922	5.921	33.838	1026.690	26.669	1026.691	26.669
19.83	20.0	5.901	5.900	33.837	1026.738	26.671	1026.739	26.671
24.79	25.0	5.875	5.873	33.833	1026.761	26.671	1026.762	26.671
29.75	30.0	5.847	5.845	33.836	1026.790	26.677	1026.791	26.677
39.66	40.0	5.745	5.742	33.834	1026.848	26.688	1026.848	26.688
49.58	50.0	5.701	5.697	33.838	1026.903	26.697	1026.903	26.697
59.49	60.0	5.693	5.688	33.838	1026.950	26.698	1026.950	26.698
69.41	70.0	5.694	5.688	33.839	1026.997	26.699	1026.997	26.699
74.36	75.0	5.693	5.687	33.839	1027.020	26.698	1027.021	26.699
79.32	80.0	5.695	5.688	33.839	1027.043	26.698	1027.044	26.699
89.23	90.0	5.702	5.695	33.843	1027.091	26.700	1027.092	26.701
99.14	100.0	5.753	5.745	33.882	1027.161	26.725	1027.163	26.726
118.97	120.0	5.595	5.585	34.020	1027.383	26.853	1027.384	26.855
123.92	125.0	5.612	5.602	34.031	1027.412	26.860	1027.414	26.861
138.79	140.0	5.552	5.541	34.055	1027.508	26.886	1027.509	26.888
148.70	150.0	5.619	5.607	34.109	1027.589	26.921	1027.590	26.922
158.61	160.0	5.565	5.552	34.120	1027.650	26.936	1027.652	26.938
173.47	175.0	5.511	5.497	34.133	1027.736	26.953	1027.738	26.955
178.42	180.0	5.495	5.481	34.141	1027.767	26.961	1027.769	26.963
198.24	200.0	5.358	5.342	34.194	1027.919	27.020	1027.921	27.021
218.05	220.0	4.688	4.671	34.160	1028.064	27.070	1028.066	27.071
237.87	240.0	4.478	4.460	34.159	1028.180	27.092	1028.182	27.094
247.77	250.0	4.403	4.385	34.158	1028.234	27.099	1028.236	27.101
257.67	260.0	4.357	4.338	34.158	1028.285	27.104	1028.288	27.106
277.48	280.0	4.275	4.255	34.160	1028.389	27.114	1028.391	27.116
297.29	300.0	4.233	4.212	34.160	1028.486	27.119	1028.489	27.121
317.09	320.0	4.144	4.121	34.162	1028.590	27.130	1028.593	27.132
336.89	340.0	4.025	4.001	34.154	1028.690	27.136	1028.693	27.138
346.79	350.0	3.966	3.942	34.152	1028.742	27.141	1028.744	27.143
356.69	360.0	3.922	3.896	34.152	1028.793	27.145	1028.795	27.147
376.49	380.0	3.803	3.777	34.151	1028.897	27.156	1028.900	27.158
396.29	400.0	3.827	3.800	34.166	1028.999	27.165	1029.002	27.168
445.77	450.0	3.464	3.434	34.153	1029.260	27.191	1029.263	27.194
495.24	500.0	3.189	3.157	34.161	1029.527	27.223	1029.531	27.226
544.70	550.0	3.131	3.095	34.195	1029.792	27.255	1029.796	27.259
594.15	600.0	2.906	2.868	34.207	1030.057	27.286	1030.061	27.289
643.58	650.0	2.764	2.723	34.233	1030.324	27.319	1030.328	27.322
693.01	700.0	2.691	2.647	34.259	1030.583	27.346	1030.588	27.350
742.42	750.0	2.620	2.573	34.292	1030.848	27.379	1030.853	27.383
791.82	800.0	2.586	2.535	34.319	1031.104	27.403	1031.109	27.407
841.21	850.0	2.564	2.511	34.353	1031.364	27.432	1031.370	27.437
890.58	900.0	2.545	2.488	34.380	1031.618	27.455	1031.624	27.460
939.95	950.0	2.573	2.512	34.408	1031.868	27.476	1031.874	27.481
989.30	1000.0	2.571	2.507	34.450	1032.131	27.509	1032.138	27.515

POTENTIAL TEMPERATURE (°C)

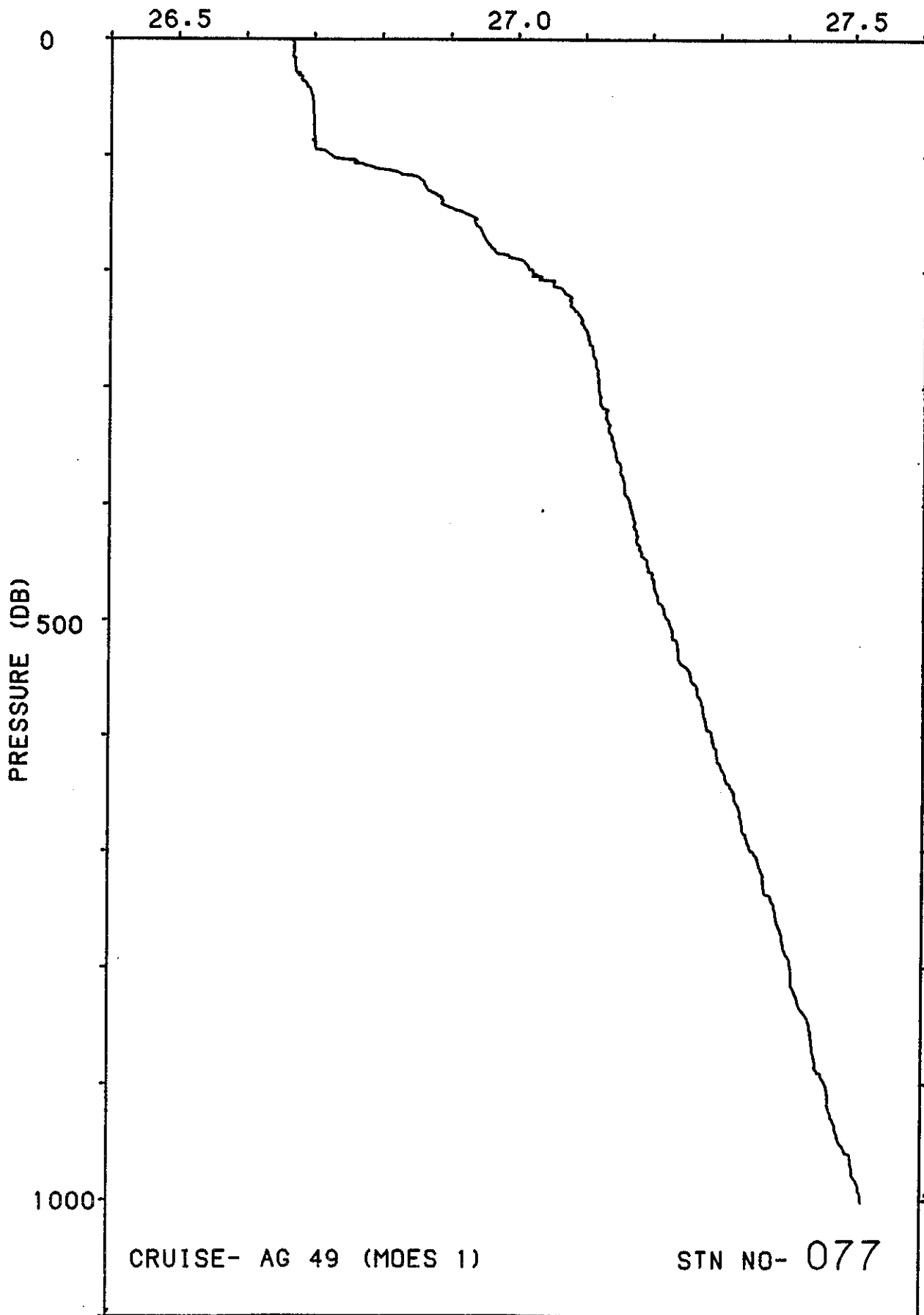


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.29
Station: 77 Cast: BOTTLE Time: 14.36 Z
Position: Lat: 47° 12.000'S Long: 37° 50.000'E Depth: 3000 m

NO BOTTLE DATA

237

POTENTIAL DENSITY (σ_θ)



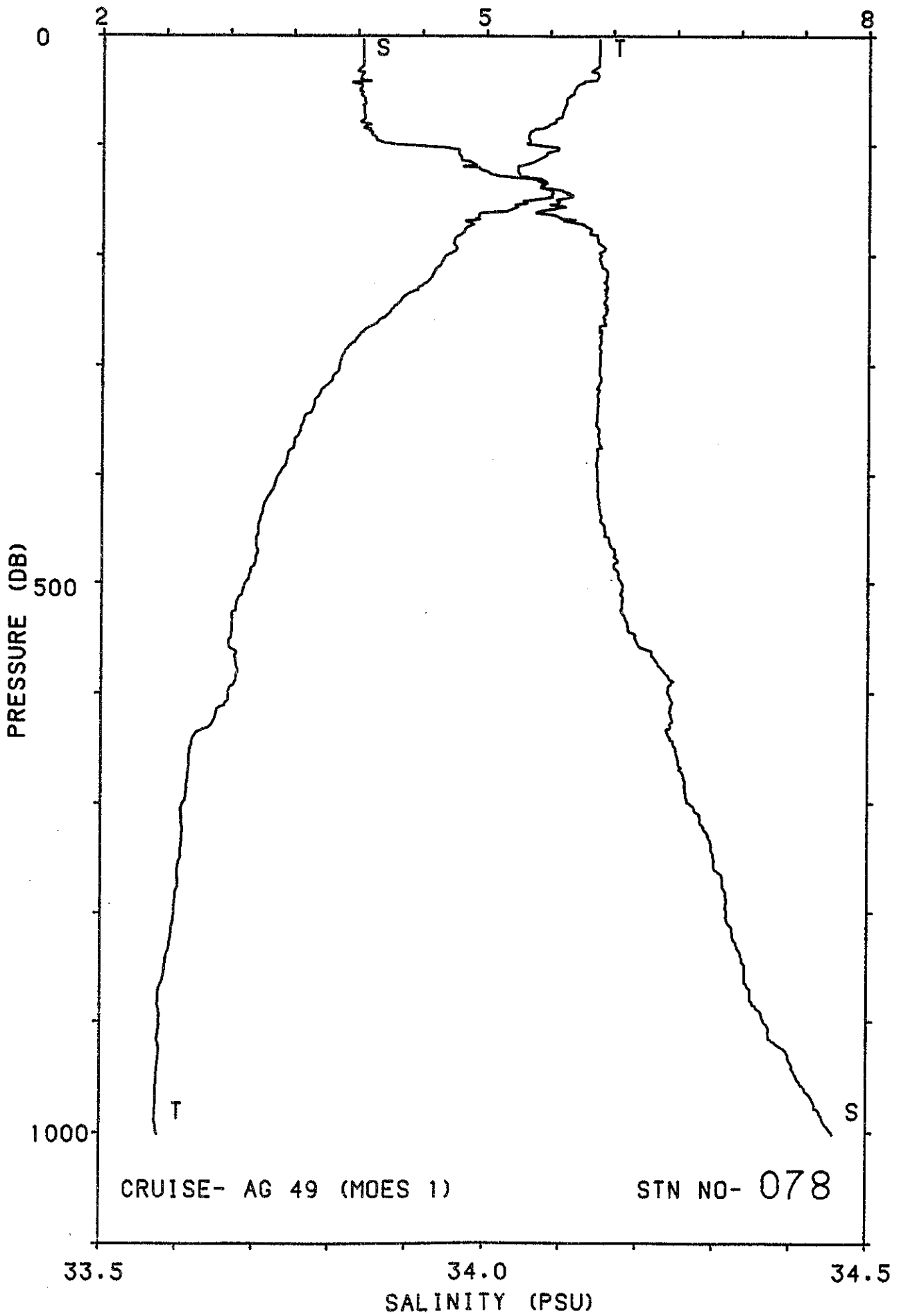
CRUISE- AG 49 (MOES 1)

STN NO- 077

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.29
 Station: 78 Cast: CTD UP Time: 15.47 Z
 Position: Lat: 47°15.000'S Long: 37°50.000'E Depth: 3720 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_{θ} kg.m ⁻³
.00	.0	5.900	5.900	33.835	1026.644	26.669	1026.645	26.670
4.96	5.0	5.887	5.887	33.840	1026.674	26.675	1026.673	26.675
9.92	10.0	5.887	5.887	33.839	1026.696	26.675	1026.696	26.674
19.83	20.0	5.886	5.884	33.839	1026.742	26.675	1026.742	26.675
24.79	25.0	5.886	5.884	33.839	1026.765	26.675	1026.765	26.675
29.75	30.0	5.859	5.857	33.837	1026.790	26.676	1026.790	26.677
39.66	40.0	5.869	5.866	33.837	1026.835	26.675	1026.835	26.676
49.58	50.0	5.694	5.690	33.836	1026.902	26.696	1026.902	26.696
59.49	60.0	5.634	5.629	33.842	1026.960	26.708	1026.961	26.708
69.41	70.0	5.607	5.602	33.841	1027.009	26.710	1027.010	26.711
74.36	75.0	5.581	5.575	33.842	1027.036	26.715	1027.037	26.715
79.32	80.0	5.525	5.519	33.843	1027.067	26.722	1027.067	26.723
89.23	90.0	5.345	5.338	33.851	1027.141	26.750	1027.142	26.750
99.14	100.0	5.387	5.379	33.895	1027.217	26.780	1027.218	26.780
118.97	120.0	5.254	5.245	33.987	1027.398	26.868	1027.399	26.869
123.92	125.0	5.262	5.252	34.003	1027.433	26.879	1027.434	26.881
138.79	140.0	5.486	5.475	34.087	1027.542	26.920	1027.543	26.921
148.70	150.0	5.372	5.360	34.092	1027.606	26.937	1027.607	26.939
158.61	160.0	5.176	5.163	34.072	1027.660	26.944	1027.661	26.946
173.47	175.0	4.860	4.847	34.134	1027.815	27.030	1027.817	27.031
178.42	180.0	4.828	4.814	34.136	1027.844	27.035	1027.846	27.036
198.24	200.0	4.708	4.693	34.151	1027.962	27.060	1027.964	27.062
218.05	220.0	4.593	4.577	34.159	1028.075	27.079	1028.076	27.081
237.86	240.0	4.361	4.344	34.158	1028.192	27.103	1028.195	27.105
247.77	250.0	4.279	4.261	34.160	1028.249	27.114	1028.252	27.116
257.67	260.0	4.185	4.167	34.156	1028.303	27.121	1028.305	27.123
277.48	280.0	3.978	3.958	34.151	1028.415	27.138	1028.417	27.140
297.29	300.0	3.885	3.864	34.150	1028.517	27.147	1028.519	27.149
317.09	320.0	3.768	3.746	34.148	1028.621	27.157	1028.623	27.159
336.89	340.0	3.678	3.655	34.147	1028.722	27.165	1028.725	27.167
346.79	350.0	3.608	3.585	34.146	1028.776	27.172	1028.778	27.173
356.69	360.0	3.583	3.559	34.149	1028.827	27.176	1028.829	27.178
376.49	380.0	3.491	3.466	34.147	1028.928	27.183	1028.931	27.186
396.29	400.0	3.413	3.386	34.146	1029.028	27.190	1029.031	27.193
445.77	450.0	3.261	3.232	34.156	1029.284	27.212	1029.287	27.215
495.24	500.0	3.164	3.132	34.179	1029.544	27.240	1029.547	27.243
544.70	550.0	3.053	3.018	34.196	1029.801	27.264	1029.805	27.267
594.15	600.0	3.036	2.997	34.240	1030.069	27.300	1030.073	27.304
643.58	650.0	2.742	2.701	34.250	1030.340	27.335	1030.344	27.338
693.00	700.0	2.691	2.647	34.268	1030.590	27.353	1030.595	27.357
742.41	750.0	2.679	2.632	34.300	1030.848	27.380	1030.853	27.384
791.81	800.0	2.635	2.585	34.317	1031.097	27.397	1031.103	27.402
841.20	850.0	2.566	2.512	34.340	1031.354	27.422	1031.359	27.426
890.58	900.0	2.527	2.470	34.365	1031.608	27.445	1031.614	27.450
939.94	950.0	2.511	2.451	34.409	1031.875	27.481	1031.882	27.486
989.29	1000.0	2.509	2.445	34.456	1032.142	27.519	1032.150	27.525

POTENTIAL TEMPERATURE (°C)



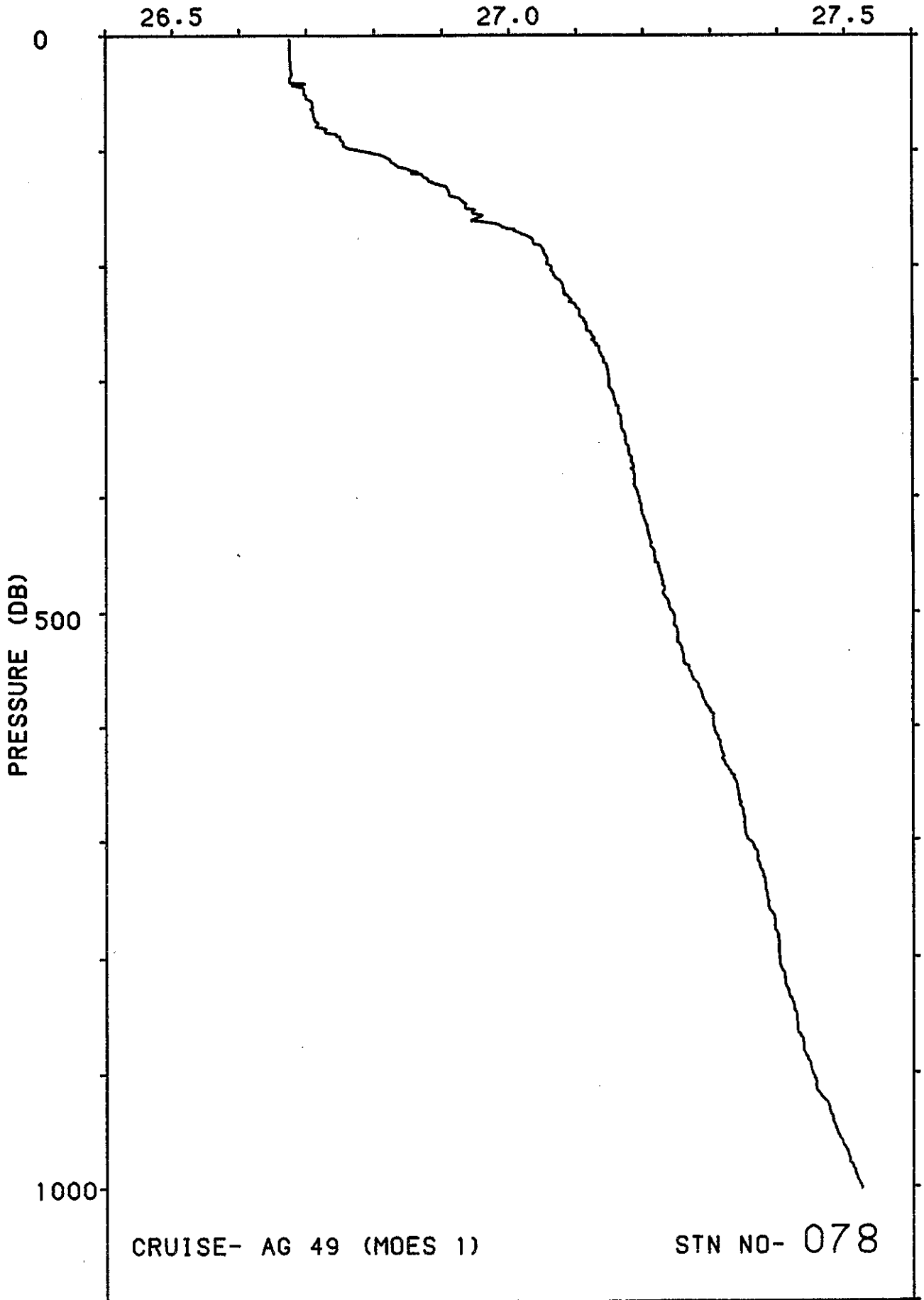
240

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.04.29
Station: 78 Cast: BOTTLE Time: 15.47 Z
Position: Lat: 47°15.000'S Long: 37°50.000'E Depth: 3720 m

NO BOTTLE DATA

241

POTENTIAL DENSITY (σ_θ)



CRUISE- AG 49 (MOES 1)

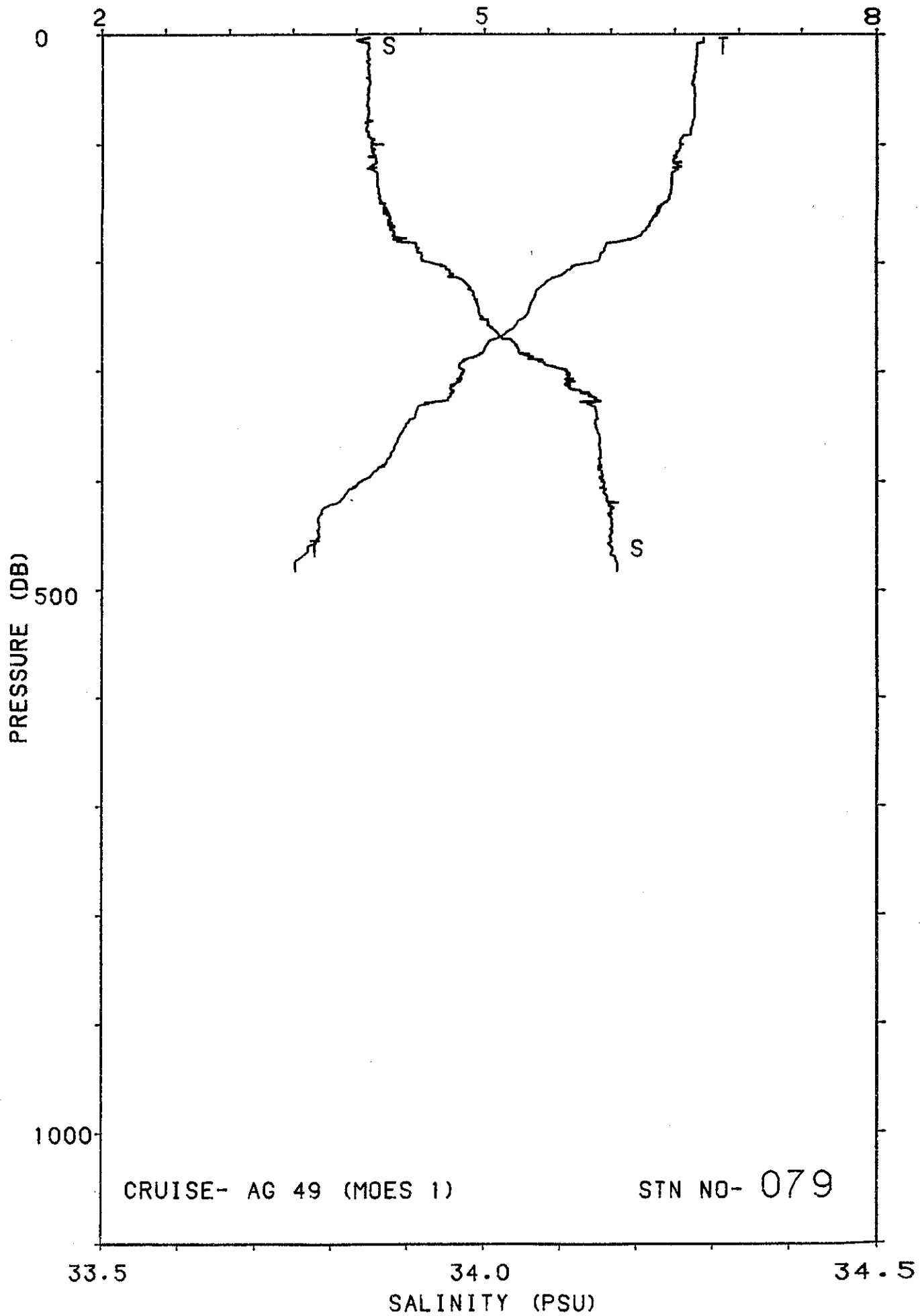
STN NO- 078

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.05.01
 Station: 79 Cast: CTD UP Time: 4.43 Z
 Position: Lat: 46°35.020'S Long: 37°49.950'E Depth: 570 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.706	6.706	33.896	1026.589	26.614	1026.589	26.614
4.96	5.0	6.729	6.729	33.840	1026.565	26.567	1026.565	26.567
9.92	10.0	6.675	6.674	33.850	1026.603	26.582	1026.603	26.582
19.83	20.0	6.675	6.673	33.849	1026.648	26.581	1026.648	26.581
24.79	25.0	6.663	6.661	33.848	1026.672	26.582	1026.672	26.582
29.75	30.0	6.661	6.659	33.849	1026.696	26.583	1026.696	26.583
39.67	40.0	6.656	6.652	33.850	1026.744	26.585	1026.744	26.585
49.58	50.0	6.655	6.651	33.849	1026.789	26.584	1026.789	26.584
59.50	60.0	6.659	6.654	33.849	1026.834	26.583	1026.835	26.584
69.41	70.0	6.658	6.652	33.849	1026.881	26.584	1026.881	26.584
74.37	75.0	6.662	6.655	33.849	1026.903	26.583	1026.904	26.584
79.32	80.0	6.645	6.637	33.845	1026.925	26.582	1026.926	26.583
89.24	90.0	6.627	6.619	33.849	1026.976	26.587	1026.977	26.589
99.15	100.0	6.550	6.541	33.853	1027.036	26.601	1027.037	26.602
118.97	120.0	6.555	6.544	33.851	1027.126	26.599	1027.127	26.600
123.93	125.0	6.497	6.486	33.859	1027.162	26.612	1027.164	26.614
138.80	140.0	6.484	6.471	33.862	1027.235	26.616	1027.237	26.618
148.71	150.0	6.465	6.451	33.864	1027.285	26.620	1027.287	26.622
158.62	160.0	6.336	6.322	33.878	1027.360	26.649	1027.362	26.650
173.48	175.0	6.255	6.240	33.882	1027.443	26.662	1027.445	26.664
178.43	180.0	6.109	6.093	33.888	1027.490	26.686	1027.492	26.687
198.25	200.0	5.862	5.846	33.930	1027.646	26.749	1027.649	26.752
218.07	220.0	5.493	5.475	33.978	1027.823	26.832	1027.826	26.835
237.88	240.0	5.379	5.360	33.992	1027.941	26.857	1027.943	26.859
247.78	250.0	5.345	5.325	33.997	1027.995	26.865	1027.997	26.867
257.69	260.0	5.254	5.233	34.010	1028.063	26.886	1028.065	26.889
277.50	280.0	5.028	5.006	34.045	1028.210	26.940	1028.213	26.943
297.31	300.0	4.867	4.844	34.107	1028.371	27.008	1028.373	27.010
317.11	320.0	4.766	4.742	34.131	1028.494	27.038	1028.497	27.041
336.91	340.0	4.489	4.464	34.148	1028.632	27.082	1028.635	27.085
346.81	350.0	4.418	4.392	34.147	1028.687	27.089	1028.689	27.092
356.71	360.0	4.364	4.338	34.152	1028.742	27.098	1028.745	27.101
376.51	380.0	4.278	4.251	34.150	1028.843	27.106	1028.846	27.109
396.31	400.0	4.075	4.047	34.154	1028.962	27.130	1028.965	27.133
445.80	450.0	3.737	3.706	34.165	1029.240	27.174	1029.243	27.177

243

POTENTIAL TEMPERATURE (°C)



Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.05.01
 Station: 79 Cast: BOTTLE Time: 4.43 Z
 Position: Lat: 46°35.020'S Long: 37°49.950'E Depth: 570 m

Bottle Data

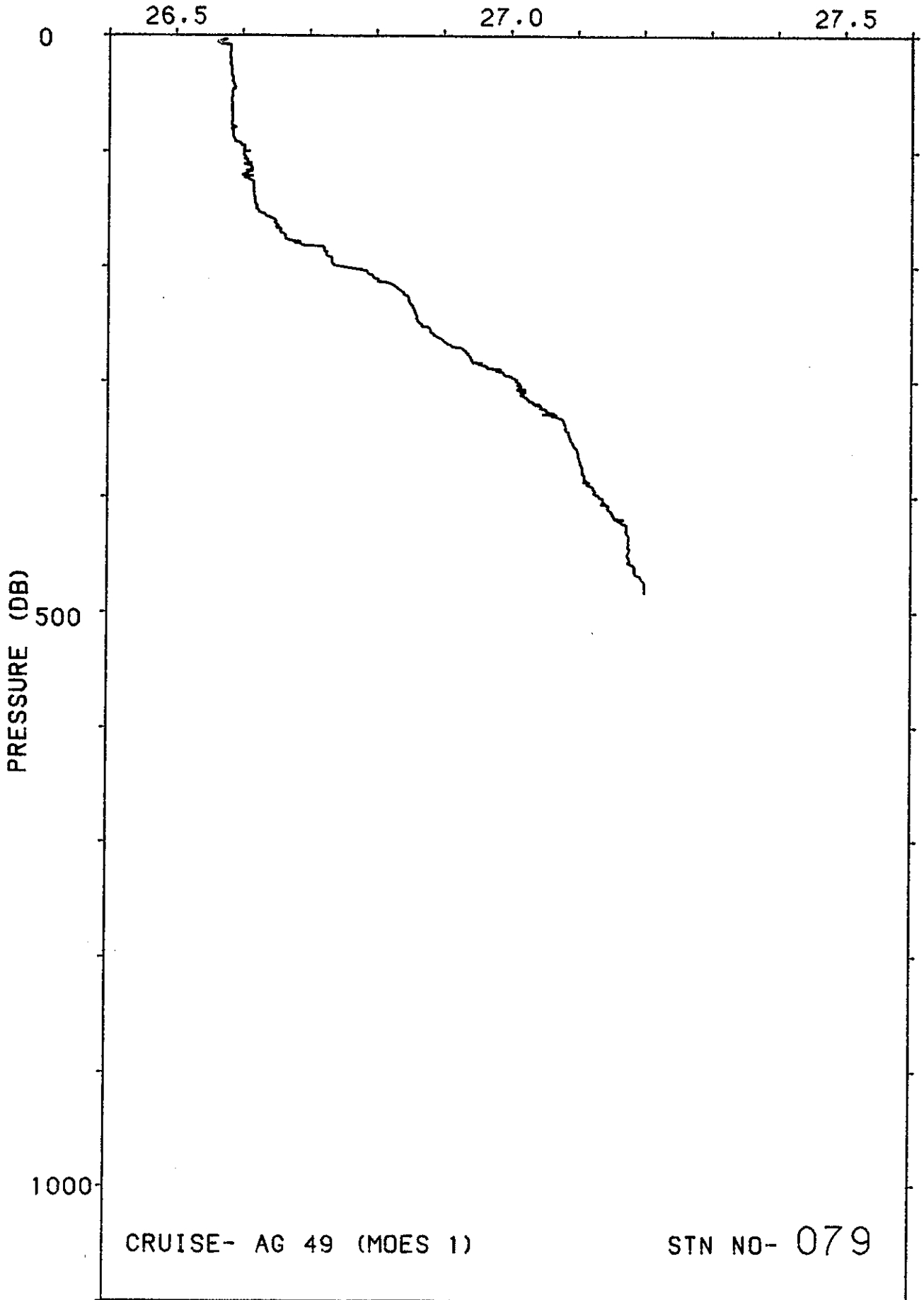
Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
.0	6.71	6.71	33.900	.705	1.41	16.37	.34	1.22
5.0	6.73	6.73	33.840	.778	1.36	15.90	.35	1.24
10.0	6.68	6.67	33.850	.931	1.44	16.08	.35	1.22
16.0	6.68	6.67	33.848	.958	1.42	15.84	.34	1.21
33.0	6.67	6.67	33.850	.968	1.40	15.86	.35	1.14

Production Data

Depth m	Filter size: Light %	Carbon Uptake				Total	Areal Production mg(C).m ⁻² .hr ⁻¹
		0.2μm	2μm	20μm	mg(C).m ⁻³ .hr ⁻¹		
.0	100	.173	.728	7.106	8.007	128.1	
5.0	50	.251	.518	2.724	3.492		
10.0	25	.171	.576	2.537	3.283		
16.0	10	.064	.053	1.059	1.176		
33.0	1	-.193	.101	.826	.733		

245

POTENTIAL DENSITY (σ_θ)

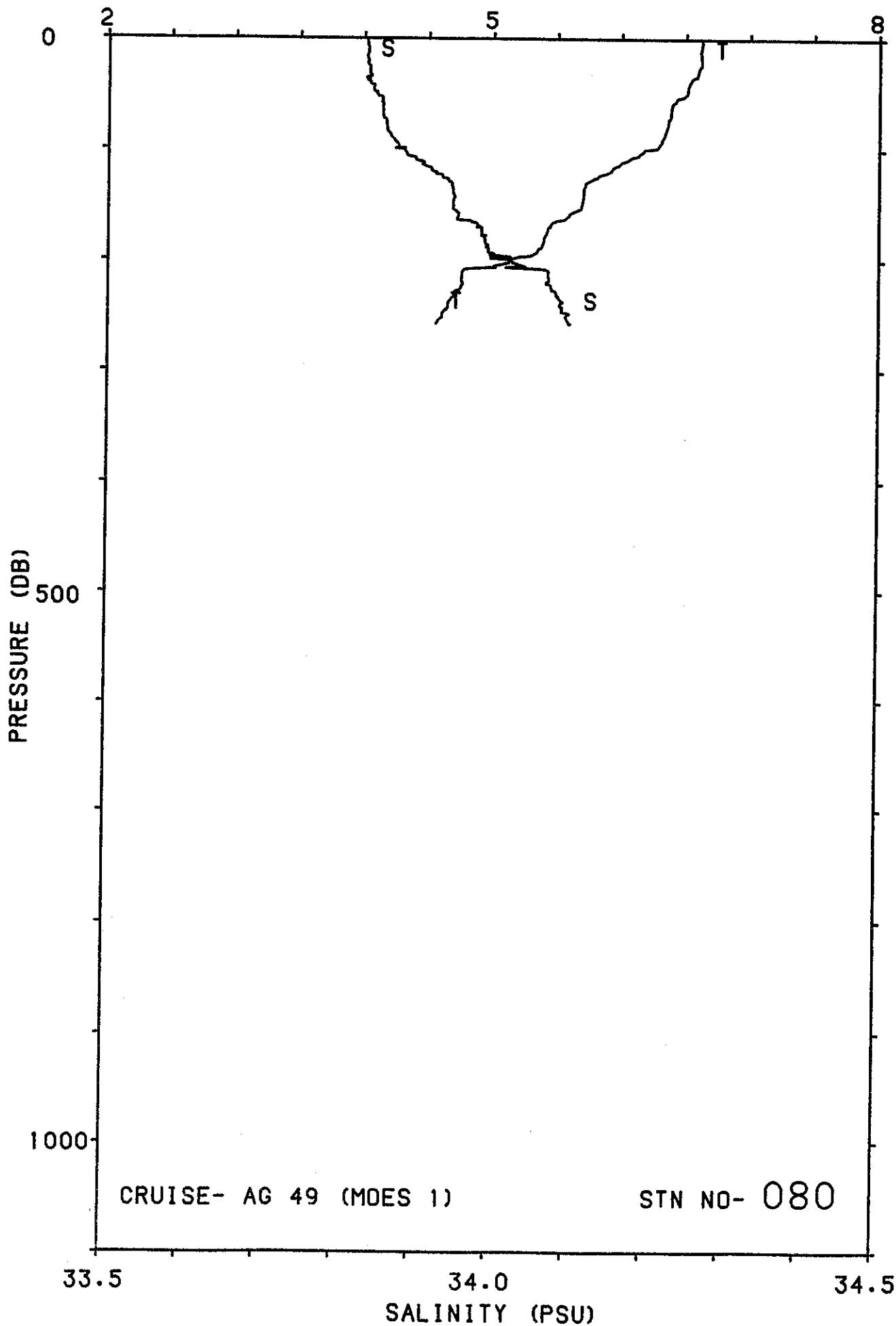


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.05.01
 Station: 80 Cast: CTD UP Time: 8.05 Z
 Position: Lat: 46°33.500'S Long: 37°55.000'E Depth: 320 m/250 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.641	6.641	33.817	1026.536	26.561	1026.535	26.560
4.96	5.0	6.622	6.622	33.837	1026.577	26.579	1026.577	26.579
9.92	10.0	6.612	6.611	33.839	1026.602	26.581	1026.603	26.582
19.83	20.0	6.618	6.617	33.838	1026.647	26.580	1026.647	26.580
24.79	25.0	6.613	6.611	33.839	1026.672	26.582	1026.672	26.582
29.75	30.0	6.596	6.594	33.839	1026.697	26.584	1026.697	26.584
39.67	40.0	6.531	6.527	33.840	1026.752	26.593	1026.753	26.594
49.58	50.0	6.507	6.503	33.849	1026.808	26.603	1026.809	26.604
59.50	60.0	6.397	6.392	33.858	1026.876	26.625	1026.877	26.625
69.41	70.0	6.387	6.381	33.858	1026.923	26.626	1026.924	26.627
74.37	75.0	6.369	6.363	33.862	1026.952	26.632	1026.953	26.632
79.32	80.0	6.360	6.353	33.863	1026.977	26.633	1026.978	26.634
89.24	90.0	6.329	6.321	33.870	1027.033	26.643	1027.034	26.644
99.15	100.0	6.185	6.177	33.885	1027.109	26.674	1027.110	26.674
118.97	120.0	5.915	5.905	33.925	1027.267	26.739	1027.269	26.740
123.93	125.0	5.822	5.812	33.934	1027.310	26.758	1027.311	26.759
138.80	140.0	5.718	5.706	33.948	1027.403	26.782	1027.404	26.783
148.71	150.0	5.706	5.694	33.947	1027.450	26.782	1027.451	26.784
158.62	160.0	5.602	5.589	33.955	1027.515	26.801	1027.517	26.803
173.48	175.0	5.434	5.420	33.986	1027.629	26.846	1027.631	26.848
178.44	180.0	5.415	5.400	33.989	1027.658	26.851	1027.659	26.852
198.25	200.0	5.144	5.129	34.022	1027.808	26.908	1027.810	26.910
218.07	220.0	4.781	4.765	34.070	1027.982	26.988	1027.984	26.990
237.88	240.0	4.676	4.658	34.088	1028.101	27.013	1028.103	27.016
247.79	250.0	4.624	4.605	34.096	1028.160	27.026	1028.162	27.028

247

POTENTIAL TEMPERATURE (°C)

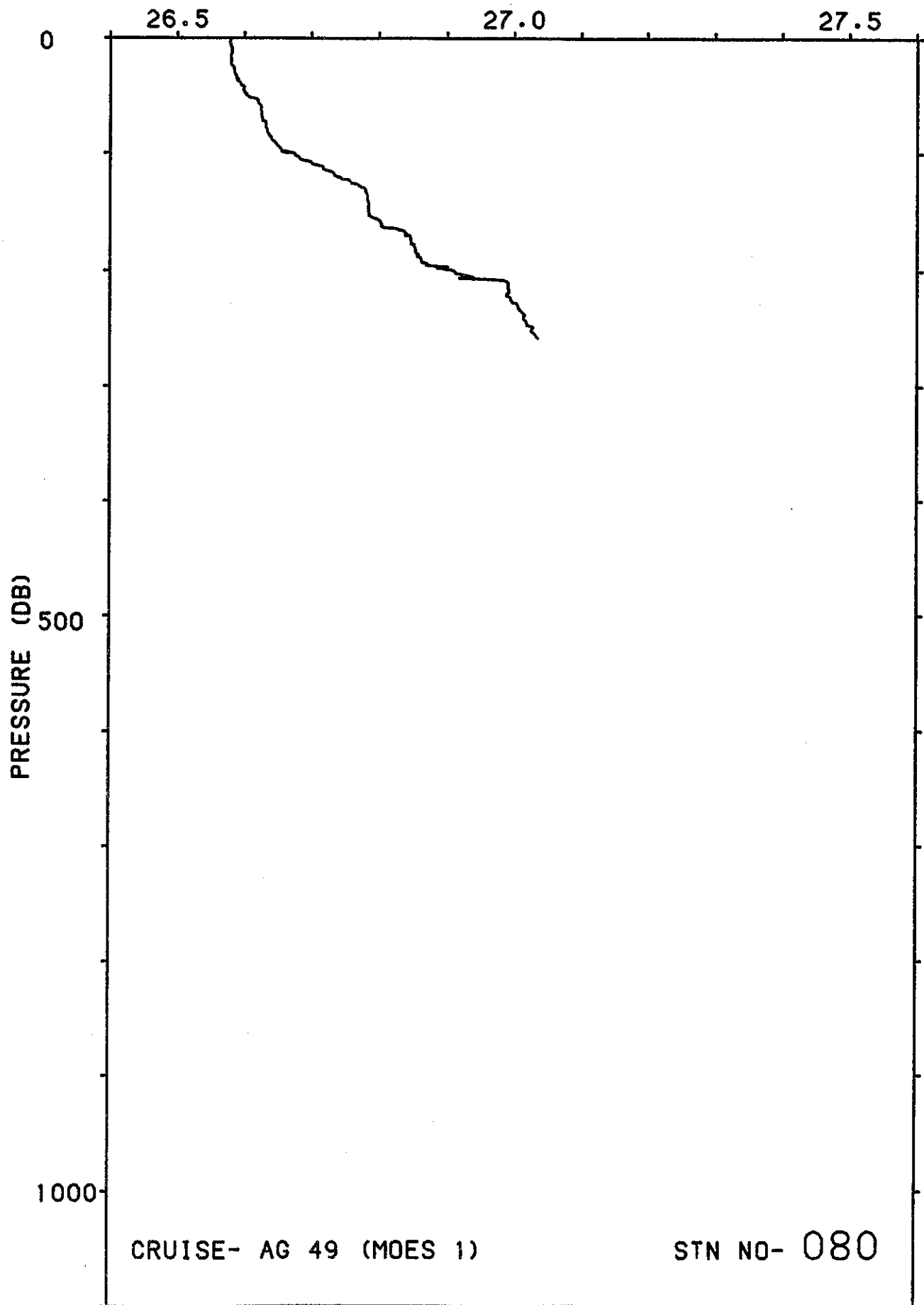


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.05.01
Station: 80 Cast: BOTTLE Time: 8.05 Z
Position: Lat: 46°33.500'S Long: 37°55.000'E Depth: 320 m/250 m

NO BOTTLE DATA

249

POTENTIAL DENSITY (σ_t)



CRUISE- AG 49 (MOES 1)

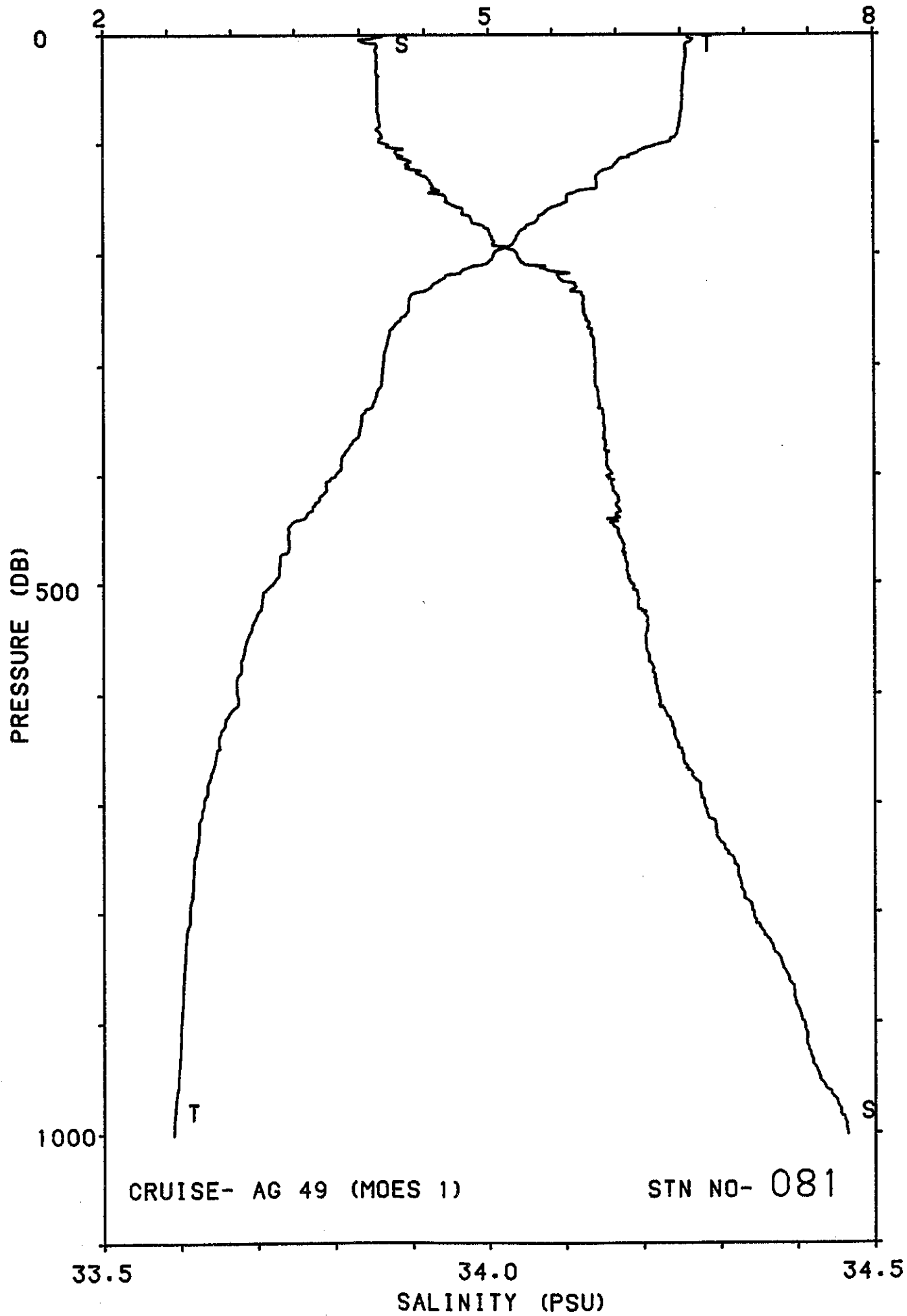
STN NO- 080

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.05.01
 Station: 81 Cast: CTD UP Time: 8.57 Z
 Position: Lat: 46°30.600'S Long: 37°55.000'E Depth: 1600 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.570	6.570	33.877	1026.592	26.617	1026.592	26.617
4.96	5.0	6.629	6.629	33.852	1026.587	26.589	1026.588	26.590
9.92	10.0	6.542	6.541	33.855	1026.625	26.603	1026.625	26.604
19.83	20.0	6.547	6.545	33.856	1026.671	26.604	1026.671	26.604
24.79	25.0	6.542	6.540	33.856	1026.694	26.604	1026.695	26.604
29.75	30.0	6.535	6.532	33.856	1026.718	26.605	1026.719	26.606
39.67	40.0	6.528	6.525	33.856	1026.765	26.606	1026.766	26.606
49.58	50.0	6.522	6.517	33.856	1026.812	26.607	1026.813	26.608
59.50	60.0	6.521	6.516	33.857	1026.859	26.607	1026.860	26.608
69.41	70.0	6.516	6.510	33.856	1026.905	26.608	1026.906	26.608
74.37	75.0	6.509	6.502	33.858	1026.930	26.610	1026.931	26.611
79.32	80.0	6.505	6.498	33.858	1026.954	26.611	1026.955	26.612
89.24	90.0	6.486	6.479	33.859	1027.003	26.614	1027.004	26.615
99.15	100.0	6.371	6.363	33.865	1027.069	26.633	1027.070	26.635
118.97	120.0	5.994	5.984	33.895	1027.233	26.705	1027.235	26.707
123.93	125.0	5.900	5.890	33.911	1027.281	26.730	1027.283	26.731
138.80	140.0	5.859	5.847	33.929	1027.370	26.749	1027.371	26.751
148.71	150.0	5.627	5.615	33.945	1027.458	26.790	1027.459	26.792
158.62	160.0	5.477	5.465	33.967	1027.540	26.825	1027.541	26.827
173.48	175.0	5.308	5.295	33.994	1027.651	26.867	1027.653	26.869
178.44	180.0	5.259	5.245	34.001	1027.686	26.878	1027.688	26.880
198.25	200.0	5.058	5.043	34.038	1027.831	26.931	1027.833	26.933
218.07	220.0	4.678	4.662	34.091	1028.011	27.016	1028.013	27.018
237.88	240.0	4.403	4.385	34.124	1028.161	27.072	1028.163	27.074
247.79	250.0	4.396	4.377	34.124	1028.208	27.073	1028.210	27.075
257.69	260.0	4.321	4.303	34.128	1028.266	27.084	1028.268	27.086
277.50	280.0	4.232	4.212	34.137	1028.376	27.101	1028.378	27.103
297.31	300.0	4.200	4.178	34.138	1028.473	27.105	1028.475	27.107
317.11	320.0	4.177	4.154	34.140	1028.569	27.109	1028.572	27.111
336.92	340.0	4.072	4.048	34.148	1028.680	27.126	1028.683	27.129
346.82	350.0	4.036	4.011	34.149	1028.732	27.131	1028.734	27.133
356.72	360.0	4.023	3.997	34.151	1028.780	27.133	1028.783	27.136
376.52	380.0	3.908	3.881	34.152	1028.887	27.146	1028.890	27.149
396.31	400.0	3.842	3.814	34.157	1028.991	27.157	1028.994	27.160
445.80	450.0	3.476	3.446	34.167	1029.270	27.201	1029.273	27.204
495.27	500.0	3.359	3.326	34.184	1029.527	27.225	1029.531	27.229
544.74	550.0	3.161	3.125	34.203	1029.795	27.259	1029.799	27.263
594.19	600.0	3.082	3.043	34.220	1030.048	27.280	1030.052	27.284
643.62	650.0	2.928	2.886	34.249	1030.319	27.317	1030.323	27.321
693.05	700.0	2.826	2.781	34.279	1030.585	27.350	1030.590	27.354
742.46	750.0	2.751	2.703	34.316	1030.853	27.387	1030.858	27.391
791.87	800.0	2.721	2.670	34.343	1031.108	27.410	1031.114	27.415
841.26	850.0	2.683	2.629	34.381	1031.373	27.444	1031.379	27.449
890.64	900.0	2.659	2.601	34.408	1031.628	27.468	1031.634	27.473
940.01	950.0	2.640	2.579	34.429	1031.877	27.486	1031.883	27.492
989.36	1000.0	2.606	2.541	34.464	1032.138	27.517	1032.145	27.523

251

POTENTIAL TEMPERATURE (°C)

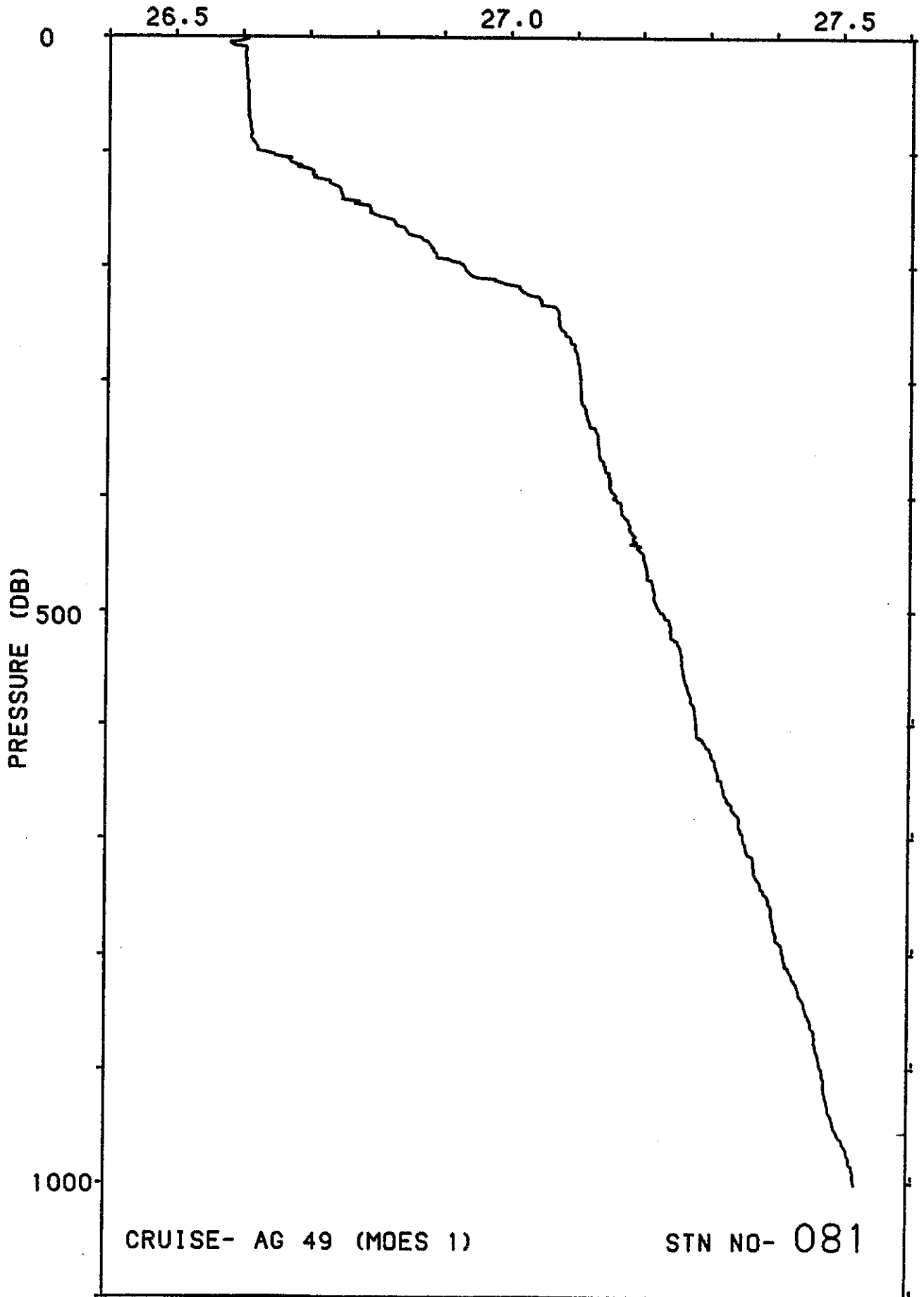


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.05.01
Station: 81 Cast: BOTTLE Time: 8.57 Z
Position: Lat: 46°30.600'S Long: 37°55.000'E Depth: 1600 m

NO BOTTLE DATA

253

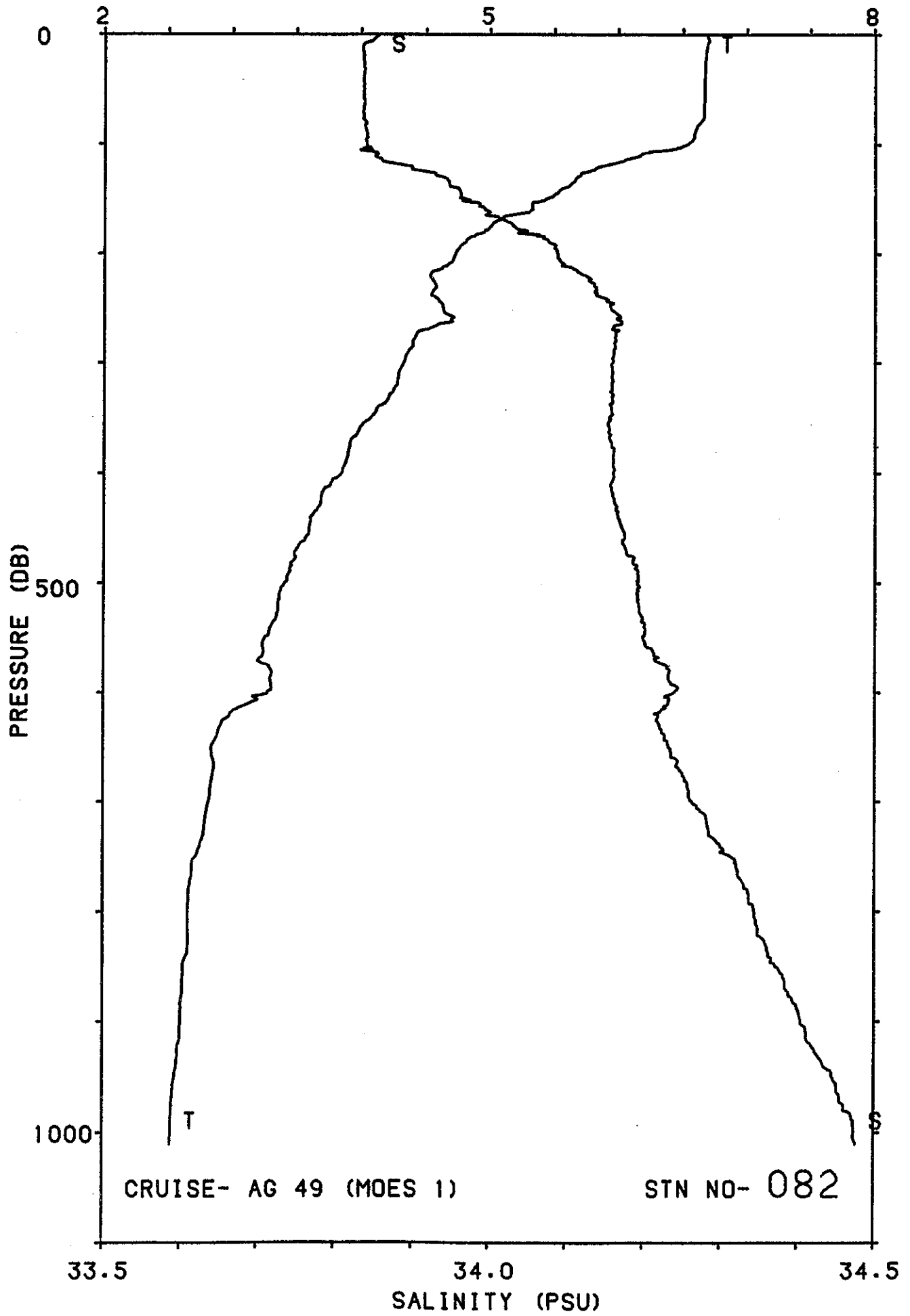
POTENTIAL DENSITY (σ_θ)



Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.05.01
 Station: 82 Cast: CTD UP Time: 10.21 Z
 Position: Lat: 46°27.600'S Long: 37°55.000'E Depth: 3250 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ _t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ _θ kg.m ⁻³
.00	.0	6.762	6.762	33.744	1026.462	26.487	1026.462	26.487
4.96	5.0	6.958	6.958	33.870	1026.557	26.559	1026.558	26.560
9.92	10.0	6.690	6.689	33.836	1026.590	26.569	1026.590	26.569
19.83	20.0	6.680	6.678	33.837	1026.638	26.571	1026.638	26.571
24.79	25.0	6.675	6.673	33.837	1026.661	26.571	1026.662	26.572
29.75	30.0	6.674	6.671	33.837	1026.685	26.572	1026.685	26.572
39.67	40.0	6.673	6.669	33.837	1026.731	26.572	1026.731	26.572
49.58	50.0	6.671	6.667	33.837	1026.777	26.572	1026.778	26.573
59.50	60.0	6.671	6.666	33.838	1026.824	26.573	1026.825	26.574
69.41	70.0	6.667	6.661	33.836	1026.869	26.572	1026.870	26.573
74.37	75.0	6.666	6.659	33.837	1026.893	26.573	1026.894	26.574
79.32	80.0	6.642	6.635	33.840	1026.921	26.578	1026.922	26.579
89.24	90.0	6.597	6.589	33.841	1026.974	26.585	1026.975	26.586
99.15	100.0	6.545	6.536	33.840	1027.026	26.591	1027.027	26.592
118.98	120.0	5.868	5.858	33.898	1027.252	26.723	1027.253	26.725
123.93	125.0	5.758	5.748	33.919	1027.305	26.753	1027.307	26.755
138.80	140.0	5.576	5.564	33.959	1027.429	26.807	1027.431	26.809
148.71	150.0	5.439	5.427	33.970	1027.501	26.833	1027.502	26.834
158.62	160.0	5.334	5.322	33.997	1027.581	26.866	1027.583	26.868
173.48	175.0	5.017	5.003	34.031	1027.715	26.930	1027.717	26.932
178.44	180.0	4.967	4.953	34.038	1027.750	26.942	1027.752	26.943
198.25	200.0	4.742	4.727	34.088	1027.908	27.006	1027.910	27.008
218.07	220.0	4.547	4.531	34.124	1028.052	27.056	1028.054	27.058
237.88	240.0	4.585	4.568	34.146	1028.157	27.069	1028.160	27.072
247.79	250.0	4.649	4.631	34.157	1028.205	27.071	1028.207	27.073
257.69	260.0	4.717	4.697	34.165	1028.250	27.070	1028.252	27.073
277.50	280.0	4.418	4.398	34.164	1028.376	27.102	1028.378	27.104
297.31	300.0	4.349	4.327	34.160	1028.473	27.106	1028.476	27.109
317.11	320.0	4.299	4.276	34.158	1028.570	27.111	1028.572	27.113
336.92	340.0	4.155	4.131	34.157	1028.678	27.125	1028.681	27.127
346.82	350.0	4.098	4.074	34.155	1028.729	27.129	1028.732	27.131
356.72	360.0	4.016	3.990	34.155	1028.785	27.138	1028.787	27.140
376.52	380.0	3.935	3.909	34.161	1028.891	27.151	1028.894	27.153
396.32	400.0	3.881	3.853	34.161	1028.989	27.156	1028.992	27.159
445.80	450.0	3.633	3.602	34.172	1029.257	27.189	1029.260	27.192
495.28	500.0	3.444	3.411	34.192	1029.524	27.224	1029.528	27.227
544.74	550.0	3.293	3.257	34.199	1029.777	27.243	1029.782	27.247
594.19	600.0	3.322	3.282	34.239	1030.037	27.273	1030.042	27.277
643.63	650.0	2.884	2.843	34.232	1030.310	27.308	1030.314	27.311
693.05	700.0	2.868	2.823	34.263	1030.567	27.333	1030.572	27.338
742.47	750.0	2.772	2.724	34.314	1030.849	27.383	1030.854	27.387
791.87	800.0	2.713	2.662	34.344	1031.110	27.412	1031.116	27.416
841.26	850.0	2.681	2.627	34.372	1031.367	27.437	1031.372	27.442
890.64	900.0	2.665	2.607	34.404	1031.624	27.465	1031.630	27.469
940.01	950.0	2.622	2.561	34.446	1031.892	27.501	1031.899	27.507
989.37	1000.0	2.594	2.529	34.475	1032.148	27.527	1032.155	27.533

POTENTIAL TEMPERATURE (°C)



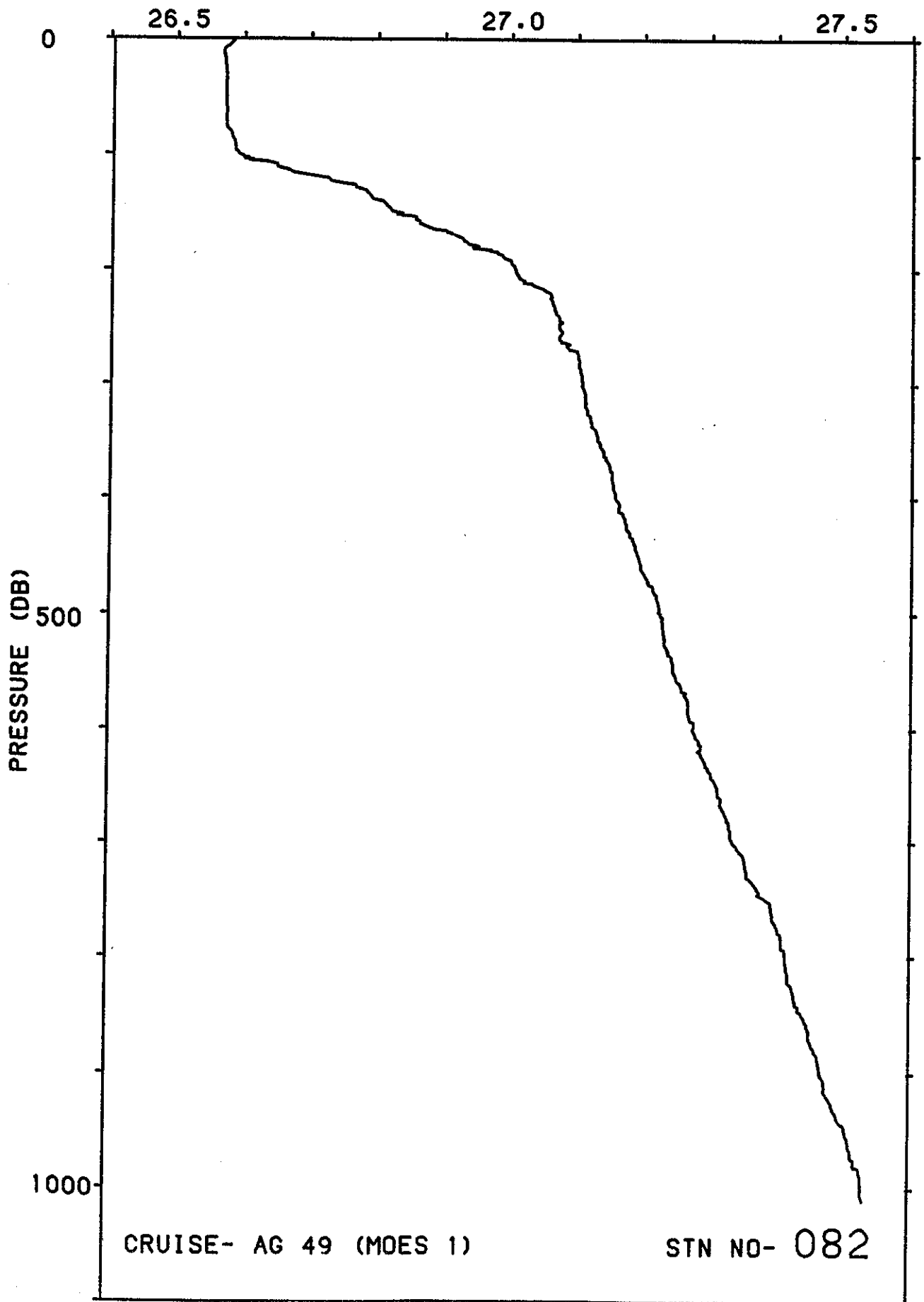
256

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.05.01
Station: 82 Cast: BOTTLE Time: 10.21 Z
Position: Lat: 46°27.600'S Long: 37°55.000'E Depth: 3250 m

NO BOTTLE DATA

257

POTENTIAL DENSITY (σ_θ)



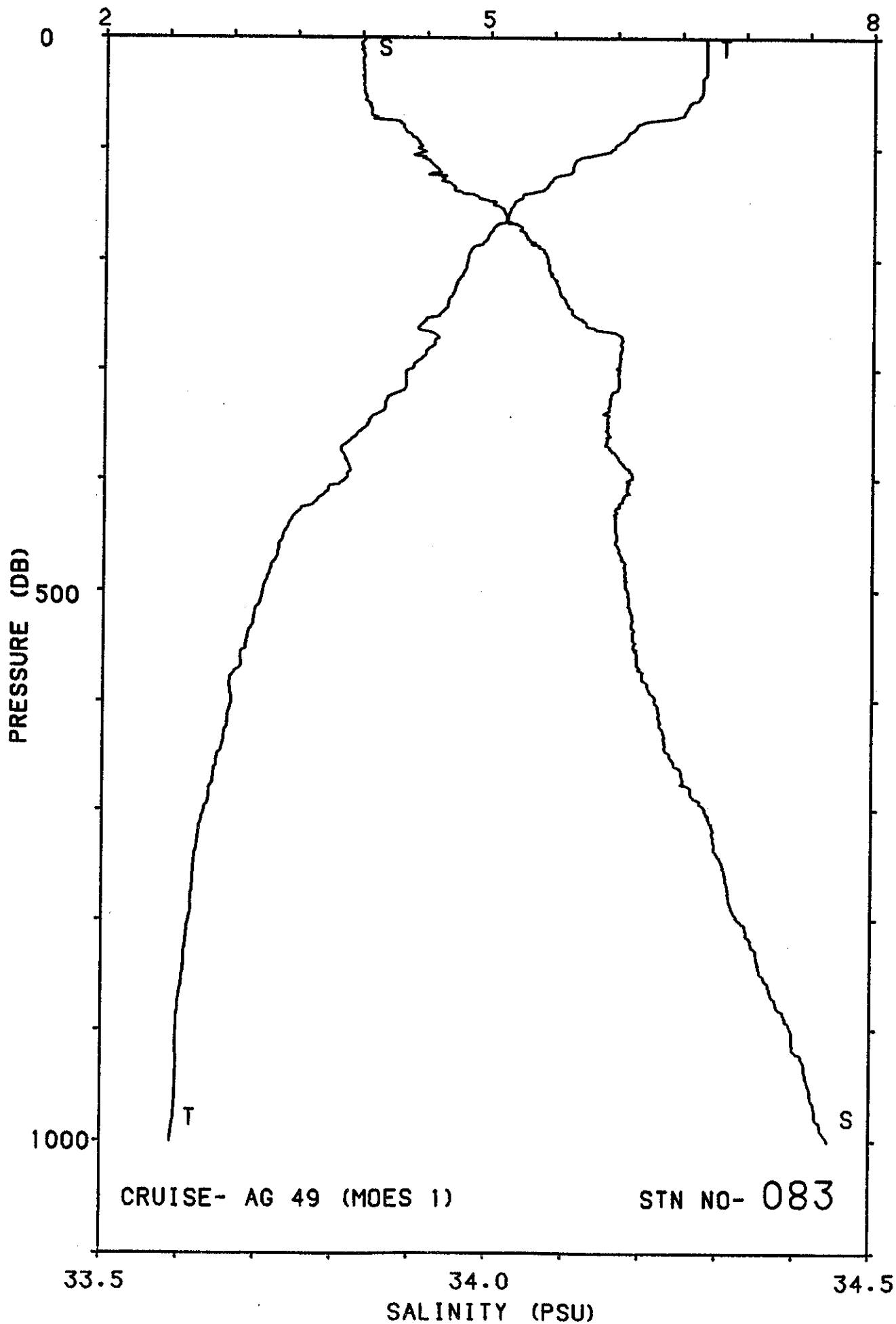
CRUISE- AG 49 (MOES 1)

STN NO- 082

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.05.01
 Station: 83 Cast: CTD UP Time: 11.45 Z
 Position: Lat: 46°24.600'S Long: 37°55.000'E Depth: 2650 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.675	6.675	33.839	1026.549	26.574	1026.548	26.573
4.96	5.0	6.688	6.688	33.832	1026.564	26.566	1026.564	26.566
9.92	10.0	6.683	6.682	33.835	1026.590	26.569	1026.590	26.569
19.83	20.0	6.687	6.685	33.834	1026.635	26.568	1026.635	26.568
24.79	25.0	6.688	6.686	33.835	1026.658	26.568	1026.659	26.569
29.75	30.0	6.686	6.683	33.835	1026.682	26.569	1026.682	26.569
39.67	40.0	6.660	6.656	33.835	1026.731	26.572	1026.732	26.573
49.58	50.0	6.657	6.653	33.836	1026.778	26.573	1026.779	26.574
59.50	60.0	6.555	6.550	33.843	1026.843	26.592	1026.844	26.593
69.41	70.0	6.505	6.499	33.846	1026.899	26.601	1026.899	26.602
74.37	75.0	6.238	6.232	33.880	1026.983	26.662	1026.984	26.663
79.32	80.0	6.149	6.142	33.887	1027.023	26.679	1027.024	26.680
89.24	90.0	6.069	6.061	33.901	1027.091	26.701	1027.092	26.702
99.15	100.0	5.973	5.965	33.908	1027.154	26.718	1027.156	26.719
118.98	120.0	5.653	5.643	33.933	1027.307	26.777	1027.308	26.779
123.93	125.0	5.527	5.517	33.939	1027.351	26.798	1027.351	26.799
138.80	140.0	5.328	5.317	33.963	1027.463	26.840	1027.464	26.842
148.71	150.0	5.197	5.185	34.004	1027.557	26.888	1027.559	26.889
158.62	160.0	5.153	5.140	34.020	1027.621	26.906	1027.623	26.907
173.48	175.0	5.023	5.010	34.043	1027.724	26.939	1027.726	26.941
178.44	180.0	4.996	4.982	34.048	1027.755	26.946	1027.756	26.948
198.25	200.0	4.842	4.827	34.074	1027.886	26.984	1027.888	26.986
218.07	220.0	4.762	4.746	34.086	1027.997	27.003	1027.999	27.004
237.88	240.0	4.691	4.673	34.100	1028.109	27.022	1028.111	27.024
247.79	250.0	4.620	4.602	34.110	1028.171	27.038	1028.173	27.039
257.69	260.0	4.474	4.455	34.126	1028.247	27.066	1028.249	27.068
277.50	280.0	4.554	4.533	34.173	1028.368	27.095	1028.370	27.097
297.31	300.0	4.395	4.373	34.170	1028.476	27.109	1028.478	27.112
317.12	320.0	4.345	4.321	34.165	1028.571	27.111	1028.573	27.113
336.92	340.0	4.168	4.144	34.151	1028.672	27.119	1028.674	27.121
346.82	350.0	4.078	4.053	34.155	1028.732	27.131	1028.734	27.134
356.72	360.0	3.996	3.970	34.156	1028.787	27.140	1028.790	27.143
376.52	380.0	3.906	3.880	34.168	1028.899	27.159	1028.902	27.162
396.32	400.0	3.913	3.885	34.185	1029.005	27.172	1029.008	27.175
445.80	450.0	3.435	3.405	34.168	1029.275	27.205	1029.278	27.208
495.28	500.0	3.282	3.249	34.182	1029.534	27.231	1029.537	27.234
544.74	550.0	3.147	3.111	34.190	1029.786	27.250	1029.790	27.253
594.19	600.0	3.043	3.004	34.217	1030.050	27.281	1030.054	27.285
643.63	650.0	2.940	2.898	34.237	1030.308	27.307	1030.313	27.310
693.06	700.0	2.845	2.800	34.283	1030.586	27.352	1030.591	27.356
742.47	750.0	2.768	2.720	34.306	1030.843	27.377	1030.849	27.381
791.88	800.0	2.738	2.687	34.327	1031.094	27.396	1031.100	27.401
841.27	850.0	2.692	2.638	34.357	1031.353	27.424	1031.359	27.429
890.65	900.0	2.649	2.591	34.396	1031.619	27.459	1031.626	27.464
940.01	950.0	2.649	2.588	34.419	1031.868	27.478	1031.874	27.483
989.37	1000.0	2.615	2.550	34.445	1032.122	27.501	1032.129	27.507

POTENTIAL TEMPERATURE (°C)



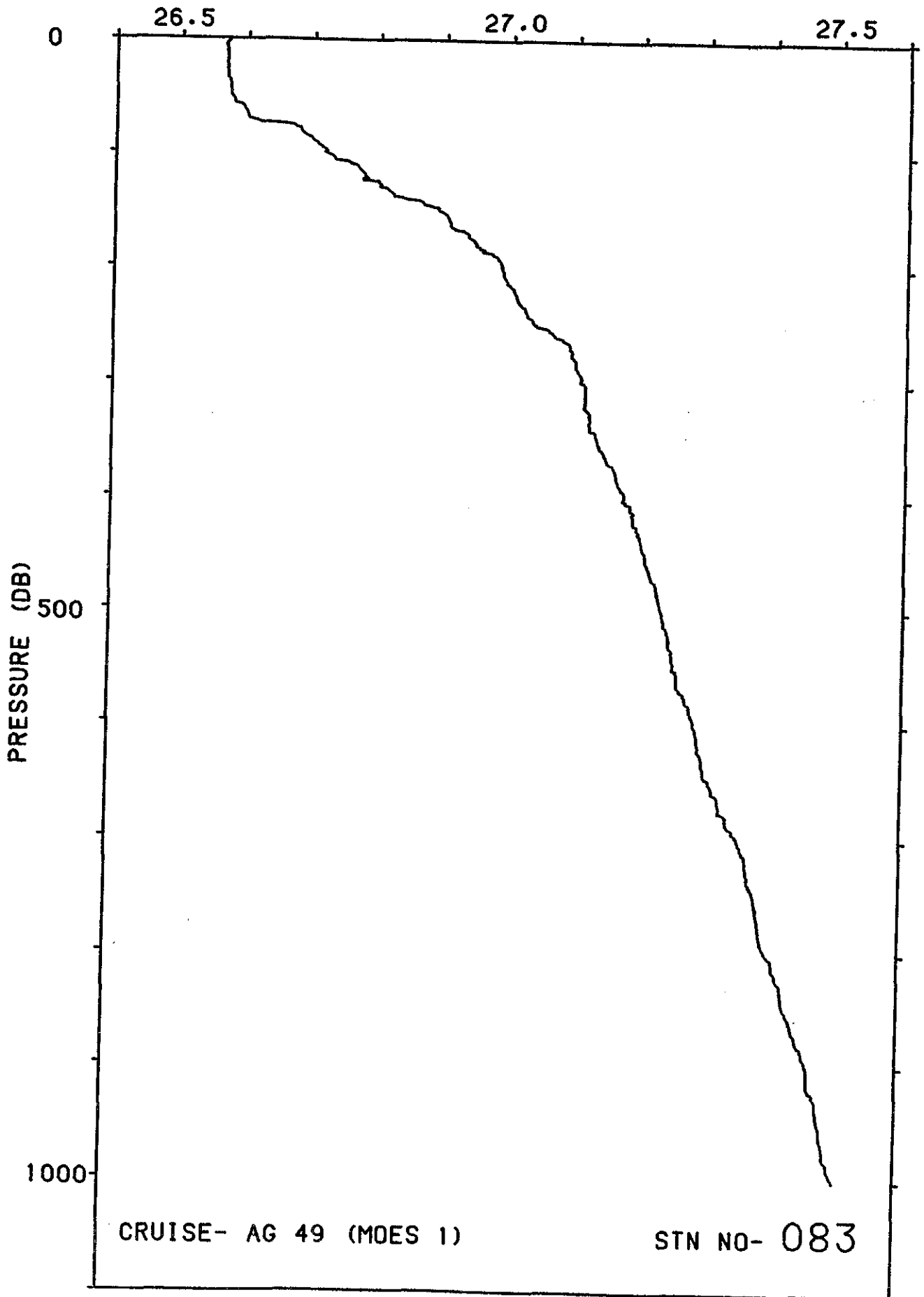
260

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.05.01
Station: 83 Cast: BOTTLE Time: 11.45 Z
Position: Lat: 46°24.600'S Long: 37°55.000'E Depth: 2650 m

NO BOTTLE DATA

261

POTENTIAL DENSITY (σ_θ)



CRUISE- AG 49 (MOES 1)

STN NO- 083

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.05.02
Station: 85 Cast: Time: 4.39 Z
Position: Lat: 47°01.950'S Long: 37°35.990'E Depth: 1775 m

NO CTD CAST

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.05.02
 Station: 85 Cast: BOTTLE Time: 4.39 Z
 Position: Lat: 47°01.950'S Long: 37°35.990'E Depth: 1775 m

Bottle Data

Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
.0				.314	2.13	19.31	.40	1.34
6.0					2.17	18.63	.41	1.33
12.0					2.23	18.37	.39	1.32
19.0				.126	2.28	18.42	.41	1.44
39.0				.014	2.30	18.19	.40	1.30
50.0				.054	2.37	18.12	.40	1.36
100.0				.100	2.51	18.47	.39	1.39

Production Data

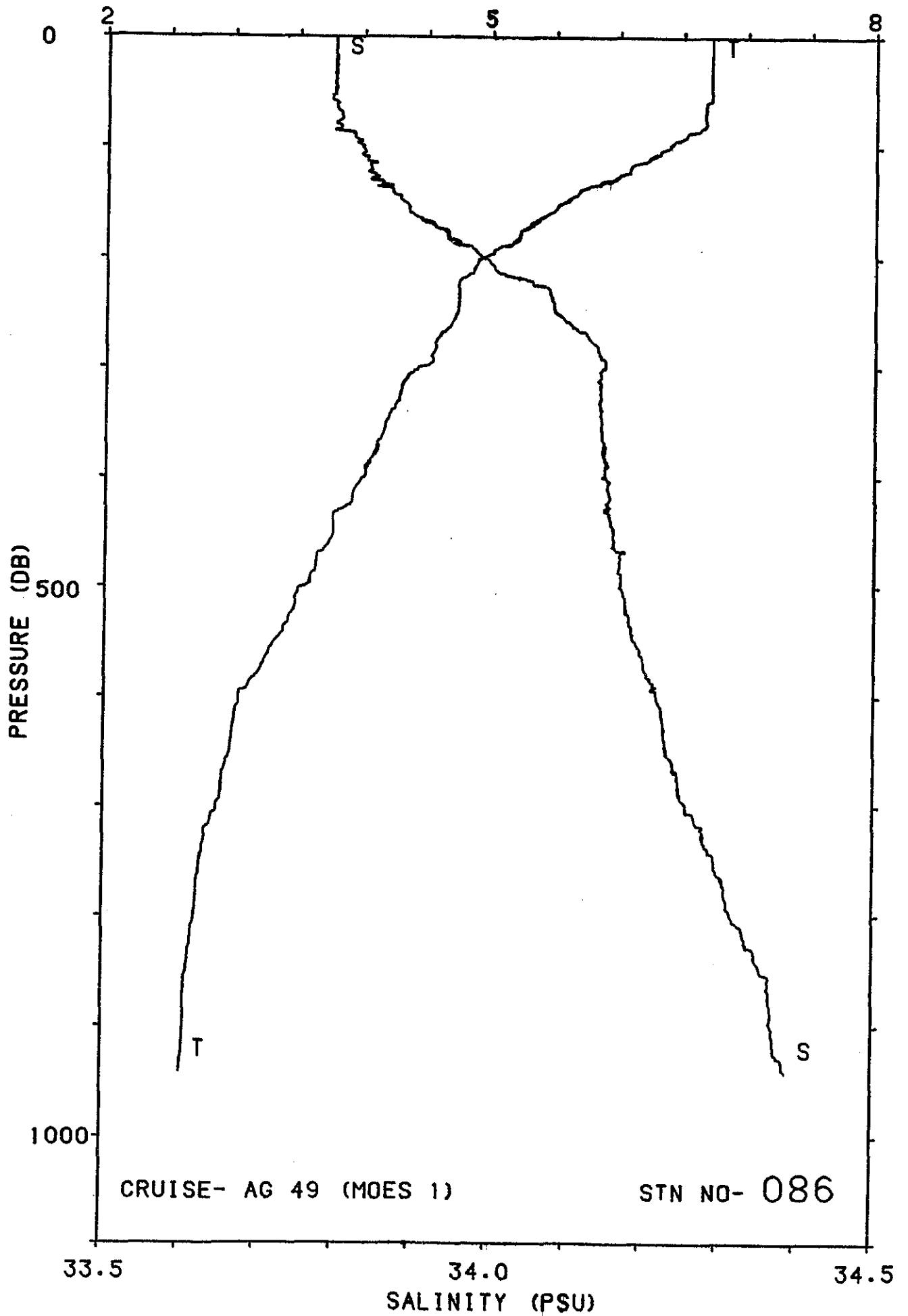
Depth m	Filter size: Light %	Carbon Uptake				Total	Areal Production mg(C).m ⁻² .hr ⁻¹
		0.2 μm	2 μm	20 μm			
mg(C).m ⁻³ .hr ⁻¹							
.0	100	-.026	.063	.051	.087	13.48	
6.0	50	.118	.489	.102	.709		
12.0	25	.051	.249	.129	.430		
19.0	10	.168	.125	.091	.384		
39.0	1	.024	.154	.245	.422		

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.05.03
 Station: 86 Cast: CTD UP Time: 4.45 Z
 Position: Lat: 46°36.000'S Long: 38° 4.400'E Depth: 1000 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.718	6.718	33.796	1026.508	26.533	1026.509	26.534
4.96	5.0	6.719	6.719	33.796	1026.532	26.534	1026.531	26.533
9.92	10.0	6.721	6.720	33.797	1026.555	26.534	1026.555	26.534
19.83	20.0	6.718	6.716	33.797	1026.602	26.535	1026.602	26.535
24.79	25.0	6.719	6.717	33.797	1026.624	26.534	1026.625	26.535
29.75	30.0	6.718	6.715	33.796	1026.647	26.534	1026.647	26.534
39.67	40.0	6.722	6.718	33.796	1026.692	26.533	1026.693	26.534
49.58	50.0	6.721	6.717	33.796	1026.738	26.533	1026.739	26.534
59.50	60.0	6.678	6.672	33.799	1026.793	26.542	1026.793	26.542
69.41	70.0	6.673	6.667	33.804	1026.843	26.546	1026.844	26.547
74.37	75.0	6.674	6.667	33.804	1026.866	26.546	1026.867	26.547
79.32	80.0	6.678	6.671	33.801	1026.886	26.543	1026.887	26.544
89.24	90.0	6.527	6.519	33.823	1026.969	26.580	1026.970	26.581
99.15	100.0	6.401	6.392	33.832	1027.039	26.604	1027.040	26.605
118.97	120.0	6.092	6.082	33.843	1027.181	26.652	1027.181	26.653
123.93	125.0	6.004	5.994	33.850	1027.220	26.668	1027.221	26.670
138.80	140.0	5.690	5.679	33.871	1027.346	26.724	1027.347	26.725
148.71	150.0	5.563	5.551	33.887	1027.420	26.752	1027.422	26.753
158.62	160.0	5.453	5.440	33.897	1027.488	26.773	1027.489	26.775
173.48	175.0	5.246	5.233	33.942	1027.618	26.833	1027.619	26.835
178.43	180.0	5.236	5.222	33.944	1027.644	26.836	1027.645	26.838
198.25	200.0	4.945	4.930	33.989	1027.807	26.905	1027.808	26.907
218.07	220.0	4.780	4.763	34.047	1027.964	26.970	1027.966	26.972
237.88	240.0	4.768	4.750	34.081	1028.085	26.998	1028.087	27.000
247.78	250.0	4.759	4.741	34.085	1028.135	27.002	1028.137	27.004
257.69	260.0	4.715	4.695	34.103	1028.201	27.022	1028.203	27.024
277.50	280.0	4.591	4.570	34.138	1028.335	27.063	1028.338	27.065
297.30	300.0	4.454	4.432	34.147	1028.451	27.085	1028.453	27.087
317.11	320.0	4.331	4.308	34.143	1028.554	27.095	1028.557	27.097
336.91	340.0	4.253	4.228	34.143	1028.656	27.103	1028.659	27.106
346.81	350.0	4.214	4.189	34.146	1028.709	27.110	1028.712	27.112
356.71	360.0	4.194	4.168	34.146	1028.757	27.112	1028.760	27.114
376.51	380.0	4.116	4.088	34.146	1028.859	27.120	1028.862	27.123
396.31	400.0	4.026	3.998	34.153	1028.966	27.134	1028.970	27.138
445.80	450.0	3.814	3.782	34.161	1029.228	27.163	1029.232	27.166
495.27	500.0	3.564	3.530	34.171	1029.495	27.195	1029.498	27.199
544.73	550.0	3.367	3.330	34.190	1029.763	27.230	1029.767	27.233
594.18	600.0	3.097	3.058	34.217	1030.045	27.276	1030.048	27.280
643.62	650.0	3.037	2.995	34.232	1030.294	27.294	1030.298	27.298
693.04	700.0	2.935	2.890	34.257	1030.556	27.323	1030.560	27.327
742.46	750.0	2.811	2.763	34.295	1030.830	27.364	1030.835	27.369
791.86	800.0	2.778	2.727	34.317	1031.082	27.385	1031.087	27.389
841.25	850.0	2.721	2.666	34.355	1031.349	27.420	1031.355	27.425
890.63	900.0	2.702	2.644	34.370	1031.593	27.434	1031.599	27.439

265

POTENTIAL TEMPERATURE (°C)



Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.05.03
 Station: 86 Cast: BOTTLE Time: 4.45 Z
 Position: Lat: 46°36.000'S Long: 38° 4.400'E Depth: 1000 m

Bottle Data

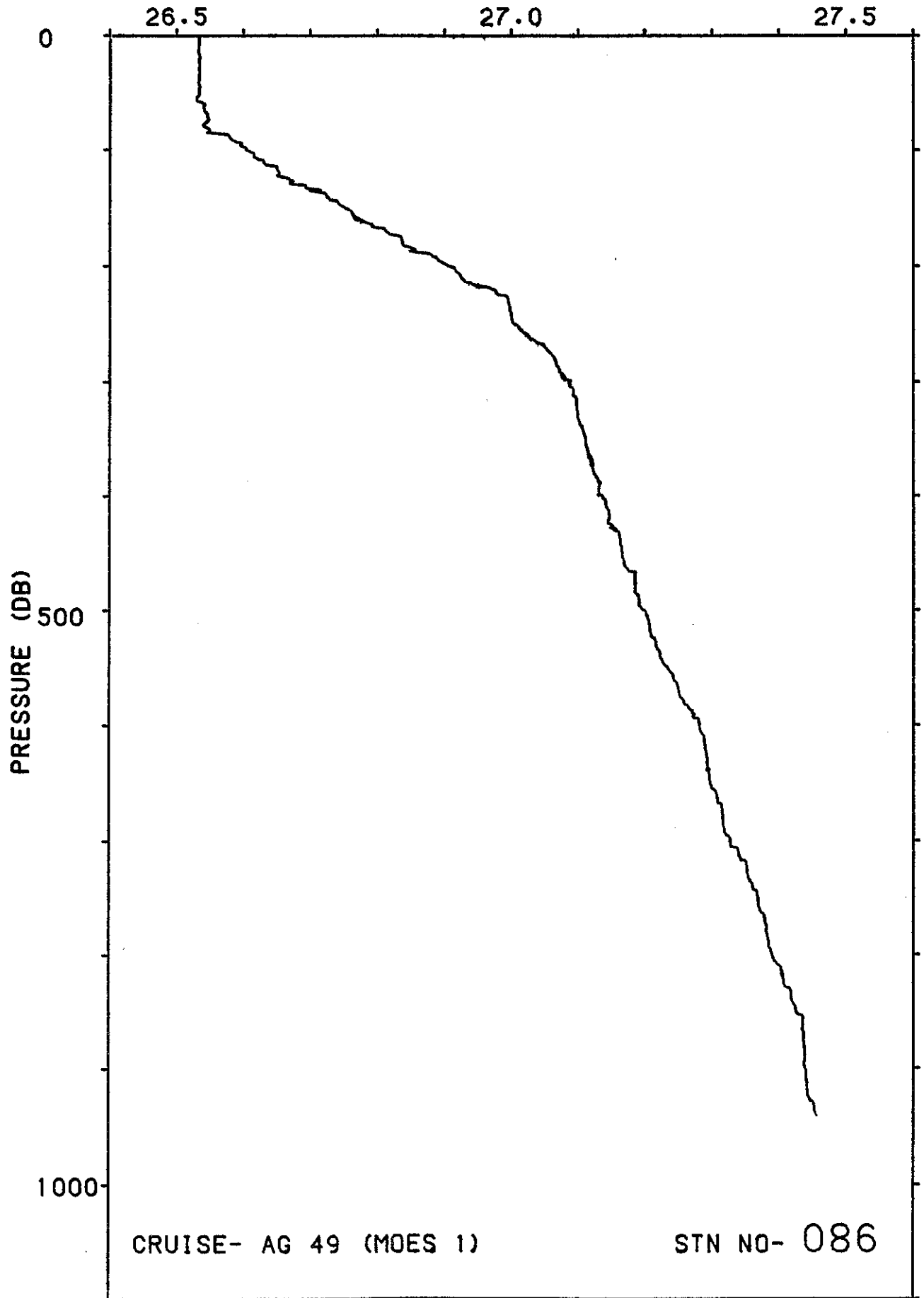
Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
.0	6.72	6.72	33.796	1.546	.04	9.01	.16	
4.0	6.72	6.72	33.796		.01	12.78	.25	
7.0	6.72	6.72	33.797		.02	12.23	.24	
12.0	6.72	6.72	33.797	1.402	.02	12.69	.26	
23.0	6.72	6.72	33.796		.02	11.34	.24	
30.0	6.72	6.72	33.796	1.189	.01	12.72	.26	
50.0	6.72	6.72	33.796	1.171	.02	10.63	.22	
75.0	6.68	6.67	33.803		.02	15.25	.36	

Production Data

Depth m	Filter size: Light %	Carbon Uptake				Total	Areal Production mg(C).m ⁻² .hr ⁻¹
		0.2 μ m	2 μ m	20 μ m			
		mg(C).m ⁻³ .hr ⁻¹					
.0	100	.189	.580	20.741	21.509	258.1	
4.0	50	.735	.462	14.233	15.430		
7.0	25	.467	.565	15.643	16.675		
12.0	10	.238	.557	14.018	14.813		
23.0	1	.185	.363	7.155	7.704		

267

POTENTIAL DENSITY (σ_t)



CRUISE- AG 49 (MOES 1)

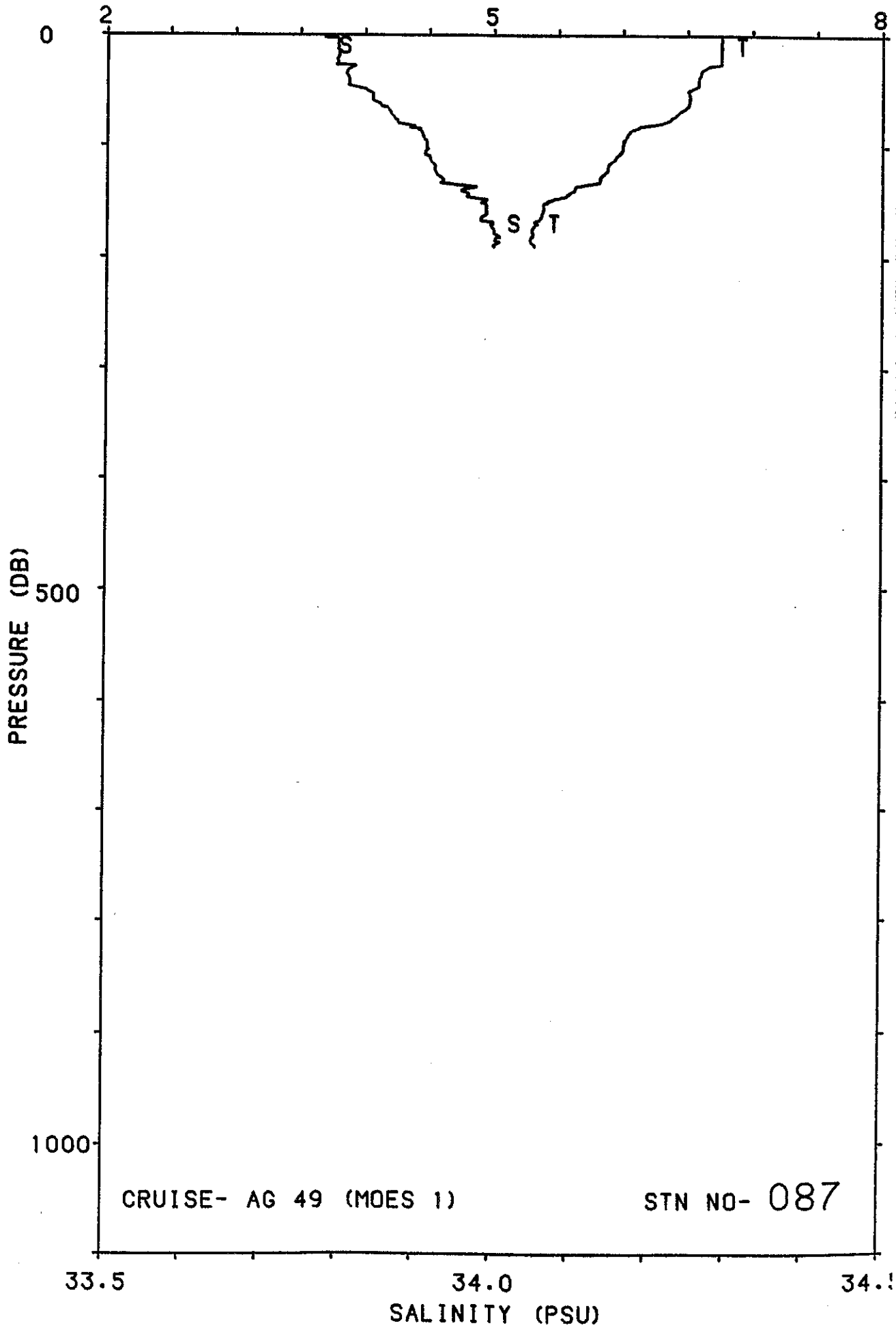
STN NO- 086

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.05.03
 Station: 87 Cast: CTD UP Time: 8.25 Z
 Position: Lat: 46°33.500'S Long: 37°55.000'E Depth: 245 m/210 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.762	6.762	33.644	1026.383	26.408	1026.383	26.408
4.96	5.0	6.762	6.762	33.798	1026.527	26.529	1026.527	26.529
9.92	10.0	6.761	6.760	33.798	1026.550	26.529	1026.551	26.530
19.83	20.0	6.758	6.756	33.799	1026.598	26.531	1026.598	26.531
24.79	25.0	6.760	6.757	33.798	1026.620	26.530	1026.620	26.530
29.75	30.0	6.637	6.634	33.815	1026.672	26.559	1026.673	26.560
39.67	40.0	6.588	6.585	33.812	1026.723	26.564	1026.723	26.564
49.58	50.0	6.504	6.500	33.835	1026.798	26.592	1026.798	26.593
59.50	60.0	6.517	6.512	33.847	1026.852	26.600	1026.852	26.601
69.41	70.0	6.437	6.431	33.866	1026.923	26.626	1026.924	26.627
74.37	75.0	6.380	6.374	33.872	1026.959	26.638	1026.959	26.639
79.32	80.0	6.275	6.268	33.881	1027.003	26.659	1027.003	26.660
89.24	90.0	6.041	6.034	33.908	1027.100	26.710	1027.101	26.711
99.15	100.0	6.006	5.998	33.914	1027.155	26.718	1027.156	26.720
118.97	120.0	5.892	5.882	33.924	1027.270	26.741	1027.271	26.742
123.93	125.0	5.864	5.854	33.927	1027.298	26.747	1027.300	26.748
138.80	140.0	5.638	5.627	33.958	1027.421	26.799	1027.422	26.800
148.71	150.0	5.424	5.412	33.987	1027.516	26.848	1027.518	26.849
158.62	160.0	5.392	5.379	33.990	1027.569	26.854	1027.570	26.856
173.48	175.0	5.309	5.295	34.000	1027.656	26.872	1027.658	26.873
178.44	180.0	5.316	5.301	34.005	1027.682	26.875	1027.684	26.877

269

POTENTIAL TEMPERATURE (°C)



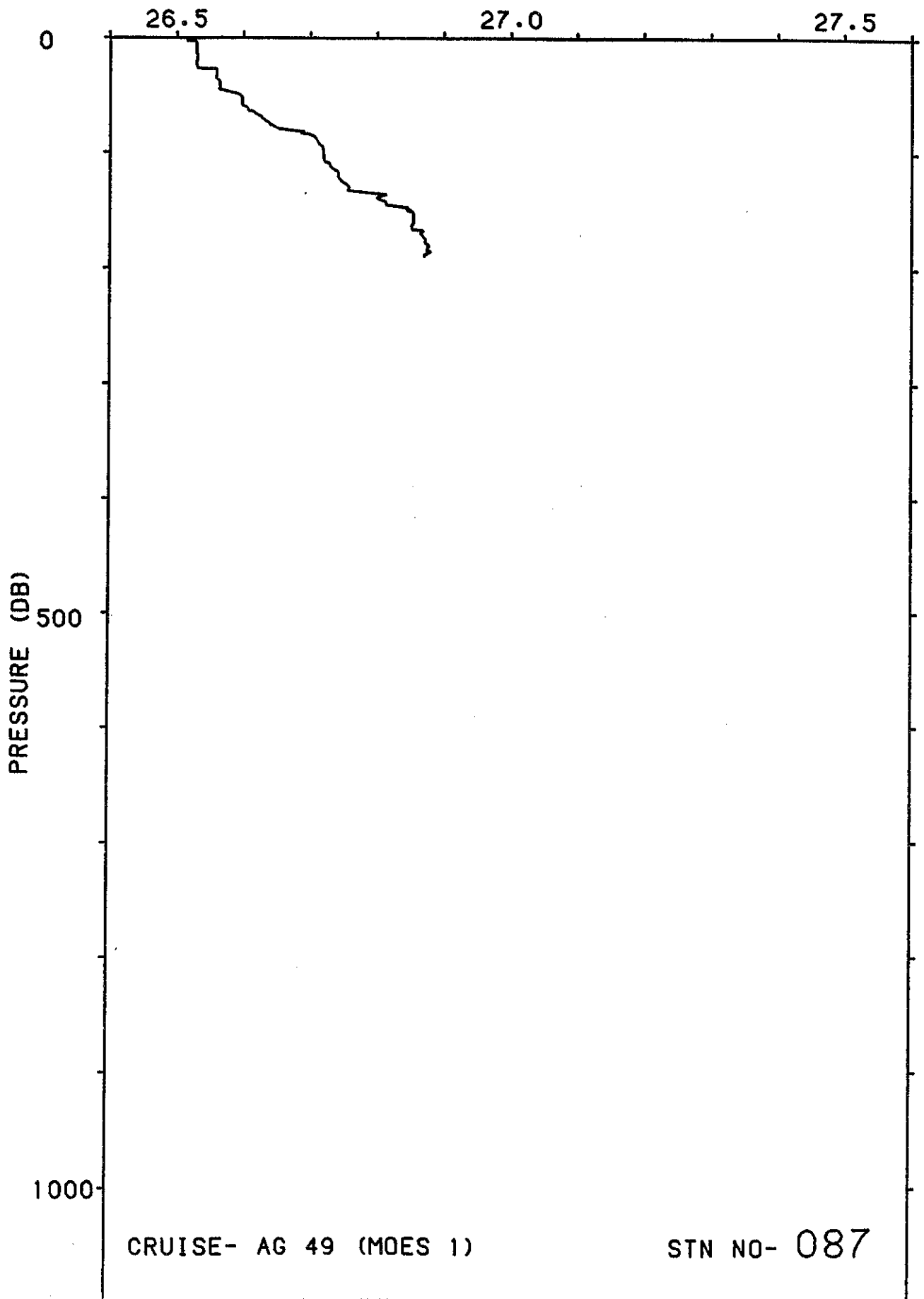
270

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.05.03
Station: 87 Cast: BOTTLE Time: 8.25 Z
Position: Lat: 46°33.500'S Long: 37°55.000'E Depth: 245 m/210 m

NO BOTTLE DATA

271

POTENTIAL DENSITY (σ_t)

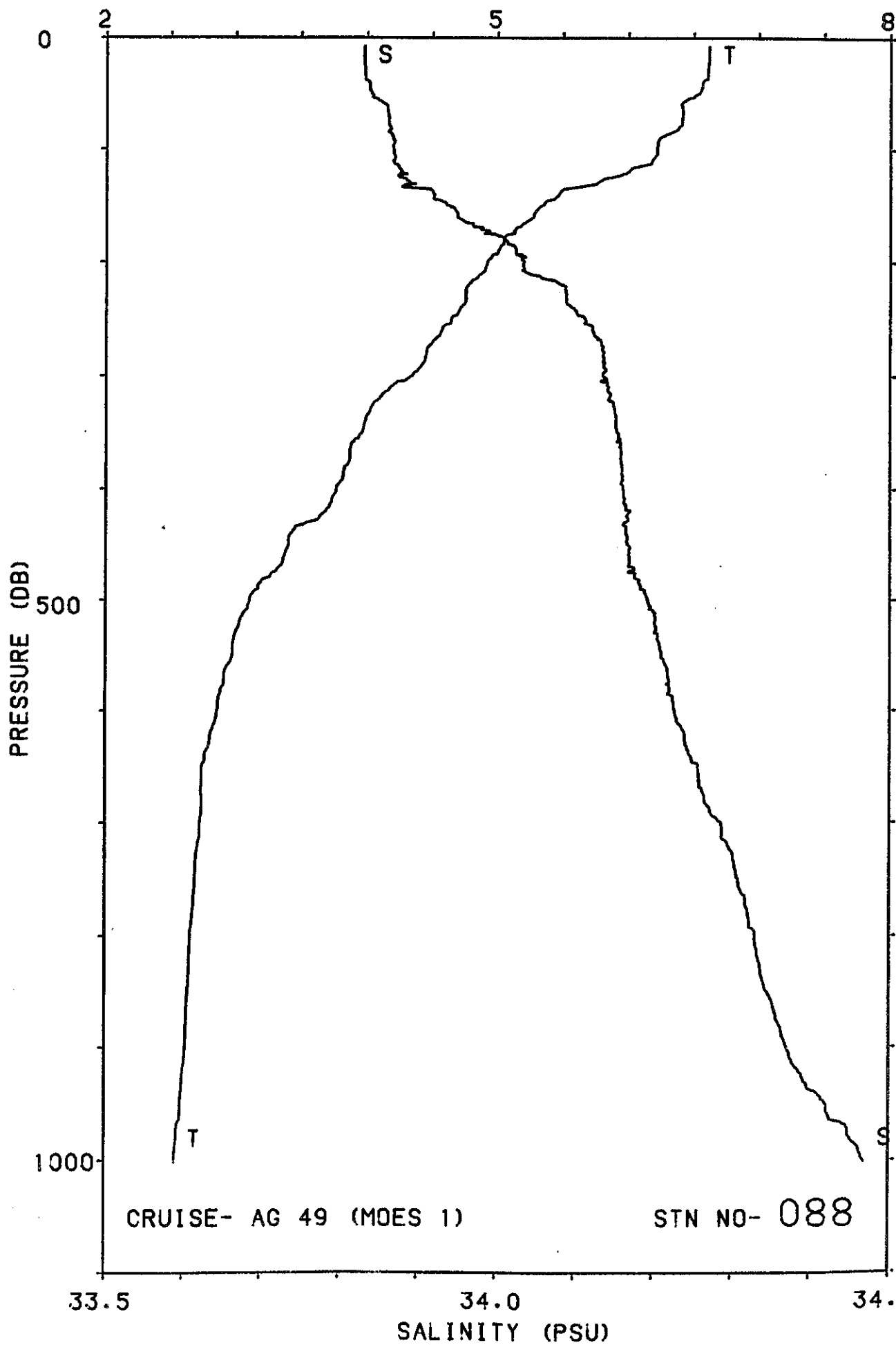


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.05.03
 Station: 88 Cast: CTD UP Time: 9.12 Z
 Position: Lat: 46°30.000'S Long: 37°55.000'E Depth: 1600 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.616	6.616	33.827	1026.546	26.571	1026.547	26.572
4.96	5.0	6.616	6.616	33.829	1026.571	26.573	1026.571	26.573
9.92	10.0	6.616	6.615	33.829	1026.594	26.573	1026.594	26.573
19.83	20.0	6.618	6.616	33.829	1026.640	26.573	1026.640	26.573
24.79	25.0	6.615	6.613	33.829	1026.664	26.574	1026.664	26.574
29.75	30.0	6.610	6.608	33.830	1026.688	26.575	1026.688	26.575
39.67	40.0	6.570	6.567	33.836	1026.744	26.585	1026.744	26.585
49.58	50.0	6.537	6.533	33.839	1026.796	26.591	1026.797	26.592
59.50	60.0	6.410	6.405	33.857	1026.874	26.622	1026.874	26.623
69.41	70.0	6.420	6.414	33.861	1026.921	26.624	1026.922	26.625
74.37	75.0	6.415	6.409	33.860	1026.945	26.624	1026.945	26.625
79.32	80.0	6.392	6.385	33.862	1026.972	26.629	1026.973	26.629
89.24	90.0	6.245	6.237	33.866	1027.041	26.651	1027.041	26.652
99.15	100.0	6.227	6.218	33.867	1027.089	26.653	1027.091	26.655
118.97	120.0	6.004	5.994	33.878	1027.219	26.691	1027.220	26.692
123.93	125.0	5.866	5.855	33.878	1027.259	26.708	1027.261	26.709
138.80	140.0	5.475	5.464	33.921	1027.411	26.789	1027.413	26.791
148.71	150.0	5.350	5.338	33.938	1027.486	26.818	1027.488	26.819
158.62	160.0	5.289	5.277	33.949	1027.549	26.834	1027.550	26.835
173.48	175.0	5.108	5.094	33.996	1027.677	26.892	1027.679	26.894
178.44	180.0	5.068	5.054	34.010	1027.716	26.907	1027.718	26.909
198.25	200.0	4.941	4.926	34.034	1027.842	26.941	1027.844	26.943
218.07	220.0	4.794	4.778	34.083	1027.991	26.997	1027.993	26.998
237.88	240.0	4.739	4.721	34.097	1028.101	27.014	1028.103	27.016
247.79	250.0	4.667	4.649	34.111	1028.167	27.033	1028.169	27.035
257.69	260.0	4.596	4.577	34.121	1028.229	27.049	1028.231	27.051
277.50	280.0	4.478	4.457	34.135	1028.346	27.073	1028.349	27.075
297.31	300.0	4.359	4.337	34.135	1028.452	27.086	1028.455	27.088
317.11	320.0	4.118	4.095	34.142	1028.578	27.117	1028.580	27.119
336.92	340.0	4.013	3.990	34.151	1028.689	27.134	1028.692	27.137
346.82	350.0	3.988	3.963	34.153	1028.740	27.139	1028.742	27.141
356.72	360.0	3.909	3.884	34.157	1028.798	27.150	1028.801	27.152
376.52	380.0	3.860	3.834	34.158	1028.897	27.156	1028.900	27.158
396.31	400.0	3.799	3.772	34.160	1028.998	27.164	1029.001	27.166
445.80	450.0	3.437	3.407	34.167	1029.274	27.204	1029.277	27.207
495.27	500.0	3.145	3.113	34.192	1029.556	27.252	1029.560	27.255
544.74	550.0	3.014	2.979	34.210	1029.816	27.278	1029.820	27.281
594.19	600.0	2.901	2.862	34.227	1030.073	27.302	1030.077	27.305
643.62	650.0	2.788	2.747	34.256	1030.340	27.336	1030.344	27.339
693.05	700.0	2.774	2.730	34.286	1030.596	27.361	1030.601	27.364
742.47	750.0	2.740	2.692	34.309	1030.849	27.382	1030.854	27.386
791.87	800.0	2.706	2.655	34.330	1031.100	27.402	1031.105	27.406
841.26	850.0	2.695	2.640	34.346	1031.344	27.415	1031.350	27.420
890.64	900.0	2.679	2.622	34.371	1031.596	27.437	1031.603	27.442
940.01	950.0	2.644	2.583	34.420	1031.869	27.479	1031.876	27.484
989.36	1000.0	2.601	2.536	34.469	1032.142	27.521	1032.150	27.527

273

POTENTIAL TEMPERATURE (°C)



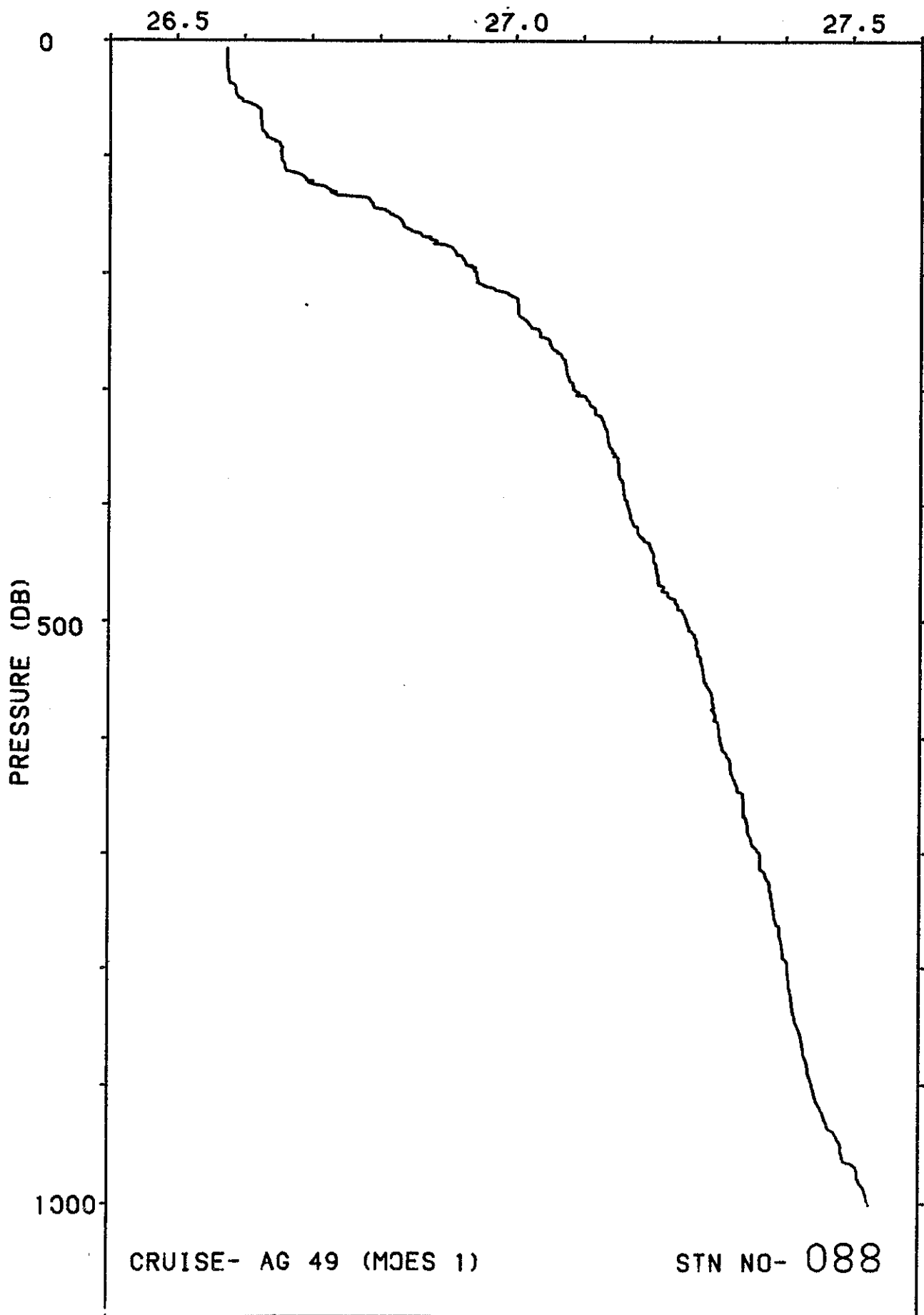
274

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.05.03
Station: 88 Cast: BOTTLE Time: 9.12 Z
Position: Lat: 46°30.000'S Long: 37°55.000'E Depth: 1600 m

NO BOTTLE DATA

275

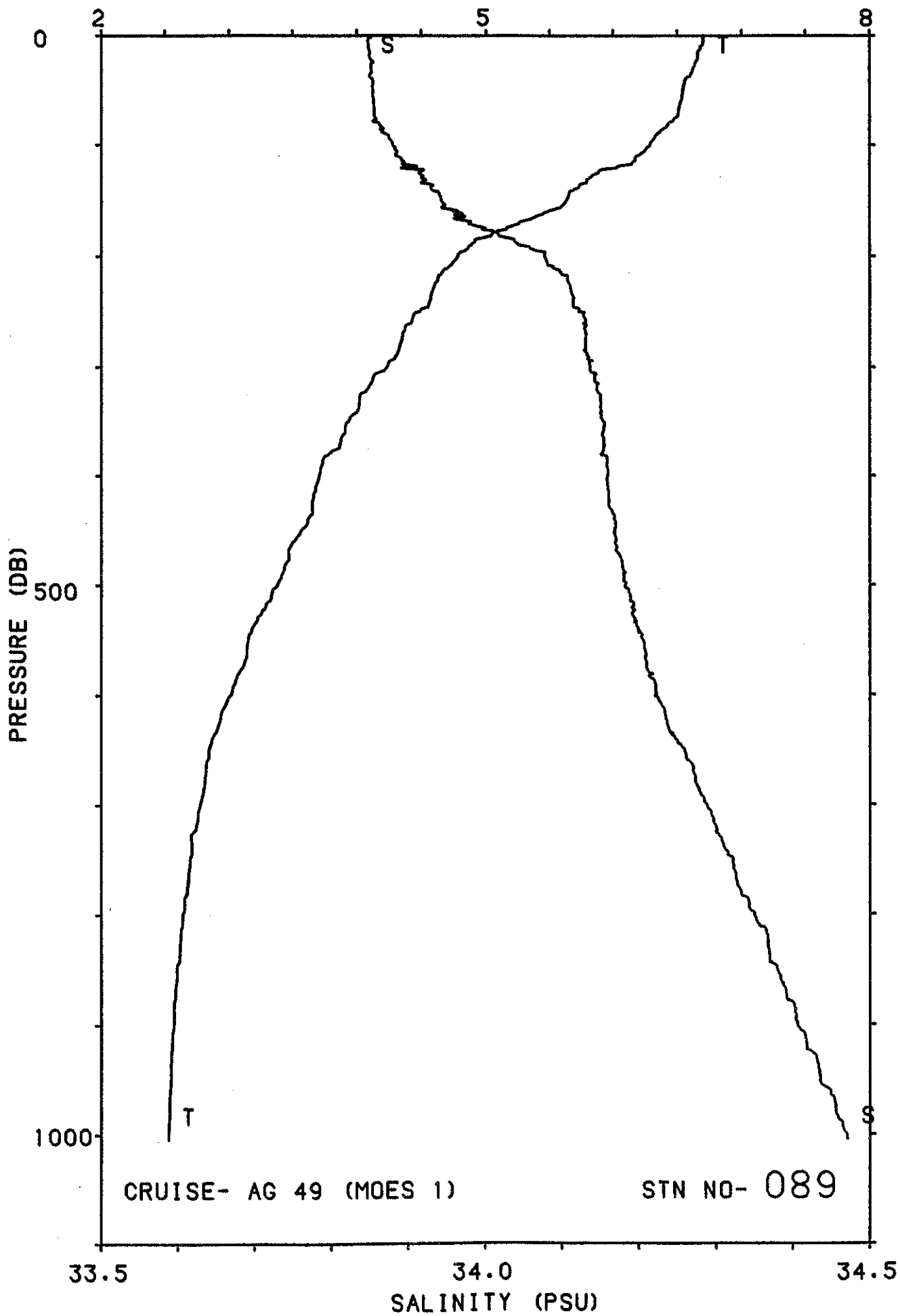
POTENTIAL DENSITY (σ_θ)



Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.05.03
 Station: 89 Cast: CTD UP Time: 10.25 Z
 Position: Lat: 46°27.400'S Long: 37°55.000'E Depth: 2200 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot. Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.718	6.718	33.839	1026.543	26.568	1026.543	26.568
4.96	5.0	6.705	6.705	33.848	1026.574	26.576	1026.574	26.576
9.92	10.0	6.678	6.677	33.849	1026.602	26.581	1026.602	26.581
19.83	20.0	6.662	6.661	33.850	1026.650	26.583	1026.651	26.584
24.79	25.0	6.647	6.645	33.855	1026.680	26.590	1026.680	26.590
29.75	30.0	6.630	6.628	33.852	1026.702	26.589	1026.703	26.590
39.67	40.0	6.573	6.570	33.853	1026.757	26.598	1026.757	26.598
49.58	50.0	6.550	6.546	33.854	1026.807	26.602	1026.807	26.602
59.50	60.0	6.539	6.534	33.855	1026.855	26.604	1026.856	26.604
69.41	70.0	6.518	6.511	33.856	1026.905	26.608	1026.905	26.608
74.37	75.0	6.502	6.496	33.857	1026.930	26.610	1026.931	26.611
79.32	80.0	6.446	6.439	33.862	1026.965	26.622	1026.966	26.622
89.24	90.0	6.355	6.347	33.871	1027.030	26.640	1027.031	26.642
99.15	100.0	6.298	6.289	33.880	1027.091	26.655	1027.092	26.656
118.98	120.0	6.050	6.039	33.902	1027.232	26.704	1027.234	26.705
123.93	125.0	5.900	5.890	33.914	1027.283	26.732	1027.285	26.733
138.80	140.0	5.715	5.703	33.931	1027.389	26.768	1027.391	26.770
148.71	150.0	5.645	5.632	33.943	1027.454	26.786	1027.456	26.788
158.62	160.0	5.503	5.490	33.962	1027.533	26.818	1027.534	26.820
173.48	175.0	5.175	5.162	34.000	1027.672	26.887	1027.674	26.889
178.44	180.0	5.065	5.051	34.017	1027.722	26.914	1027.724	26.915
198.25	200.0	4.803	4.788	34.077	1027.892	26.991	1027.894	26.993
218.07	220.0	4.650	4.634	34.107	1028.027	27.032	1028.029	27.033
237.88	240.0	4.590	4.572	34.115	1028.132	27.044	1028.135	27.047
247.79	250.0	4.505	4.487	34.122	1028.194	27.059	1028.196	27.061
257.69	260.0	4.446	4.427	34.130	1028.253	27.072	1028.256	27.074
277.50	280.0	4.358	4.338	34.131	1028.357	27.082	1028.359	27.085
297.31	300.0	4.257	4.235	34.136	1028.465	27.097	1028.467	27.100
317.11	320.0	4.111	4.088	34.145	1028.581	27.120	1028.583	27.122
336.92	340.0	4.033	4.009	34.151	1028.687	27.132	1028.689	27.135
346.82	350.0	3.959	3.934	34.155	1028.744	27.143	1028.747	27.146
356.72	360.0	3.935	3.910	34.154	1028.792	27.145	1028.795	27.147
376.52	380.0	3.811	3.785	34.152	1028.897	27.156	1028.900	27.158
396.32	400.0	3.738	3.711	34.160	1029.004	27.169	1029.007	27.172
445.80	450.0	3.601	3.570	34.169	1029.258	27.190	1029.261	27.193
495.28	500.0	3.418	3.385	34.183	1029.520	27.219	1029.524	27.222
544.74	550.0	3.190	3.154	34.205	1029.794	27.258	1029.797	27.261
594.19	600.0	3.052	3.013	34.223	1030.054	27.285	1030.058	27.289
643.63	650.0	2.887	2.846	34.260	1030.332	27.329	1030.336	27.333
693.05	700.0	2.820	2.775	34.289	1030.594	27.359	1030.598	27.363
742.47	750.0	2.746	2.698	34.322	1030.858	27.392	1030.864	27.396
791.87	800.0	2.694	2.643	34.350	1031.117	27.419	1031.123	27.423
841.26	850.0	2.651	2.597	34.380	1031.376	27.446	1031.382	27.451
890.64	900.0	2.631	2.573	34.406	1031.630	27.469	1031.636	27.474
940.01	950.0	2.610	2.549	34.436	1031.886	27.495	1031.892	27.500
989.37	1000.0	2.596	2.531	34.470	1032.144	27.523	1032.151	27.529

POTENTIAL TEMPERATURE (°C)

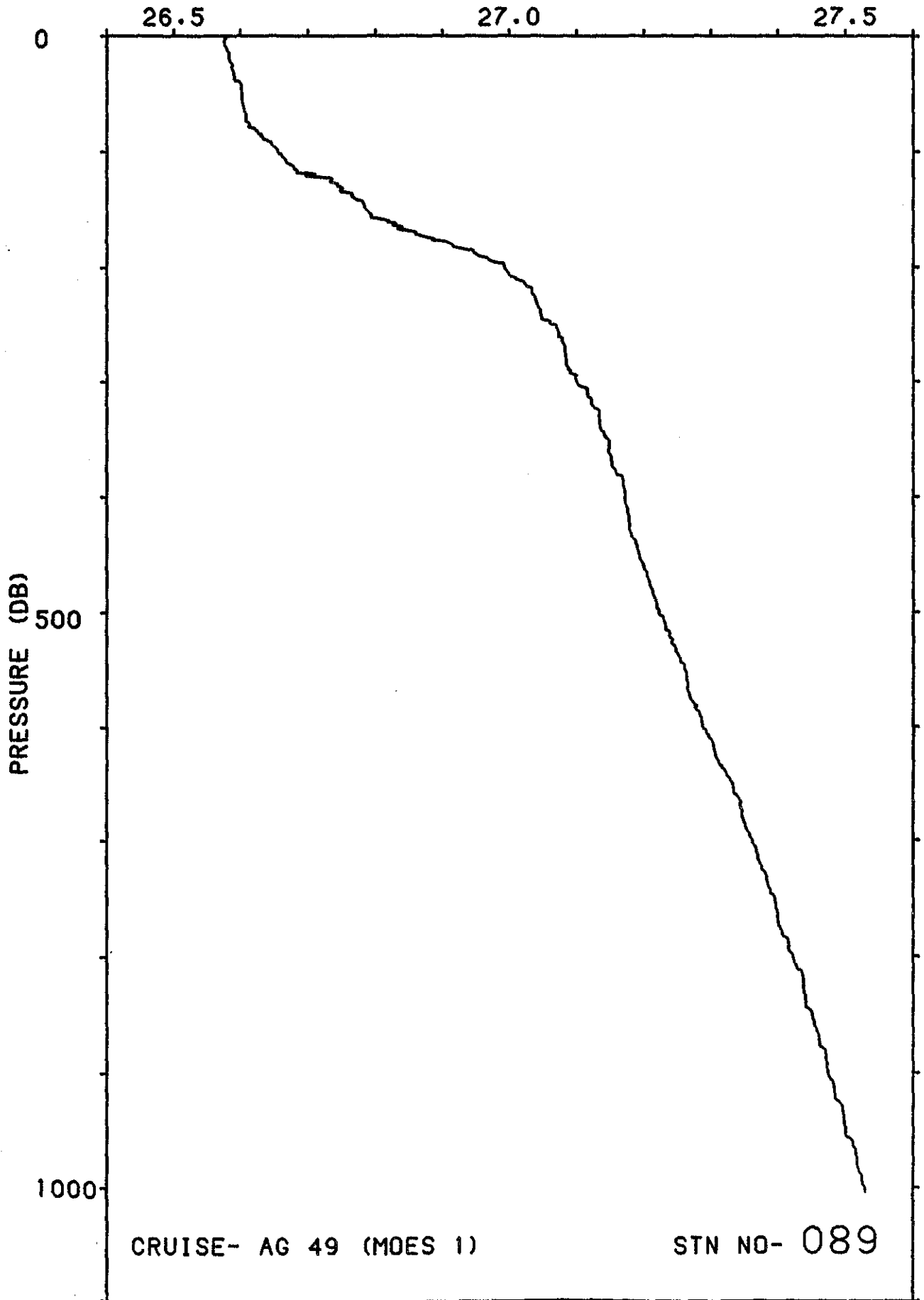


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.05.03
Station: 89 Cast: BOTTLE Time: 10.25 Z
Position: Lat: 46°27.400'S Long: 37°55.000'E Depth: 2200 m

NO BOTTLE DATA

279

POTENTIAL DENSITY (σ_θ)

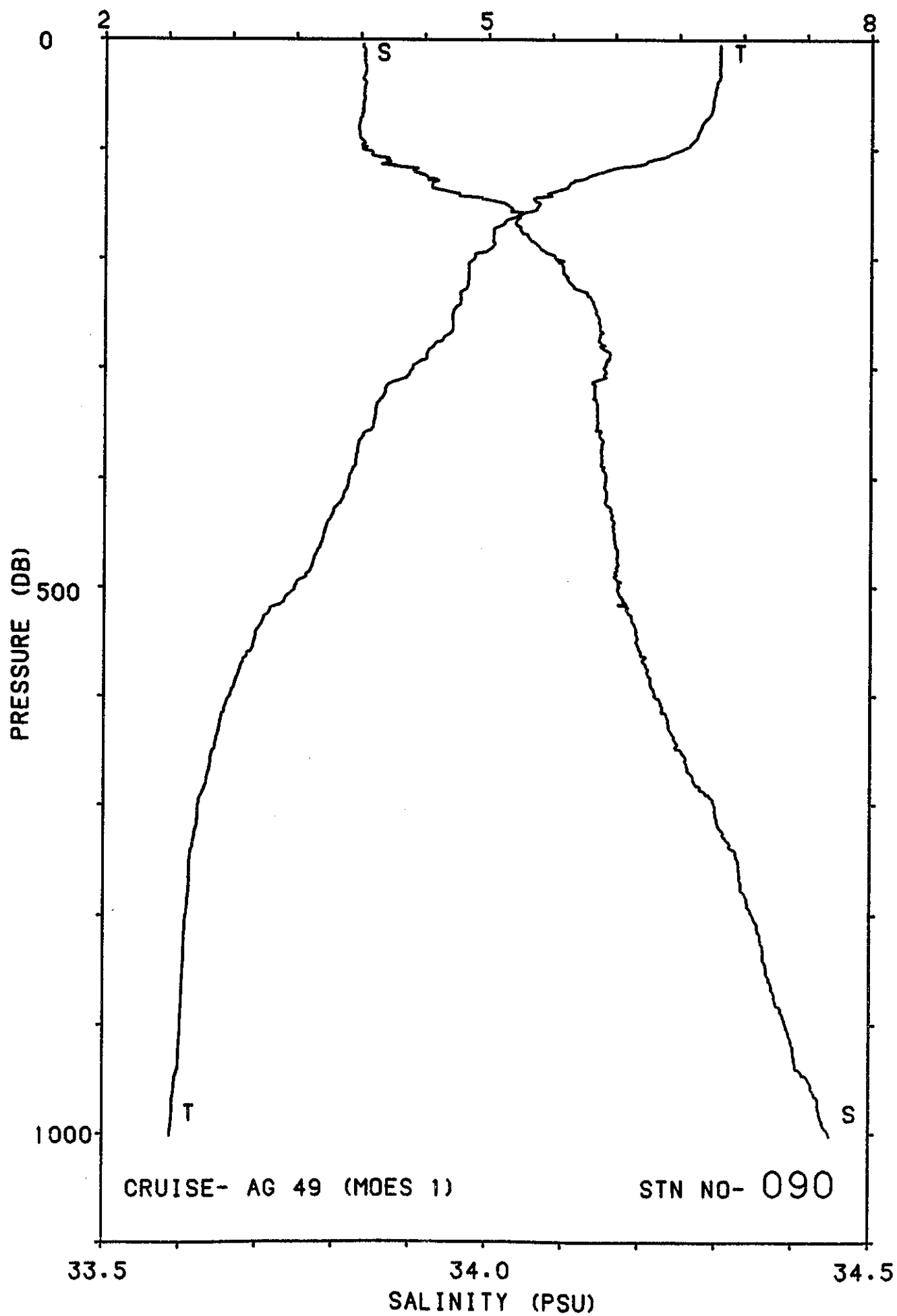


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.05.03
 Station: 90 Cast: CTD UP Time: 11.38 Z
 Position: Lat: 46°24.400'S Long: 37°55.000'E Depth: 2480 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ _t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ _θ kg.m ⁻³
.00	.0	6.811	6.811	33.838	1026.529	26.554	1026.529	26.554
4.96	5.0	6.816	6.815	33.836	1026.550	26.552	1026.550	26.552
9.92	10.0	6.814	6.813	33.838	1026.575	26.554	1026.575	26.554
19.83	20.0	6.815	6.813	33.838	1026.621	26.554	1026.621	26.554
24.79	25.0	6.815	6.813	33.840	1026.645	26.555	1026.646	26.556
29.75	30.0	6.815	6.812	33.839	1026.668	26.555	1026.668	26.555
39.67	40.0	6.793	6.789	33.840	1026.717	26.558	1026.718	26.559
49.58	50.0	6.778	6.774	33.837	1026.763	26.558	1026.763	26.558
59.50	60.0	6.766	6.760	33.836	1026.810	26.559	1026.810	26.560
69.41	70.0	6.732	6.726	33.835	1026.859	26.563	1026.860	26.563
74.37	75.0	6.693	6.686	33.832	1026.885	26.566	1026.886	26.566
79.32	80.0	6.674	6.667	33.831	1026.910	26.567	1026.911	26.568
89.24	90.0	6.638	6.630	33.832	1026.962	26.573	1026.963	26.574
99.15	100.0	6.530	6.521	33.836	1027.025	26.590	1027.026	26.591
118.98	120.0	5.919	5.909	33.903	1027.250	26.721	1027.251	26.722
123.93	125.0	5.789	5.779	33.921	1027.303	26.751	1027.305	26.753
138.80	140.0	5.484	5.473	33.961	1027.442	26.820	1027.443	26.821
148.71	150.0	5.414	5.402	34.024	1027.546	26.878	1027.548	26.880
158.62	160.0	5.245	5.232	34.043	1027.629	26.914	1027.630	26.915
173.48	175.0	5.059	5.045	34.043	1027.720	26.935	1027.722	26.937
178.44	180.0	5.053	5.039	34.052	1027.751	26.943	1027.753	26.944
198.25	200.0	4.908	4.892	34.088	1027.889	26.988	1027.891	26.990
218.07	220.0	4.865	4.848	34.105	1028.000	27.006	1028.002	27.008
237.88	240.0	4.807	4.789	34.138	1028.125	27.039	1028.127	27.041
247.79	250.0	4.751	4.732	34.141	1028.181	27.048	1028.183	27.050
257.69	260.0	4.748	4.728	34.147	1028.232	27.052	1028.234	27.055
277.50	280.0	4.599	4.578	34.154	1028.347	27.075	1028.350	27.077
297.31	300.0	4.437	4.415	34.152	1028.457	27.091	1028.459	27.093
317.12	320.0	4.219	4.196	34.141	1028.565	27.105	1028.568	27.108
336.92	340.0	4.149	4.125	34.144	1028.668	27.115	1028.671	27.117
346.82	350.0	4.134	4.109	34.145	1028.717	27.117	1028.720	27.120
356.72	360.0	4.053	4.027	34.147	1028.774	27.127	1028.777	27.130
376.52	380.0	4.001	3.974	34.150	1028.875	27.135	1028.878	27.138
396.32	400.0	3.948	3.920	34.155	1028.977	27.144	1028.980	27.147
445.80	450.0	3.757	3.726	34.166	1029.238	27.173	1029.242	27.175
495.28	500.0	3.529	3.496	34.172	1029.500	27.200	1029.503	27.203
544.74	550.0	3.214	3.178	34.195	1029.783	27.248	1029.787	27.251
594.19	600.0	3.030	2.991	34.219	1030.053	27.284	1030.057	27.287
643.63	650.0	2.898	2.856	34.254	1030.326	27.324	1030.331	27.328
693.06	700.0	2.789	2.745	34.298	1030.603	27.368	1030.608	27.372
742.47	750.0	2.727	2.679	34.329	1030.866	27.399	1030.871	27.403
791.88	800.0	2.705	2.654	34.347	1031.113	27.415	1031.119	27.420
841.27	850.0	2.683	2.629	34.366	1031.361	27.432	1031.367	27.437
890.65	900.0	2.668	2.610	34.391	1031.613	27.454	1031.620	27.459
940.02	950.0	2.630	2.569	34.421	1031.871	27.481	1031.878	27.486
989.37	1000.0	2.596	2.531	34.448	1032.127	27.506	1032.134	27.511

281

POTENTIAL TEMPERATURE (°C)

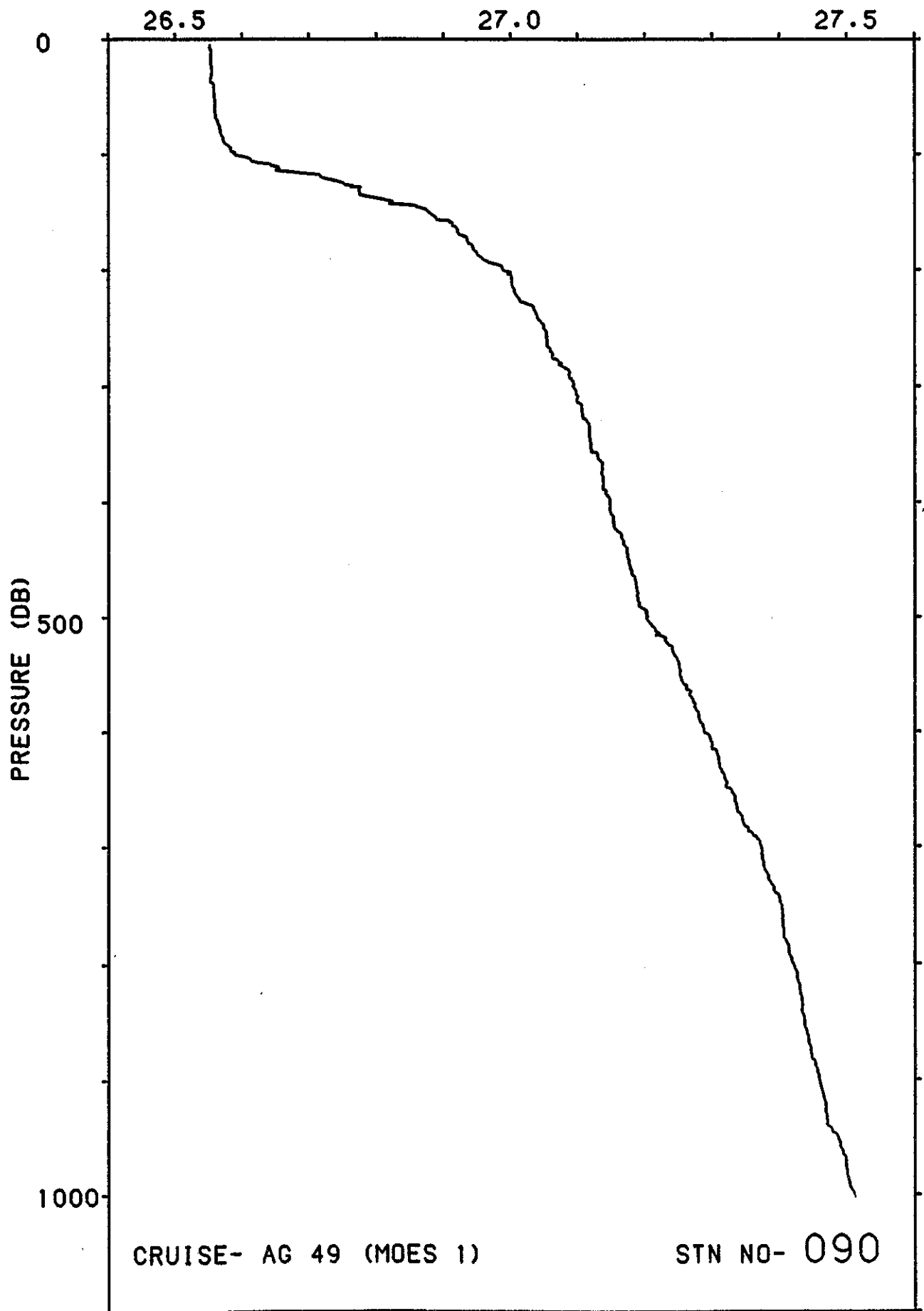


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.05.03
Station: 90 Cast: BOTTLE Time: 11.38 Z
Position: Lat: 46°24.400'S Long: 37°55.000'E Depth: 2480 m

NO BOTTLE DATA

283

POTENTIAL DENSITY (σ_t)



CRUISE- AG 49 (MOES 1)

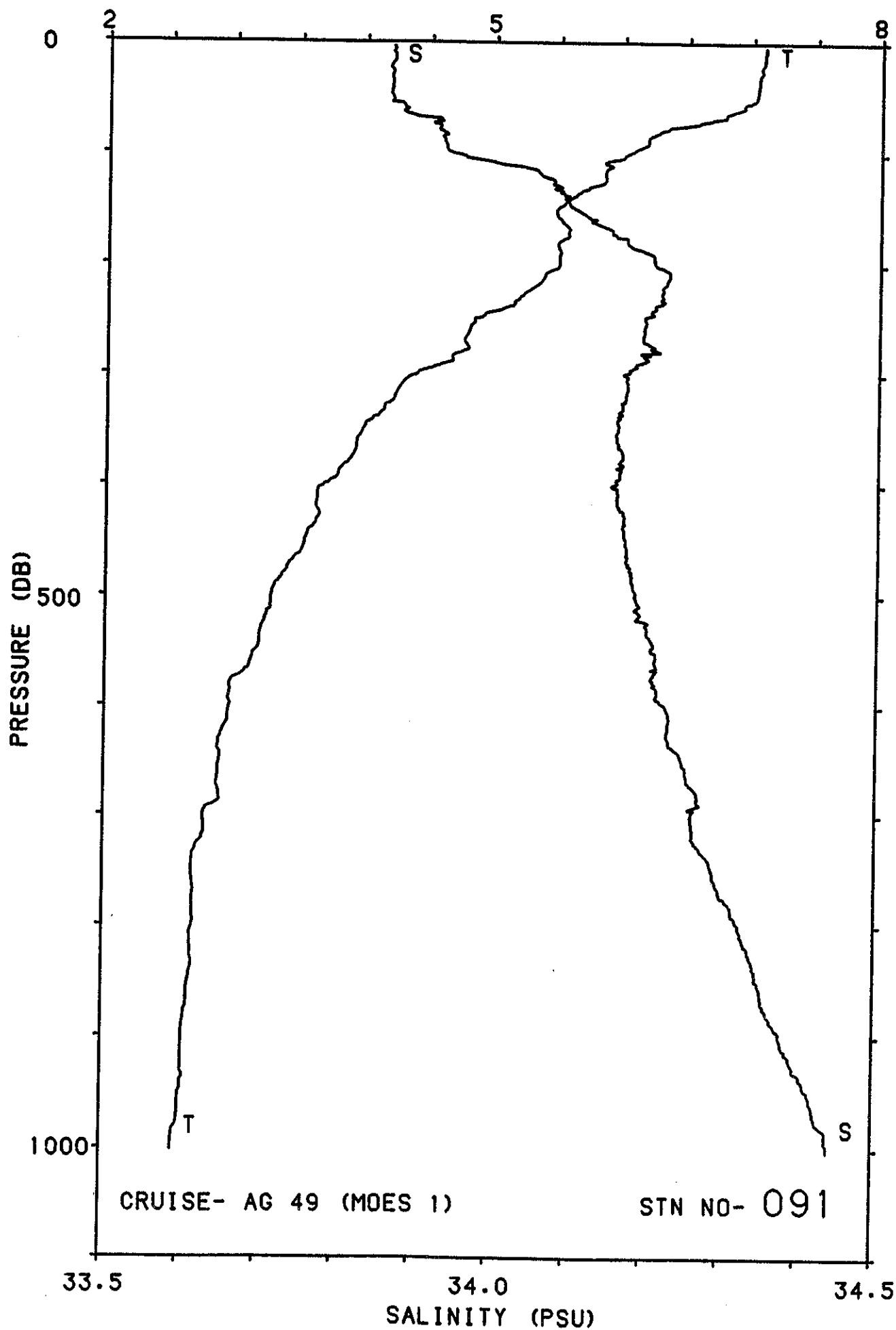
STN NO- 090

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.05.03
 Station: 91 Cast: CTD UP Time: 12.48 Z
 Position: Lat: 46°21.400'S Long: 37°55.000'E Depth: 2630 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ _t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ _θ kg.m ⁻³
.00	.0	7.101	7.101	33.858	1026.505	26.530	1026.506	26.531
4.96	5.0	7.088	7.087	33.868	1026.539	26.541	1026.538	26.540
9.92	10.0	7.084	7.083	33.867	1026.561	26.540	1026.561	26.540
19.83	20.0	7.075	7.074	33.865	1026.607	26.540	1026.607	26.540
24.79	25.0	7.063	7.061	33.865	1026.631	26.541	1026.631	26.542
29.75	30.0	7.049	7.046	33.865	1026.656	26.543	1026.656	26.544
39.67	40.0	7.040	7.036	33.865	1026.704	26.545	1026.704	26.545
49.58	50.0	7.025	7.020	33.866	1026.752	26.547	1026.753	26.548
59.50	60.0	6.892	6.887	33.886	1026.832	26.581	1026.832	26.582
69.41	70.0	6.627	6.621	33.924	1026.943	26.646	1026.944	26.647
74.37	75.0	6.392	6.386	33.928	1027.001	26.681	1027.002	26.681
79.33	80.0	6.274	6.267	33.931	1027.042	26.699	1027.043	26.699
89.24	90.0	6.189	6.181	33.935	1027.102	26.712	1027.103	26.713
99.15	100.0	6.037	6.028	33.949	1027.179	26.743	1027.180	26.744
118.98	120.0	5.859	5.849	34.061	1027.382	26.853	1027.383	26.855
123.93	125.0	5.857	5.846	34.076	1027.417	26.866	1027.419	26.867
138.80	140.0	5.594	5.582	34.090	1027.530	26.909	1027.532	26.910
148.71	150.0	5.490	5.478	34.105	1027.601	26.933	1027.603	26.935
158.62	160.0	5.525	5.512	34.127	1027.661	26.947	1027.662	26.948
173.48	175.0	5.580	5.565	34.158	1027.748	26.965	1027.749	26.966
178.44	180.0	5.503	5.488	34.171	1027.790	26.984	1027.792	26.986
198.26	200.0	5.512	5.496	34.208	1027.910	27.012	1027.912	27.014
218.07	220.0	5.331	5.313	34.219	1028.034	27.043	1028.036	27.045
237.88	240.0	5.086	5.067	34.210	1028.149	27.064	1028.151	27.066
247.79	250.0	4.866	4.847	34.195	1028.210	27.077	1028.212	27.080
257.69	260.0	4.830	4.810	34.194	1028.259	27.080	1028.262	27.083
277.50	280.0	4.755	4.734	34.207	1028.371	27.100	1028.373	27.102
297.31	300.0	4.422	4.400	34.168	1028.472	27.105	1028.474	27.107
317.12	320.0	4.259	4.236	34.172	1028.585	27.125	1028.588	27.128
336.92	340.0	4.092	4.068	34.164	1028.690	27.137	1028.693	27.139
346.82	350.0	4.020	3.995	34.162	1028.743	27.142	1028.746	27.145
356.72	360.0	3.974	3.949	34.160	1028.793	27.146	1028.796	27.148
376.52	380.0	3.905	3.878	34.163	1028.896	27.155	1028.899	27.158
396.32	400.0	3.722	3.695	34.158	1029.004	27.169	1029.007	27.172
445.81	450.0	3.578	3.548	34.173	1029.263	27.195	1029.267	27.199
495.28	500.0	3.326	3.293	34.185	1029.532	27.230	1029.535	27.233
544.74	550.0	3.211	3.175	34.207	1029.793	27.258	1029.797	27.261
594.19	600.0	3.017	2.979	34.226	1030.060	27.291	1030.064	27.294
643.63	650.0	2.946	2.904	34.248	1030.316	27.315	1030.321	27.318
693.06	700.0	2.827	2.783	34.261	1030.571	27.336	1030.575	27.340
742.48	750.0	2.741	2.694	34.289	1030.833	27.366	1030.838	27.370
791.88	800.0	2.756	2.704	34.324	1031.090	27.393	1031.095	27.397
841.27	850.0	2.733	2.678	34.348	1031.342	27.413	1031.348	27.418
890.65	900.0	2.689	2.631	34.378	1031.601	27.441	1031.607	27.446
940.02	950.0	2.678	2.616	34.416	1031.862	27.473	1031.869	27.478
989.38	1000.0	2.622	2.557	34.442	1032.119	27.498	1032.126	27.504

285

POTENTIAL TEMPERATURE (°C)



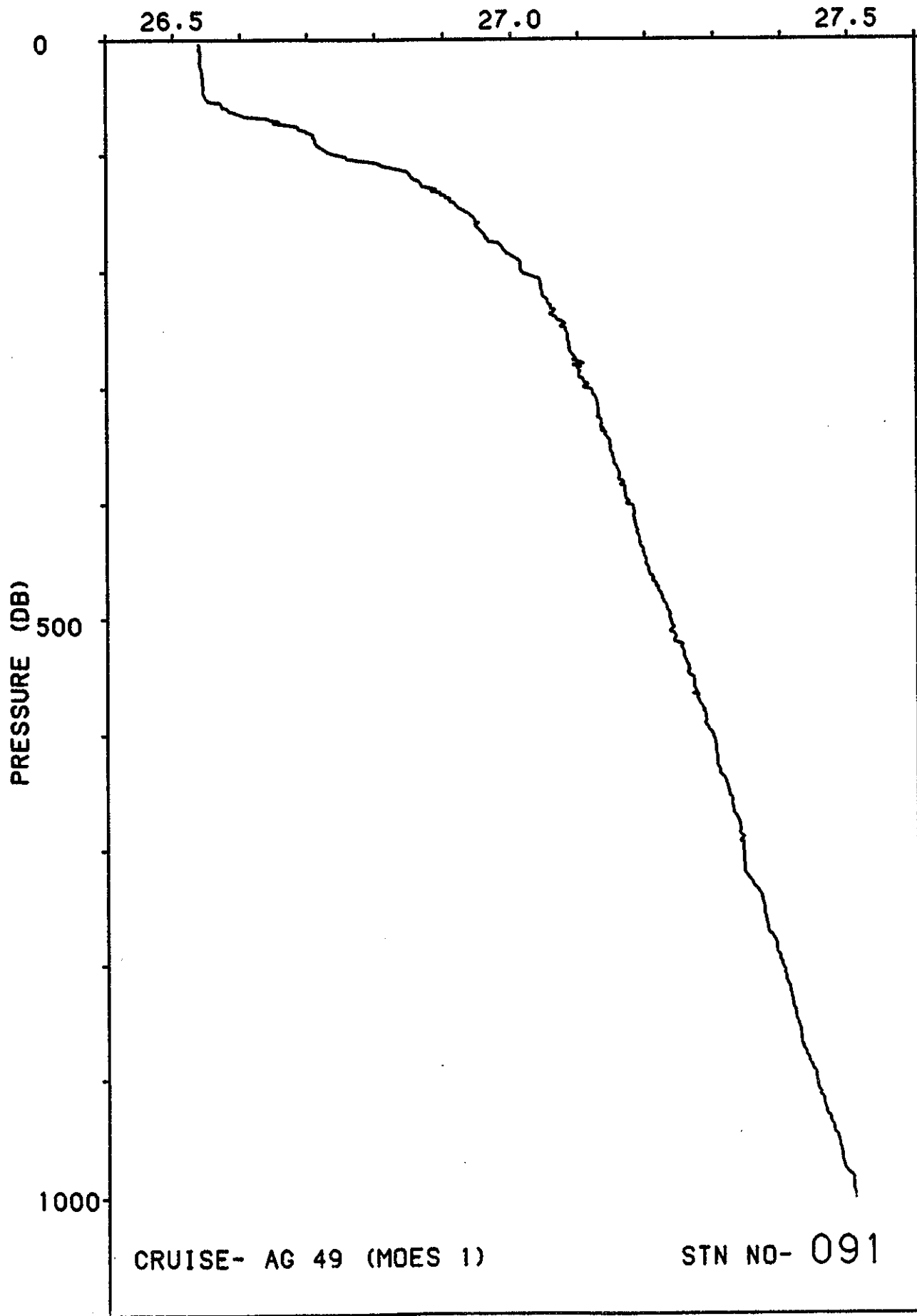
286

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.05.03
Station: 91 Cast: BOTTLE Time: 12.48 Z
Position: Lat: 46°21.400'S Long: 37°55.000'E Depth: 2630 m

NO BOTTLE DATA

287

POTENTIAL DENSITY (σ_t)

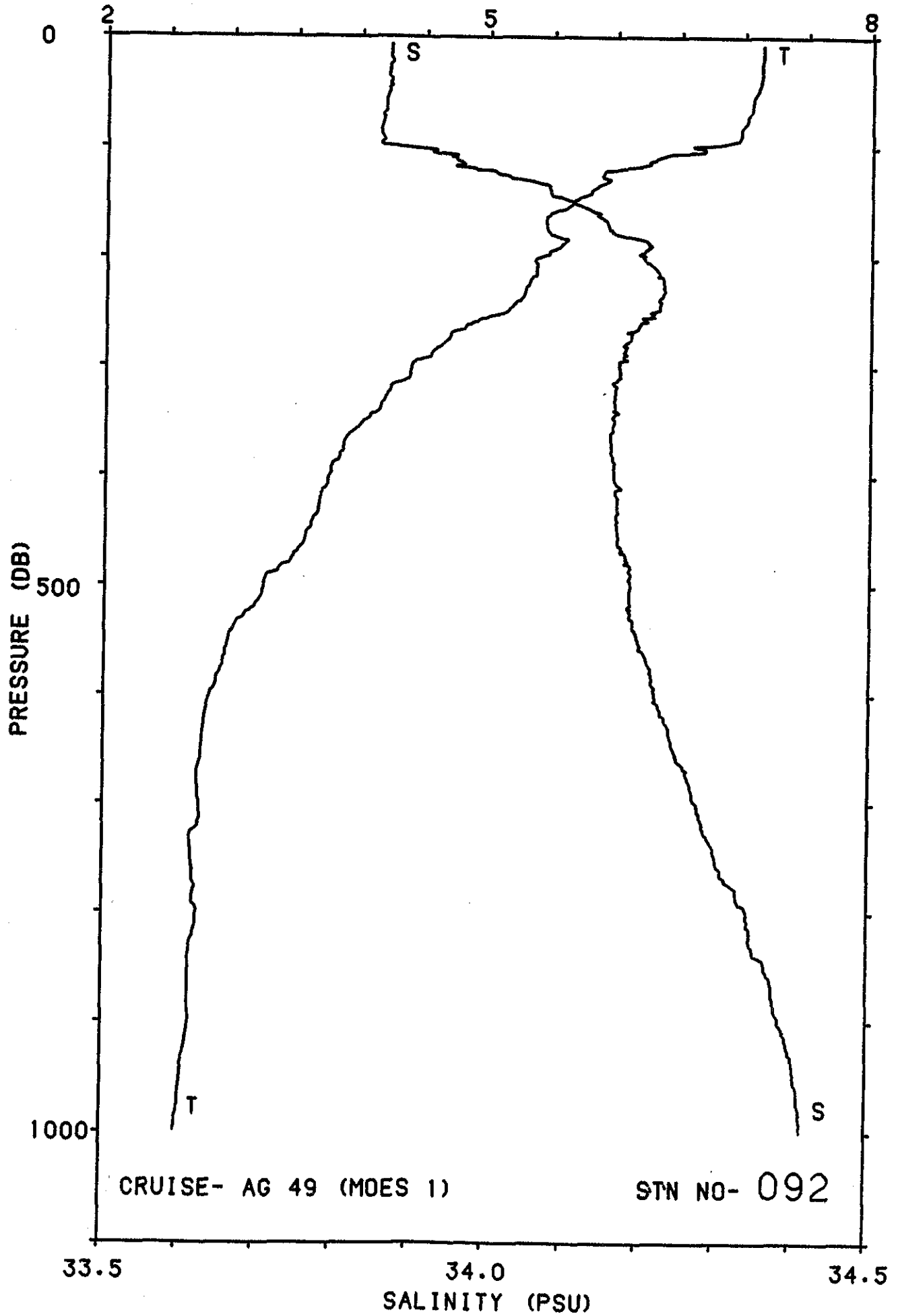


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.05.03
 Station: 92 Cast: CTD UP Time: 13.45 Z
 Position: Lat: 46°18.350'S Long: 37°55.000'E Depth: 2670 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	7.111	7.111	33.872	1026.515	26.540	1026.515	26.540
4.96	5.0	7.131	7.130	33.872	1026.535	26.537	1026.536	26.538
9.92	10.0	7.142	7.141	33.872	1026.557	26.536	1026.557	26.536
19.83	20.0	7.143	7.141	33.872	1026.602	26.536	1026.603	26.536
24.79	25.0	7.135	7.133	33.871	1026.626	26.536	1026.626	26.536
29.75	30.0	7.136	7.134	33.870	1026.648	26.535	1026.648	26.535
39.67	40.0	7.125	7.121	33.872	1026.697	26.538	1026.697	26.539
49.58	50.0	7.099	7.095	33.869	1026.744	26.539	1026.745	26.540
59.50	60.0	7.067	7.062	33.865	1026.791	26.541	1026.792	26.541
69.41	70.0	7.037	7.030	33.861	1026.838	26.542	1026.839	26.543
74.37	75.0	7.027	7.020	33.862	1026.863	26.544	1026.864	26.545
79.33	80.0	6.998	6.991	33.860	1026.889	26.546	1026.889	26.547
89.24	90.0	6.969	6.961	33.861	1026.939	26.551	1026.940	26.552
99.15	100.0	6.654	6.645	33.898	1027.057	26.623	1027.059	26.624
118.98	120.0	5.985	5.975	33.987	1027.308	26.780	1027.309	26.780
123.93	125.0	5.892	5.882	34.022	1027.370	26.819	1027.371	26.820
138.80	140.0	5.806	5.795	34.080	1027.496	26.875	1027.497	26.876
148.71	150.0	5.666	5.654	34.111	1027.584	26.917	1027.586	26.918
158.62	160.0	5.484	5.471	34.142	1027.677	26.963	1027.679	26.965
173.49	175.0	5.466	5.452	34.161	1027.764	26.980	1027.766	26.982
178.44	180.0	5.539	5.524	34.179	1027.792	26.986	1027.794	26.988
198.26	200.0	5.393	5.377	34.203	1027.922	27.023	1027.923	27.024
218.07	220.0	5.339	5.321	34.228	1028.040	27.049	1028.042	27.051
237.88	240.0	5.235	5.216	34.225	1028.143	27.059	1028.145	27.061
247.79	250.0	5.149	5.129	34.213	1028.189	27.059	1028.192	27.062
257.70	260.0	4.889	4.869	34.199	1028.256	27.078	1028.259	27.080
277.51	280.0	4.656	4.635	34.176	1028.358	27.086	1028.360	27.088
297.31	300.0	4.423	4.401	34.171	1028.474	27.107	1028.476	27.110
317.12	320.0	4.261	4.238	34.167	1028.581	27.121	1028.584	27.124
336.92	340.0	4.173	4.148	34.166	1028.683	27.130	1028.686	27.132
346.82	350.0	4.051	4.026	34.165	1028.742	27.142	1028.745	27.144
356.72	360.0	3.966	3.941	34.161	1028.795	27.148	1028.798	27.150
376.52	380.0	3.870	3.844	34.160	1028.897	27.156	1028.900	27.159
396.32	400.0	3.790	3.763	34.165	1029.002	27.168	1029.005	27.171
445.81	450.0	3.620	3.590	34.169	1029.256	27.189	1029.259	27.191
495.28	500.0	3.288	3.255	34.187	1029.538	27.235	1029.541	27.238
544.75	550.0	3.014	2.979	34.198	1029.807	27.269	1029.810	27.272
594.20	600.0	2.883	2.845	34.219	1030.069	27.298	1030.072	27.301
643.64	650.0	2.818	2.776	34.245	1030.328	27.324	1030.332	27.327
693.06	700.0	2.810	2.765	34.276	1030.584	27.349	1030.589	27.353
742.48	750.0	2.748	2.701	34.301	1030.842	27.375	1030.847	27.379
791.88	800.0	2.801	2.750	34.343	1031.100	27.403	1031.105	27.408
841.27	850.0	2.745	2.690	34.366	1031.355	27.427	1031.361	27.432
890.66	900.0	2.750	2.691	34.384	1031.599	27.441	1031.605	27.446
940.02	950.0	2.690	2.629	34.405	1031.852	27.463	1031.859	27.468

289

POTENTIAL TEMPERATURE (°C)



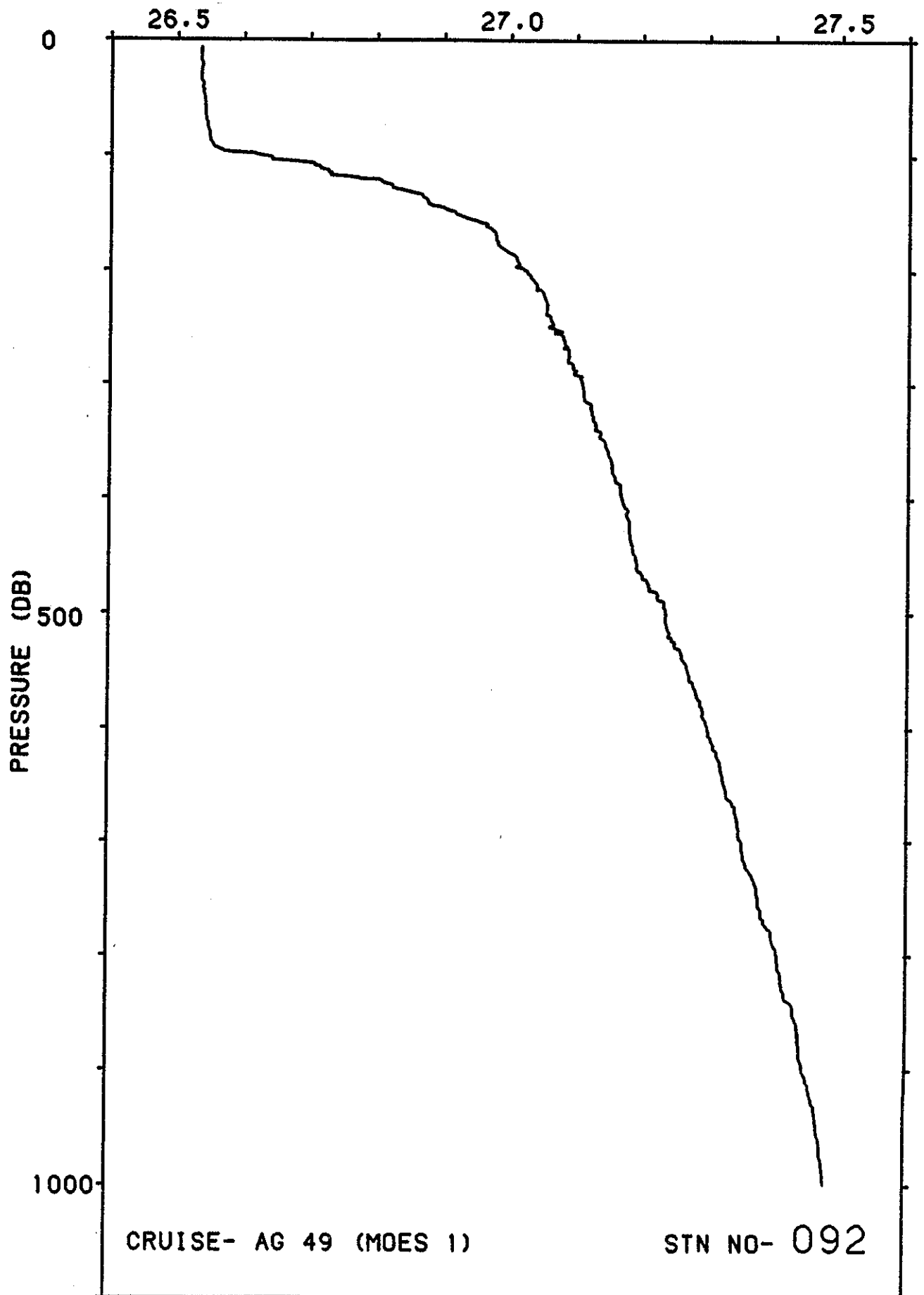
290

Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.05.03
Station: 92 Cast: BOTTLE Time: 13.45 Z
Position: Lat: 46°18.350'S Long: 37°55.000'E Depth: 2670 m

NO BOTTLE DATA

291

POTENTIAL DENSITY (σ_t)

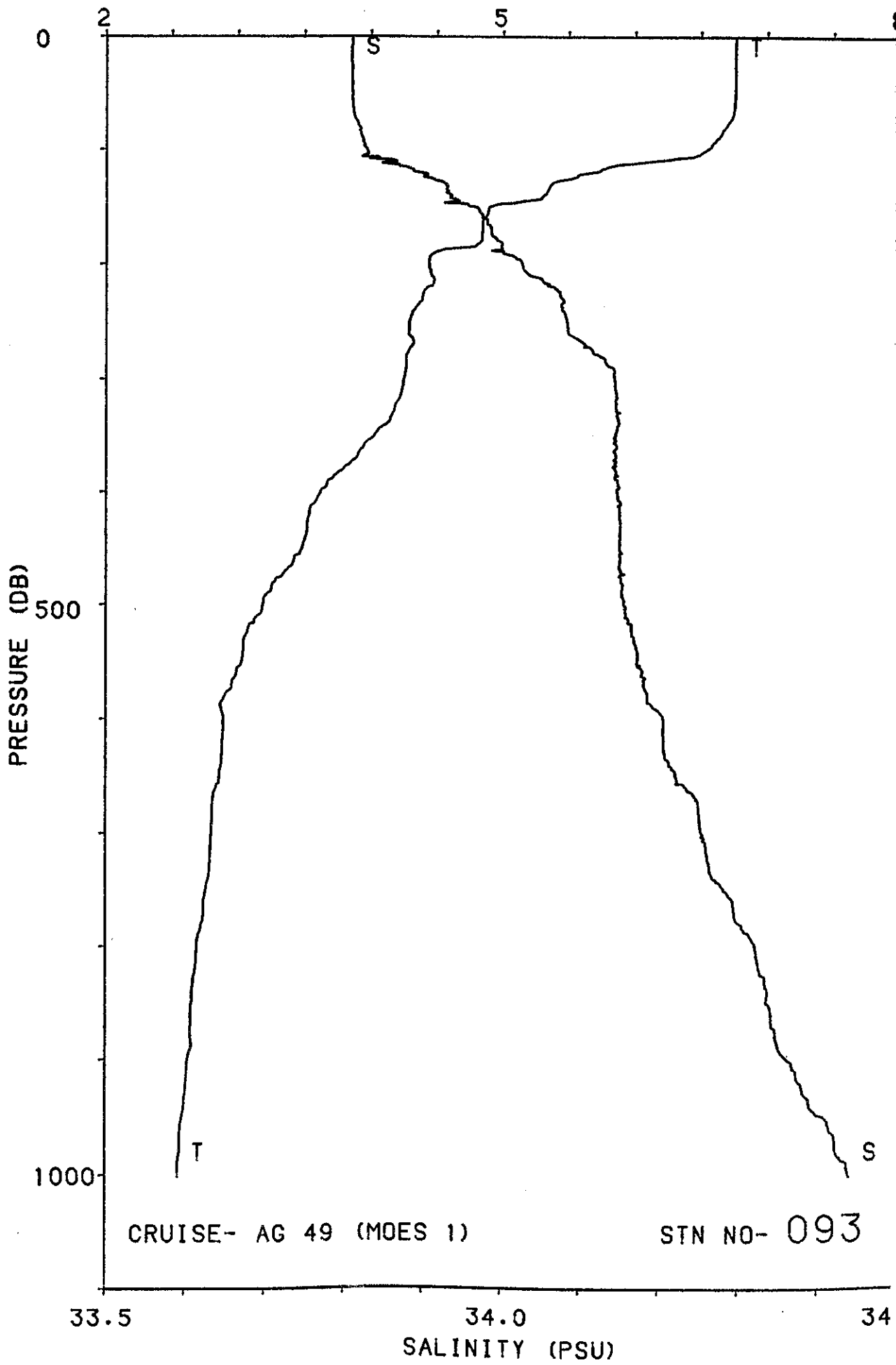


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.05.04
 Station: 93 Cast: CTD UP Time: 4.50 Z
 Position: Lat: 46°46.400'S Long: 38°21.800'E Depth: 1500 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot. Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.746	6.746	33.823	1026.526	26.551	1026.526	26.551
4.96	5.0	6.759	6.758	33.810	1026.537	26.539	1026.537	26.539
9.92	10.0	6.758	6.757	33.809	1026.559	26.538	1026.560	26.539
19.83	20.0	6.758	6.756	33.809	1026.605	26.538	1026.606	26.539
24.79	25.0	6.758	6.756	33.810	1026.629	26.539	1026.630	26.540
29.75	30.0	6.758	6.756	33.810	1026.652	26.539	1026.653	26.540
39.66	40.0	6.759	6.755	33.809	1026.698	26.539	1026.698	26.539
49.58	50.0	6.759	6.755	33.810	1026.744	26.539	1026.745	26.540
59.49	60.0	6.756	6.751	33.810	1026.790	26.540	1026.791	26.540
69.41	70.0	6.743	6.737	33.812	1026.840	26.543	1026.841	26.544
74.37	75.0	6.720	6.713	33.815	1026.869	26.549	1026.869	26.549
79.32	80.0	6.691	6.684	33.818	1026.898	26.555	1026.898	26.555
89.24	90.0	6.631	6.623	33.823	1026.955	26.566	1026.956	26.568
99.15	100.0	6.551	6.542	33.828	1027.016	26.581	1027.017	26.582
118.97	120.0	5.666	5.656	33.896	1027.276	26.747	1027.277	26.748
123.93	125.0	5.532	5.522	33.910	1027.326	26.774	1027.328	26.775
138.79	140.0	5.315	5.304	33.935	1027.442	26.819	1027.444	26.821
148.70	150.0	4.908	4.897	33.966	1027.561	26.891	1027.563	26.892
158.61	160.0	4.870	4.858	33.976	1027.620	26.903	1027.621	26.905
173.48	175.0	4.848	4.835	33.986	1027.700	26.914	1027.701	26.915
178.43	180.0	4.847	4.833	33.995	1027.730	26.921	1027.732	26.922
198.25	200.0	4.452	4.438	34.023	1027.890	26.987	1027.892	26.988
218.06	220.0	4.442	4.426	34.066	1028.018	27.022	1028.020	27.024
237.87	240.0	4.346	4.328	34.075	1028.129	27.039	1028.131	27.041
247.78	250.0	4.309	4.291	34.081	1028.184	27.048	1028.186	27.050
257.69	260.0	4.304	4.286	34.083	1028.232	27.050	1028.234	27.052
277.49	280.0	4.289	4.269	34.123	1028.358	27.083	1028.360	27.086
297.30	300.0	4.275	4.253	34.141	1028.466	27.099	1028.469	27.102
317.10	320.0	4.224	4.201	34.142	1028.566	27.106	1028.568	27.108
336.91	340.0	4.139	4.115	34.147	1028.672	27.118	1028.674	27.121
346.81	350.0	4.050	4.025	34.143	1028.725	27.125	1028.728	27.127
356.71	360.0	3.970	3.945	34.144	1028.781	27.134	1028.784	27.136
376.51	380.0	3.819	3.792	34.141	1028.888	27.146	1028.891	27.149
396.30	400.0	3.652	3.625	34.144	1029.001	27.166	1029.004	27.168
445.79	450.0	3.515	3.484	34.148	1029.250	27.182	1029.254	27.185
495.26	500.0	3.222	3.189	34.153	1029.518	27.214	1029.521	27.217
544.72	550.0	3.065	3.030	34.171	1029.780	27.243	1029.783	27.246
594.17	600.0	2.930	2.892	34.204	1030.052	27.281	1030.056	27.284
643.61	650.0	2.904	2.863	34.220	1030.298	27.296	1030.303	27.300
693.03	700.0	2.849	2.804	34.252	1030.561	27.327	1030.566	27.331
742.45	750.0	2.810	2.762	34.281	1030.819	27.353	1030.824	27.357
791.85	800.0	2.746	2.695	34.320	1031.088	27.390	1031.093	27.394
841.24	850.0	2.712	2.658	34.335	1031.334	27.405	1031.340	27.410
890.62	900.0	2.686	2.628	34.361	1031.587	27.428	1031.594	27.433
939.98	950.0	2.647	2.585	34.406	1031.857	27.467	1031.865	27.473
989.34	1000.0	2.616	2.551	34.438	1032.116	27.496	1032.124	27.501

293

POTENTIAL TEMPERATURE (°C)



Ship: SA Agulhas Cruise: AG 49 (NOES 1) Date: 1987.05.04
 Station: 93 Cast: BOTTLE Time: 4.50 Z
 Position: Lat: 46°46.400'S Long: 38°21.800'E Depth: 1500 m

Bottle Data

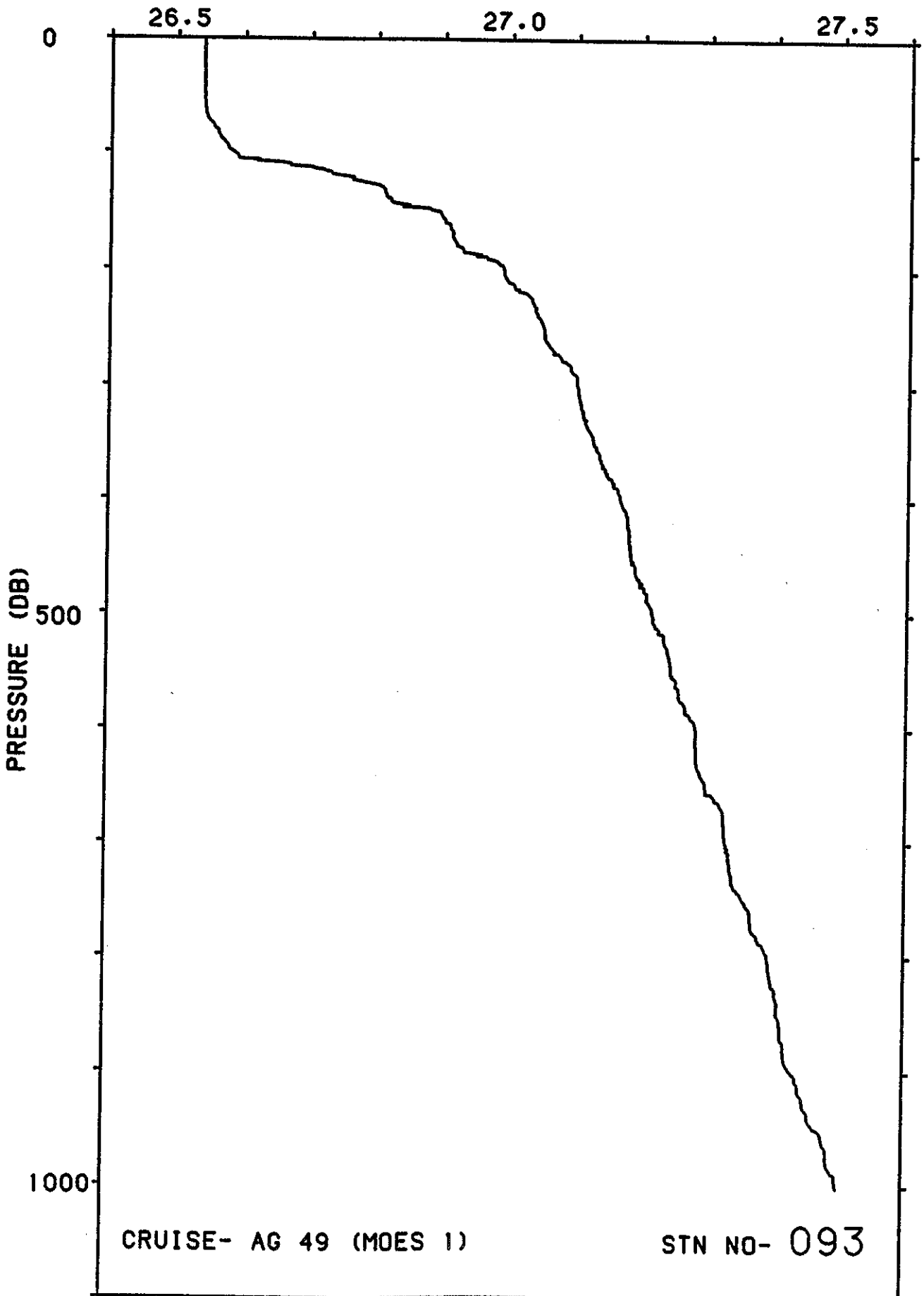
Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
.0	6.75	6.75	33.823	1.468	.08	16.74	.35	1.25
4.0	6.76	6.76	33.809		.07	16.19	.34	1.29
7.0	6.76	6.76	33.810		.07	16.29	.34	1.25
12.0	6.76	6.76	33.810		.08	16.24	.34	1.22
25.0	6.76	6.76	33.810	1.708	.05	16.13	.36	1.26
50.0	6.76	6.75	33.810	1.754	.06	16.55	.34	1.25
70.0	6.74	6.73	33.812	1.443	.10	16.40	.35	1.29
100.0	6.54	6.53	33.828	1.163	1.31	17.14	.41	1.41

Production Data

Depth m	Filter size: Light %	Carbon Uptake				Total	Areal Production mg(C).m ⁻² .hr ⁻¹
		0.2μm	2μm	20μm	mg(C).m ⁻³ .hr ⁻¹		
.0	100	.278	.337	6.097	6.712	118.8	
4.0	50	.364	.314	6.804	7.482		
7.0	25	.200	.566	9.134	9.900		
12.0	10	.058	.164	3.069	3.291		
25.0	1	.139	.154	.944	1.237		

295

POTENTIAL DENSITY (σ_t)

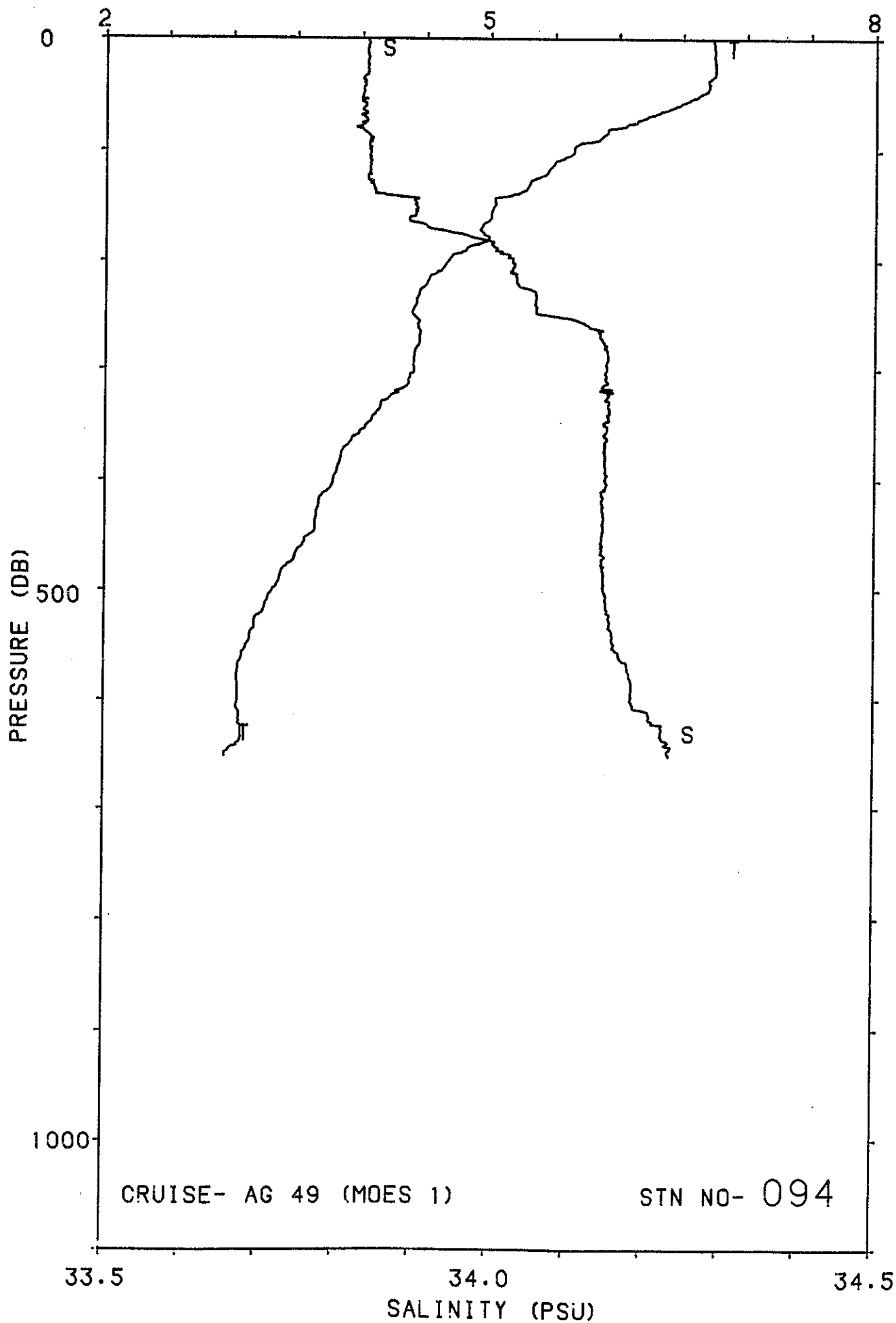


Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.05.06
 Station: 94 Cast: CTD UP Time: 4.45 Z
 Position: Lat: 46°56.000'S Long: 37°32.000'E Depth: 670 m

Depth m	Press db	Temp °C	θ °C	Salt psu	Density kg.m ⁻³	σ_t kg.m ⁻³	Pot.Dens kg.m ⁻³	σ_θ kg.m ⁻³
.00	.0	6.734	6.734	33.842	1026.542	26.567	1026.543	26.568
4.96	5.0	6.742	6.742	33.842	1026.564	26.566	1026.565	26.567
9.92	10.0	6.747	6.746	33.840	1026.585	26.564	1026.586	26.565
19.83	20.0	6.749	6.748	33.840	1026.631	26.564	1026.631	26.564
24.79	25.0	6.755	6.753	33.840	1026.654	26.564	1026.654	26.564
29.75	30.0	6.754	6.752	33.841	1026.677	26.564	1026.678	26.565
39.66	40.0	6.710	6.707	33.838	1026.727	26.568	1026.727	26.568
49.58	50.0	6.630	6.626	33.834	1026.780	26.575	1026.781	26.576
59.49	60.0	6.445	6.440	33.837	1026.854	26.602	1026.854	26.603
69.41	70.0	6.209	6.203	33.836	1026.929	26.632	1026.930	26.632
74.36	75.0	6.102	6.095	33.837	1026.967	26.646	1026.968	26.647
79.32	80.0	5.929	5.923	33.834	1027.009	26.665	1027.010	26.666
89.23	90.0	5.854	5.847	33.843	1027.072	26.682	1027.073	26.683
99.15	100.0	5.657	5.649	33.844	1027.144	26.707	1027.145	26.708
118.97	120.0	5.444	5.435	33.843	1027.261	26.731	1027.262	26.733
123.93	125.0	5.351	5.342	33.841	1027.294	26.740	1027.295	26.742
138.79	140.0	5.153	5.142	33.878	1027.417	26.793	1027.418	26.795
148.70	150.0	5.042	5.030	33.904	1027.497	26.827	1027.498	26.828
158.61	160.0	5.022	5.010	33.895	1027.538	26.822	1027.539	26.823
173.47	175.0	4.961	4.947	33.966	1027.671	26.885	1027.672	26.887
178.43	180.0	4.995	4.981	33.993	1027.712	26.903	1027.713	26.904
198.25	200.0	4.686	4.671	34.030	1027.869	26.966	1027.871	26.968
218.06	220.0	4.525	4.509	34.035	1027.984	26.988	1027.986	26.990
237.87	240.0	4.446	4.429	34.058	1028.104	27.015	1028.106	27.017
247.78	250.0	4.428	4.409	34.076	1028.167	27.032	1028.169	27.033
257.68	260.0	4.464	4.445	34.128	1028.250	27.069	1028.252	27.071
277.49	280.0	4.451	4.431	34.150	1028.361	27.087	1028.363	27.090
297.30	300.0	4.434	4.412	34.153	1028.458	27.092	1028.461	27.094
317.10	320.0	4.284	4.261	34.150	1028.565	27.105	1028.568	27.108
336.90	340.0	4.139	4.115	34.156	1028.679	27.126	1028.682	27.128
346.80	350.0	4.066	4.041	34.149	1028.728	27.127	1028.731	27.130
356.70	360.0	3.972	3.947	34.149	1028.784	27.137	1028.787	27.140
376.50	380.0	3.869	3.842	34.150	1028.889	27.149	1028.892	27.151
396.30	400.0	3.816	3.788	34.150	1028.988	27.154	1028.991	27.157
445.78	450.0	3.628	3.597	34.147	1029.238	27.170	1029.241	27.173
495.25	500.0	3.351	3.318	34.149	1029.500	27.198	1029.504	27.201
544.71	550.0	3.152	3.117	34.162	1029.764	27.228	1029.767	27.231
594.16	600.0	3.091	3.052	34.185	1030.019	27.251	1030.024	27.255
643.60	650.0	2.996	2.954	34.233	1030.299	27.299	1030.304	27.302

297

POTENTIAL TEMPERATURE (°C)



Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.05.06
 Station: 94 Cast: BOTTLE Time: 4.45 Z
 Position: Lat: 46°56.000'S Long: 37°32.000'E Depth: 670 m

Bottle Data

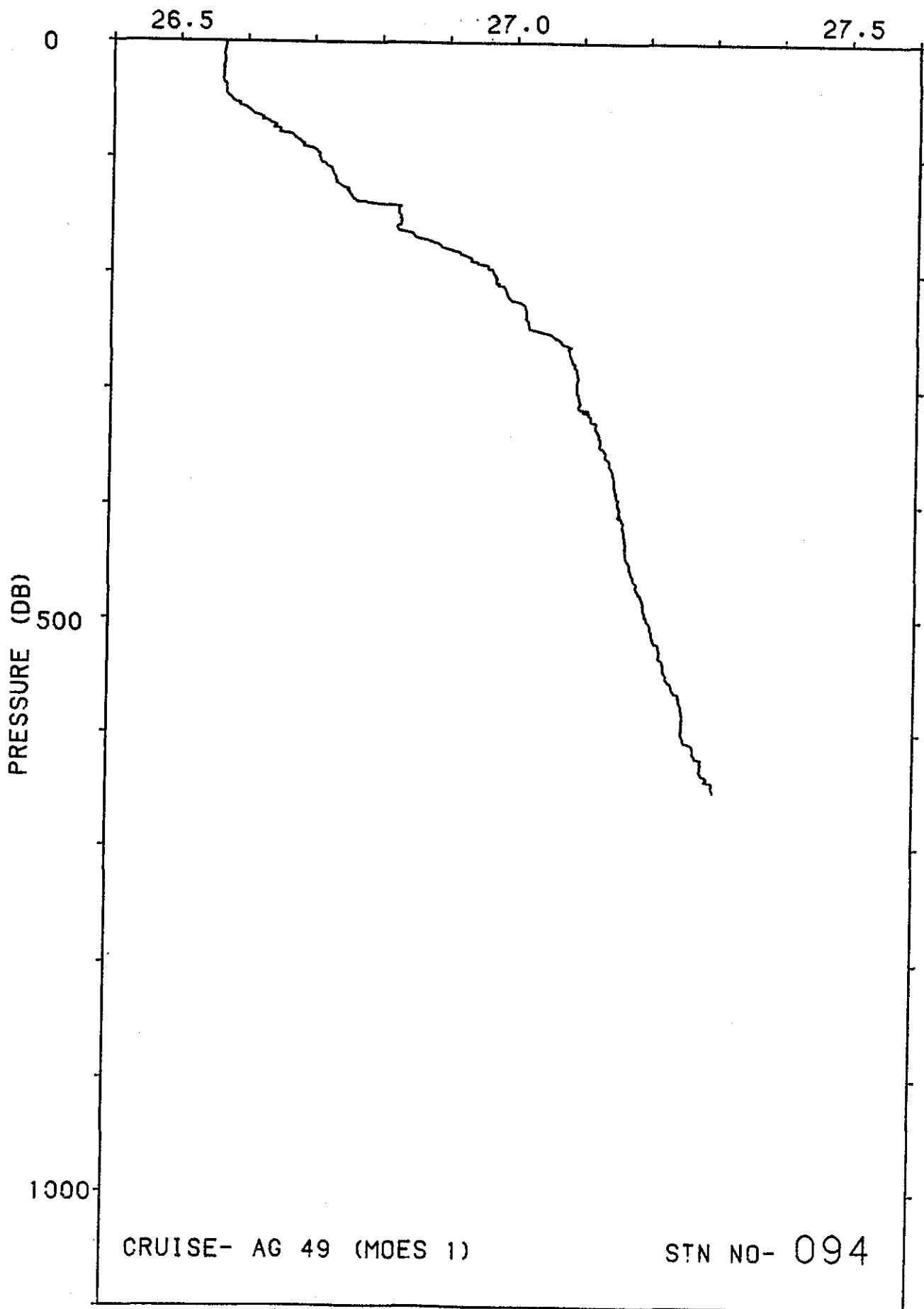
Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
.0	6.73	6.73	33.842	.140	1.46	19.92	.39	1.41
8.0	6.74	6.74	33.841	.163	1.47	20.80	.39	1.42
15.0	6.75	6.74	33.840	.131	1.48	21.91	.39	1.46
25.0	6.76	6.75	33.840	.170	1.49	22.19	.39	1.43
51.0	6.61	6.61	33.834	.145	1.63	23.19	.42	1.47
75.0	6.08	6.07	33.835	.113	1.63	24.01	.39	1.49
100.0	5.66	5.65	33.846	.074	1.95	23.58	.37	1.53

Production Data

Depth m	Filter size: Light %	Carbon Uptake				Total	Areal Production mg(C).m ⁻² .hr ⁻¹
		0.2 μ m	2 μ m	20 μ m			
		mg(C).m ⁻³ .hr ⁻¹					
.0	100	-.079	.532	.361	.814	41.34	
8.0	50	.284	1.056	.383	1.723		
15.0	25	.305	.423	.370	1.098		
25.0	10	.346	-.035	-.154	.156		
51.0	1	.069	.122	-.065	.126		

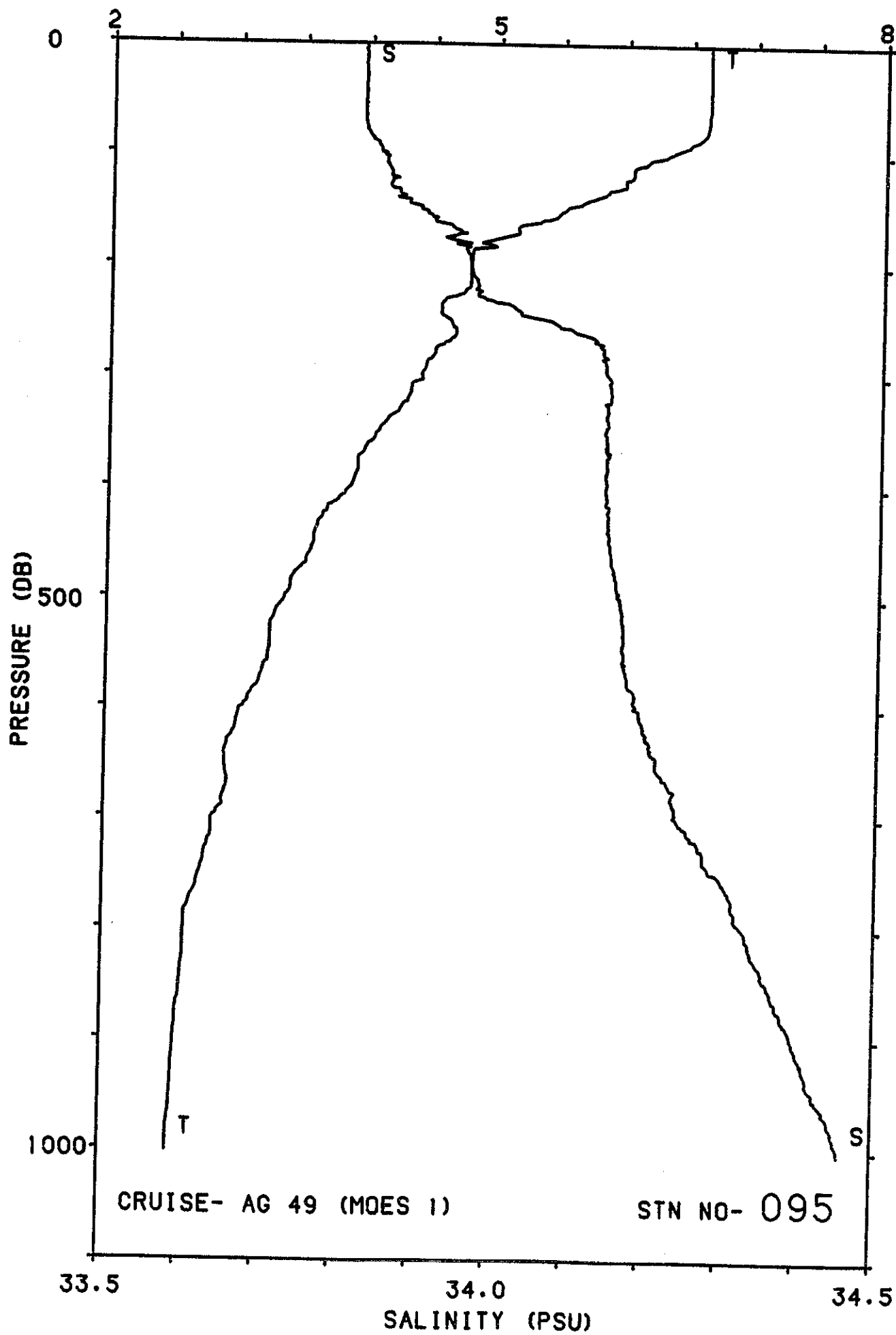
299

POTENTIAL DENSITY (σ_θ)



301

POTENTIAL TEMPERATURE (°C)



Ship: SA Agulhas Cruise: AG 49 (MOES 1) Date: 1987.05.07
 Station: 95 Cast: BOTTLE Time: 4.50 Z
 Position: Lat: 46°49.000'S Long: 38°16.000'E Depth: 2350 m

Bottle Data

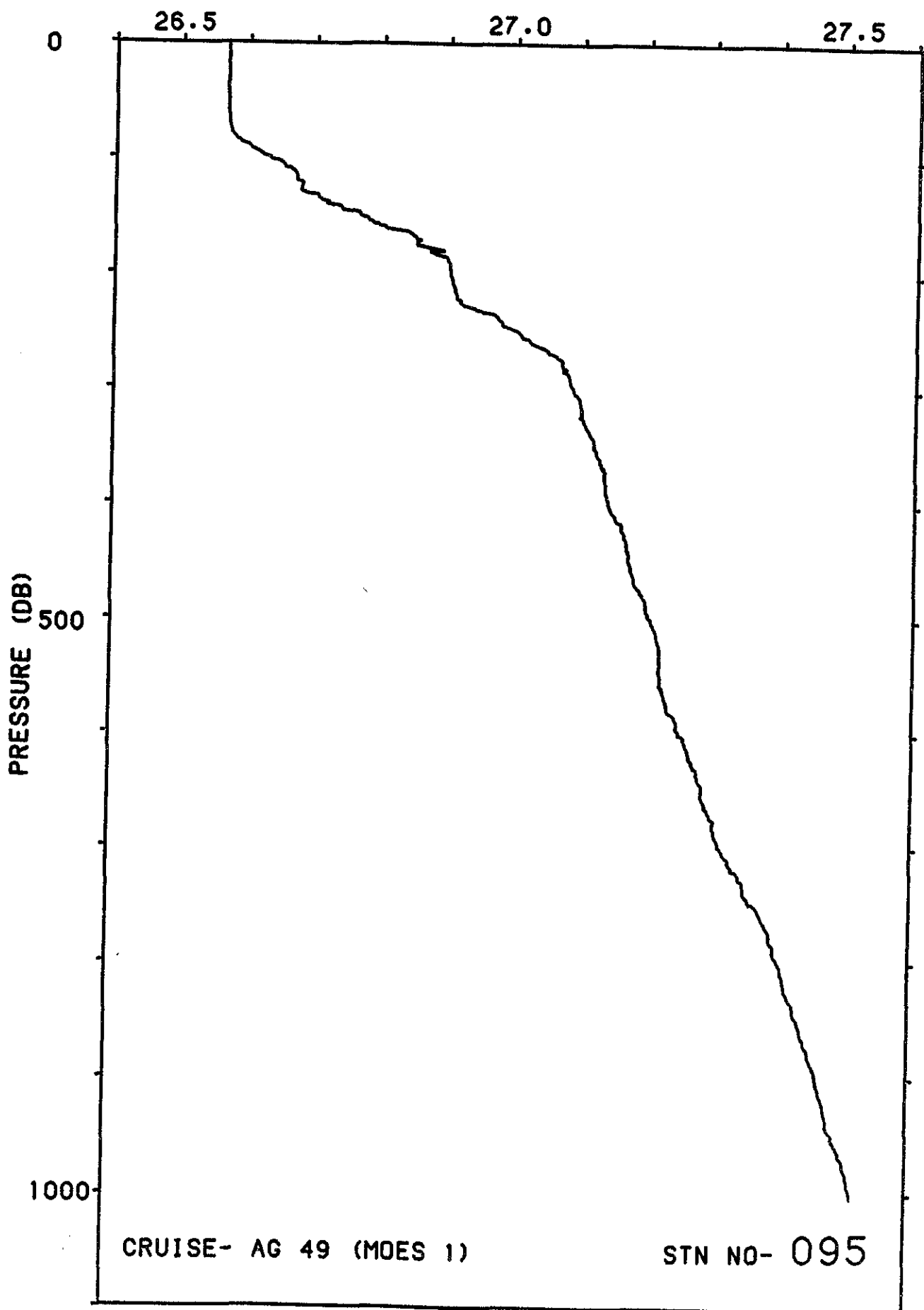
Depth m	Temp °C	θ °C	Salt psu	Chl-a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
.0	6.63	6.63	33.819	.995	.51	18.15	.38	1.22
4.0	6.63	6.63	33.826	1.009	.63	16.92	.39	1.23
8.0	6.63	6.63	33.825	.970	.71	16.50	.38	1.26
14.0	6.63	6.63	33.826	1.133	.73	16.89	.38	1.26
28.0	6.63	6.63	33.826	.959				
50.0	6.64	6.63	33.825	1.095	.74	17.12	.39	1.28
75.0	6.62	6.61	33.827	.874	.78	17.45	.39	1.28

Production Data

Depth m	Filter size: Light %	Carbon Uptake				Total	Areal Production mg(C).m ⁻² .hr ⁻¹
		0.2 μ m	2 μ m	20 μ m			
mg(C).m ⁻³ .hr ⁻¹							
.0	100	.621	.461	1.840	2.923	138.4	
4.0	50	.404	1.562	7.918	9.883		
8.0	25	.455	.644	3.672	4.772		
14.0	10	.673	.463	3.091	4.227		
28.0	1	.332	.668	1.293	2.293		

303

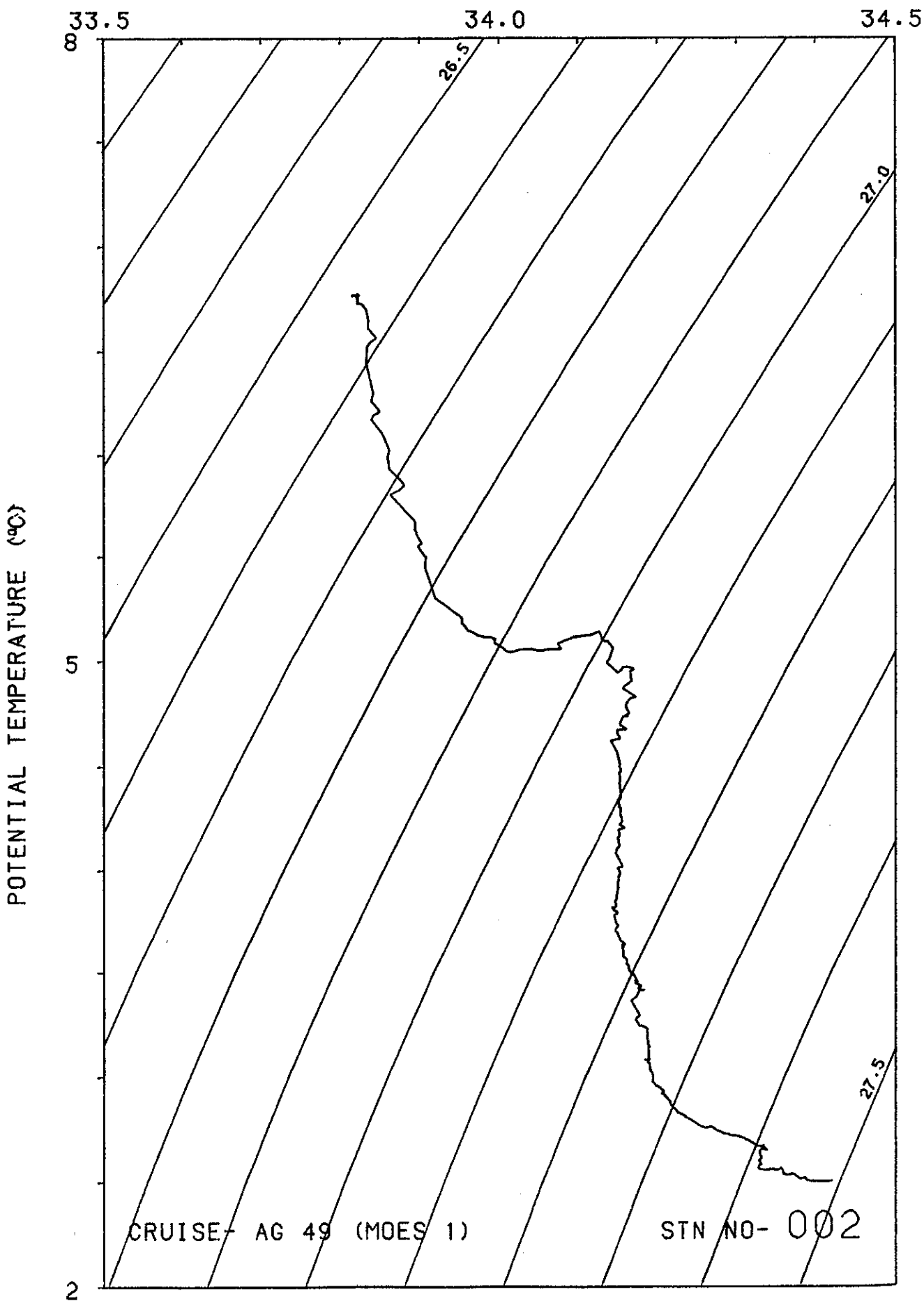
POTENTIAL DENSITY (σ_θ)



Salinity Plots

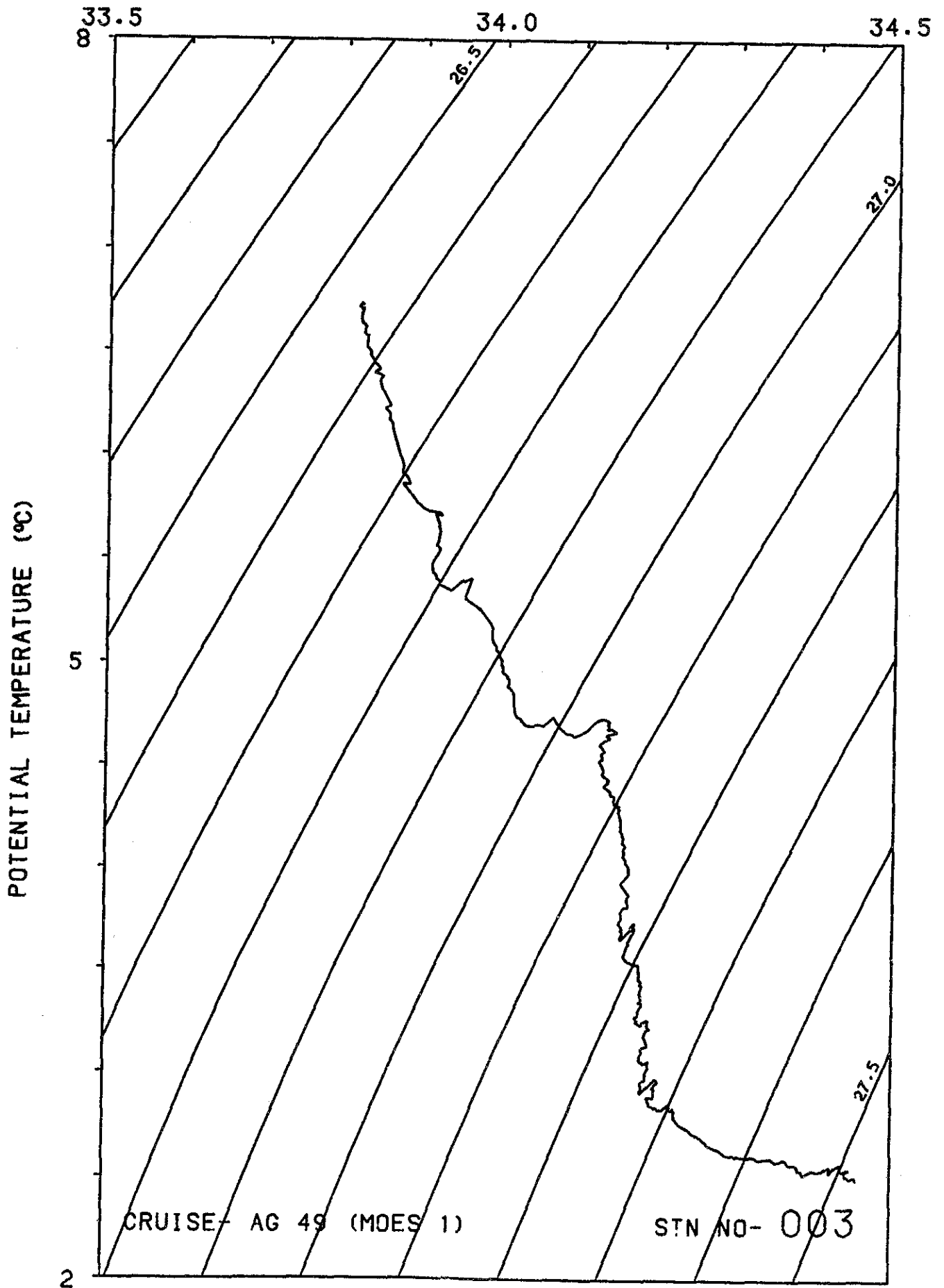
306

SALINITY (PSU)



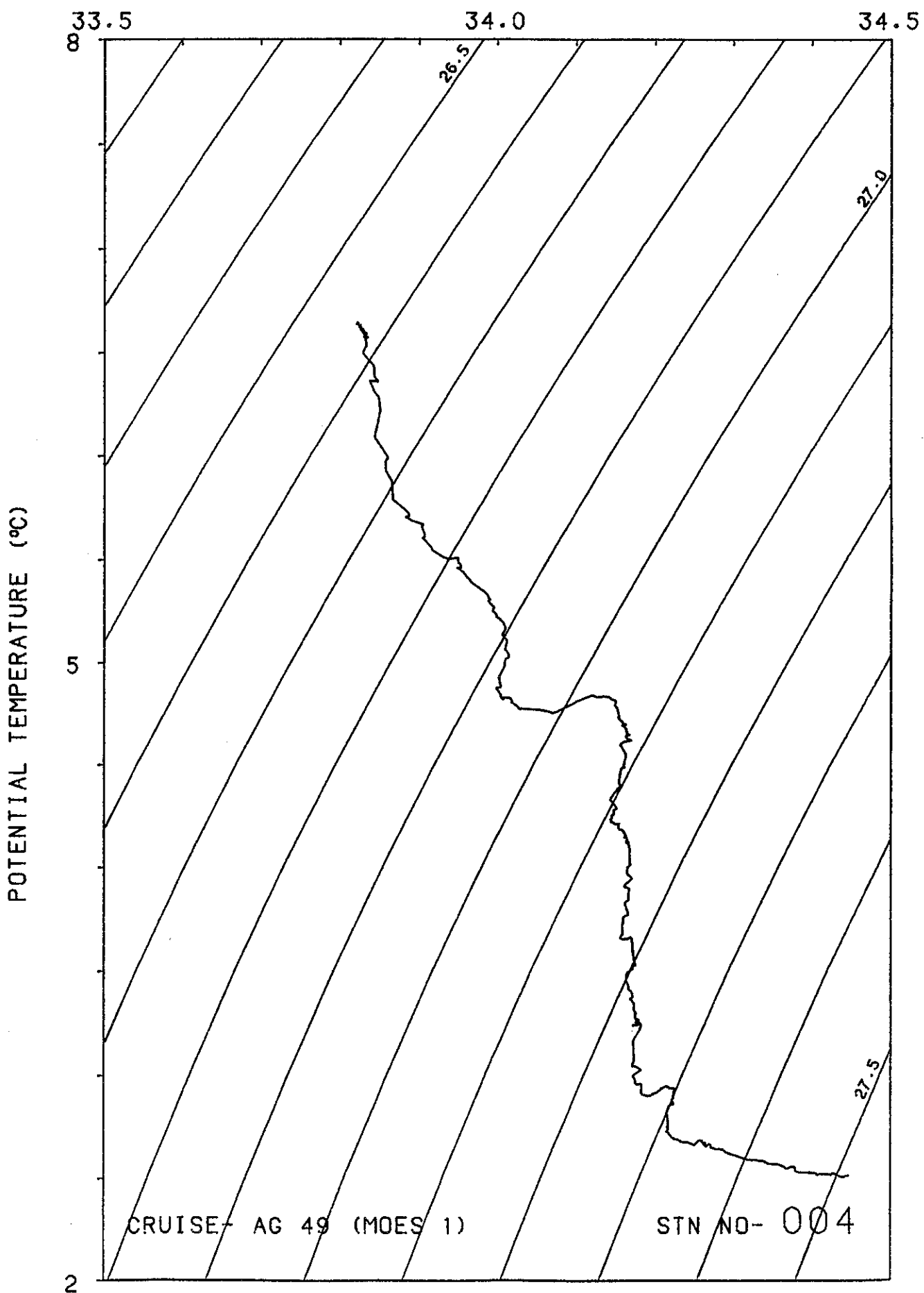
307

SALINITY (PSU)



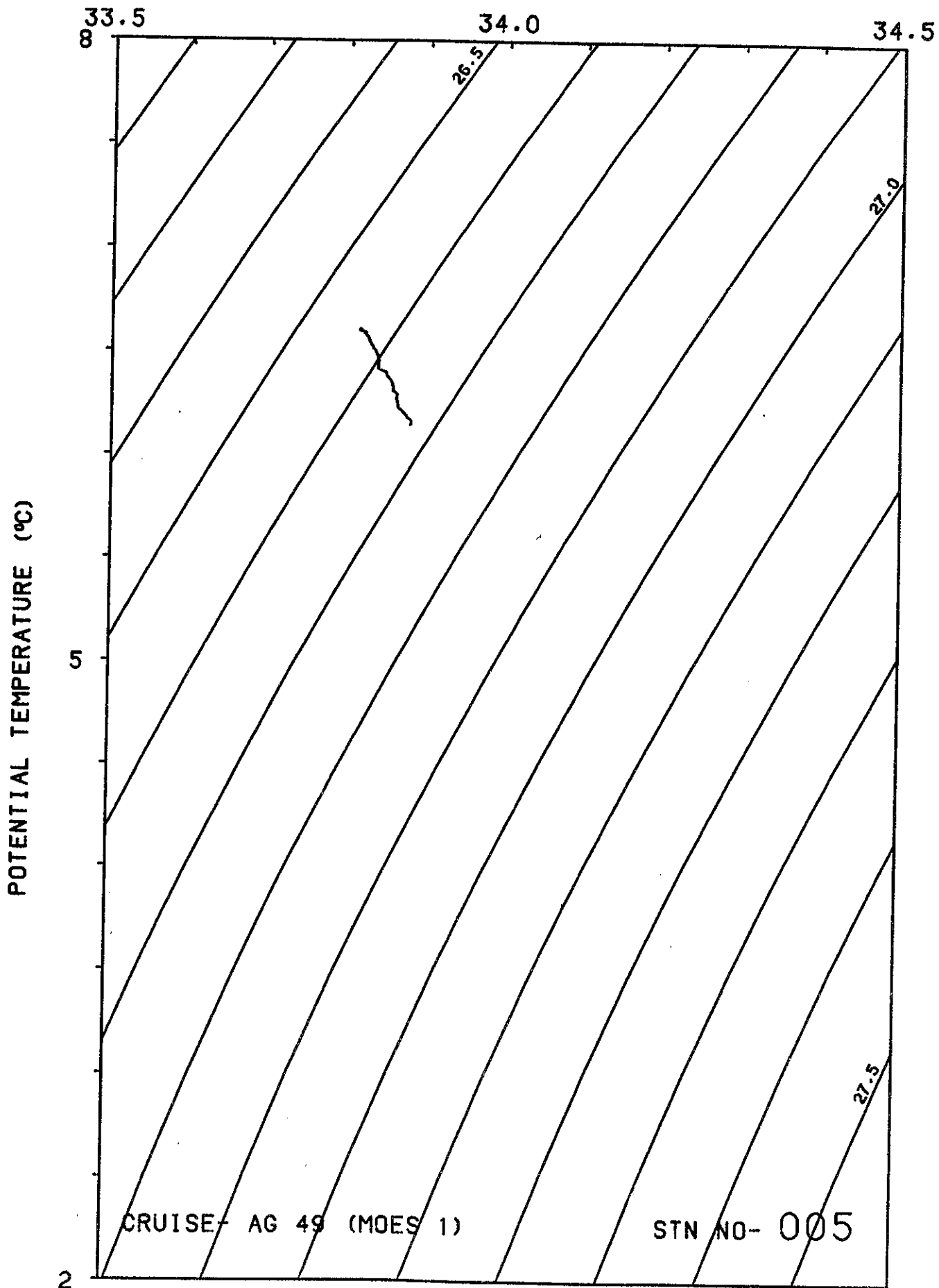
308

SALINITY (PSU)

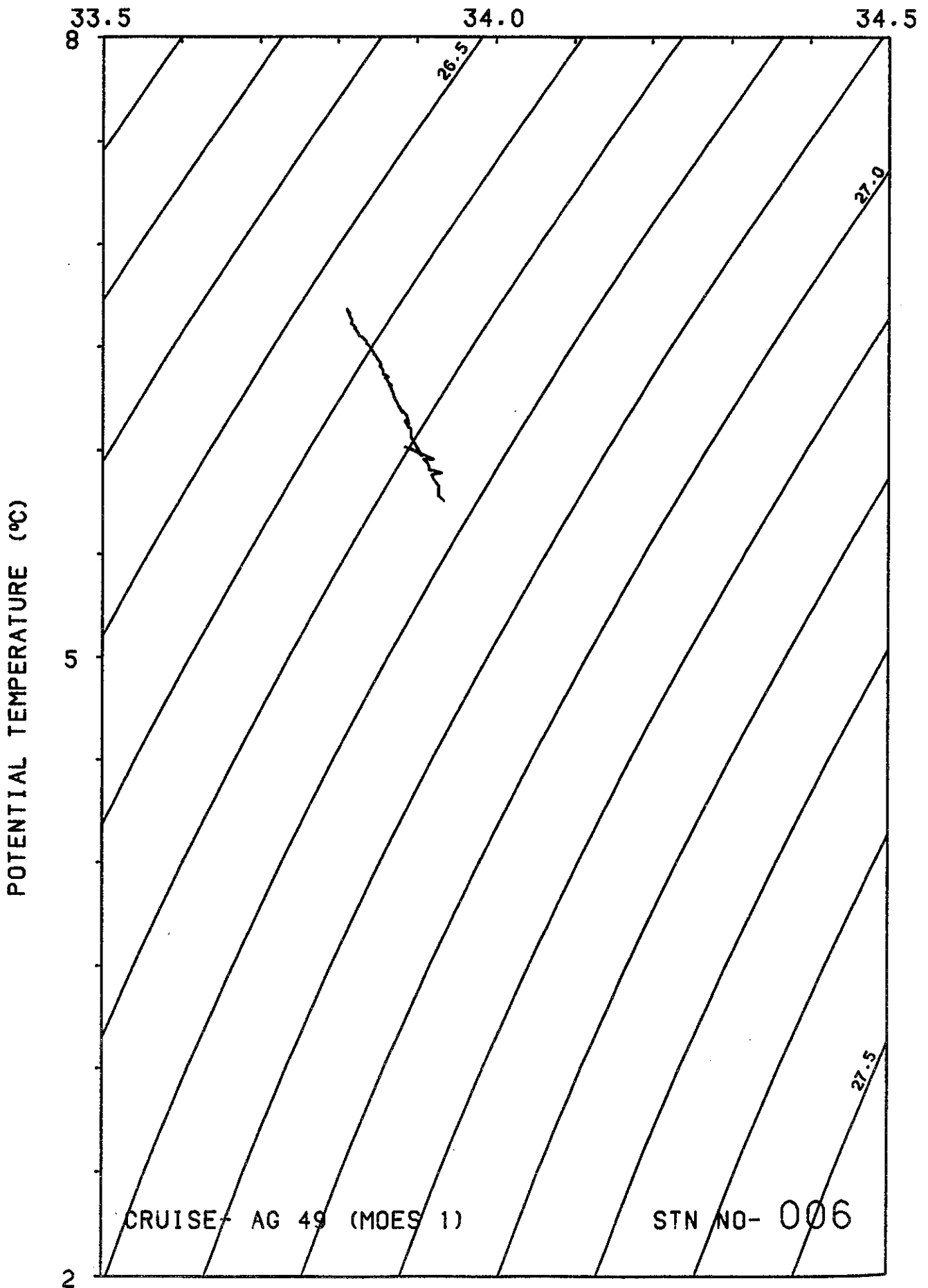


309

SALINITY (PSU)

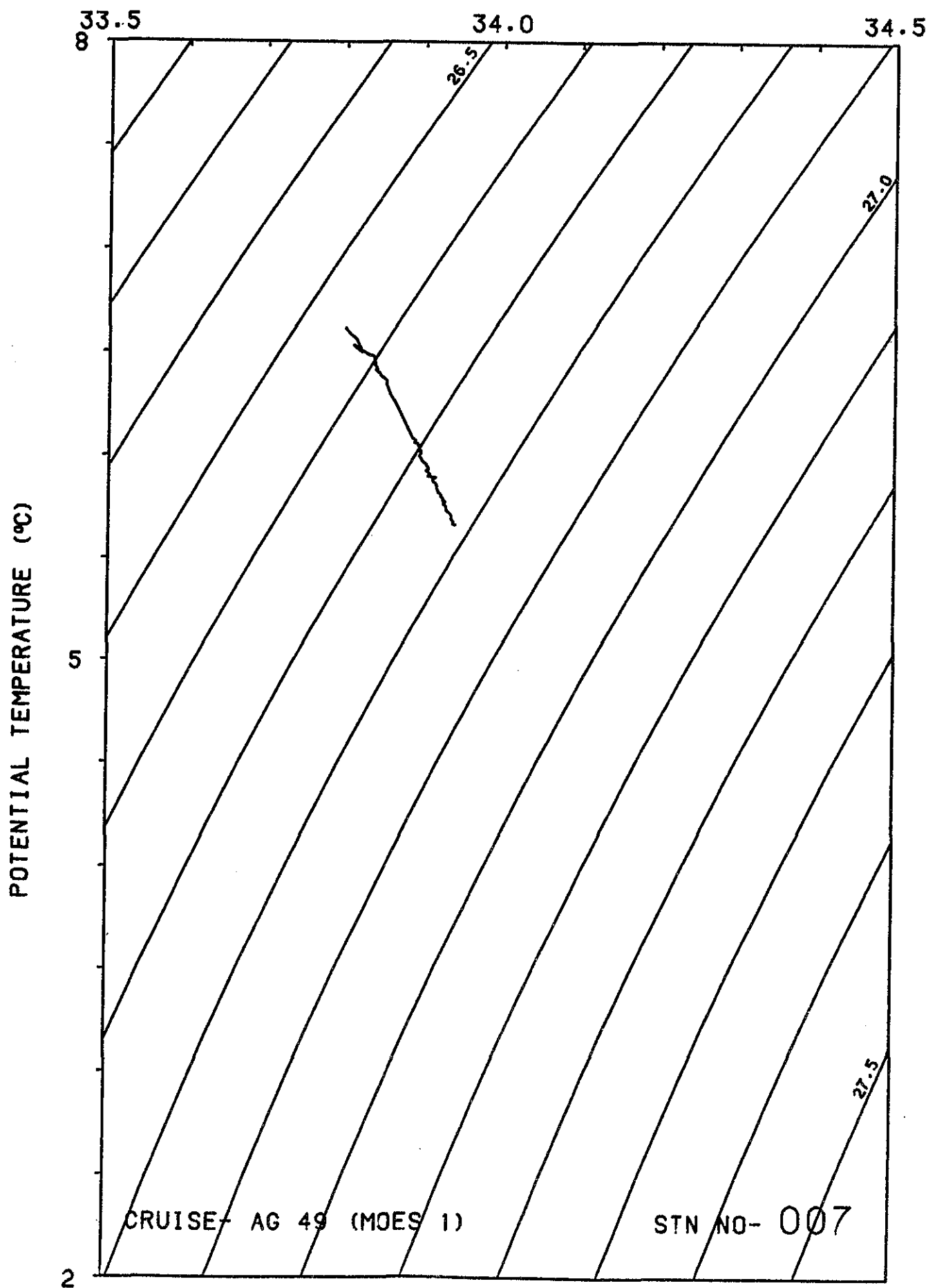


310
SALINITY (PSU)



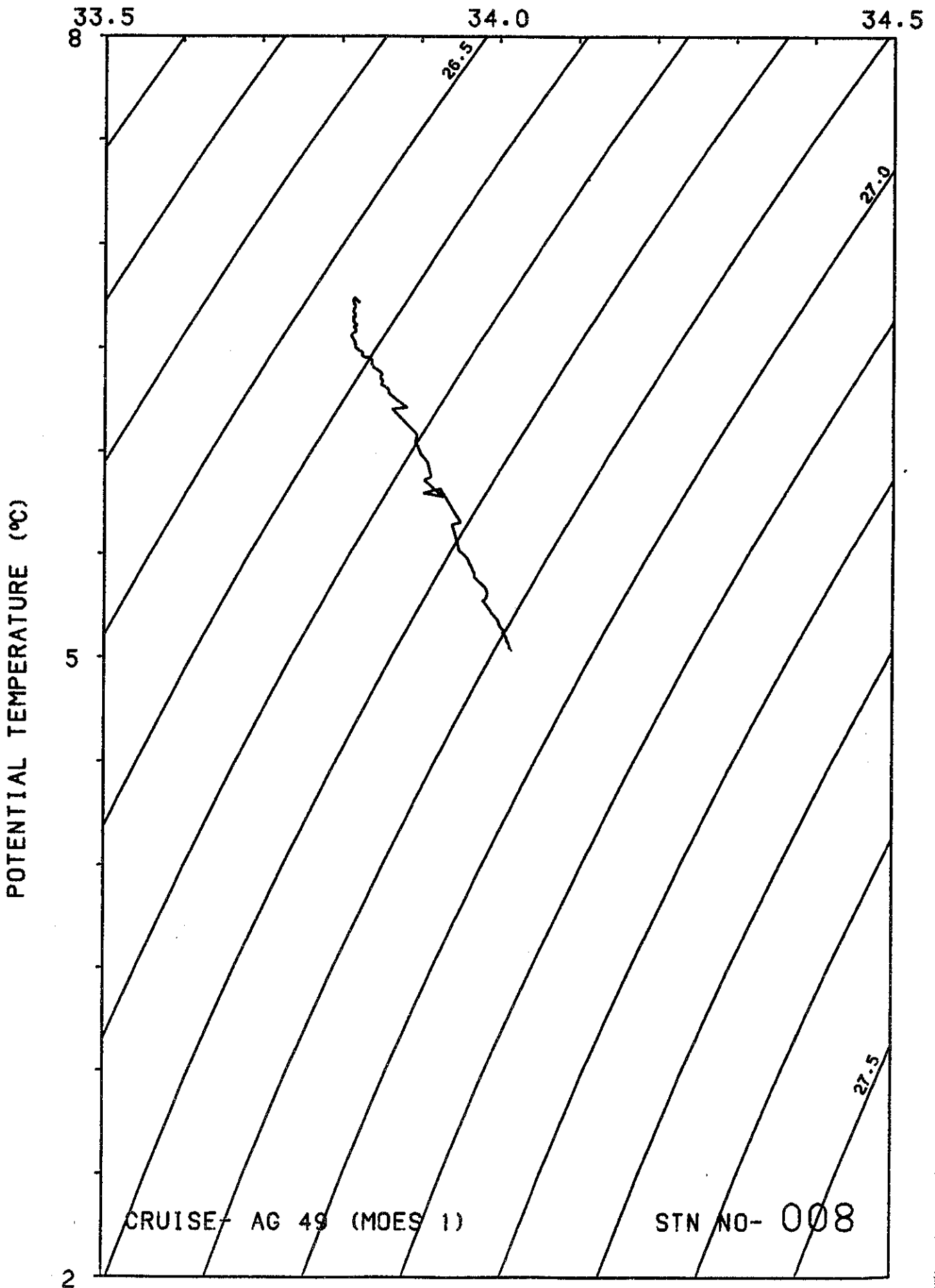
311

SALINITY (PSU)

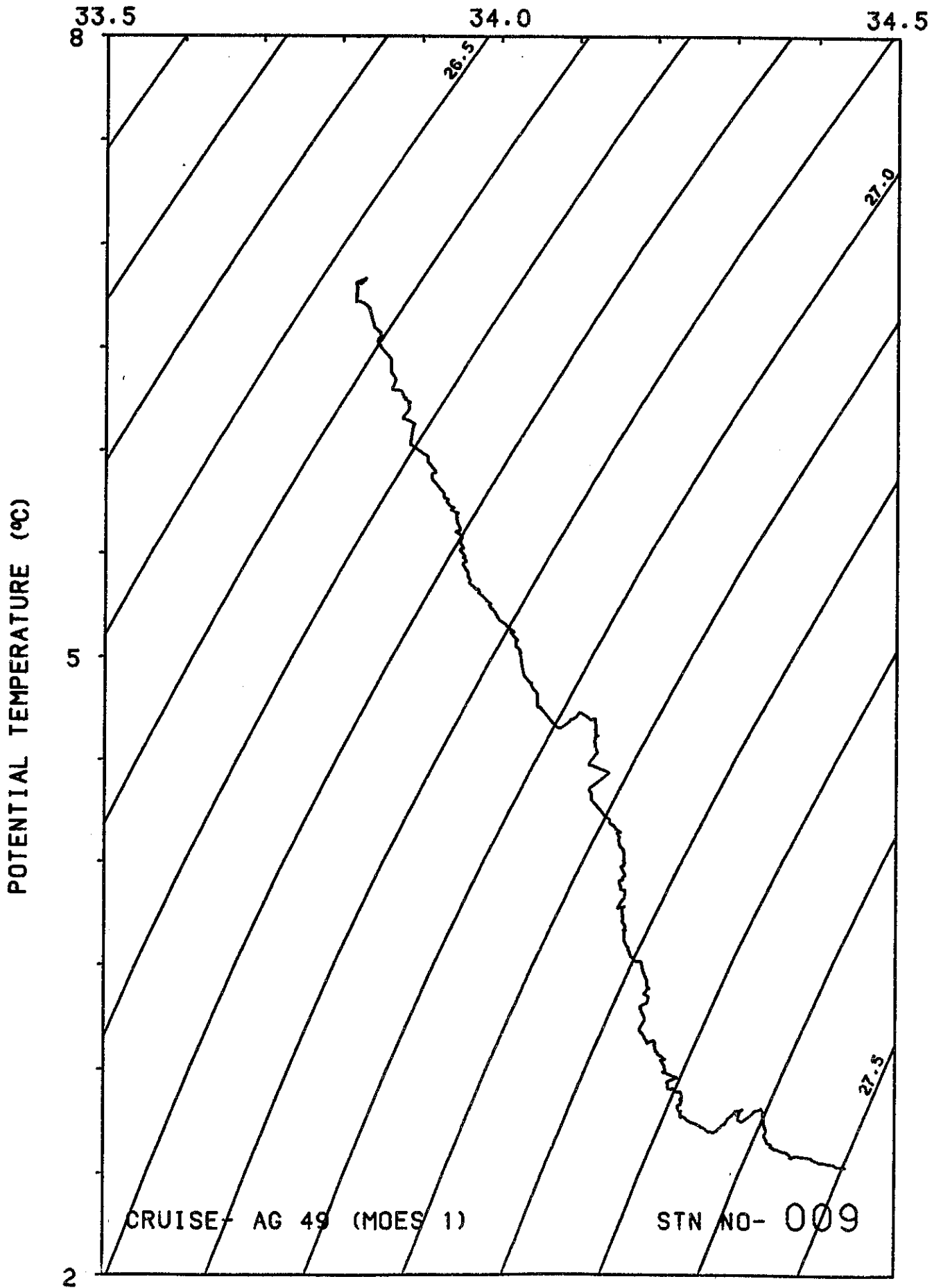


312

SALINITY (PSU)

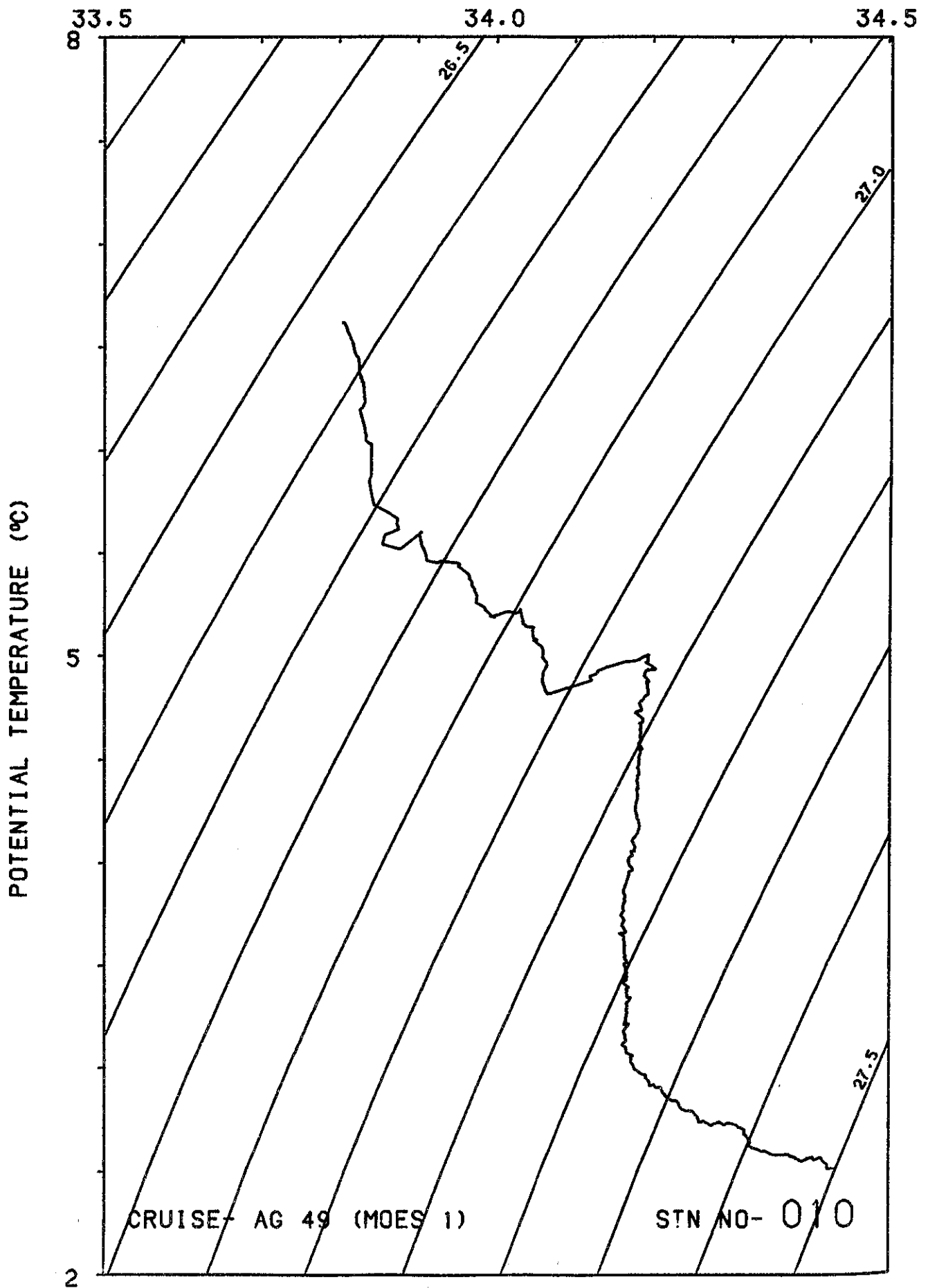


313
SALINITY (PSU)



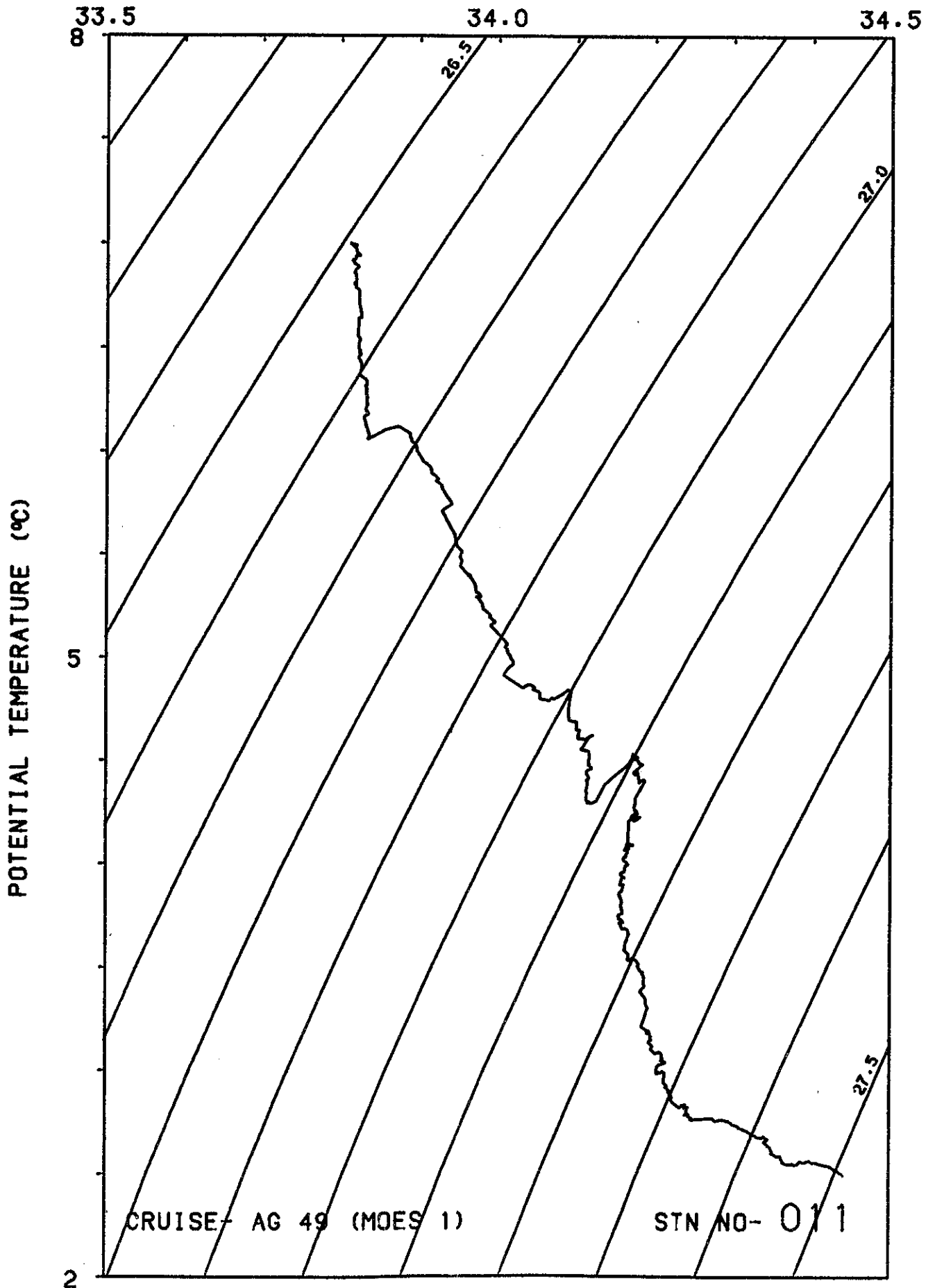
314

SALINITY (PSU)

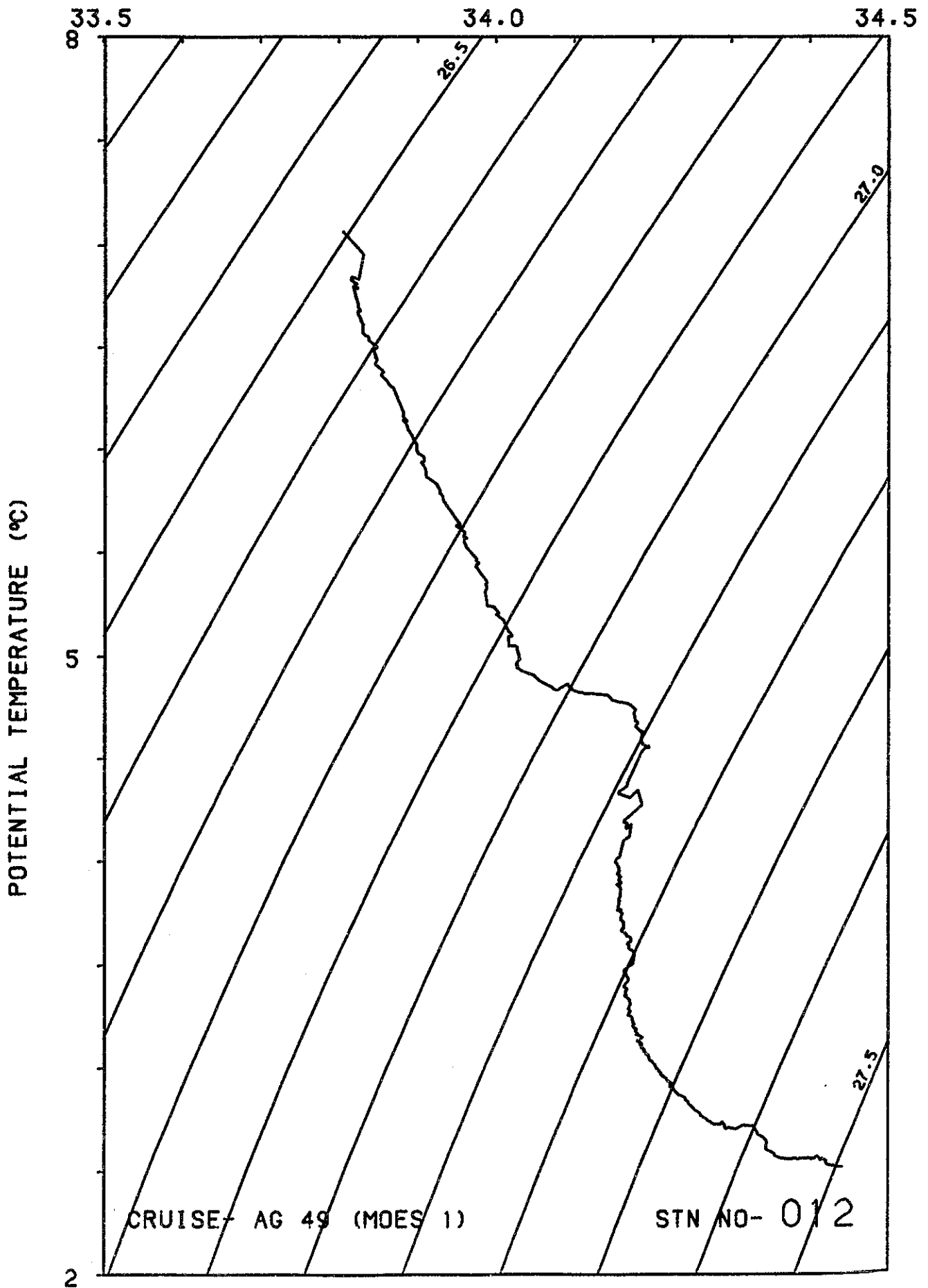


315

SALINITY (PSU)



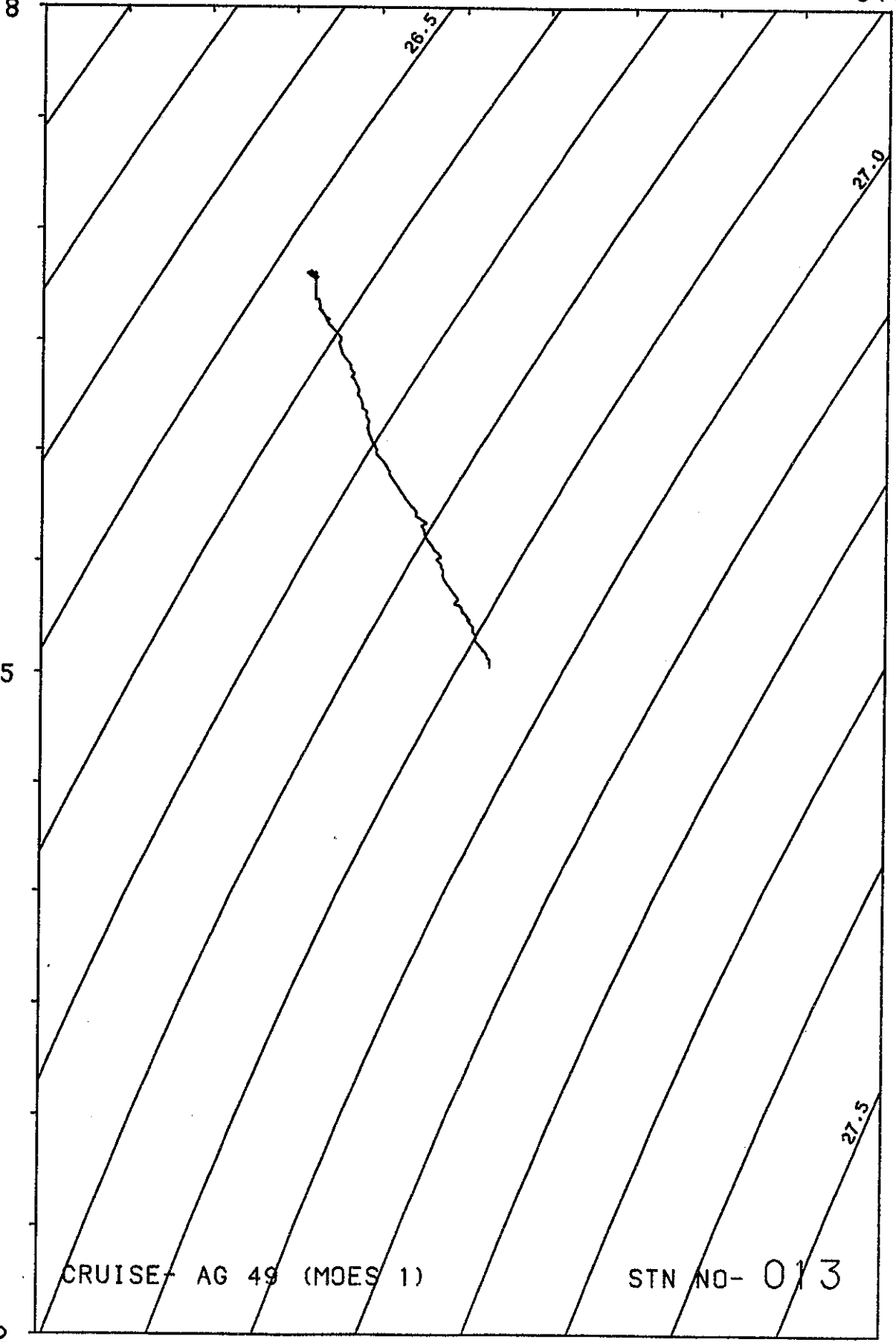
316
SALINITY (PSU)



317

SALINITY (PSU)

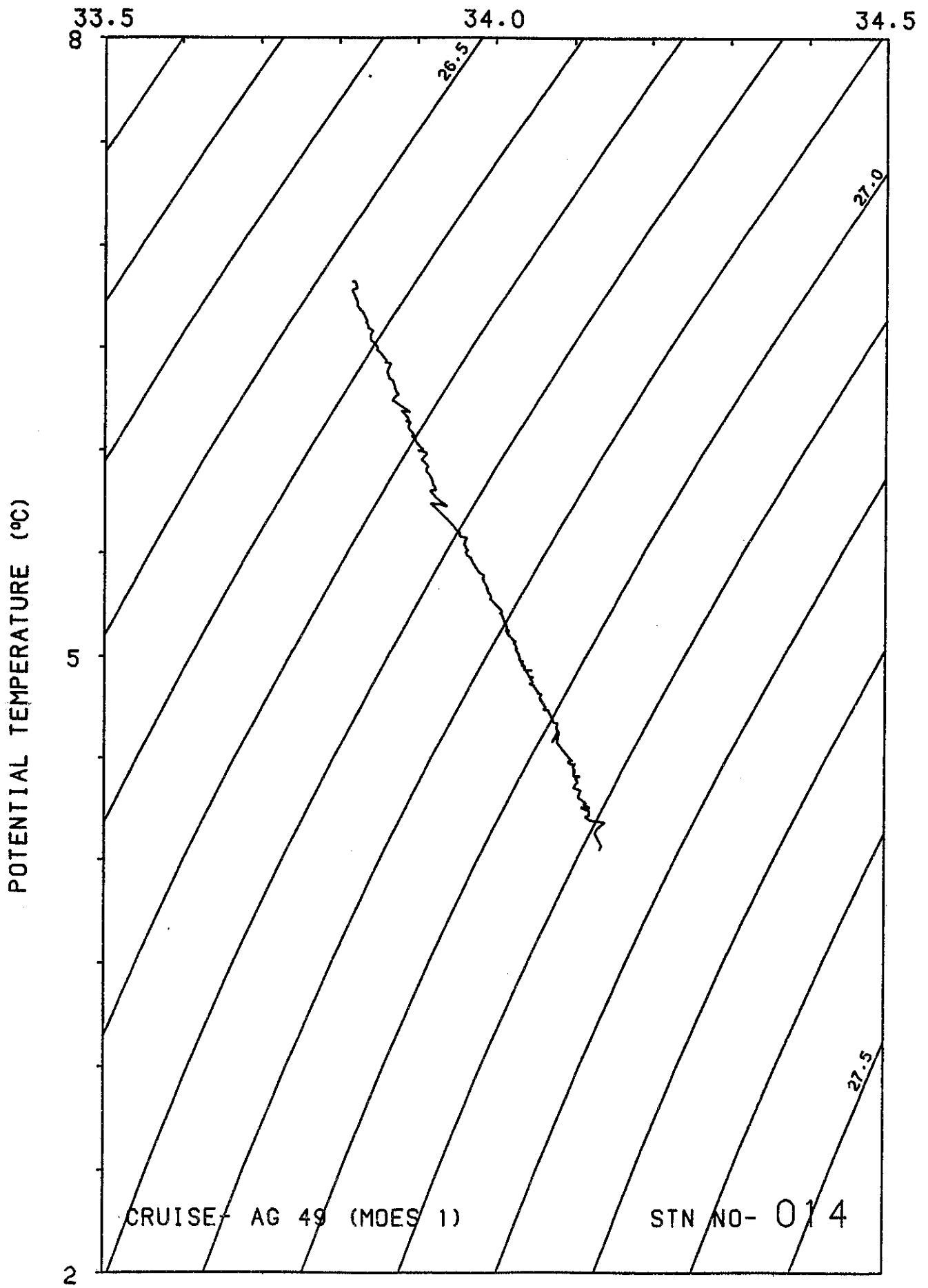
33.5 34.0 34.5



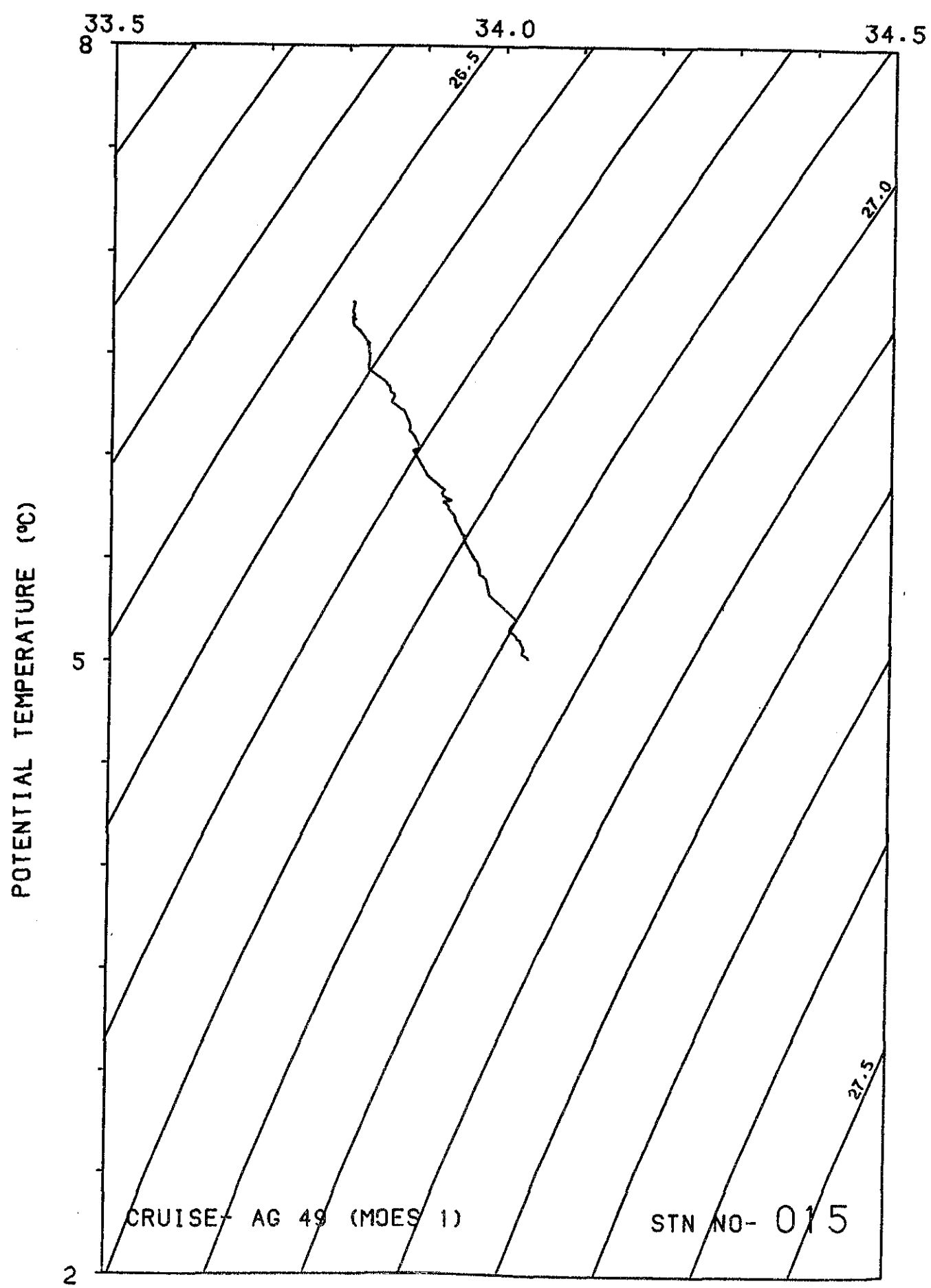
CRUISE AG 49 (MOES 1)

STN NO- 013

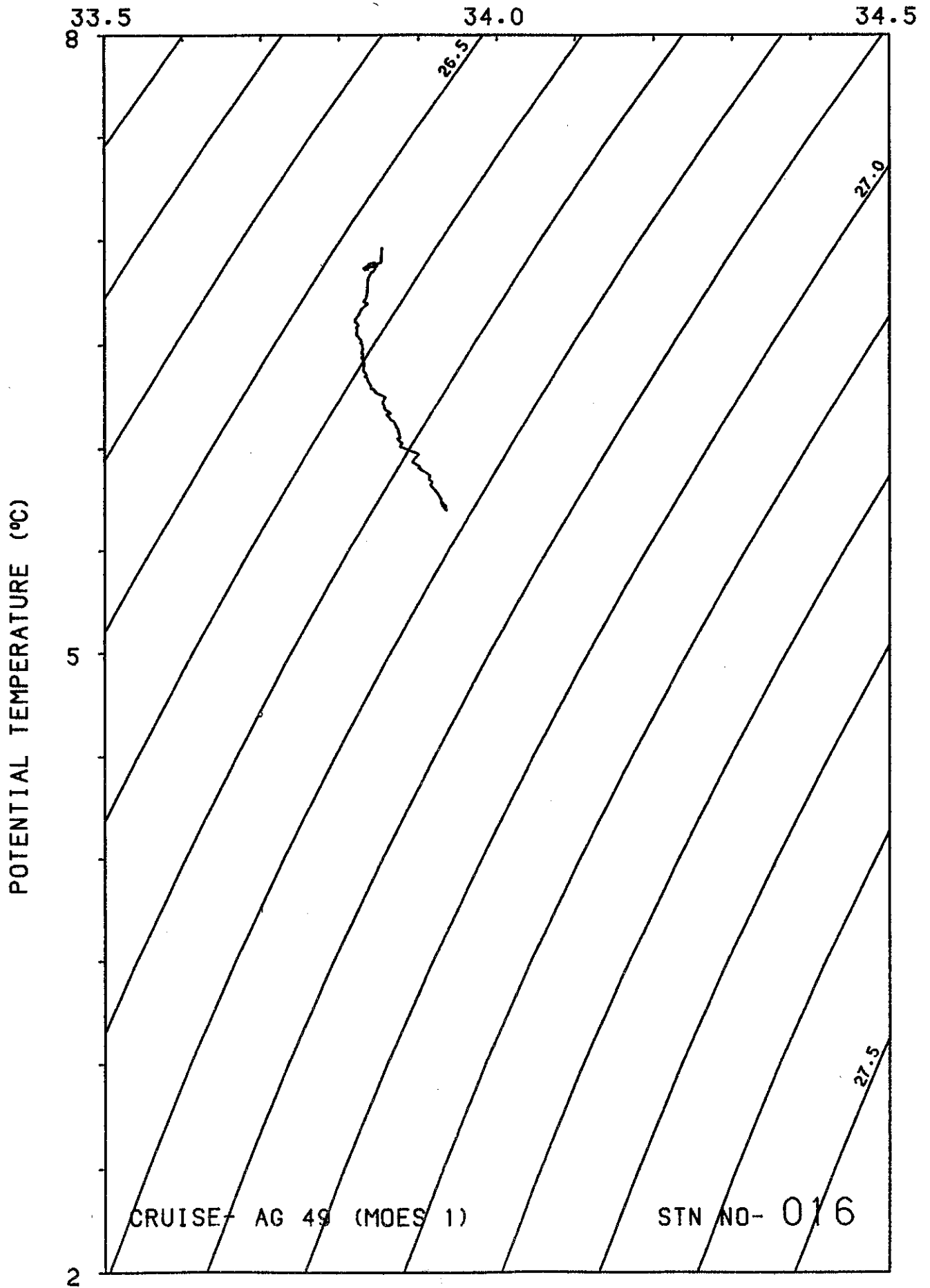
318
SALINITY (PSU)



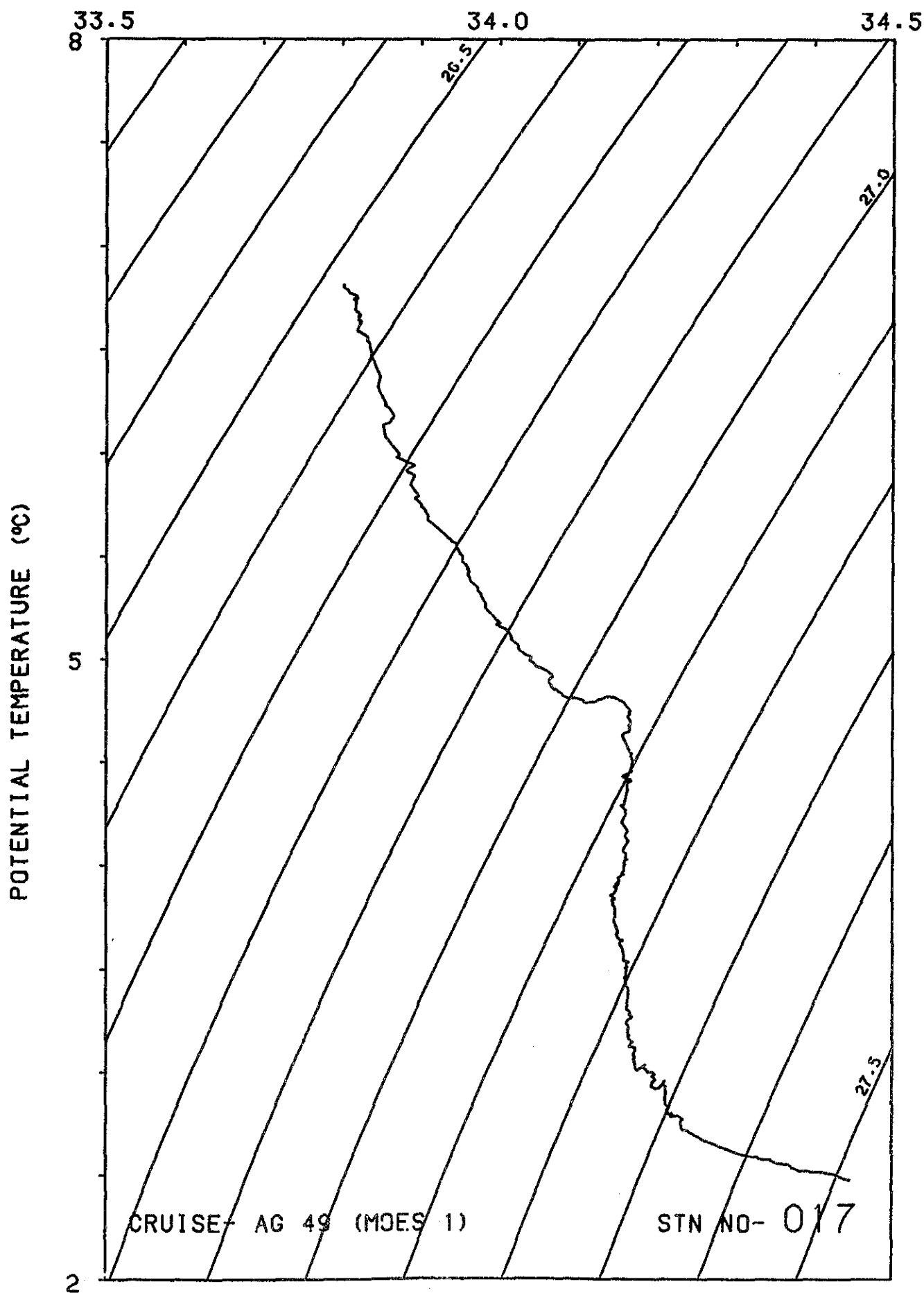
319
SALINITY (PSU)



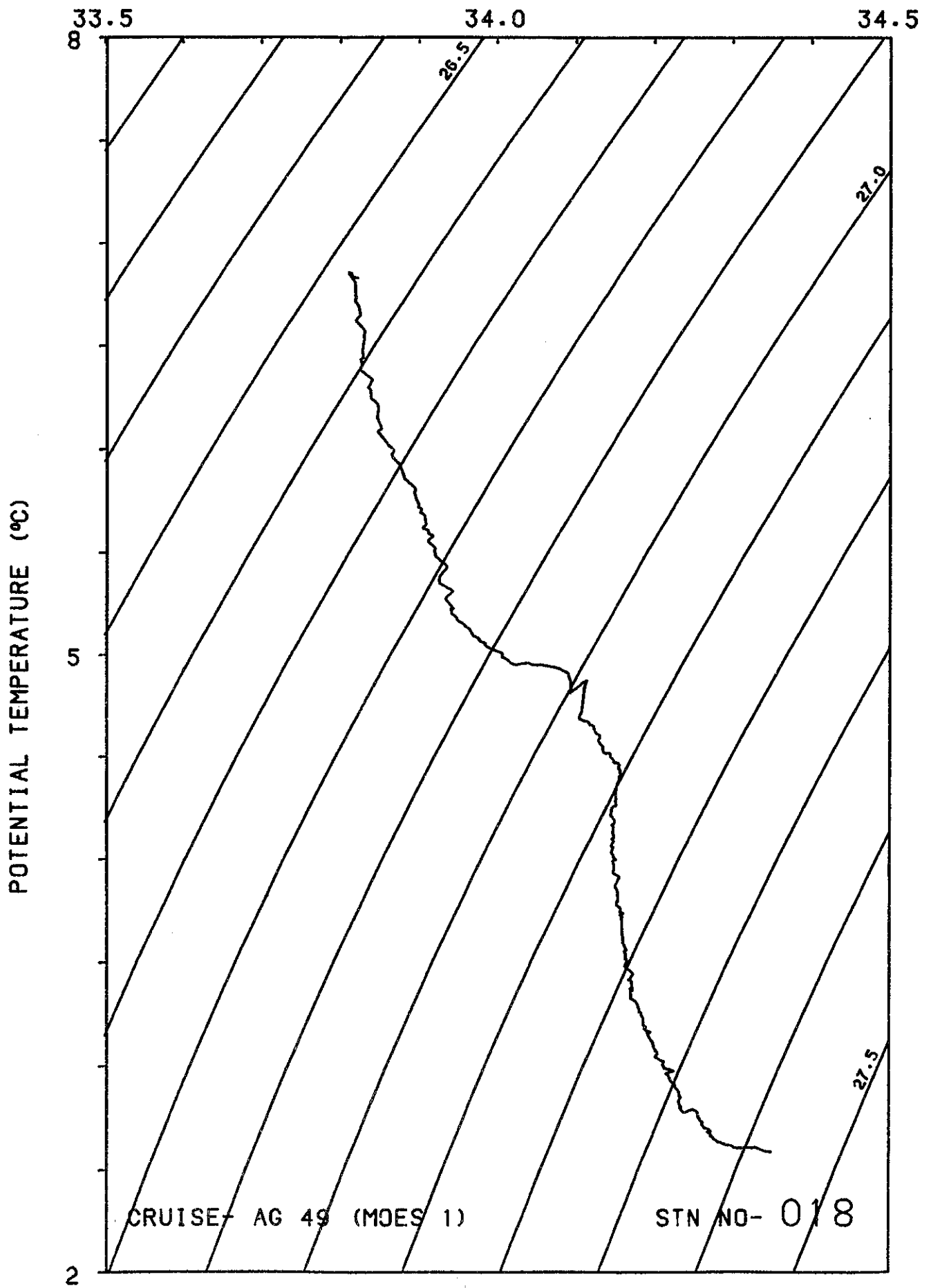
320
SALINITY (PSU)



321
SALINITY (PSU)

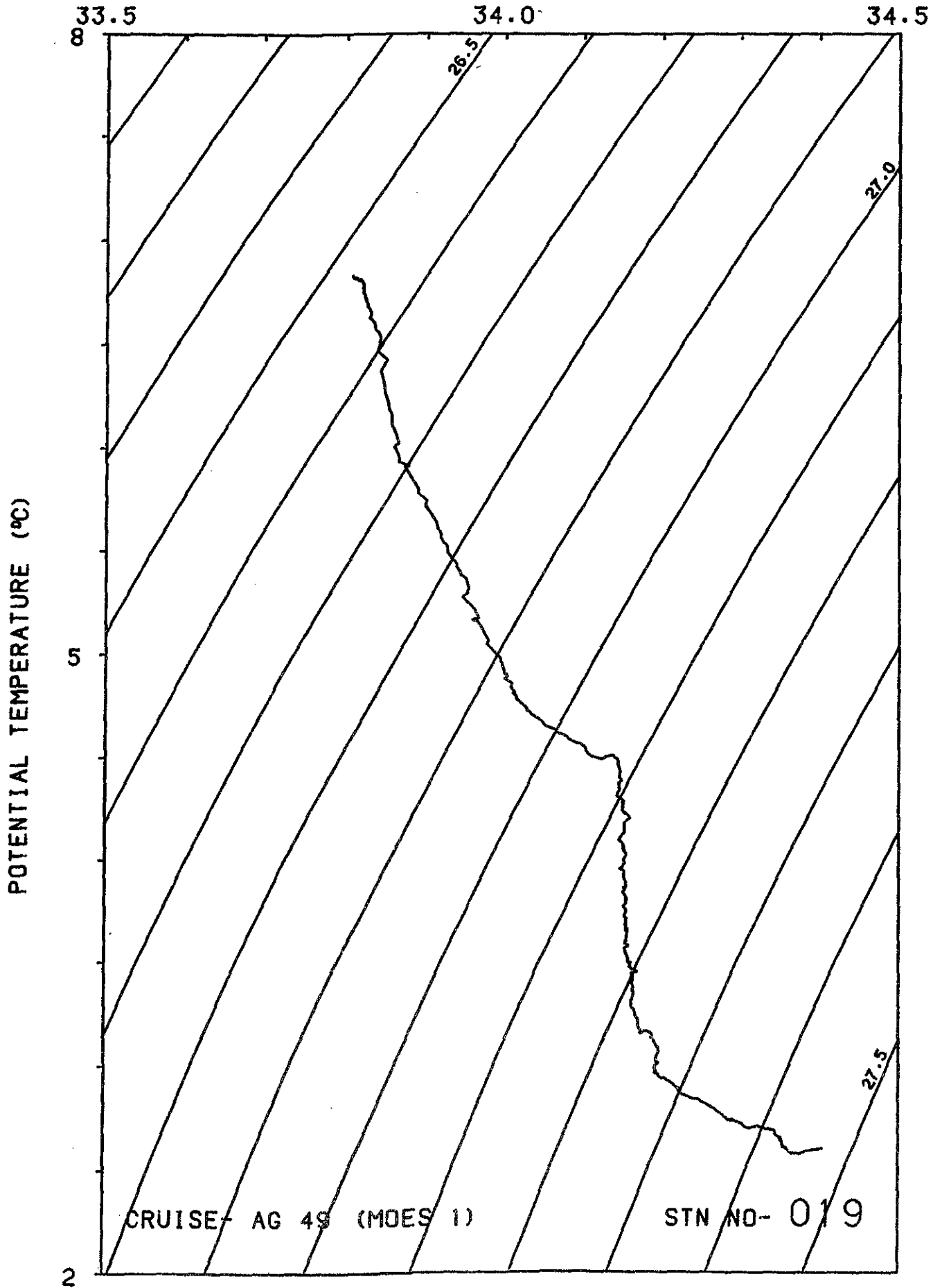


322
SALINITY (PSU)



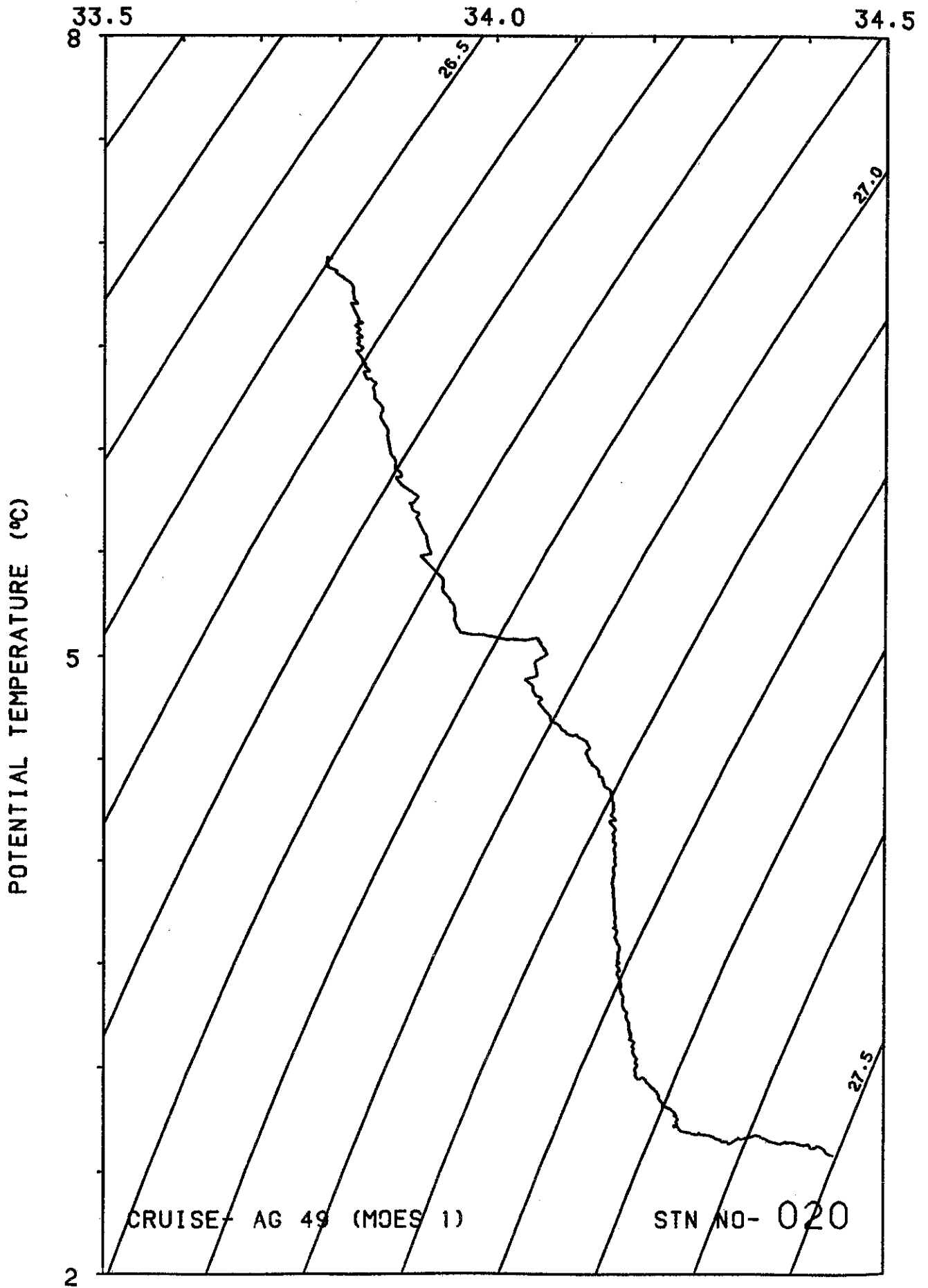
323

SALINITY (PSU)



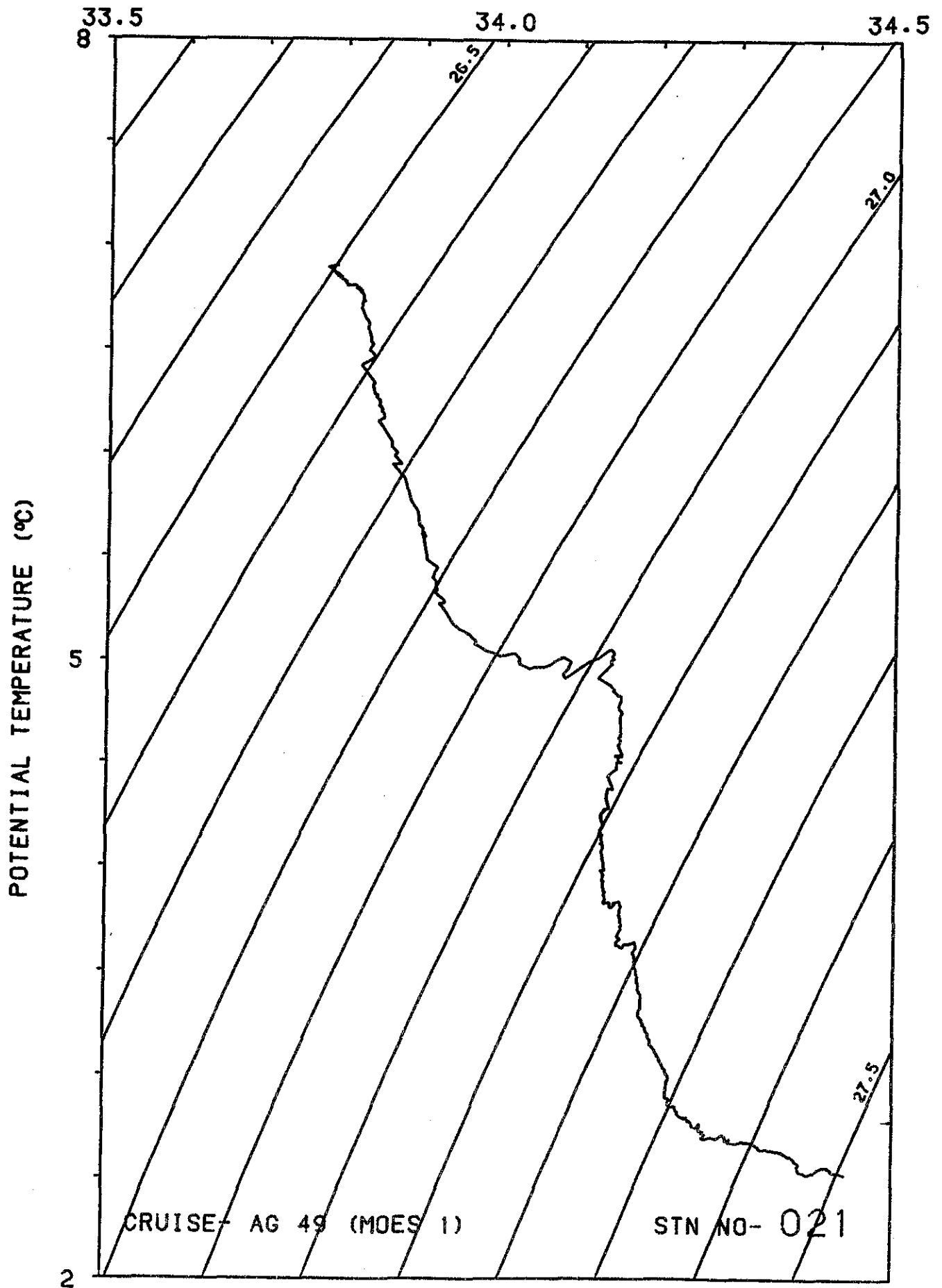
324

SALINITY (PSU)

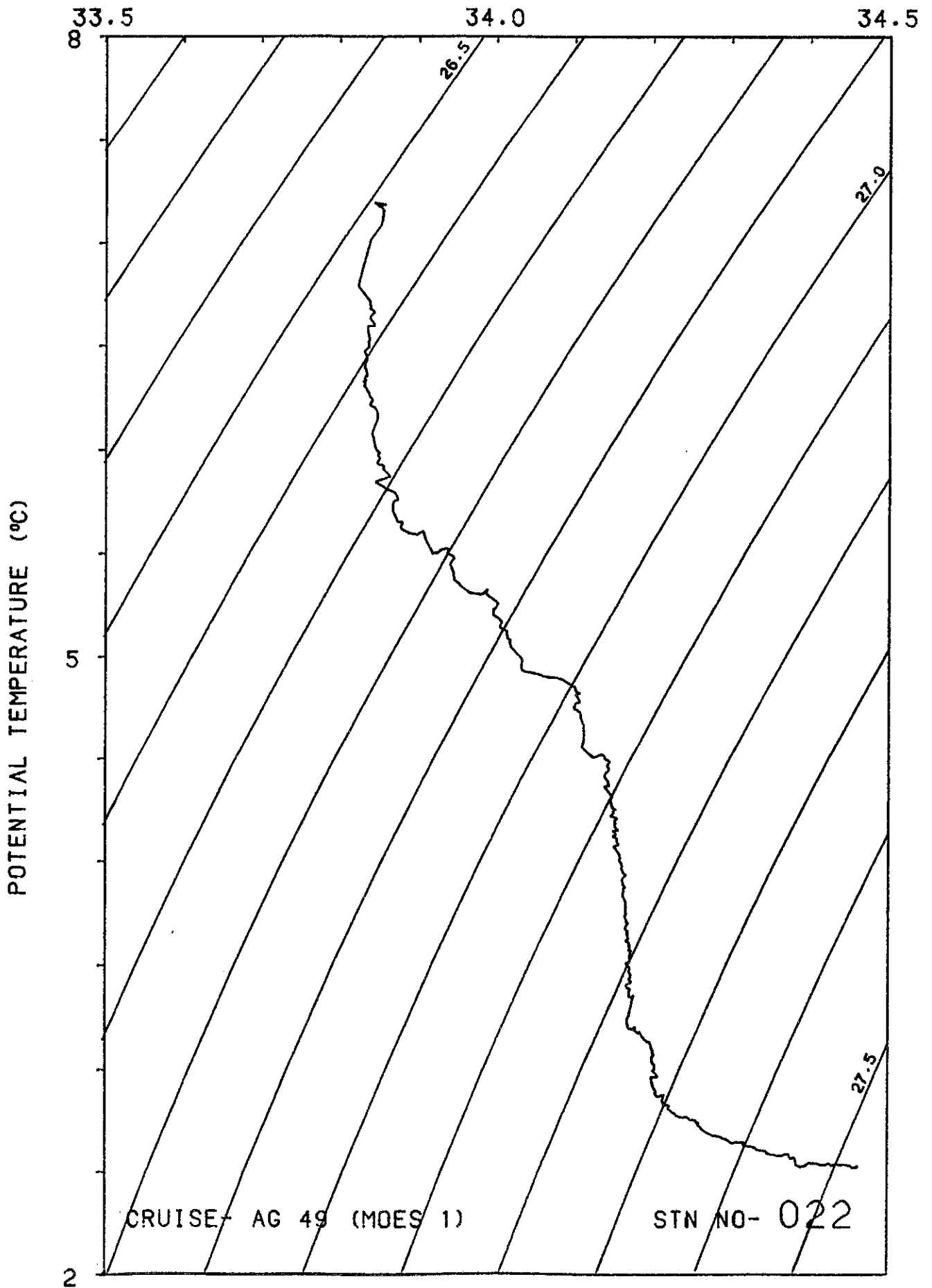


325

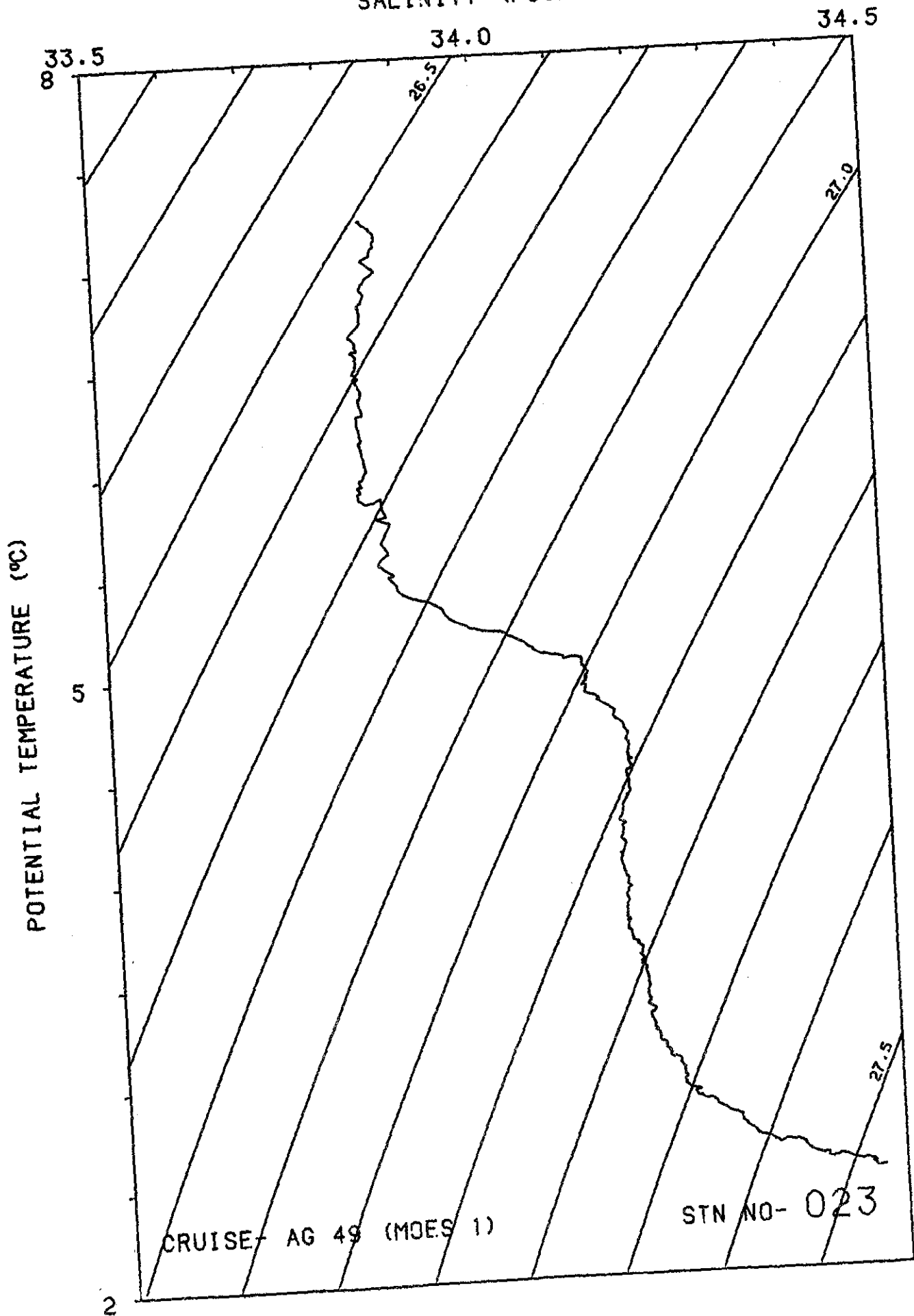
SALINITY (PSU)



326
SALINITY (PSU)



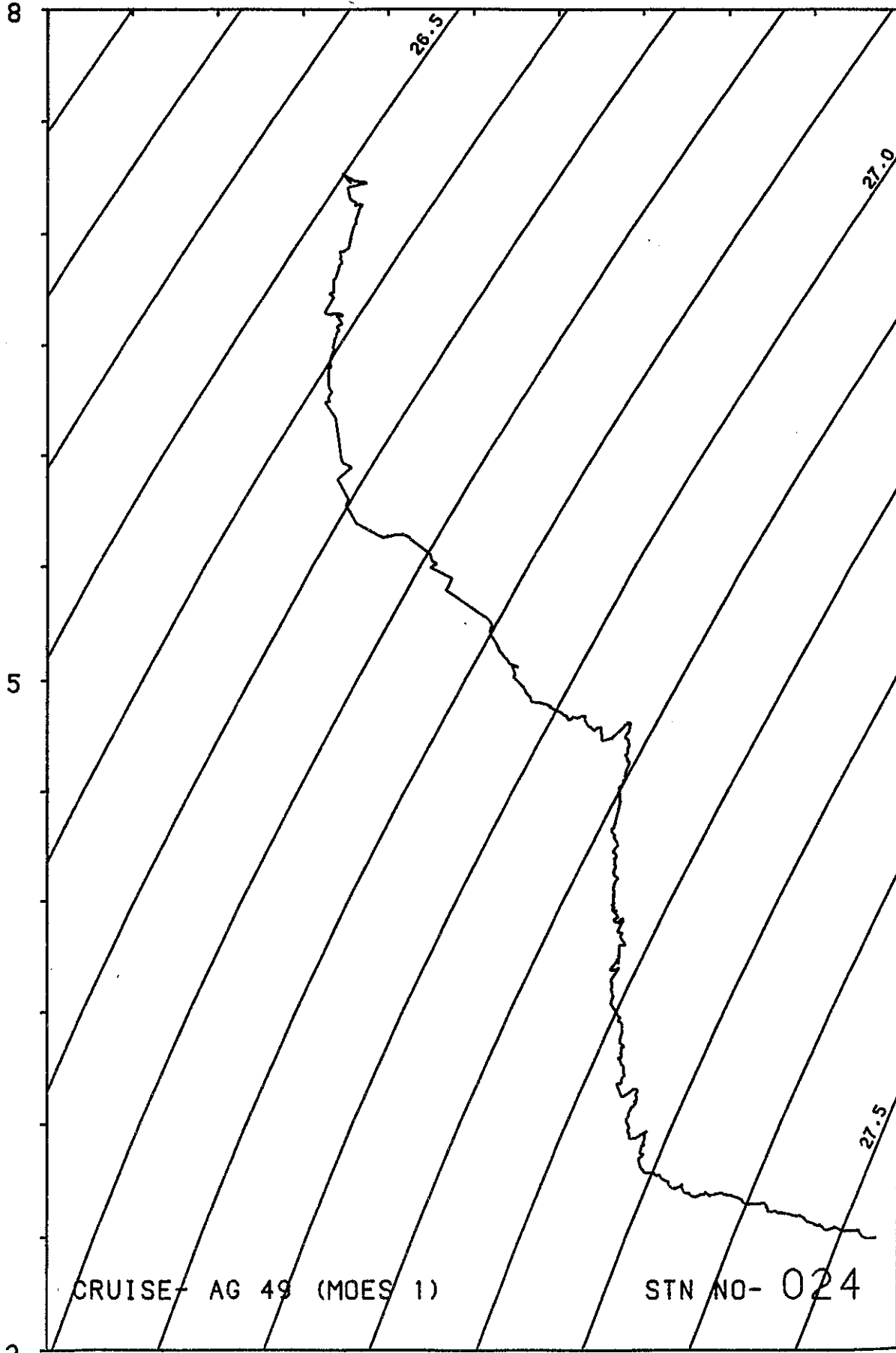
327
SALINITY (PSU)



328

SALINITY (PSU)

33.5 34.0 34.5



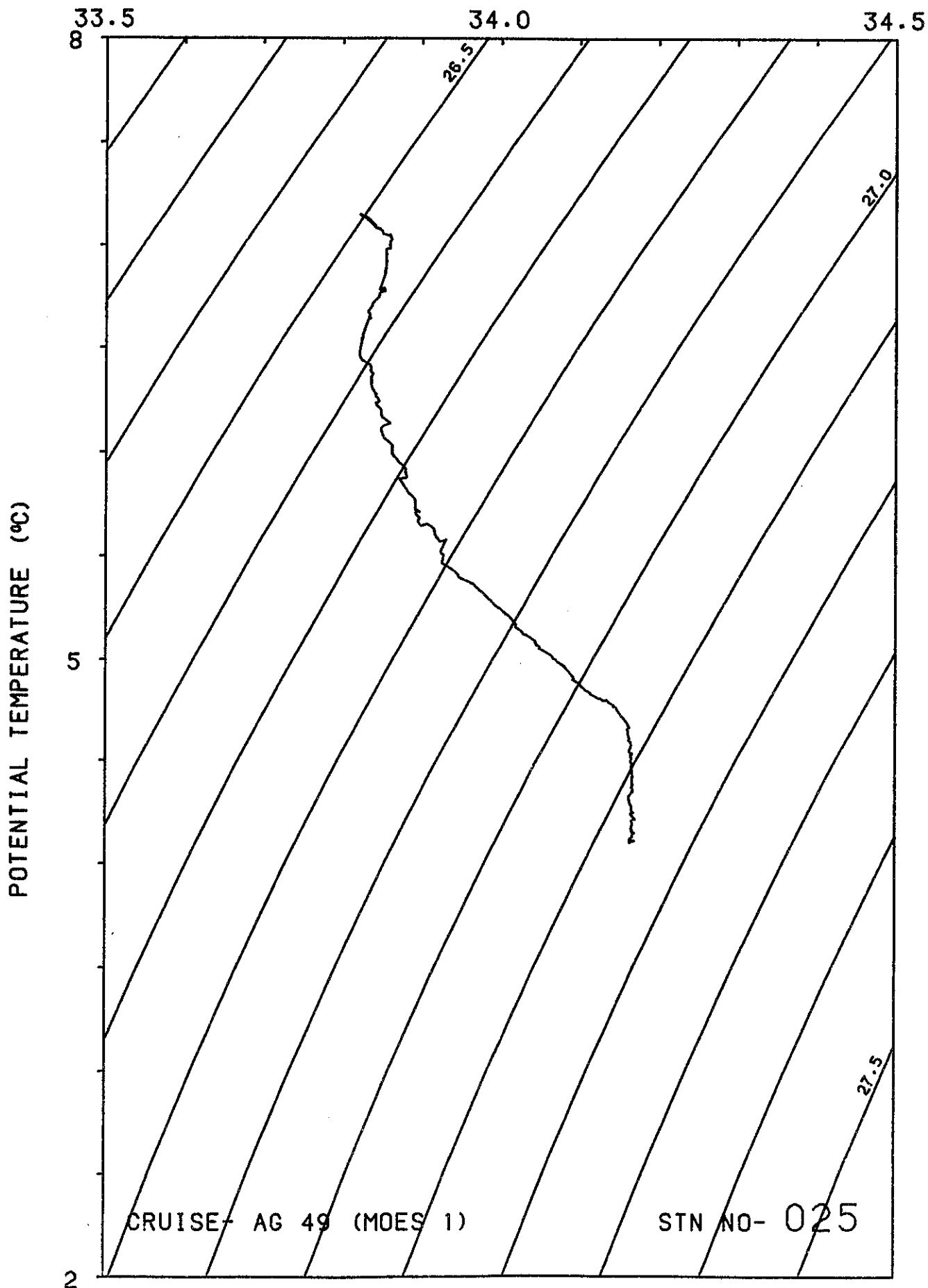
POTENTIAL TEMPERATURE (°C)

CRUISE AG 49 (MOES 1)

STN NO- 024

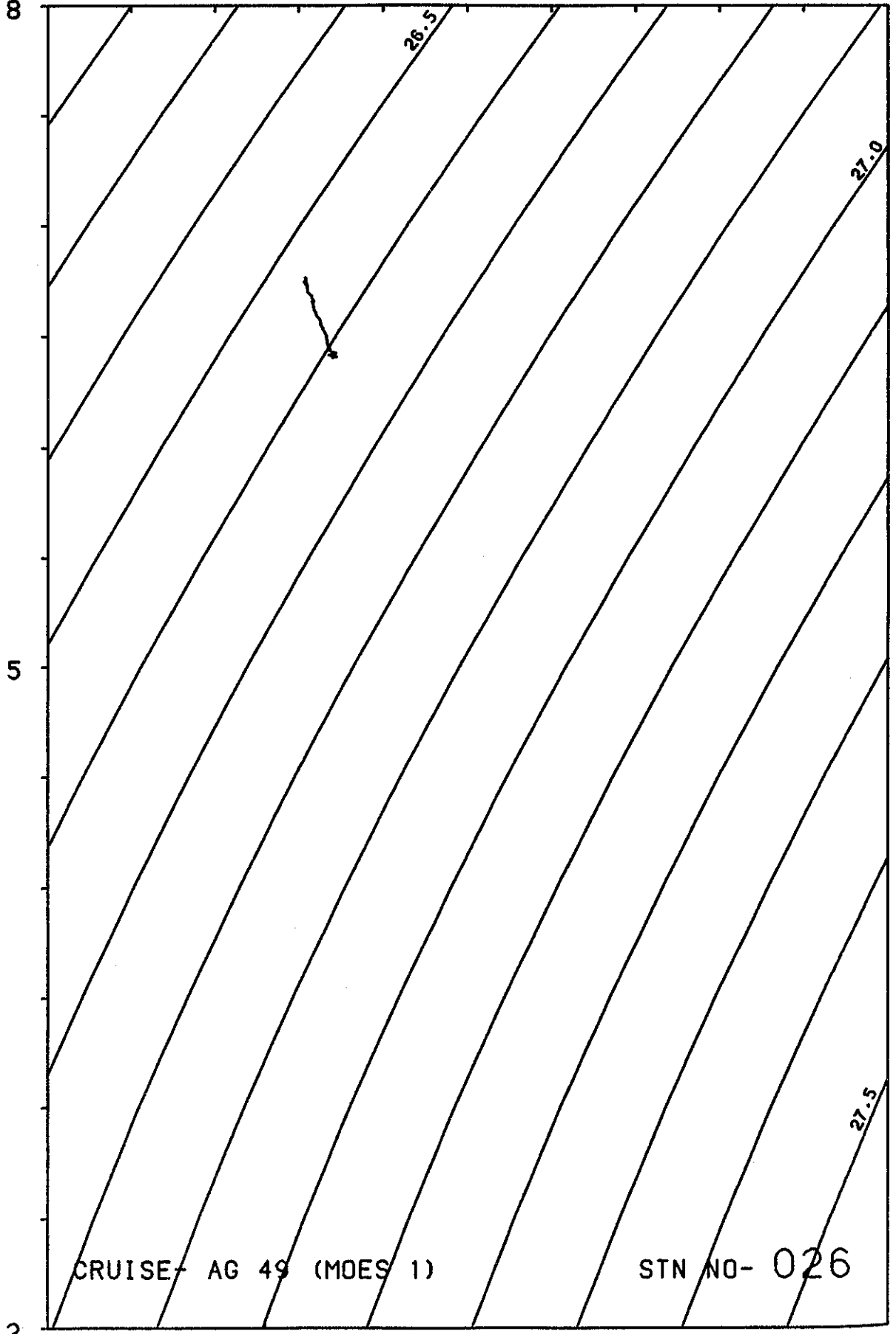
329

SALINITY (PSU)



330
SALINITY (PSU)

33.5 34.0 34.5

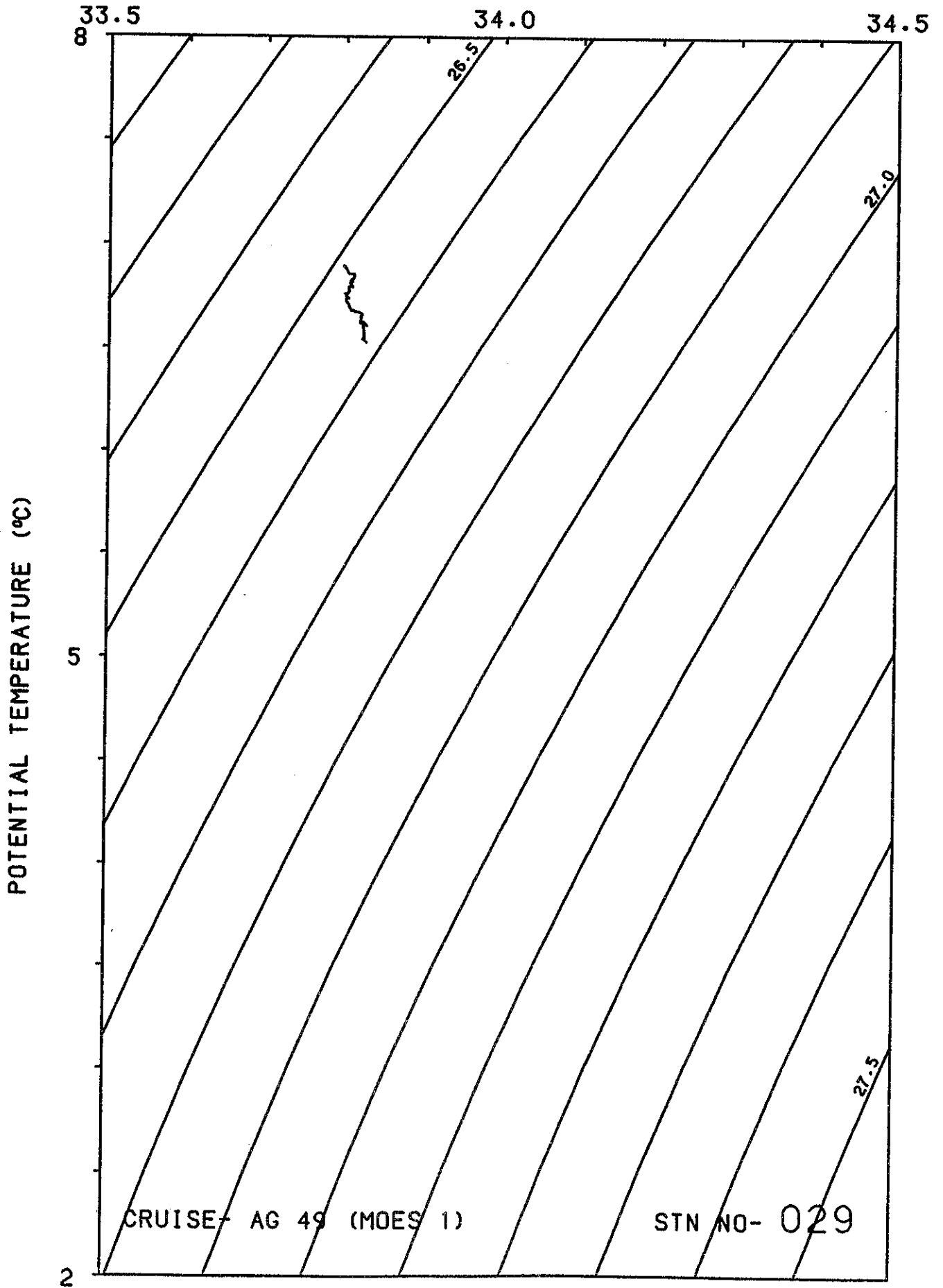


CRUISE AG 49 (MOES 1)

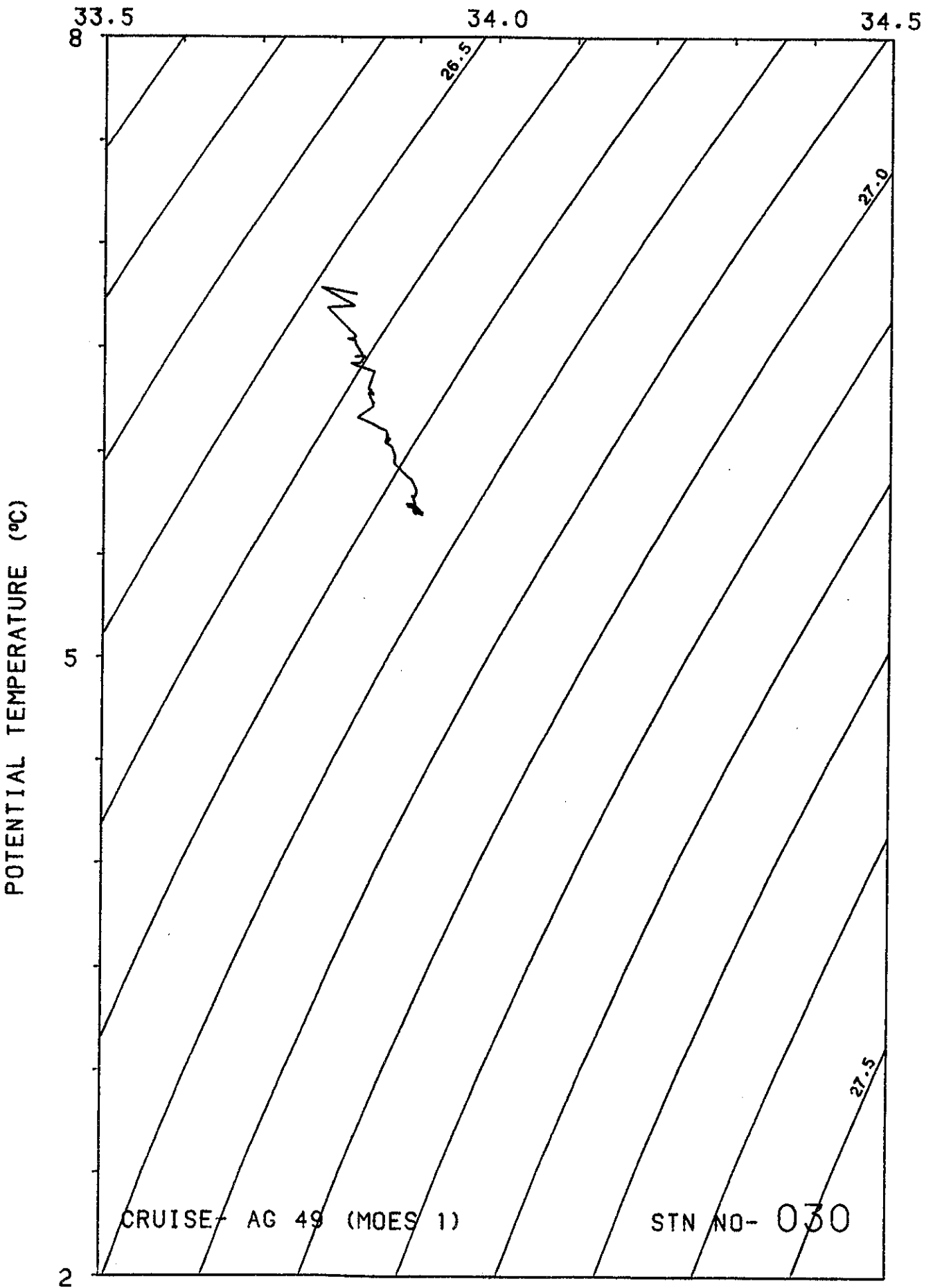
STN NO- 026

331

SALINITY (PSU)



332
SALINITY (PSU)



333

SALINITY (PSU)

33.5
8

34.0

34.5

POTENTIAL TEMPERATURE (°C)

5

2

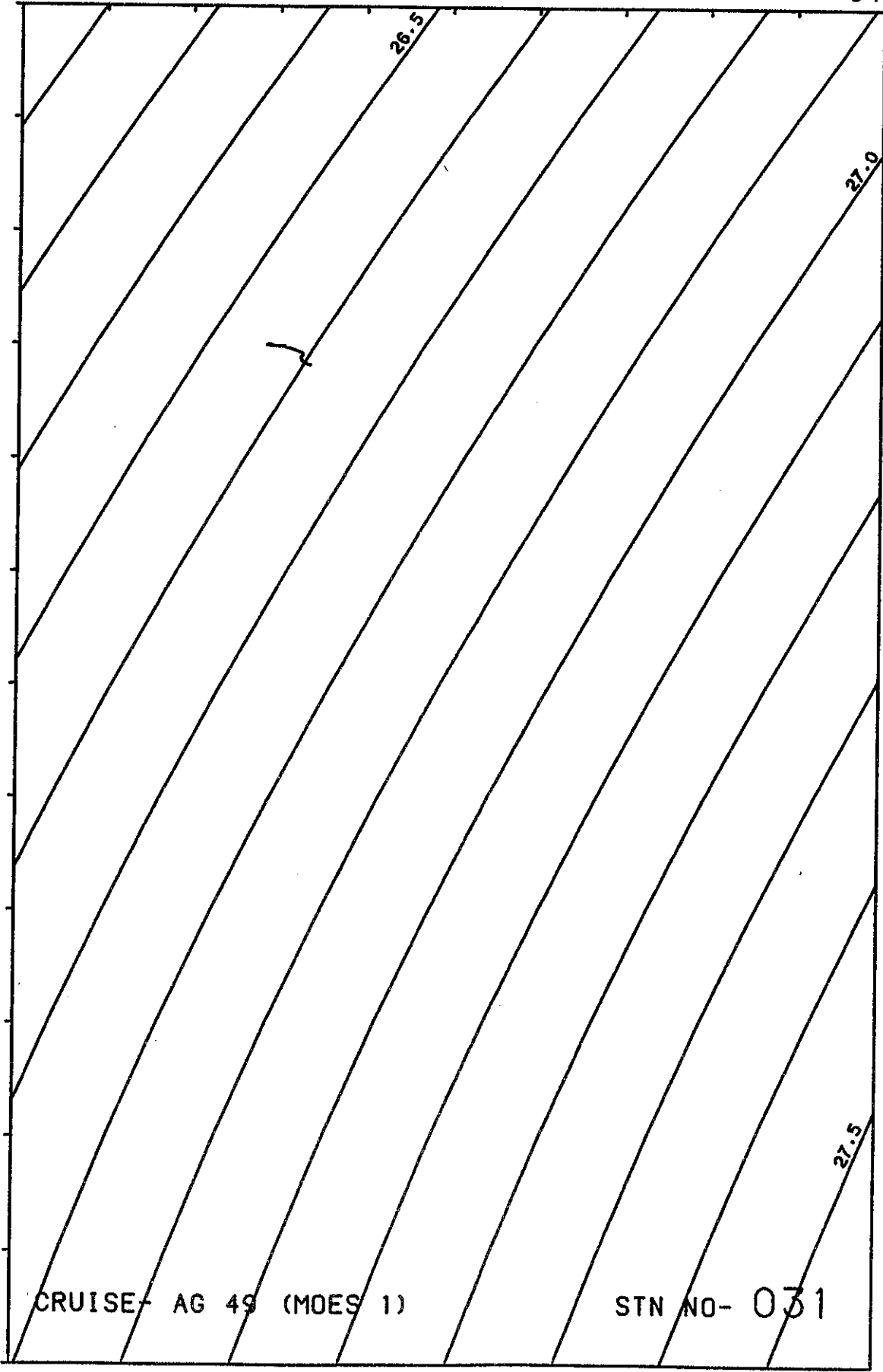
26.5

27.0

27.5

CRUISE- AG 49 (MOES 1)

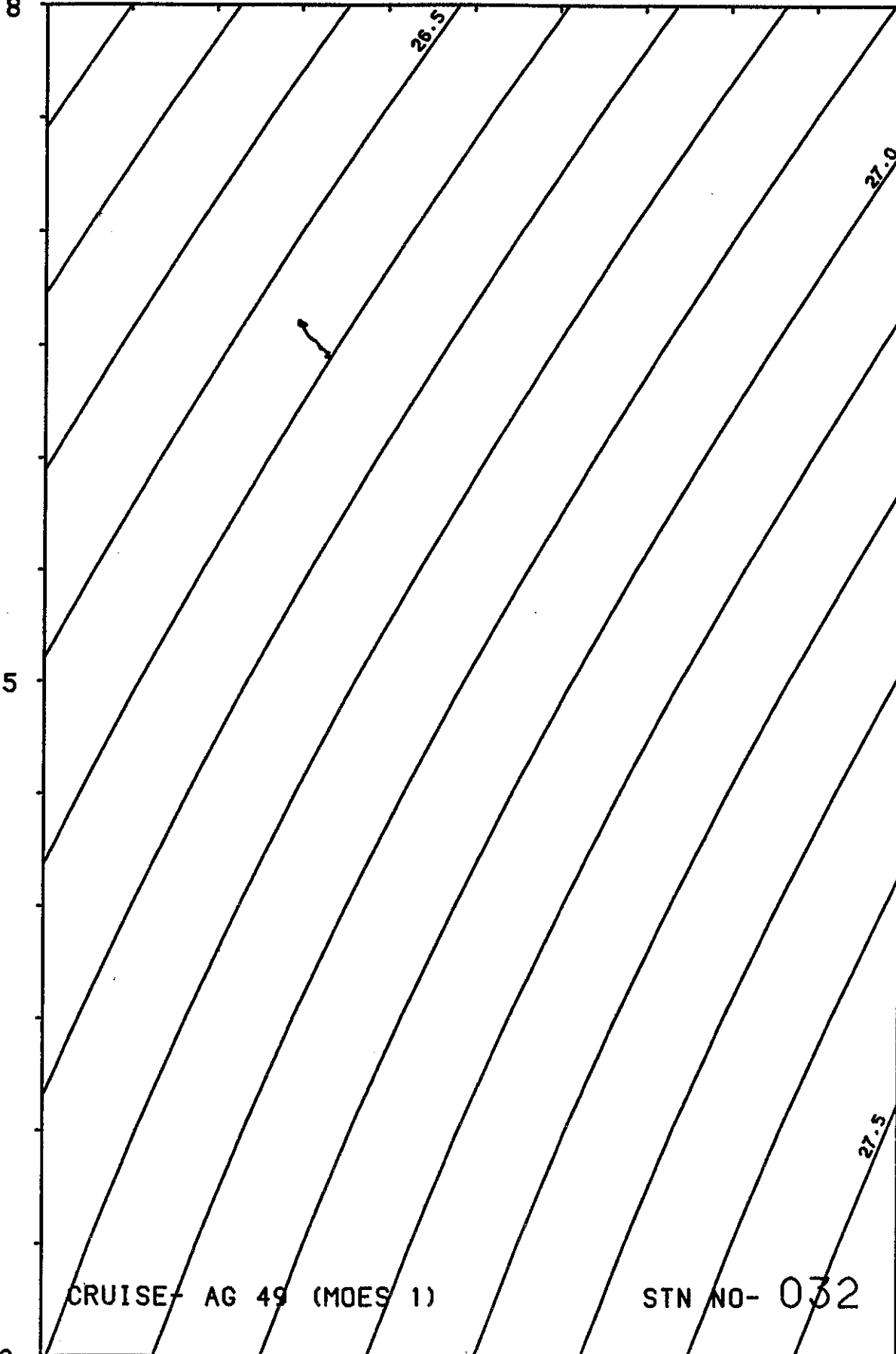
STN NO- 031



334

SALINITY (PSU)

33.5 34.0 34.5



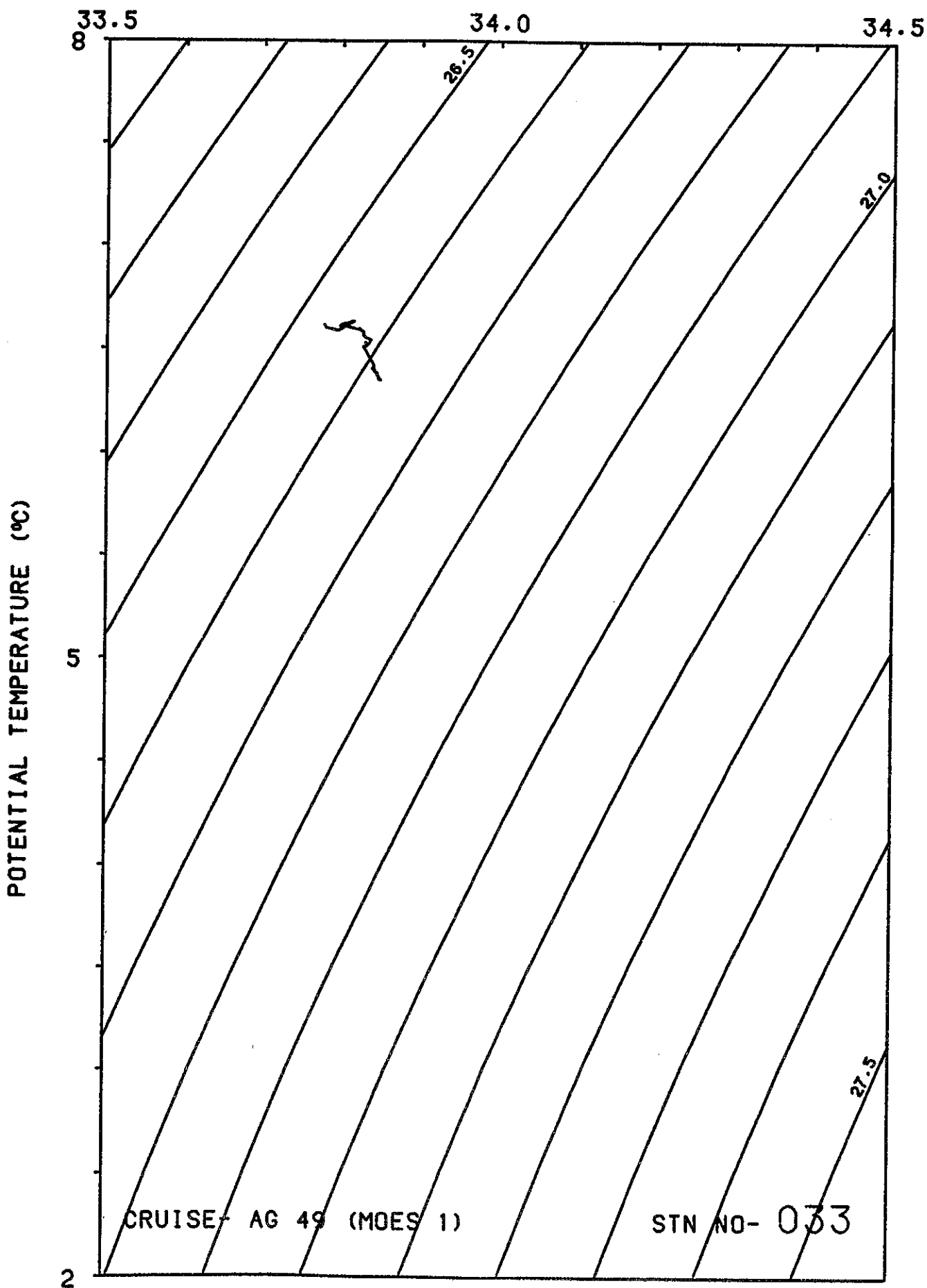
POTENTIAL TEMPERATURE (°C)

CRUISE- AG 49 (MOES 1)

STN NO- 032

335

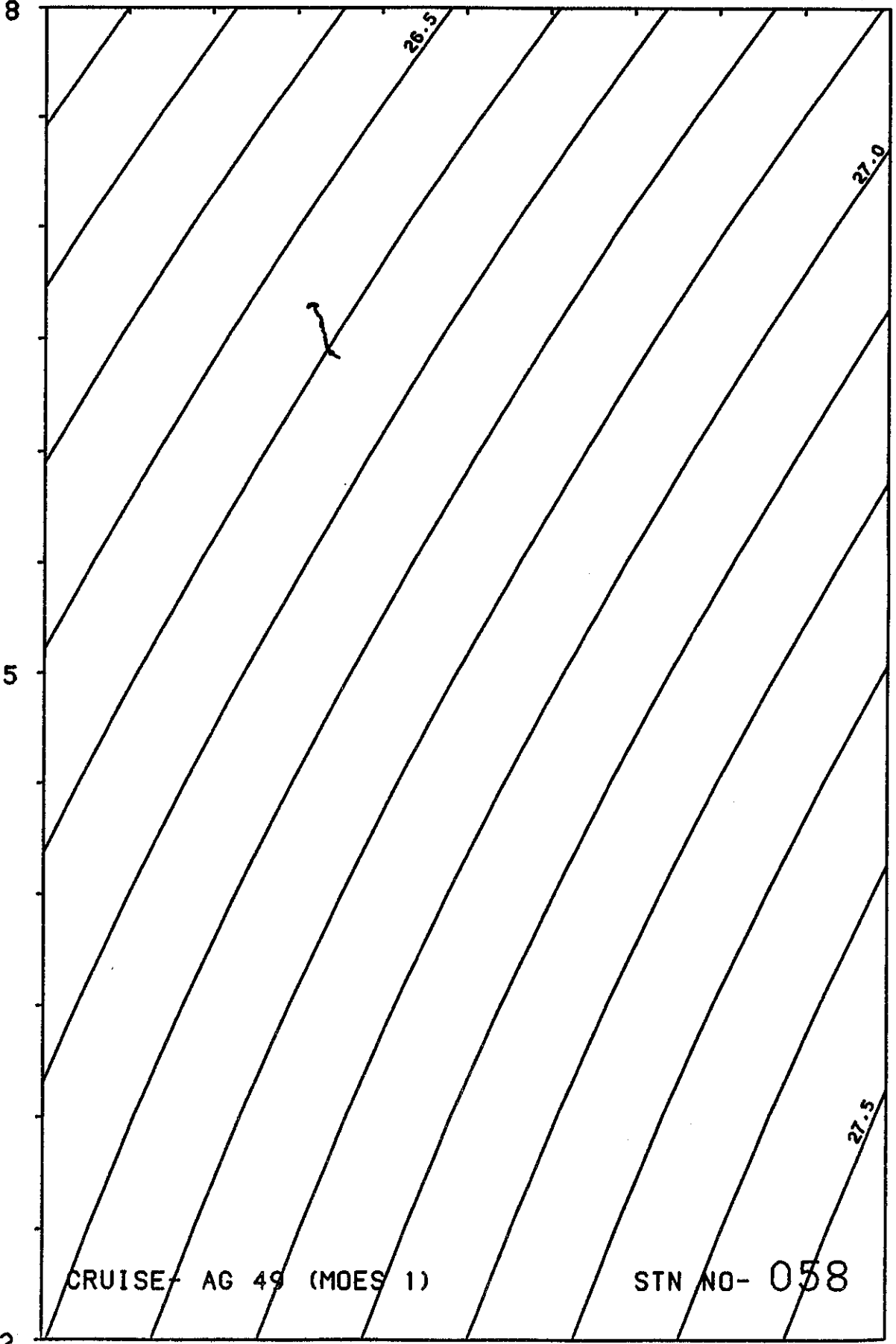
SALINITY (PSU)



336

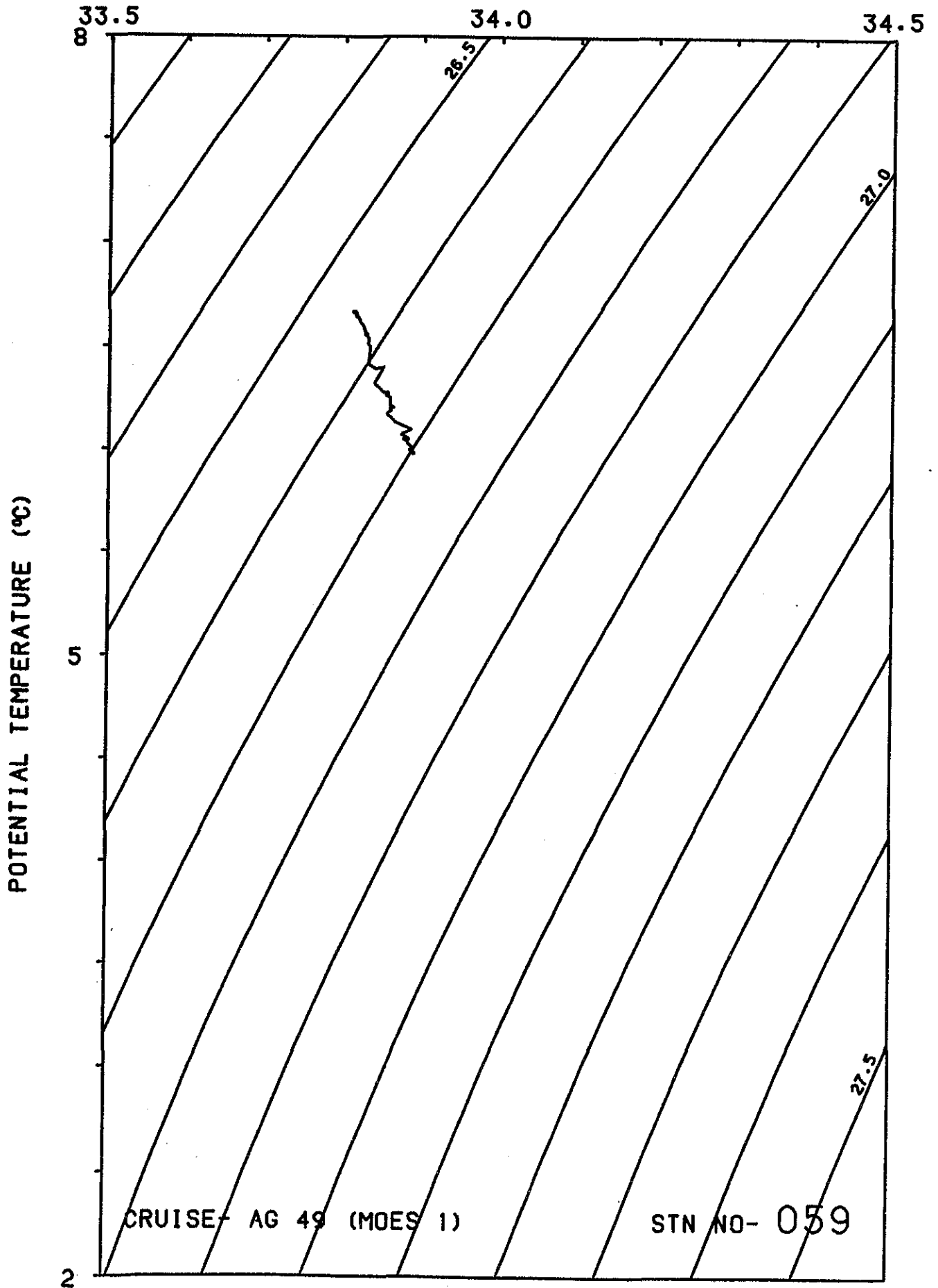
SALINITY (PSU)

33.5 34.0 34.5

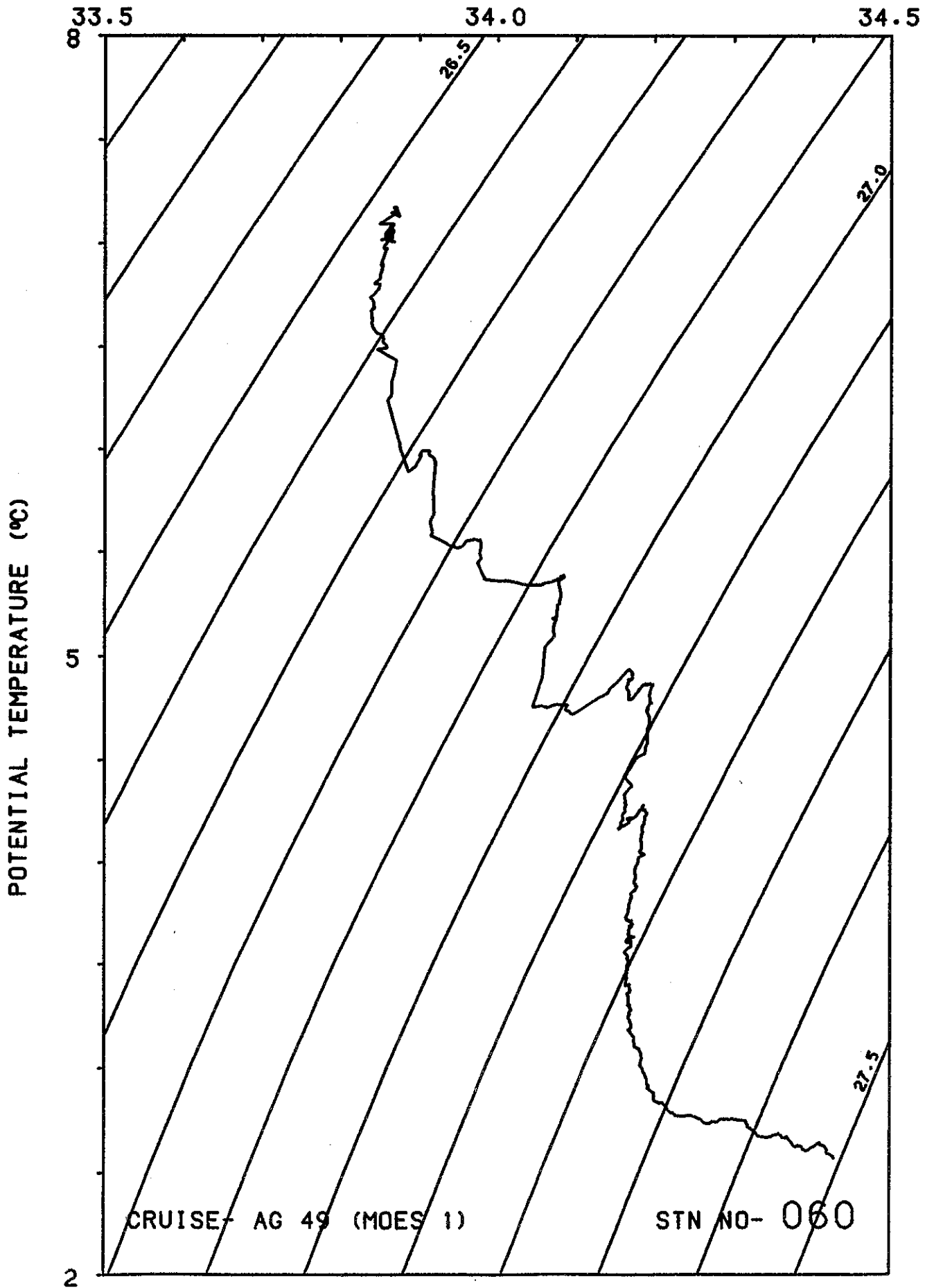


337

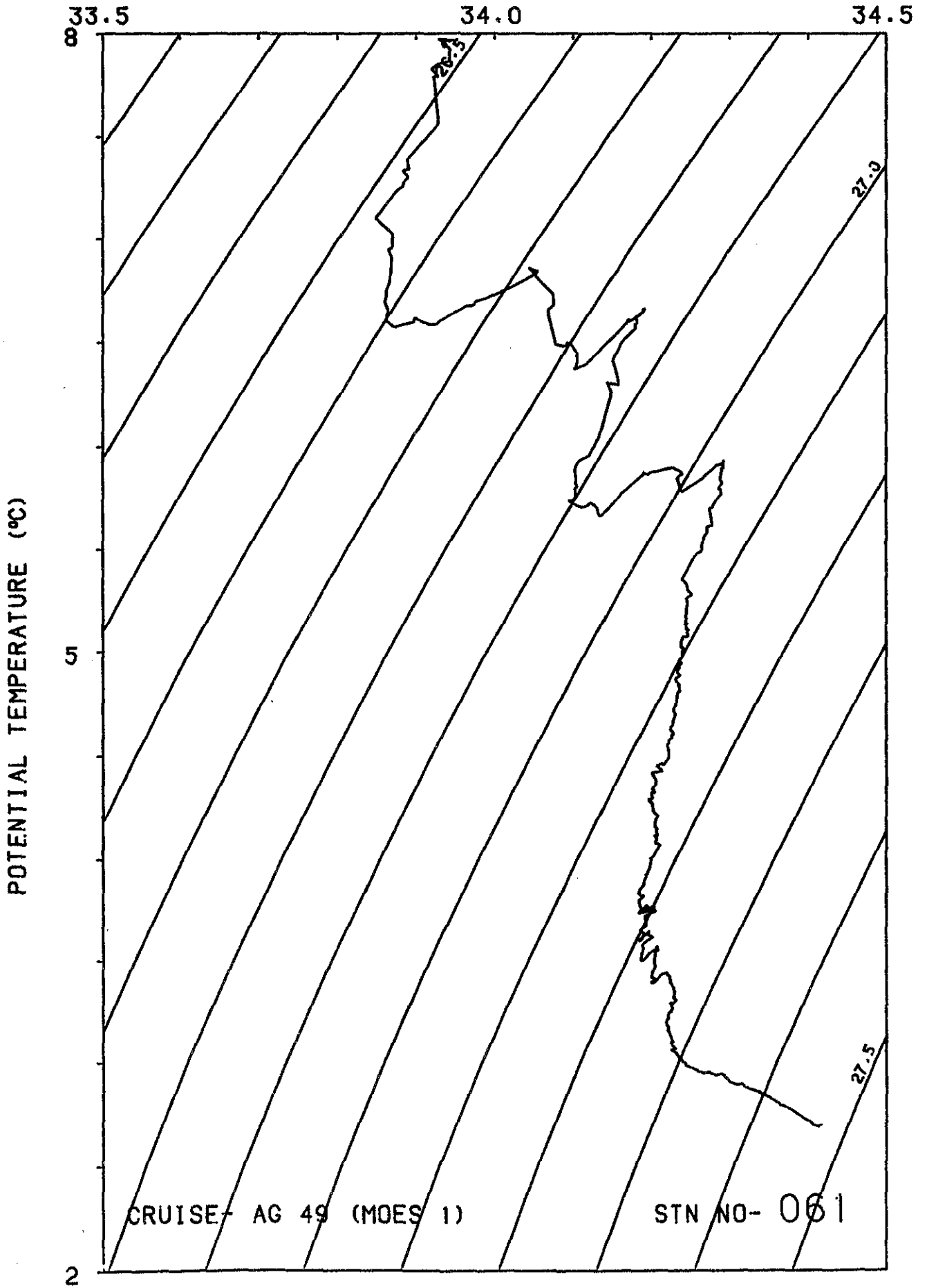
SALINITY (PSU)



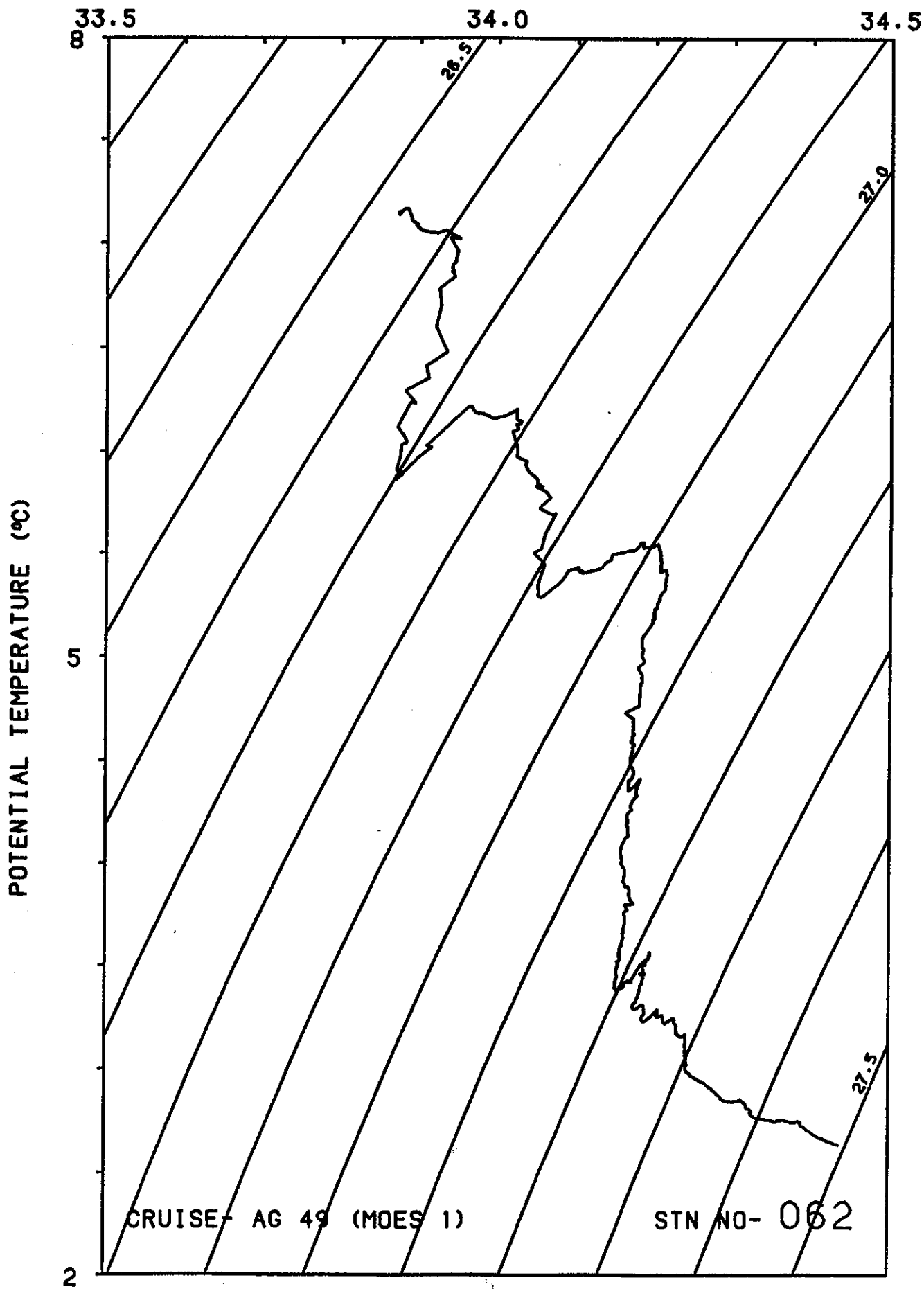
SALINITY (PSU)



SALINITY (PSU)

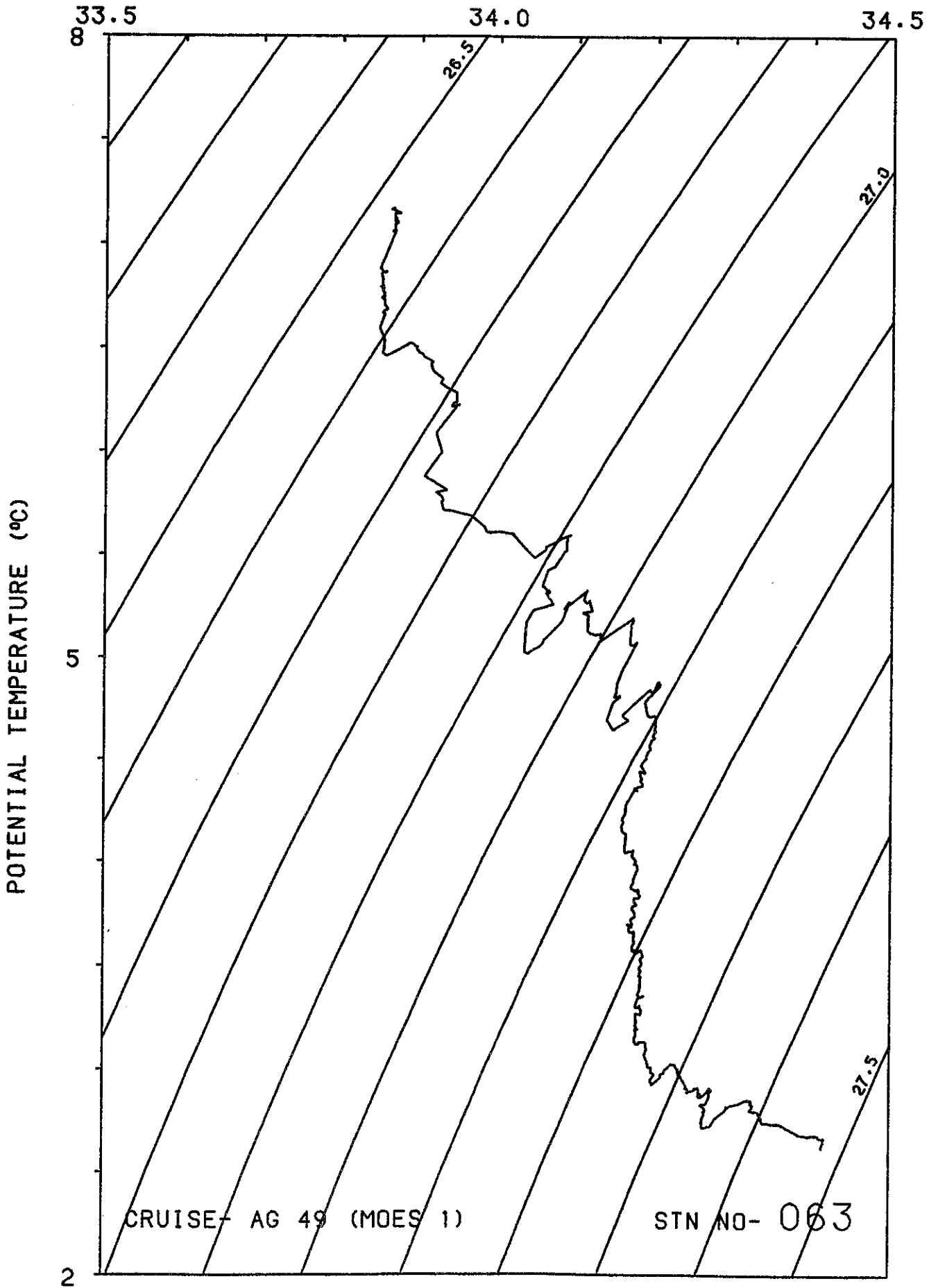


340
SALINITY (PSU)

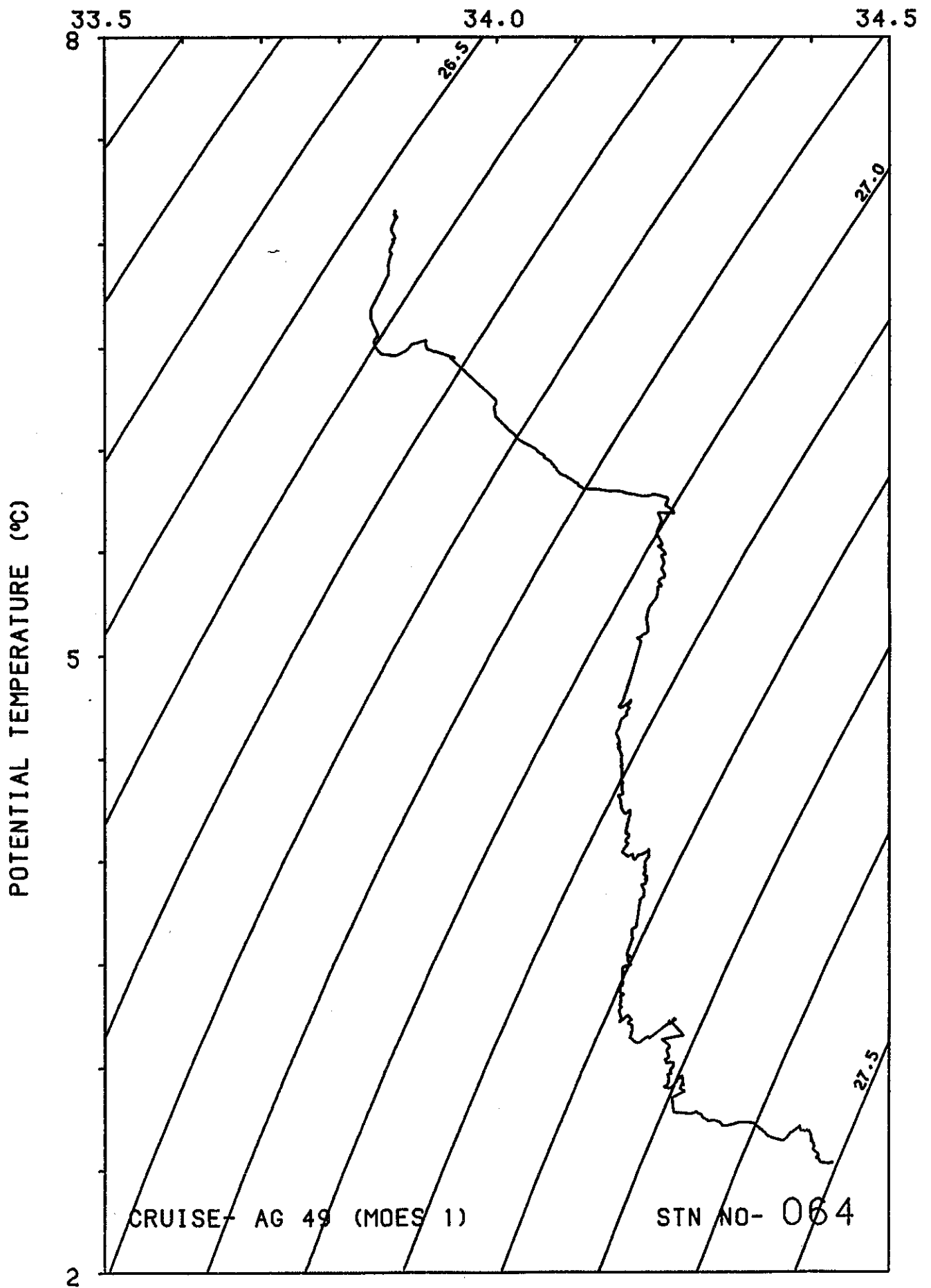


341

SALINITY (PSU)

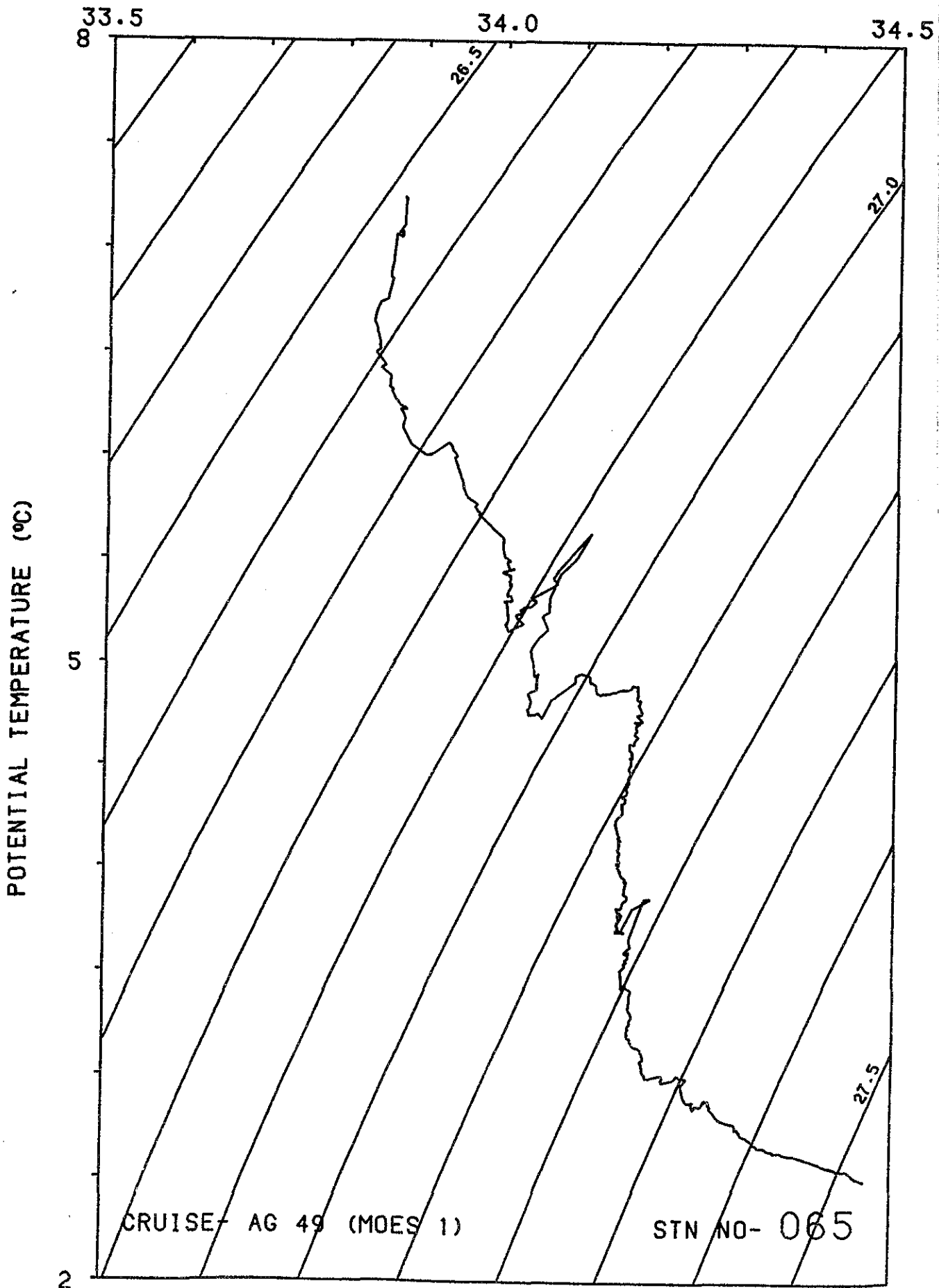


342
SALINITY (PSU)



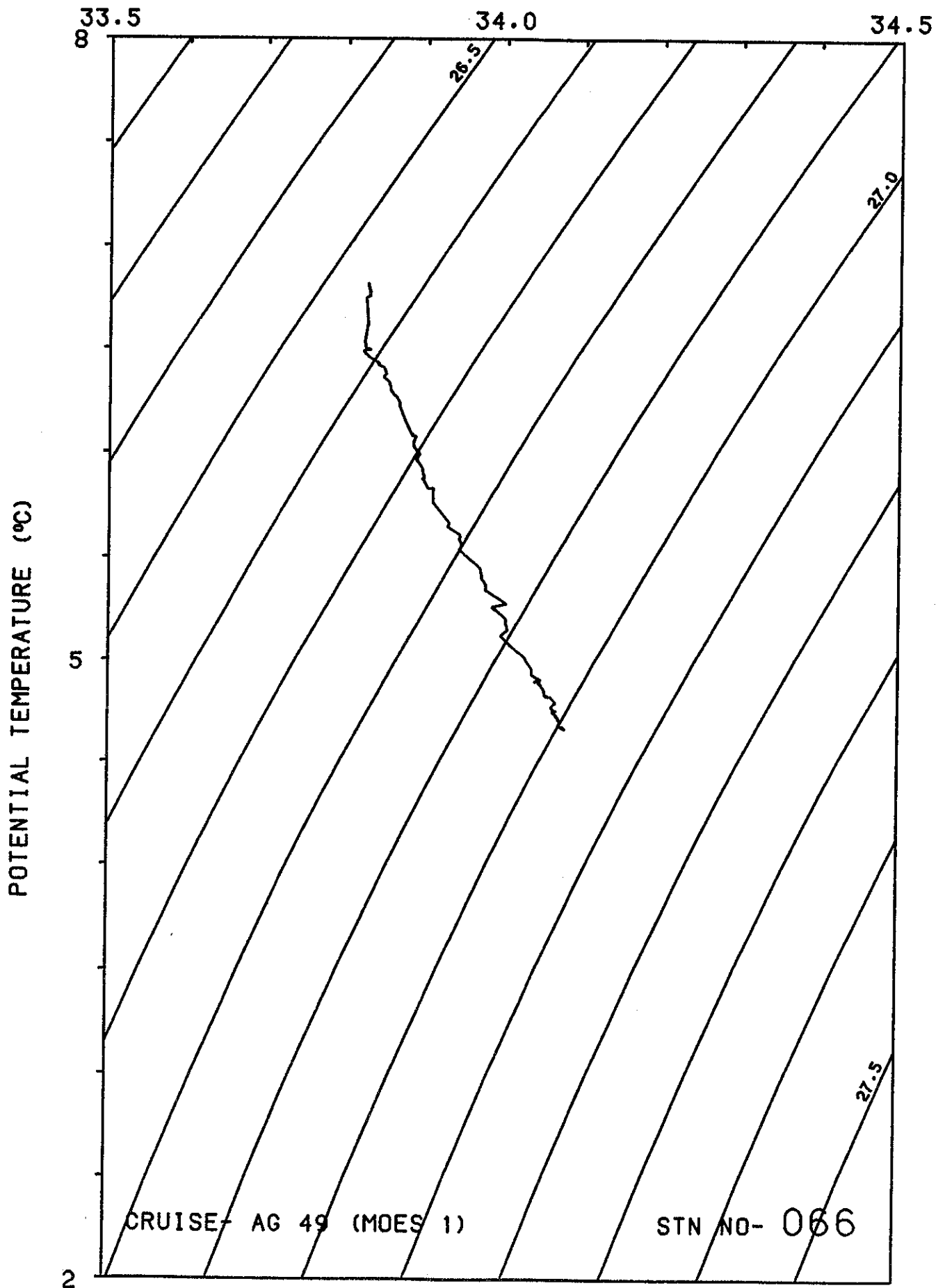
343

SALINITY (PSU)

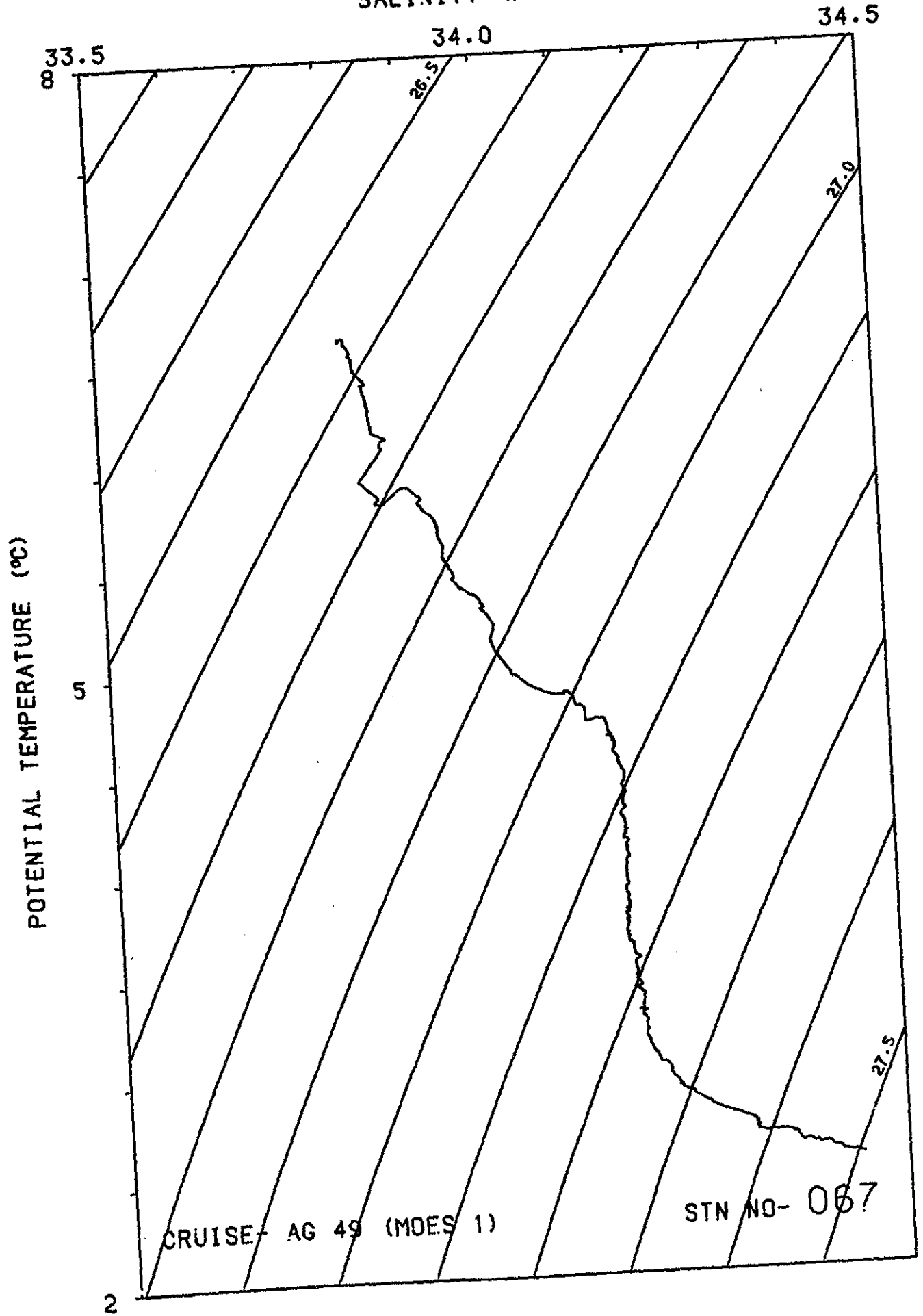


344

SALINITY (PSU)



345
SALINITY (PSU)



346

SALINITY (PSU)

33.5
8

34.0

34.5

POTENTIAL TEMPERATURE (°C)

5

2

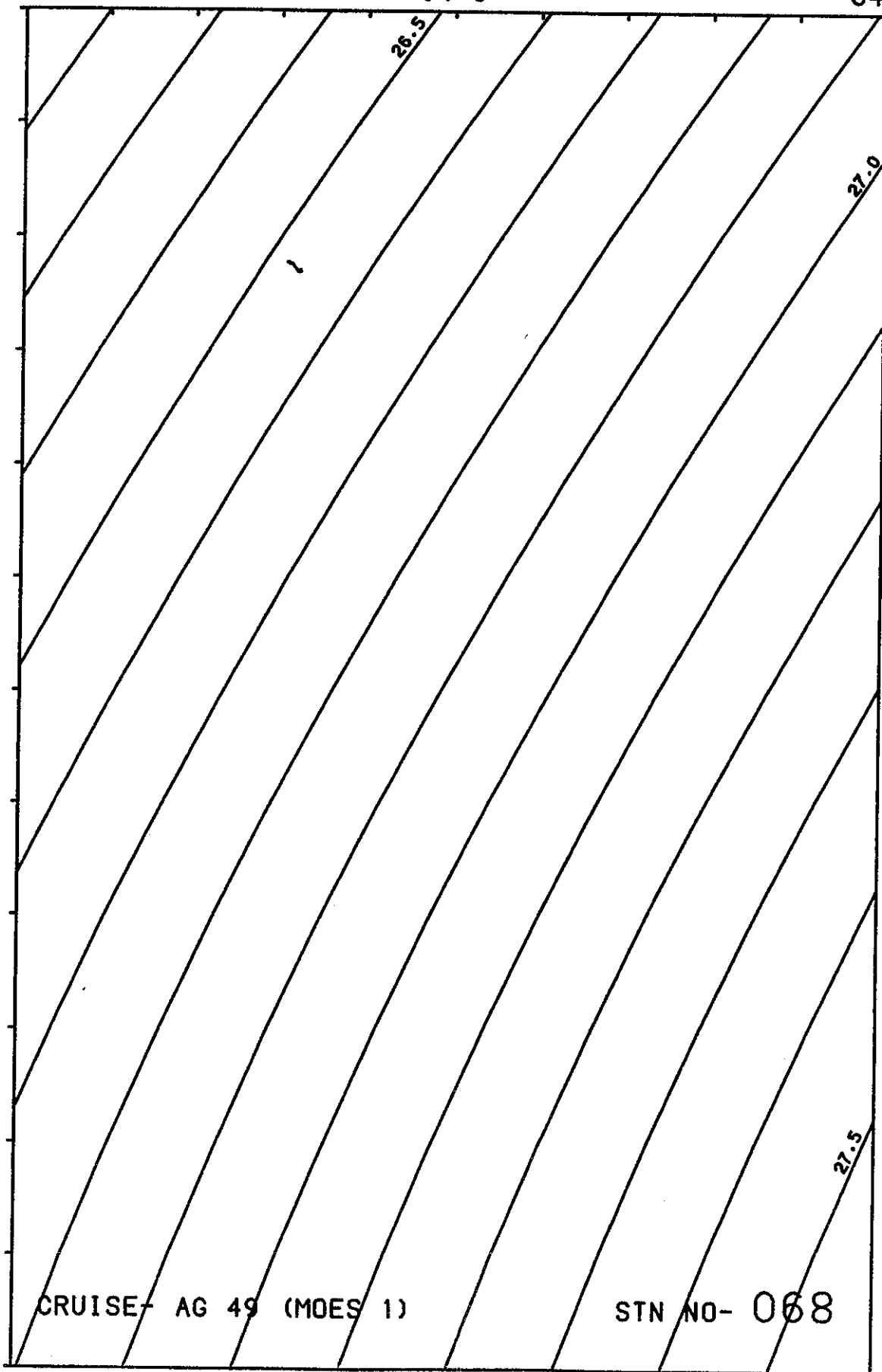
26.5

27.0

27.5

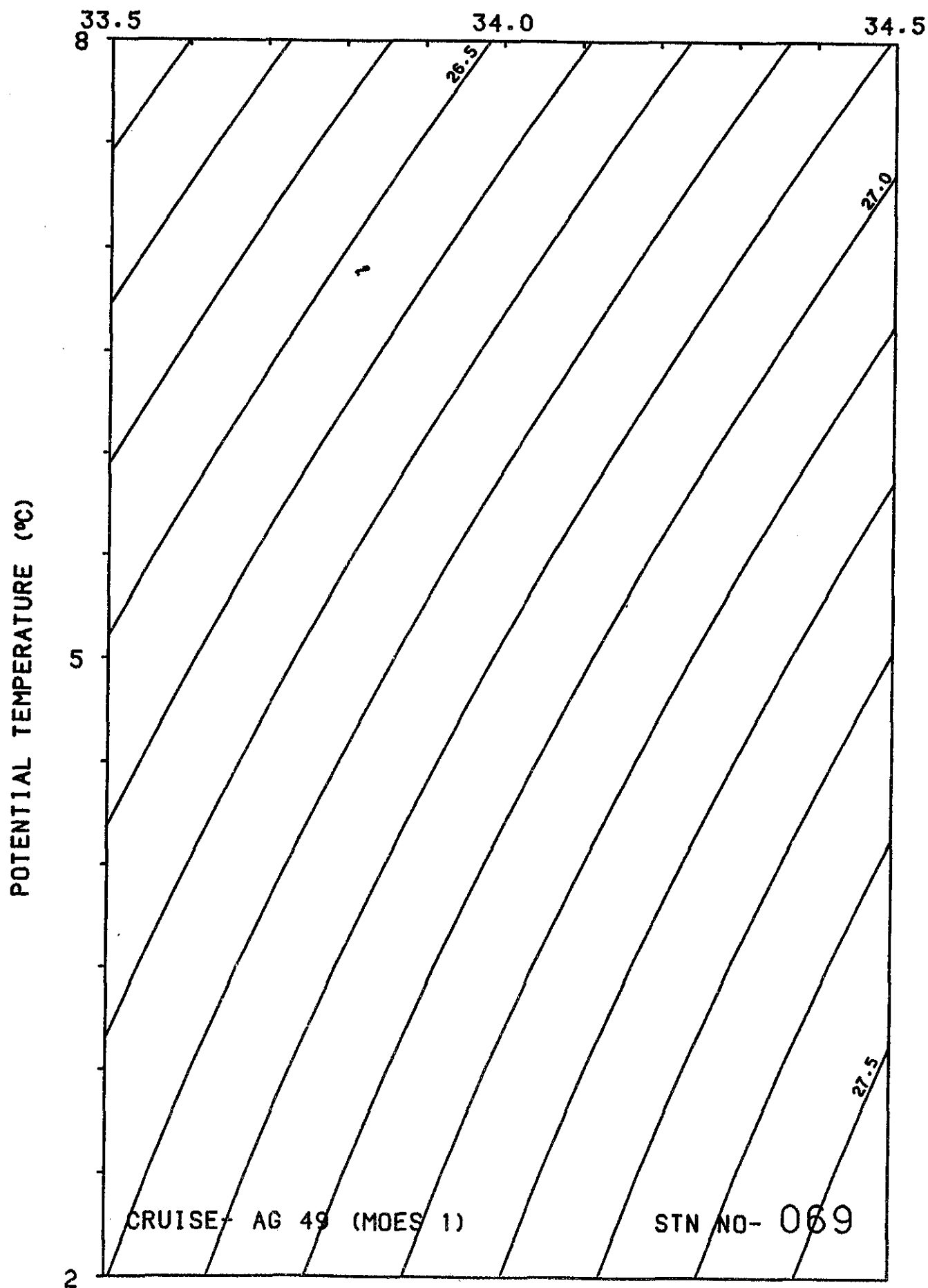
CRUISE- AG 49 (MOES 1)

STN NO- 068



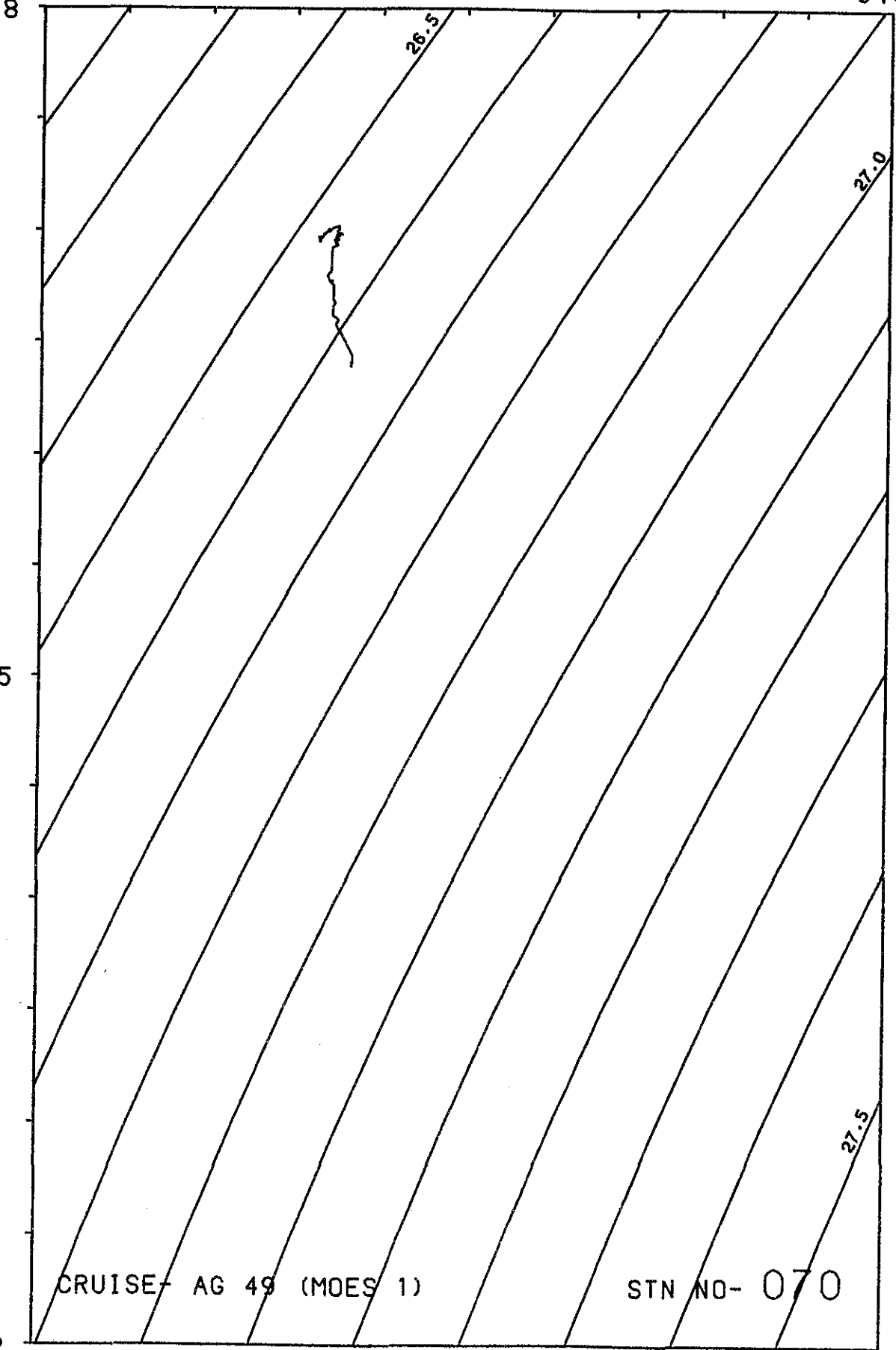
347

SALINITY (PSU)



SALINITY (PSU)

33.5 34.0 34.5



POTENTIAL TEMPERATURE (°C)

5

2

CRUISE AG 49 (MOES 1)

STN NO- 070

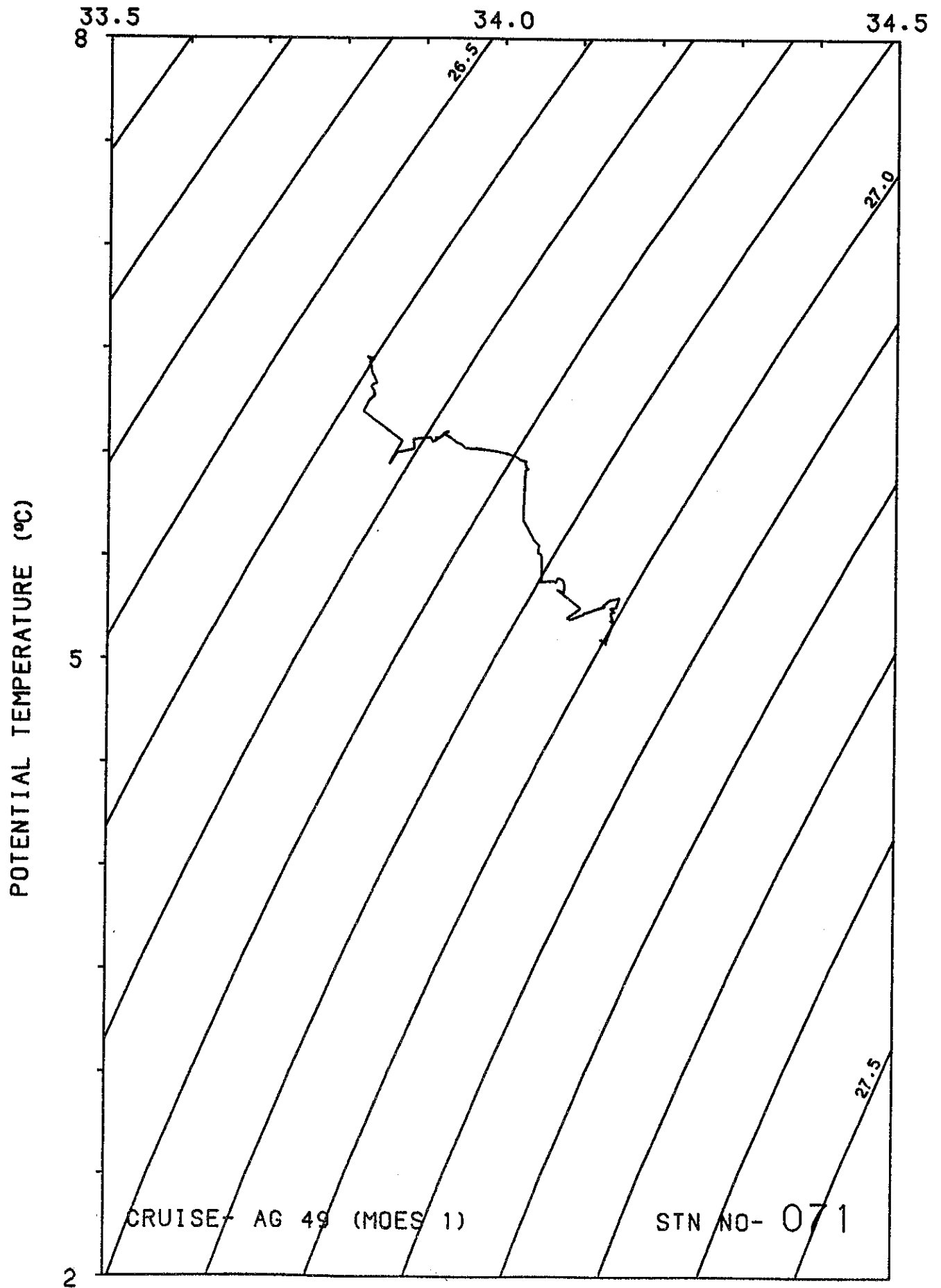
26.5

27.0

27.5

349

SALINITY (PSU)



350

SALINITY (PSU)

33.5

34.0

34.5

8

26.5

27.0

POTENTIAL TEMPERATURE (°C)

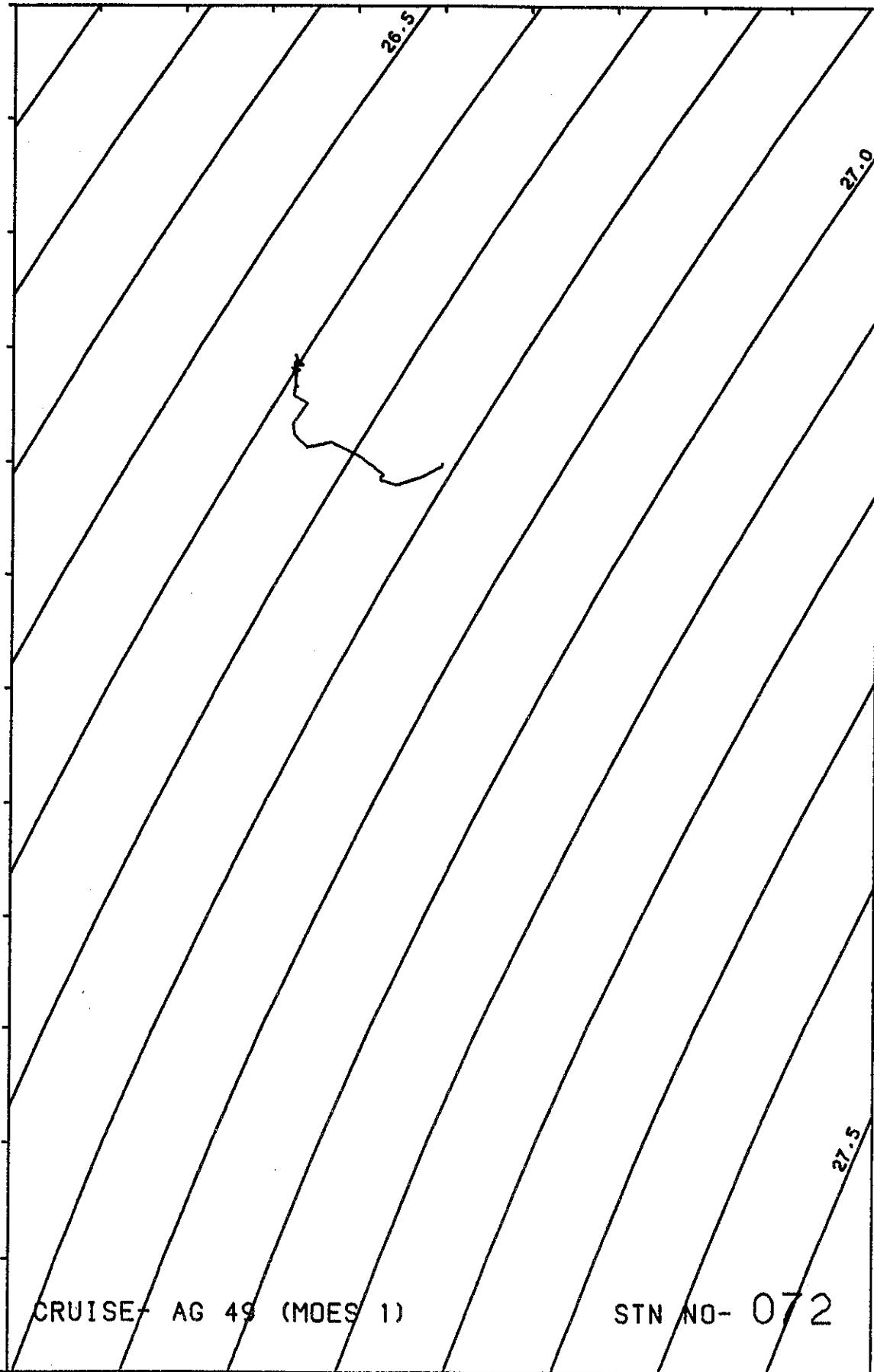
5

27.5

CRUISE- AG 49 (MOES 1)

STN NO- 072

2

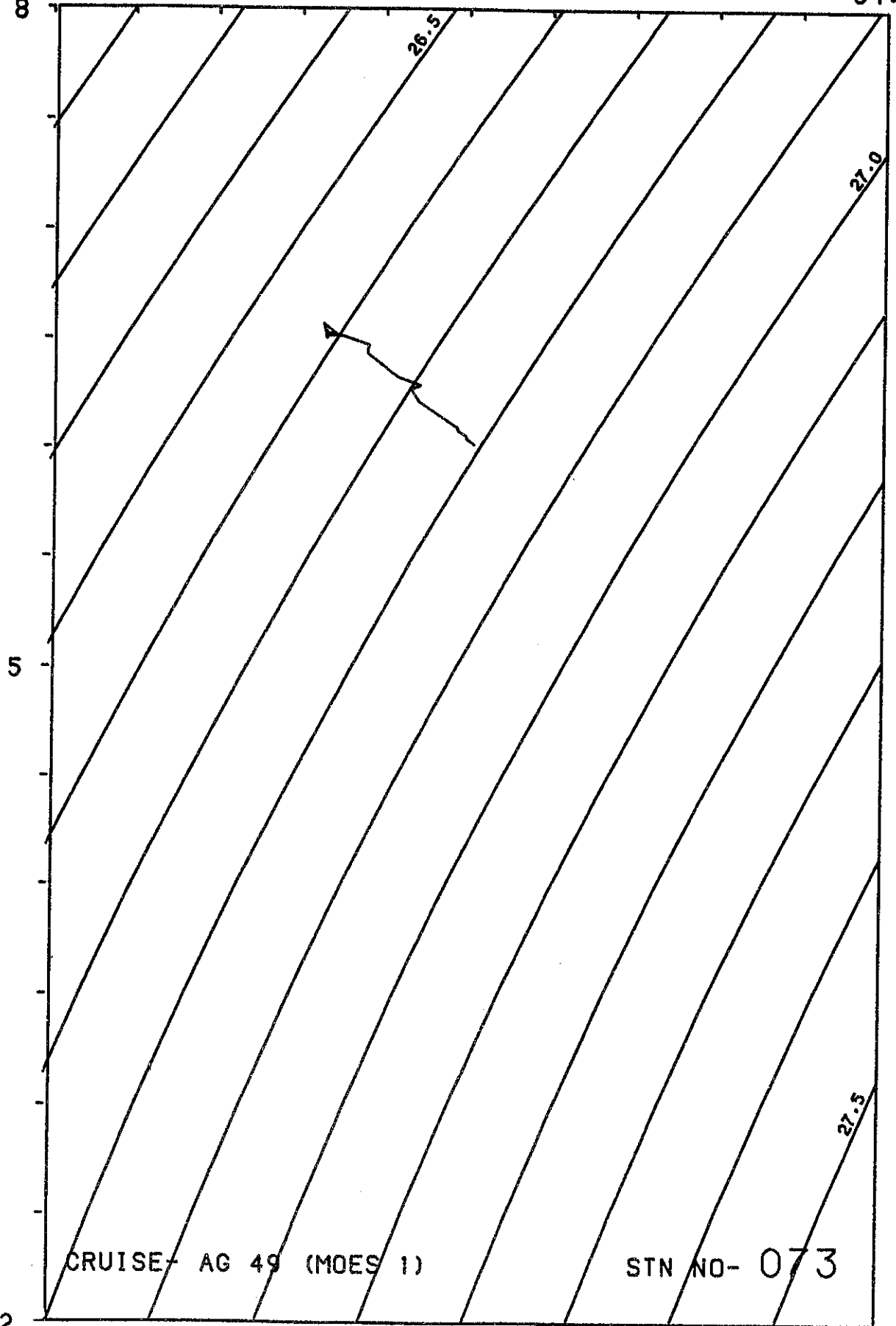


351

SALINITY (PSU)

33.5 34.0 34.5

POTENTIAL TEMPERATURE (°C)



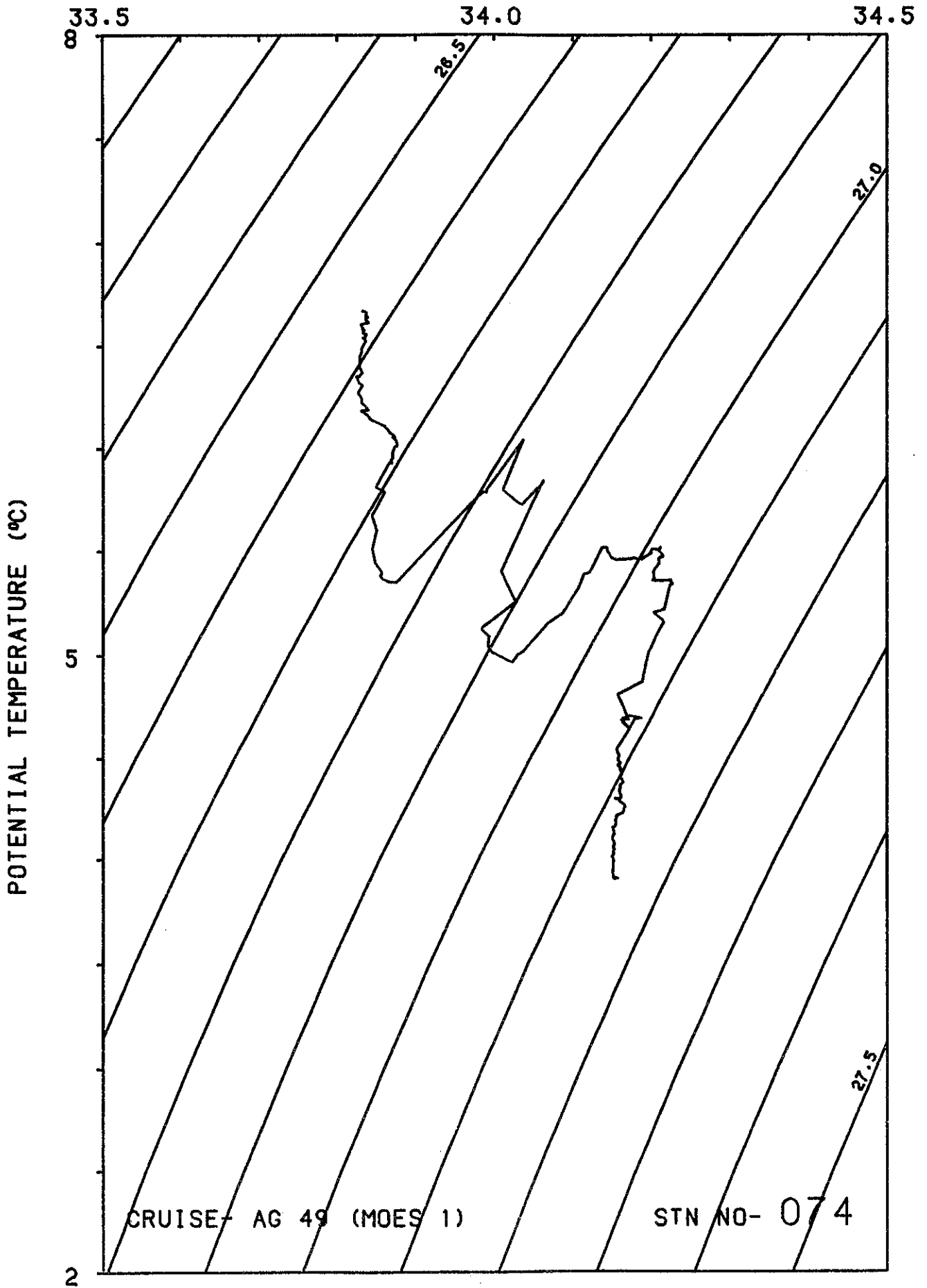
5

2

CRUISE- AG 49 (MOES 1)

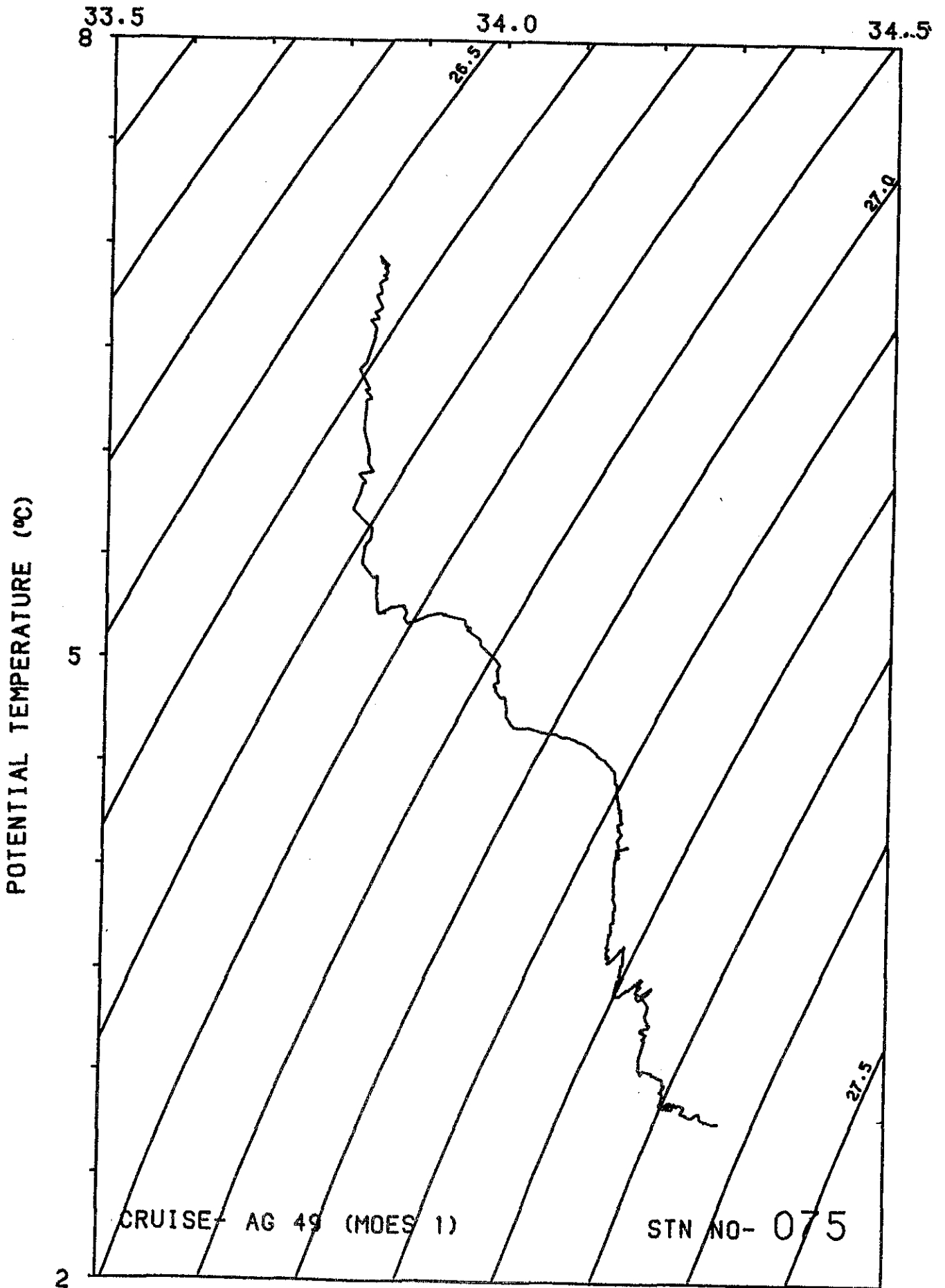
STN NO- 073

SALINITY (PSU)



353

SALINITY (PSU)



354

SALINITY (PSU)

33.5

34.0

34.5

8

26.5

27.0

POTENTIAL TEMPERATURE (°C)

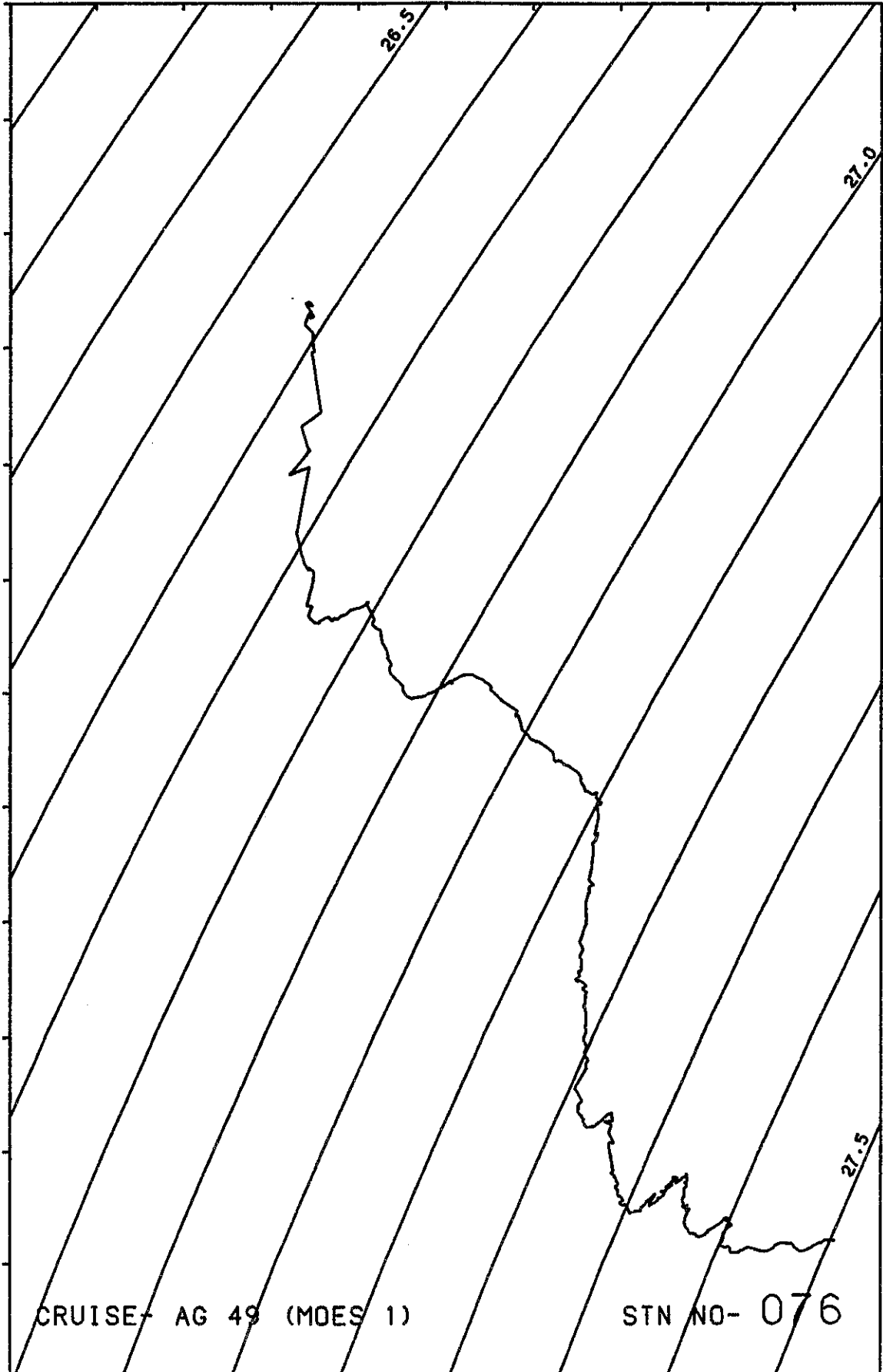
5

27.5

CRUISE AG 49 (MOES 1)

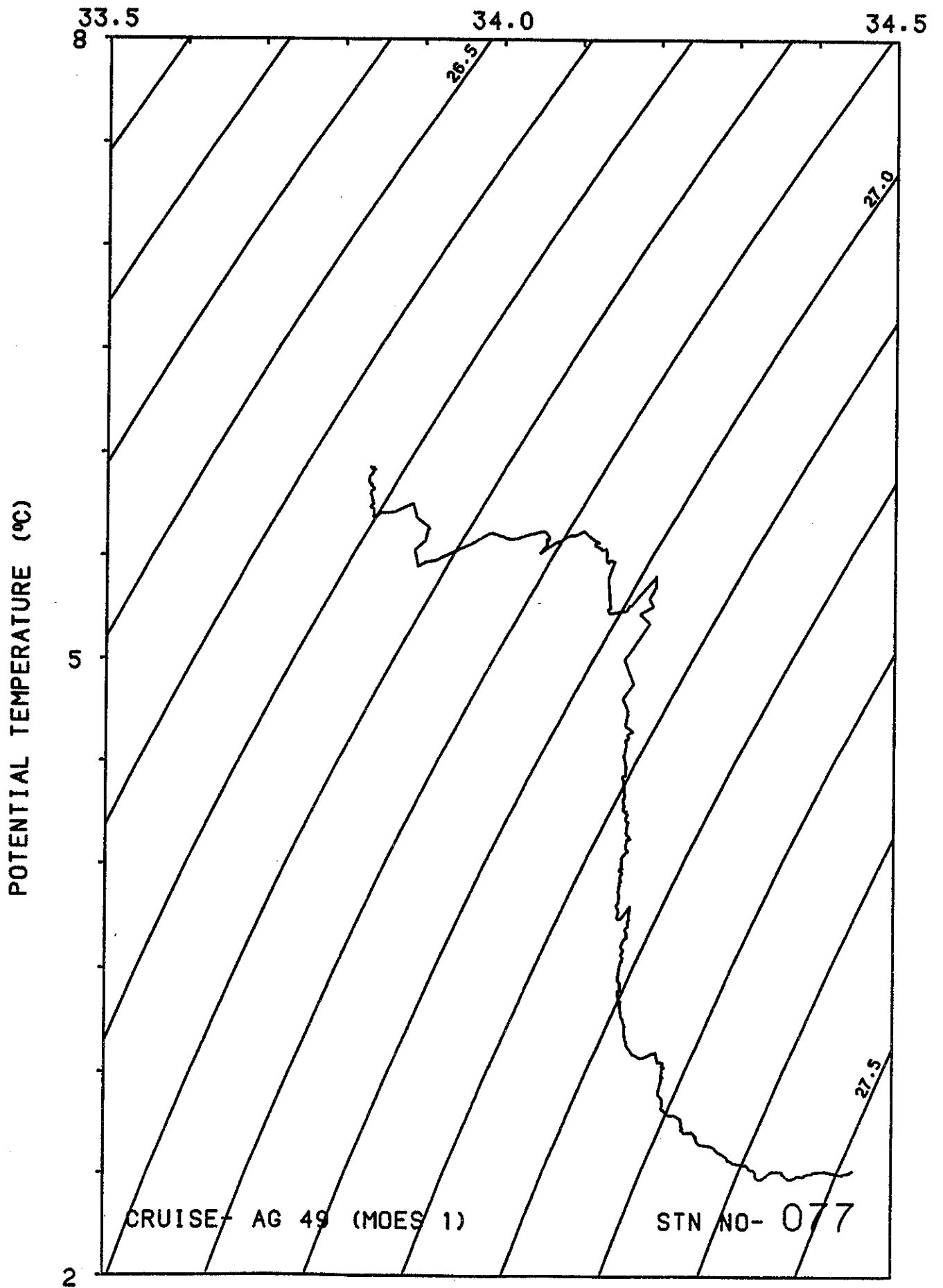
STN NO- 076

2



355

SALINITY (PSU)



356

SALINITY (PSU)

33.5

34.0

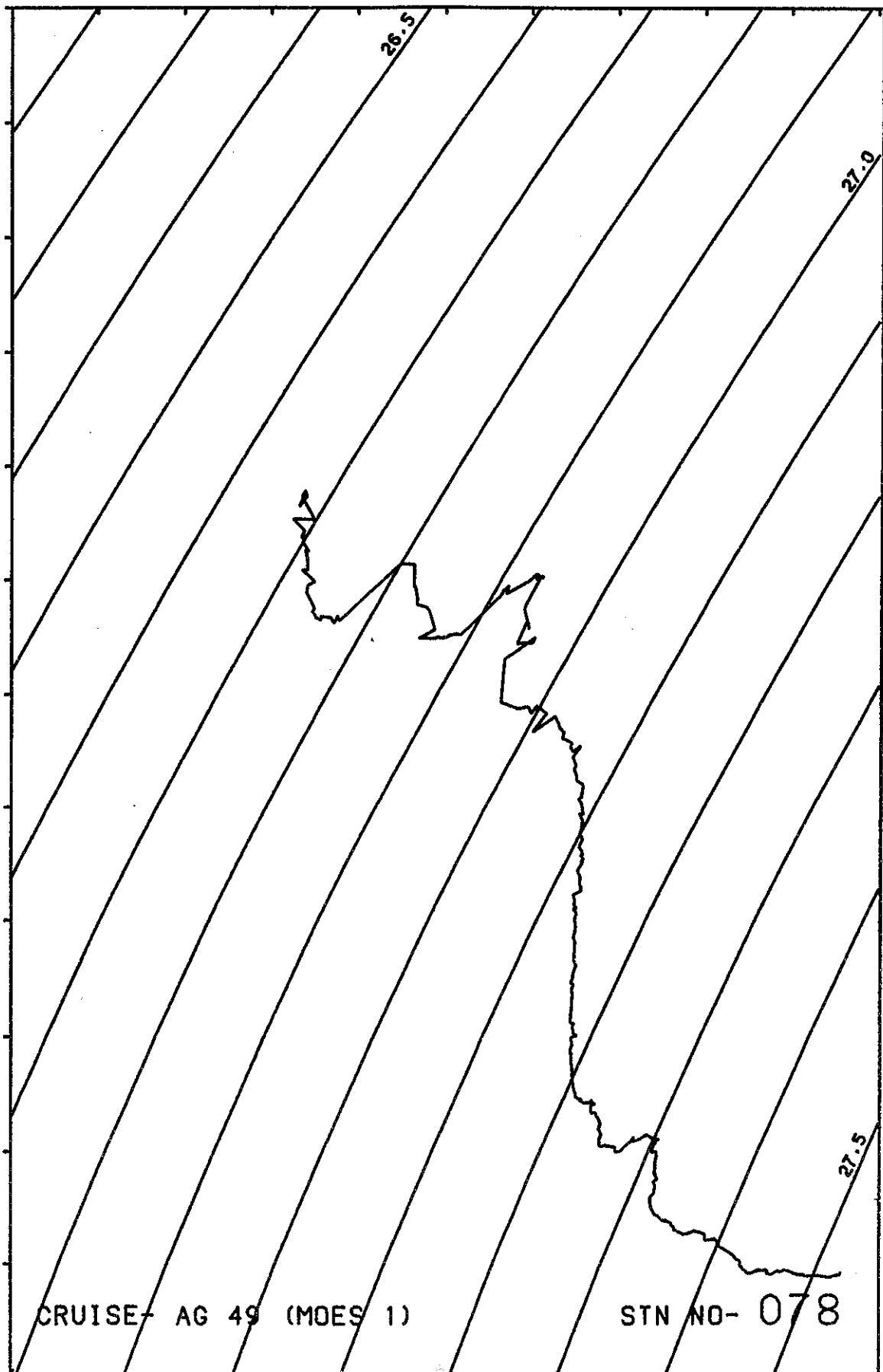
34.5

8

POTENTIAL TEMPERATURE (°C)

5

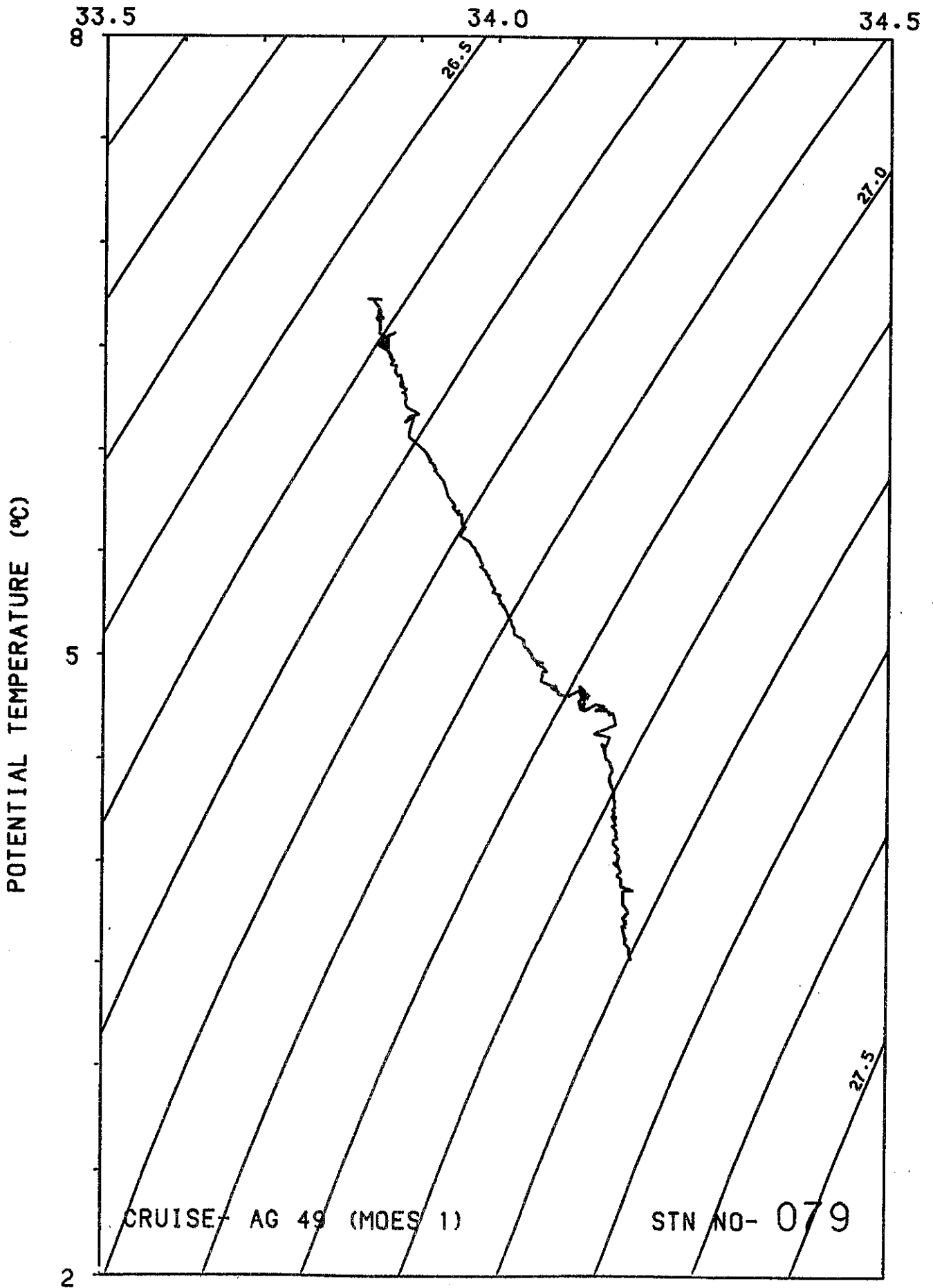
2



CRUISE- AG 49 (MOES 1)

STN NO- 078

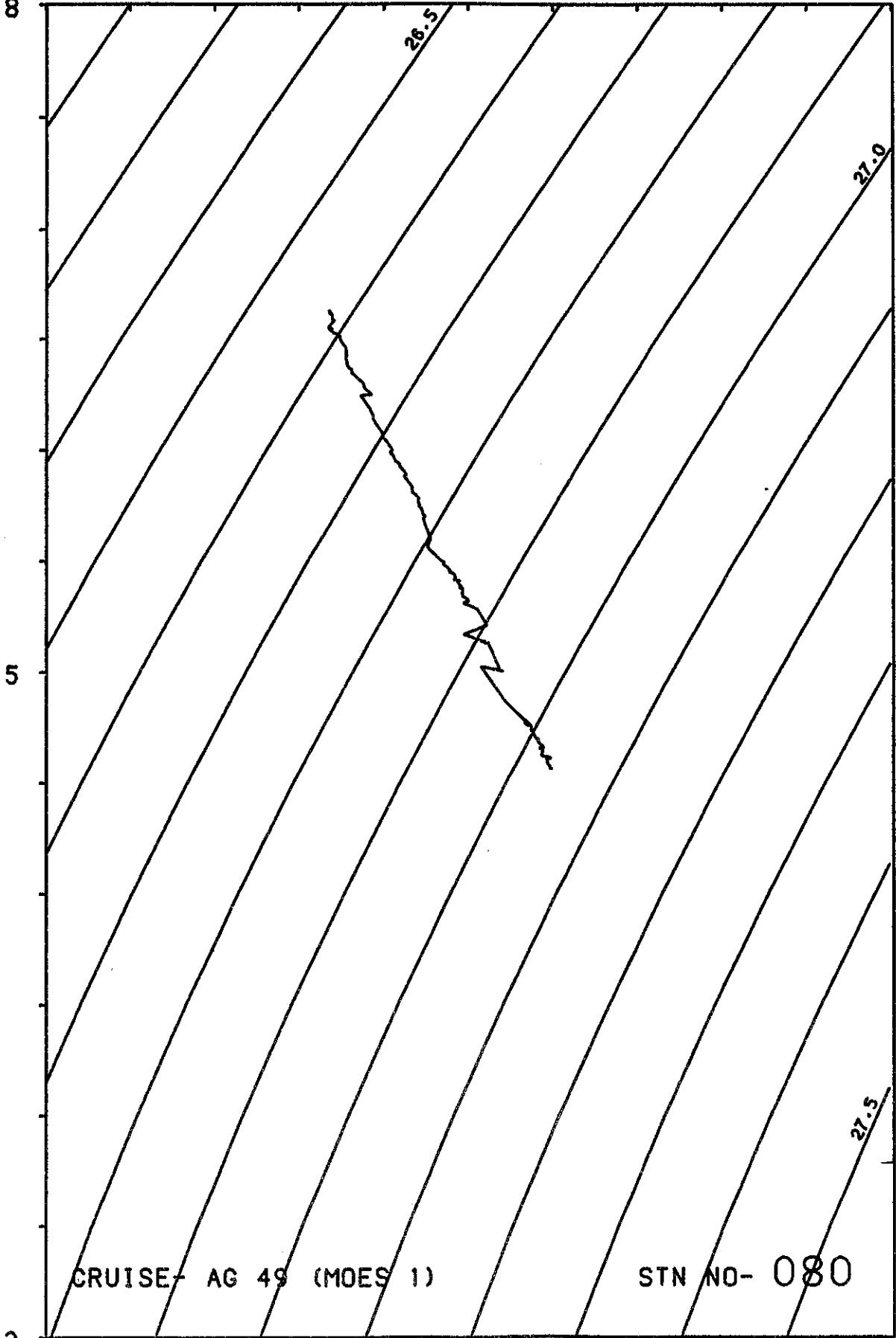
357
SALINITY (PSU)



SALINITY (PSU)

33.5 34.0 34.5

POTENTIAL TEMPERATURE (°C)

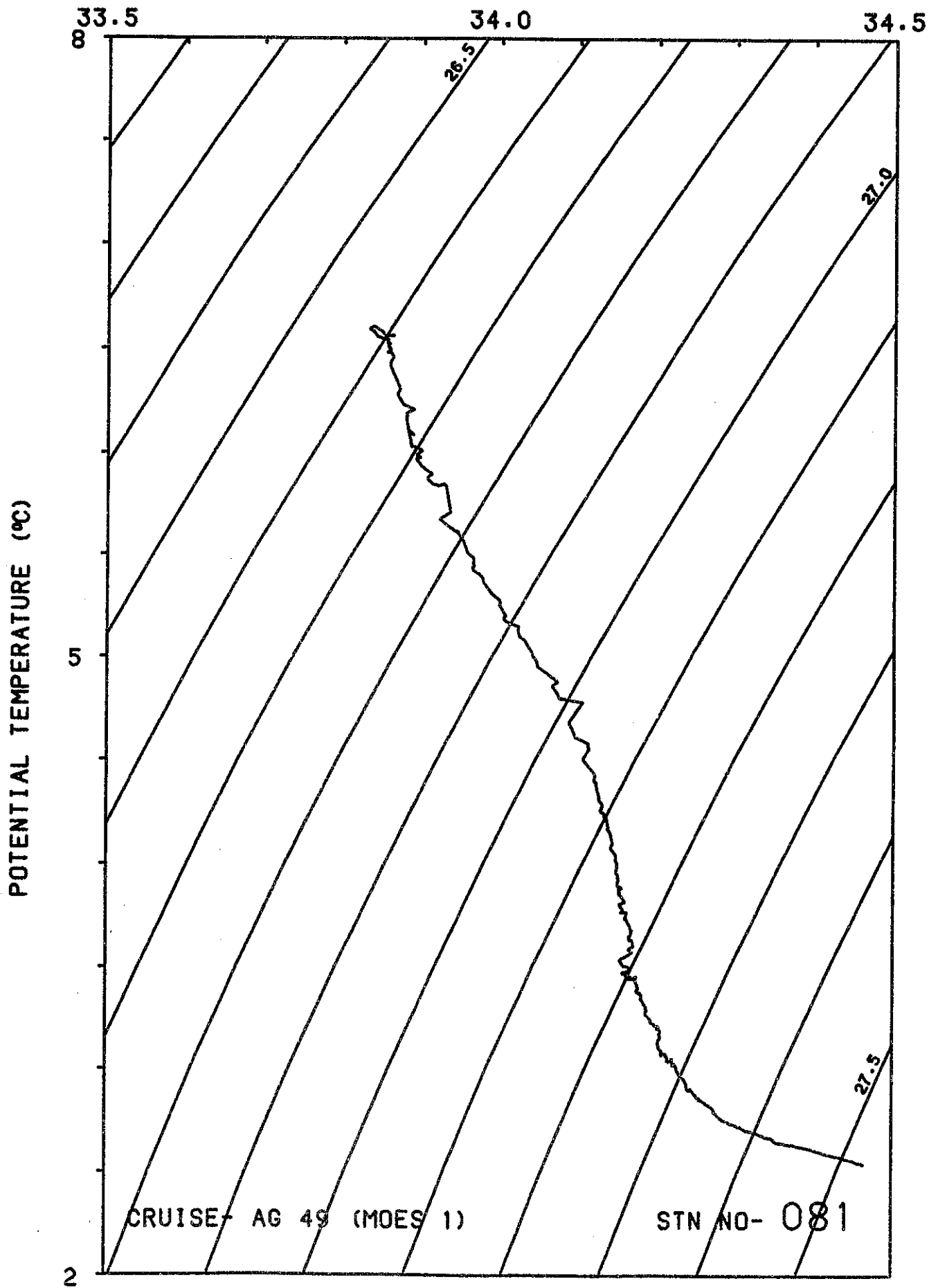


CRUISE- AG 49 (MOES 1)

STN NO- 080

359

SALINITY (PSU)



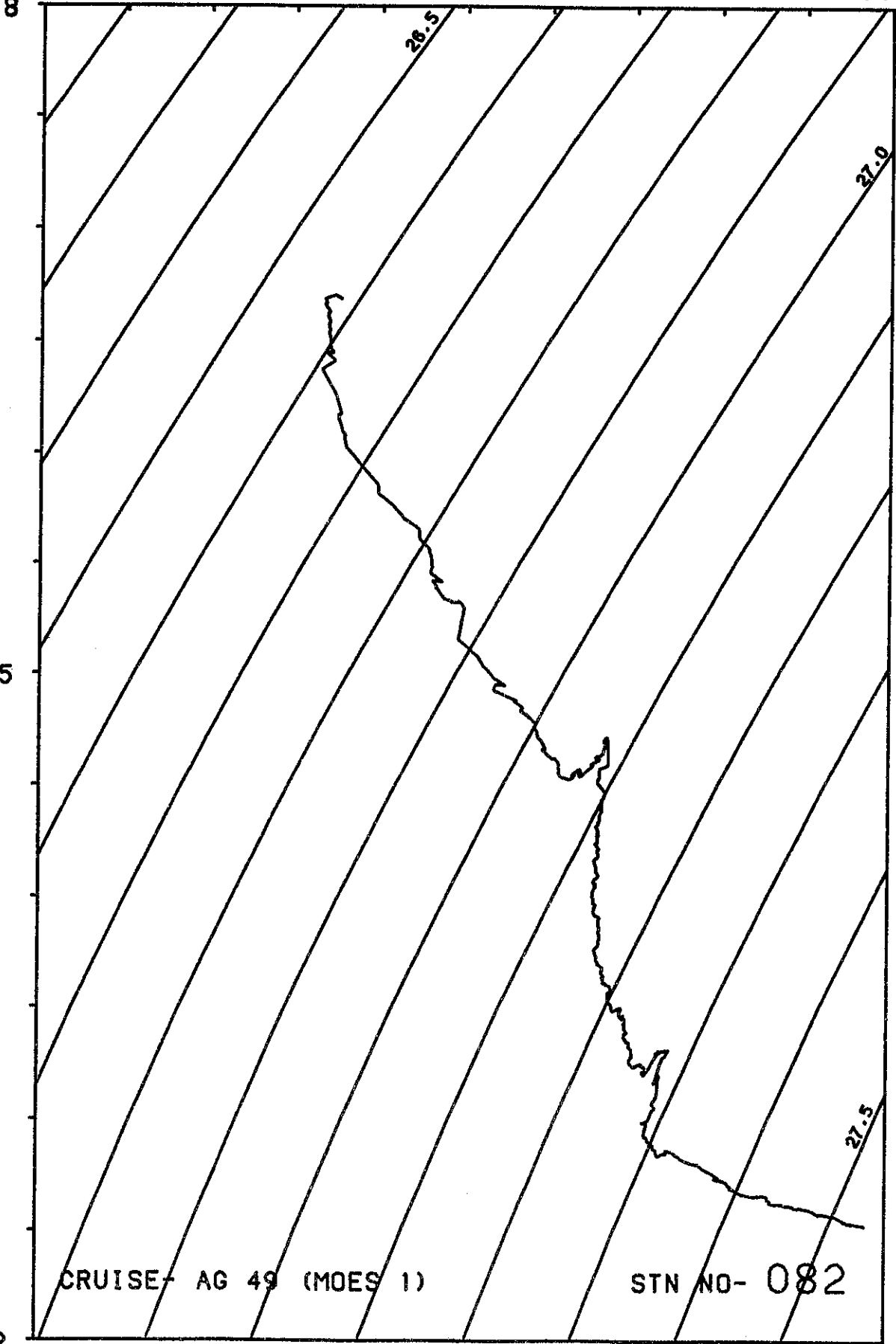
360

SALINITY (PSU)

33.5

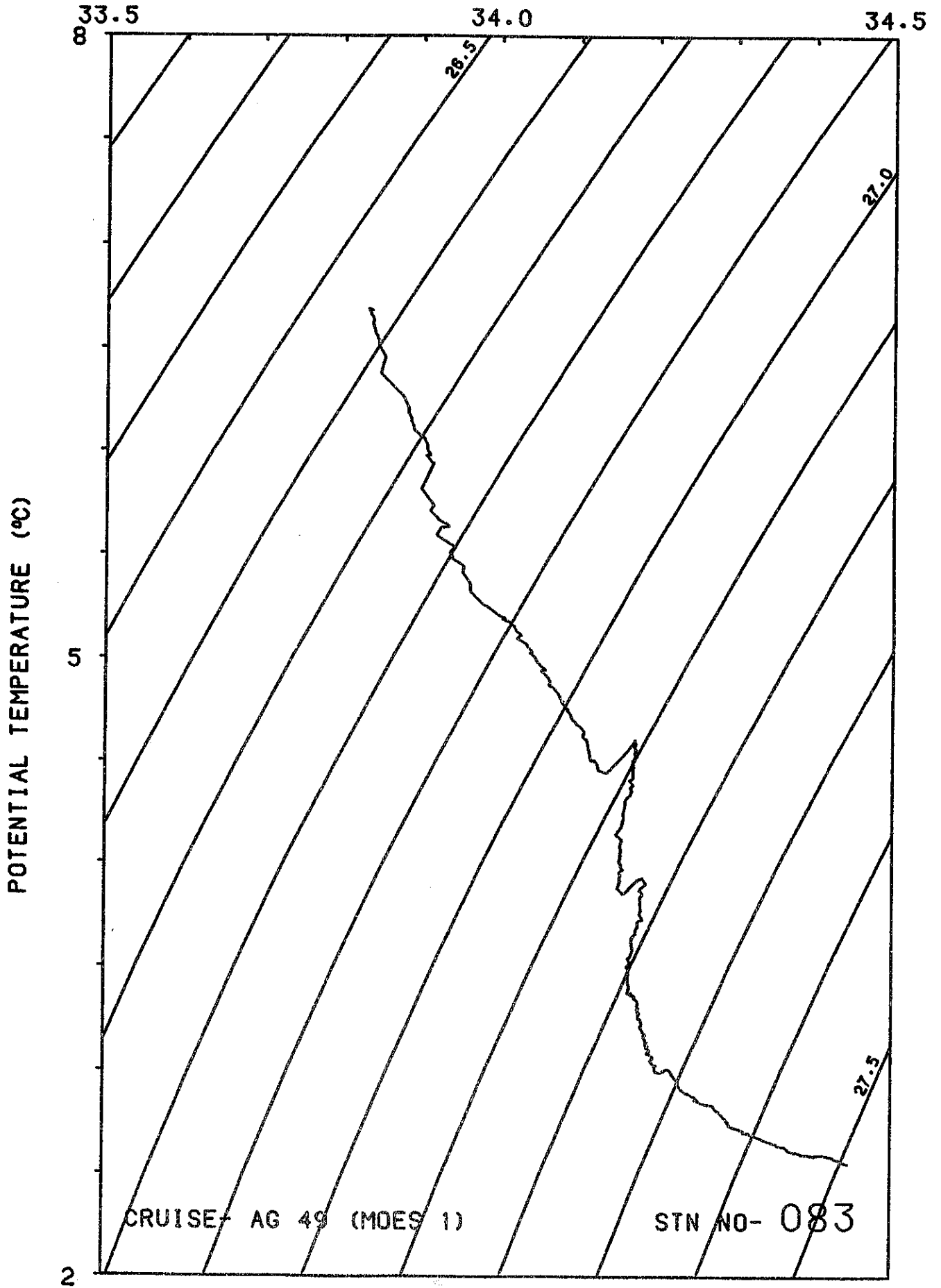
34.0

34.5



361

SALINITY (PSU)



362

SALINITY (PSU)

33.5

34.0

34.5

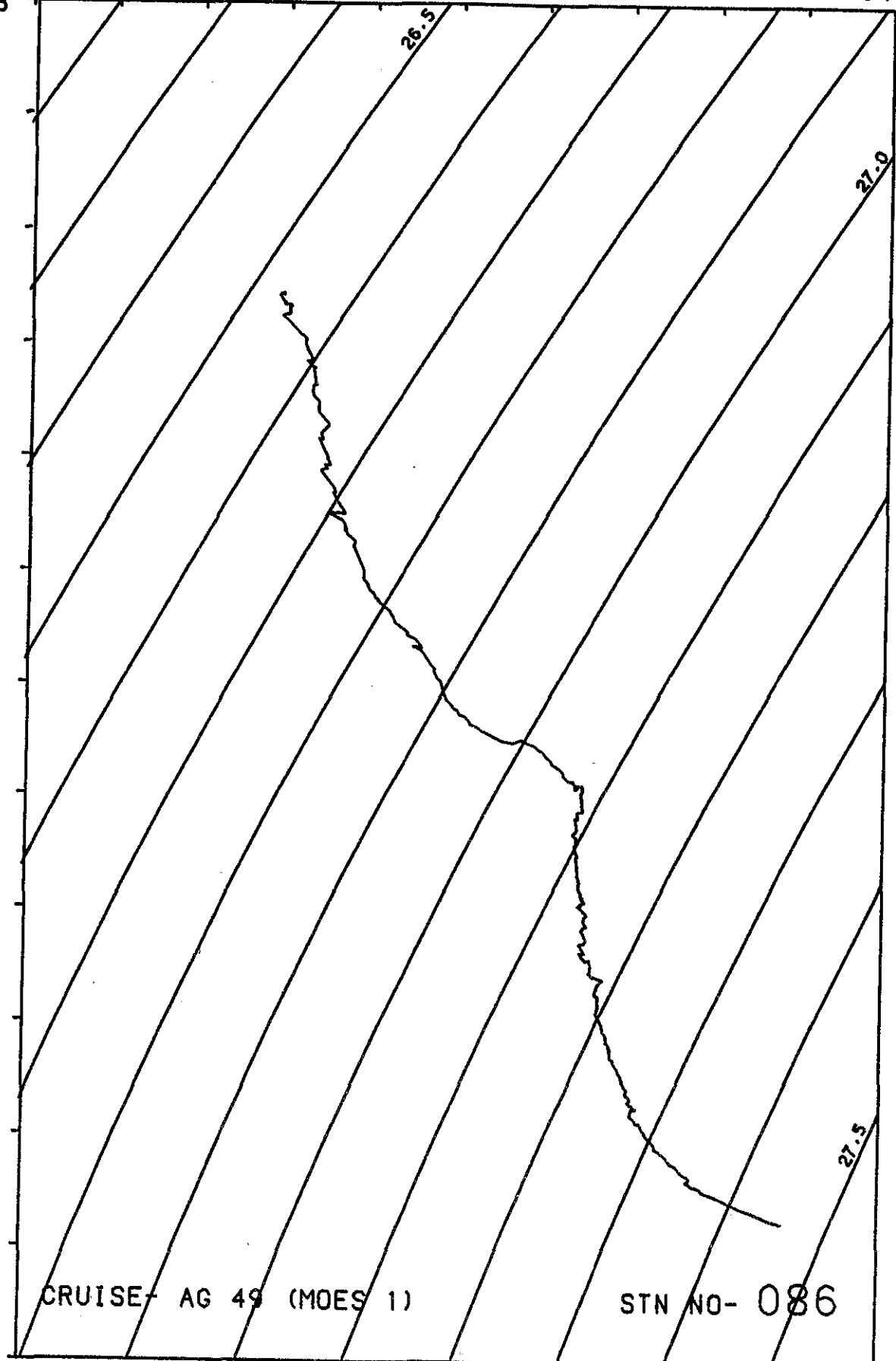
POTENTIAL TEMPERATURE (°C)

5

2

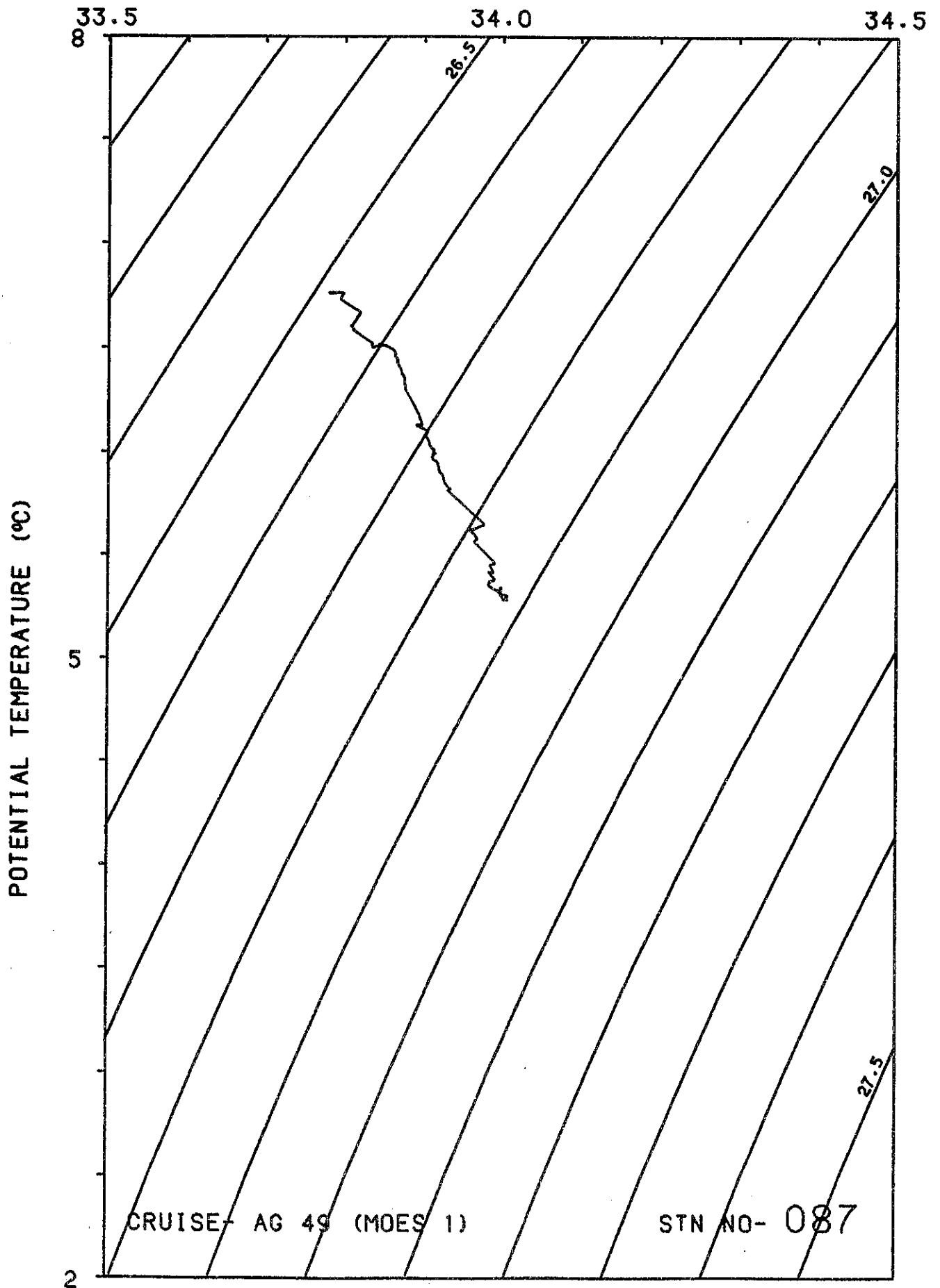
CRUISE AG 49 (MOES 1)

STN NO- 086



363

SALINITY (PSU)



364

SALINITY (PSU)

33.5

34.0

34.5

8

26.5

27.0

POTENTIAL TEMPERATURE (°C)

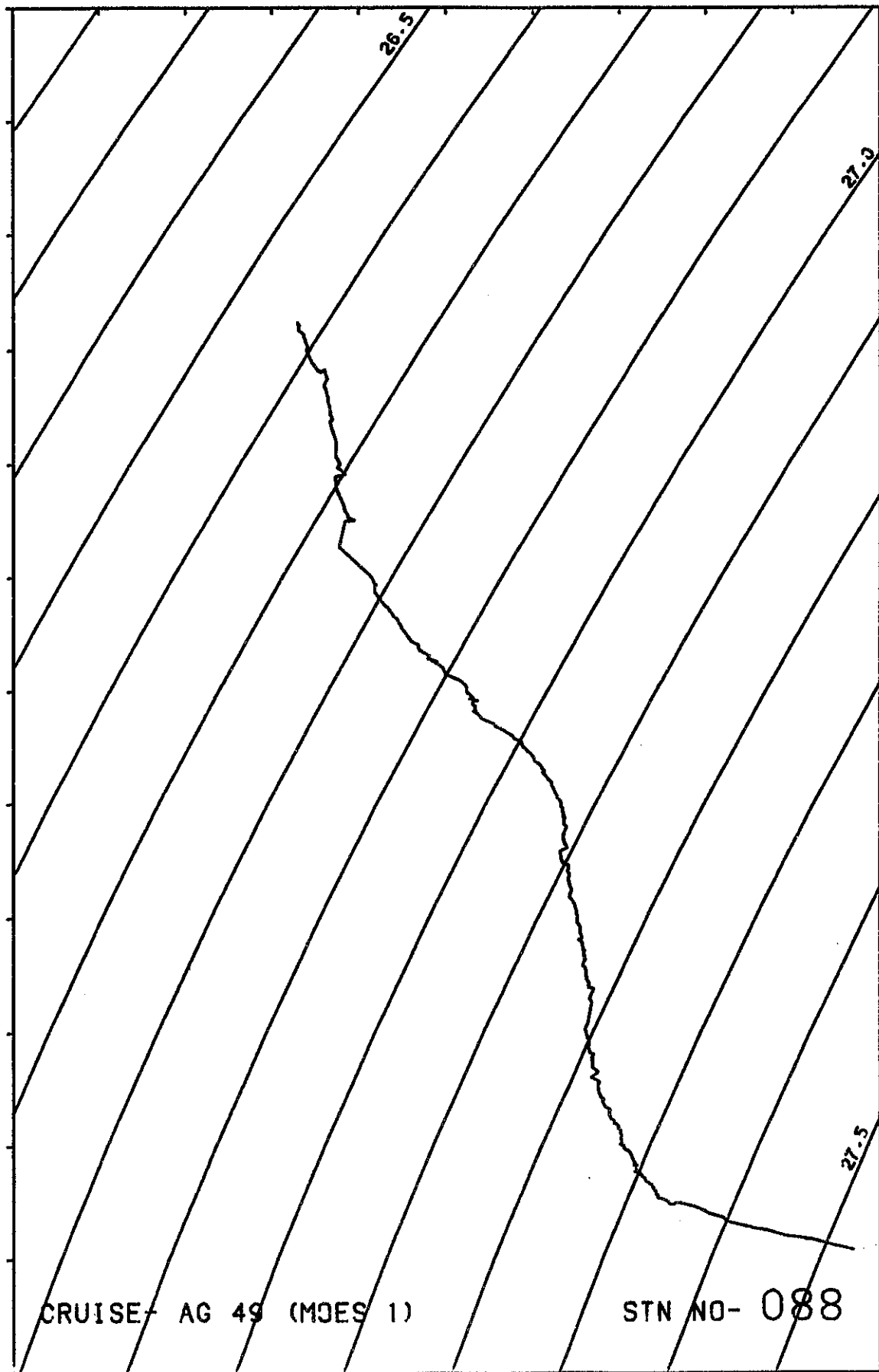
5

27.5

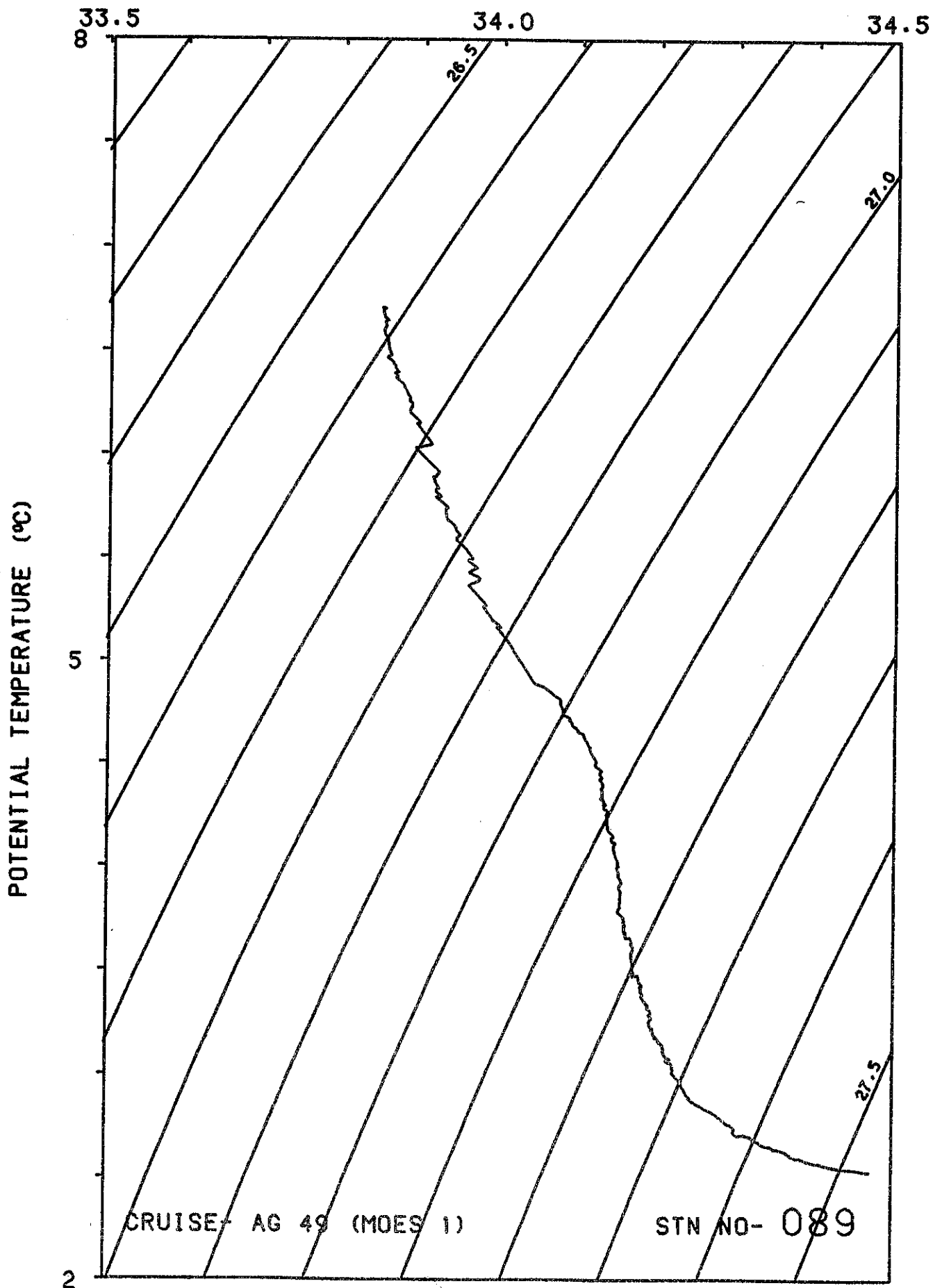
CRUISE AG 49 (MOES 1)

STN NO- 088

2



SALINITY (PSU)



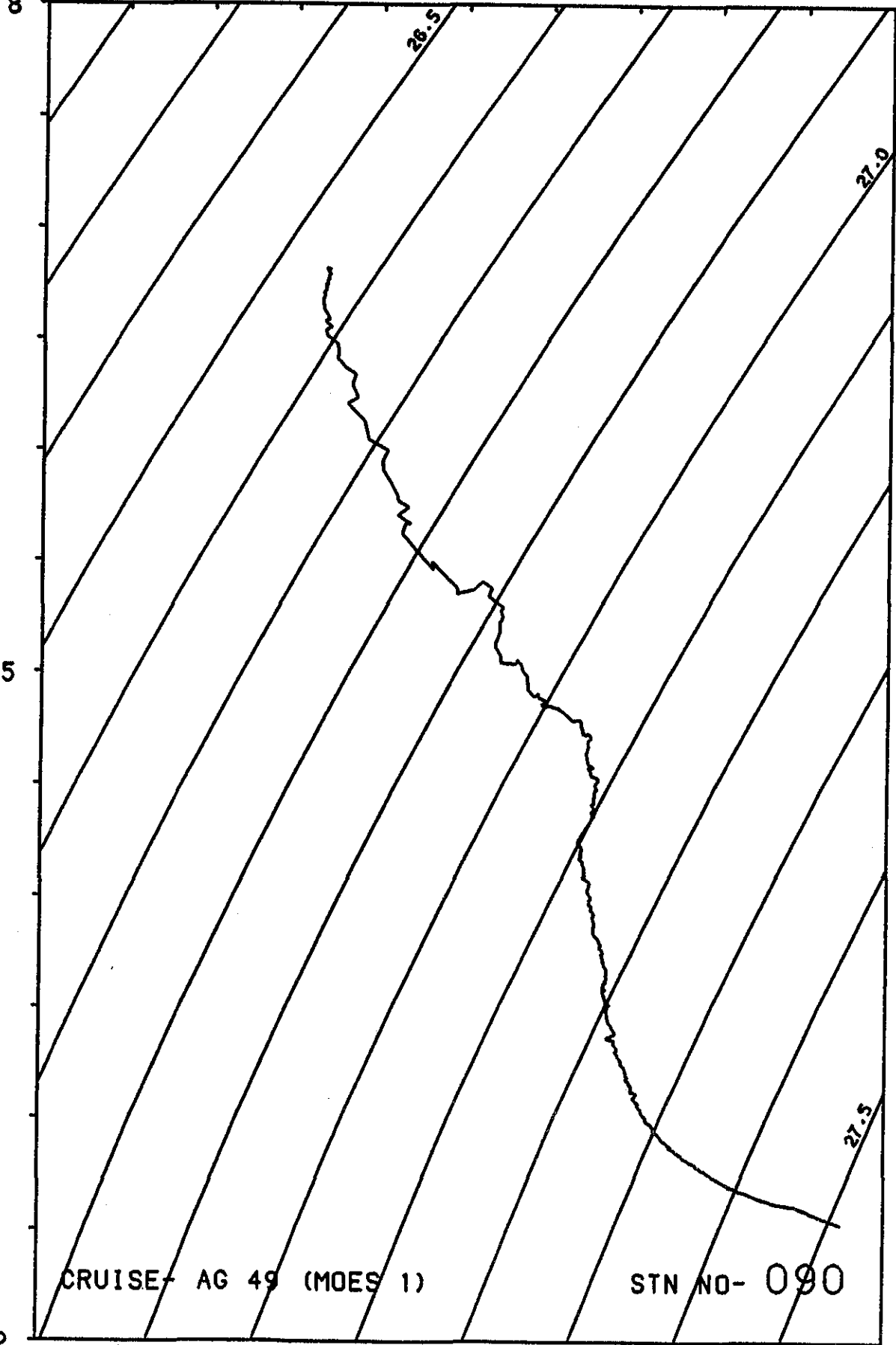
366

SALINITY (PSU)

33.5

34.0

34.5



POTENTIAL TEMPERATURE (°C)

5

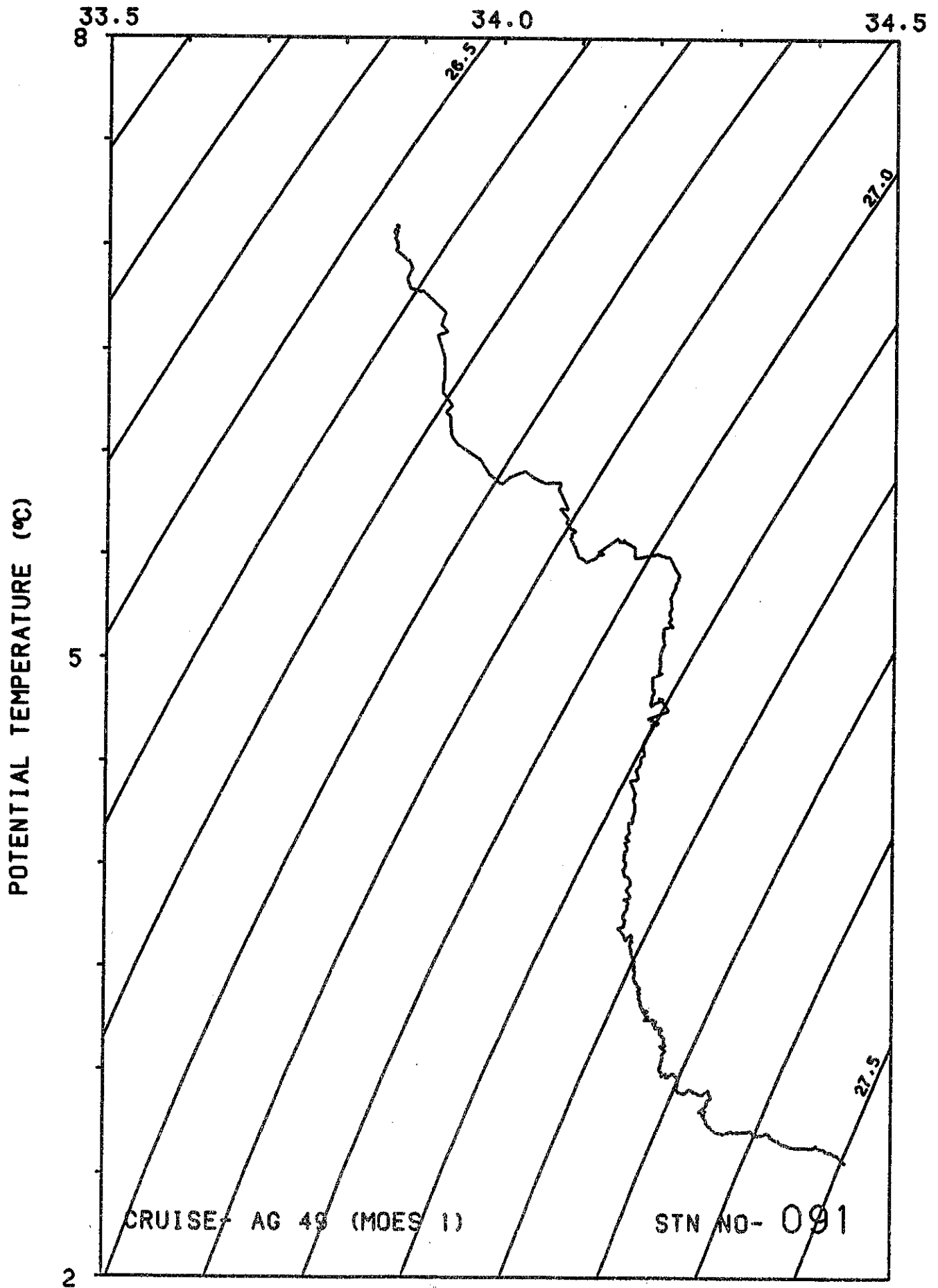
2

CRUISE AG 49 (MOES 1)

STN NO- 090

367

SALINITY (PSU)



368

SALINITY (PSU)

33.5

34.0

34.5

8

26.5

27.0

POTENTIAL TEMPERATURE (°C)

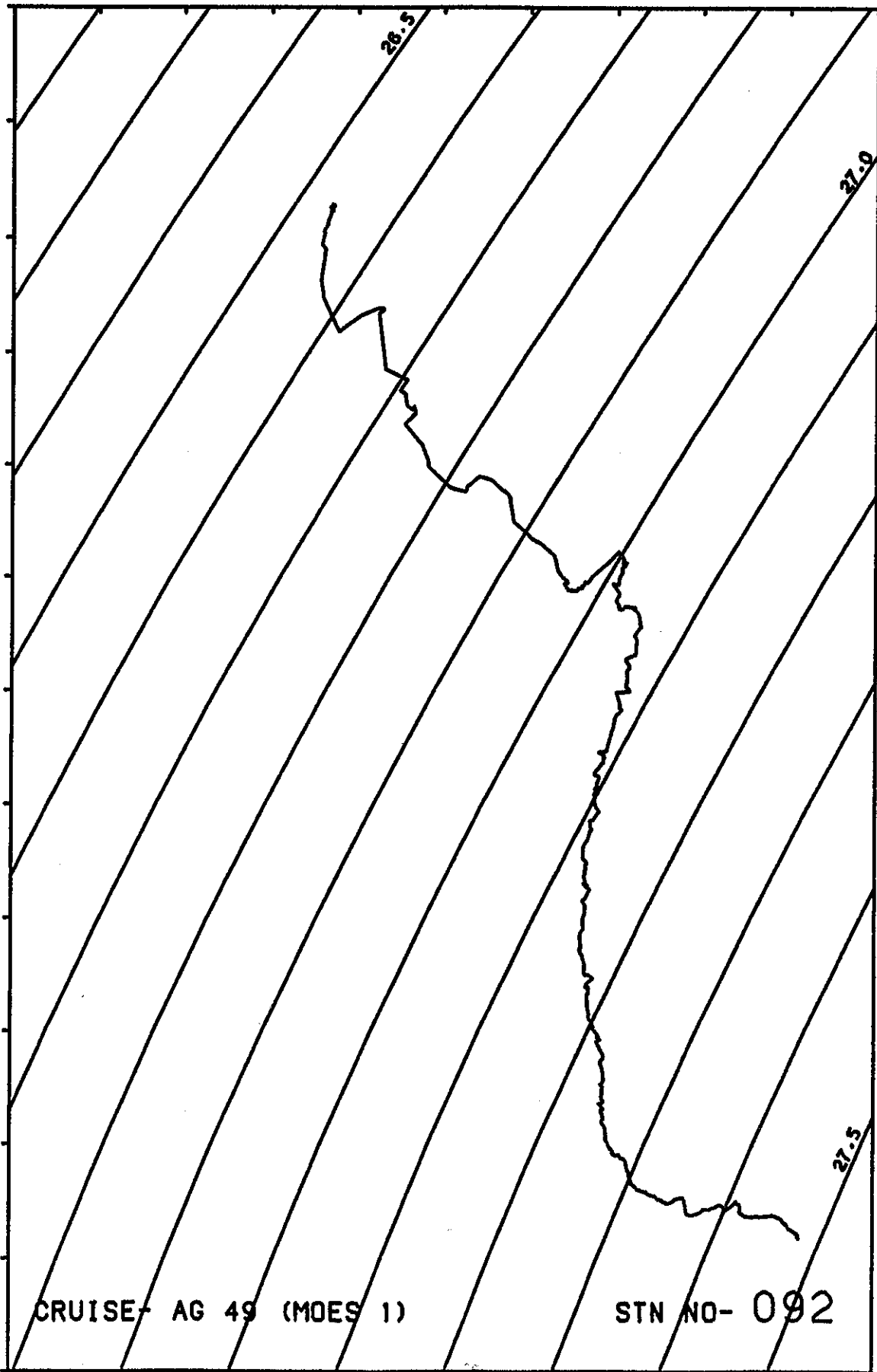
5

27.5

CRUISE- AG 49 (MOES 1)

STN NO- 092

2



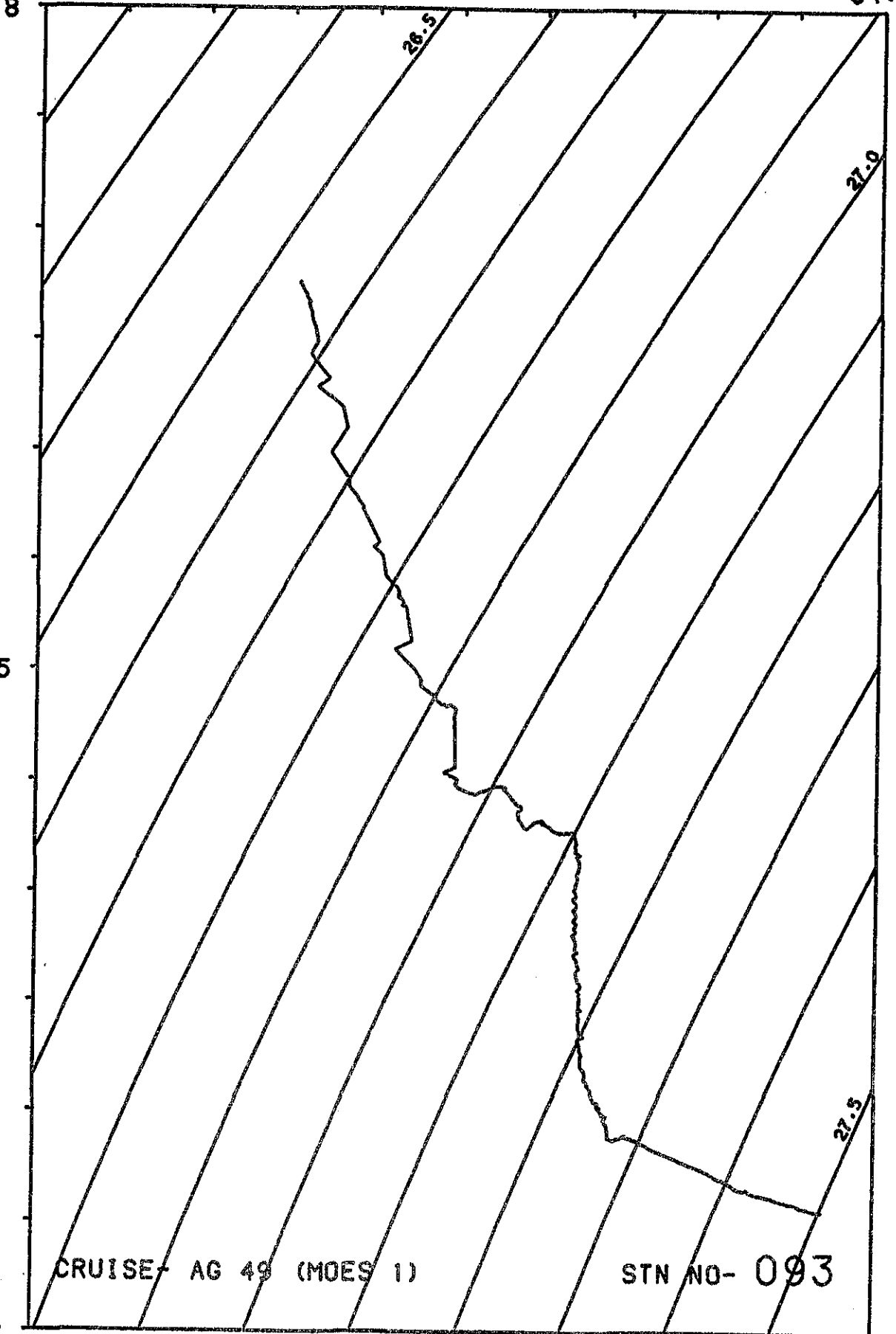
369

SALINITY (PSU)

33.5

34.0

34.5



2

370

SALINITY (PSU)

33.5

34.0

34.5

8

26.5

27.0

POTENTIAL TEMPERATURE (°C)

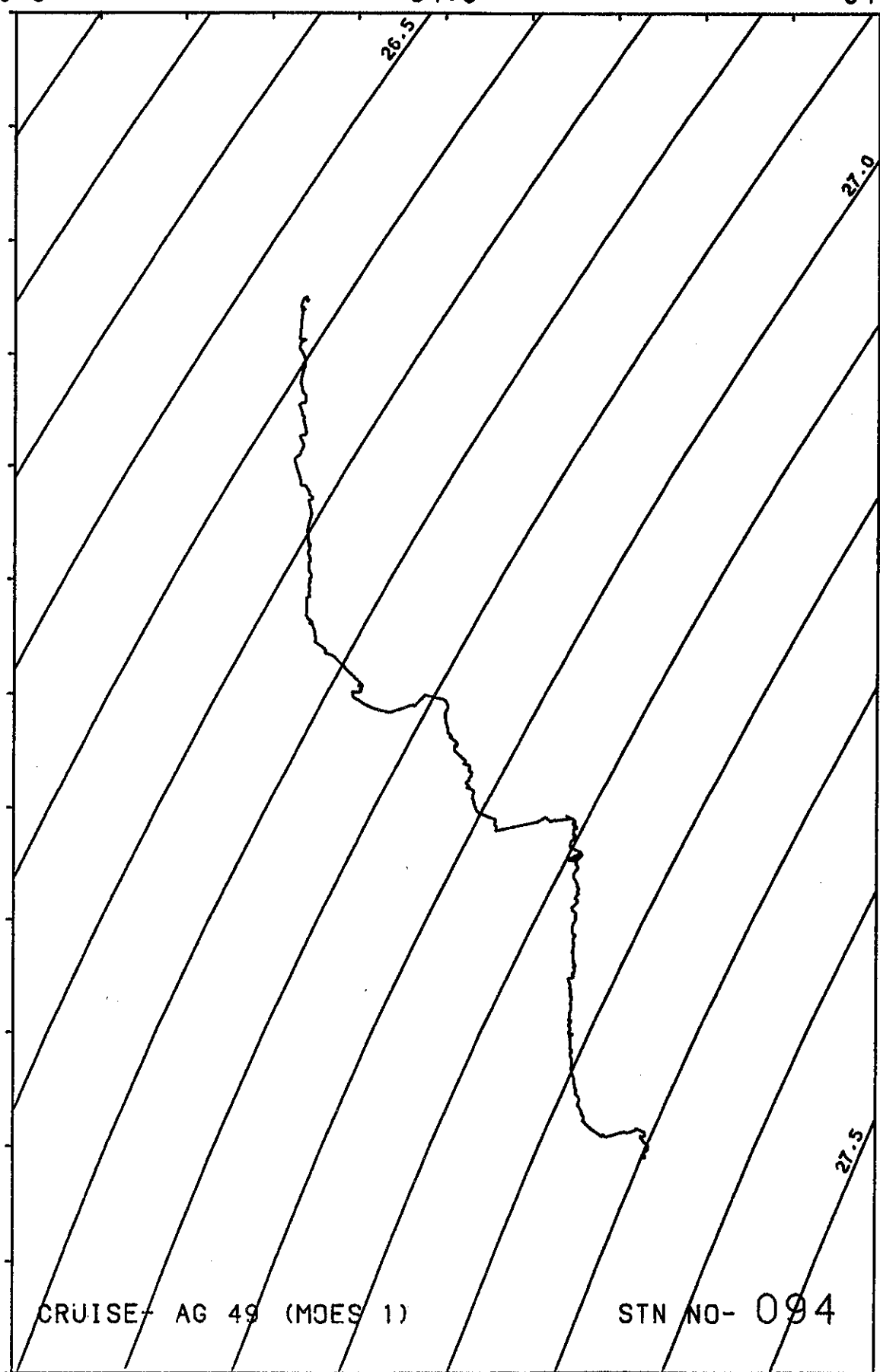
5

27.5

CRUISE AG 49 (MOES 1)

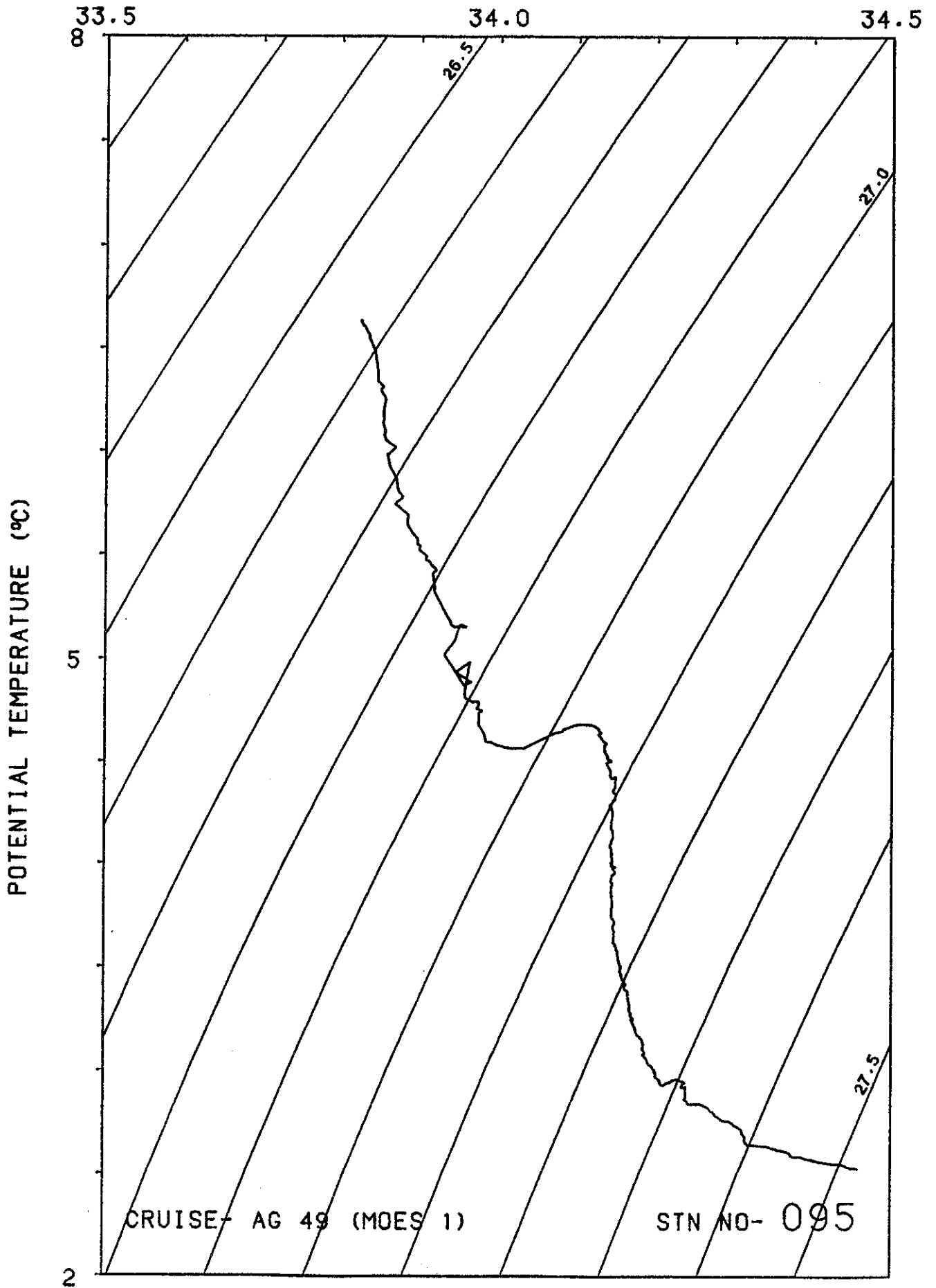
STN NO- 094

2



371

SALINITY (PSU)



Surface Data Listing

Date	Time	Stn	Latitude	Longitude	Pos	Chl _a mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
87.04.09	09h10	201	36°03.571'	21°15.563'	U	.118	1.16			
87.04.09	11h39	202	37°18.657'	21°44.234'	U	.115	1.83			
87.04.09	14h29	203	37°49.690'	22°17.522'	U	.103	1.15			
87.04.09	18h15	204	38°12.390'	22°41.410'	U	.134	1.98			
87.04.09	20h00	205	38°27.532'	23°02.655'	U	.181	1.88			
87.04.09	22h15	206	38°47.505'	23°31.900'	U	.197	1.89			
87.04.09	23h45	207	39°02.705'	23°53.500'	U	.214	1.85			
87.04.10	00h08	208	39°23.759'	24°21.147'	U	.151	1.34			
87.04.10	02h06	209	39°39.835'	24°47.298'	U	.163	2.30			
87.04.10	04h09	210	39°57.711'	25°14.691'	U	.239	2.06			
87.04.10	06h00	211	40°15.847'	25°46.761'	U	.094	1.77			
87.04.10	08h12	212	40°31.000'	26°08.000'	U	.307	1.93			
87.04.10	10h29	213	40°51.000'	26°39.700'	U	.439	1.96			
87.04.10	12h11	214	41°04.795'	27°04.698'	U	.443				
87.04.10	13h58	215	41°19.058'	27°28.361'	U	.575	3.53	1.95	.18	
87.04.10	16h03	216	41°33.410'	28°01.450'	U	.305	1.88	6.49	.19	
87.04.10	18h06	217	41°49.374'	28°29.954'	U	.532	1.16	2.18	.14	
87.04.10	20h00	218	42°04.615'	28°58.850'	U	.406	3.22	8.10	.23	
87.04.10	22h05	219	42°22.320'	29°25.600'	U	.349	2.82	4.77	.25	
87.04.11	00h20	220	42°39.380'	29°57.140'	U	.297	1.86	3.52	.22	
87.04.11	02h02	221	42°53.400'	30°18.200'	U	.290	2.62	4.86	.27	
87.04.11	03h54	222	43°08.099'	30°43.730'	U	.317	3.40	5.03	.23	
87.04.11	05h54	223	43°25.563'	31°09.500'	U	.365	3.74	5.56	.24	
87.04.11	08h05	224	43°42.261'	31°41.944'	U		2.50	3.17	.18	
87.04.11	10h00	225	43°52.911'	32°13.621'	U	.480	3.24	5.52	.22	
87.04.11	12h00	226	44°08.000'	32°37.000'	U	.264	2.66	8.06	.22	
87.04.11	13h55	227	44°27.000'	33°02.000'	U	.208	3.20	12.80	.35	
87.04.11	16h02	228	44°43.735'	33°35.897'	U	.218	3.43	12.27	.27	
87.04.11	18h00	229	44°58.996'	34°07.804'	U	.252	3.16	11.99	.31	
87.04.11	20h10	230	45°16.750'	34°41.639'	U	.404	3.08	11.93	.32	
87.04.11	22h04	231	45°32.725'	35°09.498'	U	.314	2.56	10.33	.26	
87.04.12	00h14	232	45°47.960'	35°39.560'	U	.226	2.42	11.31	.25	
87.04.12	02h12	233	46°06.530'	36°15.230'	U	.189	2.51	11.60	.25	
87.04.12	04h11	234	46°19.070'	36°40.300'	U	.193	2.26	11.23	.25	
87.04.12	06h05	235	46°31.100'	37°12.600'	U	.142	3.19	14.59	.35	
87.04.12	16h00	236	46°43.926'	37°41.520'	UI	.280	3.88	16.38	.42	.37
87.04.12	16h30	237	46°46.578'	37°36.684'	UI	.168	2.38	12.37	.35	.29
87.04.12	17h00	238	46°51.006'	37°33.084'	UI	.075	2.91	14.01	.39	.31

Date	Time	Stn	Latitude	Longitude	Pos	Chla mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
87.04.12	17h30	239	46°56.994'	37°31.360'	UI	.140	3.45	15.28	.43	.35
87.04.12	18h01	240	47°00.534'	37°37.296'	UI	.167	3.09	13.90	.41	.34
87.04.12	18h31	241	47°02.106'	37°46.392'	UI	.152	3.15	14.04	.39	.35
87.04.12	19h00	242	47°01.176'	37°54.810'	UI	.126	4.54	18.01	.49	.42
87.04.12	19h30	243	46°59.850'	38°03.468'	UI	.186				
87.04.12	20h00	244	46°52.164'	38°08.370'	UI	1.992	3.86	15.67	.42	.38
87.04.12	20h30	245	46°46.236'	38°09.030'	UI	1.862	2.15	13.86	.41	.35
87.04.12	21h00	246	46°40.920'	38°09.606'	UI	2.038	1.95	13.25	.36	.32
87.04.12	21h30	247	46°37.230'	38°05.250'	UI	1.950	1.68	12.60	.35	.33
87.04.12	22h00	248	46°34.830'	37°58.320'	UI	1.642	2.35	15.07	.41	.36
87.04.12	22h30	249	46°34.962'	37°52.188'	UI	1.729	.55	9.07	.28	.22
87.04.12	23h00	250	46°39.066'	37°48.324'	UI	1.456	.53	9.33	.28	.22
87.04.12	23h30	251	46°42.930'	37°41.586'	UI	.308	3.51	14.95	.40	.35
87.04.13	00h00	252	46°45.900'	37°45.804'	UI	1.122	2.07	10.92	.32	.24
87.04.15	15h15	253	46°50.484'	38°07.458'	UI	1.537	.09	13.82	.35	.35
87.04.15	15h46	254	46°43.530'	38°07.536'	UI	1.644	.16	15.96	.31	.37
87.04.15	16h18	255	46°37.740'	38°06.750'	UI	1.061	.05	14.92	.26	.36
87.04.15	16h46	256	46°35.490'	38°00.738'	UI	1.945	.11	14.99	.27	.35
87.04.15	17h20	257	46°33.144'	37°53.598'	UI	1.517	.11	15.38	.36	.38
87.04.15	17h46	258	46°34.980'	37°48.612'	UI	1.815	.80	15.91	.32	.38
87.04.15	18h26	259	46°40.314'	37°43.110'	UI	2.157	.25	15.60	.32	.38
87.04.15	18h45	260	46°42.762'	37°40.650'	UI	1.972	.19	15.67	.39	.37
87.04.15	19h15	261	46°46.524'	37°36.984'	UI	.604	1.90	16.80	.39	.40
87.04.15	19h45	262	46°52.260'	37°33.624'	UI	.709	1.29	14.20	.35	.33
87.04.15	20h15	263	46°56.250'	37°31.584'	UI	1.006	2.23	17.05	.38	.41
87.04.15	20h50	264	46°59.268'	37°36.996'	UI	.295	2.42	17.11	.39	.40
87.04.15	21h15	265	47°00.660'	37°43.698'	UI	.198	2.60	16.99	.40	.41
87.04.15	21h42	266	47°00.798'	37°50.130'	UI	.186	.54	9.03	.30	.19
87.04.15	22h12	267	46°59.760'	37°56.262'	UI	.154	1.00	10.83	.34	.24
87.04.15	22h46	268	46°57.888'	38°05.388'	UI	.145	2.30	14.97	.25	.35
87.04.17	15h00	269	46°54.264'	38°06.270'	UI	.369	2.02	13.84	.31	.33
87.04.17	15h30	270	46°51.312'	38°10.728'	UI	1.361				
87.04.17	16h00	271	46°45.984'	38°12.144'	UI	2.084	1.37	15.72	.37	.43
87.04.17	16h30	272	46°39.462'	38°12.582'	UI	1.591	.62	12.59	.29	.33
87.04.17	17h00	273	46°36.510'	38°09.222'	UI	1.632	.01	8.20	.21	.21
87.04.17	17h30	274	46°34.134'	38°03.102'	UI	1.616	.02	7.48	.19	.19
87.04.17	18h00	275	46°31.044'	37°58.938'	UI	1.512	.97	15.31	.34	.40
87.04.17	18h30	276	46°29.742'	37°51.222'	UI	.663	.21	10.75	.26	.34

Date	Time	Stn	Latitude	Longitude	Pos	Chla mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
87.04.17	19h00	277	46°32.490'	37°46.290'	UI	1.618				
87.04.17	19h30	278	46°36.978'	37°40.578'	UI	1.532				
87.04.17	20h00	279	46°41.004'	37°34.836'	UI	.523				
87.04.17	20h30	280	46°46.632'	37°32.346'	UI	.333	.98	9.47	.26	.22
87.04.17	21h00	281	46°51.636'	37°30.552'	UI	.075	3.01	16.72	.42	.43
87.04.17	21h30	282	46°58.602'	37°30.366'	UI	.130	2.21	12.38	.33	.32
87.04.17	22h00	283	47°02.856'	37°36.030'	UI	.226	2.32	13.27	.35	.33
87.04.17	22h30	284	47°03.276'	37°45.540'	UI	.211	.91	8.06	.26	.21
87.04.17	23h00	285	47°03.168'	37°54.510'	UI	.180	2.25	13.52	.37	.33
87.04.17	23h30	286	47°02.322'	38°12.504'	UI	.255	2.27	13.43	.45	.34
87.04.17	24h00	287	46°55.740'	38°07.800'	UI	.165		11.14	.30	.26
87.04.24	14h45	34	46°55.008'	38°09.660'	UI	1.964	.09	12.81	.25	.55
87.04.24	15h15	35	46°59.814'	38°08.088'	UI	.320	.45	12.90	.27	.52
87.04.24	15h45	36	47°02.958'	38°05.736'	UI	.213	1.81	21.60	.38	.78
87.04.24	16h15	37	47°06.066'	38°02.676'	UI	.236	.65	13.82	.30	.54
87.04.24	16h45	38	47°04.392'	37°54.384'	UI	.253	1.69	19.70	.38	2.42
87.04.24	17h15	39	47°03.312'	37°46.878'	UI	.214	1.01	15.66	.33	.63
87.04.24	17h45	40	47°02.238'	37°42.030'	UI	.181	1.82	21.57	.40	.74
87.04.24	18h15	41	46°58.848'	37°33.708'	UI	.189	.28	11.91	.26	.44
87.04.24	18h45	42	46°55.140'	37°28.218'	UI	.165	.72	14.58	.32	.57
87.04.24	19h15	43	46°49.248'	37°28.062'	UI	.220	1.39	18.08	.37	.68
87.04.24	19h45	44	46°44.364'	37°29.058'	UI	.217	1.88	20.65	.40	.74
87.04.24	20h15	45	46°39.378'	37°33.102'	UI	.209	1.67	19.12	.38	.72
87.04.24	20h45	46	46°32.802'	37°36.684'	UI	.183	1.15	15.86	.34	.62
87.04.24	21h15	47	46°27.246'	37°41.598'	UI	1.167	.25	13.34	.29	.56
87.04.24	21h45	48	46°26.244'	37°48.300'	UI	1.511	.01	12.26	.25	.58
87.04.24	22h15	49	46°27.750'	37°54.558'	UI	2.048	.01	16.02	.32	.62
87.04.24	22h45	50	46°29.064'	38°02.868'	UI	2.076				
87.04.24	23h15	51	46°31.086'	38°10.128'	UI	1.862				
87.04.24	23h30	52	46°32.214'	38°14.148'	UI	1.027				
87.04.24	23h45	53	46°33.768'	38°18.138'	UI	1.568				
87.04.25	00h15	54	46°38.442'	38°16.164'	UI	1.620				
87.04.25	00h45	55	46°43.218'	38°14.148'	UI	1.796				
87.04.25	01h15	56	46°48.624'	38°12.768'	UI	.691				
87.04.25	01h45	57	46°53.496'	38°09.858'	UI	1.241				
87.05.07	14h00	96	46°24.000'	37°43.000'	U					
87.05.07	16h05	97	46°08.132'	37°38.832'	U					
87.05.07	18h00	98	45°47.792'	37°31.716'	U					

Date	Time	Stn	Latitude	Longitude	Pos	Chla µg.l ⁻³	SiO ₂ µmol.l ⁻³	NO ₃ µmol.l ⁻³	NO ₂ µmol.l ⁻³	PO ₄ µmol.l ⁻³
87.05.11	12h00	99	34°24.978'	26°04.330'	U	.436	.02	.48	.01	.42
87.05.11	14h00	100	34°49.752'	26°15.881'	U	.665	.00	.51	.02	.29
87.05.11	16h00	101	35°13.000'	26°32.000'	U	.203	.36	.31	.01	.19
87.05.11	18h00	102	35°37.000'	26°53.000'	U	.284	1.40	.49	.05	.19
87.05.11	20h00	103	36°03.500'	27°14.280'	U	.222	1.10	.41	.01	.22
87.05.11	22h00	104	36°26.540'	27°34.694'	U	.282	.77	.52	.03	.26
87.05.12	00h13	105	36°56.260'	28°01.190'	U	.507	.62	.96	.09	.28
87.05.12	02h00	106	37°12.900'	28°19.500'	U	.263	1.02	.31	.01	.33
87.05.12	04h00	107	37°42.309'	28°40.299'	U	.310	1.81	.69	.12	.29
87.05.12	06h00	108	38°07.339'	29°01.775'	U	.288	1.00	.28	.00	.15
87.05.12	08h00	109	38°32.000'	29°23.000'	U	.166	1.05	.35	.02	.11
87.05.12	10h00	110	38°53.000'	29°43.000'	U	.153	1.08	.28	.00	.13
87.05.12	12h30	111	39°20.841'	30°14.070'	U	.284	1.08	1.02	.16	.26
87.05.12	14h00	112	39°35.400'	30°27.414'	U	.355	2.07	2.21	.06	.25
87.05.12	16h05	113	40°03.450'	30°46.450'	U	.285	2.59	2.34	.05	.32
87.05.12	18h04	114	40°20.540'	31°02.830'	U	.532	1.70	3.37	.16	.35
87.05.12	20h01	115	40°36.093'	31°15.909'	U	.242	.08	1.31	.31	.41
87.05.12	22h00	116	40°51.669'	31°27.162'	U	.175	.11	1.49	.37	.34
87.05.13	00h05	117	41°08.000'	31°38.000'	U	.226	1.58	1.94	.18	.29
87.05.13	02h00	118	41°24.000'	31°25.000'	U	.300	.92	1.51	.19	.30
87.05.13	05h30	119	42°00.130'	32°09.145'	U	.147	1.67	2.16	.47	.33
87.05.13	06h45	120	42°13.594'	32°18.430'	U	.161	1.65	2.36	.45	.31
87.05.13	08h00	121	42°25.540'	32°28.470'	U	.309	2.13	2.30	.29	.31
87.05.13	10h00	122	42°44.200'	32°43.850'	U	.365	1.26	6.39	.31	.53
87.05.13	12h00	123	43°05.174'	33°03.191'	U	.283	.09	9.09	.33	.73
87.05.13	14h00	124	43°25.774'	33°22.218'	U	.186	.04	11.35	.31	.78
87.05.13	16h00	125	43°44.000'	33°43.000'	U	.232	.50	17.28	.47	1.13
87.05.13	18h00	126	43°59.000'	34°03.000'	U	.375	.16	18.50	.43	1.22
87.05.13	20h00	127	44°18.205'	34°34.348'	U	.292	.73	18.60	.48	1.18
87.05.13	22h00	128	44°38.628'	35°04.080'	U	.264	.22	16.96	.40	1.02
87.05.14	00h06	129	44°59.570'	35°27.130'	U	.272	.47	18.12	.48	1.13
87.05.14	01h59	130	45°17.870'	35°51.640'	U	.200	1.30	20.63	.52	1.25
87.05.14	04h02	131	45°37.868'	36°19.013'	U	.279	2.18	19.85	.60	1.32
87.05.14	06h00	132	45°58.752'	36°41.920'	U	.261	4.69	18.74	.12	1.04
87.05.14	08h00	133	46°20.000'	37°03.000'	U	.203	1.91	14.48	.38	1.12
87.05.14	10h00	134	46°42.000'	37°26.000'	U	.130	1.95	14.70	.36	.52
87.05.15	16h06	135	46°52.998'	36°03.000'	UI	.916	1.69	15.84	.38	
87.05.15	16h30	136	46°51.738'	38°05.574'	UI	.893	.02	7.73	.19	

Date	Time	Stn	Latitude	Longitude	Pos	Chla mg.m ⁻³	SiO ₂ mmol.m ⁻³	NO ₃ mmol.m ⁻³	NO ₂ mmol.m ⁻³	PO ₄ mmol.m ⁻³
87.05.15	17h00	137	46°48.318'	38°06.768'	UI	1.694	.23	13.42	.33	
87.05.15	17h30	138	46°44.220'	38°06.984'	UI	1.536				
87.05.15	18h00	139	46°40.344'	38°07.374'	UI	.887	1.21	12.80	.28	
87.05.15	18h30	140	46°37.272'	38°06.264'	UI	1.343	.10	9.48	.22	
87.05.15	19h00	141	46°34.416'	38°01.266'	UI	.837	2.82	16.38	.36	
87.05.15	19h30	142	46°32.010'	37°56.592'	UI	1.622	.01	11.13	.32	
87.05.15	20h00	143	46°33.408'	37°48.336'	UI	.212	3.22	17.36	.42	
87.05.15	20h30	144	46°36.114'	37°43.578'	UI	.249	3.19	16.46	.44	
87.05.15	21h00	145	46°38.346'	37°39.612'	UI	.239	2.59	14.85	.39	
87.05.15	21h30	146	46°43.536'	37°36.852'	UI	.364	2.99	15.96	.45	
87.05.15	22h00	147	46°46.932'	37°33.678'	UI	.180	3.03	15.59	.49	
87.05.15	22h30	148	46°51.276'	37°30.078'	UI	.177	2.91	15.11	.48	
87.05.15	23h00	149	46°55.632'	37°27.318'	UI	.186	2.20		.38	1.31
87.05.15	23h30	150	47°00.000'	37°36.840'	UI	.177	1.32		.31	1.02
87.05.16	00h00	151	47°03.348'	37°43.800'	UI	.195	2.61		.38	1.32
87.05.16	00h30	152	47°04.152'	37°51.378'	UI	.175	1.30		.33	1.09
87.05.16	01h00	153	47°01.938'	37°57.060'	UI	.235	2.55		.39	1.33
87.05.16	01h30	154	46°58.098'	38°00.798'	UI	.163	2.67		.39	1.33
87.05.16	02h00	155	46°53.538'	38°06.642'	UI	.866	2.30		.35	1.31
87.05.17	14h00	156	46°32.458'	37°17.856'	U	.287	.04	11.89	.26	.88
87.05.17	16h00	157	46°20.922'	37°57.440'	U	.252	.05	11.00	.22	.85
87.05.17	18h00	158	46°09.290'	36°35.800'	U	.209	.46	13.47	.33	.84
87.05.17	20h00	159	45°58.178'	36°14.490'	U	.152	.26	12.47	.33	.81
87.05.17	22h00	160	45°46.746'	35°51.630'	U	.201	.75	14.67	.37	.91
87.05.18	00h00	161	45°34.658'	35°30.530'	U	.211	.62	14.35	.39	.91
87.05.18	02h00	162	45°20.000'	35°00.000'	U	.184	.33	13.53	.36	.70
87.05.18	04h00	163	45°10.000'	34°36.000'	U	.309	.08	10.70	.36	.83
87.05.18	06h00	164	44°57.807'	34°08.772'	U	.360	.02	10.74	.29	.81
87.05.18	08h00	165	44°46.473'	33°42.590'	U	.020	.02	2.12	.13	.51
87.05.18	10h00	166	44°35.729'	33°23.250'	U	.151	.02	7.27	.22	.69
87.05.18	12h25	167	44°24.023'	33°01.202'	U	.114	.02	6.68	.18	.50

RECENT TITLES IN THIS SERIES

- 48 A bibliography of seabirds in the waters of southern Africa, the Prince Edward and Tristan Groups. J Cooper and R K Brooke. December 1981. 297 pp.
- 49 *National Geoscience Programme. The evolution of earth resource systems. SACUGS. June 1981. 42 pp.
- 50 South African Antarctic Biological Research Programme. SASCAR. July 1981. 54 pp.
- 51 South African Marine Pollution Monitoring Programme 1979-1982. R J Watling and C E Cloete (editors). July 1981. 52 pp.
- 52 *Structural characterization of vegetation in the Fynbos Biome. B M Campbell, R M Cowling, W J Bond and F J Kruger in collaboration with D P Bands, C Boucher, E J Moll, H C Taylor and B W van Wilgen. August 1981. 19 pp.
- 53 *A bibliography of fynbos ecology. M L Jarman, R M Cowling, R Haynes, F J Kruger, S M Pierce and G Moll. August 1981. 73 pp.
- 54 *A description of the Benguela Ecology Programme 1982-1986. SANCOR: W R Siegfried and J G Field (editors). March 1982. 39 pp.
- 55 Trophic ecology of Lepidoptera larvae associated with woody vegetation in a savanna ecosystem. C H Scholtz. June 1982. 29 pp.
- 56 Man and the Pongola floodplain. J Heeg and C M Breen. June 1982. 117 pp.
- 57 *An inventory of plant communities recorded in the western, southern and eastern Cape Province, South Africa up to the end of 1980. C Boucher and A E McDonald. September 1982. 58 pp.
- 58 A bibliography of African inland water invertebrates (to 1980). B R Davies, T Davies, J Frazer and F M Chutter. September 1982. 418 pp.
- 59 An annotated checklist of dung-associated beetles of the Savanna Ecosystem Project study area, Nylsvley. S Endrödy-Younga. September 1982. 34 pp.
- 60 The termites of the Savanna Ecosystem Project study area, Nylsvley. P Ferrar. September 1982. 41 pp.
- 61 *Conservation of Ecosystems: Theory and Practice. A report on a workshop meeting held at Tsitsikamma, South Africa, September 1980. W R Siegfried and B R Davies (editors). September 1982. 97 pp.
- 62 *A description of the Grassland Biome Project. M T Mentis and B J Huntley (editors). October 1982. 29 pp.
- 63 Description of a fire and its effects in the Nylsvlei Nature Reserve: A synthesis report. M V Gandar. October 1982. 39 pp.
- 64 Terrestrial ecology in South Africa - project abstracts for 1980-1981. December 1982. 148 pp.
- 65 *Alien invasive vascular plants in South African natural and semi-natural environments: bibliography from 1830. V C Moran and P M Moran. December 1982. 42 pp.

- 66 Environmental research perspectives in South Africa. December 1982. 39 pp.
- 67 The SANCOR Estuaries Programme 1982-1986. February 1983. 43 pp.
- 68 The SANCOR Programme on Coastal Processes April 1982 - March 1988. D H Swart (editor). February 1983. 30 pp.
- 69 *Guidelines for the management of large mammals in African conservation areas. The proceedings of an international workshop held at Olifants Camp, Kruger National Park, South Africa. A A Ferrar (editor). May 1983. 95 pp.
- 70 *Marine linefish programme - priority species list. SANCOR. J H Wallace and R P van der Elst (editors). May 1983. 113 pp.
- 71 *Mineral nutrients in mediterranean ecosystems. J A Day (editor). June 1983. 165 pp.
- 72 South African programme for the SCOPE project on the ecology of biological invasions. A description and research framework produced by the Task Group for Invasive Biota of the National Programme for Environmental Sciences. July 1983. 25 pp.
- 73 *South African marine pollution survey report 1976-1979. B D Gardner, A D Connell, G A Eagle, A G S Moldan, W D Oliff, M J Orren and R J Watling. September 1983. 105 pp.
- 74 Ecological notes and annotated checklist of the grasshoppers (Orthoptera: Acridoidea) of the Savanna Ecosystem Project study area, Nylsvley. M V Gandar. November 1983. 42 pp.
- 75 *Fynbos palaeoecology: a preliminary synthesis. H J Deacon, Q B Hendey and J J N Lambrechts (editors). December 1983. 216 pp.
- 76 *A South African perspective on conservation behaviour - a programme description. A A Ferrar (compiler). December 1983. 34 pp.
- 77 Limnology and fisheries potential of Lake Le Roux. B R Allanson and P B N Jackson (editors). December 1983. 182 pp.
- 78 Limnology of Lake Midmar. C M Breen (editor). December 1983. 140 pp.
- 79 The limnology of the Touw River floodplain. B R Allanson and A K Whitfield. December 1983. 35 pp.
- 80 *SANCOR: Summary report on marine research 1983. SANCOR. February 1984. 52 pp.
- 81 *South African Antarctic Earth Science Research Programme. SASCAR. February 1984. 53 pp.
- 82 *The SANCOR Marine Sedimentology Programme January 1984 - December 1988. I C Rust (editor). March 1984. 15 pp.
- 83 *A description of major vegetation categories in and adjacent to the fynbos biome. E J Moll, B M Campbell, R M Cowling, L Bossi, M L Jarman and C Boucher. March 1984. 29 pp.
- 84 Environmental research perspectives in South Africa. February 1984. 77 pp.

- 85 Invasive alien organisms in the terrestrial ecosystems of the fynbos biome, South Africa. I A W Macdonald and M L Jarman (editors). April 1984. 72 pp.
- 86 *Terrestrial ecology in South Africa - project abstracts for 1982-1983. May 1984. 198 pp.
- 87 Conservation priorities in lowland fynbos. M L Jarman. 1986. 55 pp.
- 88 A synthesis of plant phenology in the fynbos biome. Shirley M Pierce. July 1984. 57 pp.
- 89 *Aquaculture in South Africa: A cooperative research programme. O Safriel and M N Bruton. June 1984. 79 pp.
- 90 Pipeline discharges of effluents to sea. D A Lord, F P Anderson and J K Basson (editors). October 1984. 108 pp.
- 91 *Monitoring in South African grasslands. M T Mentis. September 1984. 55 pp.
- 92 Conservation of threatened natural habitats. A V Hall (editor). November 1984. 185 pp.
- 93 Limnological criteria for management of water quality in the Southern Hemisphere. R C Hart and B R Allanson (editors). December 1984. 181 pp.
- 94 Water quality criteria for the South African coastal zone. J A Lusher (editor). December 1984. 42 pp.
- 95 *National Programme for Weather, Climate and Atmosphere Research Annual Report 1984/85. C W Louw (compiler). December 1984. 28 pp.
- 96 A guide to the literature on research in the grassland biome of South Africa. N M Tainton. December 1984. 77 pp.
- 97 *South African Red Data Book - Birds. R K Brooke. December 1984. 213 pp.
- 98 Directory of southern African conservation areas. T Greyling and B J Huntley (editors). December 1984. 311 pp.
- 99 The effects of crude oil pollution on marine organisms. A C Brown. February 1985. 33 pp.
- 100 *"SANKON: Opsommingsverslag oor mariene navorsing 1984." SANCOR. February 1985. 51 pp.
- 101A *"Verslag van die Hoofprogram vir Navorsingsondersteuning." February 1985. 30 pp.
- 101E *Report of the Main Research Support Programme. February 1985. 30 pp.
- 102 National Programme for Remote Sensing. Report: 1984. P J van der Westhuizen. February 1985. 50 pp.
- 103 Bibliography of marine biology in South Africa. A supplement to the 1980 edition. A C Brown. March 1985. 83 pp.
- 104 The plant communities of Swartboschkloof, Jonkershoek. D J McDonald. March 1985. 54 pp.

- 105 Simulation modelling of fynbos ecosystems: systems analysis and conceptual models. F J Kruger, P M Miller, J Miller and W C Oechel (editors). March 1985. 101 pp.
- 106 The Kuiseb environment: the development of a monitoring baseline. B J Huntley (editor). March 1985. 138 pp.
- 107 Annotated bibliography of South African indigenous evergreen forest ecology. C J Geldenhuys. May 1984. 125 pp.
- 108 *Review of metal concentrations in southern African coastal waters, sediments and organisms. H F-K O Hennig. August 1985. 140 pp.
- 109 *Coastal dunes of South Africa. K L Tinley. September 1985. 293 pp.
- 110 The limnology of Hartbeespoort Dam. NIWR. September 1985. 269 pp.
- 111 Management of invasive alien plants in the fynbos biome. I A W Macdonald, M L Jarman and P Beeston. (editors). October 1985. 140 pp.
- 112 *The SANCOR Marine Pollution Research Programme 1986-1990. October 1985. 16 pp.
- 113 Alien and translocated aquatic animals in southern Africa: a general introduction, checklist and bibliography. M N Bruton and S V Merron. October 1985. 59 pp.
- 114 A synthesis of field experiments concerning the grasslayer in the savanna regions of southern Africa. T G O'Connor. October 1985. 126 pp.
- 115 *South African marine pollution survey report 1979-1982. B D Gardner, A D Connell, G A Eagle, A G S Moldan and R J Watling. December 1985. 81 pp.
- 116 *Basic needs in rural areas. A report on a seminar held in Cape Town on 19 February 1985. December 1985. 103 pp.
- 117 *South African Red Data Book: Plants - fynbos and karoo biomes. A V Hall and H A Veldhuis. 1985. 144 pp.
- 118 Invasive alien plants in the terrestrial ecosystems of Natal, South Africa. I A W Macdonald and M L Jarman (editors). 1985. 88 pp.
- 119 Invasive alien organisms in South West Africa/Namibia. C J Brown, I A W Macdonald and S E Brown. 1985. 74 pp.
- 120 The impact of climate and weather on the activities of the building and construction industry in South Africa. G du Toit de Villiers (compiler). 1986. 40 pp.
- 121 Ecological research on South African rivers - a preliminary synthesis. J H O'Keeffe. 1986. 121 pp.
- 122 A description of the Karoo Biome Project. R M Cowling. 1986. 42 pp.
- 123 *SANCOR: Summary report on marine research 1985. SANCOR. 1986. 57 pp.
- 124 The karoo biome: a preliminary synthesis. Part I - Physical environment. R M Cowling, P W Roux and A J H Pieterse (editors). 1986. 114 pp.

- 125 South African Red Data Book - Terrestrial Mammals. R H N Smithers. 1986. 216 pp.
- 126 A bibliography of sandy beaches and sandy beach organisms on the African continent. R Bally. 1986. 179 pp.
- 127 Activities of the National Programmes for Ecosystems and Aquaculture Research, 1983-1985. E W Auret. 1986. 68 pp.
- 128 Historical sites at the Prince Edward Islands. J Cooper and G Avery. 1986. 80 pp.
- 129 Richards Bay effluent pipeline. D A Lord and N D Geldenhuys. 1986. 30 pp.
- 130 An assessment of the state of the estuaries of the Cape and Natal 1985/86. A E F Heydorn (editor). 1986. 39 pp.
- 131 The conservation of South African rivers. J H O'Keeffe (editor). 1986. 117 pp.
- 132 SIBEX - II: Report of the South African study in the sector (48-64°E) of the Southern Ocean. D G M Miller (editor). 1986. 47 pp.
- 133 The regional landscape: Nylsvley in perspective. P G H Frost. 1987. 26 pp.
- 134 South African Southern Ocean research programme. SASCAR. 1987. 58 pp.
- 135 Disturbance and the dynamics of fynbos communities. R M Cowling, C D le Maitre, B McKenzie, R P Prys-Jones and B W van Wilgen (editors). 1987. 70 pp.
- 136 "SANKON: Opsommingsverslag oor mariene navorsing 1986." SANCOR. 1987. 45 pp.
- 137 South African Red Data Book - Fishes. P H Skelton. 1987. 199 pp.
- 138A "Verslag van die Hoofprogram vir Navorsingsondersteuning - September 1984 - Junie 1987". 1987. 23 pp.
- 138E *Report of the Main Research Support Programme - September 1984 - June 1987. 1987. 23 pp.
- 139 Marine Research in Natal. Proceedings of a symposium and workshop held at Durban, South Africa, 10 and 11 February 1986. A P Bowmaker, D van der Zee and J H Ridder (editors). 1987. 184 pp.
- 140 An environmental impact assessment of a proposed emergency landing facility on Marion Island - 1987. Report to the Minister of Environment Affairs. G Heymann, T Erasmus, B J Huntley, A C Liebenberg, G de F Retief, P R Condy and O A van der Westhuysen. 1987. 209 pp. (Available only from Department of Environment Affairs)
- 141 A preliminary synthesis of pollination biology in the Cape flora. A G Rebelo (editor). 1987. 254 pp.
- 142 The karoo biome: a preliminary synthesis. Part II - vegetation and history. R M Cowling and P W Roux (editors). 1987. 133 pp.
- 143 The Vaal River catchment: Problems and research needs. E Braune and K H Rogers. 1987. 36 pp.

- 144 Atlas of alien and translocated aquatic animals in southern Africa. 1988. I de Moor and M N Bruton. 320 pp.
- 145 A description of the Research Programme for Wetlands. R D Walmsley. 1988. 26 pp.
- 146 The River Research Programme. A A Ferrar, J H O'Keeffe and B R Davies. 1988. 28 pp.
- 147 *Dictionary of forest structural terminology. C J Geldenhuys, R S Knight, S Russell and M L Jarman (editors). 1988.
- 148 SANCOR: Summary report on marine research 1987. 1988. 60 pp.
- 149 Final Report of the Bagasse Programme. J C Patterson-Jones (editor). 1988. 250 pp.
- 150 Atmospheric pollution and its implications in the Eastern Transvaal Highveld. P D Tyson, F J Kruger and C W Louw. 1988. 150 pp.
- 151 South African Red Data Book - Reptiles and Amphibians. W R Branch (editor). 1988. 235 pp.
- 152 Remote sensing in the marine environment. L V Shannon and L Y Shackleton. 1988. 54 pp.
- 153 The culture of sharptooth catfish, *Clarias gariepinus* in South Africa. T Hecht, W Uys and P J Britz (editors). 1988. 106 pp.
- 154 A forest map of southern Africa with the aid of LANDSAT imagery. D W van der Zel. 1988. 79 pp.
- 155 Research needs in the Transkei and Ciskei coastal zone. Report on a workshop held at Mpekweni, Ciskei on 3 March 1988. G M Branch and L Y Shackleton (editors). 1988. 56 pp.
- 156 The Swartkops Estuary. Proceedings of a symposium held on 14-15 September 1987 at the University of Port Elizabeth. D Baird, J F K Marais and A P Martin (editors). 1988. 107 pp.
- 157 Long-term data series relating to southern Africa's renewable natural resources. I A W Macdonald and R J M Crawford (editors). 1988.
- 158 South African Red Data Book - Butterflies. S F Henning and G A Henning. 1989. 176 pp.
- 159 Data Report of the First Cruise of the Marion Off-shore Ecological Study (MOES-I). C M Duncombe Rae. 1989. 384 pp.

* Out of print.