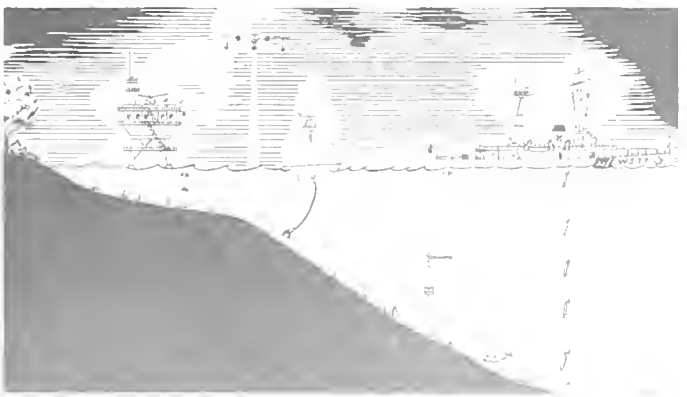
UNITED STATES COAST GUARD

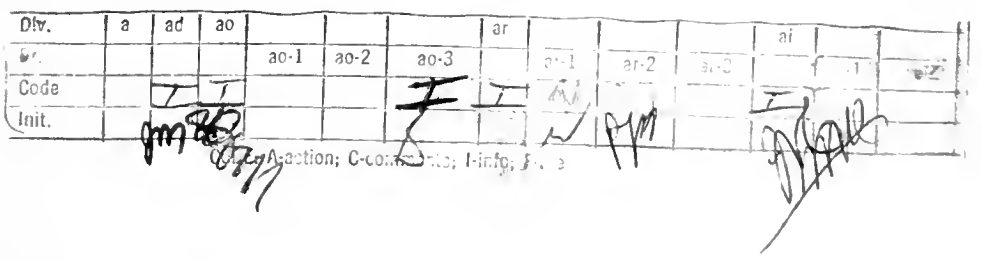
OCEANOGRAPHIC REPORT No. 35

CG 373-35

OCEANOGRAPHY OF THE MID-ATLANTIC BIGHT IN SUPPORT OF ICNAF

September–December 1967





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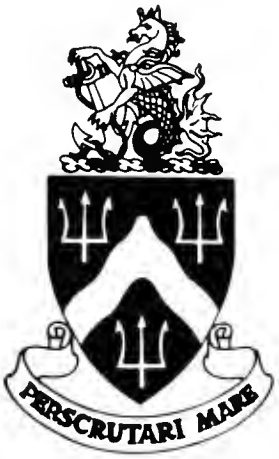

UNITED STATES COAST GUARD OCEANOGRAPHIC UNIT

REPORT No. 35 CG 373-35

OCEANOGRAPHY OF THE MID-ATLANTIC BIGHT IN SUPPORT OF ICNAF

September–December 1967

By Vincent L. Whitcomb

WASHINGTON, D.C. OCTOBER 1970

Abstract

The physical oceanography of the shelf and slope waters of the Mid-Atlantic Bight (Cape Cod to Cape Hatteras) in September and December of 1967 is described. Temperature, salinity, density, dissolved oxygen, and chlorophyll data are presented in surface contours and section profiles. The seasonal cycle of temperature and salinity over the continental shelf is discussed and geostrophic currents in the slope water are inferred from the density structure.

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Vincent L. Whitcomb [1]

INTRODUCTION

The northwest Atlantic is one of the most important commercial fishing areas in the world. Fishing fleets of many nations return annually to this region to harvest almost 4 billion pounds of fish and mollusks. The catches of these fleets contribute significantly to their nations' economy. These extensive fishing operations cannot, however, continue indefinitely without some management to protect against a depletion of resources. Recognizing the need for such management, 15 nations that fish in the northwest Atlantic have formed the International Commission for the Northwest Atlantic Fisheries (ICNAF). The goals of ICNAF are to understand the natural fluctuations in abundance of fish stocks, to assess the effects of commercial fishing, and to devise guidelines for the international management of fishing operations. The member nations include Canada, Denmark, France, Federal Republic of Germany, Iceland, Italy, Japan, Norway, Poland, Portugal, Romania, Spain, United States, Union of Soviet Socialist Republics, and the United Kingdom.

A primary area for ICNAF investigation is Georges Bank. This area supports one of the richest and most highly exploited fisheries in the world. The fish species of greatest interest in this area are haddock, herring, and silver hake. To understand the ecology of these species, a detailed investigation of their distribution, relative abundance, and growth and mortality rate in relation to environmental conditions is required. Such an investigation entails frequent measurements over the life cycle of each species and requires a multi-ship operation. The ICNAF members recommended that the USA and the USSR devise a plan for investigating the area, and indicate the resources that could be made available for the project. The plan was submitted in 1966, and after revision, accepted in 1967. The area of coverage was expanded to include the Mid-Atlantic Bight to the south (to 35°00'N) and the Gulf of Maine to the north of Georges Bank (to 41°31'N).

The Bureau of Commercial Fisheries is the United States representative agency to ICNAF. Under the Northwest Atlantic Fisheries Act of 1950 (16USC981) the United States Coast Guard is charged with cooperating with BCF in matters relating to ICNAF. The role of the Coast Guard in the ICNAF program is to collect and process data on the seasonal variations of the physical and chemical oceanography of the area being studied. The initial cruise performed in February 1967 (ICNAF 67–1) was to test various types of equipment for measuring currents on the Georges Bank. The results of this cruise were inconclusive due to the severe environmental conditions encountered. The first Coast Guard ICNAF survey cruise was made in September 1967 (ICNAF 67–2, fig. 1) by the USCGC EVERGREEN (WAGO 295) in conjunction with a groundfish survey conducted in the same area by the U.S. R/V ALBATROSS IV (of BCF) and the USSR's R/V ALBATROSS. A second cruise the area was conducted by USCGC EVERGREEN in December 1967 (ICNAF 67–3, fig. 2). The purpose of the two Coast Guard cruises was to obtain data on the vertical and horizontal distribution of temperature, salinity, dissolved oxygen and chlorophyll. The results are presented in this report.

1. U.S. Coast Guard Oceanographic Unit, Washington, D.C. 20390.

PROCEDURES

Oceanographic Sampling

Temperature and Salinity

At each station an STD (Salinity-Temperature-Depth system) cast was taken to the bottom or to the maximum STD operating depth of 1,500 meters, yielding a continuous trace of temperature and salinity as a function of depth. In shoal waters where there was danger of losing the STD "fish" on the bottom, or when the seas were too rough to permit safe shipboard handling of the STD, a standard Nansen cast with reversing thermometers was taken to determine the temperature and salinity profiles (computation of salinity from conductivity based on tables published by UNESCO/NIO, 1966). A Nansen cast to collect water samples at standard depths of 1, 10, 20, 30, 40, 50, 75, 100, 200, and 250 meters (as depths permited) was also taken for each station. Midway between stations expendable bathythermograph (XBT) casts were made. The positions at which the XBT's were dropped are indicated on the cruise tracks for September and December (figs. 1 and 2). On the return leg of the December cruise, XBT's were dropped every 3 hours.

Chemical Analyses

Water samples were analyzed for dissolved oxygen using the modified Winkler method (Carpenter, 1965). Aliquots of 125 ml of sea water were taken from water samples collected at the standard depths down to 100 meters for a determination of the cholorophyll content. The aliquots were filtered and the filters were frozen and stored in the ship's freezer. The filters were later analyzed ashore at the BCF Biological Laboratory, Woods Hole, Mass. Chlorophyll (total pigment) determinations were made according to the method of Yentsch and Menzel (1963) as modified by Yentsch (1965).

Bathymetry and Meteorology

A continuous sonic sounding program was carried out by bridge personnel, and LORAN C was used for navigation. Meteorological and sea surface conditions were likewise recorded at each station by bridge personnel. These data included cloud type and coverage, wind speed and direction, air temperature, barometric pressure, wave height, wave direction, and wave period. The weather data were combined with the water temperature data and sent by radio message to the Fleet Numerical Weather Facility, Monterey, Calif., after completion of each station deeper than 100 fathoms.

Operational Summary

	September	*December*
Hydrographic stations occupied	61	34
STD casts	58	32
XBT casts	34	35
Nansen casts	48	31
Dissolved oxygen analyses	350	220
Chlorophyll (total pigment) analyses	286	183

Quality Control

Every 24 hours a complete Nansen cast, with reversing thermometers, was made in conjunction with an STD cast. Water samples were drawn for a determination of salinity by shipboard salinometers. The control salinities and the corrected thermometer temperatures were then compared with the STD readings at corresponding depths. Attempts were made to take the quality control Nansen casts at the deeper stations in order to obtain comparisons over the widest range possible. The disadvantage of this method is that the STD and Nansen casts cannot be made simultaneously. Changes in the water column between casts and error in determining sampling depth limit the value of quality control data acquired by this technique in the thermocline and halocline. A Nansen bottle was hung directly above the STD during the December cruise, and data from this single bottle were used on each STD cast, along with the 24- hour quality control Nansen cast data, for calibration.

All STD traces were read twice by different personnel to reduce the possibility of reading errors. Sigma-t values were determined by computer to indicate the existence of density inversions. The salinity and temperature data which produced these inversions were then rechecked for reading errors. When the existence of density inversions could not be resolved, the data were marked as questionable. The Coast Guard Field Party maintained a time adjusted

position and depth log for all hydrographic and XBT stations. This log was periodically reviewed by USCGC EVERGREEN personnel.

DATA PRESENTATION

Data Listings

The STD traces were read at the standard depths of 0, 10, 20, 30, 40, 50, 75, 100, 150, 200, 250, 300, 400, 500, 600, 700, 800, 1,000, 1,100, 1,200, 1,300, 1,400 and 1,500 meters, and at all inflection points. These data, along with the dissolved oxygen, chlorophyll, time, position, meteorological, and sea surface data were entered on the NODC Form for Reporting Electronically Obtained Serial Data. These forms were submitted to the National Oceanographic Data Center, which later provided printed data listings. In addition to the data submitted, the printed listings also contain values for Sigma-t, specific volume anomaly, dynamic height, and sound velocity computed at NODC. The printed data listings for the September and December cruise are contained in Tables I and II of Appendix A.

Surface Contours

Surface values of temperature, salinity and Sigma-t were plotted along the cruise track, and surface contours were produced from these values. Surface isotherms, isohalines and isopycnals for September and December are presented in Figures 3 through 8.

Vertical Sections

Vertical sections for temperature, salinity, Sigma-t, oxygen, and chlorophyll were drawn for both cruises. The sections were drawn for those legs of the cruise track which were approximately normal to the coastline (figs. 1 and 2). For a meaningful presentation of vertical section contours, the vertical distance scale has been greatly exaggerated in comparison to horizontal distance scale (135:1). Sections of temperature, salinity and Sigma-t were drawn to a maximum depth of 500 meters. Temperature contours for the September and December cruises (figs. 9–24) were constructed using all of the sources of temperature data (STD, reversing thermometers and XBT's) collected on these cruises. Salinity sections (figs. 25–40) and Sigma-t sections (figs. 41–56) were also drawn to a maximum depth of 500 meters. The sections of dissolved oxygen (figs. 57–71) were drawn to a maximum depth of 250 meters and those of chlorophyll (figs. 72–86) were drawn to a maximum depth of 100 meters.

Water Masses

Vertical sections of temperature and salinity were inspected to determine the existence of water masses having characteristic properties of temperature or salinity. Isotherms and isohalines which tended to form closed loops on the vertical section contours were considered to be the boundaries of water masses. When "closed loop" isotherms (or isohalines) of identical value appear on successive sections, they were joined together by smooth lines to give a three dimensional perspective of the water masses (figs. 87–90). These figures are not a synoptic portrayal of the shape of the boundaries, but rather represent the extent of the boundaries over the time period of the cruise.

RESULTS

Temperature Distribution

The physical properties of coastal waters of the Mid-Atlantic Bight are subject to large seasonal variations. In September surface waters over the shelf ranged from 17°C to 20°C and subsurface waters were 2C° to 4C° cooler. In December the shelf water was essentially vertically isothermal and ranged from 6°C to 10°C.

Using data from various sources, Bigelow (1933) gave a description of the temperature cycle for the Mid-Atlantic Bight waters. Surface cooling and intense mixing of the vertical column occur over the shelf during the winter months. Shelf water temperatures reach a minimum during February and March. This minimum is followed by vernal warming occurring more rapidly inshore and at the surface. A thermocline of increasing steepness is developed as the warming season progresses. The thermocline is steepest in mid-September, after which autumnal cooling begins and the cycle is repeated. Daily water temperature and salinity at 13 locations along the Atlantic seaboard were tabulated for 1966 and 1967 by Chase (1969). The temperature cycles are depicted graphically in an atlas of monthly

sea temperatures from the Florida Keys to Cape Cod (Walford and Wickland, 1968).

Low Temperature Core

Vernal warming forms a layer of warm water overlying a pool of relatively cool water lying over the shelf. This pool gradually diminishes as vernal warming progresses. The remains of this cool water pool were found in September 1967 (fig. 87). It appears as a core of cool water (less than 8°C) form Cape Cod to the offing of Chesapeake Bay. Ketchum and Corwin (1969) studied the persistence of "winter" water on the continental shelf for a period of 3 years. They concluded that the pool of cool water is warmed by both vertical mixing with less saline surface water and horizontal mixing with more saline slope water. The type of mixing was related to the heat budget along the shelf.

One of the processes by which the pool of cool water is dissipated was described as "calving" (Cresswell 1967). In this process, large bubbles of cold water break off and move seaward as they mix with the slope water. The primary cause of calving was ascribed to the shoaling of internal waves. Tidal agitations were described as a secondary cause. The density structure of the water over the shelf edge in September 1967 (figs. 41–50) included a sharp vertical gradient 20 to 30 meters below the surface and either riding over or impinging upon the shelf edge. Thus, conditions for the propagation of internal waves existed in September 1967. They did not, however, exist during December 1967 (figs. 51–56).

Evidence of the calving process was found in September 1967 (fig. 10). A relatively small cold bubble (11°C) was found 30 miles seaward of the cold water on the shelf edge in section 2. This bubble appeared to be in the final stages of separation from the parent water mass. It is interesting to note that in this instance and in the examples presented by Cresswell, the bubbles are closer to the surface than their parent water masses.

The dissolved oxygen content of the cold water bubble (fig. 58) discussed above was higher than that of the surrounding warmer, water, as expected, but it was also higher than that of the parent water mass. This high oxygen content may have been the result of photosynthetic activity in the bubble after its detachment and rise into the photic zone. The relatively higher chlorophyll content of the bubble (fig. 73) supports this contention.

Salinity Distribution

In September and December, the water over the shelf generally showed weak vertical salinity gradients approaching isohaline conditions on some stations (figs. 25–40). The horizontal gradients were relatively strong, however, and reached a maximum near the shelf edge. In September surface salinity increased gradually from less than 31‰ near the coastline to greater than 35‰ beyond the continental shelf (fig. 5). The same general gradient of surface salinity occurred in December with an inshore salinity of less than 32‰ (fig. 6). The increase in salinity during December reflects high evaporation rates and low river discharges during winter months. The river discharges of the northern half of the Mid-Atlantic Bight are highest in March, April, and May. Inshore salinity reaches a minimum during this period (Ketchum and Keen, 1955). Bumpus (1969) has associated low river runoffs along the Mid-Atlantic Bight with reversals in the surface drift over the continental shelf.

A layer of high salinity was found during both cruises (figs. 89 and 90) in the same general location. The salinity values of the layer decreased slightly from September (35.75‰) to December (35.50‰). There was a surfacing of the high salinity layer along section 4 in September (fig. 28). It appears that this was the result of current induced upwelling associated with cyclonic water motion. Assuming geostrophic conditions, the density structure of the water along section 4 (fig. 44) depicts a local cyclonic eddy limited to the upper 50 meters.

Gulf Stream Counterflow

Stommel (1957) proposed that a baratropic flow opposite to the Gulf Stream could be maintained by the sinking of polar water. Swallow and Worthington (1957) observed a deep western boundary current opposite to the Gulf Stream off the Blake Plateau, south of Cape Hatteras. This current was below 2,000 meters and ranged from 9 to 18 cm/sec. Volkmann

(1962) computed a western boundary current flowing opposite the Gulf Stream in an area south of Cape Cod in 1959 to 1960. The geostrophic flow below 1,400 meters was determined using a 2,000-meter reference level. Volkmann concluded that the westward flow of water may not be continous but may consist of a series of eddies or transients. He also concluded from transport calculations that large amounts of water flowing westward between Cape Cod and Cape Hatteras are recirculated by the Gulf Stream, and that the amount of water recirculated can be influenced by large-scale transcients. Direct measurements of subsurface currents were made by Barrett (1955) off of Cape Hatteras in 1962. He found that the inshore westward flowing current appeared to be continous along the steep continental slope from depths of several hundred meters to depths greater than 2,500 meters.

Assuming geostrophic conditions were dominant in the water column over a depth of 500 meters or greater, several inferences concerning a counterflow west of the Gulf Stream can be drawn from the density profiles. East of 73°W longitude, counterflow was as shallow as 100 meters and within 40 miles of the edge (100 meters depth) of the continental shelf (figs. 41, 42, 44, and 53). Through sections 4 and 7 in September and section 2 in December a northeastward flow below 150 meters was indicated between the counterflow and the continental slope (figs. 44, 47, and 52). Since this flow was not indicated through adjacent sections, it may represent an eddy in the counterflow. No counterflow was indicated in the upper 500 meters along section 9 in September. It is possible that a counterflow may have existed deeper than 500 meters along this section, or it may have been entrained in the Gulf Stream.

Niiler and Spiegel (1968) presented a numercial treatment of formation of a quasi-geostropic jet along a shoaling coast. They assume coastal regions to be shallow on a scale comparable to the width of the boundary current and the current is assumed to be of constant potential vorticity. The significant features of the numerical solution are "(i) the appearance of a countercurrent, (ii) a pocket of warm water above the ledge where the shelf drops off into the deep ocean, and (iii) a pocket of cold water on the ledge." These features appear to be generally in good agreement with the conditions found during September.

Niiler and Spiegel's numerical treatment indicates the dependence of the current upon the topographical features of the shelf edge. As the shelf edge changes from a sharp ledge to a gradual rise, the countercurrent amplitude is decreased and the width is increased. They noted that the numerical analysis is valid only for a limited distance downstream of where the countercurrent begins. This is because the influx of water increases the horizontal density gradient to a point where the quasigeostrophic approximation is invalidated. This phenomena may explain the apparent discontinuity of the countercurrent indicated by the ICNAF data.

Shelfwater—Slope Water Boundary

A striking feature of the data collected during September and December 1967 was the evidence of dynamic processes occurring at the shelf water-slope water interface. This interface represents a boundary between markedly different temperatures and salinities, and between deep and shallow water regimes. This boundary is subject to the dynamic processes of wind mixing, tides, internal waves and currents which may be strongly influenced by transients. Due to these conditions and shallowness of the shelf edge, the assumptions of geostrophic flow were not applied to infer water motion in this area.

The physical properties of the shelf water-slope water boundary were strongly influenced by seasonal variations in 1967. The marked change in the density structure between 30 and 50 meters depth over the shelf edge from September to December indicated a strong seasonal variation in vertical mixing. The vertical lines of constant sigma-t in December (figs. 51 through 56) suggest intense mixing, probably due to strong wind mixing and convection resulting from surface cooling. In September, these mixing processes were absent and the density of this layer is well stratified (figs. 41–50).

CONCLUSIONS

A continuous core of relatively cold water existed in September along the shelf edge from Cape Cod to the offing of the Chesapeake Bay. Evidence of "calving" in which a large bubble of cold water separates from the core and

moves seaward was found. Oxygen and chlorophyll concentrations were relatively high within this bubble suggesting increased photosynthetic activity.

In general, surface salinity increased gradually from the shore to the shelf edge. Layers of high salinity water were found in the slope water off the Mid-Atlantic Bight in September and December. Upwelling of this high salinity layer appears to have been caused by a local cyclonic eddy in September.

A counterflow inshore of the Gulf Stream was inferred from the slope water density. This flow may have been discontinuous in the upper 500 meters and may have reversed direction.

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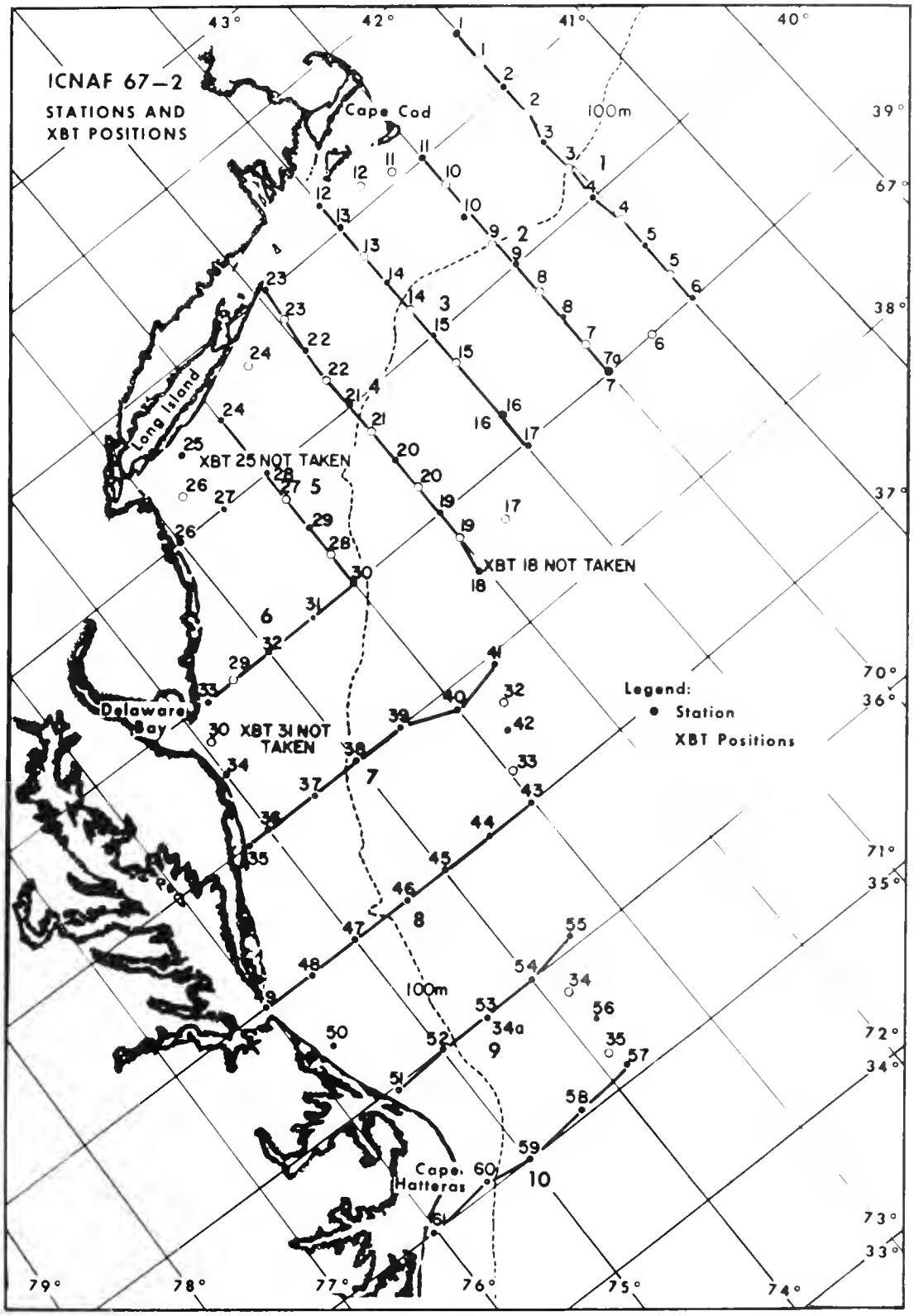

Figure 1. Station and section locations ICNAF 67-2—18-29 September 1967.

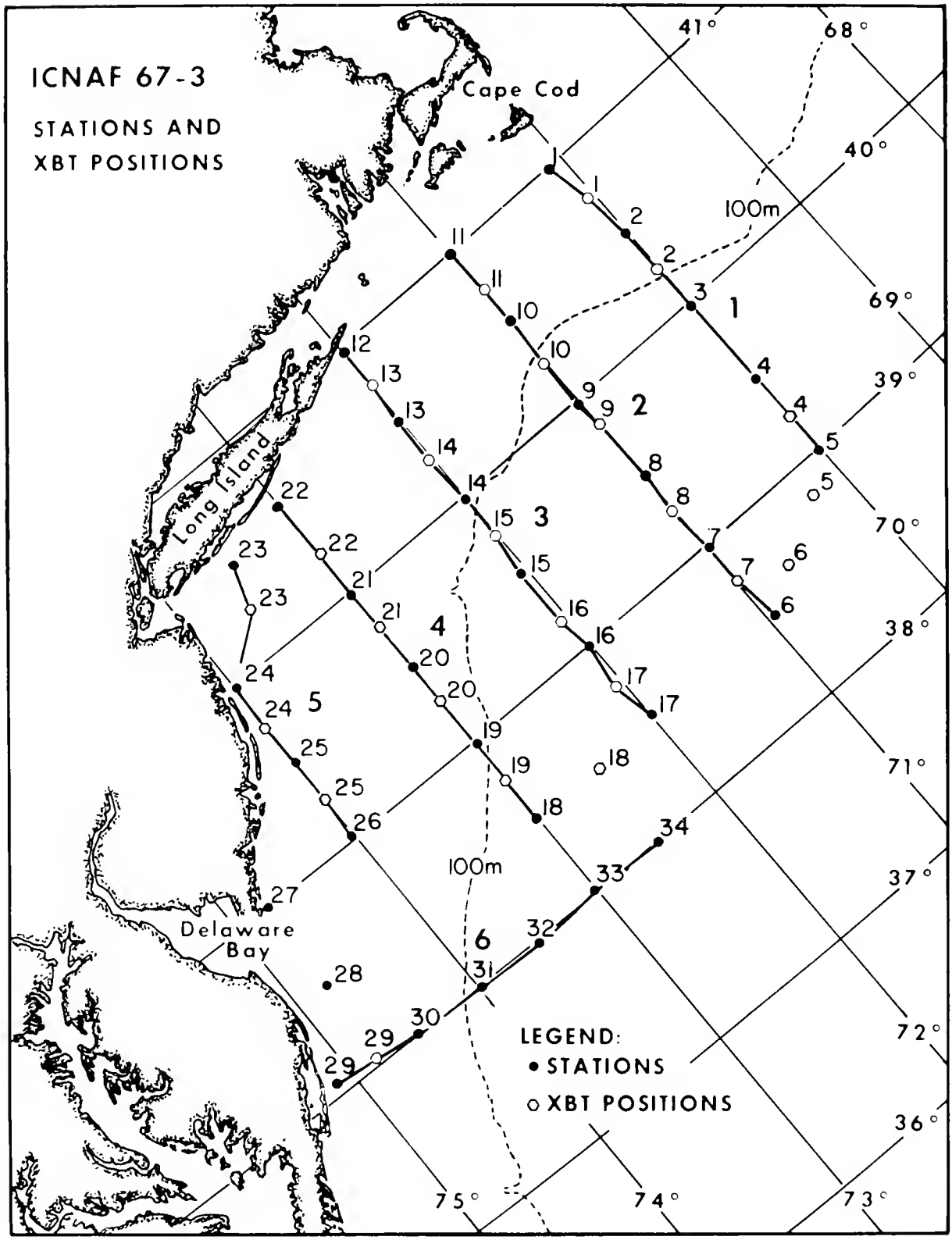

Figure 2. Station and section locations ICNAF 67–3—11–23 December 1967.

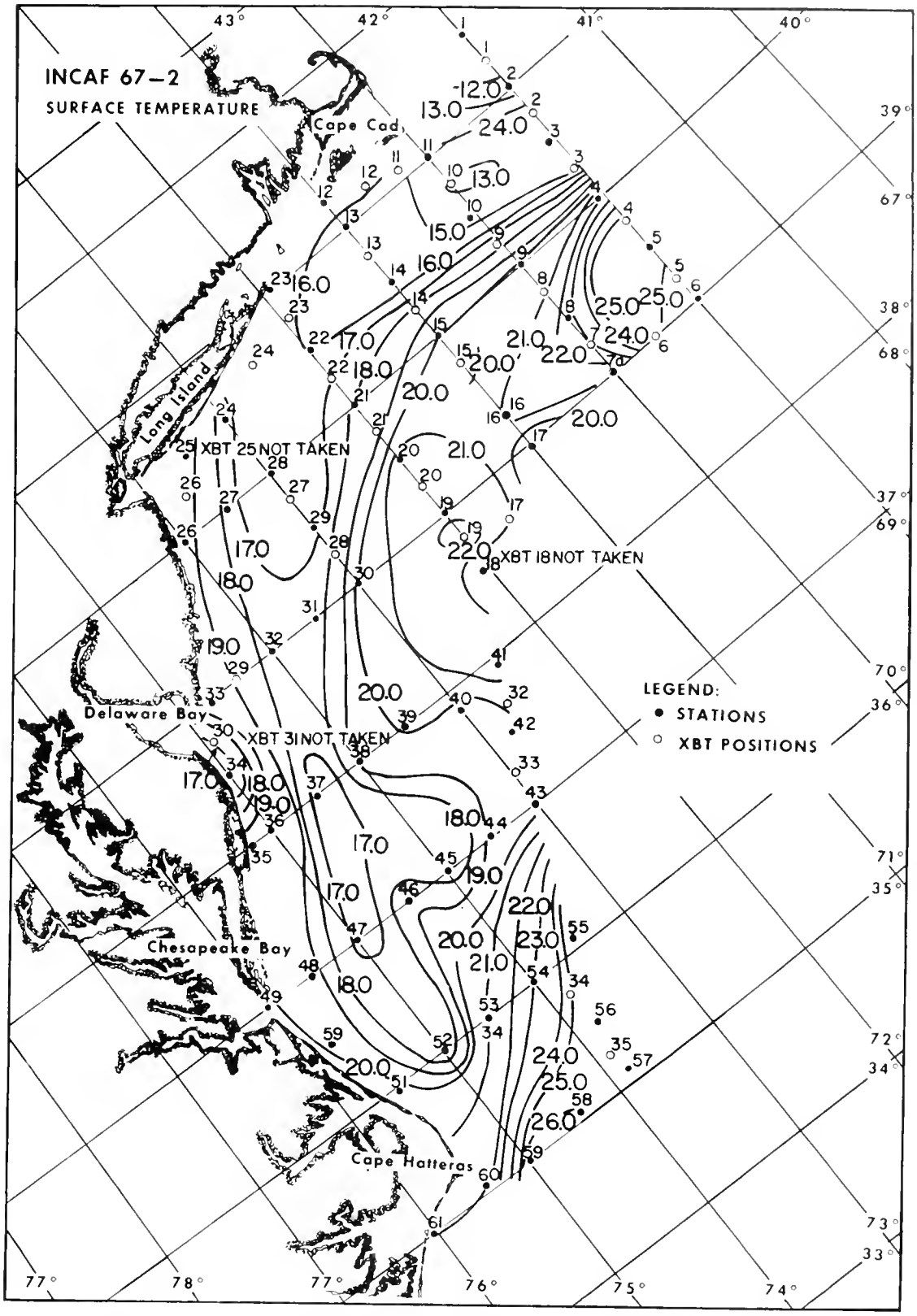

Figure 3. Sea surface temperature (°C) ICNAF 67-2—18-29 September 1967.

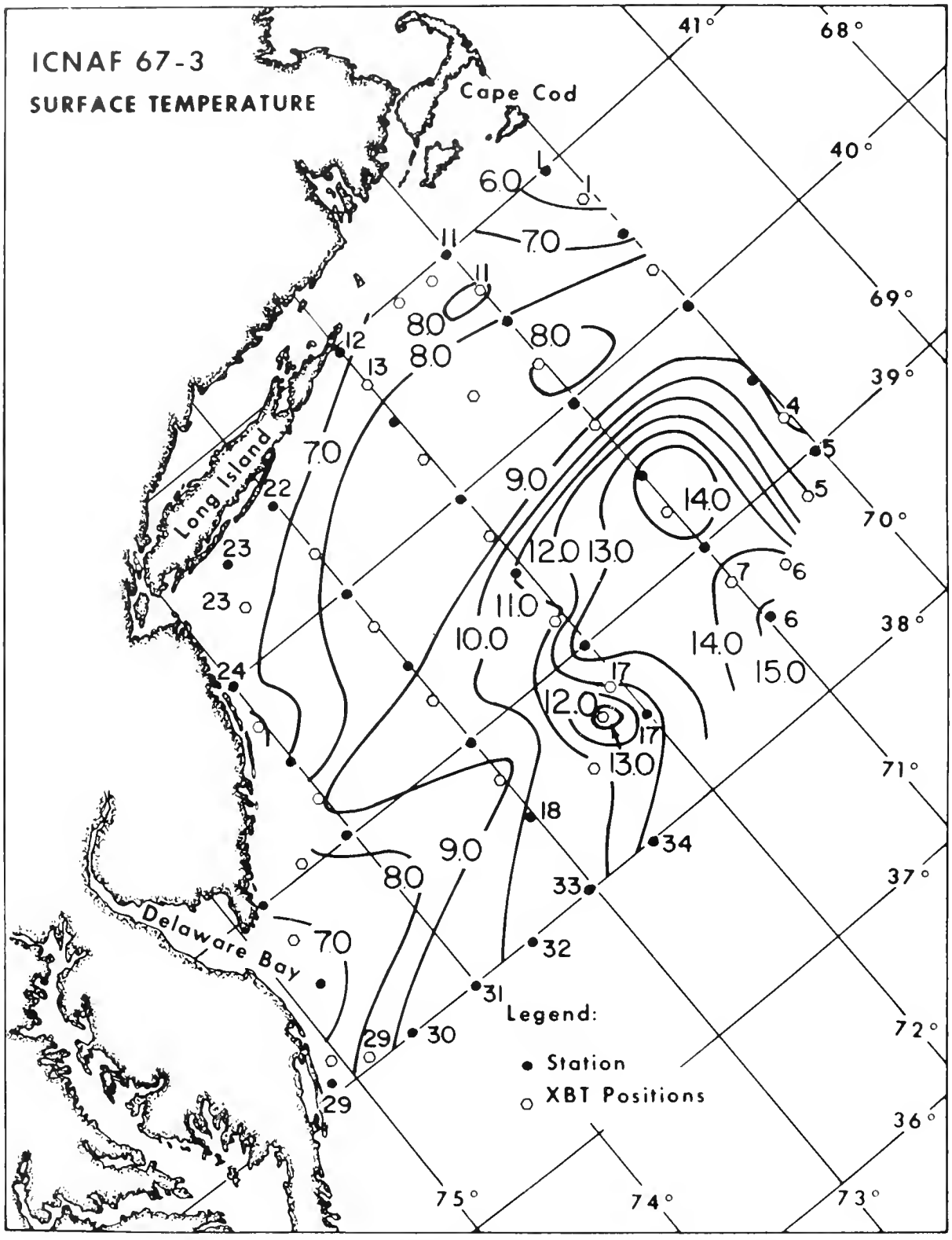

Figure 4. See surface temperature (°C) ICNAF 67-3—11-23 December 1967.

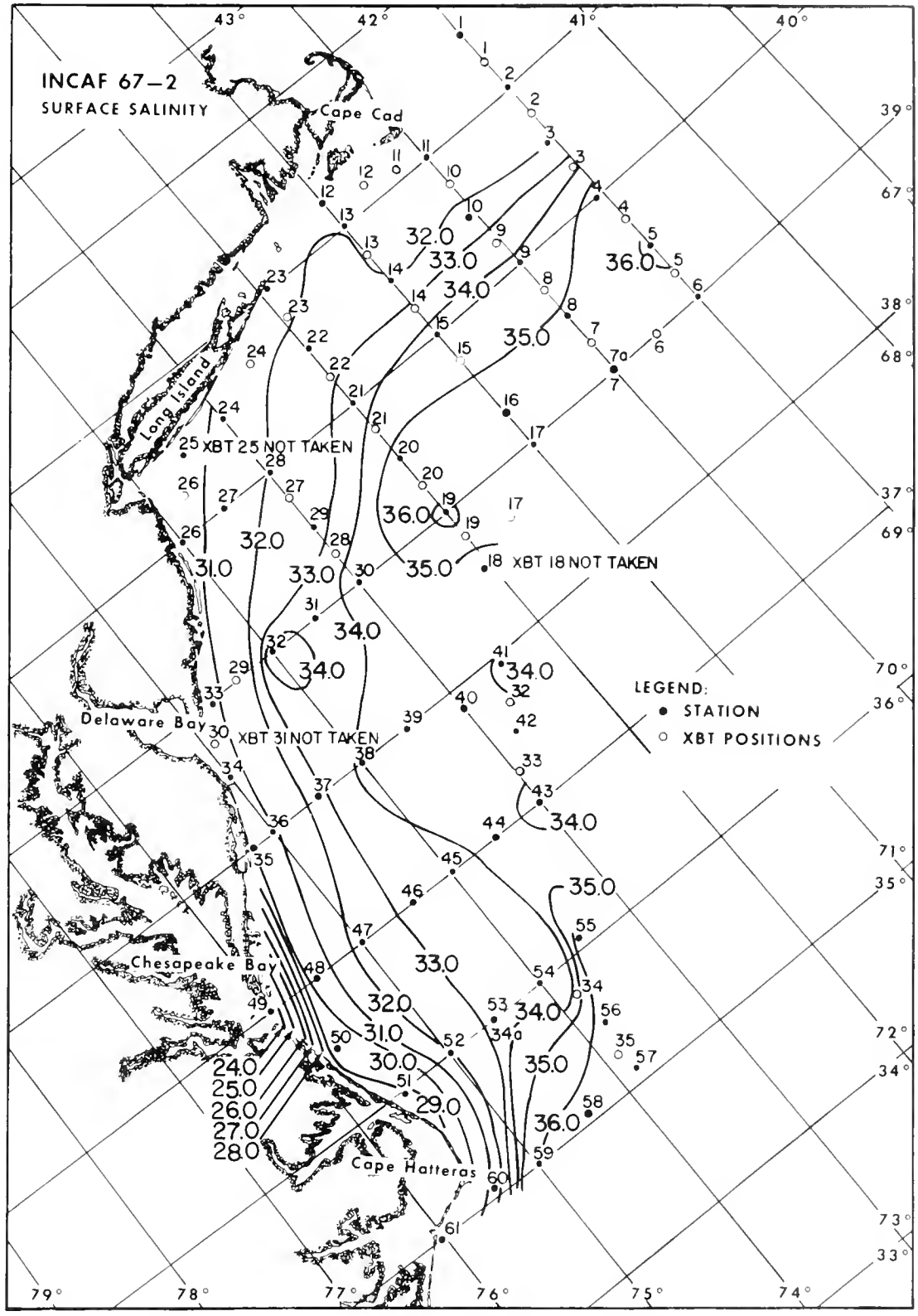

Figure 5. Surface salinity (‰) ICNAF 67-2—18-29 September 1967.

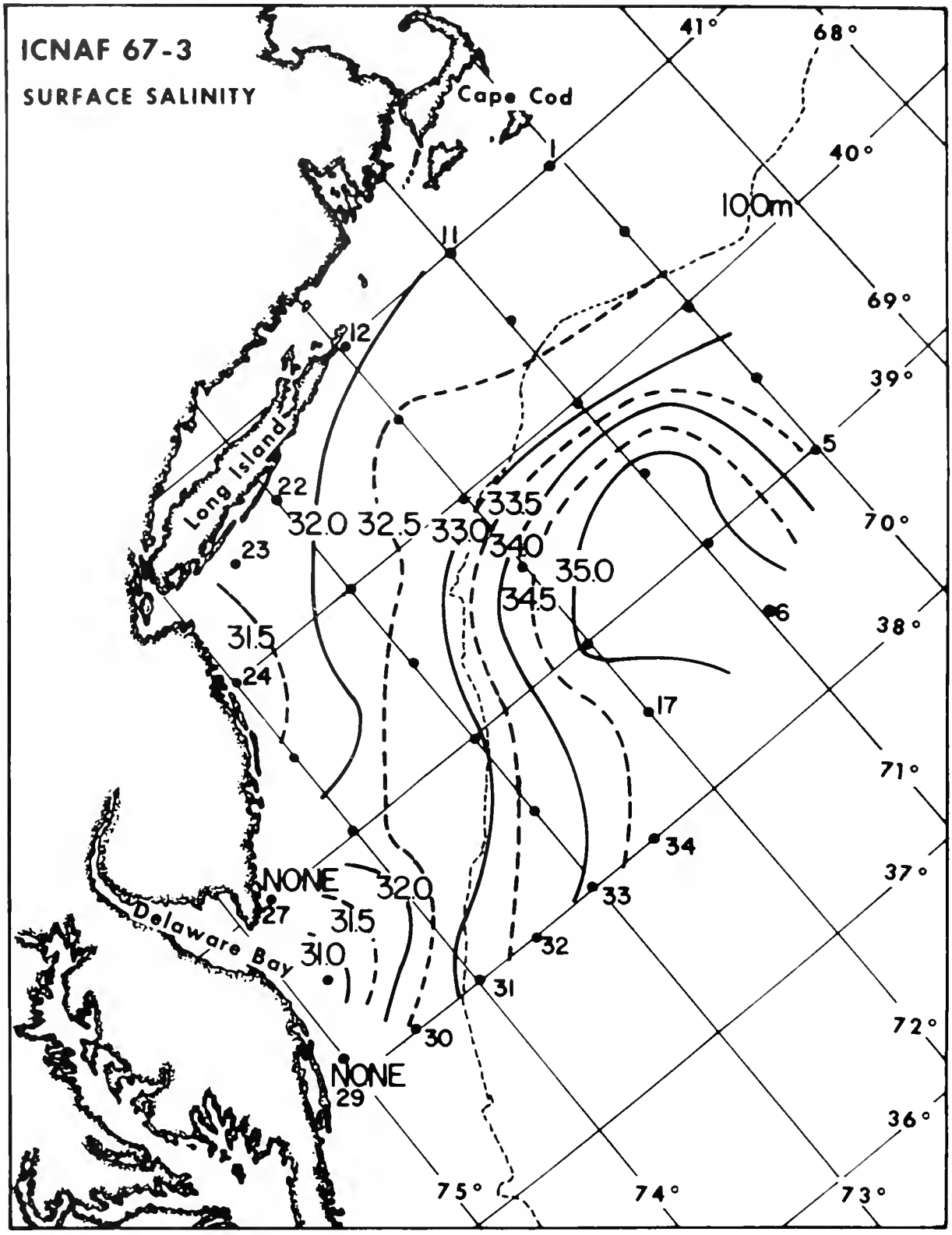

Figure 6. Surface salinity (‰) ICNAF 67-3—11-23 December 1967.

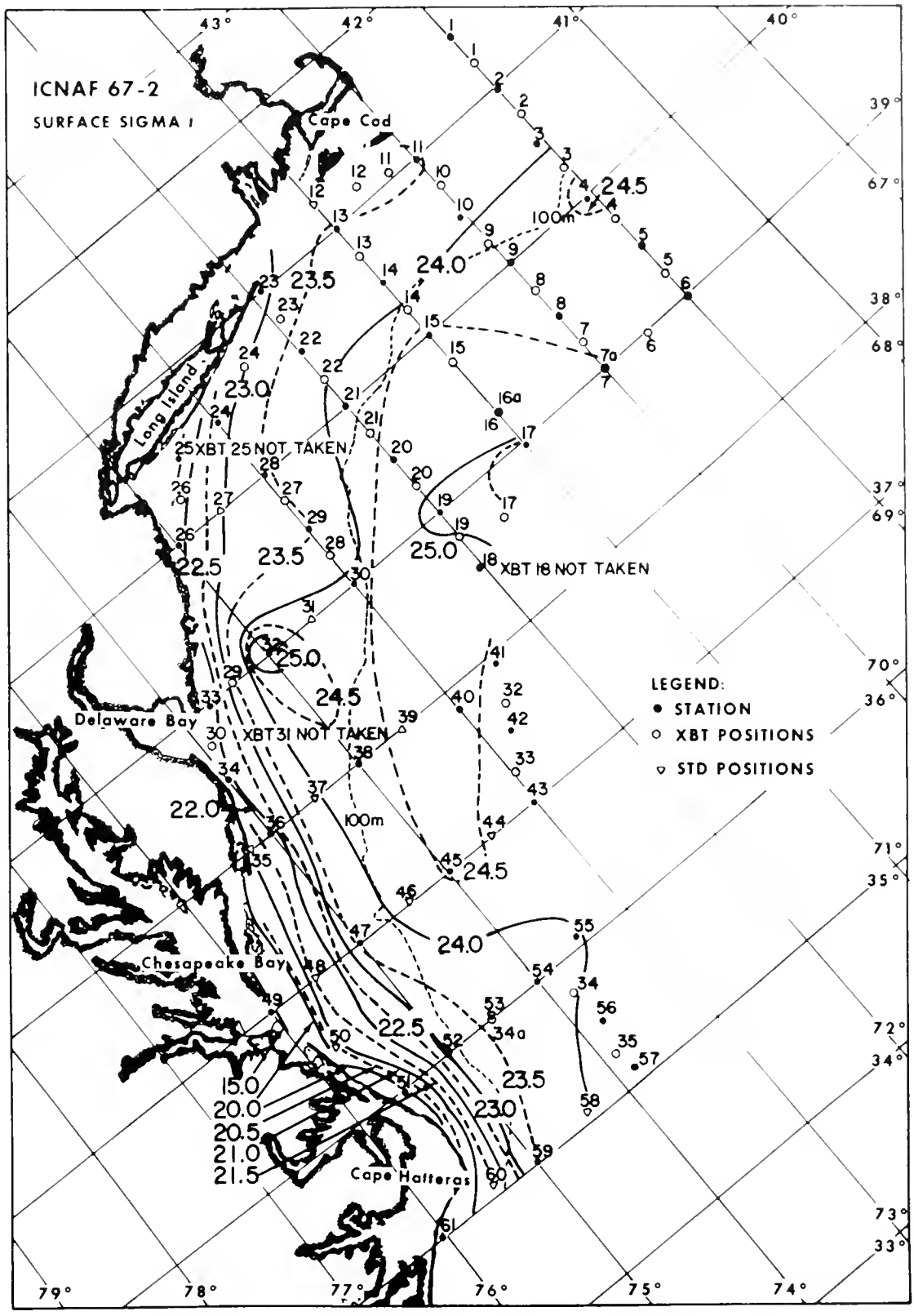

Figure 7. Surface density (σt in g/l) ICNAF 67-2—18-29 September 1967.

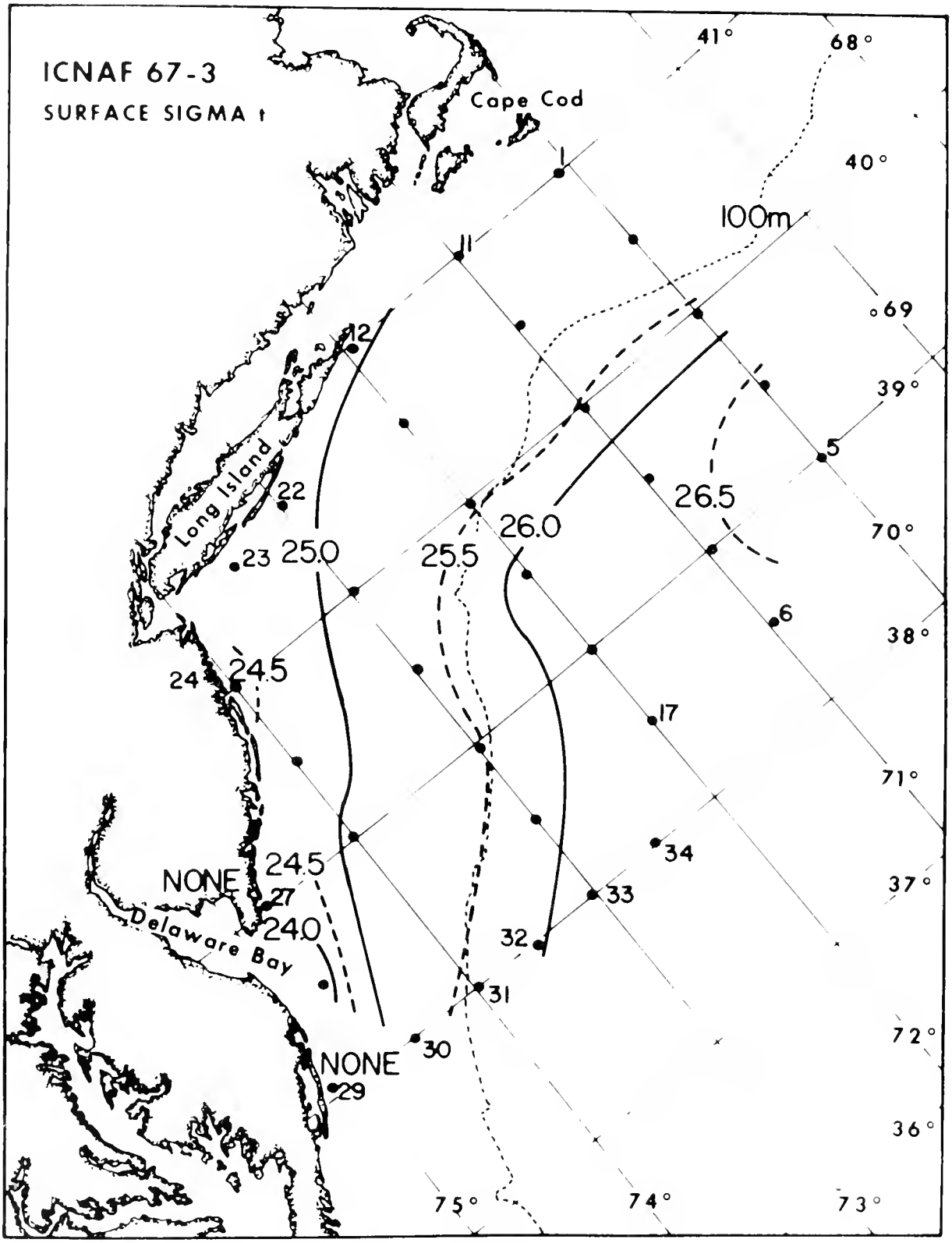

Figure 8. Surface density (σt in g/l) ICNAF 67–3—11–23 December 1967.

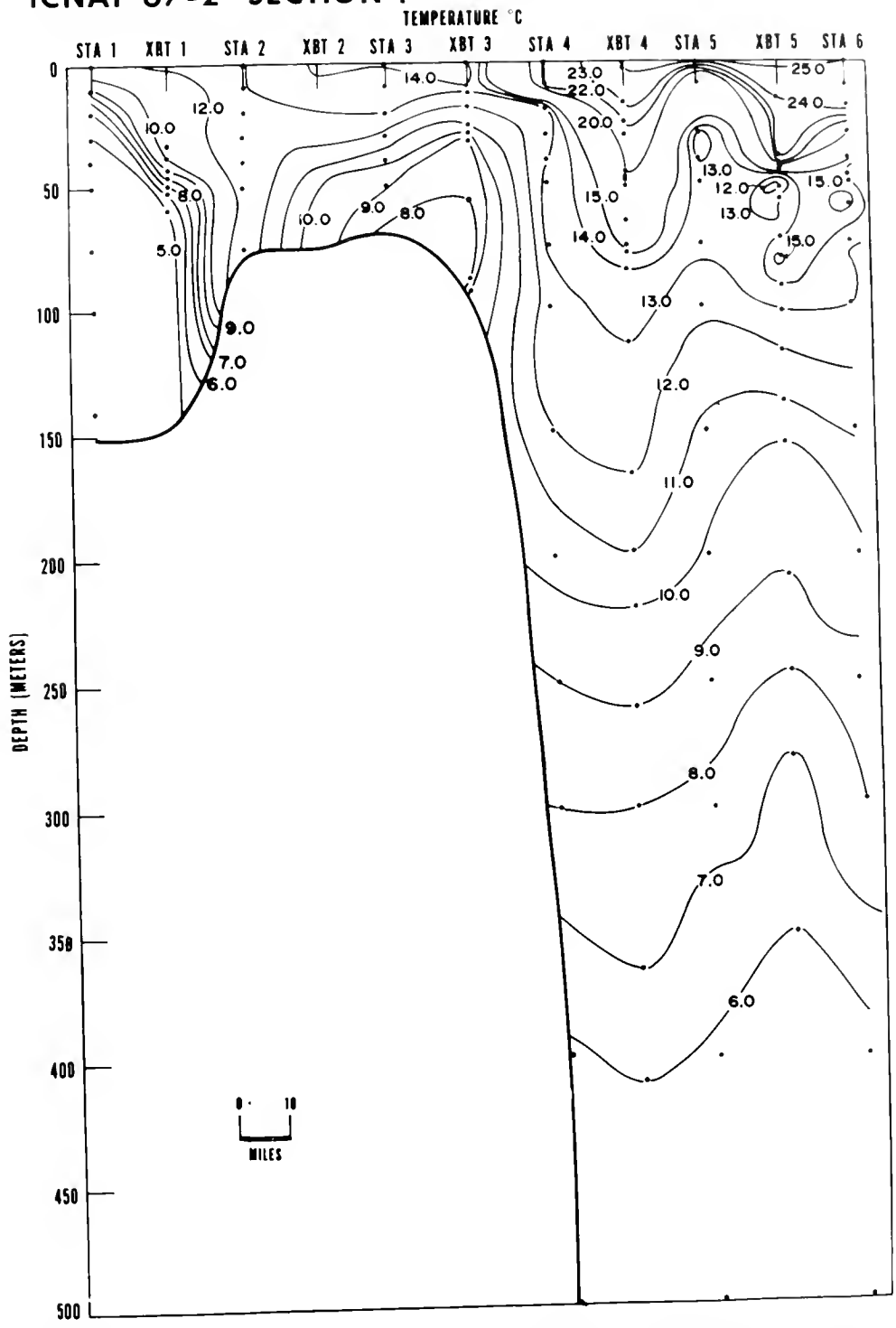

Figure 9. Vertical distribution of temperature (°C)—Section 1 ICNAF 67–2, 18–29 September 1967. 16, 17, 18, 19 and 21°C contours omitted to preserve clarity.

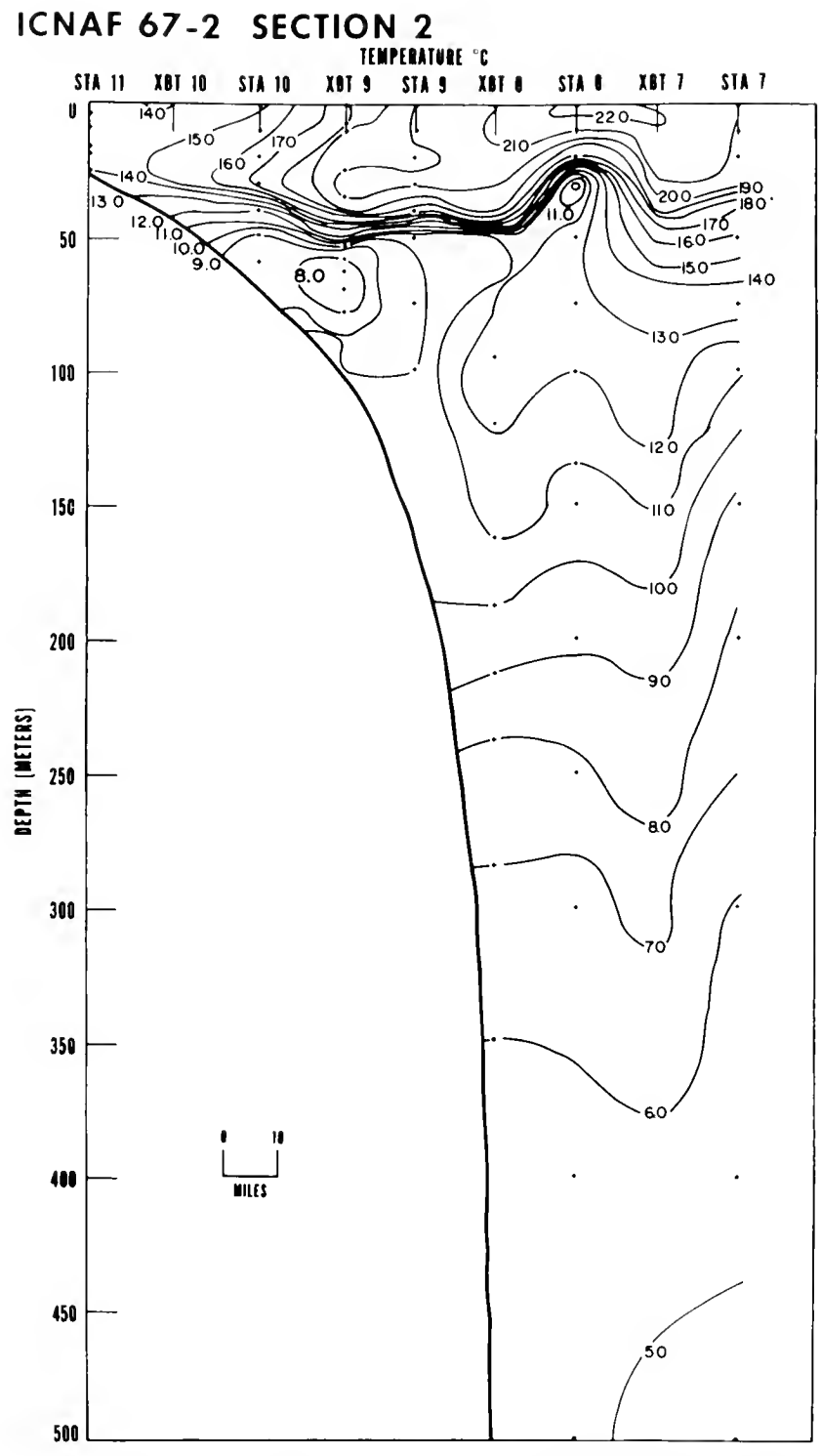

Figure 10. Vertical distribution of temperature (°C)—Section 2 ICNAF 67-2, 18-29 September 1967.

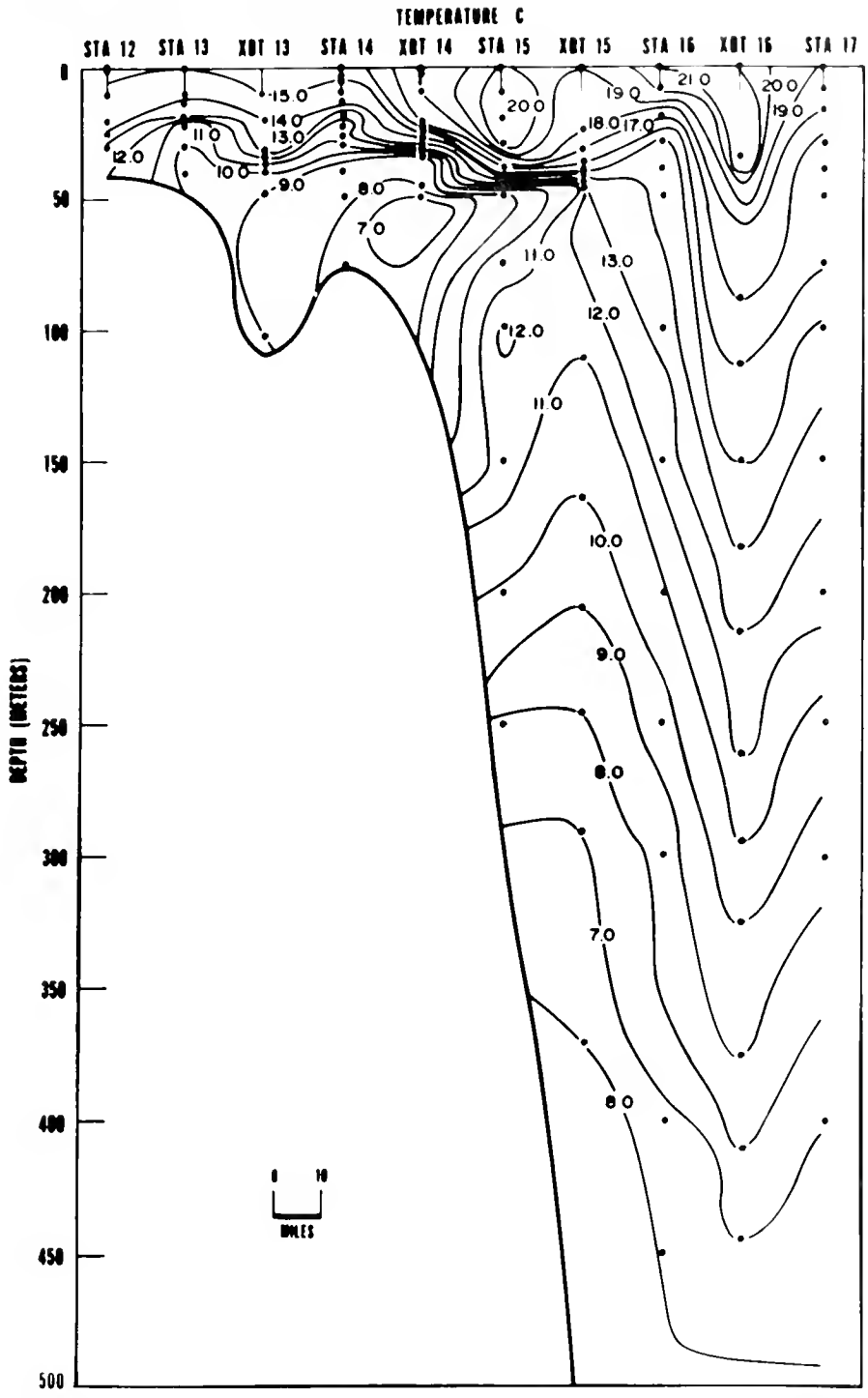

Figure 11. Vertical distribution of temperature (°C)—Section 3 ICNAF 67–2, 18–29 September 1967.

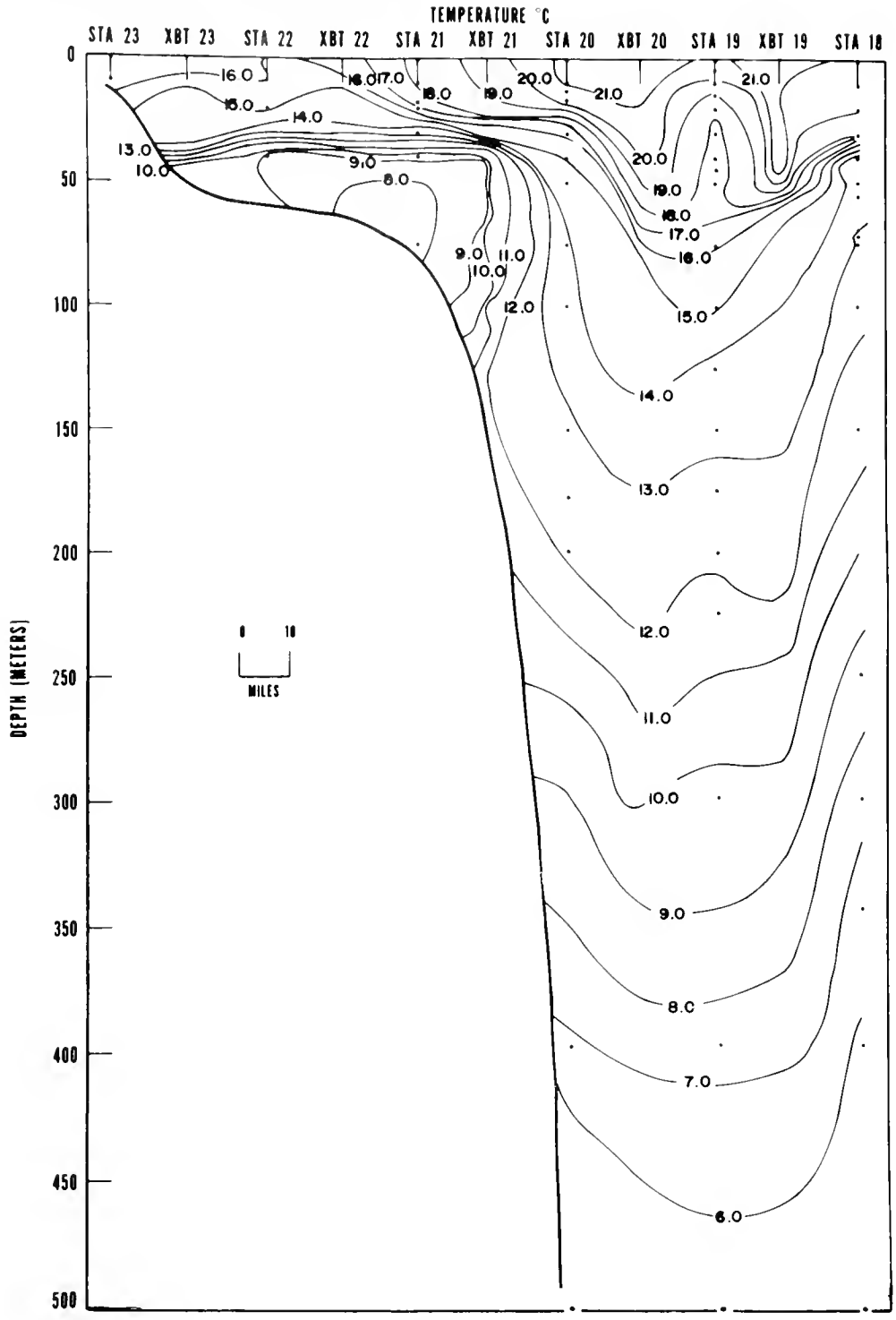

Figure 12. Vertical distribution of temperature (°C)—Section 4 ICNAF 67–2, 18–29 September 1967.

ICNAF 67-2 (SECTION 5)

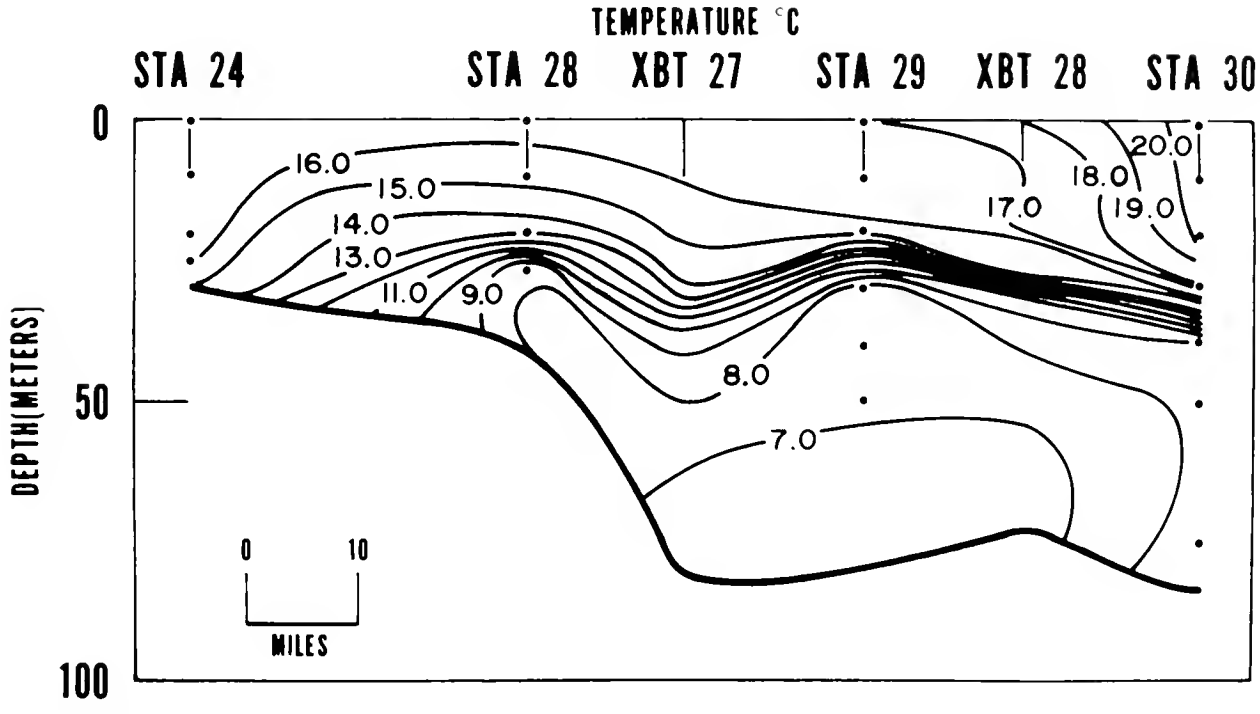

Figure 13. Vertical distribution of temperature (°C)—Section 5 ICNAF 67-2, 18-29 September 1967.

ICNAF 67-2 SECTION 6

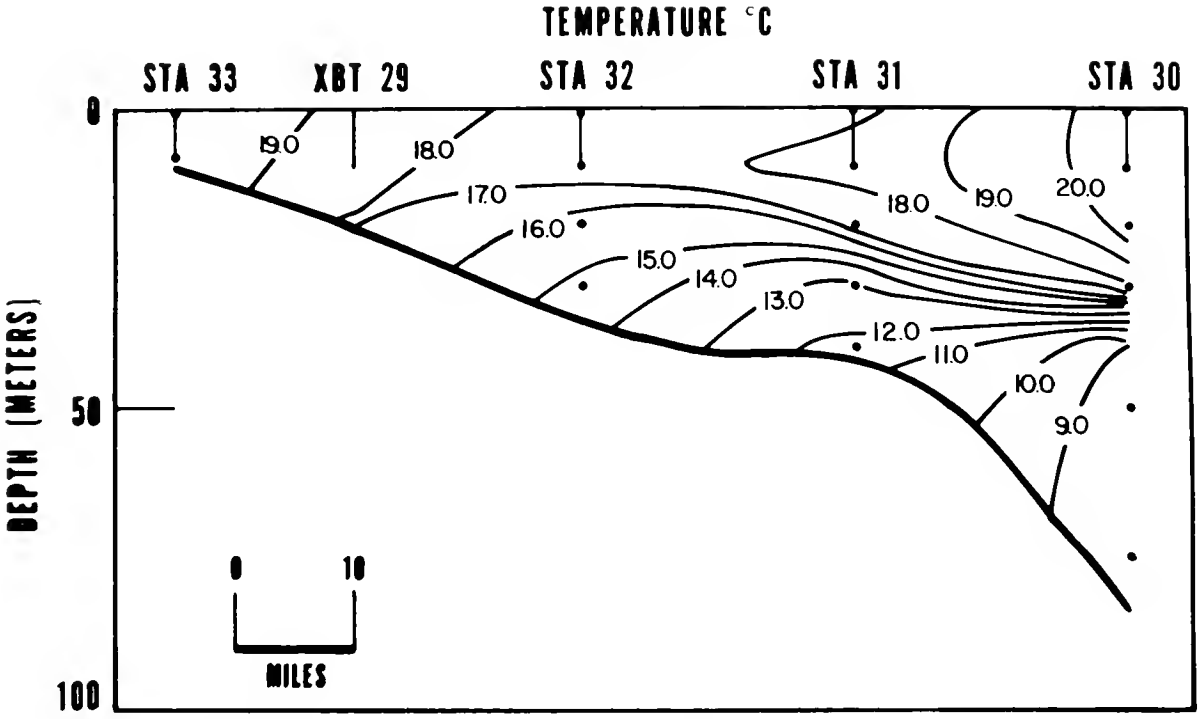

Figure 14. Vertical distribution of temperature (°C)—Section 6 ICNAF 67-2, 18-29 September 1967.

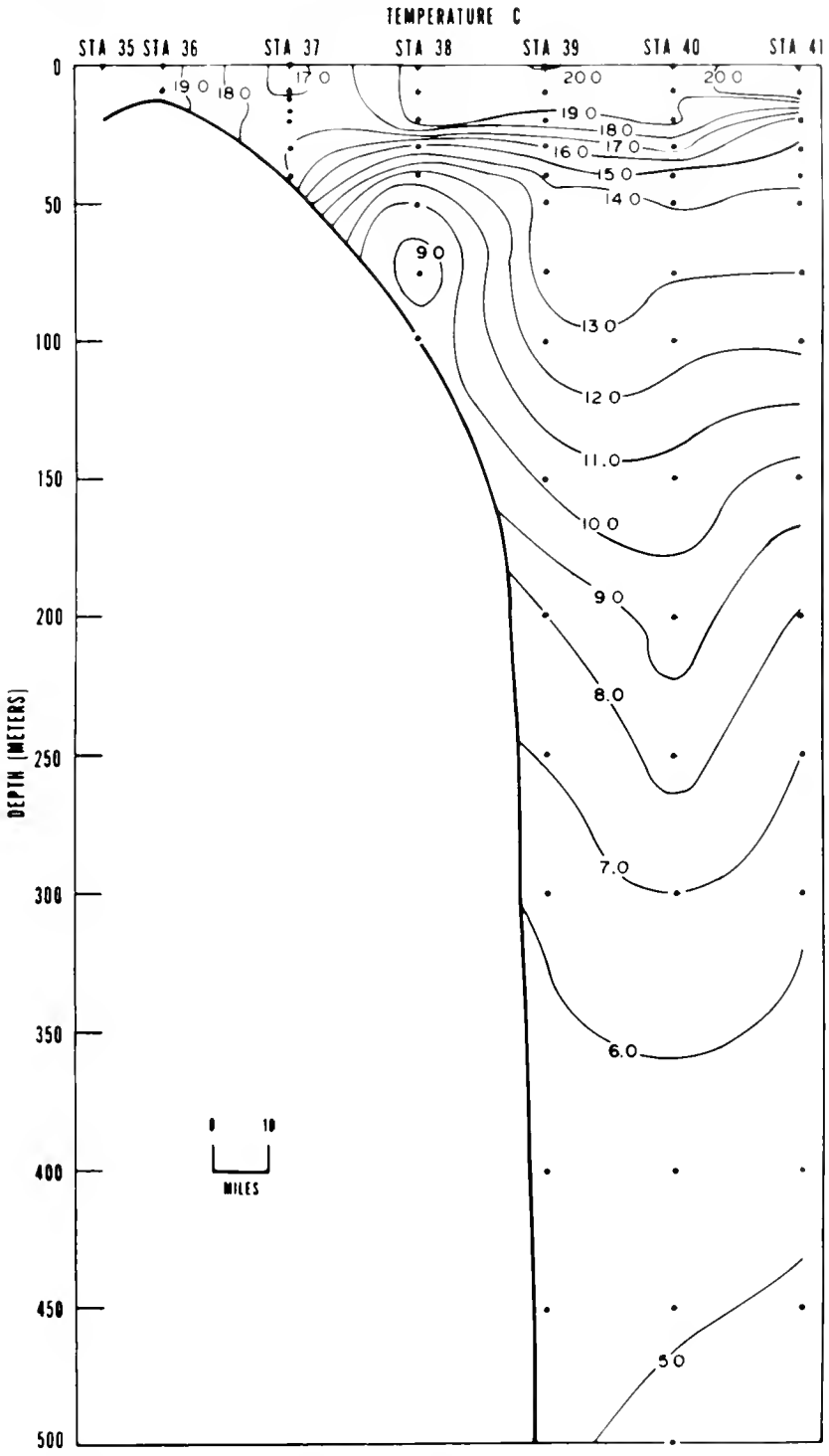

Figure 15. Vertical distribution of temperature (°C)—Section 7 ICNAF 67-2, 18–29 September 1967.

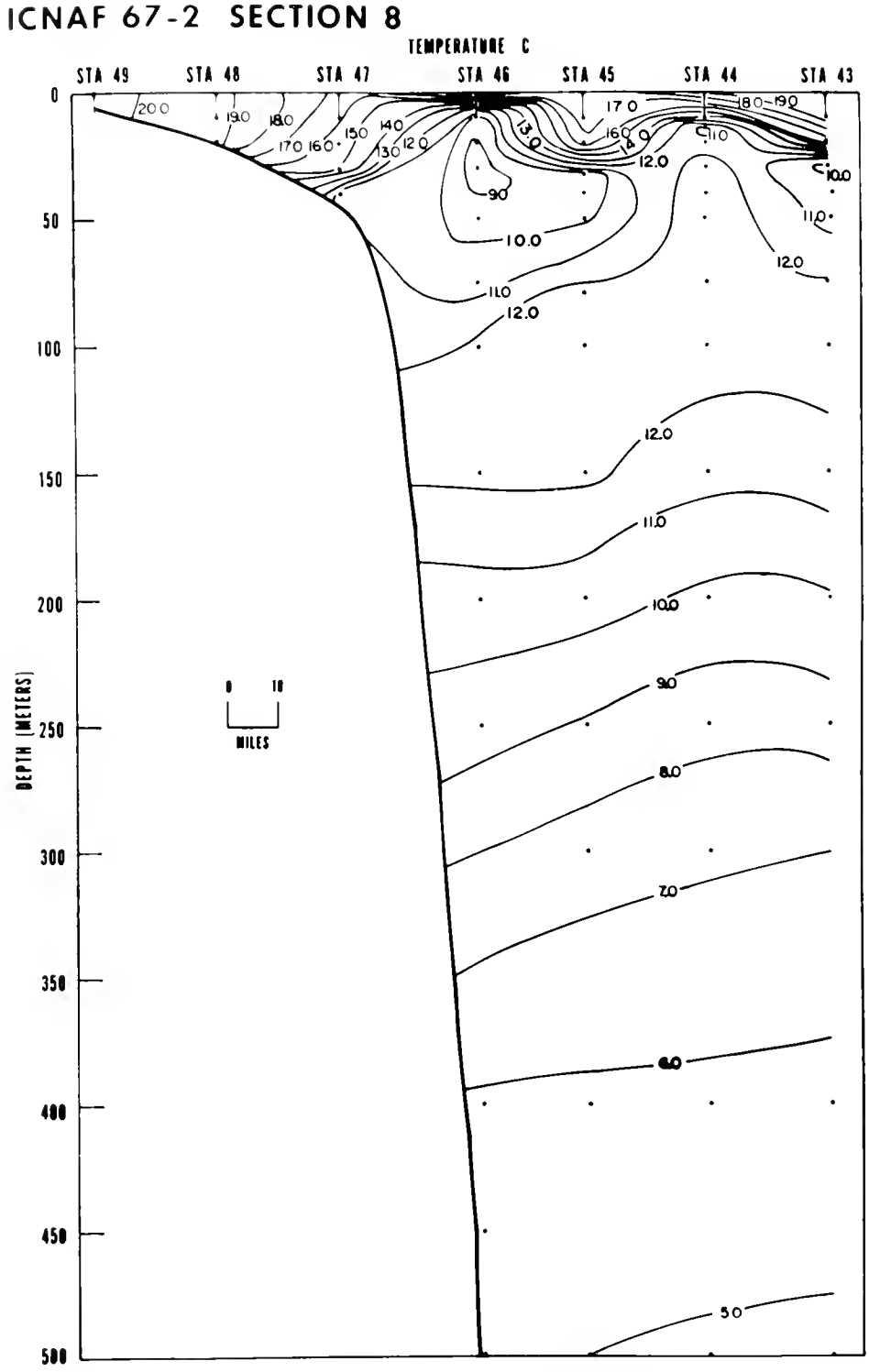

Figure 16. Vertical distribution of temperature (°C)—Section 8 ICNAF 67-2, 18-29 September 1967.

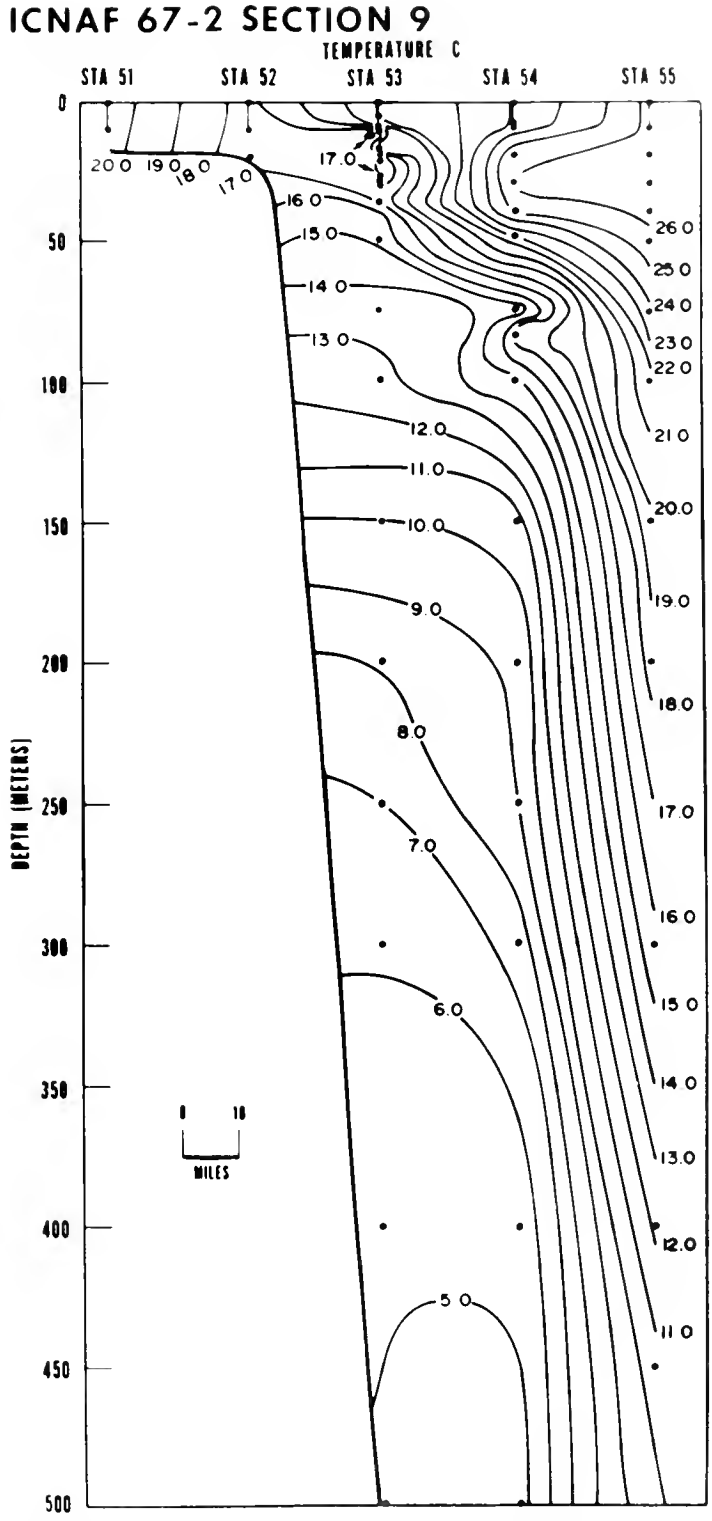

Figure 17. Vertical distribution of temperature (°C)—Section 9 ICNAF 67-2, 18–29 September 1967.

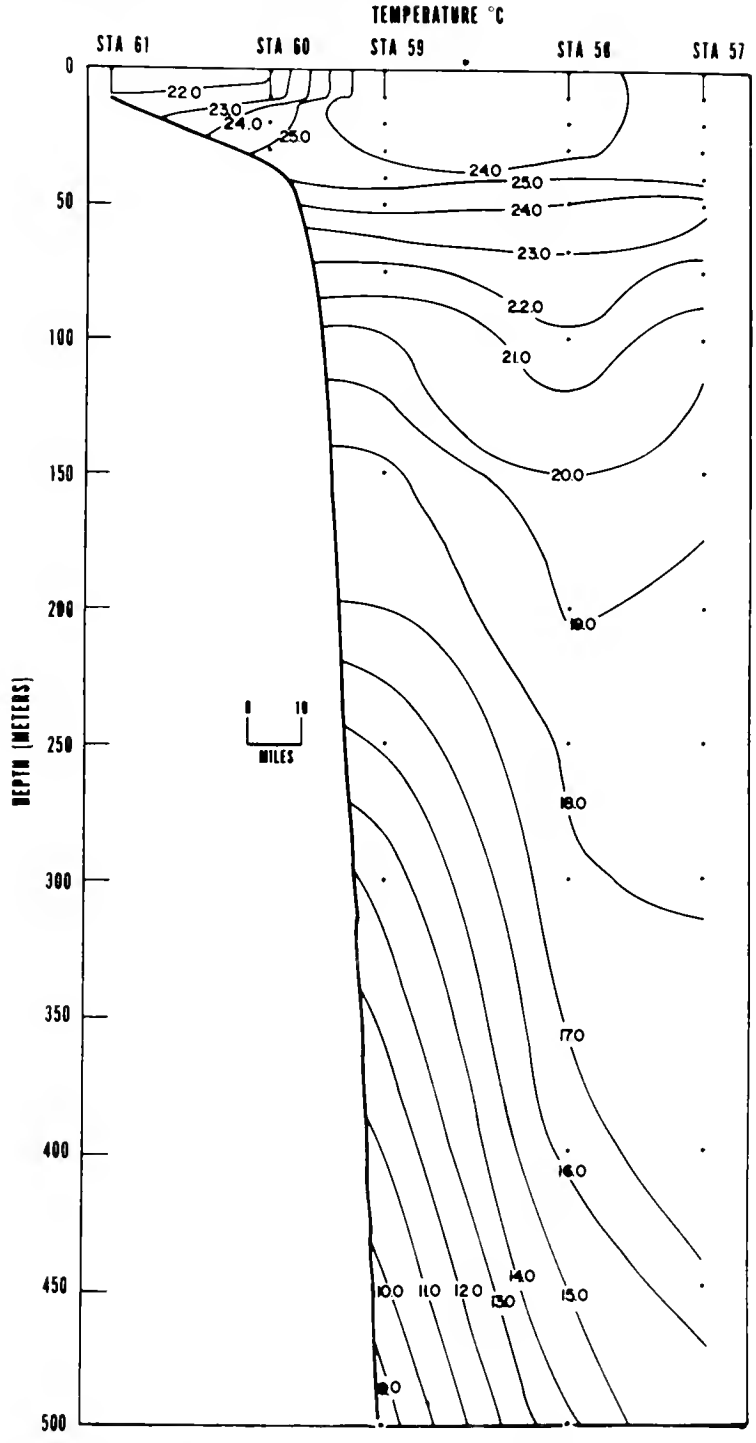

Figure 18. Vertical distribution of temperature (°C)—Section 10 ICNAF 67-2, 18-29 September 1967.

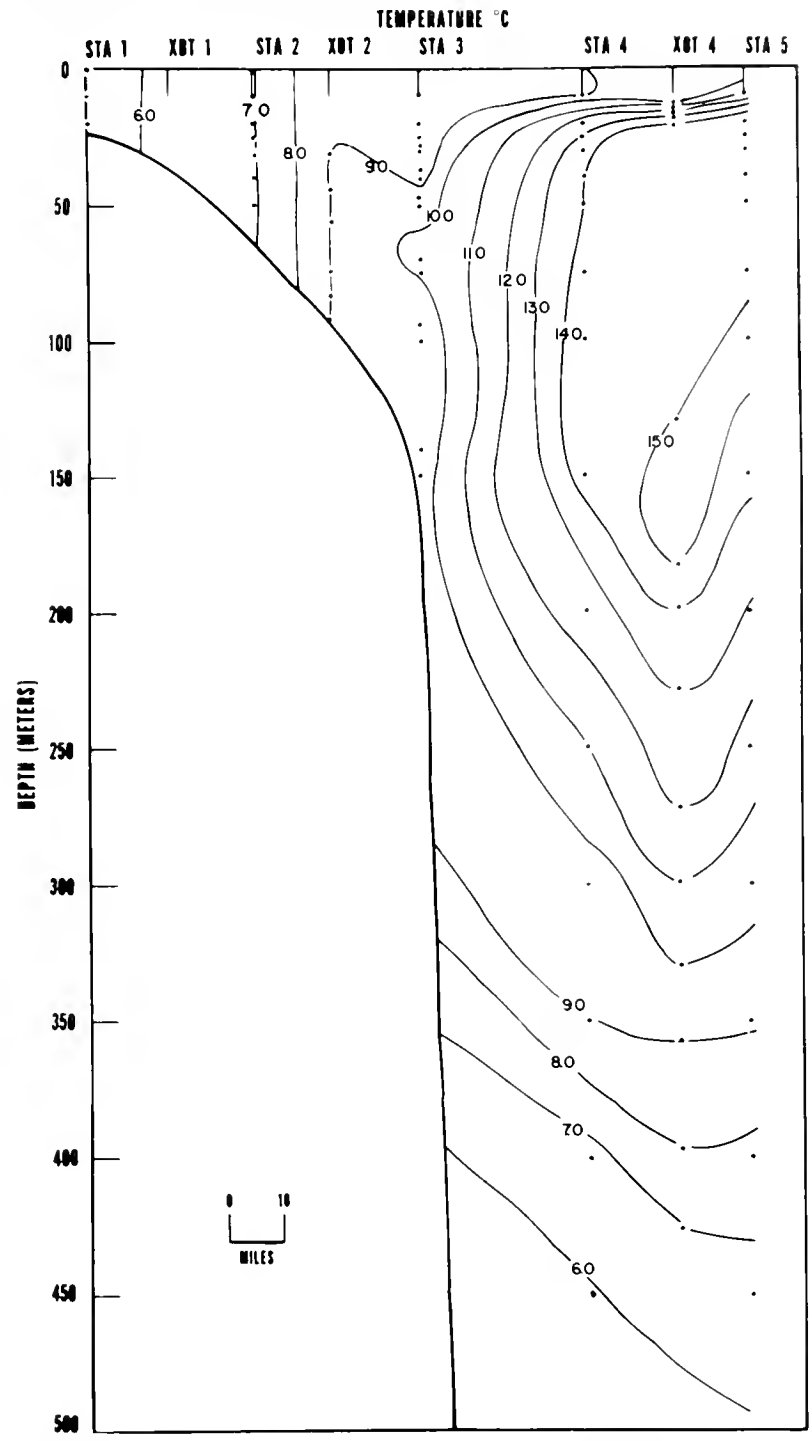

Figure 19. Vertical distribution of temperature (°C)—Section 1 ICNAF 67-3, 11-23 December 1967.

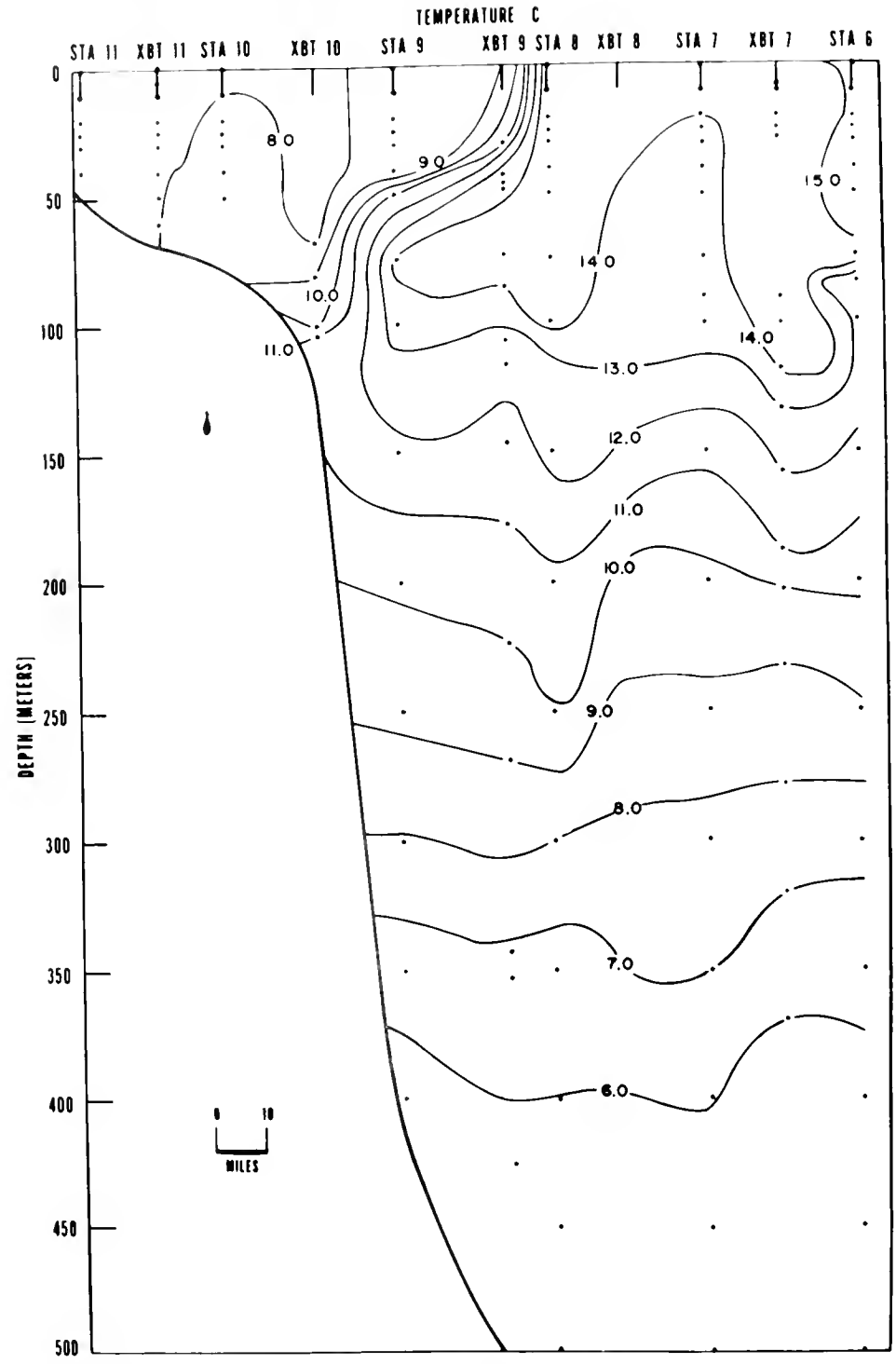

Figure 20. Vertical distribution of temperature (°C)—Section 2 ICNAF 67-3, 11-23 December 1967.

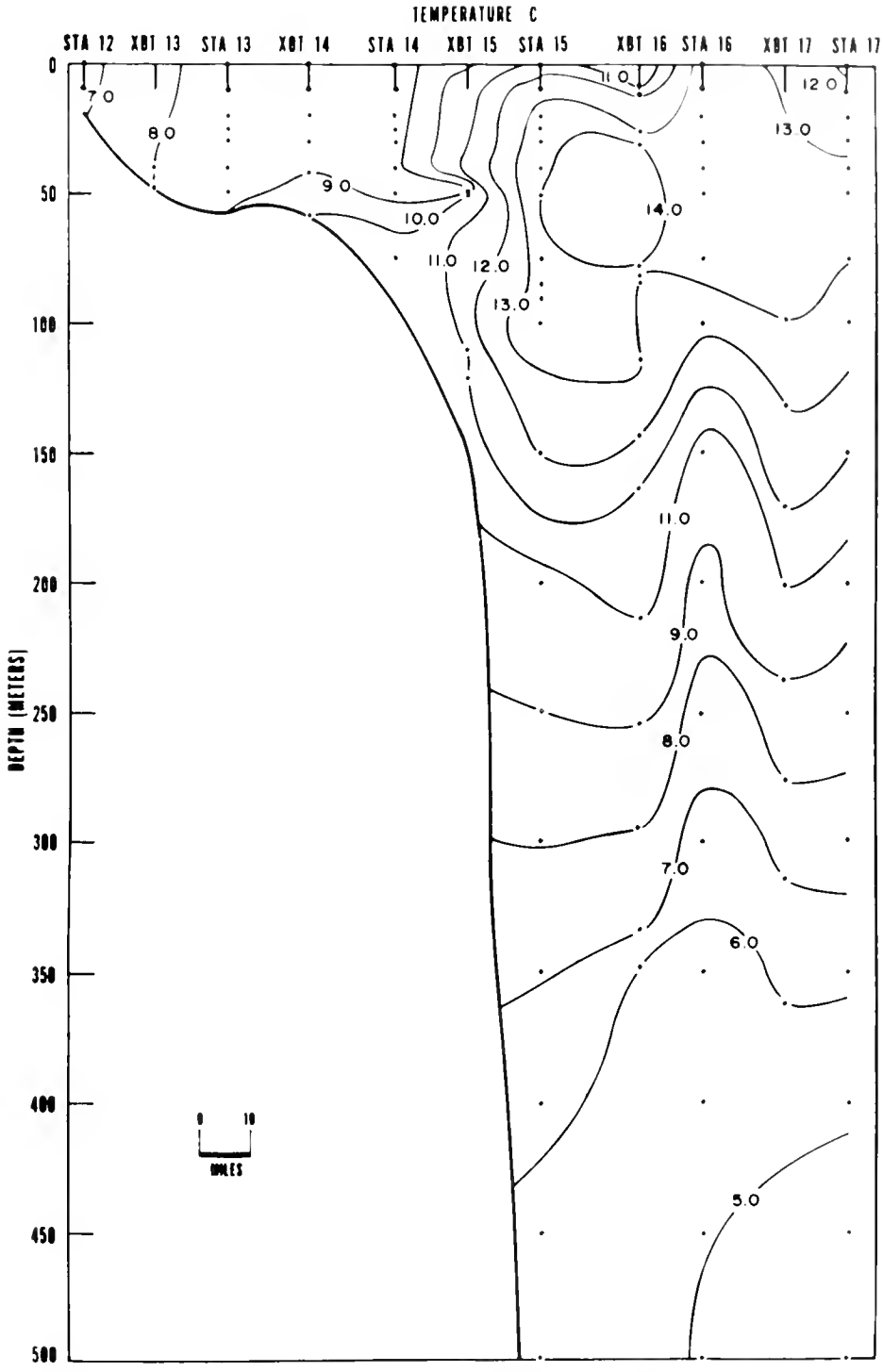

Figure 21. Vertical distribution of temperature (°C)—Section 3 ICNAF 67-3, 11-23 December 1967.

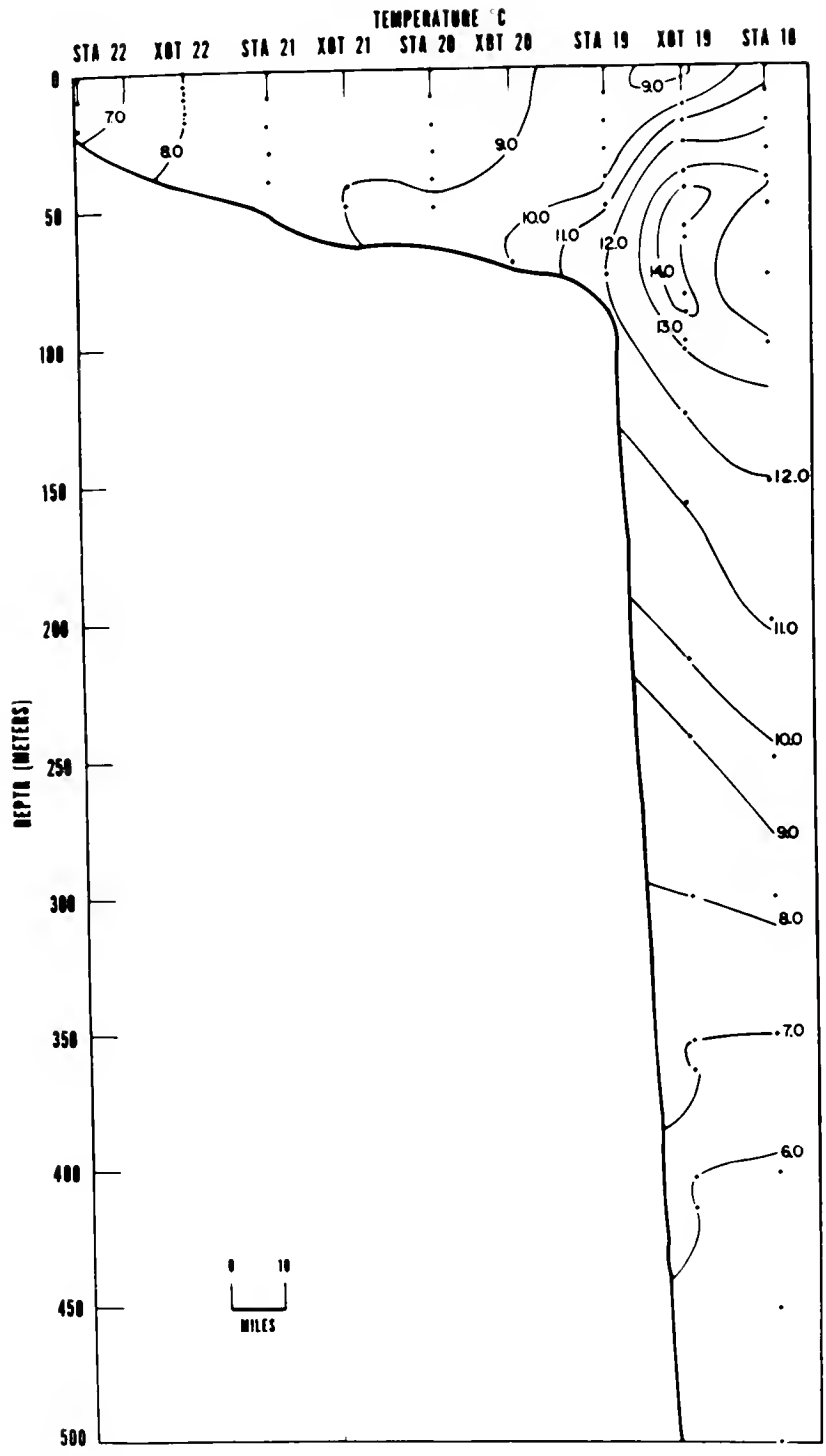

Figure 22. Vertical distribution of temperature (°C)—Section 4 ICNAF 67–3, 11–23 December 1967.

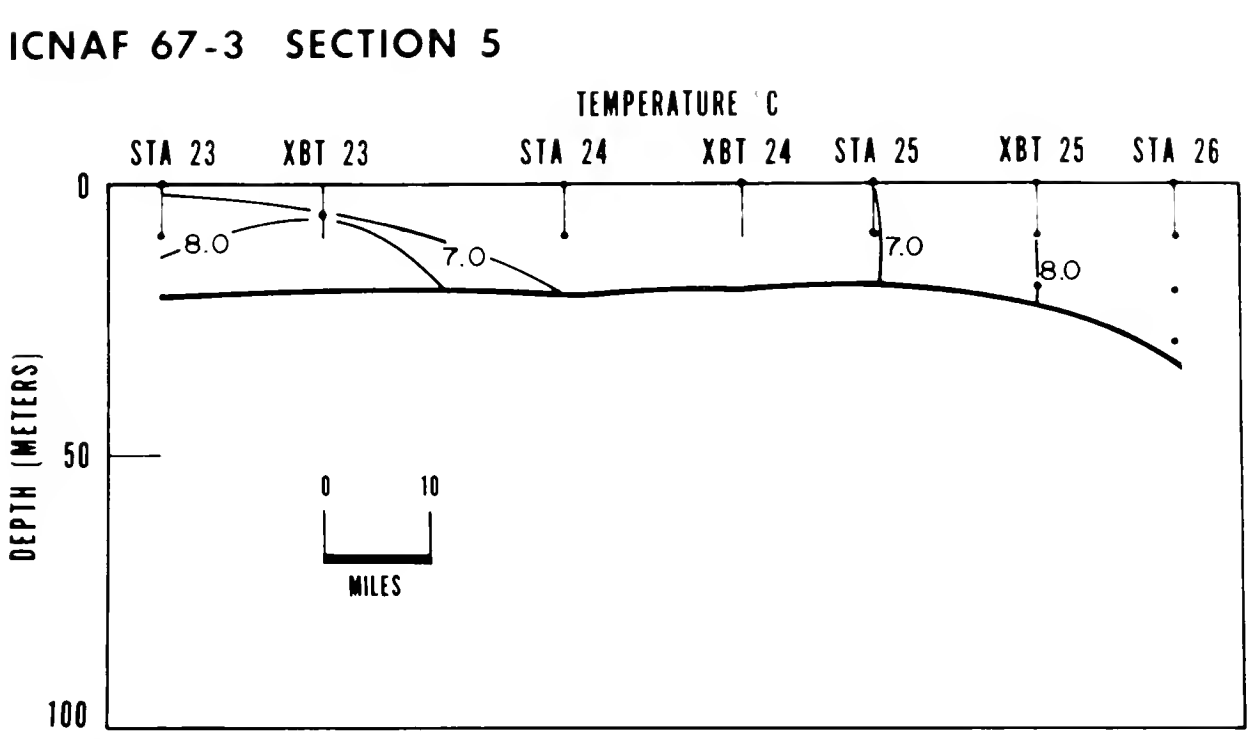

Figure 23. Vertical distribution of temperature (°C)—Section 5 ICNAF 67–3, 11–23 December 1967.

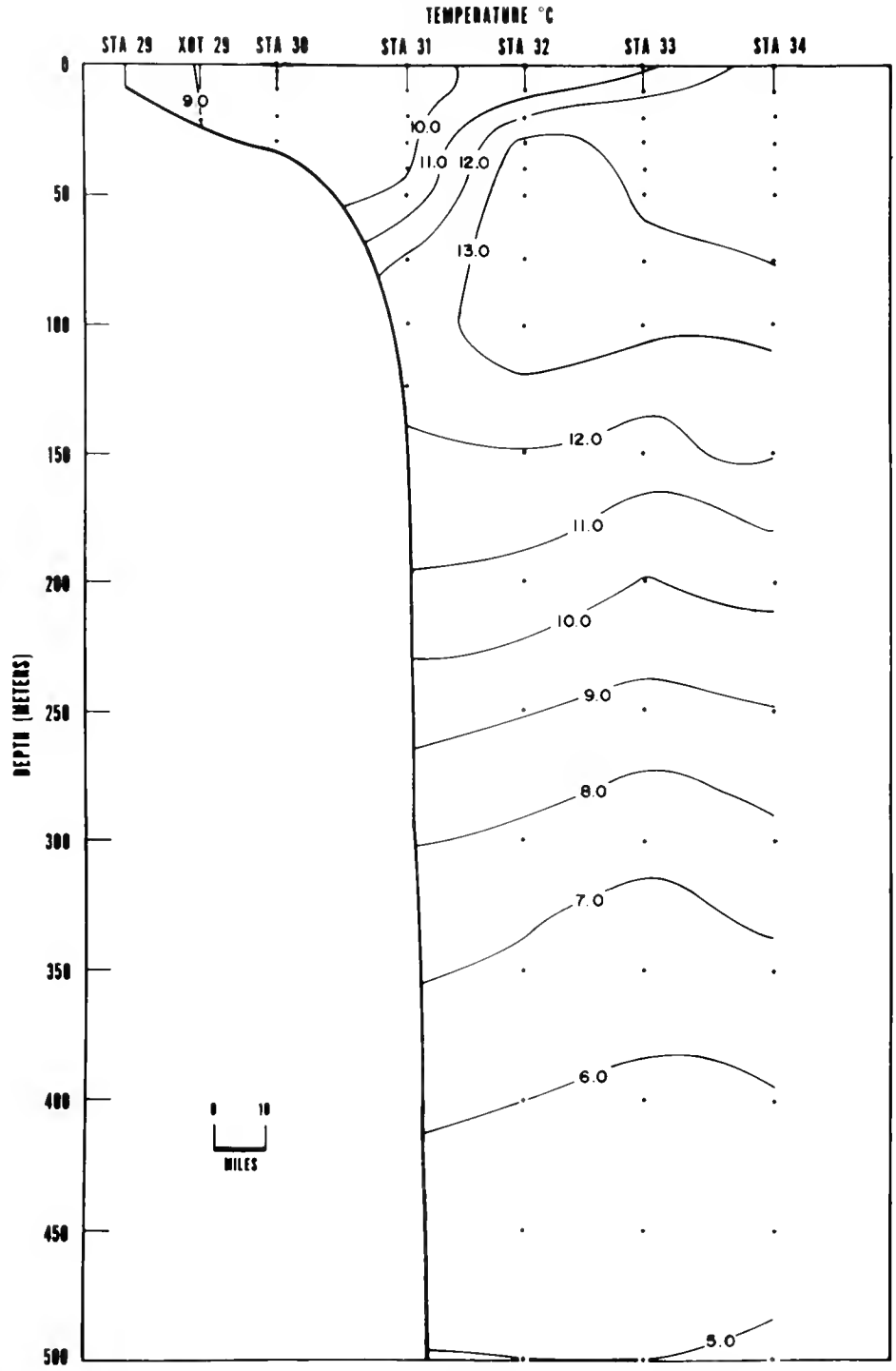

Figure 24. Vertical distribution of temperature (°C)—Section 6 ICNAF 67–3, 11–23 December 1967.

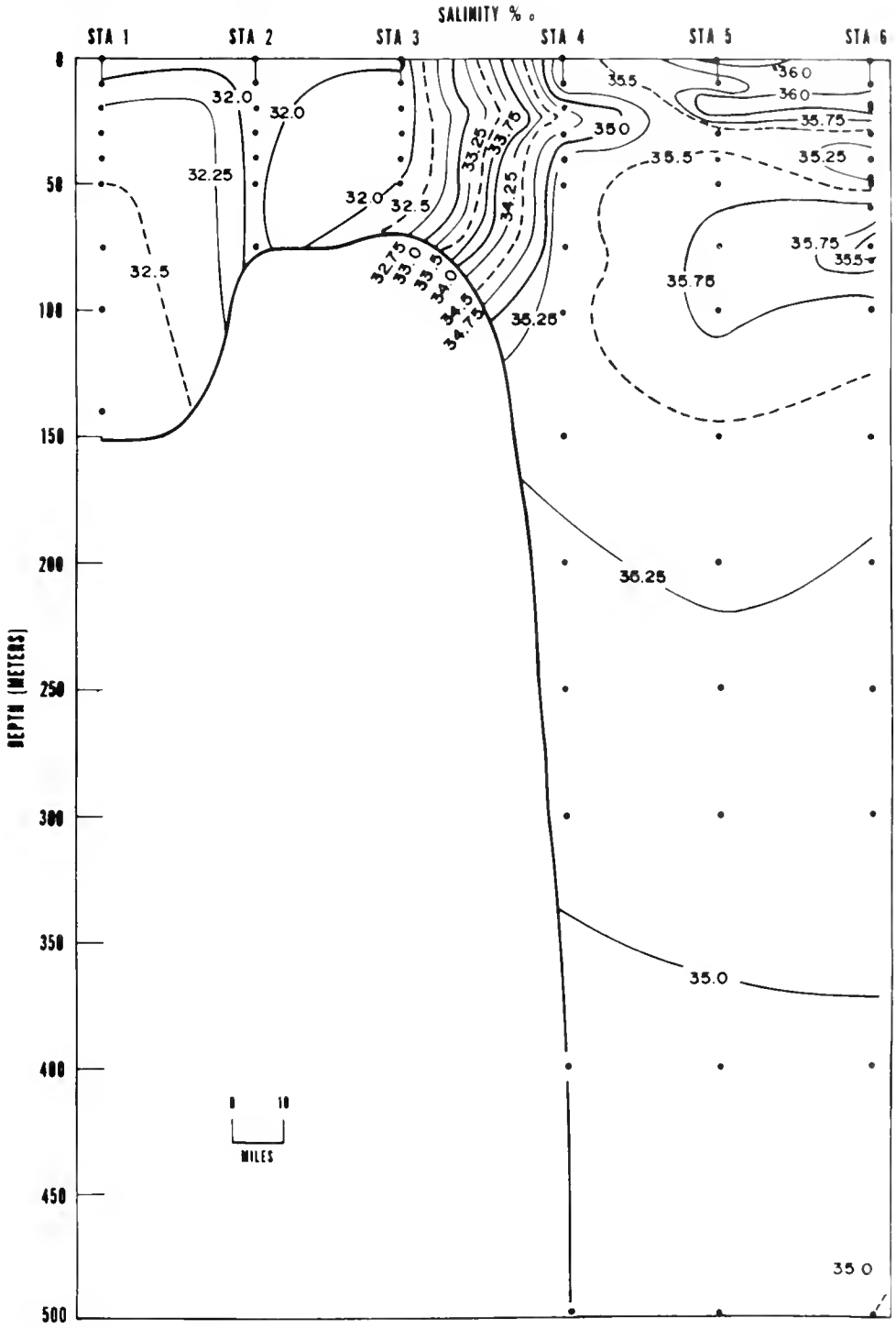

Figure 25. Vertical distribution of salinity (‰)—Section 1 ICNAF 67-2, 18-29 September 1967.

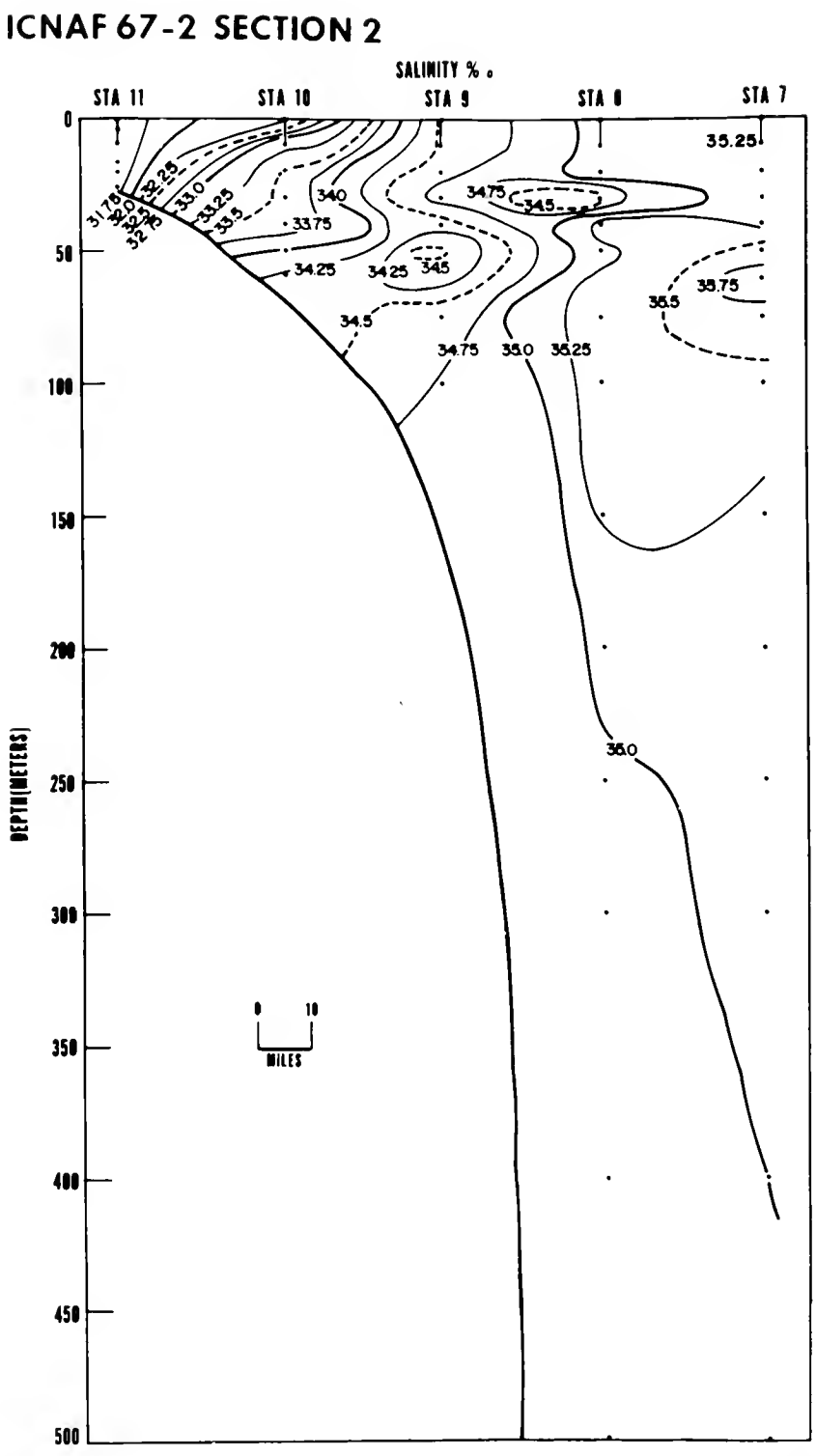

Figure 26. Vertical distribution of salinity (‰)—Section 2 ICNAF 67–2, 18–29 September 1967.

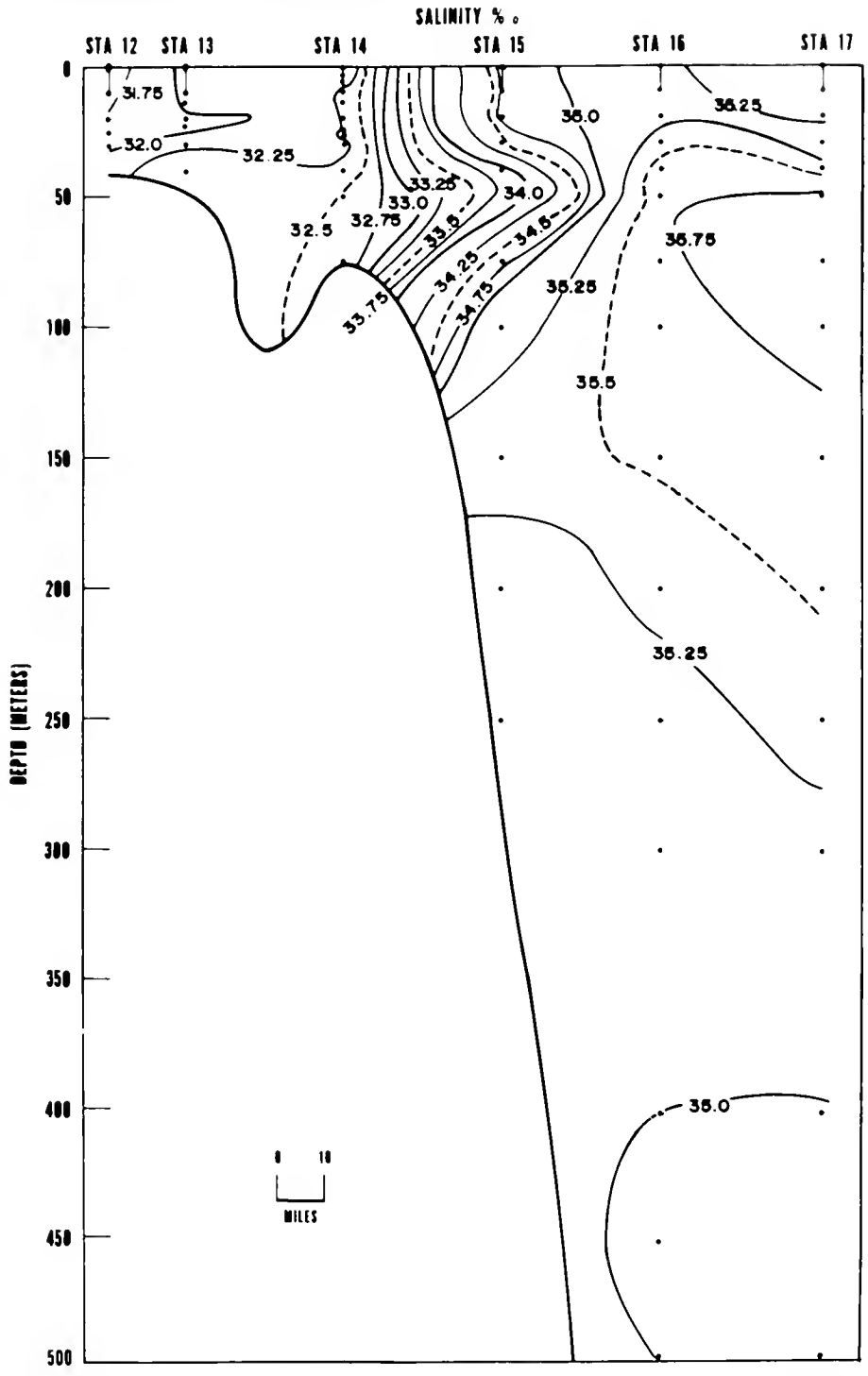

Figure 27. Vertical distribution of salinity (‰)—Section 3 ICNAF 67-2, 18–29 September 1967.

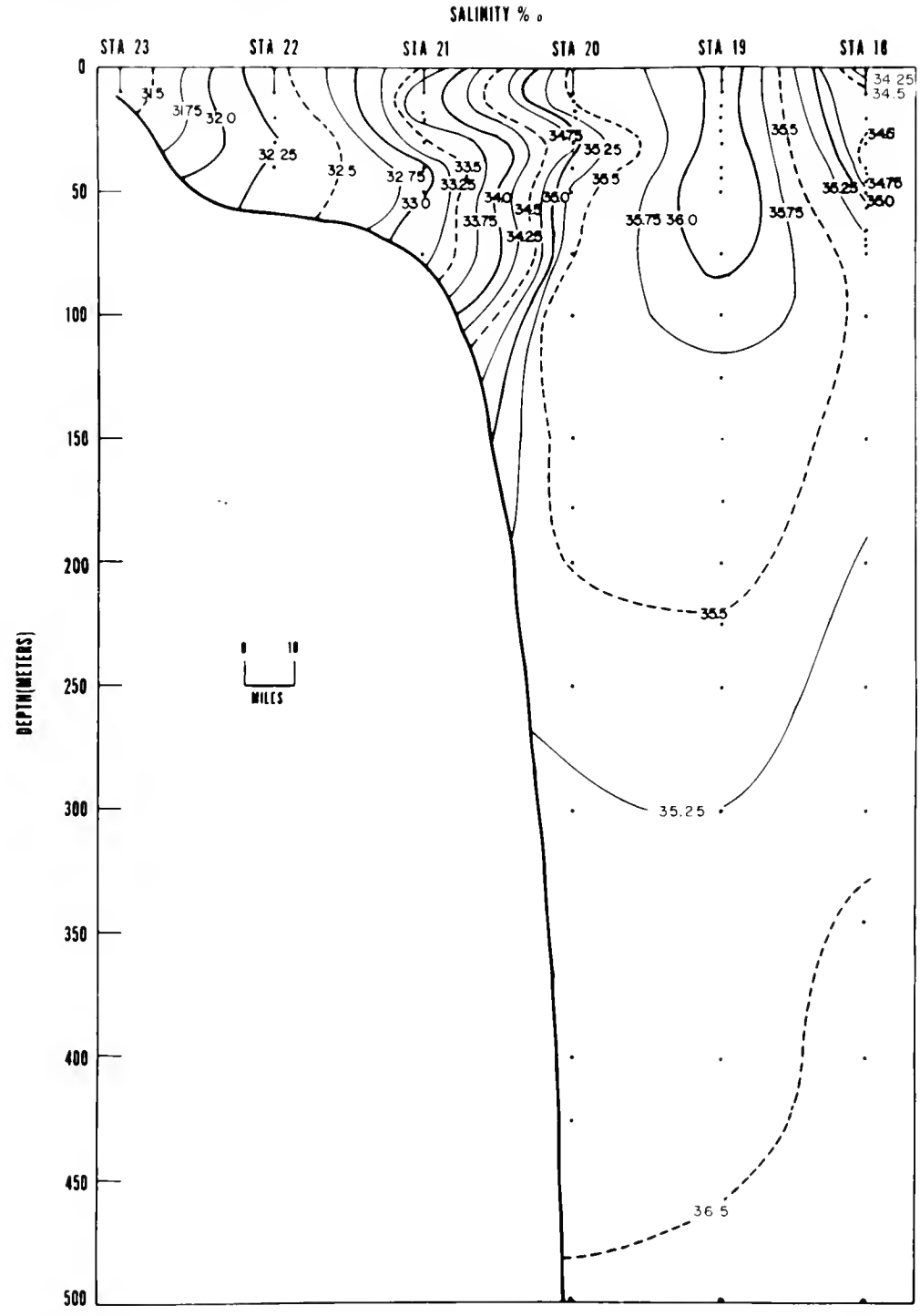

Figure 28. Vertical distribution of salinity (‰)—Section 4 ICNAF 67-2, 18–29 September 1967.

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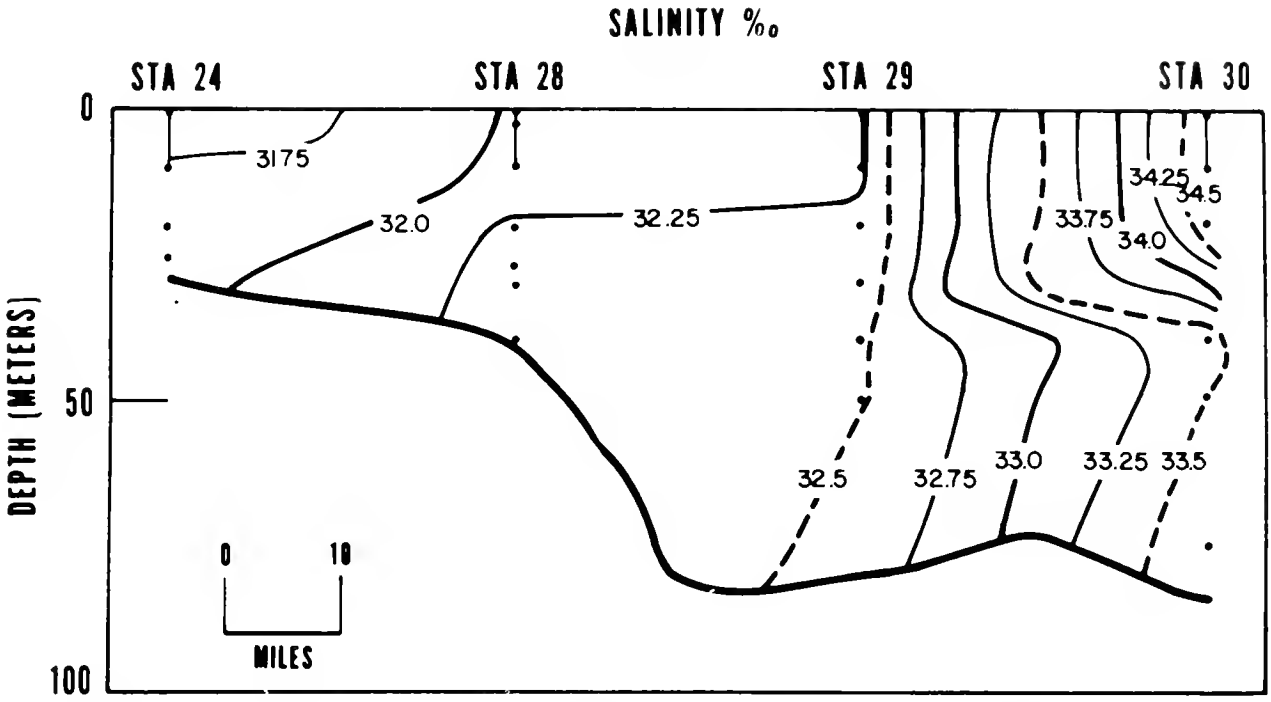

Figure 29. Vertical distribution of salinity (‰)—Section 5 ICNAF 67-2, 18-29 September 1967.

ICNAF 67-2 SECTION 6

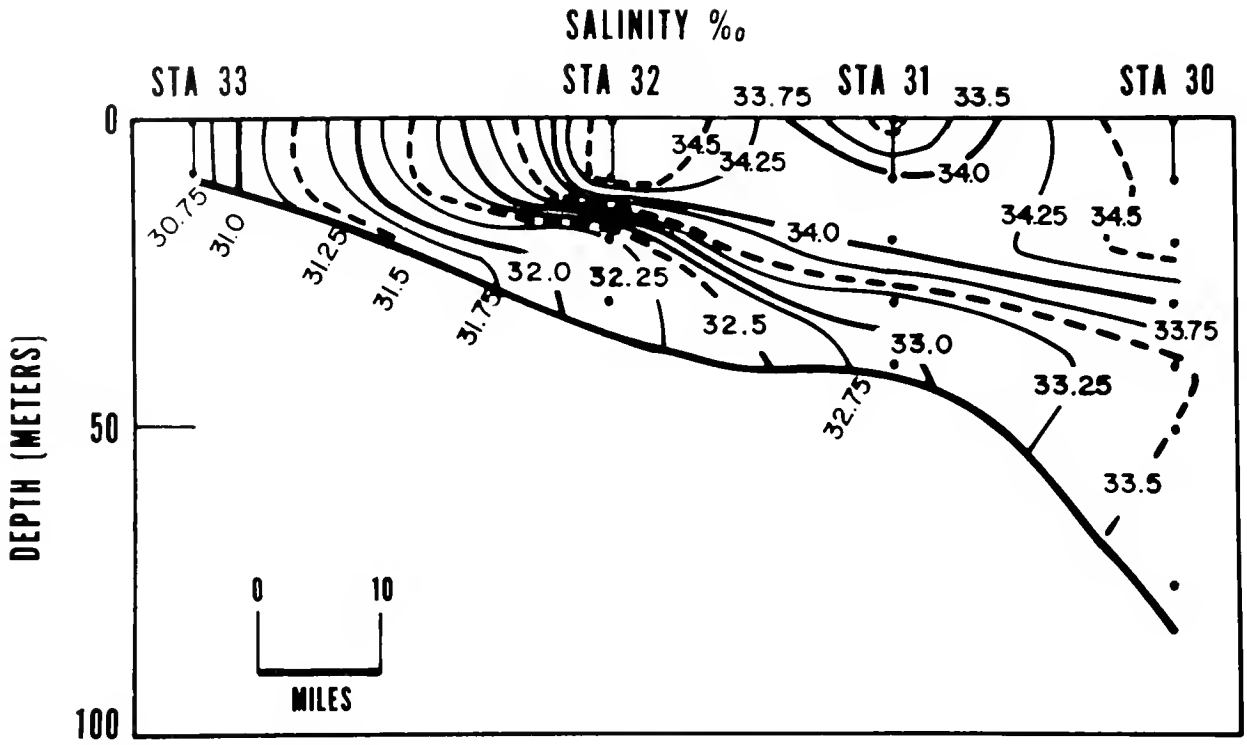

Figure 30. Vertical distribution of salinity (‰)—Section 6 ICNAF 67-2, 18-29 September 1967.

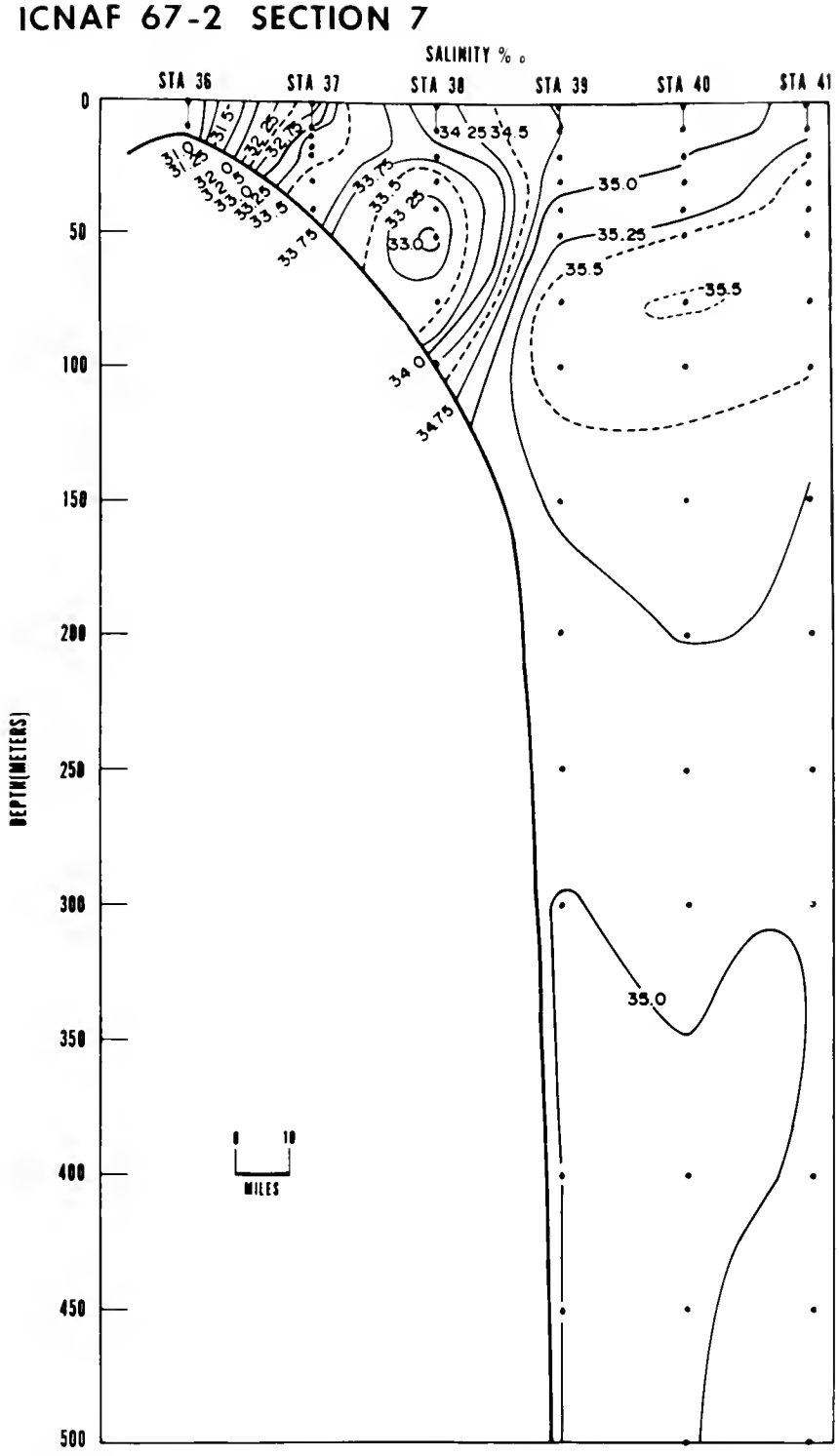

Figure 31. Vertical distribution of salinity (‰)—Section 7 ICNAF 67-2, 18-29 September 1967.

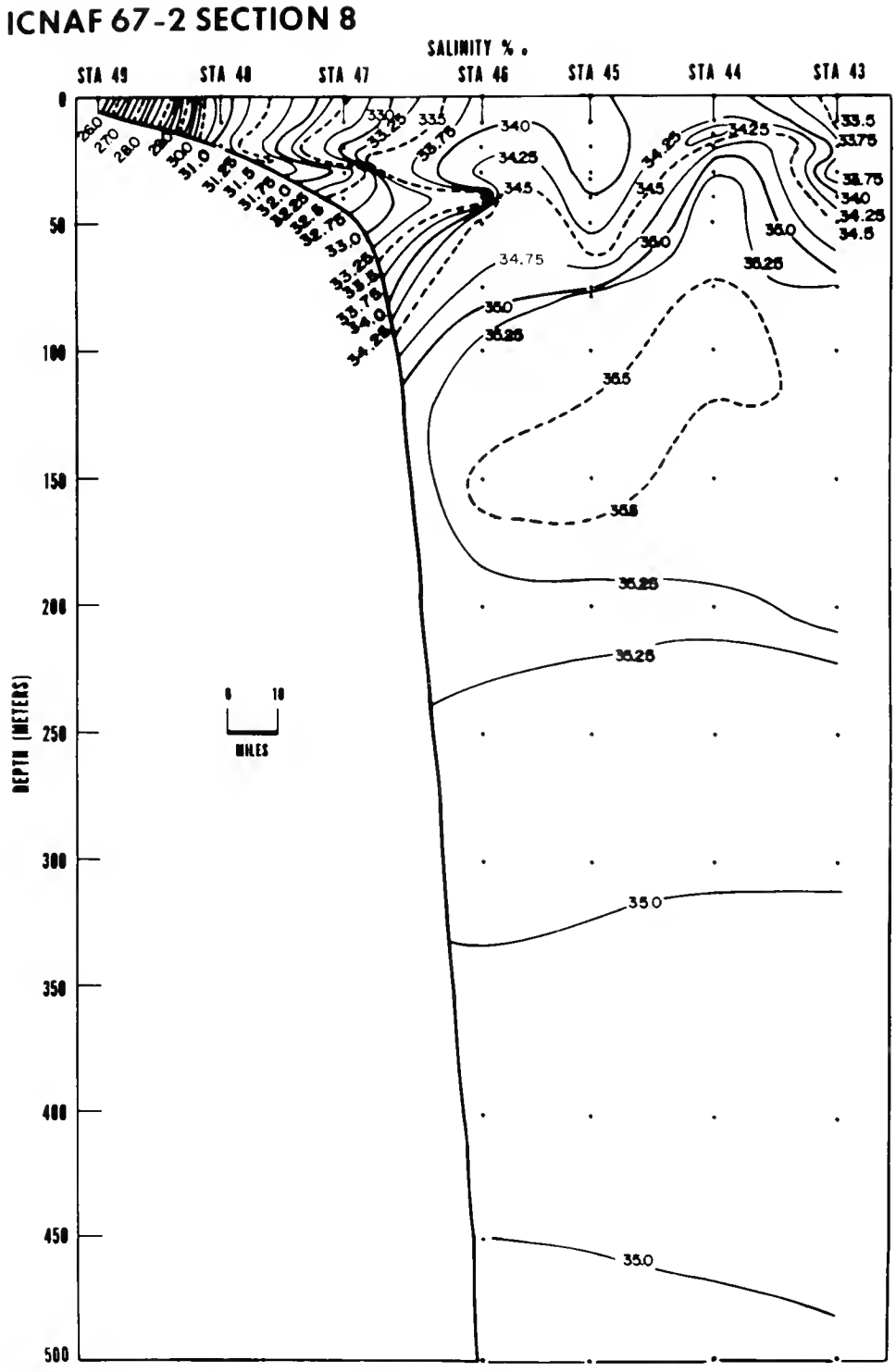

Figure 32. Vertical distribution of salinity (‰)—Section 8 ICNAF 67–2, 18–29 September 1967.

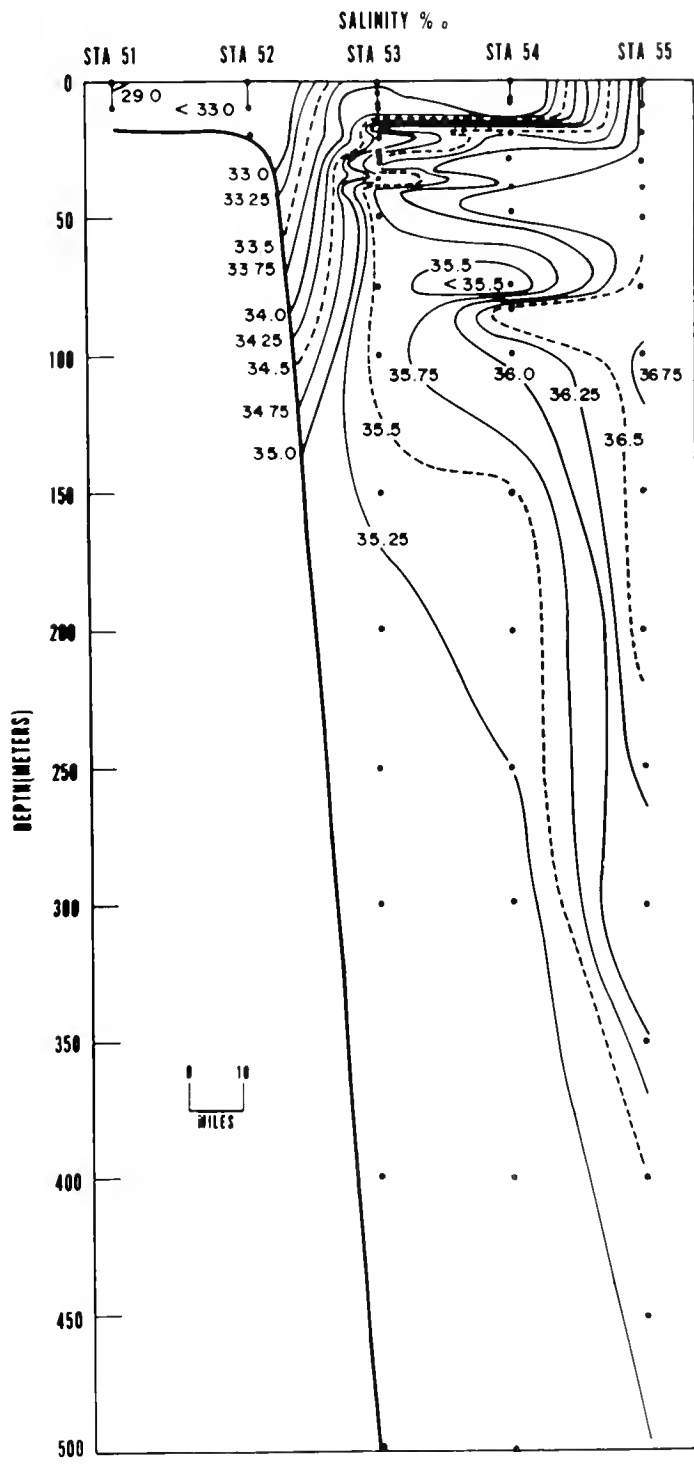

Figure 33. Vertical distribution of salinity (‰)—Section 9 ICNAF 67-2, 18–29 September 1967.

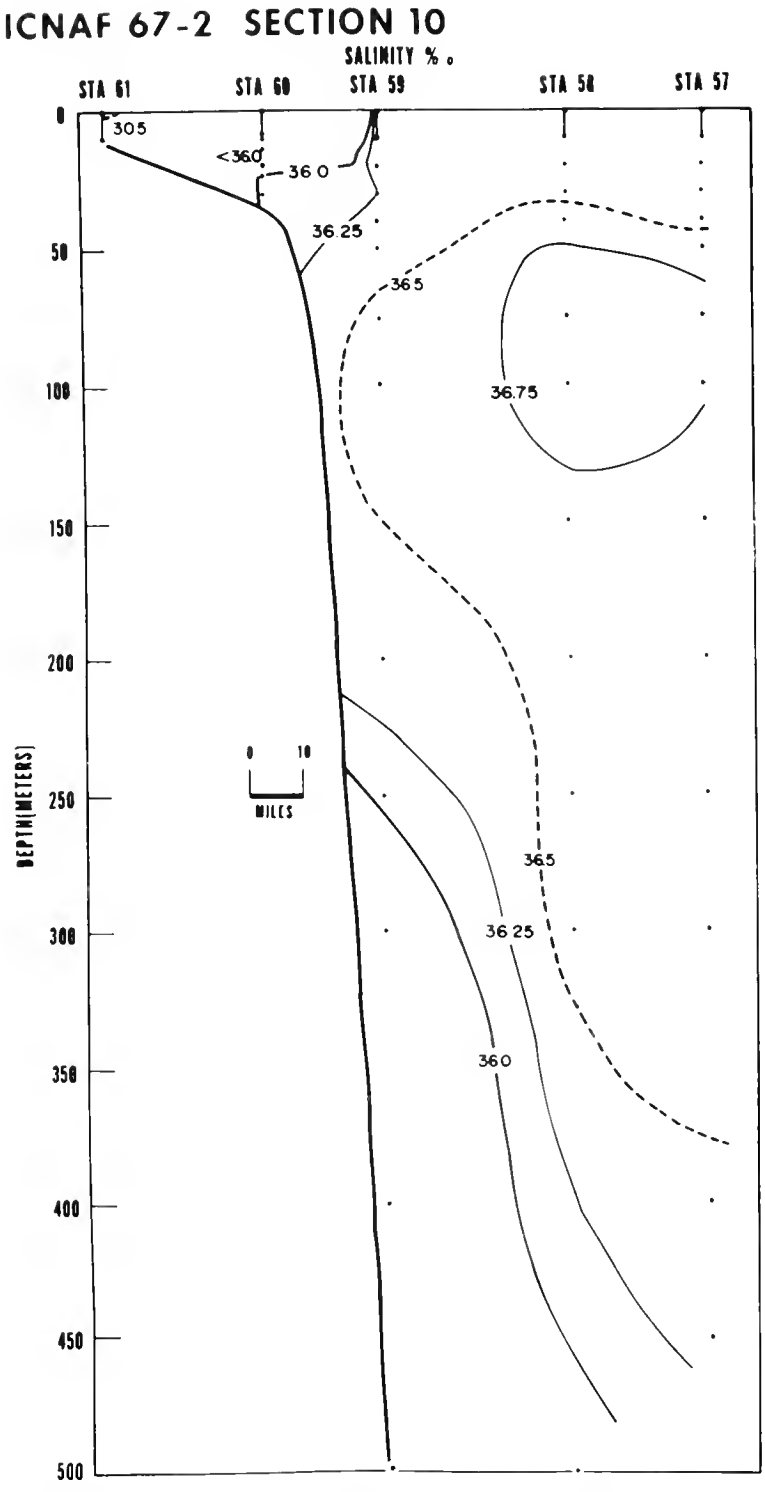

Figure 34. Vertical distribution of salinity (‰)—Section 10 ICNAF 67–2, 18–29 September 1967.

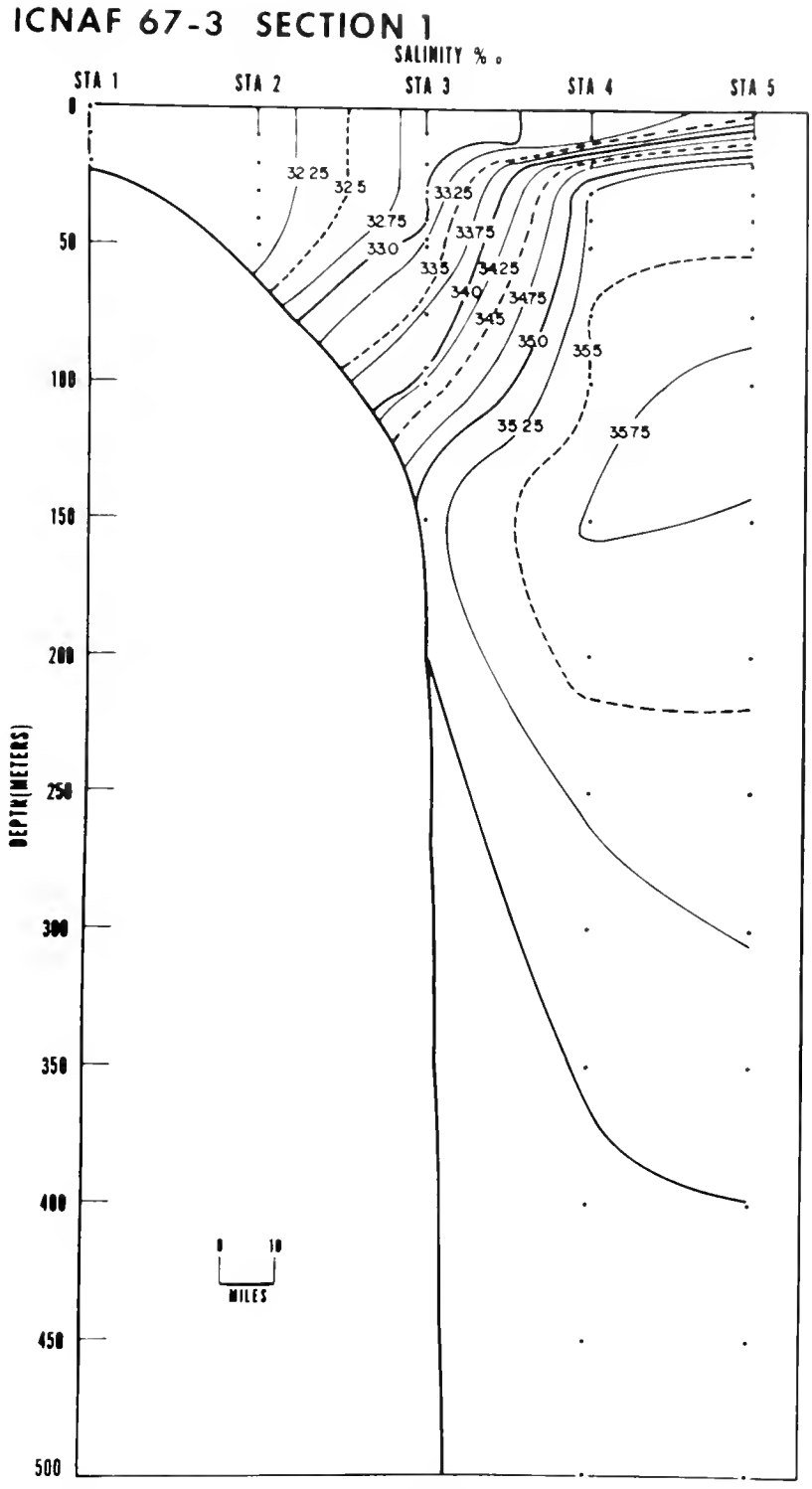

Figure 35. Vertical distribution of salinity (‰)—Section 1 ICNAF 67–3, 11–23 December 1967.

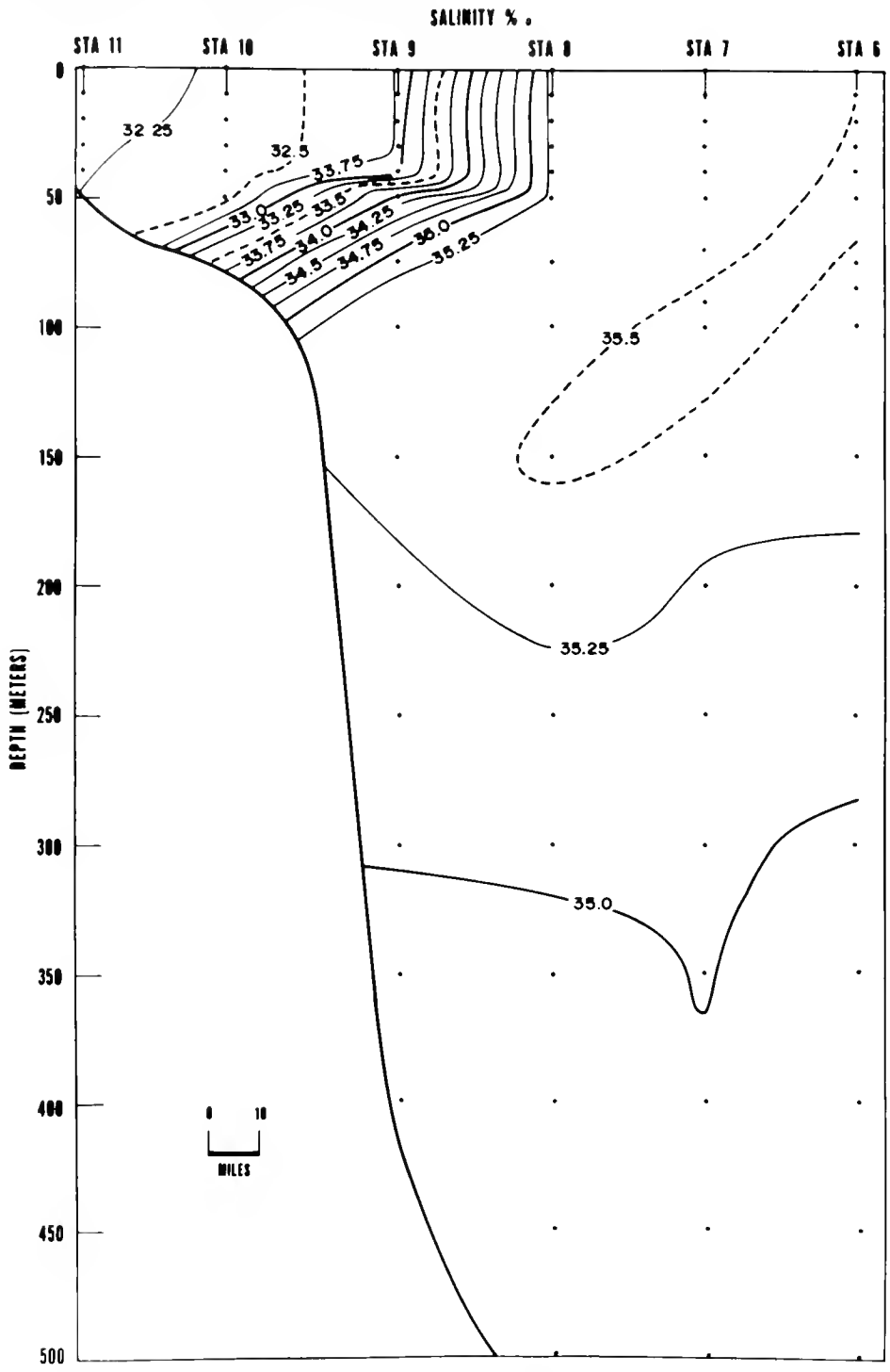

Figure 36. Vertical distribution of salinity (‰)—Section 2 ICNAF 67-3, 11-23 December 1967.

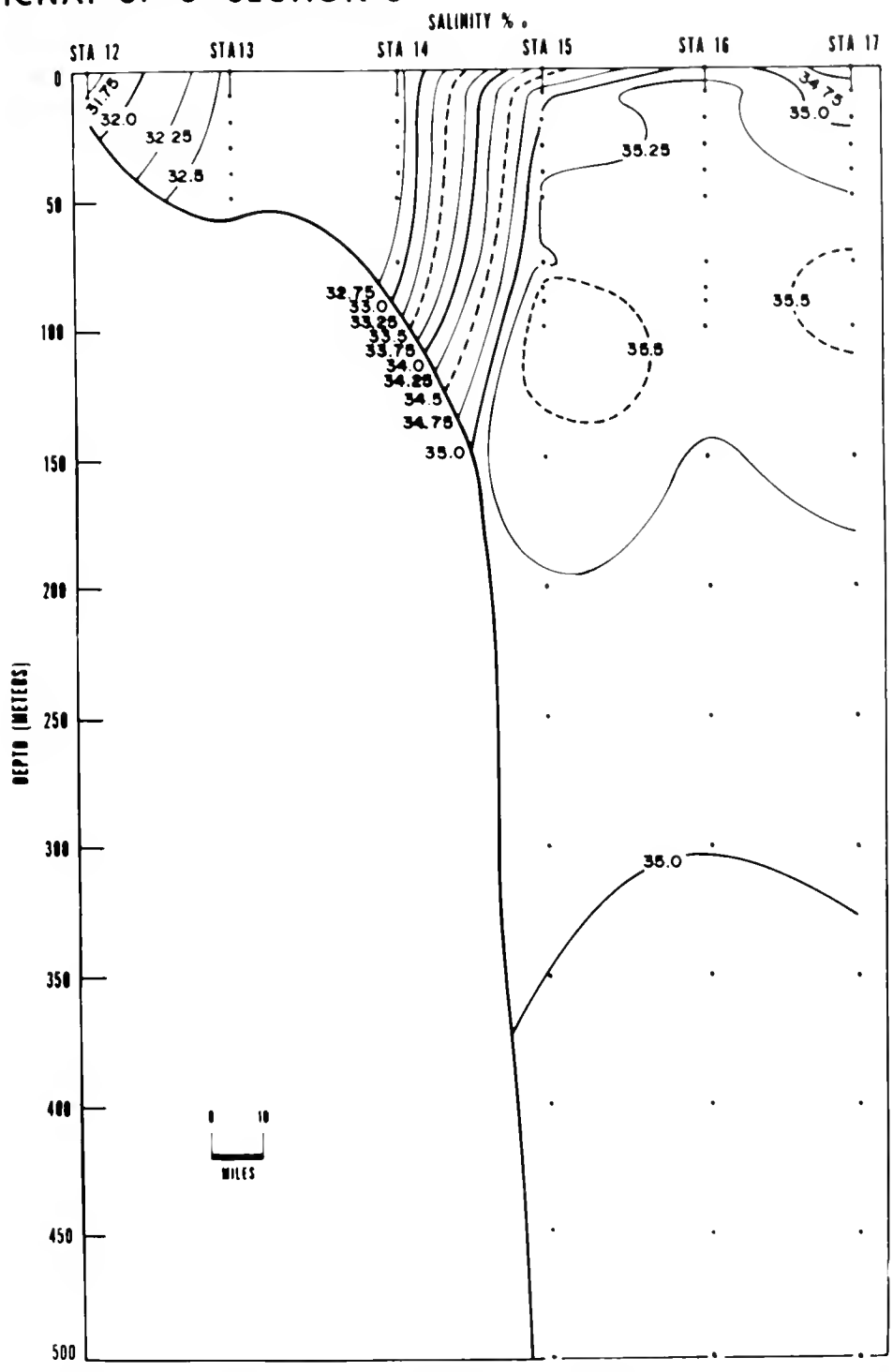

Figure 37. Vertical distribution of salinity (‰)—Section 3 ICNAF 67-3, 11-23 December 1967.

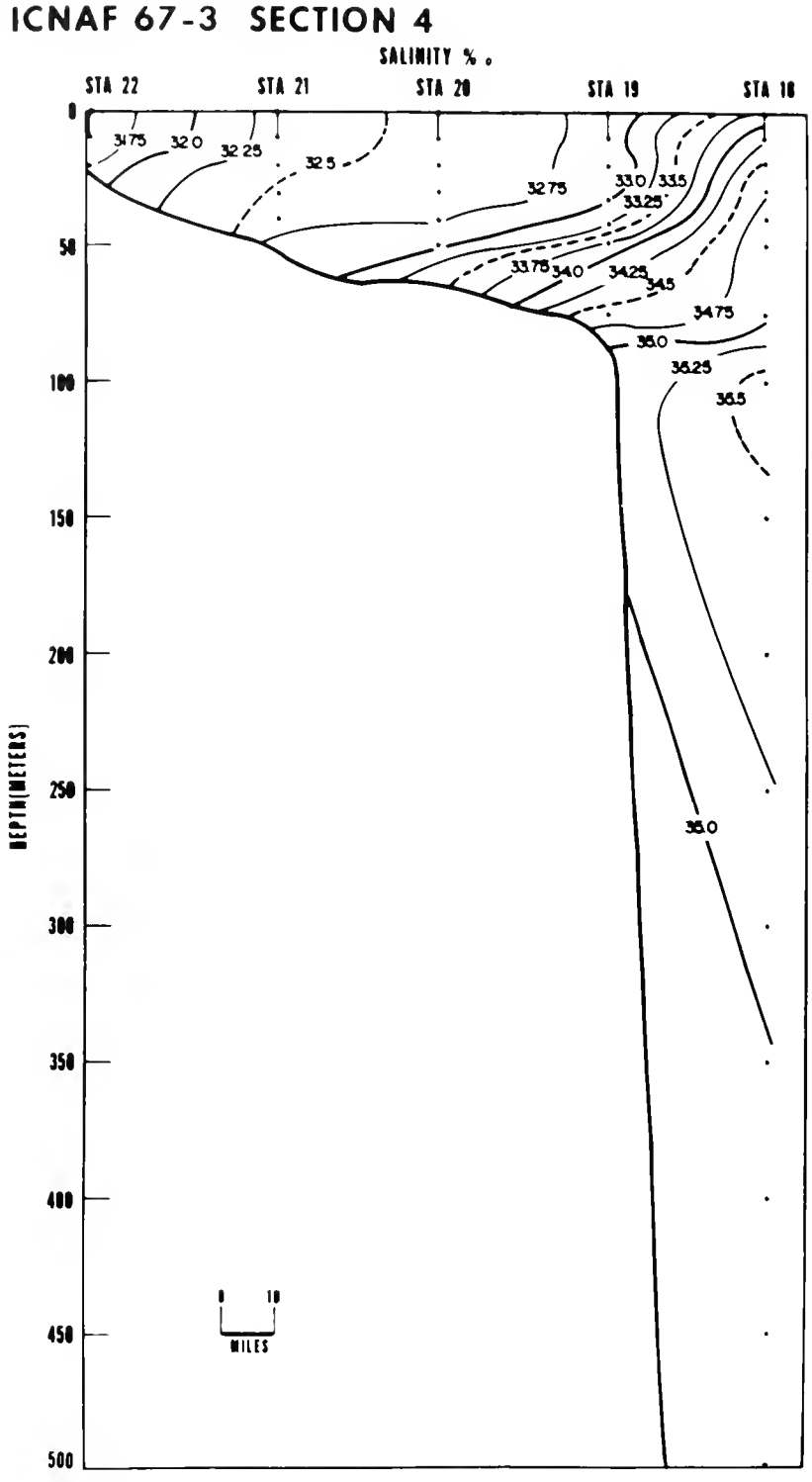

Figure 38. Vertical distribution of salinity (‰)—Section 4 ICNAF 67-3, 11-23 December 1967.

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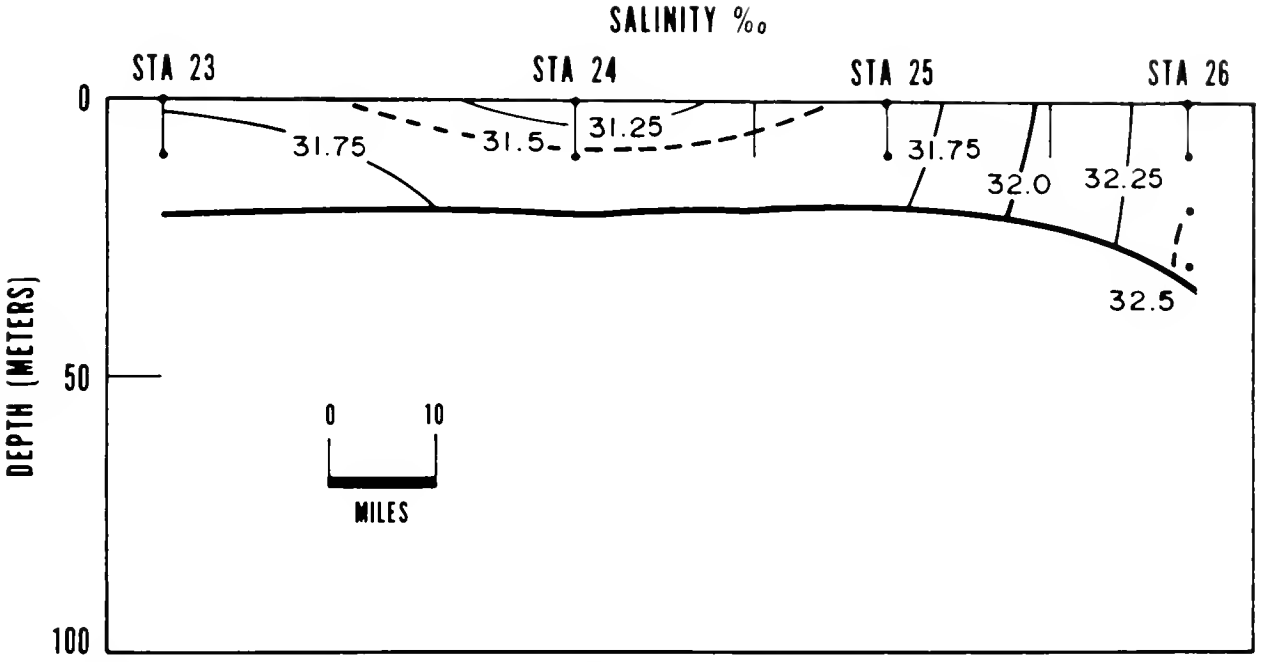

Figure 39. Vertical distribution of salinity (‰)—Section 5 ICNAF 67-3, 11-23 December 1967.

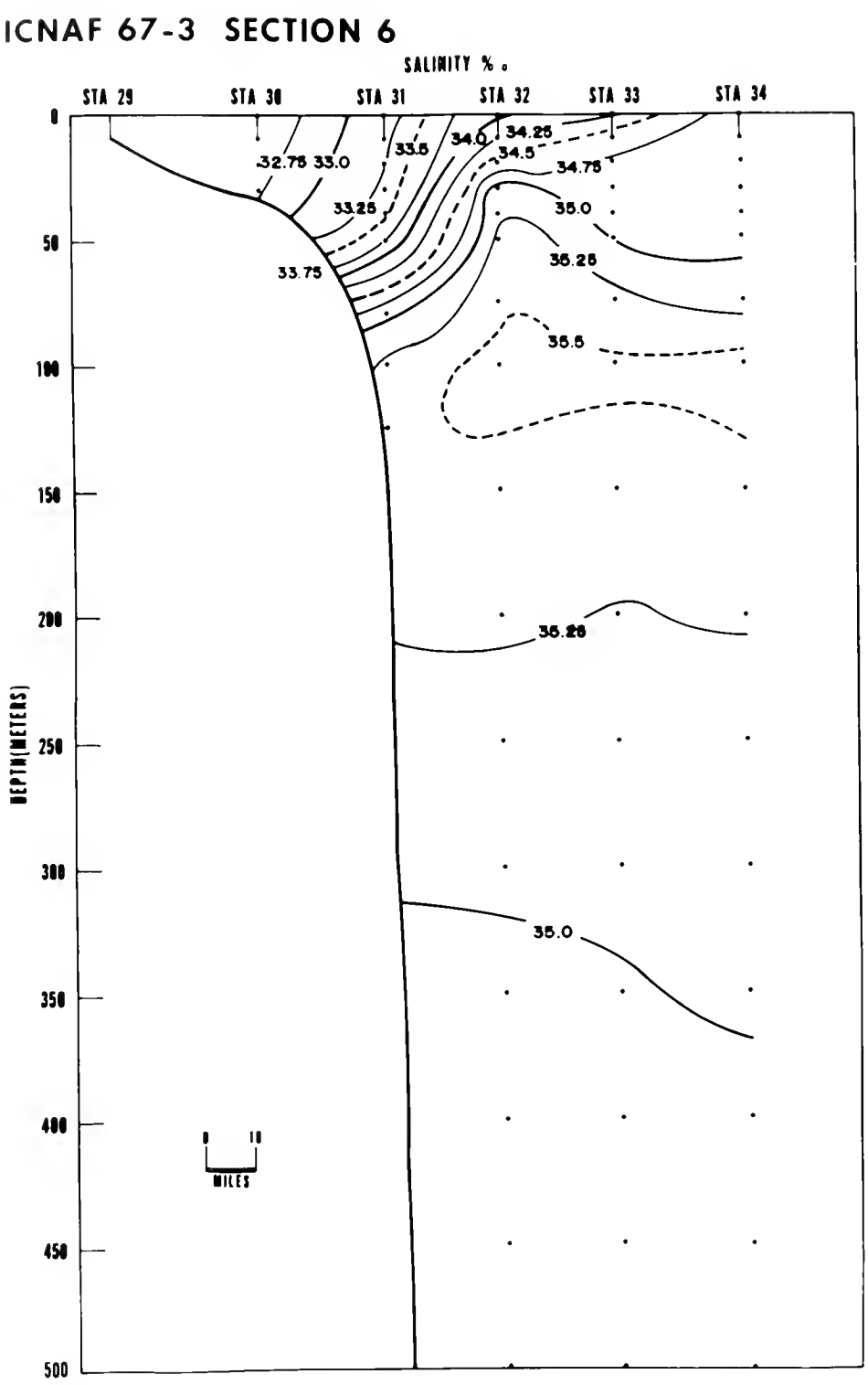

Figure 10. Vertical distribution of salinity (‰)—Section 6 ICNAF 67-3, 11-23 December 1967.

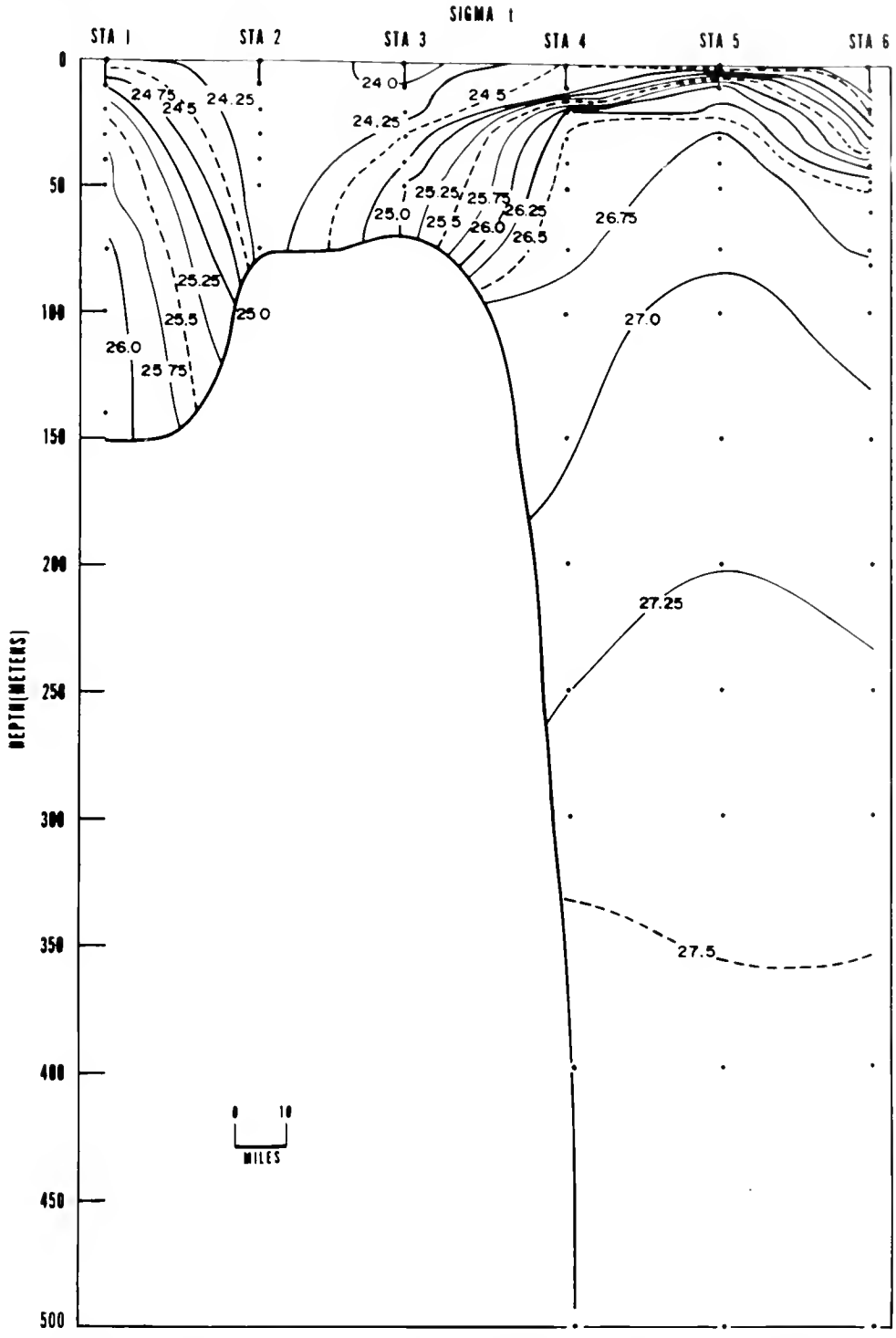

Figure 41. Vertical distribution of density (σt in g/l)—Section 1 ICNAF 67–2, 18–29 September 1967.

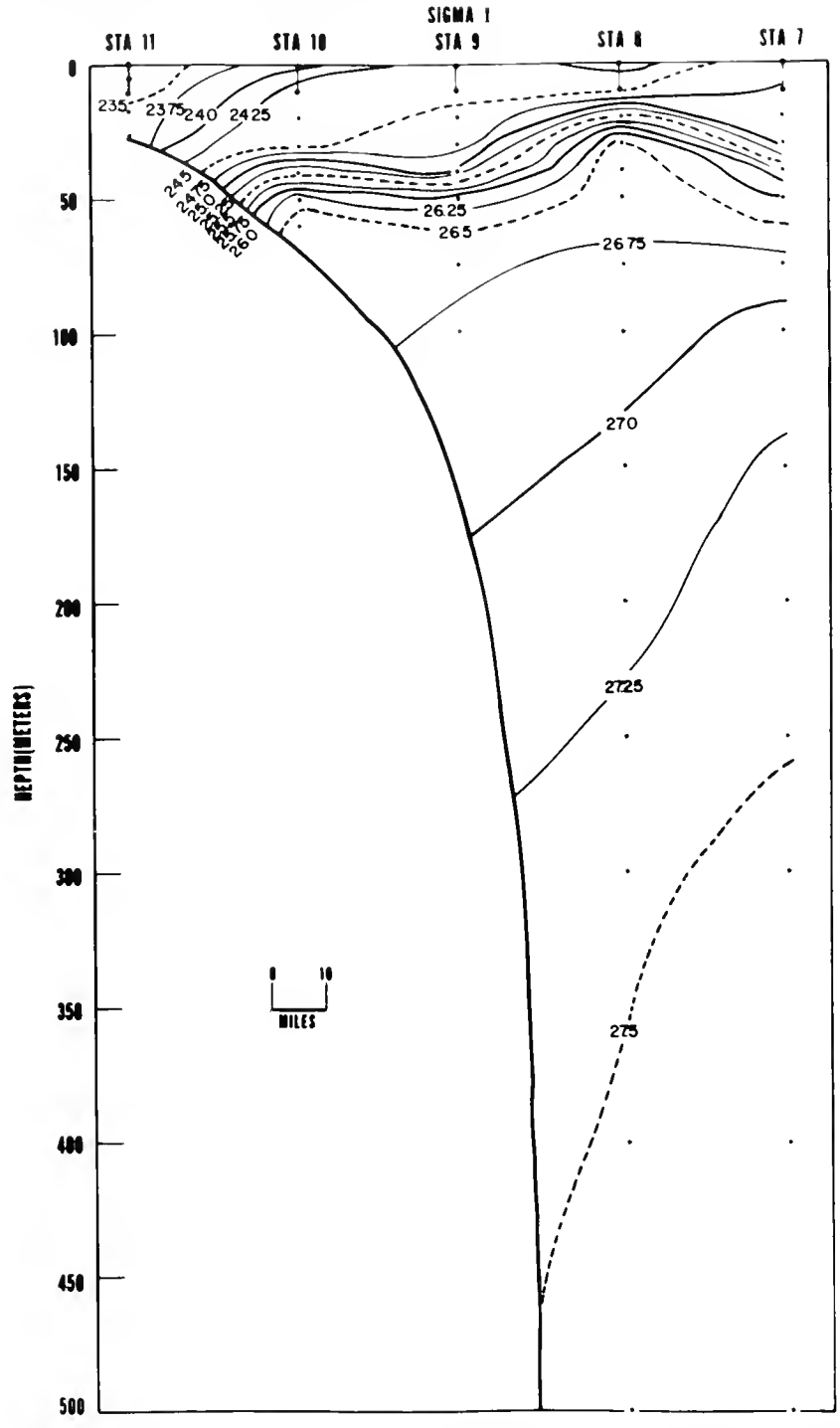

Figure 42. Vertical distribution of density (σt in g/l)—Section 2 ICNAF 67–2, 18–29 September 1967.

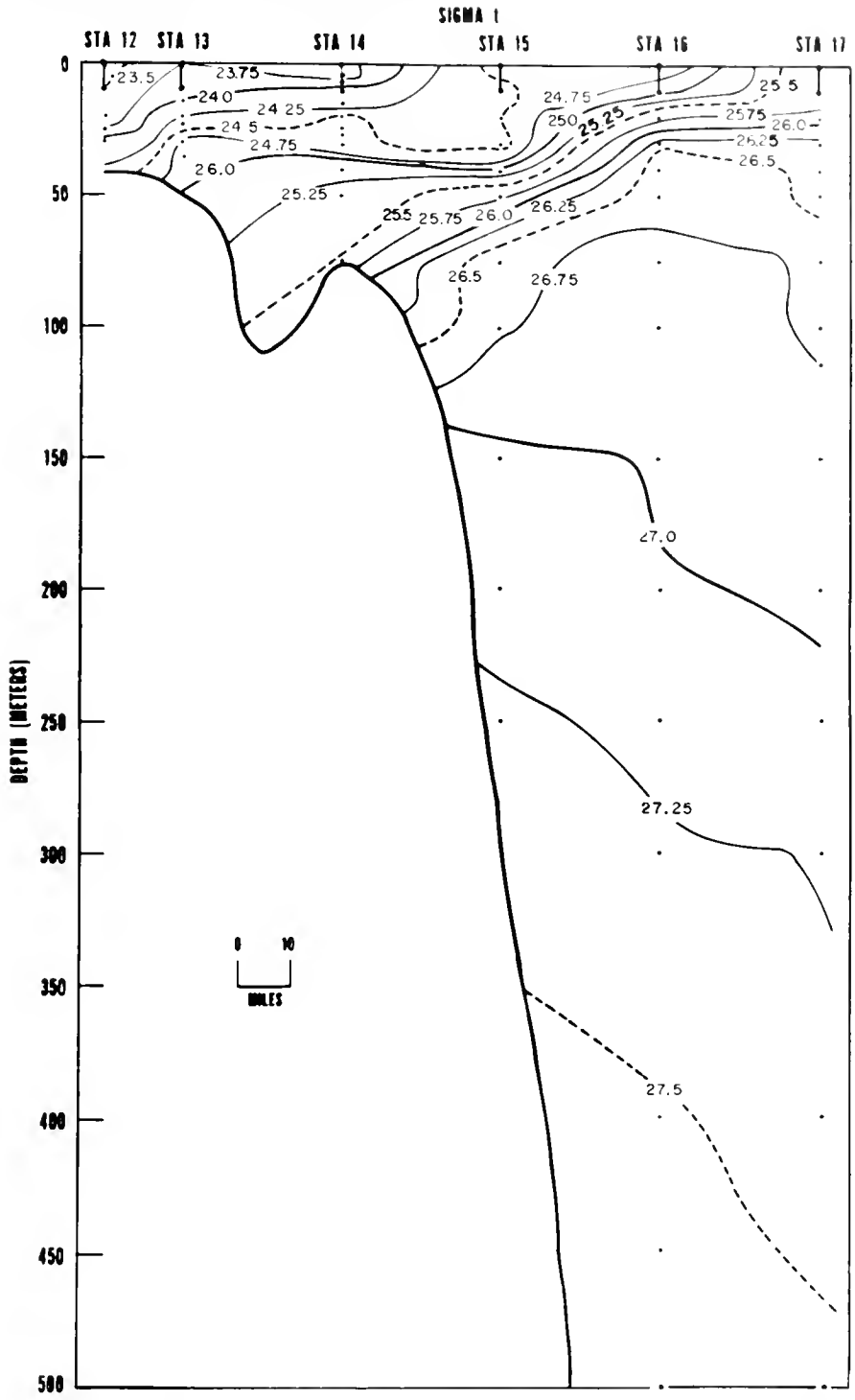

Figure 43. Vertical distribution of density (σt in g/l)—Section 3 ICNAF 67–2, 18–29 September 1967.

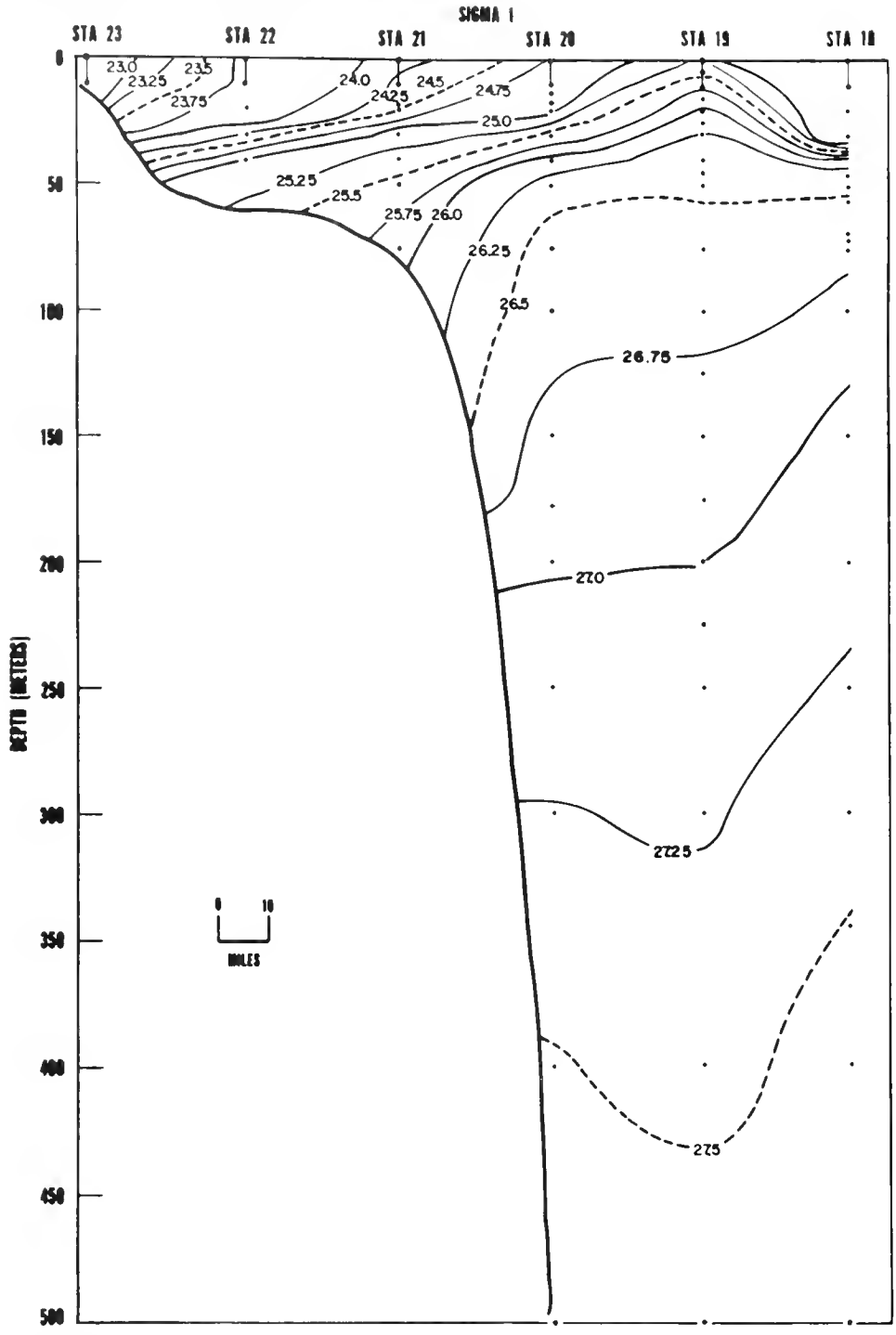

Figure 44. Vertical distribution of density (σt in g/l)—Section 4 ICNAF 67–2, 18–29 September 1967.

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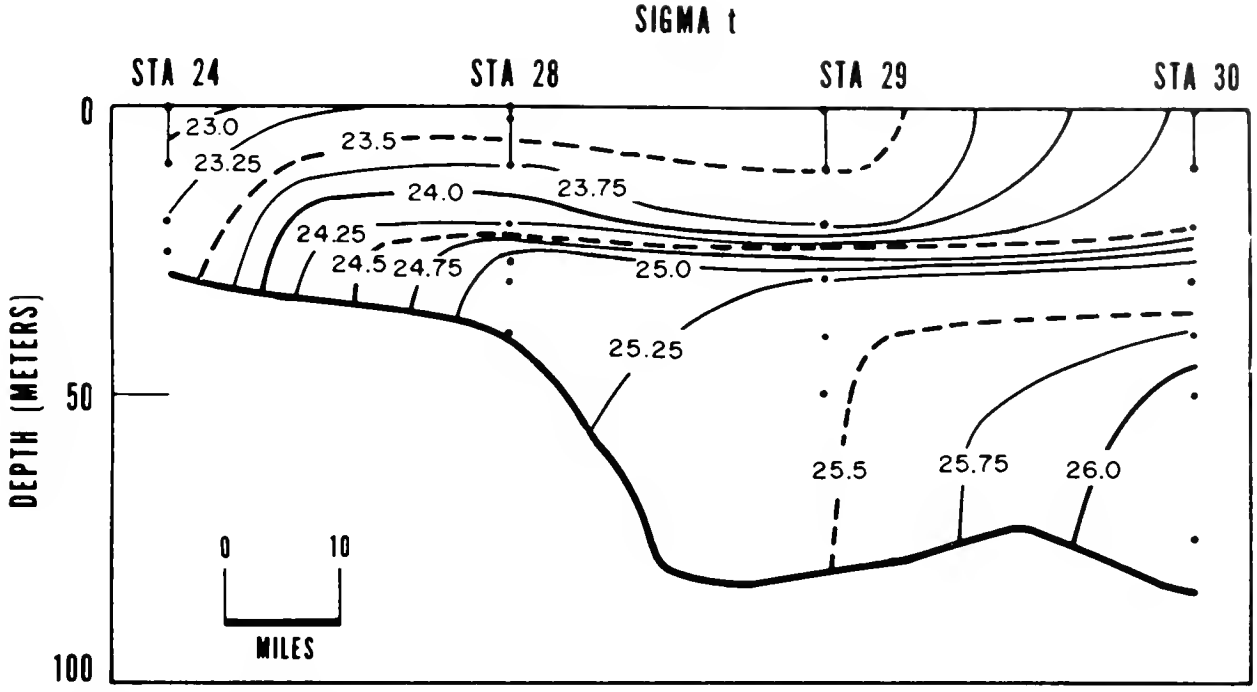

Figure 45. Vertical distribution of density (σt in g/l)—Section 5 ICNAF 67-2, 18-29 September 1967.

ICNAF 67-2 SECTION 6

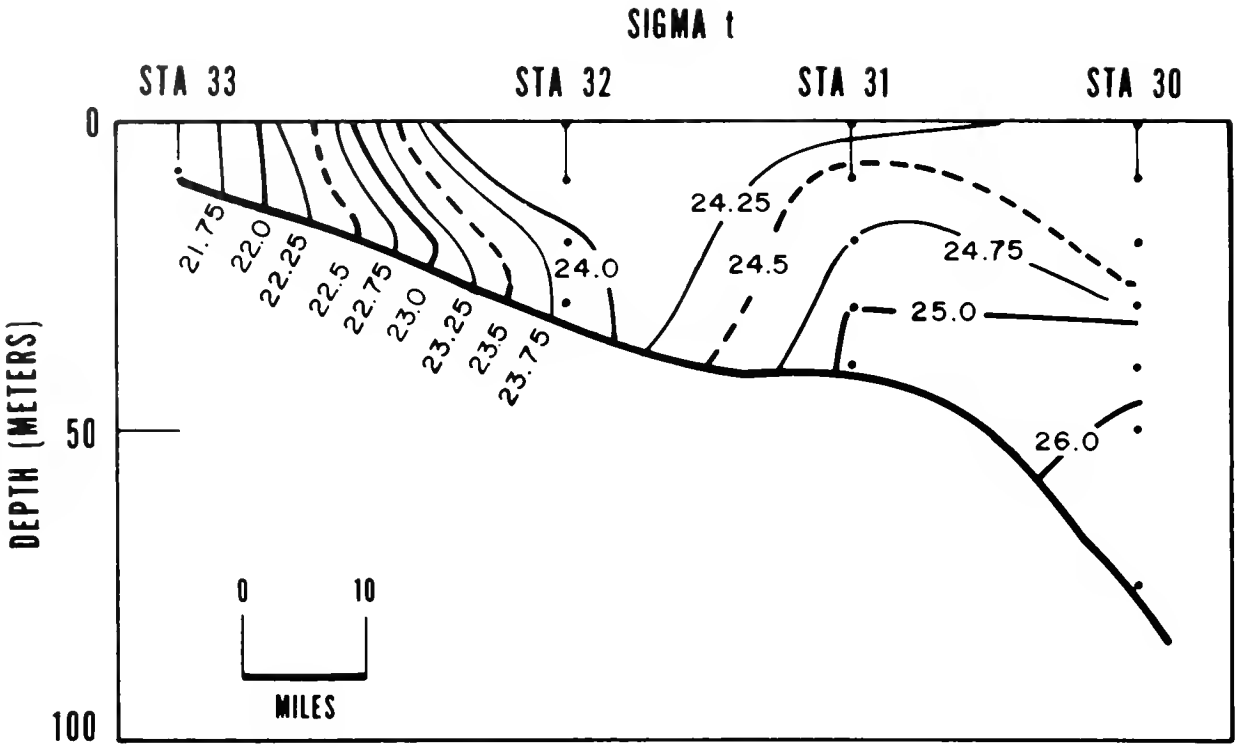

Figure 46. Vertical distribution of density (σt in g/l)—Section 6 ICNAF 67-2, 18–29 September 1967.

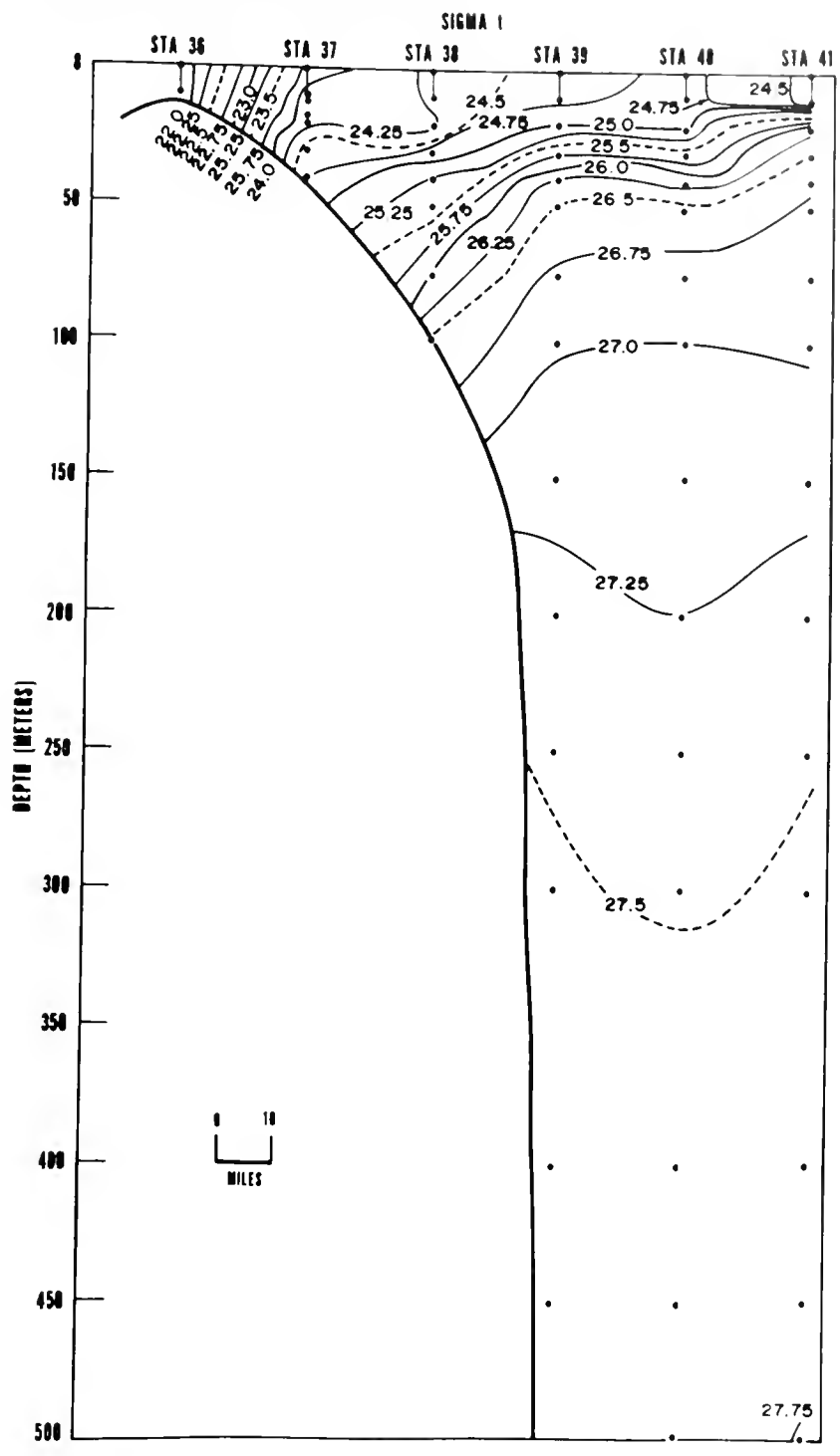

Figure 47. Vertical distribution of density (σt in g/l)—Section 7 ICNAF 67–2, 18–29 September 1967.

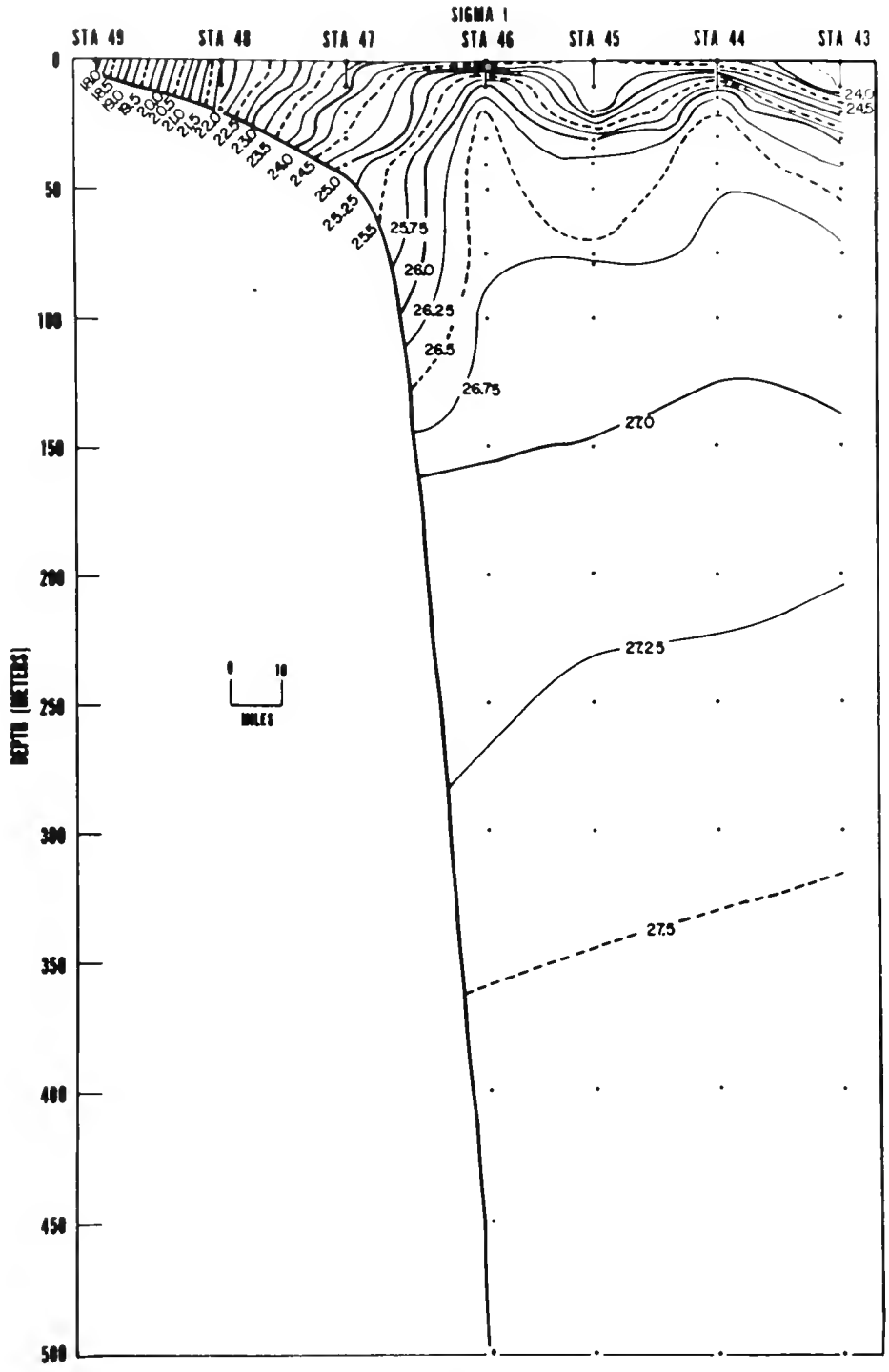

Figure 48. Vertical distribution of density (σt in g/l)—Section 8 ICNAF 67-2, 18-29 September 1967.

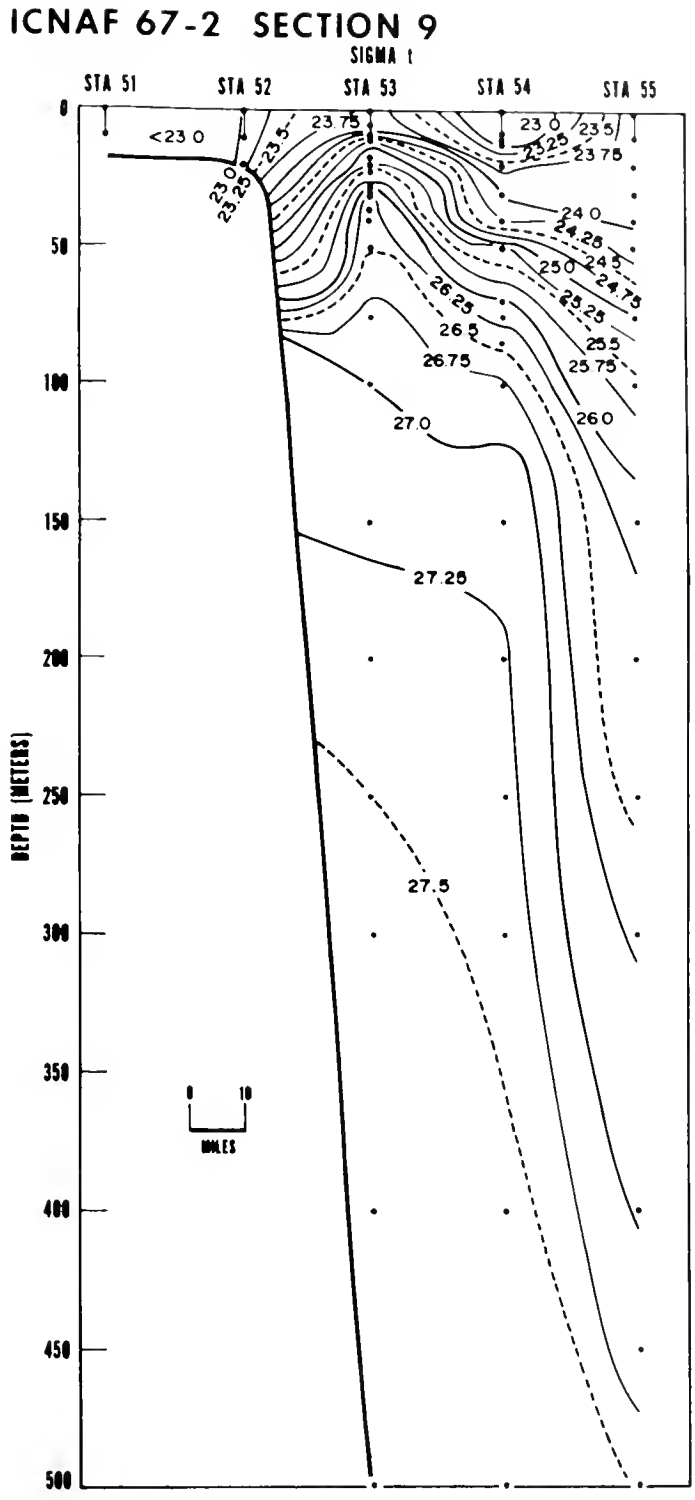

Figure 49. Vertical distribution of density (σt in g/l)—Section 9 ICNAF 67-2, 18–29 September 1967.

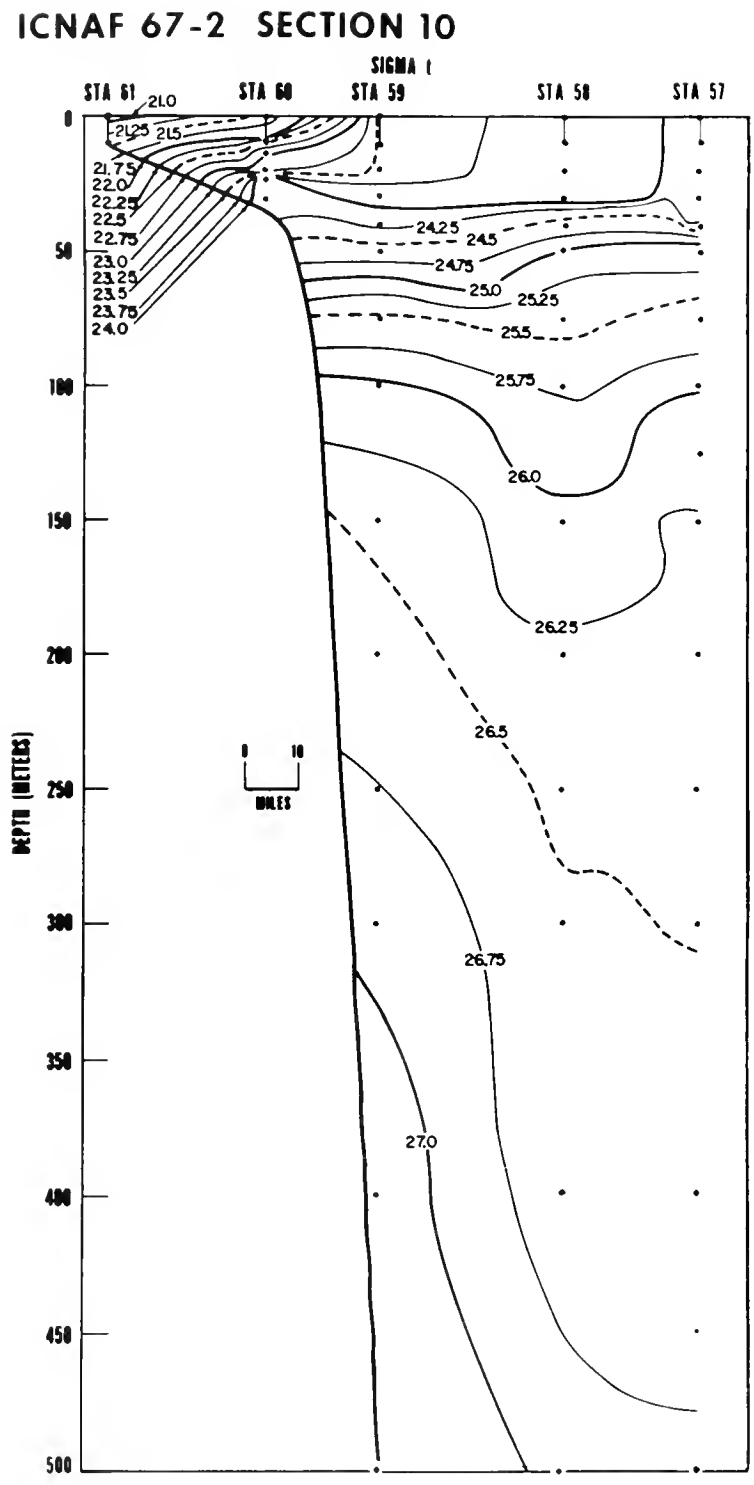

Figure 50. Vertical distribution of density (σt in g/l)—Section 10 ICNAF 67–2, 18–29 September 1967.

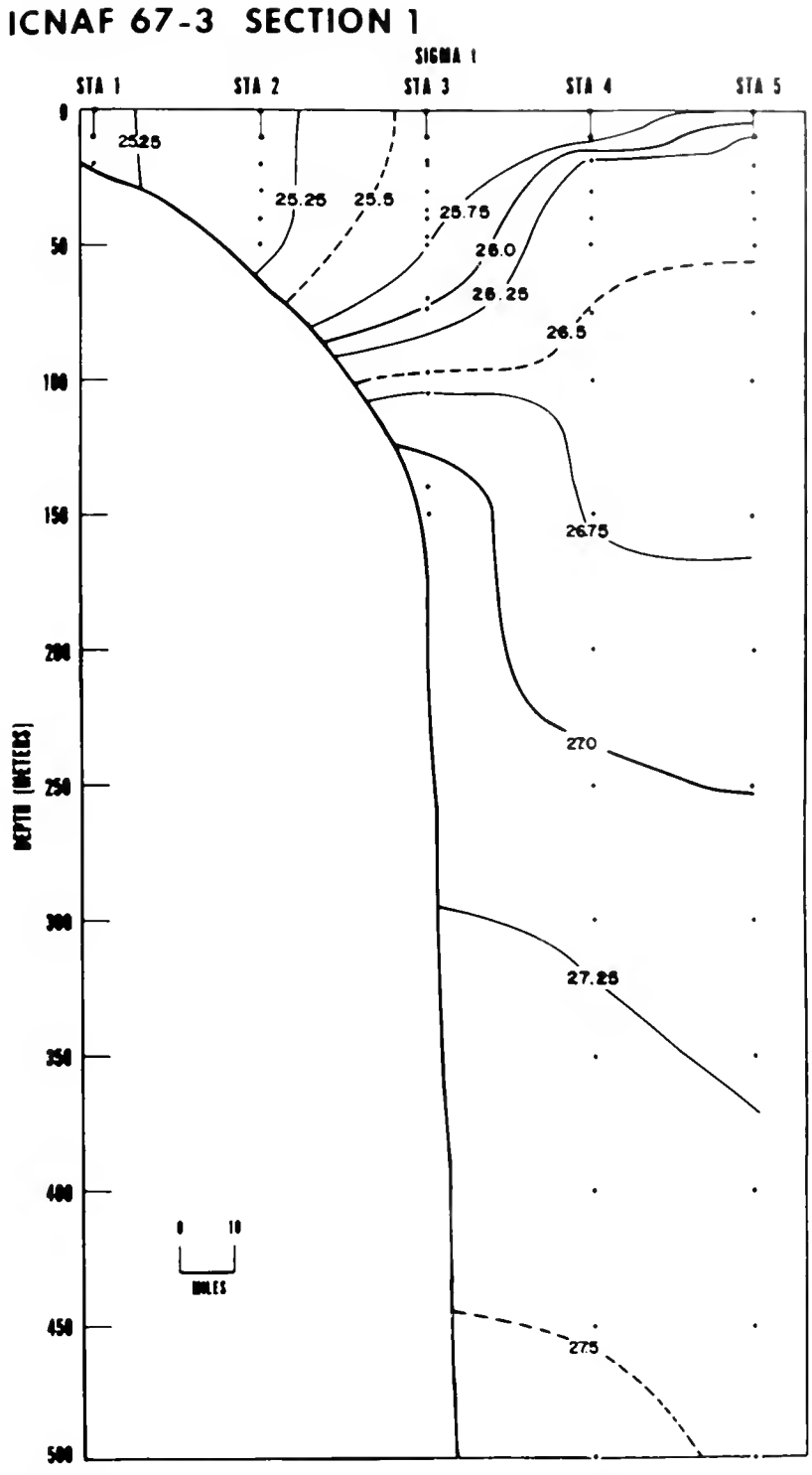

Figure 51. Vertical distribution of density (σt in g/l)—Section 1 ICNAF 67-3, 11-23 December 1967.

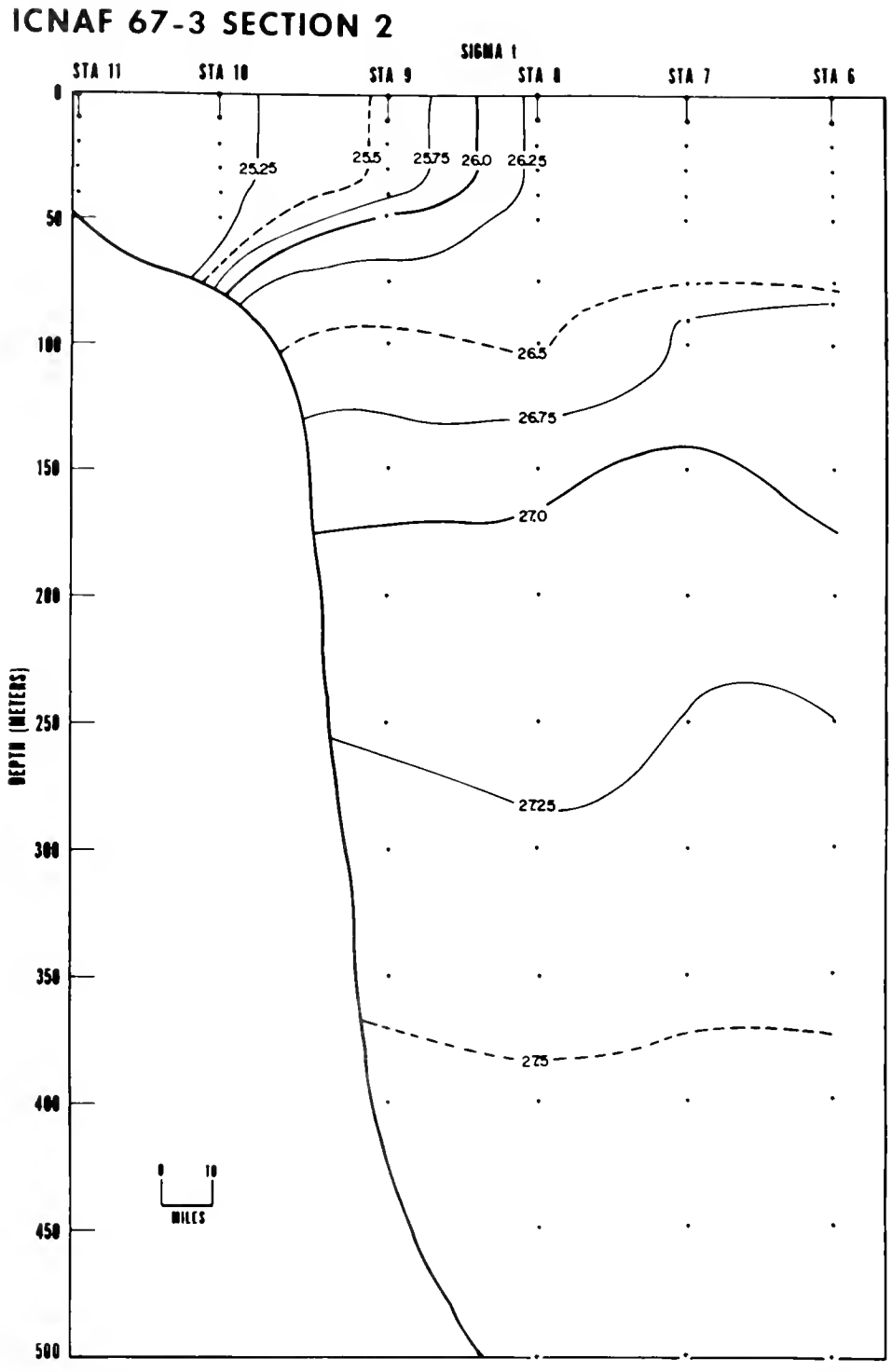

Figure 52. Vertical distribution of density (σt in g/l)—Section 2 ICNAF 67–3, 11–23 December 1967.

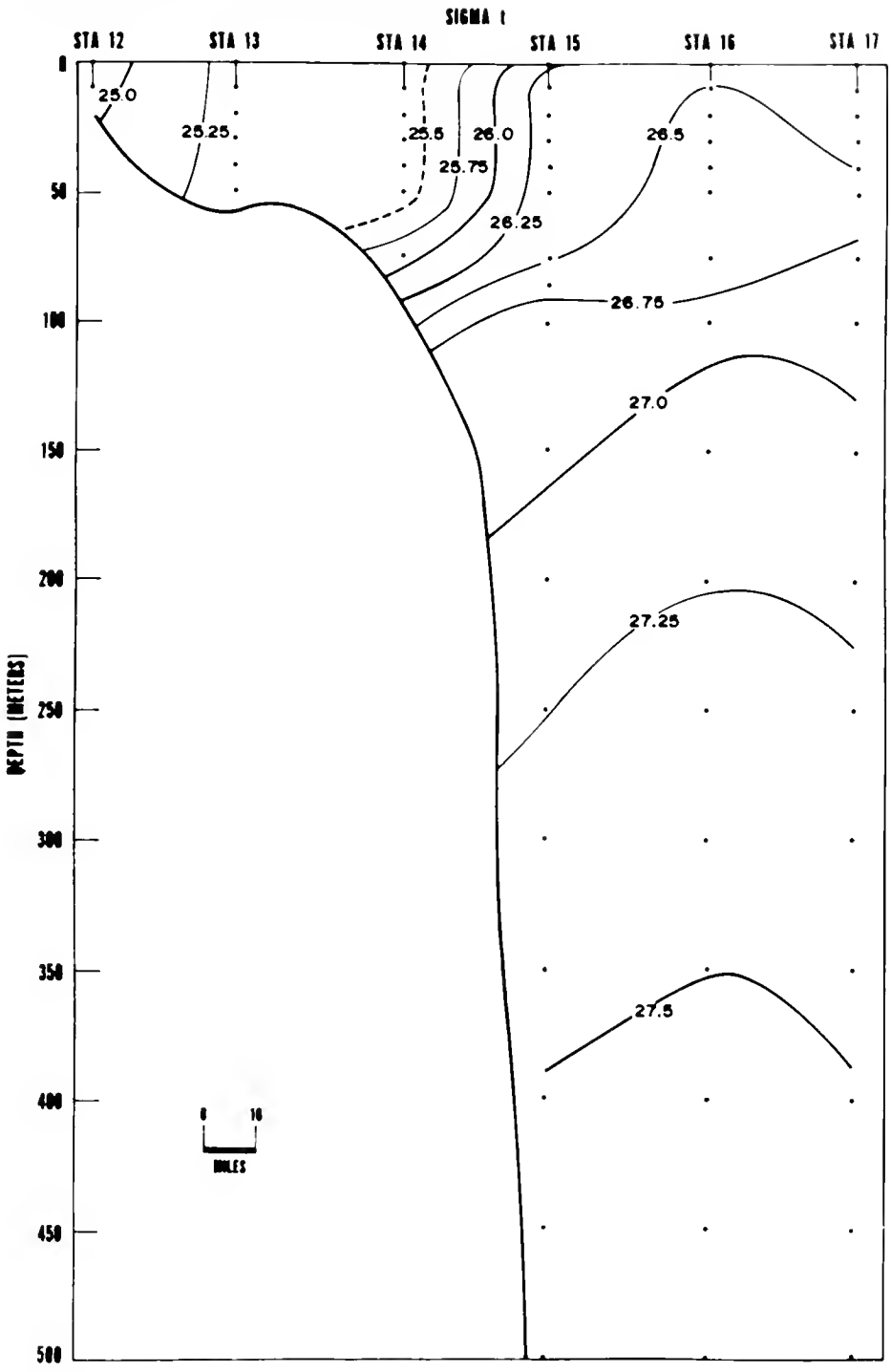

Figure 53. Vertical distribution of density (σt in g/l)—Section 3 ICNAF 67–3, 11–23 December 1967.

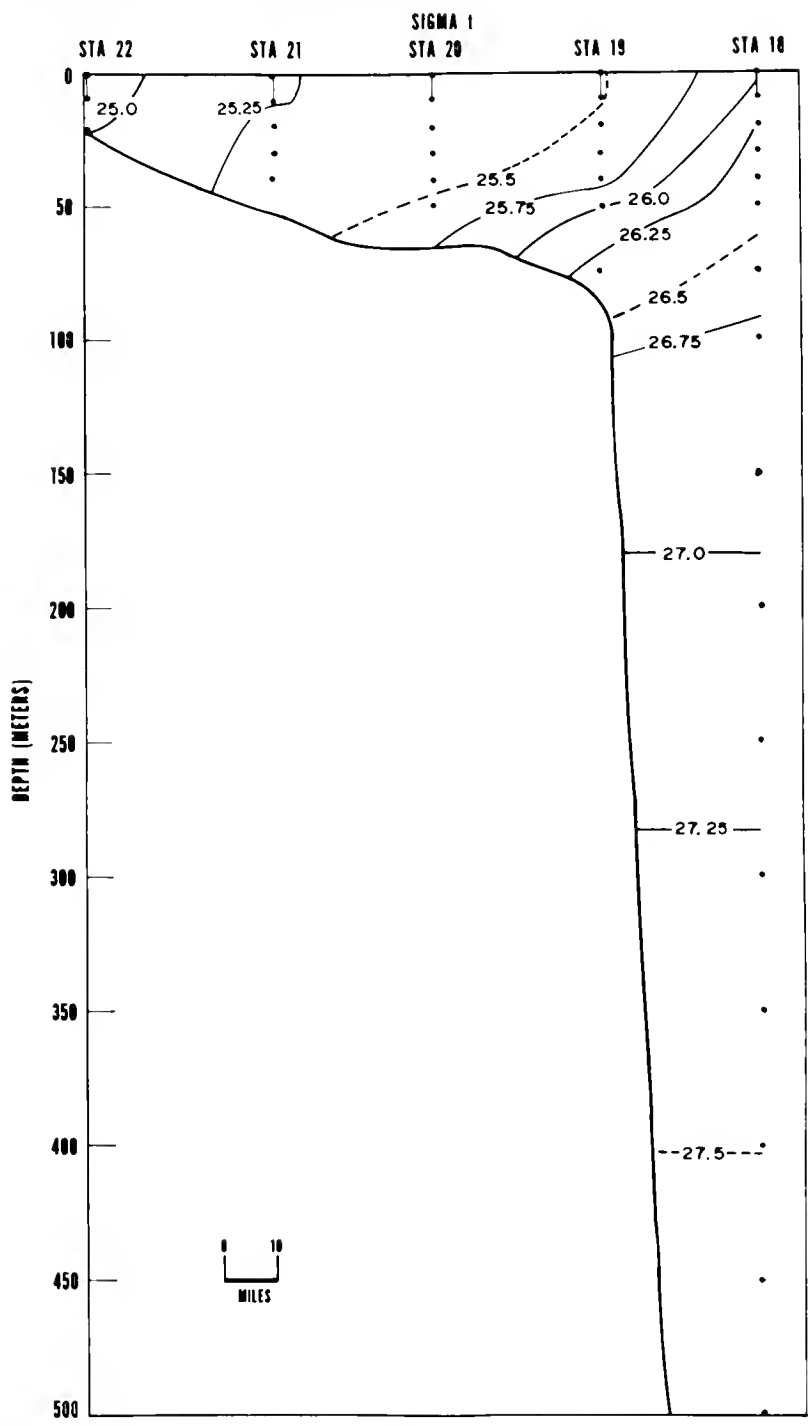

Figure 54. Vertical distribution of density (σt in g/l)—Section 4 ICNAF 67-3, 11-23 December 1967.

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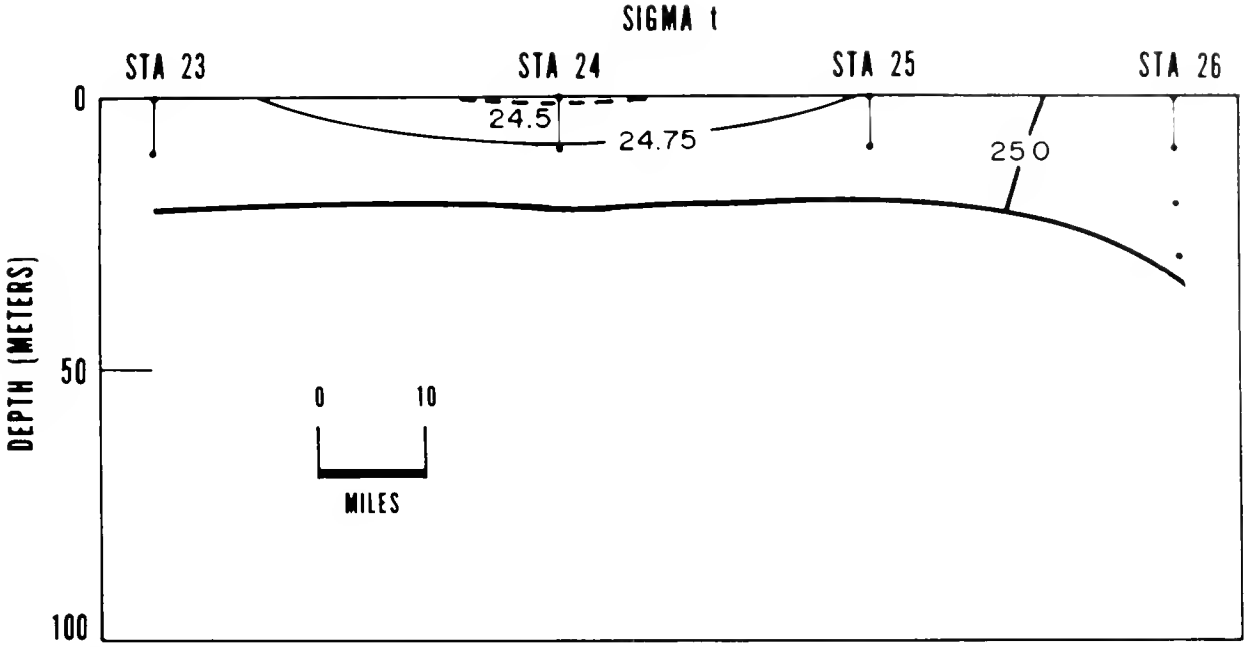

Figure 55. Vertical distribution of density (σt in g/l)—Section 5 ICNAF 67-3, 11-23 December 1967

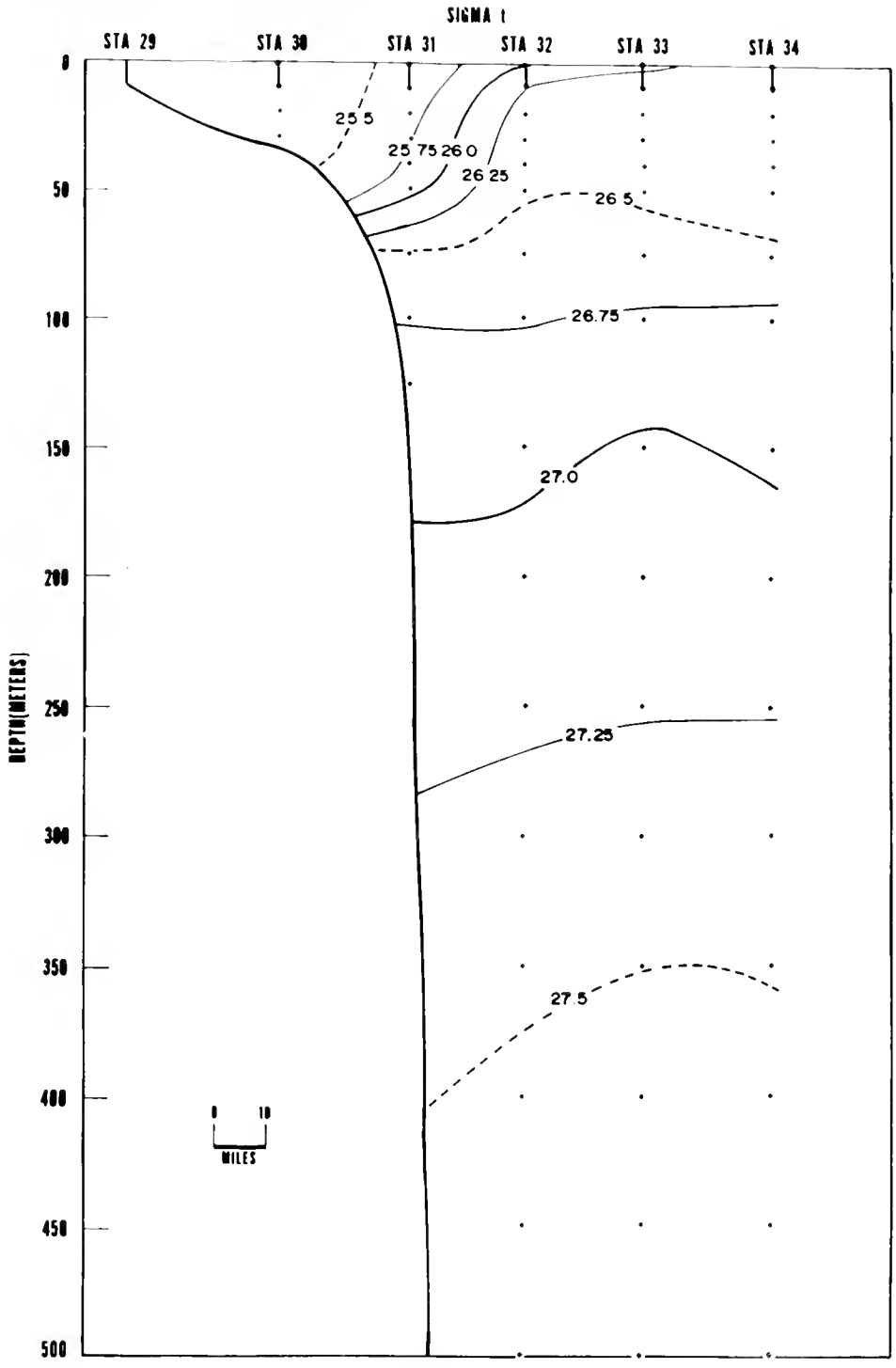

Figure 56. Vertical distribution of density (σt in g/l)—Section 6 ICNAF 67-3, 11-23 December 1967.

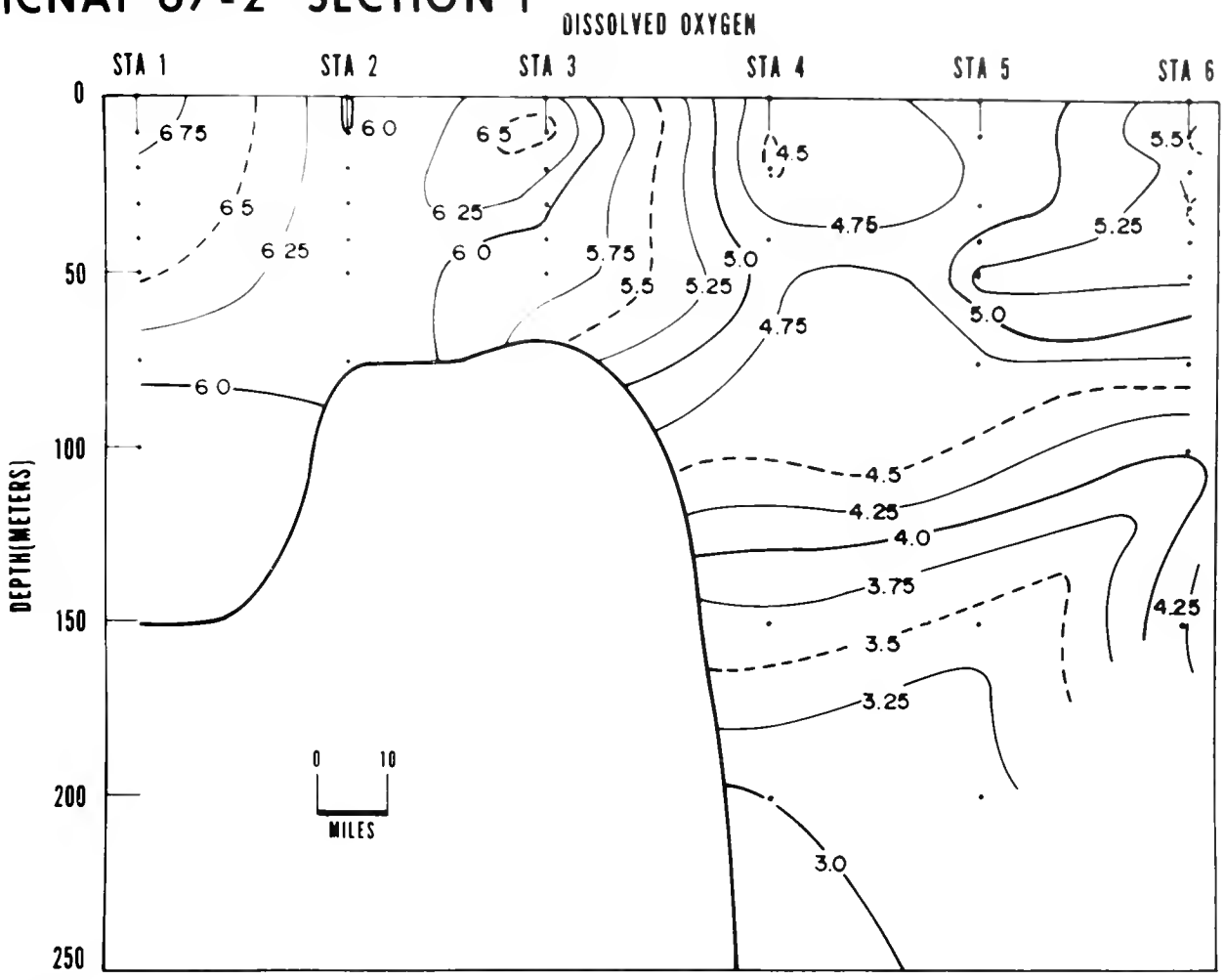

Figure 57. Vertical distribution of dissolved oxygen (ml/l)—Section 1 ICNAF 67-2, 18-29 September 1967.

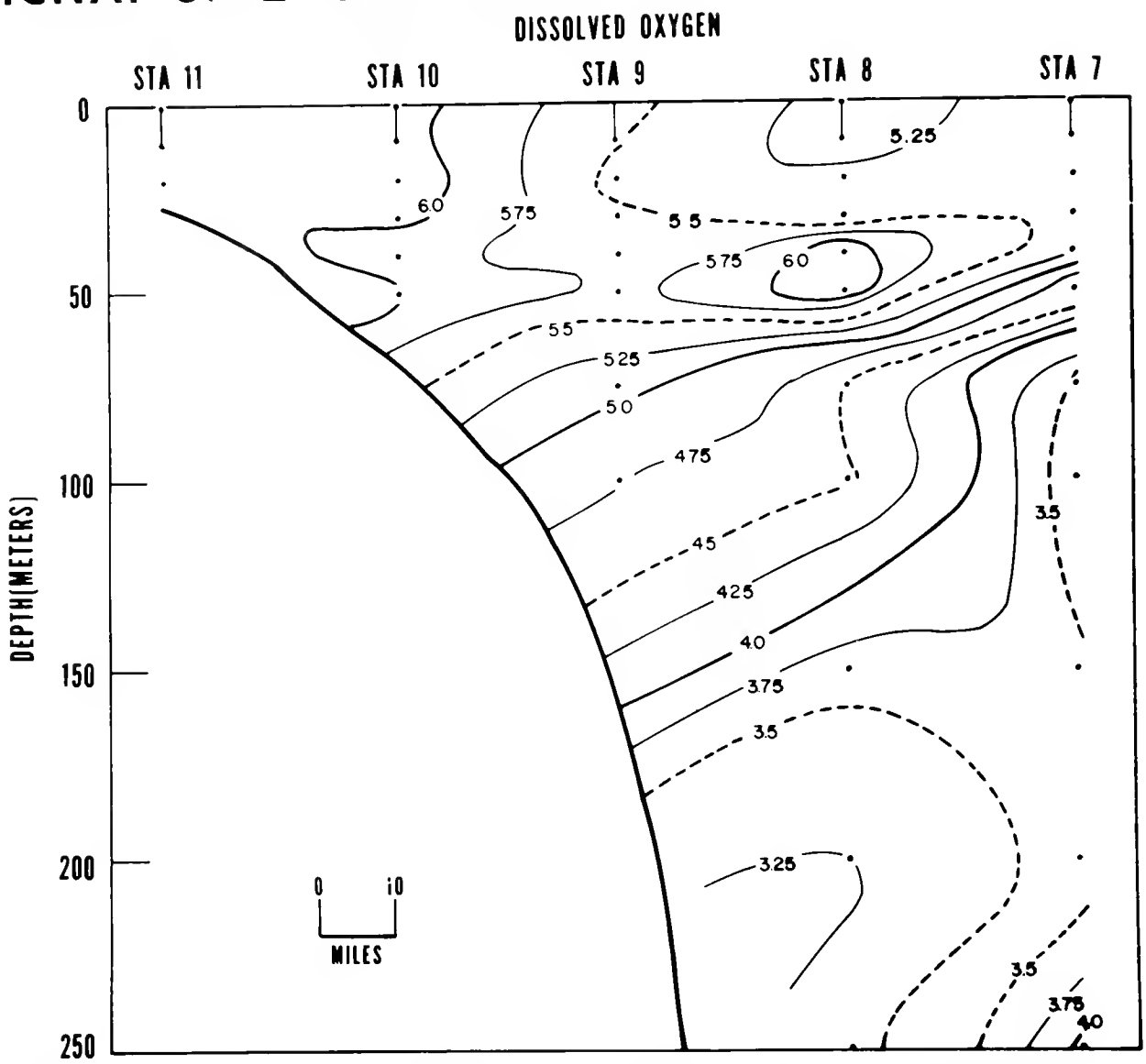

Figure 58. Vertical distribution of dissolved oxygen (ml/l)—Section 2 ICNAF 67-2, 18-29 September 1967.

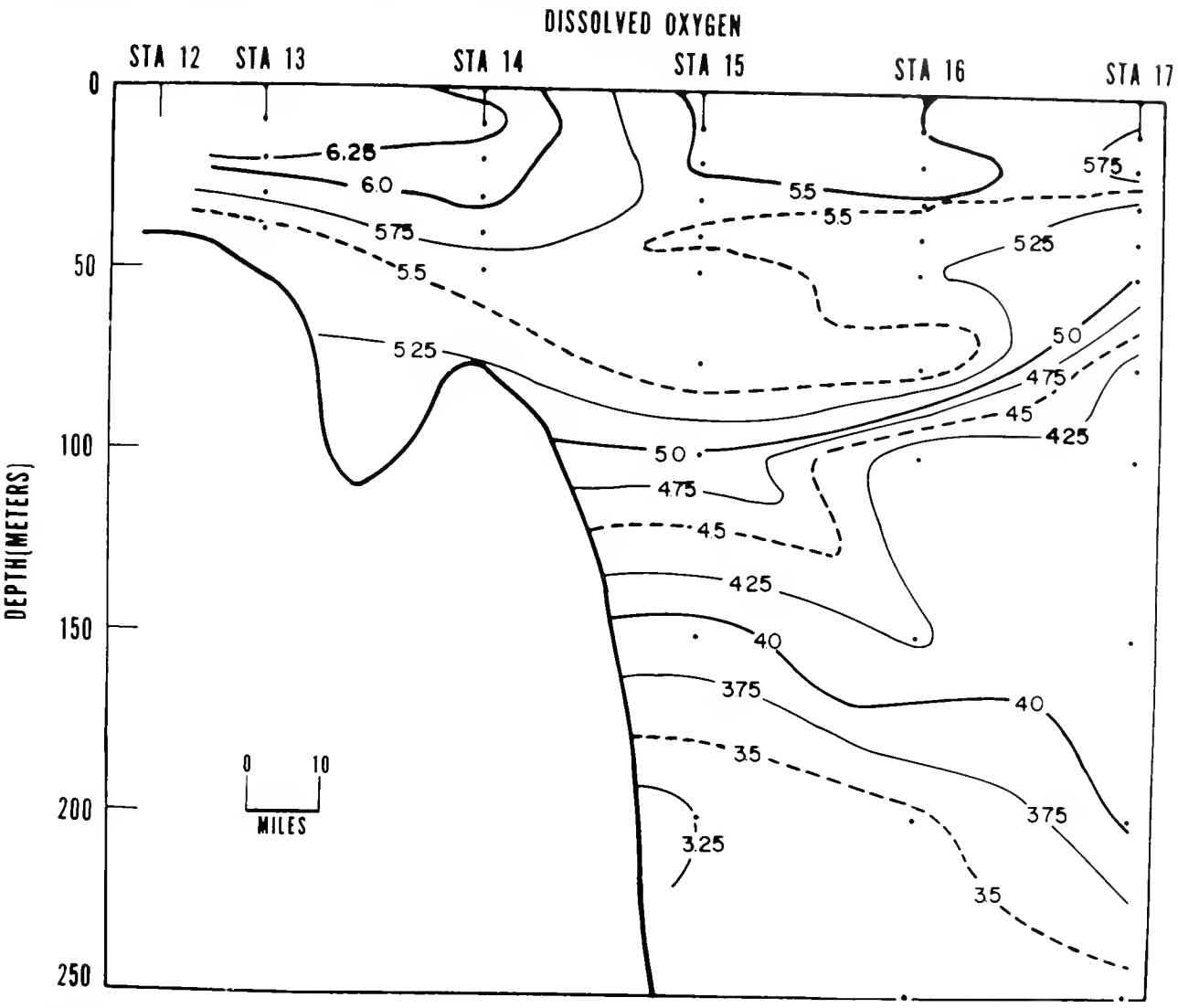

Figure 59. Vertical distribution of dissolved oxygen (ml/l)—Section 3 ICNAF 67–2, 18–29 September 1967.

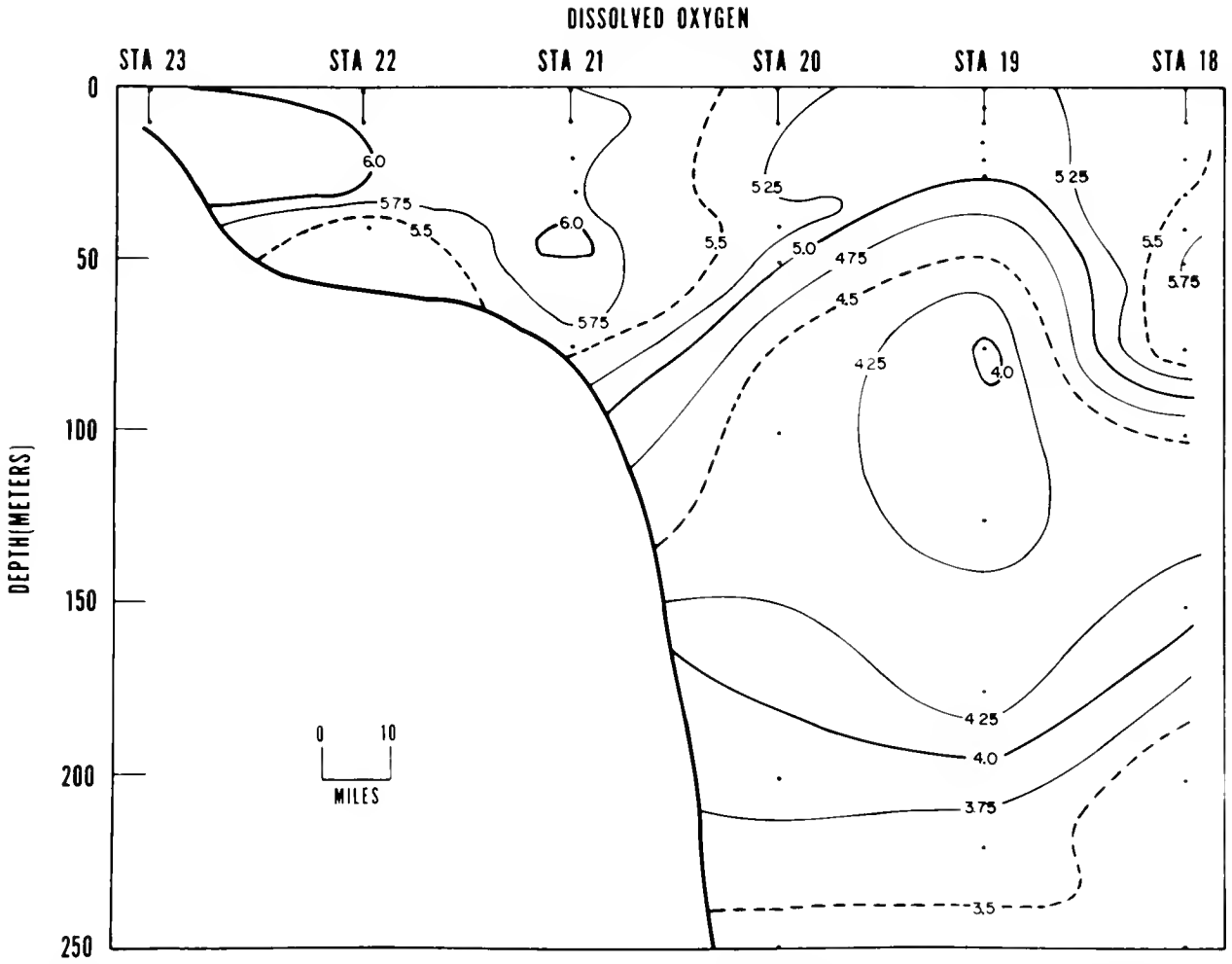

Figure 60. Vertical distribution of dissolved oxygen (ml/l)—Section 4 ICNAF 67–2, 18–29 September 1967.

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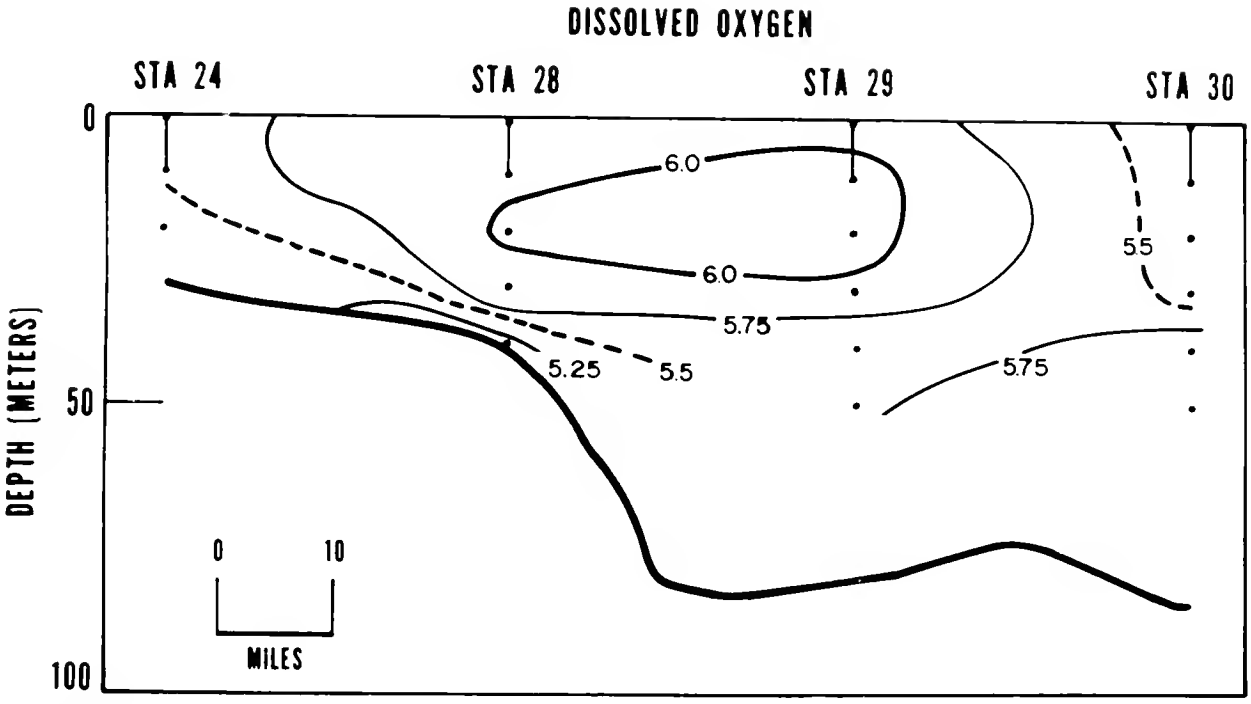

Figure 61. Vertical distribution of dissolved oxygen (ml/l)—Section 5 ICNAF 67-2, 18-29 September 1967.

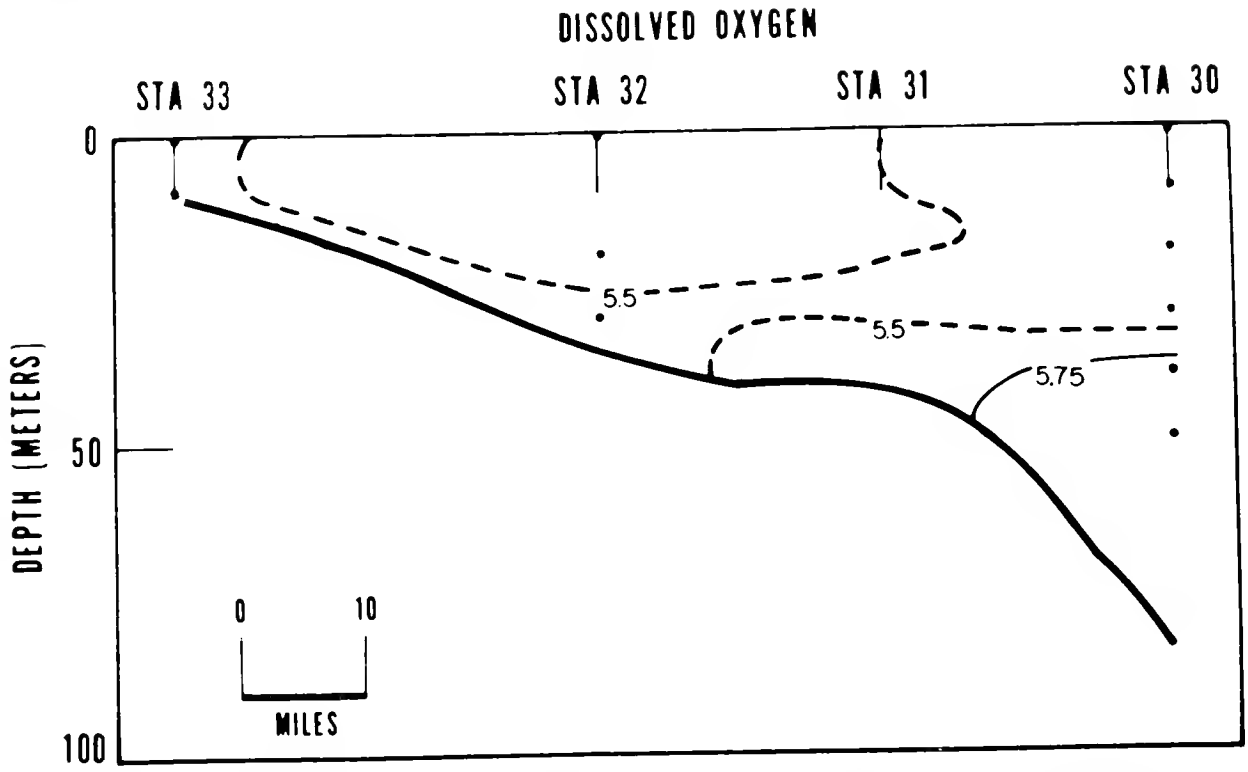

Figure 62. Vertical distribution of dissolved oxygen (ml/l)—Section 6 ICNAF 67–2, 18–29 September 1967.

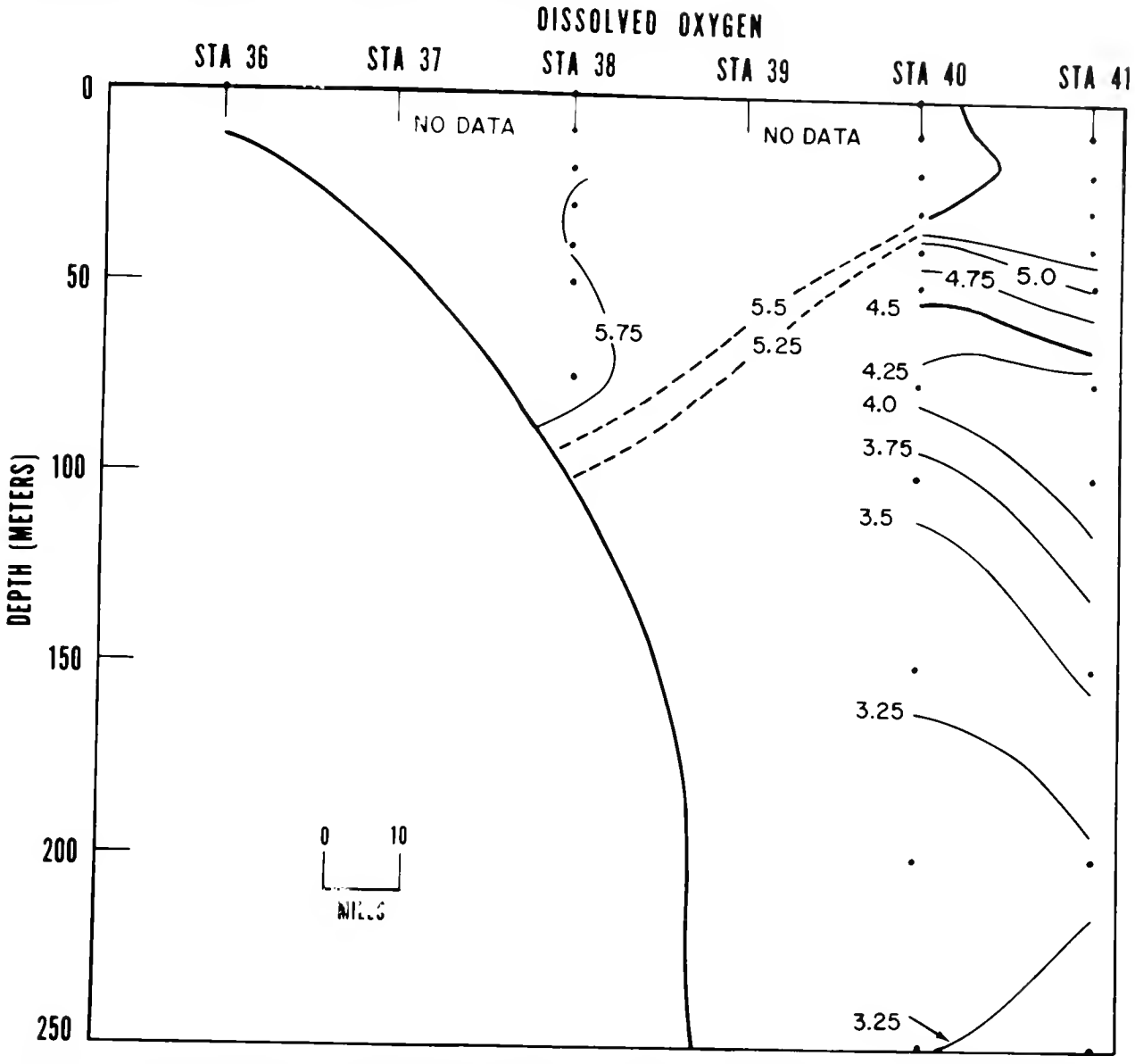

Figure 63. Vertical distribution of dissolved oxygen (ml/l)—Section 7 ICNAF 67–2, 18–29 September 1967.

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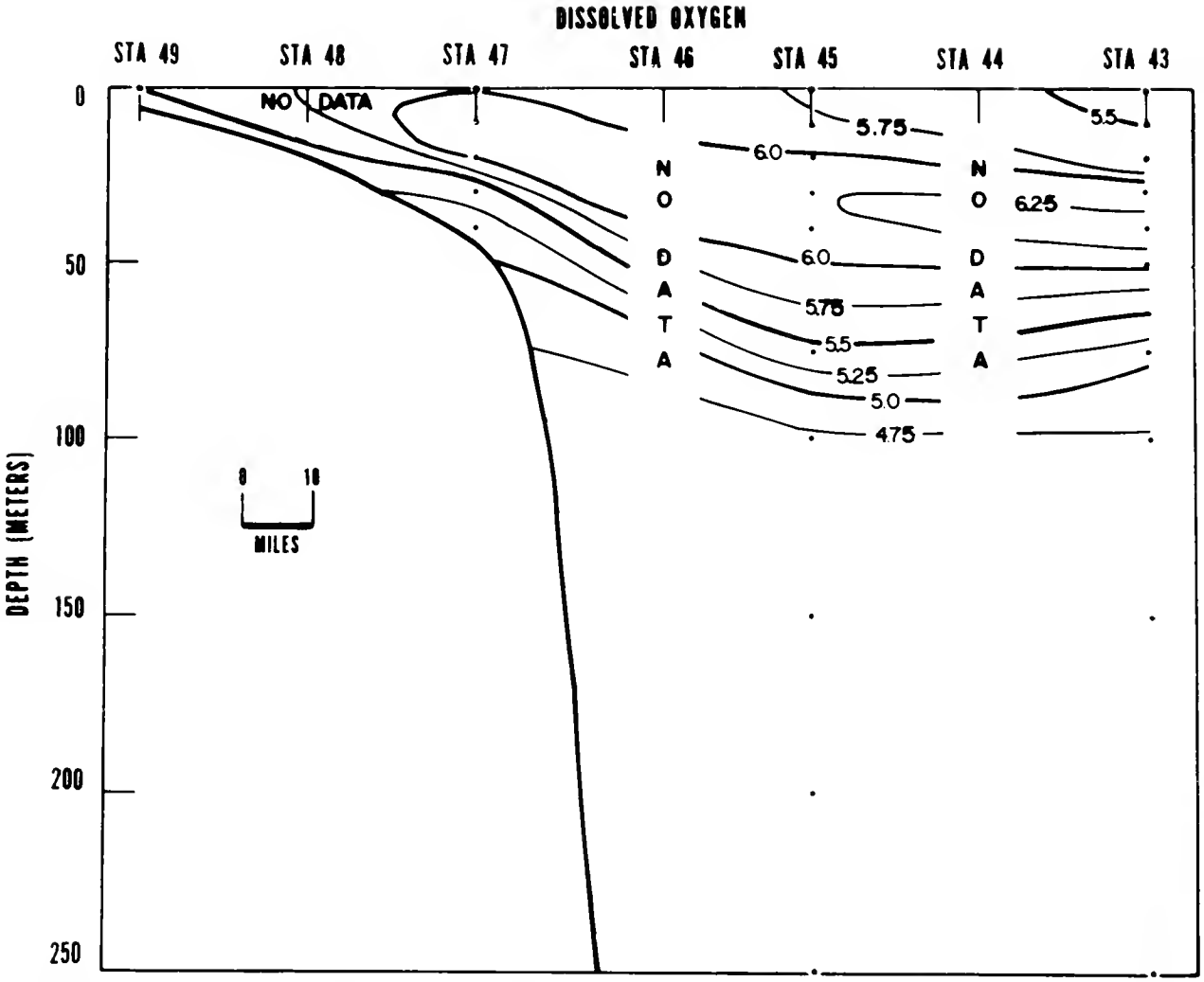


Figure 64. Vertical distribution of dissolved oxygen (ml/l—Section 8 ICNAF 67-2, 18-29 September 1967.

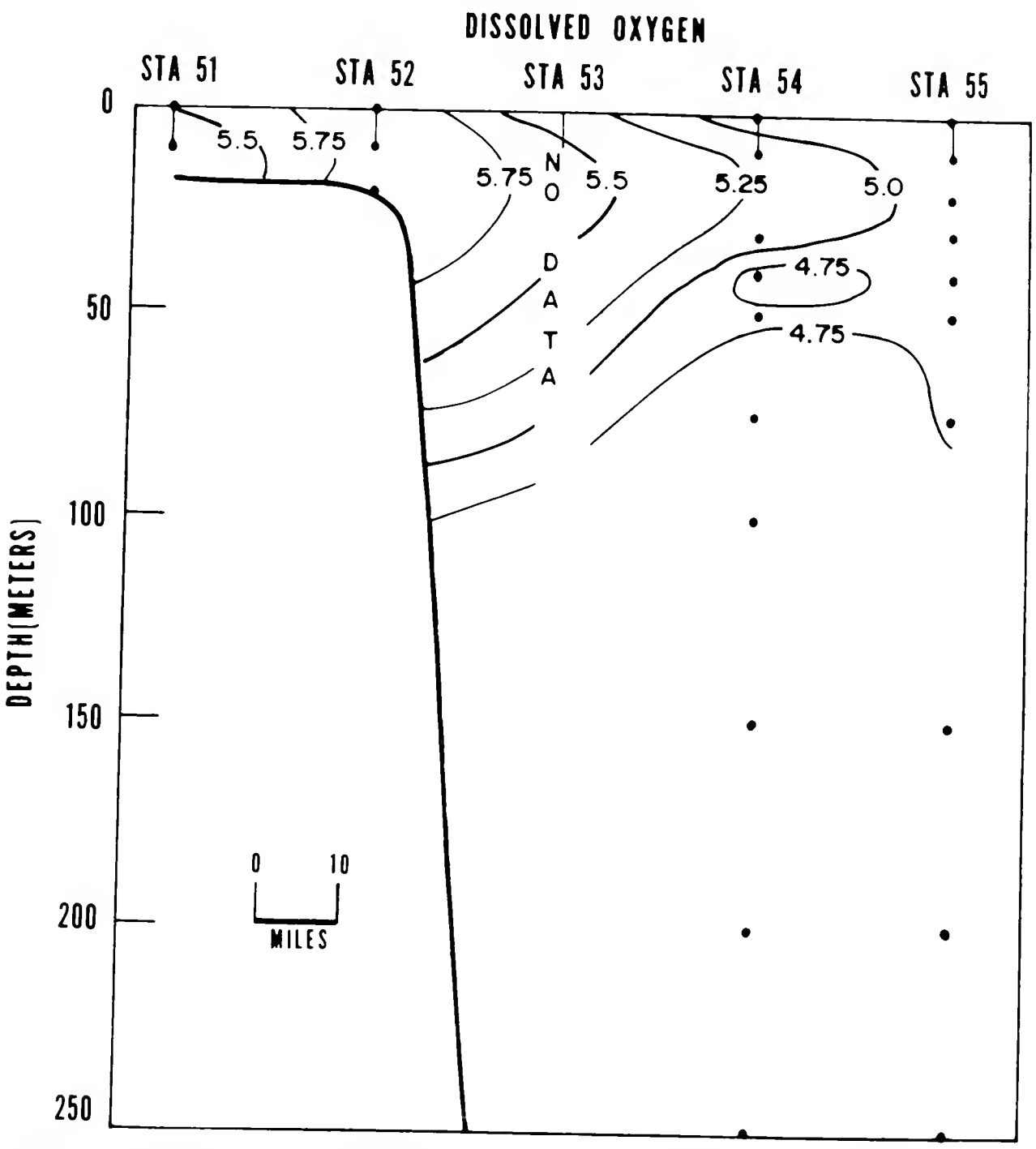


Figure 65. Vertical distribution of dissolved oxygen (ml/l)—Section 9 ICNAF 67-2, 18-29 September 1967.

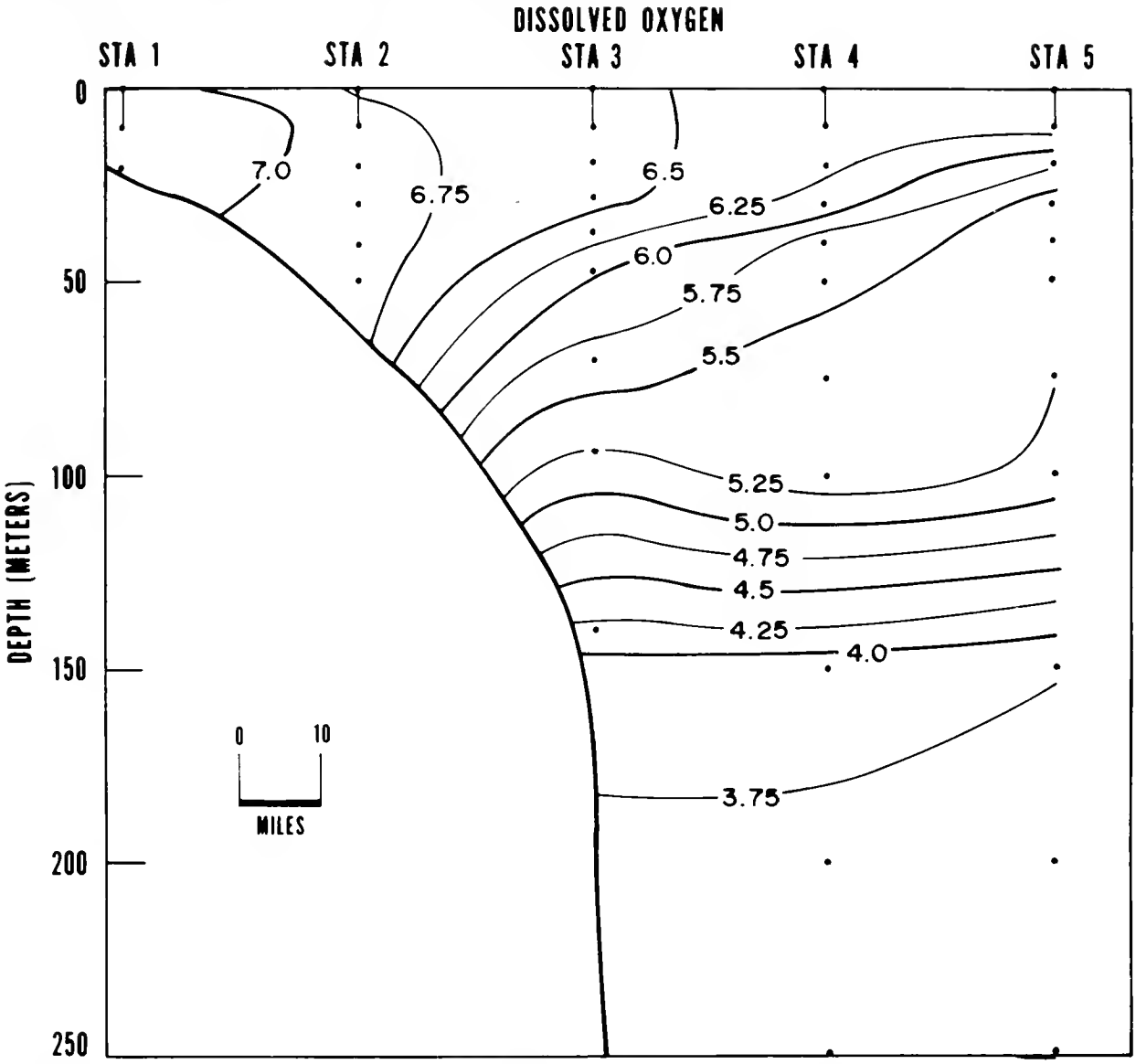


Figure 66. Vertical distribution of dissolved oxygen (ml/l)—Section 1 ICNAF 67-3, 11–23 December 1967.

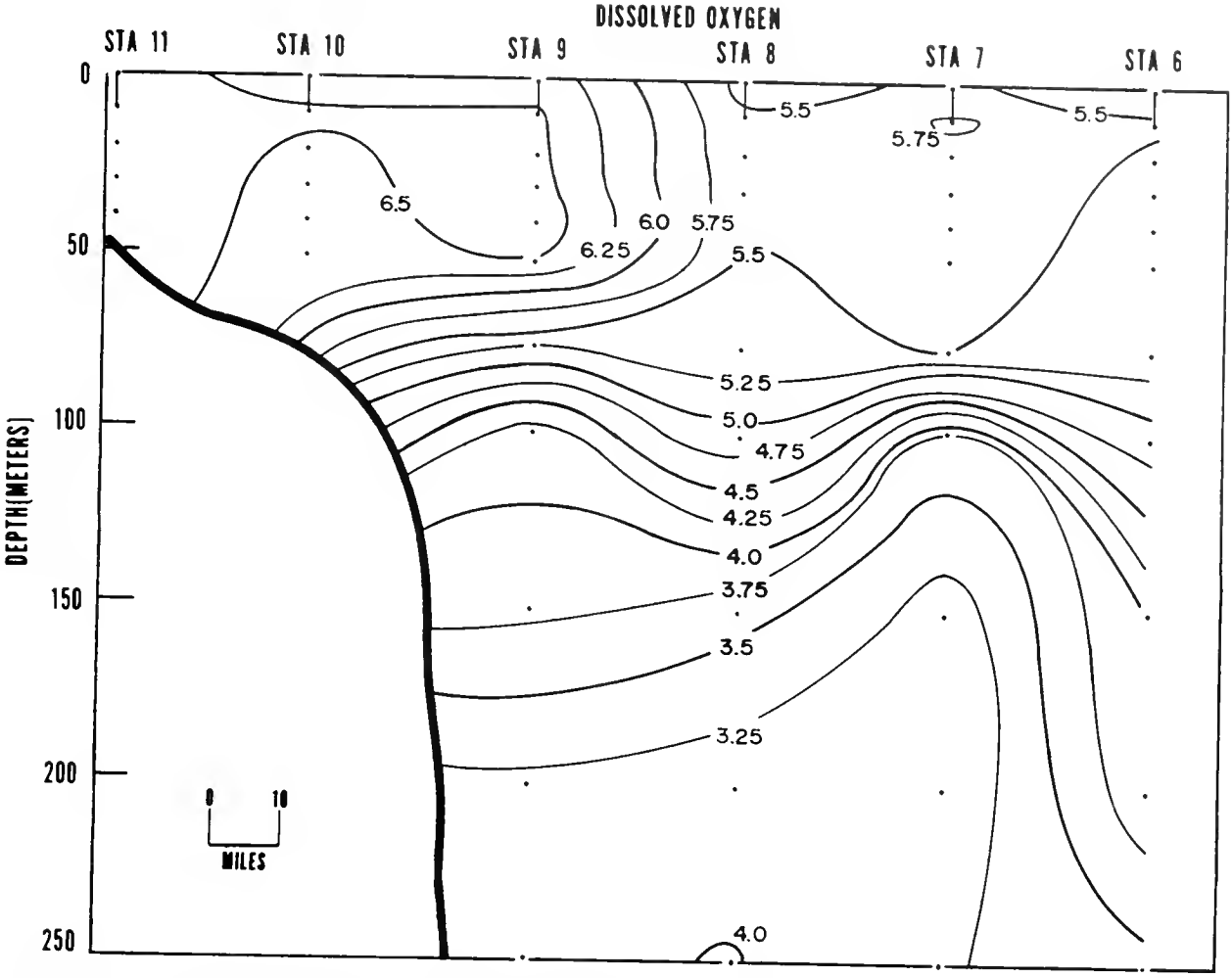


Figure 67. Vertical distribution of dissolved oxygen (ml/l)—Section 2 ICNAF 67-3, 11-23 December 1967.

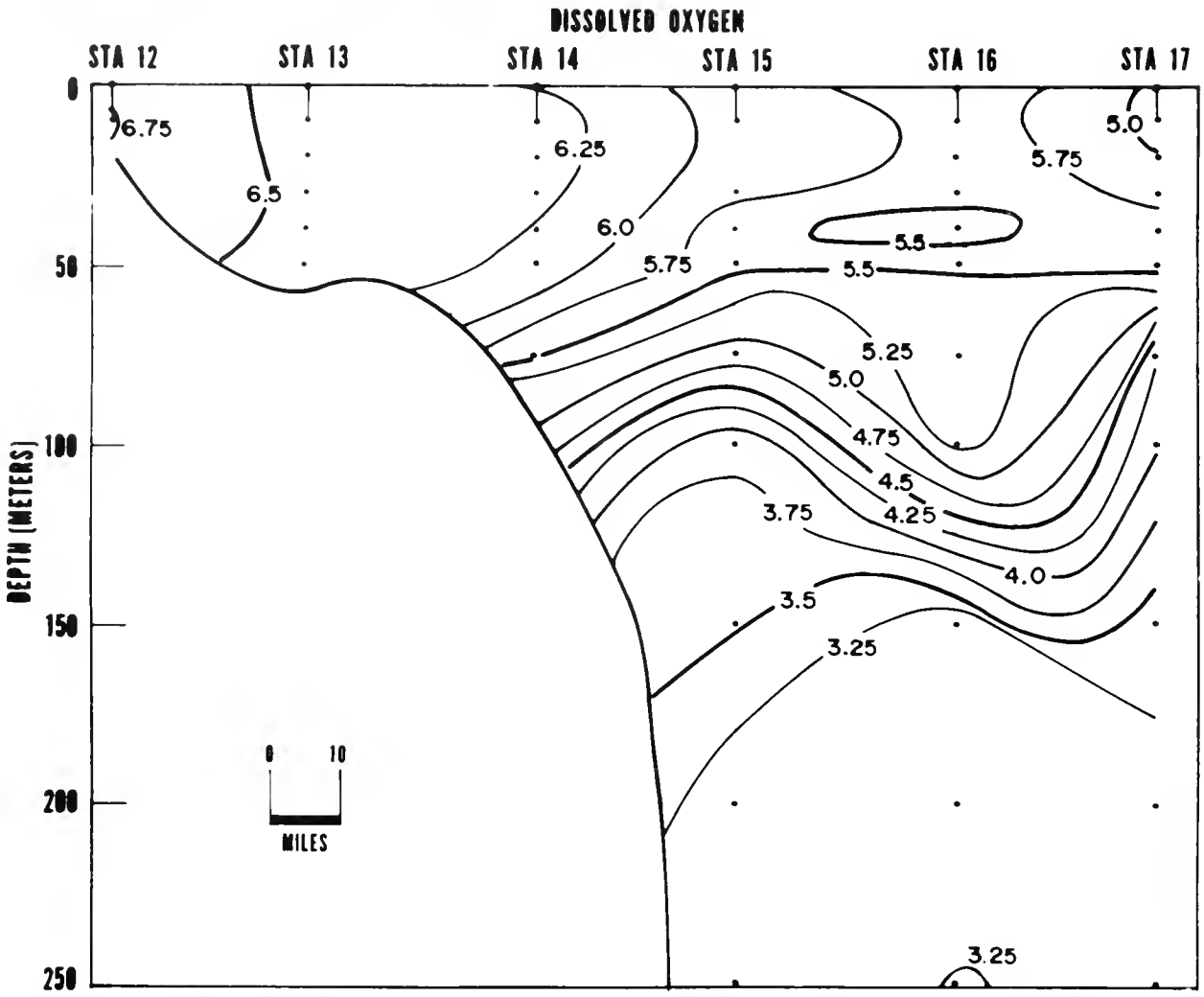


Figure 68. Vertical distribution of dissolved oxygen (ml/l)—Section 3 ICNAF 67–3, 11–23 December 1967.

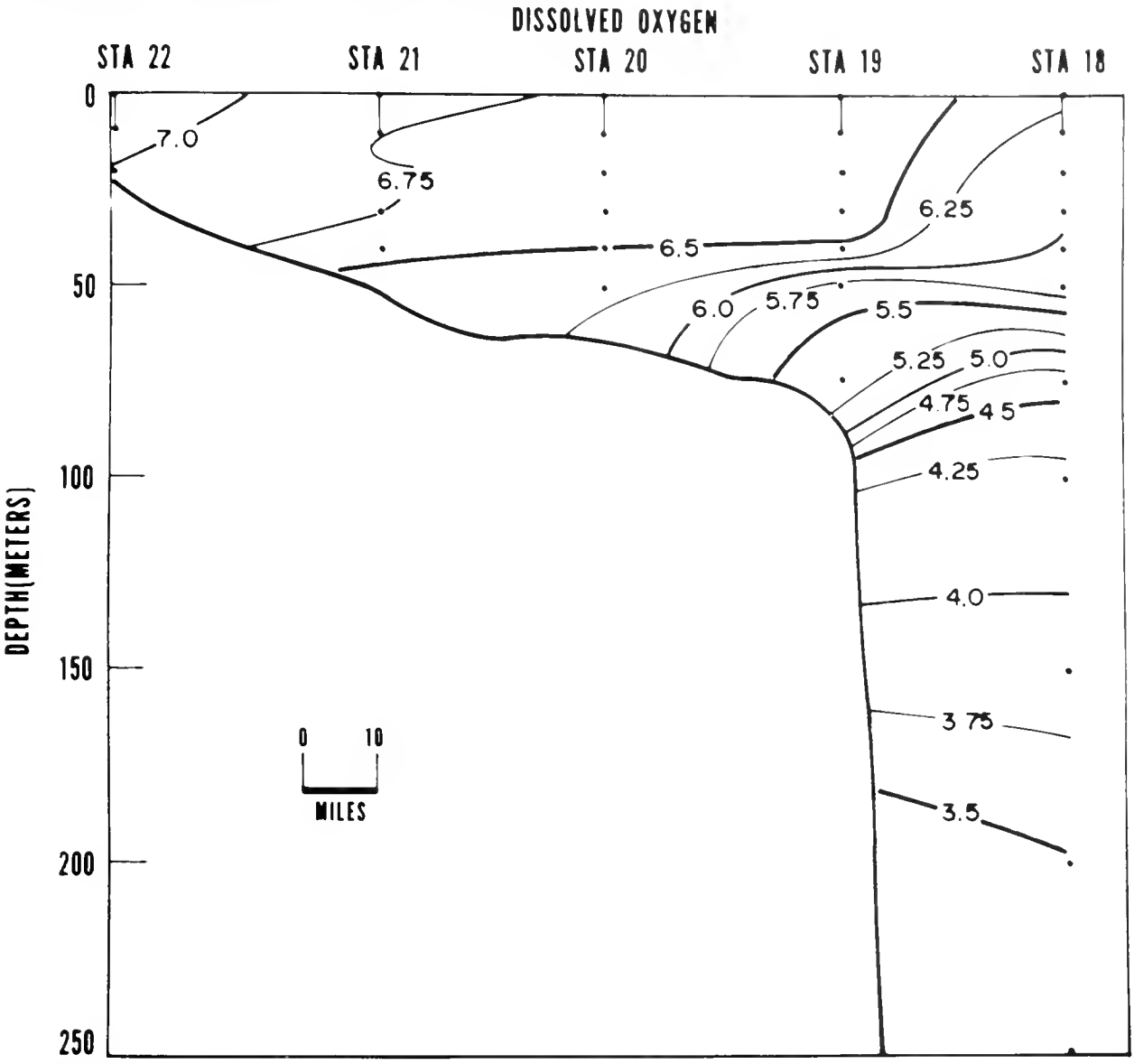


Figure 69. Vertical distribution of dissolved oxygen (ml/l)—Section 4 ICNAF 67-3, 11-23 December 1967.

ICNAF 67-3 SECTION 5

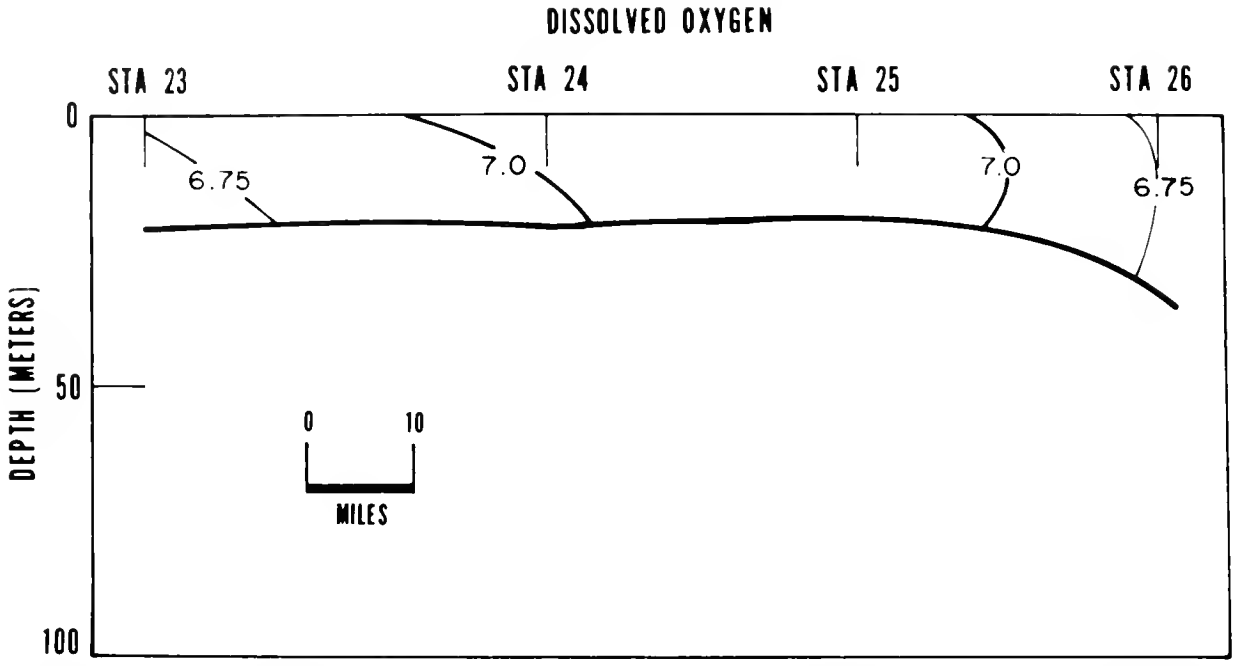


Figure 70. Vertical distribution of dissolved oxygen (ml/l)—Section 5 ICNAF 67-3, 11-23 December 1967.

ICNAF 67-3 SECTION 6

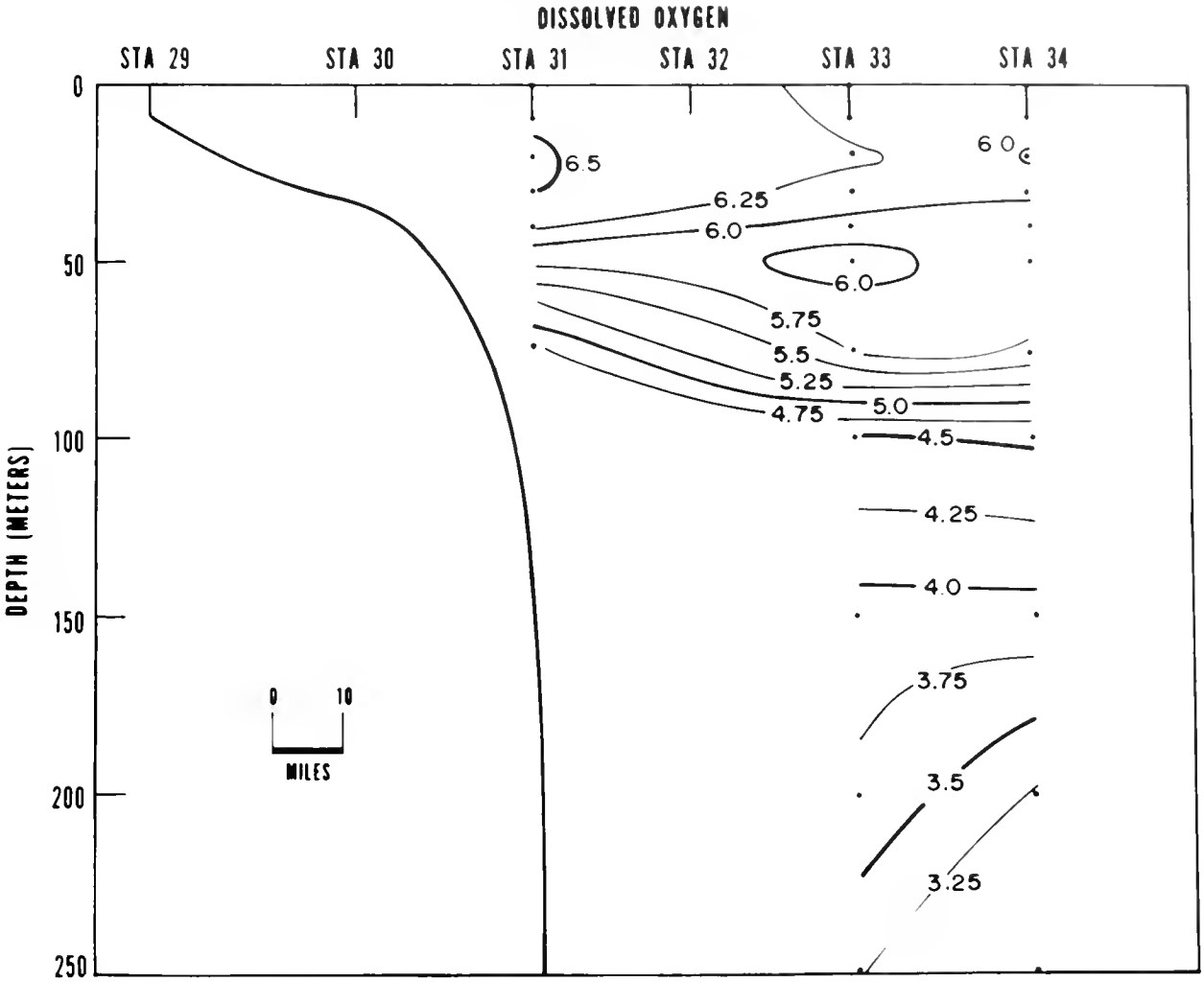


Figure 71. Vertical distribution of dissolved oxygen (ml/l)—Section 6 ICNAF 67-3, 11-23 December 1967.

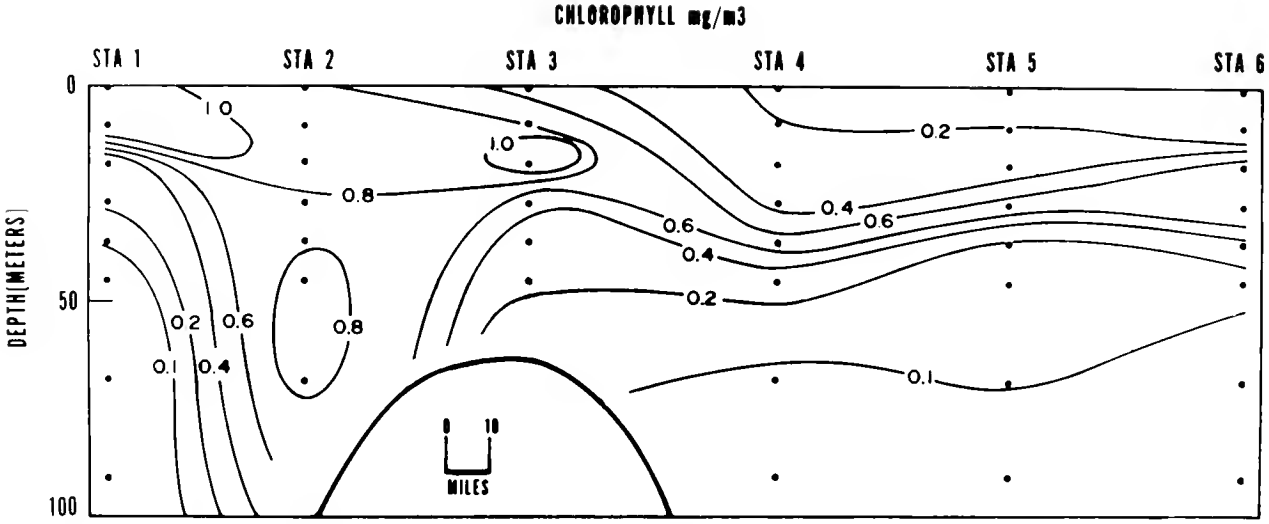


Figure 72. Vertical distribution of chlorophyll (mg/m^3)—Section 1 ICNAF 67-2, 18–29 September 1967.

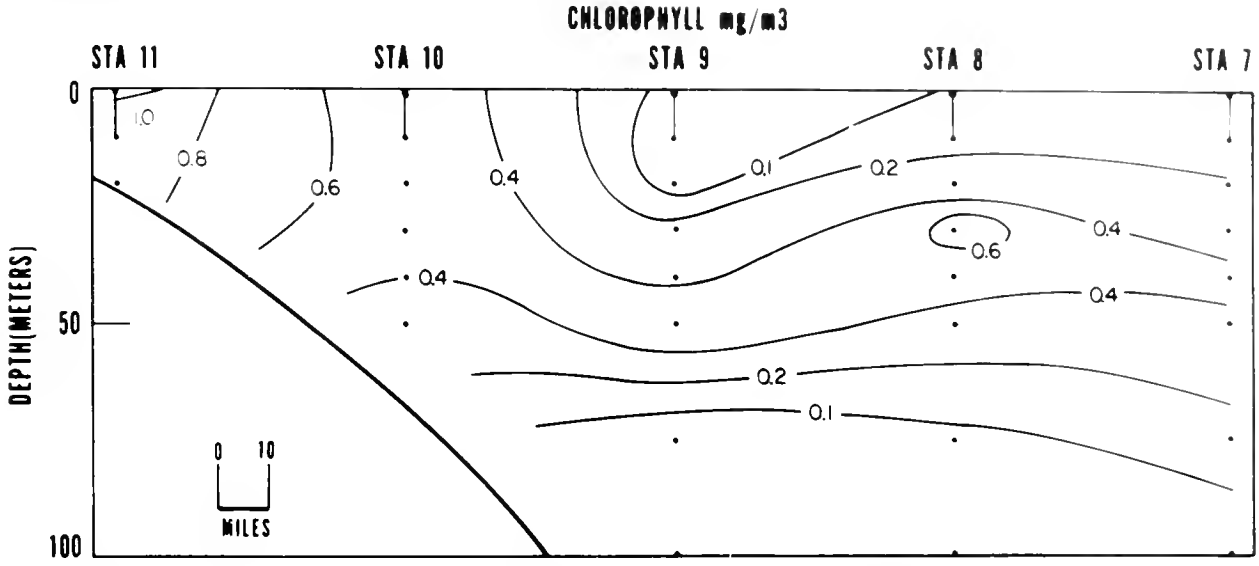


Figure 73. Vertical distribution of chlorophyll (mg/m^3)—Section 2 ICNAF 67-2, 18-29 September 1967.

ICNAF 67-2 SECTION 3

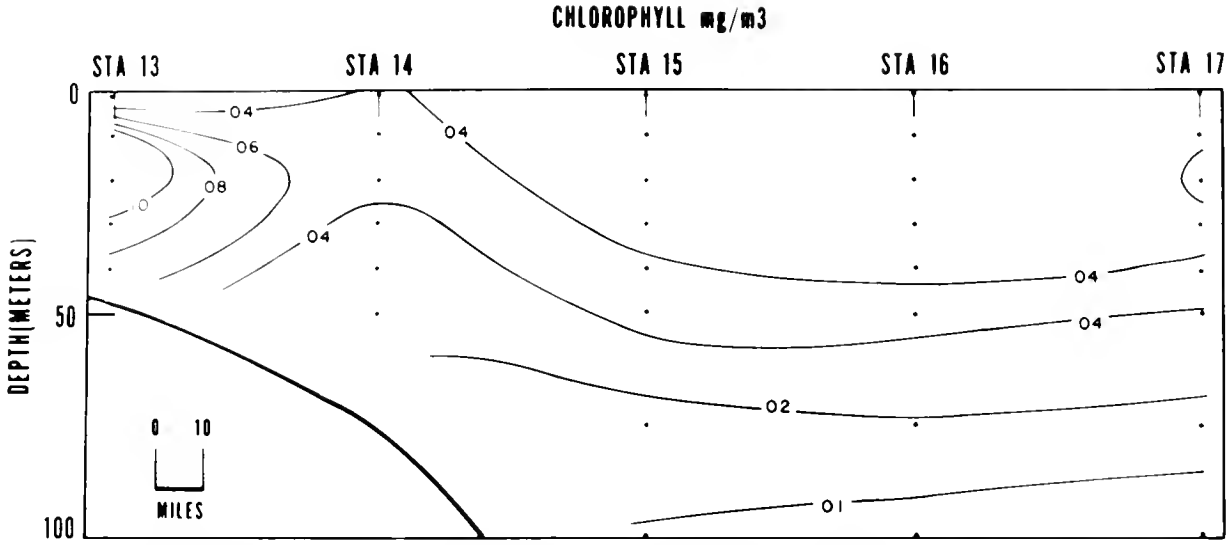


Figure 74. Vertical distribution of chlorophyll (mg/m^3)—Section 3 ICNAF 67–2, 18–29 September 1967.

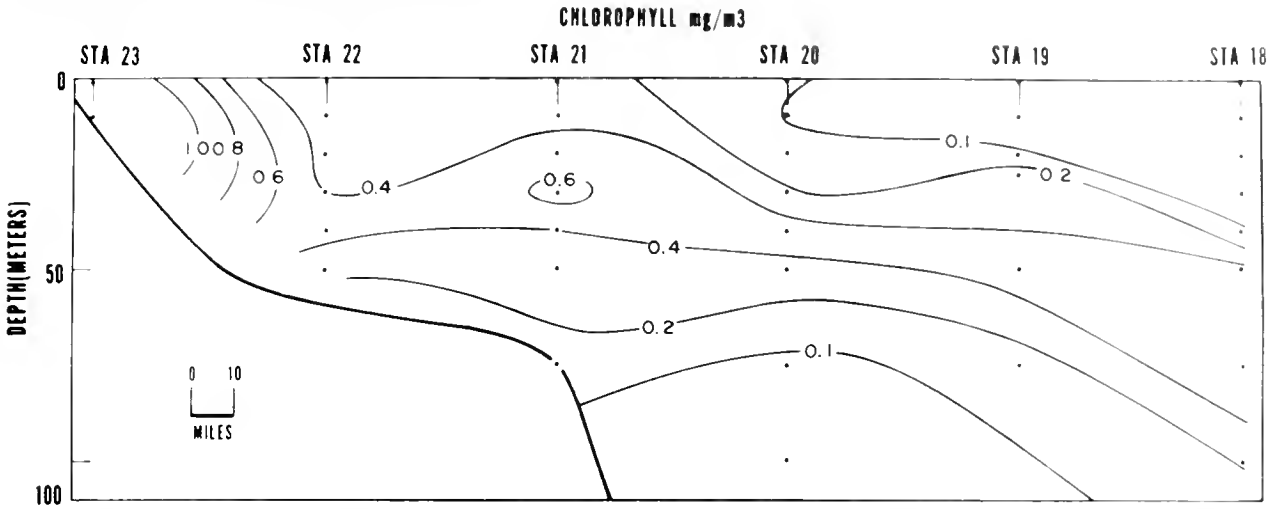


Figure 75. Vertical distribution of chlorophyll (mg/m³)—Section 4 ICNAF 67-2, 18-29 September 1967.

ICNAF 67-2 SECTION 5

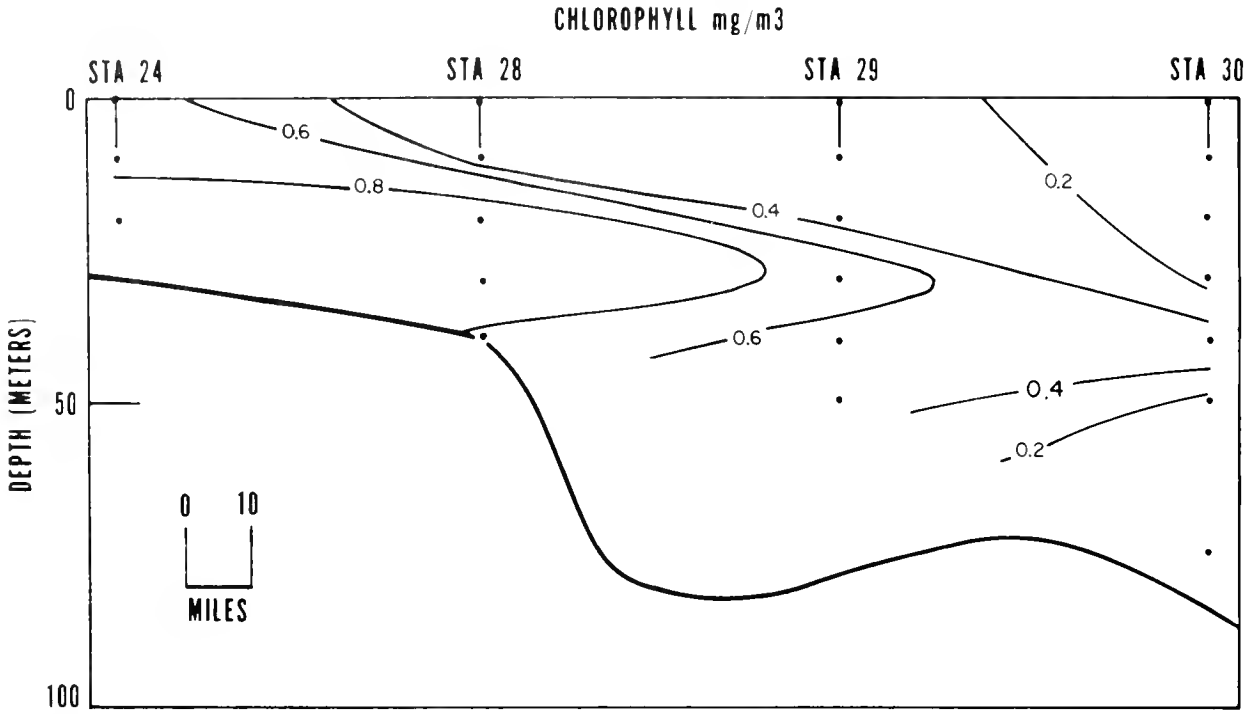


Figure 76. Vertical distribution of chlorophyll (mg/m^3)—Section 5 ICNAF 67-2, 18-29 September 1967.

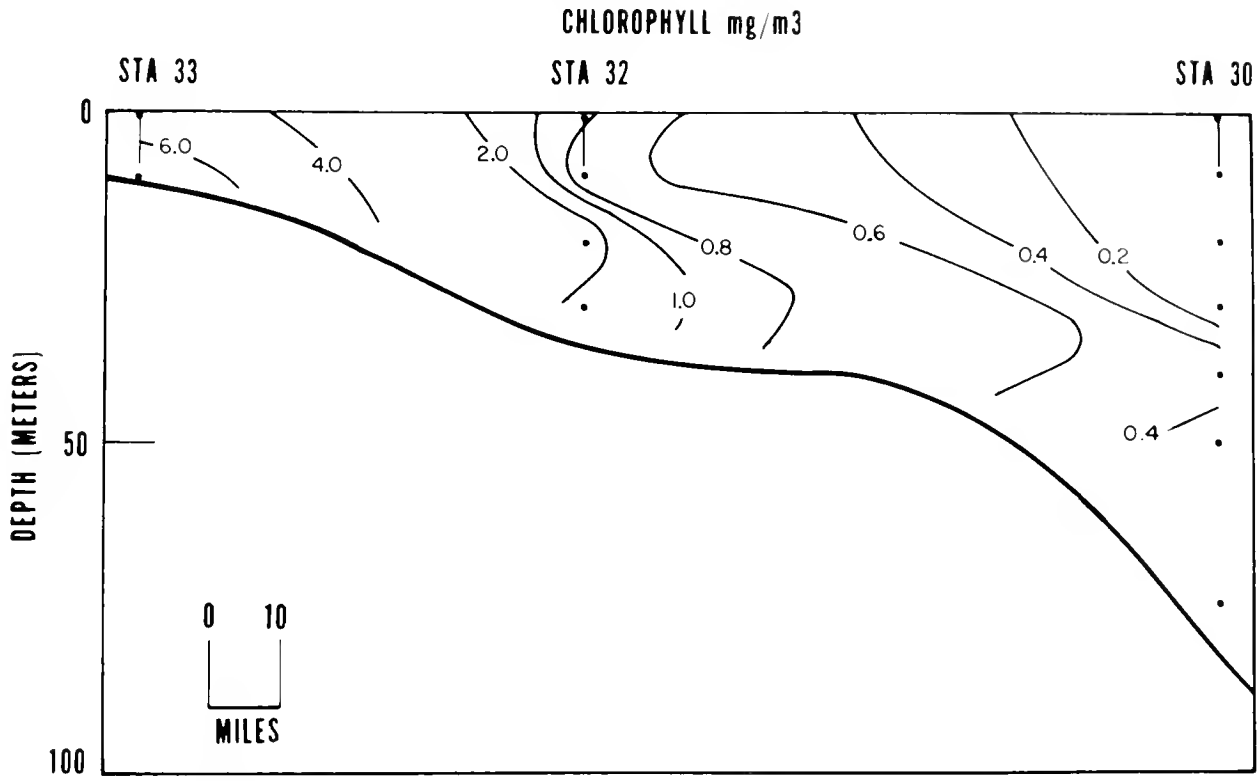


Figure 77. Vertical distribution of chlorophyll (mg/m^3)—Section 6 ICNAF 67-2, 18-29 September 1967.

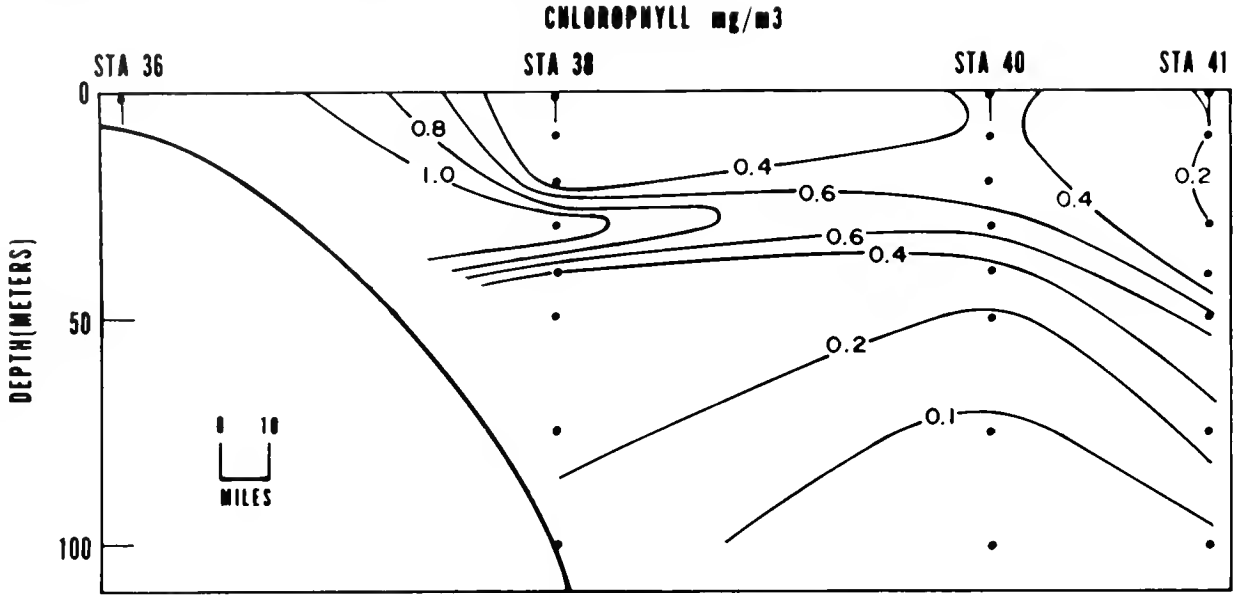


Figure 78. Vertical distribution of chlorophyll (mg/m^3)—Section 7 ICNAF 67–2, 18–29 September 1967.

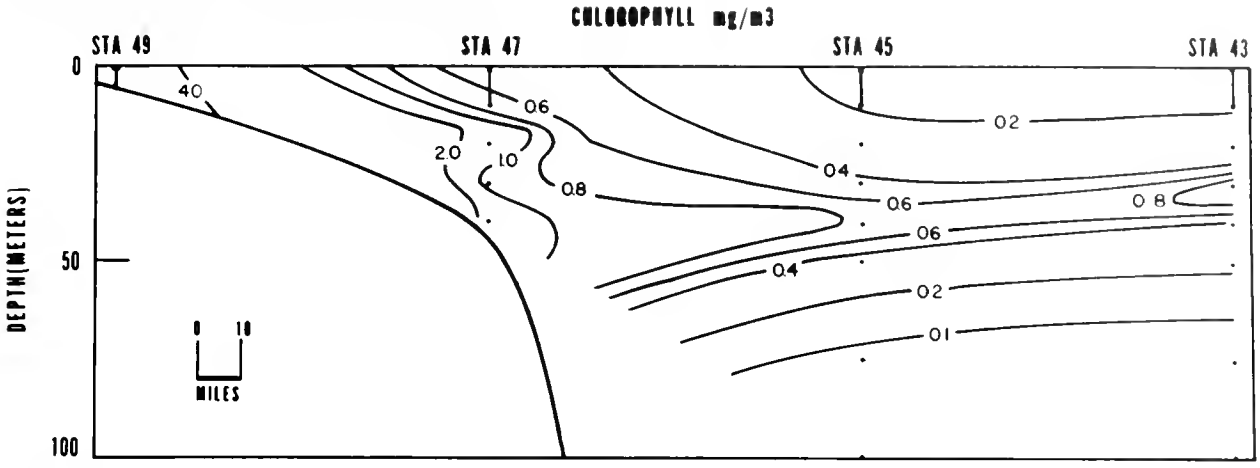


Figure 79. Vertical distribution of chlorophyll (mg/m)—Section 9 ICNAF 67-2, 18-29 September 1967.

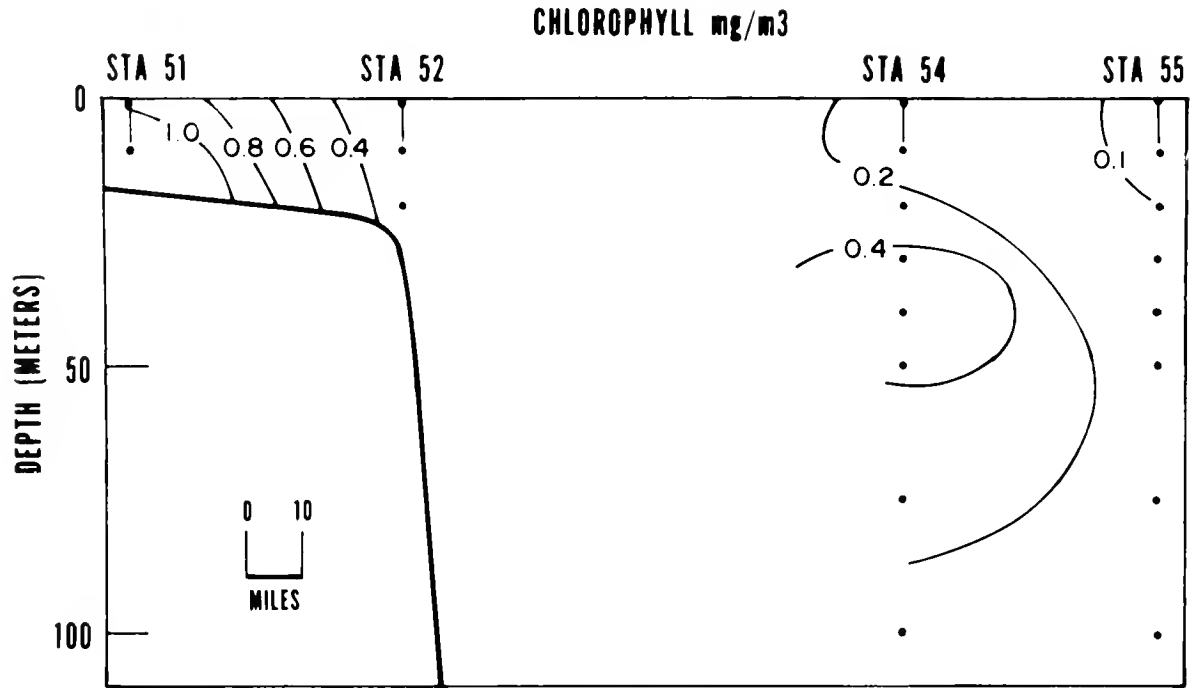


Figure 80. Vertical distribution of chlorophyll (mg/m^3)—Section 9 ICNAF 67–2, 18–29 September 1967.

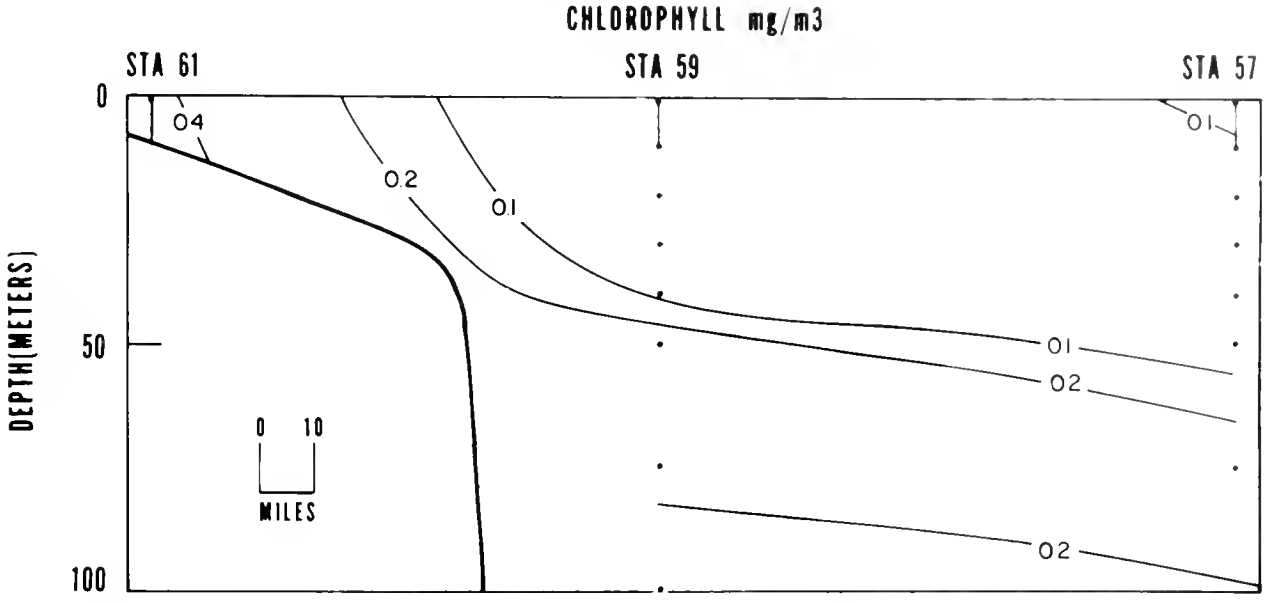


Figure 81. Vertical distribution of chlorophyll (mg/m)—Section 10 ICNAF 67-2, 18-29 September 1967.

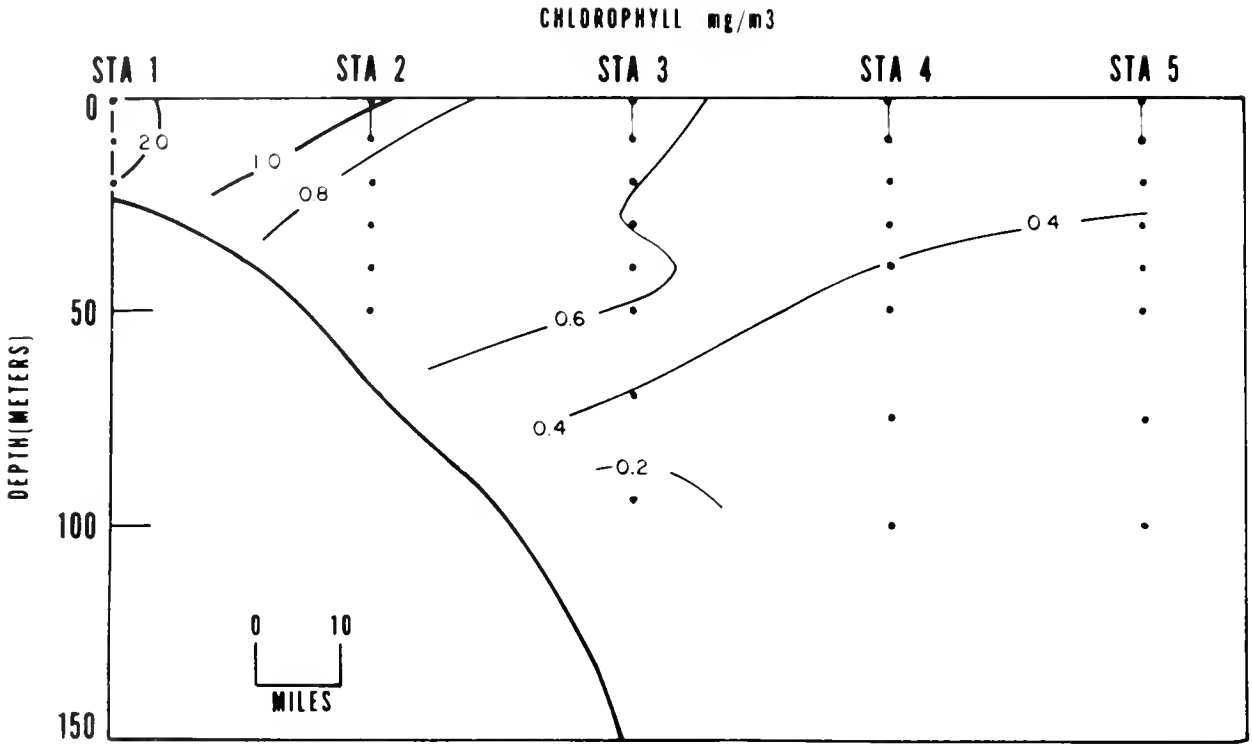


Figure 82. Vertical distribution of chlorophyll (mg/m)—Section 1 ICNAF 67-3, 11-23 December 1967.

ICNAF 67-3 SECTION 2

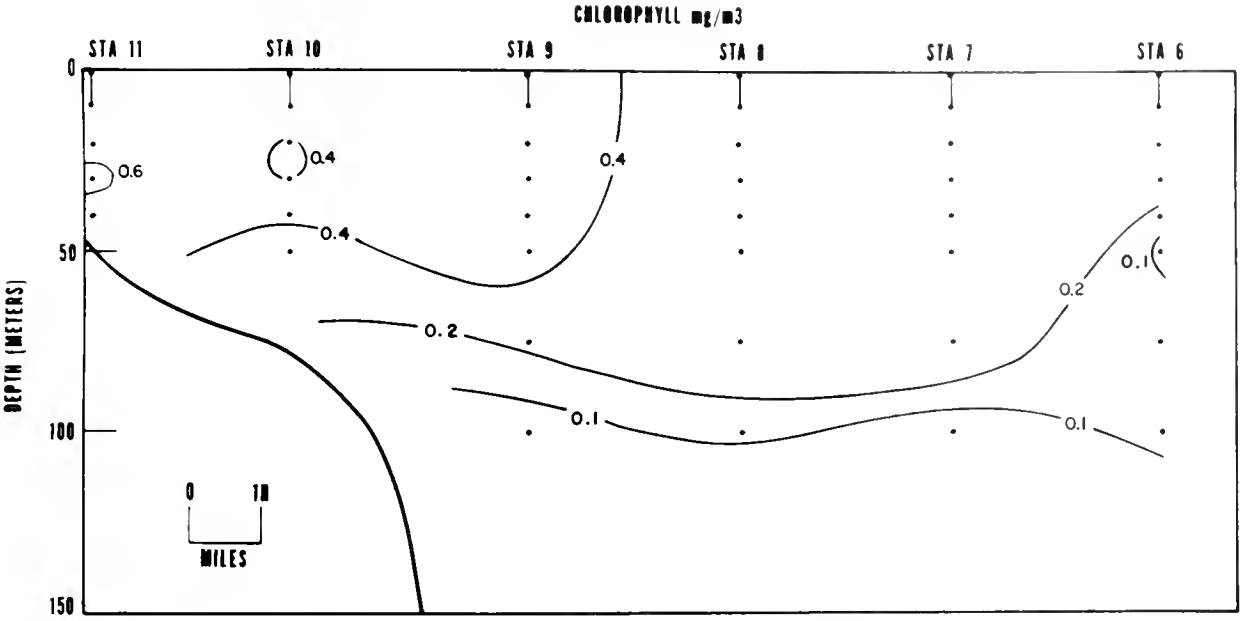


Figure 83. Vertical distribution of chlorophyll (mg/m^3)—Section 2 ICNAF 67–3, 11–23 December 1967.

ICNAF 67-3 SECTION 3

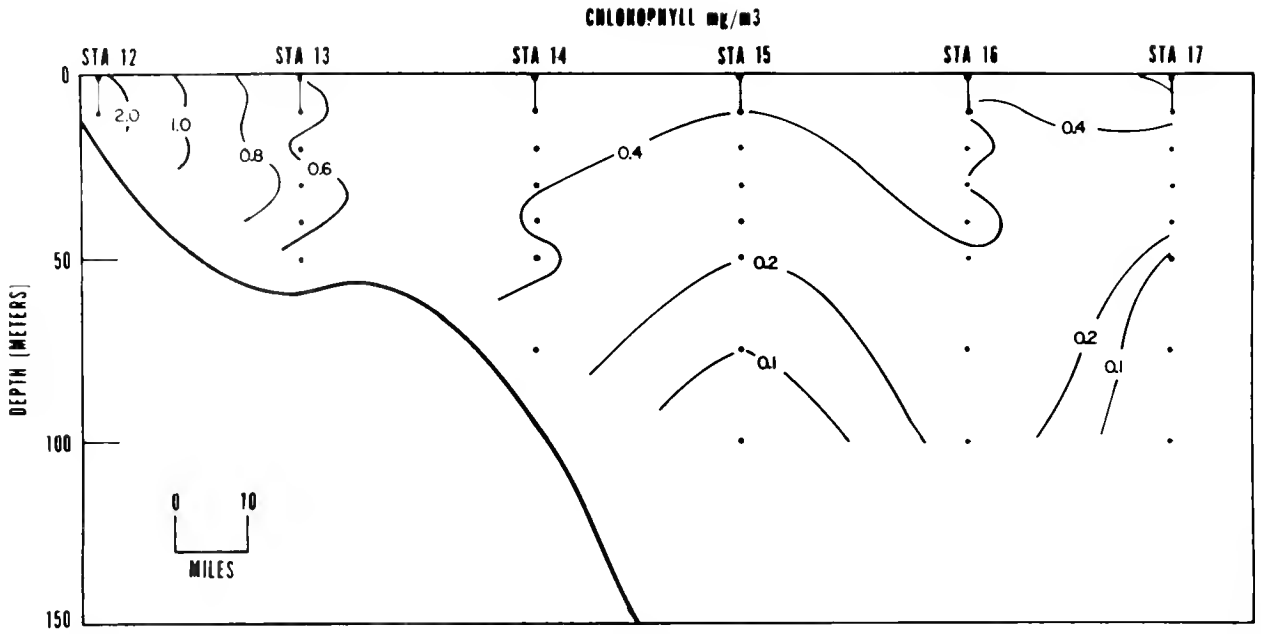


Figure 84. Vertical distribution of chlorophyll (mg/m^3)—Section 3 ICNAF 67-3, 11-23 December 1967.

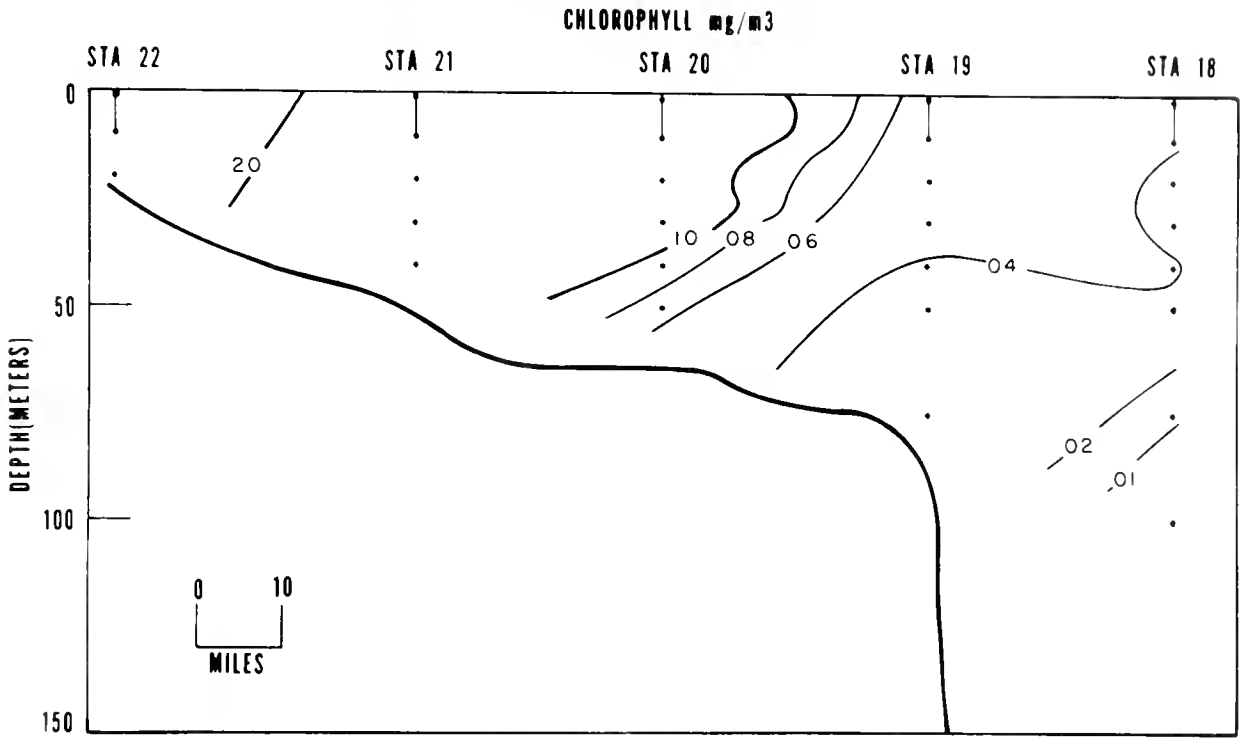


Figure 85. Vertical distribution of chlorophyll (mg/m^3)—Section 4 ICNAF 67-3, 11-23 December 1967.

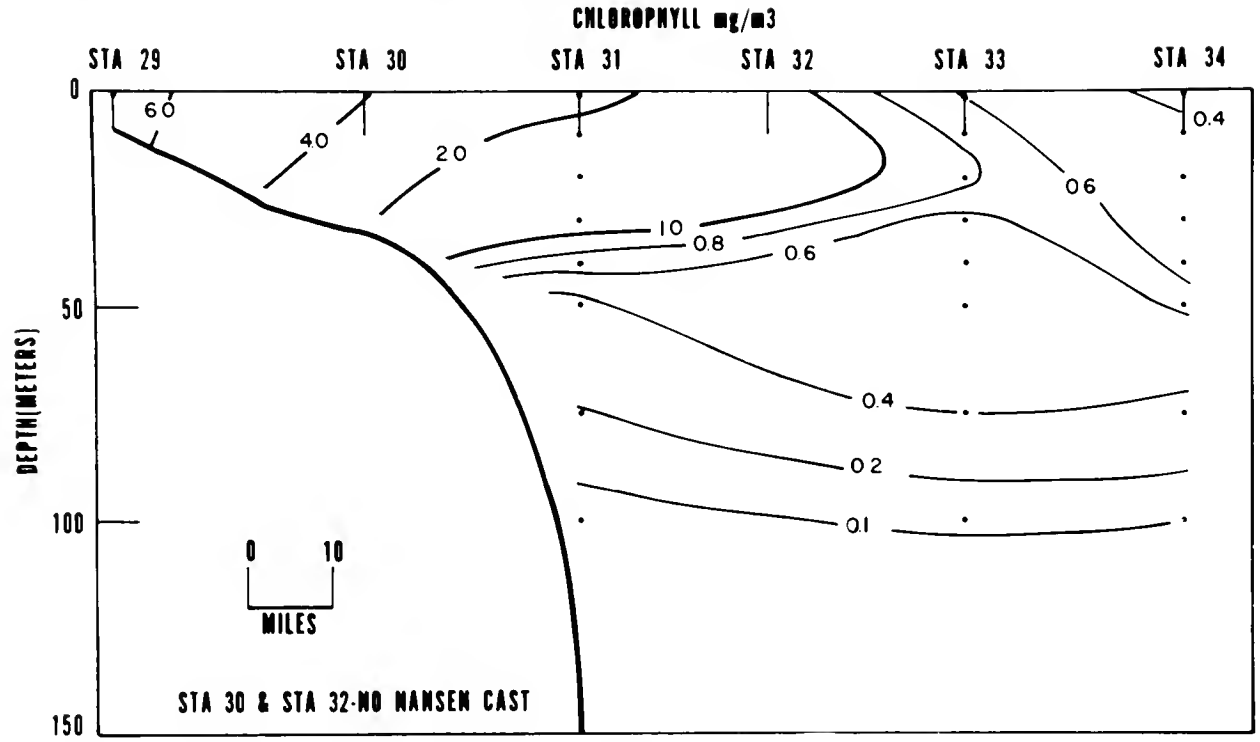


Figure 86. Vertical distribution of chlorophyll (mg/m^3)—Section 5 ICNAF 67-3, 11-23 December 1967.

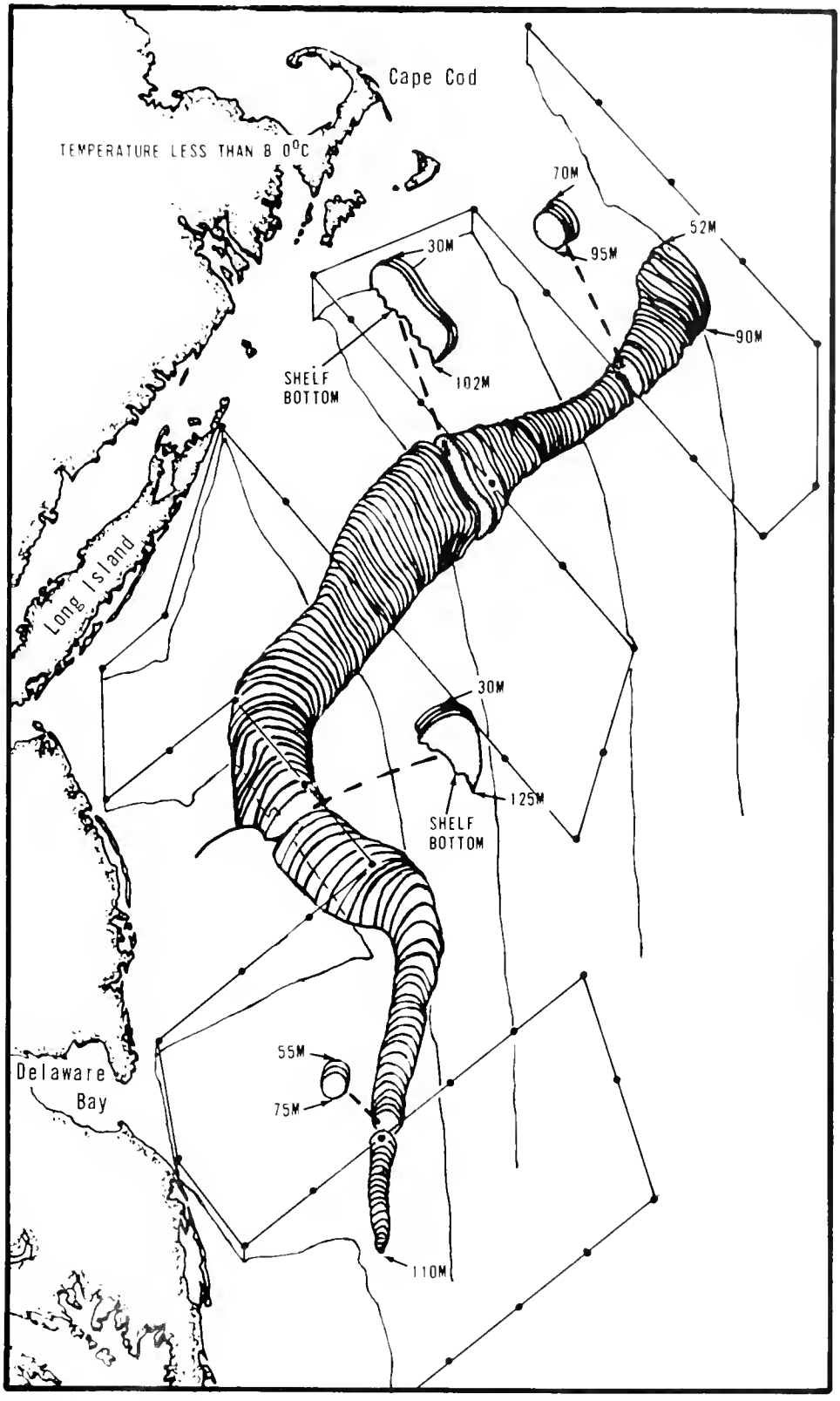


Figure 87. Cold water core (temperatures less than 8°C)—ICNAF 67-2—18-29 September 1967.

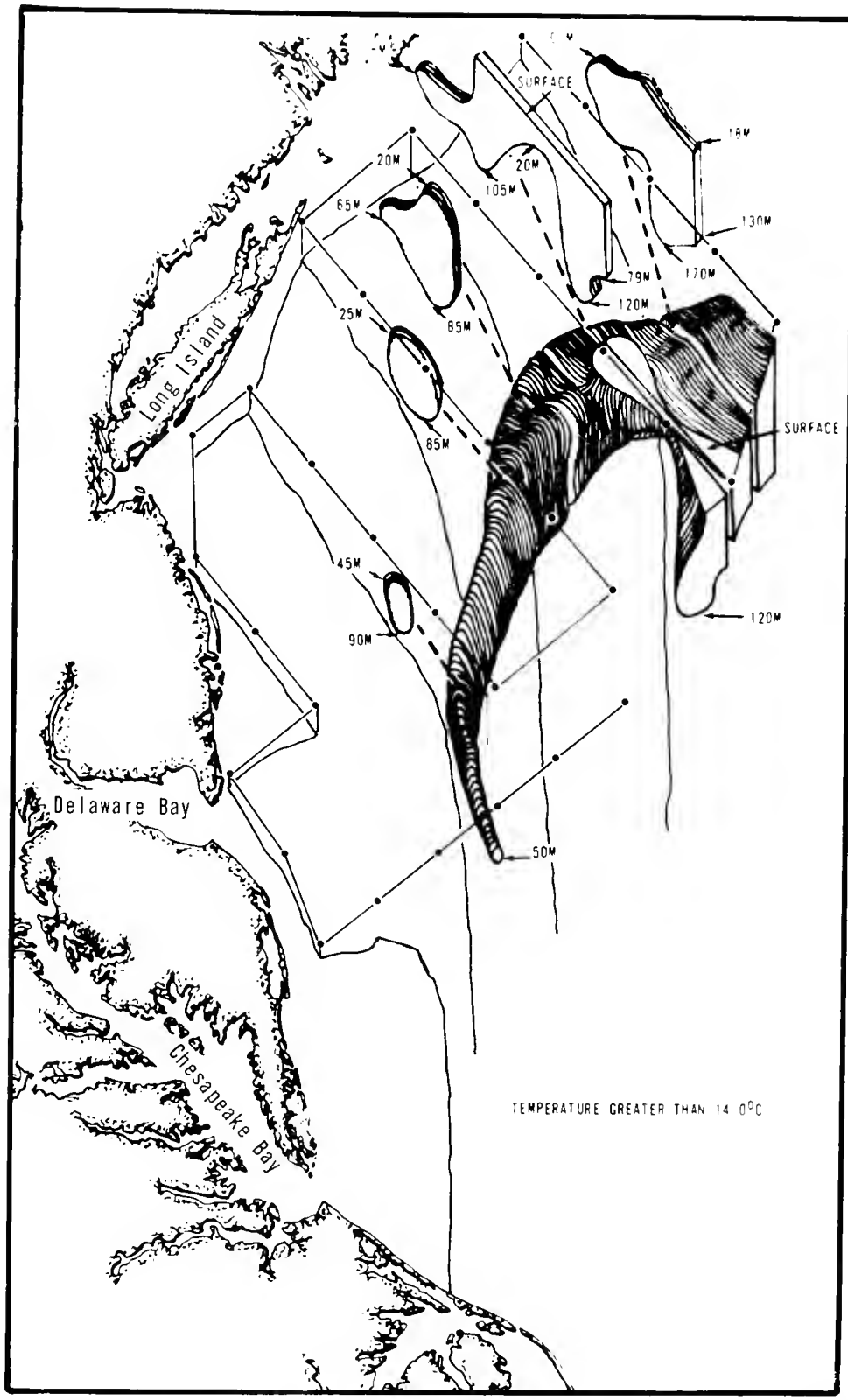


Figure 88. Warm water layer (temperatures greater than 14°C)—ICNAF 67-3—11-23 December 1967.

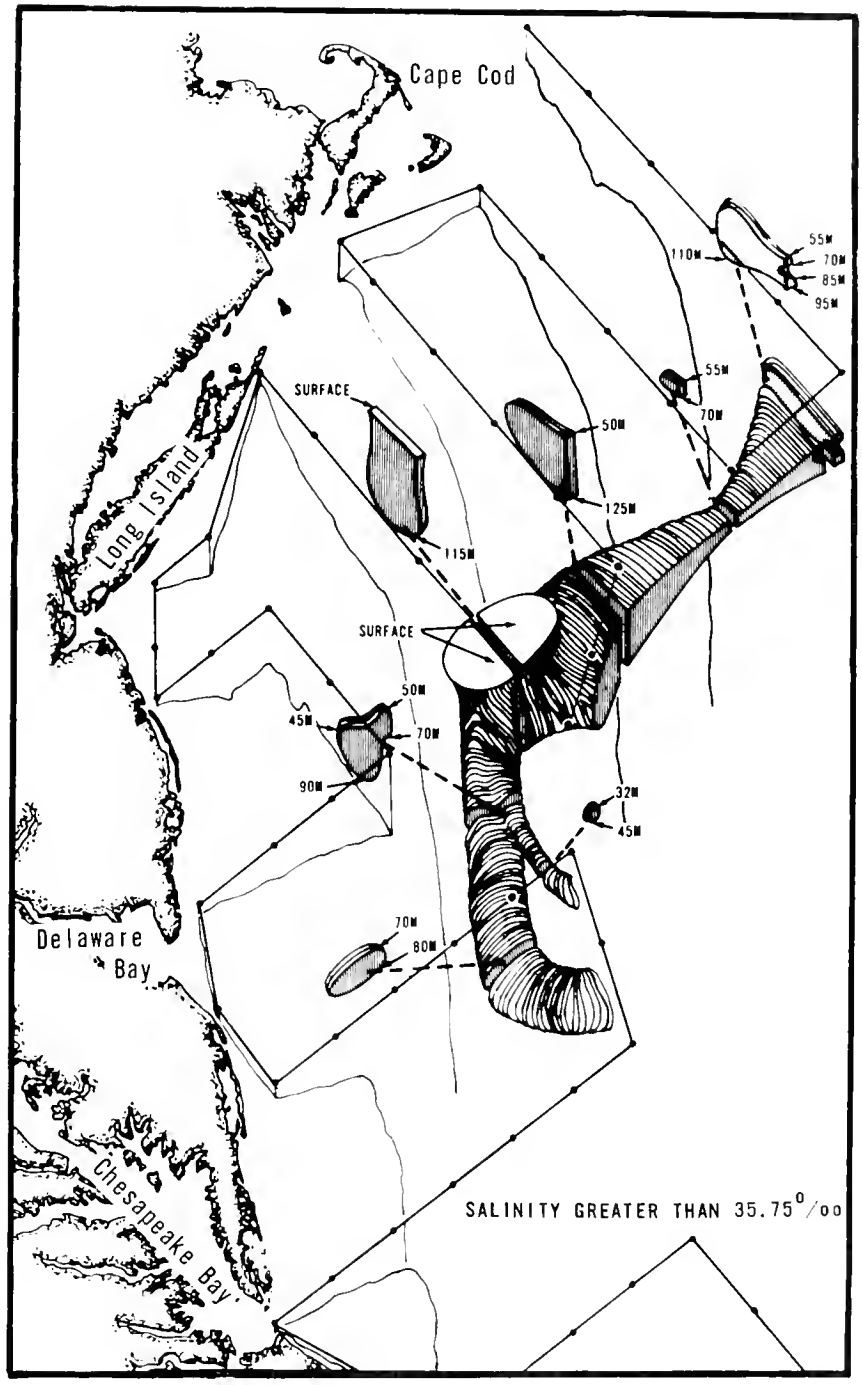


Figure 89. High salinity layer (salinity greater than 35.75‰) ICNAF 67-2 18-29 September 1967.

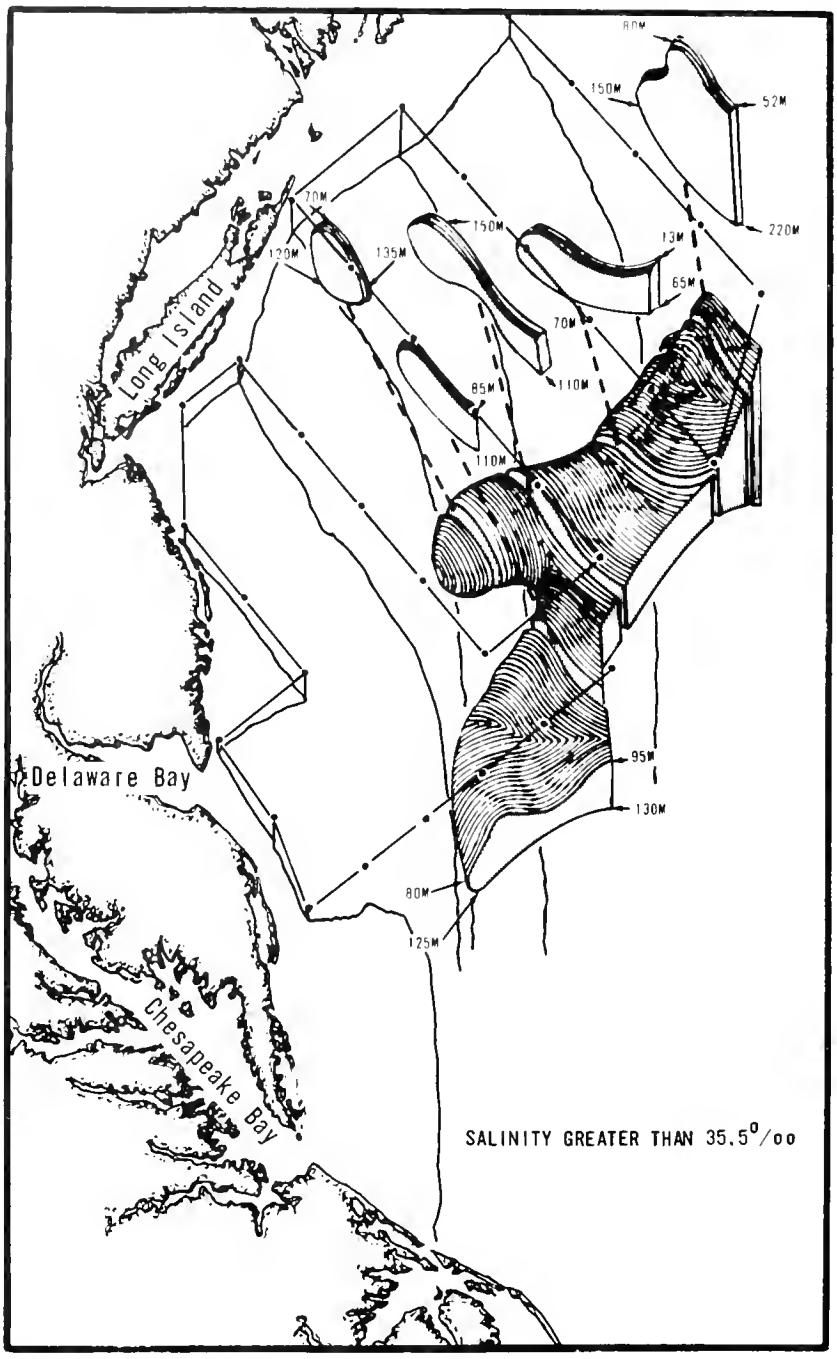


Figure 90. High salinity layer (salinity greater than 35.5‰) ICNAF 67-3, 11-23 December 1967.

APPENDIX A

OCEANOGRAPHIC DATA

A complete description of the codes utilized in the tabulation of oceanographic station data can be found in National Oceanographic Data Center publication M–2, *Processing Physical and Chemical Data from Oceanographic Stations.* (Rev. August 1964, supplement issued May 1966.)

To facilitate use of the oceanographic station data listing, entry headings which are not self-explanatory are described below.

Depth to Bottom ..... Corrected or uncorrected sounding in meter.

Max. Depth of Samples ..... Depth of deepest sample to nearest multiple of one hundred meters.

Wave observations

- DIR. ..... Rounded to nearest multiple of 10 degrees.
- HGT. ..... In increments of ½ m. Sum of 5 meters plus increments of ½ m if 50 is added to direction.
- PER. ..... If numerals 2 through 9 are entered, period in seconds is twice the numeric entry or 2X (numeric entry) + 1. For other entries see WMO Code 3155.
- SEA ..... Sea state according to WMO Code 3700

Weather Code ..... If preceded by X, weather according to WMO Code 4501. If a two-digit entry, weather according to WMO Code 4677.

Cloud Code

- Type ..... Cloud type according to WMO Code 0500.
- Amount ..... Cloud amount in eights. Entry of the numeral 9 indicates cloud amount could not be estimated.

Water

- Color Code ..... Color according to Forel-Ule scale.
- Trans. ..... Transparency in whole meters as determined by Secchi disc.

Wind

- Dir. ..... Rounded to nearest multiple of 10 degrees.
- Speed or Force ..... If preceded by letter S, wind speed in knots; if preceded by letter F, wind force according to Beaufort scale.

Barometer ..... Barometric pressure given in 10, units and tenths of millibars.

Air Temp. °C. ..... Air temperature to tenths of a degree centigrade.

Vis. Code ..... Visibility according to WMO Code 4300.

No obs. depths ..... Number of observed levels associated with the station.

Messenger time ..... Entered in hours and tenths of an hour GMT. For Nansen casts, indicates time of release of messenger applicable to the observational level. For STD casts, indicates the starting time of lowering the sensor.

Card type ..... OBS designates observed levels. STD indicates the values at this standard level were interpolated by a modified 3-point LaGrange formula.

Depth(m)	Depth to nearest meter. A postscript T indicates depth was obtained thermometrically; Z indicates uncorrected "wire out" depth. Postscript Q indicates value was marked doubtful by originator; P indicates value was considered doubtful by NODC. Postscripts P and Q retain this meaning throughout the following entries.
T °C.	Temperature to hundredths of a degree Centigrade
S ‰	Salinity in parts-per-thousand.
SIGMA-T	Entered to hundredths.
Specific-volume Anomaly-x 10^7	Multiply entry by 10^{-7} to obtain specific-volume anomaly in cubic centimeters per gram.
$\Sigma\Delta$D Dyn. M. x 10^3	Multiply entry by 10^{-3} to obtain anomaly of dynamic height in dynamic meters referenced to the sea surface.
Sound Velocity	Sound velocity according to Wilson's formula entered to tenths of a meter per second.
O_2 ml/l	Dissolved oxygen in milliliters per liter entered to hundredths.
PO_4-P ug-at/l	Inorganic phosphate in microgram-atoms per liter entered to hundredths.
Total-P ug-at/l	Total phosphous in microgram-atoms per liter entered to hundredths.
NO_2-N ug-at/l	Nitrite-nitrogen in microgram-atmos per liter entered to hundredths.
NO_3-N ug-at/l	Nitrate-nitrogen in microgram-atmos per liter entered to tenths.
SiO_4-Si ug-at/l	Silicate-silicon in microgram-atmos per liter entered to whole units.
pH	Entered to hundredths.

TABLE I.—*Observed and interpolated oceanographic data taken by USCGC Evergreen, 19–29 September 1970, on ICNAF Cruise 67–2; prepared from NoDC Listing No. 31–8023.*

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° ' 1/10	LONGITUDE ° ' 1/10	QUADRANT	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR 1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX DEPTH OF SMPL'S	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT PER	WAVE OBSERVATIONS SEA	AIR TEMP CODE	SEA TEMP CODE	SEA TEMP	STATION NUMBER
318	023	EV	413	N 069 10	W	151	19	09	19	020	1967	102	001	0151	01	21	02		X0			0001

WATER COLOR CODE	WATER TRANS (m)	WIND DIR	WIND SPEED OF FORCE	BAROMETER (mbs)	AIR TEMP °C DRY BULB	AIR TEMP °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	24	S10	142	155	144	7	C4	

MESSENGER TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10⁸	Σ Δ D DYN. M x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	SI(OH)₄-Si µg-at/l	NO₂-N µg-at/l	CHL—A	PHAEO µg/l
		STD	0000	1145	3187	2428	0036525	0000	14916	683					
220		OBS	0000	1145	31865	2428			14916	683				114	
		STD	0010	0850	32001	2488	0038358	0044	14811	686					
		OBS	0010	0850	32008	2488			14811	686				145	
		STD	0020	0529	32284	2544	0038425	0082	14709	667					
1000		OBS	0020	0529	32285	2544			14709	667				232	
		STD	0030	0442	32322	2559	0038436	0107	14675	661					
		OBS	0030	0442	32320	2559			14675	661				223	
		OBS	0040	0343	32320	2575			14659	663				211	
		STD	0050	0435	32352	2575	0038411	0130	14654	655					
		OBS	0050	0434	32351	2575			14654	655				205	
		STD	0075	0410	32376	2602	0038428	0186	14655	658					
		OBS	0075	0410	32376	2602			14655	658				207	
		STD	0100	0410	32408	2611	0038384	0234	14662	577					
		OBS	0100	0410	32981	2619			14662	577				75	
		STD	0125	0410	32992	2620	0038357	0281	14660						
		OBS	0140	0410	32992	2620			14660						

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° ' 1/10	LONGITUDE ° ' 1/10	QUADRANT	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR 1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX DEPTH OF SMPL'S	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT PER	WAVE OBSERVATIONS SEA	AIR TEMP CODE	SEA TEMP CODE	SEA TEMP	STATION NUMBER
318	023	EV	41	N 069	W	151	19	09	19	250	1967	102	002	1078	01	21	02		X0			0002

WATER COLOR CODE	WATER TRANS (m)	WIND DIR	WIND SPEED OF FORCE	BAROMETER (mbs)	AIR TEMP °C DRY BULB	AIR TEMP °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	28	S25	139	150	144	7	07	

MESSENGER TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10⁸	Σ Δ D DYN. M x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	SI(OH)₄-Si µg-at/l	NO₂-N µg-at/l	CHL—A	PHAEO µg/l
		STD	0000	1290	3196	2418	0038394	0000	14967	559					
150		OBS	0000	1290	31962	2418			14967	559				095	
		STD	0010	1290	3197	2419	0038394	0038	14969	559					
		OBS	0010	1290	31965	2419			14969	559				081	
		STD	0020	1290	3197	2419	0038417	0077	14971	604					
001		OBS	0020	1290	31965	2419			14971	604				093	
		STD	0030	1290	3197	2419	0038440	0115	14972	605					
		OBS	0030	1290	31965	2419			14972	605				076	
		OBS	0040	1290	31965	2419			14974	605				078	
		STD	0050	1290	3197	2419	0038486	0192	14976	606					
		OBS	0050	1290	31965	2419			14976	606				064	
		STD	0075	1290	3197	2419	0038543	0288	14981	606					
		OBS	0075	1290	31965	2419			14981	606				041	

REFERENCE		SHIP	LATITUDE	LONGITUDE	DIFF. INDICTR	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		OEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEA-THER CODE	CLOUD CODES			NODC STATION NUMBER
CTRY CODE	ID. NO	CODE	° 1/10	° '1/10		10°	1°	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT		
31	6023	EV	4032 N	06856 W		151	08	09	19	080	1967	102	003	0070	00	27	0	2		X0				0003

WATER		WIND		BARO-METER (mbs)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
DT	SD	27	S10	142	161	156	6	06	

MESSENGR TIME OF CAST HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S °/₀₀	SIGMA-T	SPECIFIC VOLUME ANOMALY-10^7	$\Sigma\Delta$ O DYN. M. x 10^3	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at/l	CHL-A	SiO_4-Si µg-at/l	pH	SCC
		STD	0000	1422	3197	2382	0040896	0000	15012	631							
080		OBS	0000	1422	31965	2382			15012	631				056			
		STD	0010	1340	3204	2405	0038774	0040	14987	654							
		OBS	0010	1340	32041	2405			14987	654				078			
		STD	0020	1321	3210	2413	0038019	0078	14983	627							
000		OBS	0020	1321	32098	2413			14983	627				136			
		STD	0030	1145	3215	2450	0034469	0114	14925	604							
		OBS	0030	1145	32152	2450			14925	604				047			
		OBS	0040	1043	32209	2473			14890	596				031			
		STD	0050	0921	3233	2502	0029571	0179	14849	592							
		OBS	0050	0921	32330	2502			14849	592				024			

REFERENCE		SHIP	LATITUDE	LONGITUDE	DRIFT INDEX	MARSDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX DEPTH OF SMPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES	
CTRY CODE	ID. NO.	CODE	° 1/10	° 1/10		10°	1°	MO	DAY	HR 1/10	CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT
318023	EV	4000 N	06856 W			151	08	04	19	115	1967	104	004		1097	11	25	11			

WATER		WIND		BARO-METER (mbs)	AIR TEMP °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR	SPEED OR FORCE		DRY BULB	WET BULB			
DT	SD	31	S12	156	200	184	6	20	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY $\times 10^7$	$\Sigma\Delta D$ DYN. M $\times 10^3$	SOUND VELOCITY	O_2 ml l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_3-N µg-at/l	CHL-A	SiO_4-Si µg-at/l	pH
		STD	0000	2205	3538	2451	0034352	0000	15280	452						
115		OBS	0000	2205	35375	2451			15280	452						
		STD	0010	2198	3537	2452	0034275	0034	15280	450				018		
		OBS	0010	2198	35365	2452			15280							
		STD	0020	1250	3479	2635	0014905	0060	1499-	448				020		
003		OBS	0020	1250	34790	2635			14992	448						
		STD	0030	1180	3490	2657	0014838	0076	14971	469				032		
		OBS	0030	1180	34900	2657			14971							
		OBS	0040	1287	35250	2663			15014	486				032		
		STD	0050	1327	3537	2664	0014197	0116	15031	476				069		
		OBS	0050	1327	35370	2664			15031							
		STD	0075	1310	3541	2670	0013674	0140	15029	449				026		
		OBS	0075	1310	35405	2670			15029							
		STD	0100	1252	3544	2685	0012366	0172	15014	422				009		
		OBS	0100	1252	35447	2685			15014							
		STD	0125	1239	3546	2689	0012085	0203	15014	394				001		
		STD	0150	1198	3547	2698	0011283	0232	15005	363						
		OBS	0150	1198	35470	2698			15005	363						
		STD	0200	1036	3524	2710	0010218	0286	14953	300						
		OBS	0200	1036	35240	2710			14953	300						
		STD	0250	0892	3512	2724	0008854	0333	14907	289						
		OBS	0250	0892	35120	2724			14907	289						
		STD	0300	0795	3504	2733	0008097	0376	14877							
		OBS	0300	0795	35035	2733			14877							
		STD	0400	0578	3494	2755	0006001	0446	14817							
		OBS	0400	0578	34935	2755			14807							
		STD	0500	0521	3494	2762	0005391	0503	14800							
		OBS	0500	0521	34938	2762			14800							
		STD	0600	0498	3494	2765	0005234	0556	14807							
		OBS	0600	0498	34937	2765			14807							
		STD	0700	0485	3494	2766	0005180	0608	14819							
		OBS	0700	0485	34938	2766			14819							
		STD	0800	0464	3494	2769	0005015	0659	14827							
		OBS	0800	0464	34940	2769			14827							
		STD	0900	0461	3495	2770	0005048	0710	14842							
		OBS	0900	0461	34945	2770			14842							
		STD	1000	0455	3495	2771	0005056	0760	14856							
		OBS	1000	0455	34948	2771			14856							
		OBS	1065	0444	34958	2773			14863							

REFERENCE		SHIP	LATITUDE	LONGITUDE	CARET DOCID	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX DEPTH OF SMPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES			NODC STATION NUMBER
CTRY CODE	ID NO.	CODE	° ' 1/10	° ' 1/10		10°	1°	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT		
31	8023	EV	39 3 N	069 00 W		115	99	09	19	147	1967	102	005	2650	19	29	1	2		X1				0005

WATER		WIND		BARO-METER (mbs)	AIR TEMP °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR.	SPEED (OPT'L)		DRY BULB	WET BULB			
DT	SD	31	S10	159	267	256	7	20	

MESSENGER TIME (HR 1/10)	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10^5	$\Sigma\Delta D$ DYN. M. x 10^3	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at/l	CHL-A	SiO_4-Si µg-at/l	pH	SCC
		STD	0000	2510	3602	2410	0038226	0000	15362	484							
147		OBS	0000	2510	36020	2410			15362	484				015			
		STD	0010	1695	3566	2605	0019715	0029	15144	487							
		OBS	0010	1695	35660	2605			15144	487				020			
		STD	0020	1314	3534	2665	0014082	0046	15021	488							
		STD	0030	1180	3533	2690	0011675	0059	14977	488							
013		OBS	0030	1185	35330	2690			14977	488				065			
		OBS	0040	1292	35620	2691			15020	502				018			
		STD	0050	1325	3572	2692	0011594	0082	15034	547							
		OBS	0050	1325	35720	2692			15034	547				017			
		STD	0075	1330	3575	2693	0011542	0111	15040	474							
		OBS	0075	1330	35750	2693			15040	474				011			
		STD	0100	1225	3575	2714	0009578	0137	15009	413							
		OBS	0100	1225	35753	2714			15009					003			
		STD	0125	1144	3559	2717	0009355	0161	14983	365							
		STD	0150	1075	3546	2720	0009168	0184	14961	329							
		OBS	0150	1075	35458	2720			14961	329							
		STD	0200	0975	3530	2725	0008756	0229	14931								
		OBS	0200	0975	35300	2725			14931								
		STD	0250	0862	3524	2738	0007523	0274	14897								
		OBS	0250	0862	35237	2738			14897								
		STD	0300	0762	3506	2740	0007414	0317	14865								
		OBS	0300	0762	35062	2740			14865								
		STD	0400	0584	3497	2757	0005818	0373	14810								
		OBS	0400	0584	34970	2757			14810								
		STD	0500	0518	3499	2767	0004953	0427	14800								
		OBS	0500	0518	34992	2767			14800								
		STD	0600	0478	3494	2771	0004671	0475	14800								
		OBS	0600	0478	34980	2771			14800								
		STD	0700	0464	3501	2775	0004459	0521	14811								
		OBS	0700	0464	35014	2775			14811								
		STD	0800	0450	3501	2776	0004354	0564	14822								
		OBS	0800	0450	35016	2776			14822								
		STD	0900	0438	3500	2777	0004326	0607	14833								
		OBS	0900	0438	35004	2777			14833								
		STD	1000	0421	3500	2779	0004245	0650	14843								
		OBS	1000	0421	35000	2779			14843								
		STD	1100	0410	3500	2780	0004205	0692	14855								
		STD	1200	0397	3500	2781	0004141	0734	14866								
		OBS	1200	0397	34999	2781			14866								
		STD	1300	0383	3500	2782	0004056	0775	14877								
		STD	1400	0368	3500	2784	0003952	0815	14888								
		STD	1500	0352	3500	2786	0003832	0854	14898								
		OBS	1500	0352	34999	2786			14898								

REFERENCE		SHIP	LATITUDE	LONGITUDE	QUADRANT	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SMPL'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		NET STATION NUMBER
CTRY CODE	ID. NO.	CODE	° ' 1/10	° ' 1/10		10°	1°	MO	DAY	HR 1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER		TYPE	AMT	
318	023	EV	39 00 N	069 50 W		115	99	09	19	183	1967	102	005	3181	15	29	1	2	1	X	1	0004

WATER		WIND		BARO-METER (mbs)	AIR TEMP °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
DT	SD	31	S10	176	256	222	7		

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY $\times 10^5$	$\frac{1}{2}\Delta D$ DYN. M $\times 10^3$	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_3-N µg-at/l	CHL—A	SI $(OH)_4$-Si µg-at/l	
		STD	0000	24.95	35.96	24.10	0.03825	0.000	1535.8	5.49						
183		OBS	0000	24.95	35.955	24.10			1535.8	5.49						
		STD	0010	24.93	35.99	24.14	0.03743	0.038	1535.9	5.50				0.15		
		OBS	0010	24.93	35.985	24.14			1535.9	5.50				0.12		
003		OBS	0018	24.52	36.10	24.38			1535.3							
		STD	0020	24.49	36.08	24.45	0.03496	0.075	1534.2	5.33						
		OBS	0020	24.49	36.080	24.46			1534.2	5.33				0.67		
		STD	0030	24.11	35.46	25.10	0.02881	0.105	1523.5	5.52						
		OBS	0030	24.11	35.459	25.10			1523.5	5.52				0.71		
		OBS	0040	15.66	35.085	25.91			1510.2	5.43				0.36		
		OBS	0047	13.13	35.090	26.45			1502.2							
		STD	0050	14.21	35.43	26.49	0.01560	0.151	1506.2	5.27						
		OBS	0050	14.21	35.41	26.49			1506.2	5.27				0.13		
		OBS	0059	15.40	35.860	26.56			1510.7							
		STD	0075	13.13	35.40	26.76	0.01375	0.188	1503.0	4.70						
		OBS	0075	13.13	35.402	26.70			1503.0	4.70				0.04		
		OBS	0080	13.05	35.345	26.82			1503.0							
		STD	0100	13.00	35.61	26.88	0.01207	0.220	1503.3	4.62						
		OBS	0100	14.12	35.617	26.88			1503.3	4.62				0.02		
		STD	0125	11.97	35.49	26.99	0.01105	0.249	1500.0	4.14						
		STD	0150	11.08	35.59	27.08	0.01026	0.275	1497.2	4.26						
		OBS	0150	11.08	35.588	27.08			1497.2	4.26						
		STD	0200	09.71	35.23	27.20	0.00919	0.324	1492.9							
		OBS	0200	09.71	35.229	27.20			1492.9							
		STD	0250	08.7	35.1	27.28	0.00852	0.368	1489.8							
		OBS	0250	08.70	35.118	27.28			1489.8							
		STD	0300	08.00	35.1	27.37	0.00769	0.409	1488.0							
		OBS	0300	08.00	35.100	27.37			1488.0							
		STD	0400	05.56	34.9	27.60	0.00552	0.475	1479.8							
		OBS	0400	05.56	34.962	27.60			1479.8							
		STD	0500	05.01	35.00	27.73	0.00468	0.526	1479.3							
		OBS	0500	05.01	35.000	27.70			1479.3							
		STD	0600	04.58	34.98	27.73	0.00442	0.572	1479.1							
		OBS	0600	04.58	34.981	27.73			1479.1							
		STD	0700	04.45	34.99	27.75	0.00430	0.615	1480.3							
		OBS	0700	04.45	34.990	27.75			1480.3							
		STD	0800	04.27	34.99	27.77	0.00420	0.658	1481.2							
		OBS	0800	04.27	34.985	27.77			1481.2							
		STD	0900	04.15	34.9	27.79	0.00412	0.699	1482.4							
		OBS	0900	04.15	34.993	27.79			1482.4							
		STD	1000	04.06	34.99	27.79	0.00417	0.741	1483.6							
		OBS	1000	04.05	34.995	27.79			1483.6							
		STD	1100	03.99	34.99	27.80	0.00414	0.782	1485.0							
		STD	1200	03.92	34.99	27.81	0.00413	0.824	1486.4							
		OBS	1200	03.92	34.991	27.81			1486.4							
		STD	1300	03.86	34.99	27.82	0.00414	0.865	1487.8							
		STD	1400	03.8	34.99	27.82	0.00414	0.907	1489.3							
		STD	1500	03.75	35.0	27.83	0.00415	0.948	1490.7							
		OBS	1500	03.75	34.99	27.83			1490.7							

REFERENCE		SHIP	LATITUDE	LONGITUDE	DEPTH INDICTR	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES			NODC STATION NUMBER
CTRY CODE	ID. NO.	CODE	° 1/10	° 1/10		10°	1°	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT		
31	8023	EV	3900 N	07000 W		11	6	90	09	19	237	1967	104	007	2834	15	27	01	2		X0			0007

WATER		WIND		BAROMETER (mbs)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
01	SD	32	S05	186	228	211	7	19	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	ΣΔD DYN. M. x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	CHL-A	SiO₄-Si µg-at/l	pH	SOC
		STD	0000	2112	3530	2471	0032442	0000	15255	531							
237		OBS	0000	2112	35300	2471			15255	531				013			
		STD	0010	2088	3528	2476	0032008	0032	15250	539							
		OBS	0010	2088	35274	2476			15250	539				014			
		STD	0020	2060	3525	2481	0031571	0064	15244	538							
003		OBS	0020	2060	35245	2481			15244	538				021			
		STD	0030	2040	3525	2487	0031053	0095	15240	538							
		OBS	0030	2040	35251	2487			15240	538				025			
		OBS	0040	1675	35185	2573			15137	530				054			
		STD	0050	1592	3557	2622	0018217	0145	15118	465							
		OBS	0050	1592	35569	2622			15118	465				023			
		STD	0075	1340	3568	2685	0012258	0183	15043	347							
		OBS	0075	1340	35679	2685			15043	347				018			
		STD	0100	1112	3542	2710	0009981	0210	14966	337							
		OBS	0100	1112	35419	2710			14966	337				000			
		STD	0125	0972	3525	2721	0008913	0234	14917	347							
		STD	0150	0869	3514	2730	0008151	0255	14882	354							
		OBS	0150	0869	35140	2730			14882	354							
		STD	0200	0775	3508	2739	0007322	0274	14853	363							
		OBS	0200	0775	35076	2739			14853	363							
		STD	0250	0696	3504	2747	0006577	0329	14830	411							
		OBS	0250	0696	35038	2747			14830	411							
		STD	0300	0590	3501	2760	0005452	0359	14796								
		OBS	0300	0590	35011	2760			14796								
		STD	0400	0518	3500	2768	0004763	0410	14783								
		OBS	0400	0518	35001	2768			14783								
		STD	0500	0474	3499	2771	0004472	0456	14782								
		OBS	0500	0474	34985	2771			14782								
		STD	0600	0457	3499	2773	0004380	0500	14791								
		OBS	0600	0457	34985	2773			14791								
		STD	0700	0440	3498	2775	0004321	0544	14801								
		STD	0800	0423	3498	2777	0004227	0587	14810								
		OBS	0800	0423	34979	2777			14810								
		STD	0900	0406	3497	2778	0004187	0629	14819								
		STD	1000	0393	3496	2779	0004168	0671	14831								
		OBS	1000	0393	34964	2779			14831								
		STD	1100	0386	3497	2779	0004166	0712	14844								
		STD	1200	0380	3497	2780	0004181	0754	14859								
		OBS	1200	0380	34965	2780			14859								
		STD	1300	0375	3497	2781	0004169	0796	14873								
		STD	1400	0370	3497	2781	0004191	0837	14888								
		STD	1500	0366	3497	2782	0004216	0880	14903								
		OBS	1500	0366	34971	2782			14903								

REFERENCE		SHIP	LATITUDE	LONGITUDE	DEPTH	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX DEPTH OF SMPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD OBS	
CTRY CODE	ID. NO.	CODE	° ' 1/10	° ' 1/10	METERS	10°	1°	MO	DAY	HR 1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		LOW	AMT
31	8023	EV	3930 N	07000 W		116	90	04	20	034	1967	104	008	2560	15	20	0			X9		

WATER		WIND		BARO-METER (mbs)	AIR TEMP °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR	SPEED OR FORCE		DRY BULB	WET BULB			
DT	50	03	508	207	228	200	7	19	

MESSENGER TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S °/..	SIGMA-T	SPECIFIC VOLUME ANOMALY $\times 10^7$	$\Sigma \Delta D$ DYN. M $\times 10^3$	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_3-N µg-at/l	CHL-a	SiO_4-Si µg-at/l	PH
		STD	0000	2251	3505	2413	0037923	0000	15288	520						
034		OBS	0000	2251	35052	2413			15288	520				011		
		STD	0010	2135	3506	2446	0034829	0036	15260	515						
		OBS	0010	2132	35058	2446			15260	515				026		
		STD	0020	1774	3514	2545	0025417	0066	15162	527						
003		OBS	0020	1774	35130	2545			15162	527				025		
		STD	0030	1553	3515	2599	0020390	0089	15097	591						
		OBS	0030	0980P	3450P	2662P				536				062		
		OBS	0040	1112P	3526P	2698P				613				054		
		STD	0050	1285	3518	2658	0014781	0125	15014	615						
		OBS	0050	1285	35180	2658			15014	615				031		
		STD	0075	1275	3547	2683	0012530	0159	15018	450						
		OBS	0075	1275	35470	2683			15018	450				009		
		STD	0100	1205	3538	2689	0011944	0189	14998	454						
		OBS	0100	1205	35380	2689			14998	454				000		
		STD	0125	1129	3533	2700	0010997	0218	14975	404						
		STD	0150	1055	3526	2708	0010281	0245	14952	363						
		OBS	0150	1055	35260	2708			14952	363						
		STD	0200	0915	3509	2718	0009347	0294	14907	325						
		OBS	0200	0915	35090	2718			14907	325						
		STD	0250	0780	3497	2730	0008268	0338	14862	345						
		OBS	0250	0780	34970	2730			14862	345						
		STD	0300	0675	3495	2743	0007022	0376	14829							
		OBS	0300	0675	34950	2743			14829							
		STD	0400	0540	3487	2755	0006007	0441	14791							
		OBS	0400	0540	34870	2755			14791							
		STD	0500	0510	3494	2763	0005278	0497	14796							
		OBS	0500	0510	34935	2763			14796							
		STD	0600	0480	3495	2768	0004917	0548	14800							
		OBS	0600	0480	34950	2768			14800							
		STD	0700	0461	3496	2771	0004722	0597	14809							
		STD	0800	0445	3497	2774	0004559	0643	14819							
		OBS	0800	0445	34970	2774			14819							
		STD	0900	0435	3497	2775	0004540	0689	14832							
		STD	1000	0425	3497	2775	0004553	0734	14844							
		OBS	1000	0425	34965	2775			14844							
		STD	1100	0414	3497	2777	0004513	0779	14856							
		STD	1200	0405	3497	2777	0004494	0824	14869							
		OBS	1200	0405	34965	2777			14869							
		STD	1300	0397	3497	2778	0004484	0869	14882							
		STD	1400	0390	3497	2779	0004484	0914	14896							
		STD	1500	0385	3497	2780	0004507	0959	14911							
		OBS	1500	0385	34965	2780			14911							

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR 1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT	NODC STATION NUMBER
31	8023	EV	4300 N	07000 W		152	00	09	20	067	1967	102	009	0164	01	00	0			X0			0009

WATER COLOR CODE	WATER TRANS (m)	WIND DIR.	WIND SPEED OR FORCE	BARO-METER (mbs)	AIR TEMP °C DRY BULB	AIR TEMP °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	07	S09	203	194	163	7	08	

MESSENGR TIME HR 1 10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S °/..	SIGMA–T	SPECIFIC VOLUME ANOMALY–x10⁷	Σ△D DYN. M. x 10³	SOUND VELOCITY	O₂ ml/l	PO₄–P µg-at/l	TOTAL–P µg-at/l	NO₂–N µg-at l	CHL–A	SiO₄–Si µg-at l	pH	SCC
		STD	0000	2009	3453	2440	0035379	0000	15218								
067		OBS	0000	2009	34531	2440			15218					008			
		STD	0010	2008	3452	2440	0035446	0035	15220	552							
		OBS	0010	2008	34524	2440			15220	552				006			
		STD	0020	1993	3471	2457	0033787	0070	15219	546							
000		OBS	0020	1993	34705	2457			15219	546				008			
		STD	0030	2005	3482	2463	0033284	0104	15225	552							
		OBS	0030	2005	34820	2463			15225	552				027			
		OBS	0040	1745	34355	2493			15148	558				036			
		STD	0050	1025	3400	2615	0016885	0156	14908	570							
		OBS	0050	1025	33995	2615			14908	570				051			
		STD	0075	0985	3465	2672	0013447	0196	14906	506							
		OBS	0075	0985	34650	2672			14906	506				007			
		STD	0100	0996	3477	2679	0012863	0229	14917	476							
		OBS	0100	0998	34765	2679			14917	476				007			

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR 1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT	NODC STATION NUMBER
31	8023	EV	4029 N	07005 W		152	00	09	20	098	1967	102	010	0066	01	06	0	2		X0			0010

WATER COLOR CODE	WATER TRANS (m)	WIND DIR.	WIND SPEED OF FORCE	BARO-METER (mbs)	AIR TEMP °C DRY BULB	AIR TEMP °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	10	S10	220	167	144	7	07	

MESSENGR TIME HR 1 10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S °/..	SIGMA–T	SPECIFIC VOLUME ANOMALY–x10⁷	Σ△D DYN. M. x 10³	SOUND VELOCITY	O₂ ml/l	PO₄–P µg-at/l	TOTAL–P µg-at/l	NO₂–N µg-at l	CHL–A	SiO₄–Si µg-at l	pH	SCC
		STD	0000	1486	3221	2388	0040296	0000	15033	617							
098		OBS	0000	1480	32205	2388			15033	617				047			
		STD	0010	1565	3320	2446	0034805	0038	15074	619							
		OBS	0010	1565	33200	2446			15074	619				046			
		STD	0020	1681	3358	2449	0034590	0072	15116	613							
000		OBS	0020	1681	33579	2449			15116	613				051			
		STD	0030	1725	3361	2441	0035376	0107	15131	604							
		OBS	0030	1725	33611	2441			15131	604				054			
		OBS	0040	1294	33685	2541			14995	579				040			
		STD	0050	0841	3400	2637	0016735	0159	14859	602							
		OBS	0050	0891	34000	2637			14859	602				044			
		OBS	0060	0816	34278	2670			14836								

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR 1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT	NODC STATION NUMBER
31	8023	EV	4100 N	07000 W		152	10	09	20	130	1967	102	011	0047	00	06	1	2		X0			0011

WATER COLOR CODE	WATER TRANS (m)	WIND DIR.	WIND SPEED OF FORCE	BARO-METER (mbs)	AIR TEMP °C DRY BULB	AIR TEMP °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	07	S09	237	172	159	7	06	

MESSENGR TIME HR 1 10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S °/..	SIGMA–T	SPECIFIC VOLUME ANOMALY–x10⁷	Σ△D DYN. M. x 10³	SOUND VELOCITY	O₂ ml/l	PO₄–P µg-at/l	TOTAL–P µg-at/l	NO₂–N µg-at l	CHL–A	SiO₄–Si µg-at l	pH	SCC
		STD	0000	1459	3154	2342	0044764	0000	15018	603							
130		OBS	0000	1459	31538	2342			15018	603				100			
		OBS	0004	1454	31530	2342			15017								
		STD	0010	1436	3154	2347	0044323	0045	15012	611							
000		OBS	0010	1436	31539	2347			15012	611				094			
		OBS	0017	1410	31582	2356			15006								
		STD	0020	1409	3159	2356	0043471	0088	15006	624							
		OBS	0020	1409	31586	2356			15006	624				093			
		OBS	0026	1405	31591	2357			15006								

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	QUADR	MARSDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SMPL'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		STATION NUMBER
CTRY CODE	ID NO.		° ' .1 0	° ' .1 0		10° 1°	MO	DAY	HR .1 0		CRUISE NO.	STATION NUMBER			DIR	PER	SEA		TYPE	AMT	
318	023	EV	41147N	071 11W		152 11	2	20	178	1967	114	112	0046	00							

WATER		WIND		BARO-METER (mbs)	AIR TEMP °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR	SPEED (KN OR FORCE)		DRY BULB	WET BULB			
DT	55	11	508	251	228	175	8	26	

MESSENGER TIME (HR .1 0)	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY (10^{-8})	$\Sigma\Delta D$ DYN M x 10^3	SOUND VELOCITY	O2 ml/l	PO4-P µg-at/l	TOTAL-P µg-at/l	NO2-N µg-at/l	CHL-A mg/m³	SiO4-Si µg-at/l	pH	SCC
		STD	0000	1622	31660	2316	0047186	0000	15071								
	178	OBS	0000	1622	31663	2316			15071								
		OBS	0001	1521	31689	2340			15047								
		STD	0010	1485	3172	2352	0045963	0046	15031								
	000	OBS	0010	1485	31726	2350			15031								
		STD	0020	1419	3177	2368	0042351	0089	15011								
		OBS	0020	1419	31768	2368			15011								
		OBS	0025	1390	31741	2371			15002								
		STD	0030	1257	3197	2416	0037774	0129	14961								
		OBS	0030	1257	31973	2416			14961								

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	QUADR	MARSDEN SQUARE	STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SMPL'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD CODES		STATION NUMBER
CTRY CODE	ID NO.		° ' .1 0	° ' .1 0		10° 1°	MO	DAY	HR .1 0		CRUISE NO.	STATION NUMBER			DIR	PER	SEA		TYPE	AMT	
318	023	EV	4100 N	07100 W		152 11	09	20	194	1967	105	013	0048	00	13	1	6		40		0013

WATER		WIND		BARO-METER (mbs)	AIR TEMP °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR	SPEED (KN OR FORCE)		DRY BULB	WET BULB			
DT	60	13	508	240	161	144	7	28	

MESSENGER TIME (HR .1 0)	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY (10^{-8})	$\Sigma\Delta D$ DYN M x 10^3	SOUND VELOCITY	O2 ml/l	PO4-P µg-at/l	TOTAL-P µg-at/l	NO2-N µg-at/l	CHL-A mg/m³	SiO4-Si µg-at/l	pH	SCC
		STD	0000	1548	3205	2362	0042631	0000	15053	633							
	194	OBS	0000	1548	32050	2362			15053	633				028			
		OBS	0001	1470	32042	2378			15028								
		STD	0010	1408	3207	2393	0039896	0041	15010	642							
	000	OBS	0010	1408	32057	2393			15010	642				103			
		OBS	0014	1380	32035	2401			15022								
		STD	0020	1119	3176	2424	0036839	0080	14909	626							
		OBS	0020	1119	31760	2424			14909	626				135			
		OBS	0026	1020	31640	2432			14876								
		STD	0030	0997	3225	2483	0031338	0114	14872	581							
		OBS	0030	0997	32245	2483			14872	581				047			
		OBS	0040	0985	32290	2489			14877	547				072			

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDEX	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT	NODC STATION NUMBER
31	8023	EV	4040 N	07100 W		152	01	09	20	223	1967	102	014	0076	01	09	0	2		X0			0014

WATER COLOR CODE	WATER TRANS (m)	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	10	10	S07	227	161	144	7	12	

MESSENGR TIME OF HR 3 1/0	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ Δ D DYN M x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	CHL-A	SiO₄-Si µg-at/l	pH	SCC
		STD	0000	1526	4208	2366	0042347	0000	15044	621							
223		OBS	0000	1520	32030	2366			15044	621				042			
		OBS	0004	1521	32040	2367			15045								
000		OBS	0006	1470	32070	2383			15029								
		STD	0010	1462	3239	2406	0038602	0040	15031	632							
		OBS	0010	1462	32390	2406			15031	632				044			
		OBS	0014	1423	32300	2408			15018								
		STD	0020	1191	3228	2452	0034305	0077	14941	617							
		OBS	0020	1191	32280	2452			14941	617				056			
		OBS	0024	1165	32250	2454			14932								
		OBS	0026	1180	32300	2455			14938								
		STD	0030	1101	3215	2458	0033772	0111	14909	605							
		OBS	0030	1101	32145	2458			14909	605				026			
		OBS	0040	0851	32425	2520			14822	590				035			
		STD	0050	0823	3252	2531	0032764	0172	14814	572							
		OBS	0050	0823	32515	2531			14814	572				024			
		STD	0075	0755	3265	2552	0024831	0236	14794								
		OBS	0075	0755	32654	2552			14794								

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDEX	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT	NODC STATION NUMBER
31	8023	EV	4000 N	07100 W		152	01	09	21	013	1967	102	015	0295	02	12	0	2		X1			0015

WATER COLOR CODE	WATER TRANS (m)	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	50	10	S11	220	189	161	8	11	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ Δ D DYN M x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	CHL-A	SiO₄-Si µg-at/l	pH	SCC
		STD	0000	2000	3480	2463	0033203	0000	15219	541							
013		OBS	0000	2000	34800	2463			15219	541				021			
		STD	0010	2050	3476	2446	0034820	0034	15234	547							
		OBS	0010	2050	34756	2446			15234	547				037			
		STD	0020	2052	3482	2450	0034479	0069	15237	544							
000		OBS	0020	2052	34815	2450			15237	544				020			
		STD	0030	2005	3446	2436	0035897	0104	15221	565							
		OBS	0030	2005	34460	2436			15221	565				022			
		OBS	0040	1575	33965	2503			15091	543				052			
		STD	0050	0870	3314	2573	0022601	0163	14840	570							
		OBS	0050	0870	33140	2573			14840	570				055			
		STD	0075	1018	3473	2673	0013596	0206	14919	574							
		OBS	0075	1018	34730	2673			14919	574				017			
		STD	0100	1208	3518	2673	0013460	0241	14996	496							
		OBS	0100	1208	35181	2673			14996	496				009			
		STD	0125	1203	3540	2691	0011824	0273	15001	438							
		STD	0150	1165	3546	2703	0010751	0301	14993	390							
		OBS	0150	1165	35460	2703			14993	390							
		STD	0200	0990	3508	2705	0010625	0355	14934	325							
		OBS	0200	0990	35080	2705			14934	325							
		STD	0250	0816	3508	2733	0007971	0401	14877	347							
		OBS	0250	0816	35082	2733			14877	347							

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	GRID INDEX	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR 1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT	WEATHER TYPE	WEATHER AMT	N. STATN. NUMBER
318	023	EV	3915 N	07100 W		116	91	09	21	044	1967	104	016	2377	15	11	X	X	X0	0016

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR.	WIND SPEED OR FORCE	BARO-METER (mba)	AIR TEMP °C DRY BULB	AIR TEMP °C WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	12	S08	224	211	194	7	20	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY $\times 10^7$	$\Sigma\Delta D$ DYN. M $\times 10^3$	SOUND VELOCITY	O2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_3-N µg-at/l	CHL-A	SI(OH)4-Si µg-at/l	pH
		STD	0000	2109	3515	2460	0033449	0000	15252	549						
044		OBS	0000	2109	35150	2460			15252	549				0.3		
		STD	0010	2000	3516	2490	0030666	0032	15225	550						
		OBS	0010	2000	35155	2490			15225	550				018		
		STD	0020	1710	3520	2566	0023436	0059	15144	533						
003		OBS	0020	1710	35200	2566			15144	533				023		
		STD	0030	1460	3536	2635	0016916	0079	15076	552						
		OBS	0030	1460	35355	2635			15070	552				022		
		OBS	0040	1425	35640	2665			15064	542				032		
		STD	0050	1430	3574	2671	0013545	0110	15069	527						
		OBS	0050	1430	35740	2671			15069	527				048		
		STD	0075	1380	3570	2679	0012899	0143	15056	470						
		OBS	0075	1380	35700	2679			15056	470				019		
		STD	0100	1318	3566	2689	0012036	0174	15039	402						
		OBS	0100	1318	35660	2689			15039	402				004		
		STD	0125	1276	3560	2692	0011742	0204	15029	414						
		STD	0150	1220	3553	2698	0011288	0232	15013	426						
		OBS	0150	1220	35525	2698			15013	426						
		STD	0200	1070	3532	2710	0010207	0286	14966	344						
		OBS	0200	1070	35321	2710			14966	344						
		STD	0250	0940	3514	2718	0009471	0335	14925	327						
		OBS	0250	0942	35140	2718			14925	327						
		STD	0300	0825	3508	2732	0008213	0390	14889							
		OBS	0300	0825	35080	2732			14889							
		STD	0400	0646	3500	2752	0006731	0462	14833							
		OBS	0400	0640	35000	2752			14833							
		OBS	0450	0600	35009	2758			14825							
		STD	0500	0560	3500	2762	0005422	0511	14817							
		OBS	0500	0561	35000	2762			14817							
		STD	0600	0490	3497	2768	0004891	0563	14805							
		OBS	0600	0490	34970	2768			14805							
		STD	0700	0475	3500	2773	0004597	0610	14815							
		STD	0800	0460	3502	2776	0004374	0655	14826							
		OBS	0800	0460	35020	2776			14826							
		STD	0900	0445	3501	2777	0004368	0699	14836							
		STD	1000	0432	3501	2778	0004316	0742	14848							
		OBS	1000	0432	35009	2778			14848							
		STD	1100	0422	3501	2779	0004289	0785	14860							
		STD	1200	0412	3501	2780	0004259	0828	14873							
		OBS	1200	0412	35009	2780			14873							
		STD	1300	0402	3501	2781	0004232	0870	14885							
		STD	1400	0392	3501	2782	0004209	0913	14898							
		STD	1500	0382	3501	2783	0004175	0954	14910							
		OBS	1500	0382	35005	2783			14910							

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° ' 1/10	LONGITUDE ° ' 1/10	EAST INDEX	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR. 1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT.	WAVE OBSERVATIONS PER.	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT.	NODC STATION NUMBER
31	8023	EV	3868 N	07100 W		116	81	09	21	080	1967	104	017	1006	09	14	01	2		X2			0017

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR.	WIND SPEED OR FORCE	BARO-METER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	14	S08	220	211	200	7	17	

MESSENGER TIME OF HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ Δ D DYN. M. x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at l	NO₂-N µg-at/l	CHL-A	SiO₄-Si µg-at/l	pH	SS CODE
		STD	0000	1880	3574	2565	0023440	0000	15197	568							
080		OBS	0000	1880	35730	2565			15197	568				031			
		STD	0010	1860	3554	2555	0024437	0024	15190	577							
		OBS	0010	1860	35540	2555			15190	577				038			
		STD	0020	1780	3573	2590	0021196	0047	15171	586							
002		OBS	0020	1780	35730	2590			15171	586				049			
		STD	0030	1650	3588	2633	0017167	0066	15136	518							
		OBS	0030	1650	35880	2633			15136	518				023			
		OBS	0040	1671	35998	2637			15145	505				053			
		STD	0050	1635	3600	2645	0016025	0099	15136	499							
		OBS	0050	1635	36000	2645			15136	499				036			
		STD	0075	1620	3614	2659	0014754	0138	15137	415							
		OBS	0075	1620	36140	2659			15137	415				013			
		STD	0100	1470	3587	2672	0013608	0173	15091	417							
		OBS	0100	1470	35865	2672			15091	417				006			
		STD	0125	1400	3573	2677	0013227	0207	15071	414							
		STD	0150	1340	3564	2682	0012790	0239	15055	411							
		OBS	0150	1340	35635	2682			15055	411							
		STD	0200	1249	3553	2692	0011929	0301	15031	402							
		OBS	0200	1249	35530	2692			15031	402							
		STD	0250	1065	3532	2711	0010244	0356	14972	333							
		OBS	0250	1065	35320	2711			14972	333							
		STD	0300	0940	3517	2720	0009391	0405	14933								
		OBS	0300	0940	35165	2720			14933								
		STD	0400	0706	3501	2743	0007203	0488	14859								
		OBS	0400	0706	35005	2743			14859								
		STD	0500	0578	3502	2762	0005521	0552	14824								
		OBS	0500	0578	35018	2762			14824								
		STD	0600	0520	3503	2770	0004819	0604	14818								
		OBS	0600	0520	35030	2770			14818								
		STD	0700	0483	3503	2774	0004511	0650	14819								
		STD	0800	0460	3502	2776	0004374	0695	14826								
		OBS	0800	0460	35020	2776			14826								
		STD	0900	0450	3502	2777	0004356	0738	14838								
		OBS	0900	0450	35020	2777			14838								

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	DRIFT INDEX	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX DEPTH OF SMPL'S	WAVE OBSERVATIONS			WEATHER			STA. NUMBER
CTRY CODE	ID. NO.		° ' 1/10	° ' 1/10		10°	1°	MO	DAY	HR 1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		CLOUD AMT	
318	023	EV	3831 N	07204 W		116	82	09	21	138	1967	105	018	2798	15	00	0					001H

WATER		WIND		BAROMETER (mbs)	AIR TEMP °C		VIS CODE	NO. OBS DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR	SPEED OR FORCE		DRY BULB	WET BULB			
DT	SD	17	504	213	234	222	5	29	

MESSENGER TIME OF CAST HR 1/10 T	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY $\times 10^7$	DYN. M $\times 10^7$	SOUND VELOCITY	O_2 ml l	PO_4-P µg-at l	TOTAL-P µg-at	NO_2-N µg-at	CHL A	SiO_4-Si µg-at	pH	REMARKS
		STD	0000	2028	34425	2413	0037933	0000	15220	539							
138		OBS	0000	2028	34425	2413			15220	539				00H			
		STD	0010	2027	34462	2442	0035222	0037	15226	542							
		OBS	0010	2027	34620	2442			15226	542				002			
		STD	0020	2017	34665	2447	0034824	0072	15225	547							
003		OBS	0020	2017	34645	2447			15225	547				001			
		STD	0030	1910	3446	2460	0033551	0106	15195	549							
		OBS	0030	1910	34460	2460			15195	549				002			
		OBS	0040	1263	34415	2603			14995	561				011			
		OBS	0042	1185	34500	2625			14970								
		OBS	0045	1195	34570	2628			14975								
		STD	0050	1272	3491	2640	0016477	0156	15006	578							
		OBS	0050	1270	34910	2640			15006	578				056			
		OBS	0056	1238	35040	2657			14997								
		OBS	0069	1308	35300	2663			15026								
		OBS	0071	1254	35140	2661			15007								
		STD	0075	1260	3532	2674	0013346	0193	15011	586							
		OBS	0075	1260	35320	2674			15011	586				051			
		STD	0100	1223	3547	2693	0011617	0224	15005	453							
		OBS	0100	1223	35470	2693			15005	453				021			
		STD	0125	1198	3547	2697	0011255	0253	15000	440							
		STD	0150	1153	3546	2705	0010534	0280	14989	415							
		OBS	0150	1153	35460	2705			14989	415							
		STD	0200	1000	3521	2713	0009833	0331	14939	327							
		OBS	0200	1000	35210	2713			14939	327							
		STD	0250	0865	3514	2730	0008323	0376	14897	342							
		OBS	0250	0865	35135	2730			14897	342							
		STD	0300	0741	3505	2742	0007201	0415	14856								
		OBS	0300	0741	35050	2742			14856								
		OBS	0345	0631	34983	2752			14820								
		STD	0400	0588	3497	2757	0005847	0480	14811								
		OBS	0400	0588	34973	2757			14811								
		STD	0500	0520	3499	2766	0004993	0535	14801								
		OBS	0500	0520	34990	2766			14801								
		OBS	0560	0495	34965	2767			14800								
		OBS	0580	0505	35022	2771			14808								
		STD	0600	0497	3502	2772	0004606	0583	14808								
		OBS	0600	0497	35020	2772			14808								
		STD	0700	0475	3502	2774	0004434	0628	14816								
		OBS	0700	0475	35022	2774			14816								
		STD	0800	0453	3502	2777	0004288	0671	14823								
		OBS	0800	0453	35020	2777			14823								
		STD	0900	0440	3502	2778	0004232	0714	14834								
		OBS	0900	0440	35020	2778			14834								
		STD	1000	0428	3501	2779	0004258	0757	14846								
138		OBS	1000	0428	35010	2779			14846								
		STD	1100	0418	3501	2780	0004231	0799	14858								
		STD	1200	0409	3501	2780	0004228	0841	14871								
		OBS	1200	0409	35008	2780			14871								
		STD	1300	0401	3501	2781	0004205	0883	14885								
		STD	1400	0393	3501	2782	0004193	0925	14898								
		STD	1500	0387	3501	2783	0004189	0967	14913								
		OBS	1500	0387	35012	2783			14913								

REFERENCE		SHIP	LATITUDE	LONGITUDE	DEPTH INDICATOR	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES			NODC STATION NUMBER
CTRY CODE	ID. NO.	CODE	° 1/10	° '1/10		10°	1°	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT.	PER	SEA		TYPE	AMT.		
31	8028	EV	3900 N	07200 W		116	92	09	21	169	1967	102	019	2341	15	17	1	2		X4				0019

WATER		WIND		BARO-METER (mbs)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
DT	SD	17	S08	193	250	222	4	32	

MESSENGR TIME OF T HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ Δ D DYN. M. x 10³	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at l	OIL-4"	SiO_4-Si µg-at/l	pH	SCC
		STD	0000	2082	3604	2535	0026311	0000	15256	518							
169		OBS	0000	2082	36040	2535			15256	518				007			
		OBS	0005	2050	36050	2545			15248	513							
		STD	0010	1980	3607	2565	0023536	0025	15230	512							
003		OBS	0010	1980	36070	2565			15230	512				008			
		OBS	0015	1879	36081	2592			15203	506							
		STD	0020	1832	3611	2606	0019664	0047	15191	508							
		OBS	0020	1832	36110	2606			15191	508				011			
		OBS	0025	1830	36135	2608			15191	505							
		STD	0030	1773	3622	2629	0017507	0065	15177	488							
		OBS	0030	1773	36220	2629			15177					025			
		OBS	0040	1770	36440	2647			15180								
		OBS	0044	1765	36450	2649			15179								
		STD	0050	1769	3645	2648	0015812	0098	15182	435							
		OBS	0050	1769	36450	2648			15182					048			
		STD	0075	1610	3608	2657	0014969	0137	15134	396							
		OBS	0075	1610	36080	2657			15134	396				017			
		STD	0100	1515	3593	2667	0014111	0173	15106	402							
		OBS	0100	1515	35926	2667			15106					003			
		STD	0125	1361	3565	2679	0013027	0207	15058	413							
		OBS	0125	1361	35650	2679			15058	413							
		STD	0150	1312	3564	2688	0012240	0239	15045	445							
		OBS	0150	1312	35635	2688			15045								
		OBS	0175	1290	35635	2692			15042	447							
		STD	0200	1215	3554	2700	0011214	0297	15019	418							
		OBS	0200	1215	35540	2700			15019								
		OBS	0225	1160	35493	2707			15004	359							
		STD	0250	1105	3542	2711	0010212	0351	14988								
		OBS	0250	1105	35420	2711			14988								
		STD	0300	0966	3525	2722	0009191	0399	14944								
		OBS	0300	0966	35250	2722			14944								
		STD	0400	0718	3503	2744	0007181	0481	14864								
		OBS	0400	0718	35031	2744			14864								
		STD	0500	0574	3498	2759	0005750	0546	14822								
		OBS	0500	0574	34980	2759			14822								
		OBS	0526	0539	34970	2763			14812								
		OBS	0532	0552	34990	2763			14819								
		OBS	0559	0547	35001	2764			14821								
		OBS	0574	0512	34977	2766			14809								
		STD	0600	0508	3498	2767	0005039	0600	14812								
		OBS	0600	0508	34980	2767			14812								
		STD	0700	0486	3502	2773	0004608	0648	14820								
169		OBS	0700	0486	35017	2773			14820								
		STD	0800	0460	3502	2776	0004404	0693	14826								
		OBS	0800	0460	35016	2776			14826								
		STD	0900	0445	3502	2777	0004302	0737	14836								
003		OBS	0900	0445	35019	2777			14836								
		STD	1000	0430	3502	2779	0004246	0779	14847								
		OBS	1000	0430	35015	2779			14847								
		STD	1100	0421	3501	2779	0004269	0822	14860								
		STD	1200	0412	3501	2780	0004259	0865	14873								
		OBS	1200	0412	35009	2780			14873								
		STD	1300	0404	3501	2781	0004251	0907	14886								
		STD	1400	0397	3501	2782	0004252	0950	14900								
		STD	1500	0390	3501	2783	0004250	0992	14914								
		OBS	1500	0390	35009	2783			14914								

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR 1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF SMPL'G	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT.	WAVE OBSERVATIONS PER.	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT.	NODC STATION NUMBER
31	8023	EV	3930 N	07200 W		116	92	09	21	203	1967	104	020	0686	06	17	01			42			0023

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR.	WIND SPEED OR FORCE	BARO-METER (mbs)	AIR TEMP °C DRY BULB	AIR TEMP °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	19	505	169	250	222	6	19	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10⁸	Σ Δ D DYN. M x 10³	SOUND VELOCITY	O2 ml/l	PO4-P µg-at/l	TOTAL-P µg-at/l	NO3-N µg-at/l	CHL-A	SI(OH)4-Si µg-at/l	pH	NODC
		STD	0000	2148	3552	2477	0031828	0000	15267	542							
203		OBS	0000	2148	35515	2477			15267	542				011			
		STD	0010	2137	3558	2485	0031107	0031	15266	527							
		OBS	0010	2137	35580	2485			15266	527				004			
001		OBS	0013	2052	35460	2499			15243								
		OBS	0017	2062	35400	2492			15246								
		STD	0020	2013	3520	2490	0030703	0062	15230	524							
		OBS	0020	2013	35200	2490			15230	524				013			
		STD	0030	1620	3468	2547	0025283	0093	15112	522							
		OBS	0030	1620	34675	2547			15112	522				021			
		OBS	0040	1511	35135	2607			15086	537				054			
		STD	0050	1447	3537	2633	0016591	0142	15070	510							
		OBS	0050	1447	35371	2633			15070	510				042			
		STD	0075	1389	3549	2661	0014601	0171	15057	450							
		OBS	0075	1389	35492	2661			15057	450				009			
		STD	0100	1375	3561	2673	0013514	0206	15058	438							
		OBS	0100	1375	35612	2673			15058	438				006			
		STD	0125	1317	3557	2682	0012745	0239	15042	435							
		STD	0150	1281	3555	2687	0012261	0270	15034	425							
		OBS	0150	1281	35550	2687			15034	425							
		OBS	0178	1267	35565	2691			15034								
		STD	0200	1215	3552	2698	0011398	0330	15019	386							
		OBS	0200	1215	35515	2698			15019	386							
		STD	0250	1059	3533	2712	0010088	0387	14970	342							
		OBS	0250	1059	35327	2712			14970	342							
		STD	0300	0905	3517	2726	0008776	0430	14920								
		OBS	0300	0905	35172	2726			14920								
		STD	0400	0675	3505	2751	0006423	0506	14847								
		OBS	0400	0675	35052	2751			14847								
		OBS	0425	0600	35014	2756			14821								
		STD	0500	0553	3500	2763	0005362	0565	14814								
		OBS	0500	0553	34996	2763			14814								
		STD	0600	0521	3500	2767	0005083	0618	14818								
		OBS	0600	0521	34996	2767			14818								

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR 1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF SMPL'G	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT.	WAVE OBSERVATIONS PER.	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT.	NODC STATION NUMBER
31	8023	EV	4000 N	07200 W		152	02	09	21	236	1967	104	021		01	19	01						0021

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR.	WIND SPEED OR FORCE	BARO-METER (mbs)	AIR TEMP °C DRY BULB	AIR TEMP °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	19	S08	146	222	200	7	06	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10⁸	Σ Δ D DYN. M x 10³	SOUND VELOCITY	O2 ml/l	PO4-P µg-at/l	TOTAL-P µg-at/l	NO3-N µg-at/l	CHL-A	SI(OH)4-Si µg-at/l	pH	NODC
		STD	0000	1820	3355	2413	0037916	0000	15153	575							
236		OBS	0000	1820	33550	2413			15153	575				025			
		STD	0010	1819	3391	2441	0035326	0037	15159	594							
		OBS	0010	1819	33910	2441			15159	594				037			
000		OBS	0018	1780	33860	2447			15148								
		STD	0020	1690	3380	2464	0033181	0071	15121	583							
		OBS	0020	1690	33800	2464			15121	583				046			
		STD	0030	1353	3343	2509	0028873	0102	15012	583							
		OBS	0030	1353	33430	2509			15012	583				062			
		OBS	0040	0920	32800	2539			14853	500				042			
		STD	0050	0797	3289	2564	0023628	0154	14809	600							
		OBS	0050	0797	32838	2564			14809	600				029			
		STD	0075	0758	3318	2592	0020994	0211	14802	569							
		OBS	0075	0758	33175	2592			14802	569				013			

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
31	8023	EV	4030 N	07200 W		152	02	09	22	024	1967	102	022	0060	00	19	0	2		X4				0022

WATER COLOR CODE	WATER TRANS (m)	WIND DIR	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP °C DRY BULB	AIR TEMP °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	18	S20	129	194	183	6	05	

MESSENGR TIME HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10^7	$\Sigma\Delta D$ DYN. M. x 10^3	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at/l	CHL-A	SiO_4-Si µg-at/l	pH	SCC
		STD	0000	1603	32477	2382	0040923	0000	15075	587							
024		OBS	0000	1603	32470	2382			15075	587				025			
		STD	0010	1603	32465	2381	0041024	0041	15077	599							
		OBS	0010	1603	32460	2381			15077	599				026			
		STD	0020	1526	32347	2389	0040290	0082	15053	601							
000		OBS	0020	1526	32342	2389			15053	601				038			
		STD	0030	1305	32225	2425	0036881	0120	14981	600							
		OBS	0030	1305	32215	2425			14981	600				040			
		OBS	0040	0942	32385	2503			14856	539				043			

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
31	8023	EV	4101 N	071545W		152	11	09	22	056	1967	102	023	0013	00	21	3	2		X6				0023

WATER COLOR CODE	WATER TRANS (m)	WIND DIR	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP °C DRY BULB	AIR TEMP °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	19	S22	071	178	178	6	02	

MESSENGR TIME HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10^7	$\Sigma\Delta D$ DYN. M. x 10^3	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at/l	CHL-A	SiO_4-Si µg-at/l	pH	SCC
		STD	0000	1672	31362	2278	0050620	0000	15083	604							
056		OBS	0000	1672	31320	2278			15083	604				157			
		STD	0010	1653	31333	2283	0050396	0051	15079	617							
		OBS	0010	1653	31325	2283			15079	617				185			

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
31	8023	EV	4030 N	07300 W		152	03	09	22	117	1967	102	024	0030	00	20	3	2		X1				0024

WATER COLOR CODE	WATER TRANS (m)	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP °C DRY BULB	AIR TEMP °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	22	S12	220	188	183	6	04	

MESSENGR TIME HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10^7	$\Sigma\Delta D$ DYN. M. x 10^3	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at/l	CHL-A	SiO_4-Si µg-at/l	pH	SCC
		STD	0000	1710	31500	2283	0050343	0000	15096	570							
117		OBS	0000	1710	31500	2283			15096	570				065			
		STD	0010	1650	31778	2318	0047007	0049	15083	566							
		OBS	0010	1650	31780	2318			15083	566				078			
		STD	0020	1613	31820	2330	0045943	0095	15074	531							
000		OBS	0020	1613	31820	2330			15074	531				084			
		OBS	0025	1613	31825	2330			15075								

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	MARSDEN SQUARE 10°	1°	STATION TIME (GMT) MO	DAY	HR 1/10	YEAR	ORIGINATOR'S CRUISE NO.	STATION NUMBER	DEPTH TO BOTTOM	MAX DEPTH OF SAMPLES	WAVE OBSERVATIONS	WEATHER	CLOUD CODES	STATION NUMBER
31	8023	EV	4029?N	0732? W	15?	03	[illegible]9	22	142	1967	102	025	0018	1?	23 1		x1	[illegible]

WATER COLOR CODE	TRANS (m)	WIND DIR	SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP °C DRY BULB	WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	30	S12	085	222	200	7	04	

MESSENGER TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY×10⁵	ΣΔD DYN. M ×10³	SOUND VELOCITY	O₂ ml/l	PO₄-P	TOTAL-P	NO₃-N	CHL-A
		STD	0000	1920	3028	214	0064079	0000	15144	629				
142		OBS	0000	192[illegible]	30285	214[illegible]			15144	629				496
		OBS	0008	1723	31360	2270			1510[illegible]					
		STD	0010	1722	3136	2270	0051546	0058	15100	422				
[illegible]		OBS	0010	1722	31362	2270			15100	422				[illegible]
		OBS	0015	1721	31351	2270			15101					

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	MARSDEN SQUARE 10°	1°	STATION TIME (GMT) MO	DAY	HR 1/10	YEAR	ORIGINATOR'S CRUISE NO.	STATION NUMBER	DEPTH TO BOTTOM	MAX DEPTH OF SAMPLES	WAVE OBSERVATIONS DIR	HGT PER	SEA	WEATHER CODE	CLOUD CODES TYPE AMT	STATION NUMBER
31	8023	EV	4[illegible] N	074[illegible] W	15[illegible]	04	09	22	179	1967	10[illegible]	026	002[illegible]	00	12	0	2	x1		0026

WATER COLOR CODE	TRANS (m)	WIND DIR	SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP °C DRY BULB	WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	30	S13	041	206	161	7	04	

MESSENGER TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY×10⁵	ΣΔD DYN. M ×10³	SOUND VELOCITY	O₂ ml/l	PO₄-P	TOTAL-P	NO₃-N	CHL-A
		STD	0000	1927	3084	2185	0059727	000[illegible]	15147	582				
179		OBS	0000	1927	30838	2185			15147	582				482
		OBS	0005	1884	30840	2191			15141					
		STD	0010	1802	3111	2231	0055332	0058	15121	548				
[illegible]		OBS	0010	1802	31105	2231			15121	548				514
		OBS	0016	1790	31156	2238			15119					

REFERENCE CTRY CODE	ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	MARSDEN SQUARE 10°	1°	STATION TIME (GMT) MO	DAY	HR 1/10	YEAR	ORIGINATOR'S CRUISE NO.	STATION NUMBER	DEPTH TO BOTTOM	MAX DEPTH OF SAMPLES	WAVE OBSERVATIONS DIR	HGT PER	SEA	WEATHER CODE	CLOUD CODES TYPE AMT	STATION NUMBER
31	8023	E[illegible]	4[illegible] N	07[illegible] W	152	03	0[illegible]	22		1967	1[illegible]	027	[illegible]	[illegible]0				x1		0027

WATER COLOR CODE	TRANS (m)	WIND DIR	SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP °C DRY BULB	WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	30	S08	091	216	167	8	05	

MESSENGER TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY×10⁵	ΣΔD DYN. M ×10³	SOUND VELOCITY	O₂ ml/l	PO₄-P	TOTAL-P	NO₃-N	CHL-A
		STD	0000	1700	3163	2295	0049194	0001	15095					
182		OBS	0000	1700	31627	2295			15095					
		STD	0010	1670	3172	230[illegible]	0047918	0049	150[illegible]					
		OBS	[illegible]	1670	31715	[illegible]			15[illegible]					
		STD	[illegible]0	159[illegible]	3196	2346	[illegible]	[illegible]	15[illegible]					
		OBS	[illegible]	15[illegible]	31967	2346			15[illegible]					
		STD	[illegible]	1538	3211	23[illegible]	[illegible]	[illegible]	15[illegible]					
		OBS	[illegible]	1538	[illegible]	2369			15[illegible]					
		OBS	[illegible]	1530	[illegible]	2371			15[illegible]					
		OBS	[illegible]	[illegible]	[illegible]	[illegible]			14959					

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR 1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT	NODC STATION NUMBER
48	323	EV	4000 N	07300 W		152	03	09	22	224	1967	102	028	0040	001	30	2	4		x1			0028

WATER COLOR CODE	WATER TRANS (m)	WIND DIR	WIND SPEED OR FORCE	BARO-METER (mbs)	AIR TEMP °C DRY BULB	AIR TEMP °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	31	S10	091	189	156	8	07	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ Δ D DYN. M x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at l	CHL-A	SiO₄-Si µg-at/l	pH	SCC
		STD	0000	1679	32114	2332	0045722	0000	15094	588							
224		OBS	0000	1679	32039	2332			15094	588				030			
		OBS	0002	1665	32020	2333			15089								
		STD	0010	1521	32126	2373	0041807	0044	15047	597							
000		OBS	0010	1521	32117	2373			15047	597				038			
		STD	0020	1329	32301	2427	0036685	0083	14988	603							
		OBS	0020	1329	32300	2427			14988	603				088			
		OBS	0027	0813	32560	2518			14804								
		STD	0030	0802	32633	2520	0027819	0115	14800	590							
		OBS	0030	0802	32630	2520			14800	590				095			
		OBS	0040	0801	32650	2522			14802	520				076			

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR 1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT	NODC STATION NUMBER
48	323	EV	4040 N	07300 W		116	33	09	23	015	1967	102	029	0080	00	34	x	x		x1			0029

WATER COLOR CODE	WATER TRANS (m)	WIND DIR	WIND SPEED OR FORCE	BARO-METER (mbs)	AIR TEMP °C DRY BULB	AIR TEMP °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	34	S17	115	178	167	8	06	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ Δ D DYN. M x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	CHL-A	SiO₄-Si µg-at l	pH	SCC
		STD	0000	1669	3223	2349	0044093	0000	15093	590							
015		OBS	0000	1669	32232	2349			15093	590				024			
		STD	0010	1665	3224	2350	0043975	0044	15093	611							
		OBS	0010	1665	32240	2350			15093	611				028			
		STD	0020	1580	3226	2371	0042023	0087	15069	610							
000		OBS	0020	1580	32260	2371			15069	610				039			
		STD	0030	0730	3237	2533	0026553	0121	14772	596							
		OBS	0030	0730	32370	2533			14773	596				076			
		OBS	0040	0706	32450	2543			14766	561				044			
		STD	0050	0706	3248	2545	0025448	0173	14768	573							
		OBS	0050	0706	32480	2545			14768	573				043			

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR 1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT	NODC STATION NUMBER
48	029	EV	3900 N	07400 W		116	33	04	23	045	1967	102	030	0084	01	35	1	2		x1			0030

WATER COLOR CODE	WATER TRANS (m)	WIND DIR	WIND SPEED OR FORCE	BARO-METER (mbs)	AIR TEMP °C DRY BULB	AIR TEMP °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	33	S17	012	161	139	7	07	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ Δ D DYN. M x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at l	TOTAL-P µg-at l	NO₂-N µg-at l	CHL-A	SiO₄-Si µg-at l	pH	SCC
		STD	0000	2055	3458	2431	0036223	0000	15231	532							
145		OBS	0000	2055	34575	2431			15231	532				015			
		STD	0010	2055	3458	2431	0036258	0036	15233	536							
		OBS	0010	2055	34575	2431			15233	536				012			
		STD	0020	2071	3468	2435	0035942	0072	15240	540							
000		OBS	0020	2071	34680	2435			15240	540				012			
		STD	0030	1765	3400	2461	0033459	0107	15148	531							
		OBS	0030	1765	34000	2461			15148	531				016			
		OBS	0040	0898	33350	2585			14852	592				050			
		STD	0050	0814	3350	2610	0019317	0160	14823	590							
		OBS	0050	0814	33500	2610			14823	590				019			
		STD	0075	0808	3366	2623	0018084	0207	14827								
		OBS	0075	0808	33660	2623			14827					013			

REFERENCE		SHIP	LATITUDE	LONGITUDE	DIFF. INDICA.	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY. CODE	ID. NO.	CODE	° ' 1/10	° ' 1/10		10°	1°	MO	DAY	HR 1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT.	PER.	SEA		TYPE	AMT.	
31	8023	EV	39[illegible] N	073[illegible] W		116	93	09	23	078	1967	102	031	0042	00	34	2	2		x1			0031

WATER		WIND		BARO-METER (mbs)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
DT	SD	32	S15	119	150	150	8	05	

MESSENGR. TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S °/..	SIGMA-T	SPECIFIC VOLUME ANOMALY $\times 10^7$	$\Sigma\Delta D$ DYN. M $\times 10^3$	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_3-N µg-at/l	CHL-A	SiO_4-Si µg-at/l	pH	SCC
		STD	0000	1785	3347	2415	0037720	0000	15142								
078		OBS	0000	1785	33465	2415			15142								
		STD	0010	1827	3408	2452	0034258	0036	15163								
		OBS	0010	1827	34080	2452			15163								
		STD	0020	1710	3402	2476	0032027	0069	15130								
000		OBS	0020	1710	34020	2476			15130								
		STD	0030	1288	3314	2500	0029764	0100	14986								
		OBS	0030	1288	33140	2500			14986								
		OBS	0040	1182	32928	2504			14949								

REFERENCE		SHIP	LATITUDE	LONGITUDE	DIFF. INDICA.	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY. CODE	ID. NO.	CODE	° ' 1/10	° ' 1/10		10°	1°	MO	DAY	HR 1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT.	PER.	SEA		TYPE	AMT.	
31	8023	EV	39[illegible] N	074[illegible] W		116	94	09	23	094	1967	102	032	0036	00	33	3	2					0032

WATER		WIND		BARO-METER (mbs)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
DT	SD	34	S18	139	139	100	8	04	

MESSENGR. TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S °/..	SIGMA-T	SPECIFIC VOLUME ANOMALY $\times 10^7$	$\Sigma\Delta D$ DYN. M $\times 10^3$	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_3-N µg-at/l	CHL-A	SiO_4-Si µg-at/l	pH	SCC
		STD	0000	1748						566							
094		OBS	0000	1748	3476P	2523P				566				081			
		STD	0010	1748						569							
		OBS	0010	1748	3476P	2523P								067			
		STD	0020	1538						572							
000		OBS	0020	1538	3209P	2367P				572				226			
		STD	0030	1477						540							
		OBS	0030	1477	3211P	2382P				540				176			

REFERENCE		SHIP	LATITUDE	LONGITUDE	DIFF. INDICA.	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY. CODE	ID. NO.	CODE	° ' 1/10	° ' 1/10		10°	1°	MO	DAY	HR 1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT.	PER.	SEA		TYPE	AMT.	
31	8023	EV	38597N	074445W		116	84	09	23	126	1967	102	033	0010	00	33	1	2		x1			0033

WATER		WIND		BARO-METER (mbs)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
DT	SD	34	S14	156	100	099	7	02	

MESSENGR. TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S °/..	SIGMA-T	SPECIFIC VOLUME ANOMALY $\times 10^7$	$\Sigma\Delta D$ DYN. M $\times 10^3$	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_3-N µg-at/l	CHL-A	SiO_4-Si µg-at/l	pH	SCC
		STD	0000	1960	3056	2151	0063104	0000	15158	547							
126		OBS	0000	1960	30560	2151			15158	547				532			
		OBS	0009	1960	30560	2151			15160	548				666			

REFERENCE		SHIP	LATITUDE	LONGITUDE	DRIFT INDEX	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES			NODC STATION NUMBER
CTRY CODE	ID. NO.	CODE	° 1/10	° 1/10		10°	1°	MO	DAY	HR. 1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT		
31	6023	EV	38 00 N	075 09 W		116	85	04	23	199	1967	102	036	0010	00	01	0	2		X1				0034

WATER		WIND		BAROMETER (mbs)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR	SPEED OR FORCE		DRY BULB	WET BULB			
DT	SD	33	S06	152	200	130	8	02	

MESSENGR TIME OF HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ Δ D DYN. M. x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	CHL-A	SiO₄-Si µg-at/l	pH	
		STD	0000	1952	30880	2177	0060482	0000	15160	556							
199		OBS	0000	1952	30880	2177			15160	556				130			
		OBS	0001	1952	30880	2177			15161								

REFERENCE		SHIP	LATITUDE	LONGITUDE	DRIFT INDEX	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES			NODC STATION NUMBER
CTRY CODE	ID. NO.	CODE	° 1/10	° 1/10		10°	1°	MO	DAY	HR. 1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT		
31	6023	EV	38 00 N	074 30 W		116	84	09	23	221	1967	102	037	0043	00	35	0	2		X1				0035

WATER		WIND		BAROMETER (mbs)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
DT	SD	34	S08	146	190	140	8	07	

MESSENGR TIME OF HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ Δ D DYN. M. x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	CHL-A	SiO₄-Si µg-at/l	pH	
		STD	0000	1659	3268	2385	0040639	0000	15095								
221		OBS	0000	1659	32675	2385			15095								
		STD	0010	1660	3300	2410	0038318	0039	15101								
		OBS	0010	1660	33000	2410			15101								
000		OBS	0012	1720	33500	2418			15123								
		OBS	0017	1735	33355	2419			15129								
		STD	0020	1729	3338	2422	0037119	0077	15128								
		OBS	0020	1729	33380	2422			15128								
		STD	0030	1699	3386	2466	0032976	0112	15126								
		OBS	0030	1699	33860	2466			15126								
		OBS	0040	1698	33960	2474			15129								

REFERENCE		SHIP	LATITUDE	LONGITUDE	DRIFT INDEX	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES			NODC STATION NUMBER
CTRY CODE	ID. NO.	CODE	° 1/10	° 1/10		10°	1°	MO	DAY	HR. 1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT		
31	6023	EV	38 00 N	074 00 W		116	84	09	24	006	1967	102	038	0100	01	35	0	2		X0				0036

WATER		WIND		BAROMETER (mbs)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
DT	SD	35	S13	149	150	106	8	08	

MESSENGR TIME OF HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ Δ D DYN. M. x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	CHL-A	SiO₄-Si µg-at/l	pH	
		STD	0000	1931	3416	2432	0036139	0000	15192	553							
006		OBS	0000	1931	34160	2432			15192	553				031			
		STD	0010	1931	3416	2436	0036172	0036	15194	570							
		OBS	0010	1931	34160	2437			15194	570				026			
		STD	0020	1928	3394	2416	0037729	0073	15192	570							
000		OBS	0020	1928	33940	2416			15192	570				034			
		STD	0030	1695	3331	2425	0036930	0110	15118	588							
		OBS	0030	1695	33305	24 5			15118	588				130			
		OBS	0040	1150	33143	2526			14940	569				040			
		STD	0050	1005	3300	2540	0025915	0173	14888	580							
		OBS	0050	1005	33000	2540			14888	582				032			
		STD	0075	0798	3334	2610	0020320	0231	14819	598							
		OBS	0075	0798	33340	2600			14819	598				025			
		STD	0100	0396	34401	2652	0015449	0276	14909	527							
		OBS	0100	0396	34397	2652			14909	527				015			

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DUPLICATE INDICATOR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR 1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX DEPTH OF SAMPLE	WAVE OBSERVATIONS	WEATHER CODE	DRY THERMOMETER	WET THERMOMETER
31	8023	EV	3800 N	07330 W		116	83	09	24	029	1967	104	039	1600	15	36	0	2	71

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP °C DRY BULB	AIR TEMP °C WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	34	S12	146	161	128	8	19	

MESSENGER TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY 10^{-5}	$\Sigma\Delta D$ DYN M x 10^3	SOUND VELOCITY	D.O. ml/l	PO_4-P µg-at/l	TOTAL P µg-at/l	NO_2+N µg-at/l	CHL—A mg/m³	¹⁴C mg/m³/hr
		STD	0000	2068	3480	2461	0033424	0000	15221						
030		OBS	0000	2068	34800	2462			15221						
		STD	0010	1960	3472	2467	0032844	0033	15209						
		OBS	0010	1960	34717	2467			15209						
		STD	0020	1870	3488	2502	0029510	0064	15187						
003		OBS	0020	1870	34879	2502			15187						
		STD	0030	1600	3494	2572	0022914	0091	15109						
		OBS	0030	1600	34940	2572			15109						
		OBS	0040	1425	35200	2631			15059						
		STD	0050	1340	3524	2652	0015403	0129	15033						
		OBS	0050	1340	35240	2652			15033						
		STD	0075	1355	3569	2683	0012510	0164	15048						
		OBS	0075	1355	35685	2683			15048						
		STD	0100	1252	3561	2698	0011171	0196	15016						
		OBS	0100	1252	35605	2698			15016						
		STD	0125	1138	3547	2709	0010129	0220	14980						
		STD	0150	1025	3534	2719	0009219	0244	14942						
		OBS	0150	1025	35335	2719			14942						
		STD	0200	0800	3504	2732	0007989	0287	14863						
		OBS	0200	0800	35035	2732			14863						
		STD	0250	0705	3506	2748	0006575	0324	14834						
		OBS	0250	0705	35055	2748			14834						
		STD	0300	0622	3500	2754	0005963	0355	14803						
		OBS	0300	0622	34995	2754			14803						
		STD	0400	0535	3500	2765	0004979	0410	14790						
		OBS	0400	0535	35000	2765			14790						
		OBS	0450	0510	35000	2768			14788						
		STD	0500	0498	3500	2770	0004619	0458	14792						
		STD	0600	0476	3501	2773	0004408	0503	14799						
		OBS	0600	0476	35013	2773			14799						
		STD	0700	0454	3502	2777	0004193	0546	14807						
		STD	0800	0436	3503	2779	0004006	0587	14816						
		OBS	0800	0436	35030	2779			14816						
		STD	0900	0423	3503	2780	0003979	0627	14827						
		STD	1000	0411	3502	2781	0003959	0667	14839						
		OBS	1000	0411	35022	2781			14839						
		STD	1100	0401	3502	2783	0003916	0706	14851						
		STD	1200	0391	3503	2784	0003876	0745	14864						
		OBS	1200	0391	35025	2784			14864						
		STD	1300	0382	3503	2785	0003816	0783	14877						
		STD	1400	0375	3503	2786	0003815	0821	14891						
		STD	1500	0368	3503	2786	0003810	0860	14905						
		OBS	1500	0368	35030	2786			14905						

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	CHKT INDCTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
31	03	EV	47.8 N	27400 W		116	73	04	24	055	1967	102	040	2500	15	36	1	2		X1				0038

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR.	WIND SPEED OF FORCE	BARO-METER (mbs)	AIR TEMP °C DRY BULB	AIR TEMP °C WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	50	33	512	139	157	117	8	20	

MESSENGR TIMP OF HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10^7	$\Sigma\Delta D$ DYN. M. x 10^3	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at/l	CHL-A	SiO_4-Si µg-at/l	pH	SCC
		STD	0000	1922	34860	24883	0031274	0000	15197	556							
055		OBS	0000	1922	34880	24883			15197	556				051			
		STD	0010	1921	34860	24883	0031284	0031	15199	561							
		OBS	0010	1921	34880	24883			15199	561				040			
		STD	0020	1921	34895	24897	0030049	0062	15202	574							
013		OBS	0020	1921	34875	24897			15202	574				051			
		STD	0030	1740	35111	25526	0024831	0089	15154	552							
		OBS	0030	1740	35107	25526			15154	552				068			
		OBS	0040	1445	35148	26222			15065	491				032			
		STD	0050	1415	35541	26559	0014739	0129	15061	456							
		OBS	0050	1415	35535	26559			15061	456				018			
		STD	0075	1310	35720	26955	0011371	0162	15033	420							
		OBS	0075	1310	35720	26955			15033	420				006			
		STD	0100	1240	35610	27006	0010908	0189	15012	356							
		OBS	0100	1240	35610	27006			15012	356				003			
		STD	0125	1141	35545	27077	0010329	0216	14980	340							
		STD	0150	1060	35533	27133	0009829	0241	14954	328							
		OBS	0150	1060	35533	27133			14954	328							
		STD	0200	0950	35525	27255	0008702	0288	14922	318							
		OBS	0200	0950	35252	27255			14922	318							
		STD	0250	0835	35115	27346	0007924	0329	14885	325							
		OBS	0250	0835	35127	27346			14885	325							
		STD	0300	0705	35066	27488	0006604	0365	14843								
		OBS	0300	0705	35062	27488			14843								
		STD	0400	0527	34942	27600	0005512	0426	14786								
		OBS	0400	0527	34915	27600			14786								
		OBS	0450	0512	34995	27688			14789								
		STD	0500	0480	35000	27726	0004469	0476	14784								
		OBS	0500	0480	34995	27726			14784								
		STD	0600	0459	35011	27755	0004256	0520	14792								
		OBS	0600	0459	35005	27755			14792								
		STD	0700	0442	35042	27788	0004048	0561	14802								
		STD	0800	0425	35033	27800	0003895	0601	14812								
		OBS	0800	0425	35027	27800			14812								
		STD	0900	0407	35033	27826	0003770	0639	14821								
		STD	1000	0395	35033	27844	0003720	0677	14832								
		OBS	1000	0395	35028	27844			14832								
		STD	1100	0392	35033	27844	0003783	0714	14848								
		STD	1200	0389	35033	27844	0003851	0752	14863								
		OBS	1200	0389	35025	27844			14863								
		STD	1300	0385	35033	27844	0003884	0791	14878								
		STD	1400	0380	35033	27855	0003908	0830	14893								
		STD	1500	0374	35033	27866	0003910	0869	14907								
		OBS	1500	0374	35027	27866			14907								

REFERENCE		SHIP	LATITUDE	LONGITUDE	DUPE	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD TYPES		NODC STATION NUMBER
CTRY CODE	ID. NO.	CODE	° 1/10	° 1/10	INDICA	10°	1°	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT	
31	8023	EV	3756 N	07230 W		116	72	09	24	085	1967	104	041	4389	15	33	1	2		X1			0036

WATER		WIND		BARO-METER (mbs)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
DT	50	31	522	014	161	128		20	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10⁸	ΣΔD DYN. M x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₃-N µg-at	CHL-A	Si-Si µg-at	pH	SIO
		STD	0000	2150	3511	2446	0034817	0000	15263								
	085	OBS	0000	2150	35109	2446			15263					019			
		STD	0010	2150	3512	2447	0034774	0035	15264	527							
		OBS	0010	2150	35120	2447			15264	527				020			
		STD	0020	1573	3547	2619	0018432	0061	15106	527							
	003	OBS	0020	1573	35470	2619			15106	527				019			
		STD	0030	1479	3568	2656	0014935	0078	15081	524							
		OBS	0030	1479	35680	2656			15081	524				020			
		OBS	0040	1419	35720	2672			15063	545				037			
		STD	0050	1375	3568	2678	0012873	0106	15050	504							
		OBS	0050	1375	35680	2678			15050	504				063			
		STD	0075	1300	3568	2694	0011485	0136	15029	418							
		OBS	0075	1300	35678	2694			15029	418				028			
		STD	0100	1225	3552	2696	0011267	0165	15006	411							
		OBS	0100	1225	35520	2696			15006	411				007			
		STD	0125	1061	3536	2711	0009934	0191	14958	379							
		STD	0150	0960	3522	2721	0008993	0215	14917	354							
		OBS	0150	0960	35220	2721			14917	354							
		STD	0200	0790	3502	2732	0007469	0257	14858	322							
		OBS	0200	0790	35018	2732			14858	322							
		STD	0250	0705	3486	2748	0006537	0294	14834	331							
		OBS	0250	0705	35060	2748			14834	331							
		STD	0300	0615	3501	2756	0005818	0325	14806								
		OBS	0300	0615	35005	2756			14806								
		STD	0400	0518	3504	2770	0004510	0376	14784								
		OBS	0400	0518	35035	2770			14784								
		OBS	0450	0488	35050	2773			14780								
		STD	0500	0464	3503	2776	0004004	0419	14778								
		STD	0600	0429	3504	2780	0003679	0457	14780								
		OBS	0600	0429	35035	2780			14780								
		STD	0700	0425	3504	2781	0003720	0494	14795								
		STD	0800	0418	3504	2782	0003723	0531	14809								
		OBS	0800	0418	35039	2782			14809								
		STD	0900	0405	3504	2783	0003694	0568	14820								
		STD	1000	0395	3503	2784	0003705	0605	14832								
		OBS	1000	0395	35030	2784			14832								
		STD	1100	0389	3503	2784	0003724	0643	14847								
		STD	1200	0383	3503	2785	0003740	0680	14861								
		OBS	1200	0383	35030	2785			14861								
		STD	1300	0377	3503	2786	0003746	0717	14875								
		STD	1400	0372	3503	2786	0003769	0755	14890								
		STD	1500	0366	3503	2787	0003770	0793	14904								
		OBS	1500	0366	35032	2787			14904								

REFERENCE		SHIP	LATITUDE	LONGITUDE	DRIFT INDICATOR	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES			NODC STATION NUMBER
CTRY CODE	ID. NO.	CODE	° ' 1/10	° ' 1/10		10°	1°	MO	DAY	HR 1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT		
31	8023	EV	3730 N	07245 W		116	72	09	24	121	1967	102	042	2853	15	31	1	2		X1				0040

WATER		WIND		BARO-METER (mbs)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
DT	SD	29	S17	015	205	194		24	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-X10⁷	Σ Δ D DYN. M. X 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	CHL-A	SiO₄-Si µg-at/l	pH	SCC
		STD	0000	1981	34887	2473	0032229	0000	15215	547							
	121	OBS	0000	1981	34869	2473			15215	547				043			
		STD	0010	1865	34900	2505	0029203	0031	15184	552							
		OBS	0010	1865	34900	2505			15184	552				030			
		STD	0020	1742	35020	2545	0025477	0058	15151	538							
	003	OBS	0020	1742	35020	2545			15151	538				074			
		STD	0030	1611	35180	2588	0021405	0081	15116	515							
		OBS	0030	1611	35180	2588			15116	515				044			
		OBS	0040	1500	35540	2641			15087	495				028			
		STD	0050	1343	3558	2678	0012898	0116	15037	461							
		OBS	0050	1340	35582	2678			15037	461				017			
		OBS	0057	1378	35700	2679			15053								
		STD	0075	1251	3555	2693	0011489	0146	15011	444							
		OBS	0075	1251	35550	2693			15011	444				004			
		OBS	0080	1240	35652	2704			15010								
		OBS	0088	1258	35675	2702			15017								
		STD	0100	1220	3558	2702	0010754	0174	15005	354							
		OBS	0100	1220	35580	2702			15005	354				002			
		STD	0125	1109	3541	2710	0010055	0200	14969	354							
		STD	0150	1011	3528	2717	0009397	0224	14936	353							
		OBS	0150	1011	35279	2717			14936	353							
		STD	0200	0858	3510	2729	0008347	0269	14885	352							
		OBS	0200	0858	35104	2729			14885	352							
		STD	0250	0715	3503	2744	0006913	0307	14838	384							
		OBS	0250	0715	35028	2744			14838	384							
		STD	0300	0601	3499	2757	0005741	0339	14800								
		OBS	0300	0601	34991	2757			14800								
		STD	0400	0531	3499	2765	0004962	0392	14789								
		OBS	0400	0531	34993	2765			14789								
		STD	0500	0483	3505	2776	0004104	0438	14786								
		OBS	0500	0483	35049	2776			14786								
		STD	0600	0461	3507	2780	0003797	0477	14794								
		OBS	0600	0461	35070	2780			14794								
		STD	0700	0446	3505	2780	0003837	0515	14804								
		OBS	0700	0446	35055	2780			14804								
		STD	0800	0423	3504	2781	0003775	0553	14811								
		OBS	0800	0423	35040	2781			14811								
		STD	0900	0416	3504	2782	0003798	0591	14825								
		OBS	0900	0416	35039	2782			14825								
		STD	1000	0405	3504	2783	0003760	0629	14837								
		OBS	1000	0405	35039	2783			14837								
		STD	1100	0397	3504	2784	0003763	0667	14850								
		STD	1200	0390	3504	2785	0003783	0704	14864								
		OBS	1200	0390	35035	2785			14864								
		STD	1300	0384	3504	2786	0003777	0742	14878								
		STD	1400	0377	3504	2786	0003789	0780	14892								
		STD	1500	0371	3504	2787	0003790	0818	14906								
		OBS	1500	0371	35038	2787			14906								

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° ' 1/10	LONGITUDE ° ' 1/10	QUADRANT	MARSDEN SQUARE 10°	MARSDEN SQUARE °	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR 1/10	YEAR	CRUISE NO.	INMAN'S STATION NUMBER	DEPTH OF BOTTOM	MAX DEPTH OF SAMPLE	WATER COLOR CODE	WATER TRANS.	WIND DIR.	WIND SPEED OR KNOTS	BARO-METER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
31	6024	EV	37 11 N	073 40 W	1	16	75	09	24	154	1967	10	043	2962	15	29	112								

MESSENGER TIME OF SND HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY (10⁻⁸ m³/kg)	R & D DYN. HT. x 10	SOUND VELOCITY	DEPTH	REMARKS (WATER COLOR, WEATHER, SEA CONDITION, ETC.)	CHL-A
		STD	0000	1595	3544	2758	0004241	0000	15201	541		
154		OBS	0000	1995	33400	2358			15201	541		024
		OBS	0005	1976	33450	2359			15197			
		STD	0010	1945	3344	2373	0041814	0041	15189	549		
154		OBS	0010	1945	33410	2373			15189	549		019
		STD	0020	1635	3395	2488	0030369	0079	15106	568		
		OBS	0020	1635	33960	2488			15106	568		027
		STD	0030	0947	3355	2592	0020427	0105	14871	608		
		OBS	0030	0947	33545	2593			14871	608		081
		OBS	0040	1015	34100	2624			14904	649		031
		STD	0050	1073	3450	2645	0015996	0142	14932	684		
		OBS	0050	1074	34490	2645			14932	684		026
		STD	0075	1204	3530	2682	0012577	0177	14994	508		
		OBS	0075	1206	35296	2682			14994	508		024
		STD	0101	1264	3546	2694	0012498	0209	15019	471		
		OBS	0100	1264	35451	2694			15019	471		017
		STD	0125	1213	3546	2694	0011675	0239	15005	483		
		STD	0150	1156	3546	2706	0010317	0267	14988	495		
		OBS	0150	115	35455	2707			14988	495		
		STD	0200	1095	3532	2713	0008893	0315	14937	400		
		OBS	0200	0990	35311	2713			14937	400		
		STD	0250	0884	3500	2727	0006273	0356	14887	313		
		OBS	0250	0884	35030	2727			14887	313		
		STD	0300	0695	3504	2744	0005614	0395	14848			
		OBS	0300	0695	35042	2744			14838			
		STD	0400	0529	3499	2765	0004979	0453	14788			
		OBS	0400	0529	34990	2765			14786			
		STD	0500	0488	3501	2771	0004303	0501	14788			
		OBS	0500	0489	35005	2771			14788			
		STD	0600	0467	3504	2777	0004192	0544	14796			
		OBS	0600	0467	35040	2777			14796			
		STD	0700	0452	3505	2779	0003983	0584	14806			
		OBS	0700	0452	35045	2779			14806			
		STD	0800	0435	3505	2781	0003868	0623	14816			
		OBS	0800	0435	35047	2781			14816			
		STD	0900	0427	3504	2782	0003639	0662	14826			
		OBS	0900	0427	35047	2782			14826			
		STD	1000	0404	3503	2783	0003814	0701	14836			
		OBS	1000	0404	35030	2783			14836			
		STD	1100	0397	3503	2784	0003730	0736	14850			
		STD	1200	0390	3504	2785	0003725	0774	14864			
		OBS	1200	0390	35035	2785			14864			
		STD	1400	0383	3504	2785	0003742	0844	14875			
		STD	1600	0377	3504	2786	0003724	0852	14892			
		STD	1800	0371	3504	2787	0003706	0859	14906			
		OBS	1800	037	35035	2787			14906			

REFERENCE		SHIP	LATITUDE	LONGITUDE	DRIFT INDICTR	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF SMPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES			NODC STATION NUMBER
TYPE CODE	ID. NO.	CODE	° ' 1/10	° ' 1/10		10°	1°	MO	DAY	HR. 1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT		
31	8027	EV	3700 N	07330 W		116	73	04	24	187	1967	104	044	2908	15	30	1	2		x1				0042

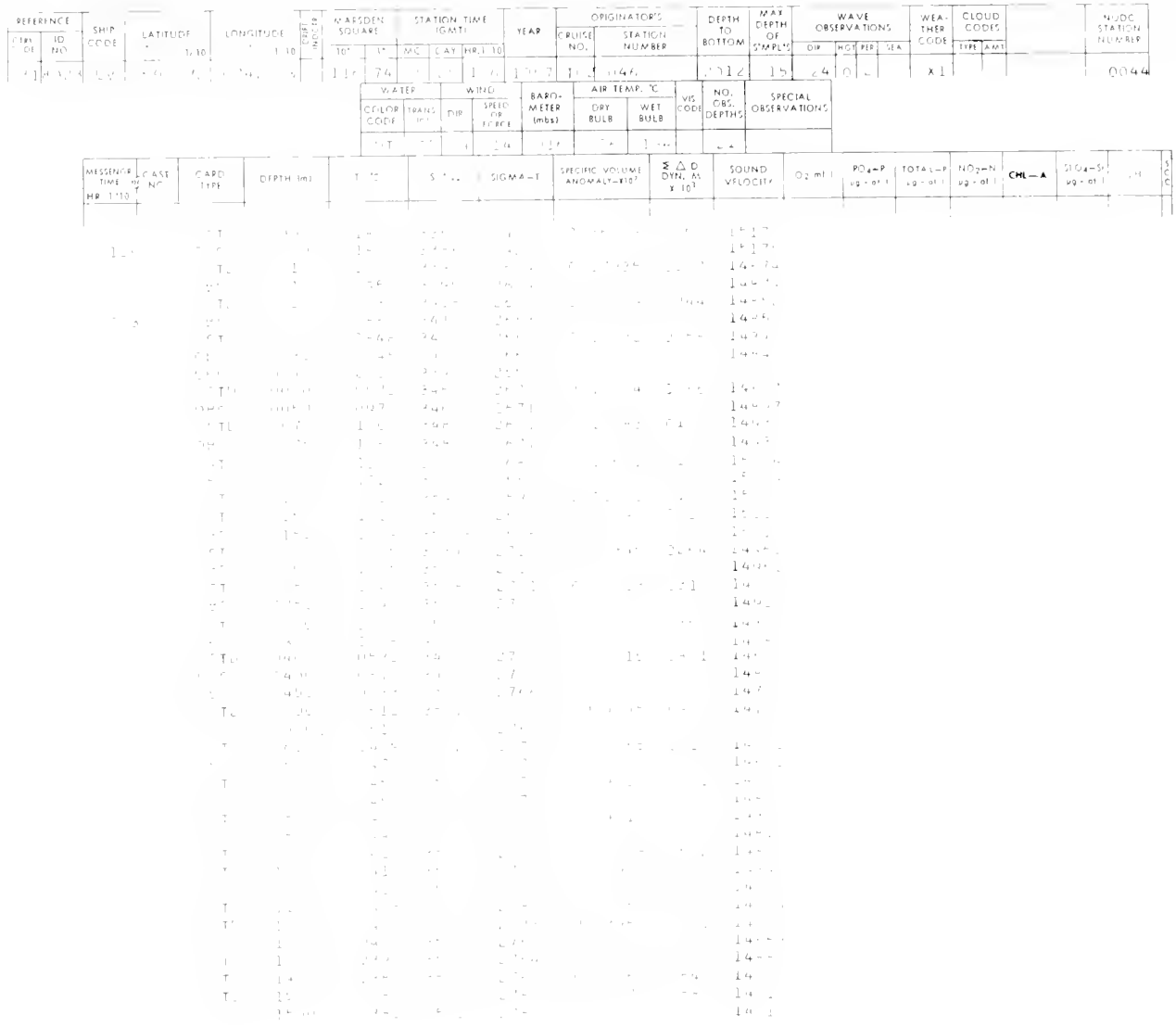
WATER		WIND		BARO-METER (mbs)	AIR TEMP °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
DT	SD	25	S12	139	183	144	8	22	

MESSENGR TIME OF HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ Δ D DYN. M x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₃-N µg-at/l	CHL-A	SiO₄-Si µg-at/l	pH	SCC
		STD	0000	1935	34420	2434	0035946	0000	15194								
187		OBS	0000	1935	34200	2434			15194								
		STD	0010	1400	3425	2563	0023731	0030	15034								
		OBS	0010	1400	34250	2563			15034								
003		OBS	0015	1070	34255	2627			14922								
		STD	0020	1115	3465	2650	0015505	0049	14944								
		OBS	0020	1115	34650	2650			14944								
		STD	0030	1258	3522	2667	0013923	0064	15002								
		OBS	0030	1258	35220	2667			15002								
		OBS	0040	1282	35320	2669			15013								
		STD	0050	1280	3537	2674	0013292	0091	15015								
		OBS	0050	1280	35370	2674			15015								
		STD	0075	1267	3552	2688	0012011	0123	15016								
		OBS	0075	1267	35520	2688			15016								
		STD	0100	1250	3554	2693	0011617	0153	15015								
		OBS	0100	1250	35539	2693			15015								
		STD	0125	1194	3549	2700	0010998	0181	14999								
		STD	0150	1130	3542	2707	0010386	0208	14980								
		OBS	0150	1130	35424	2707			14980								
		STD	0200	0981	3523	2718	0009356	0257	14933								
		OBS	0200	0981	35232	2718			14933								
		STD	0250	0830	3510	2733	0008048	0300	14883								
		OBS	0250	0830	35100	2733			14883								
		STD	0300	0720	3503	2743	0007081	0338	14848								
		OBS	0300	0720	35026	2743			14848								
		STD	0400	0552	3501	2764	0005101	0399	14797								
		OBS	0400	0552	35012	2764			14797								
		STD	0500	0488	3502	2773	0004379	0447	14788								
		OBS	0500	0488	35020	2773			14788								
		STD	0600	0456	3502	2776	0004146	0489	14791								
		OBS	0600	0456	35015	2776			14791								
		STD	0700	0437	3502	2778	0003988	0530	14800								
		OBS	0700	0437	35020	2778			14800								
		STD	0800	0423	3502	2780	0003953	0570	14811								
		OBS	0800	0423	35016	2780			14811								
		STD	0900	0410	3502	2781	0003902	0609	14822								
		OBS	0900	0410	35015	2781			14822								
		STD	1000	0390	3502	2783	0003733	0647	14830								
		OBS	1000	0390	35018	2783			14830								
		STD	1100	0388	3502	2784	0003793	0685	14846								
		STD	1200	0384	3502	2784	0003826	0723	14861								
		OBS	1200	0384	35020	2784			14861								
		STD	1300	0379	3502	2785	0003852	0761	14876								
		STD	1400	0373	3502	2785	0003855	0800	14890								
		STD	1500	0366	3502	2786	0003850	0838	14904								
		OBS	1500	0366	35021	2786			14904								

REFERENCE		SHIP	LATITUDE	LONGITUDE	DRIFT INDICTR	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	ID. NO.	CODE	° 1/10	° 1/10		10°	1°	MO	DAY	HR 1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT	
31	8023	EV	3700 N	07400 W		116	74	09	24	211	1967	102	045	2586	15	24	2	2		X1			0043

WATER		WIND		BAROMETER (mbs)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
DT	SD	24	S14	132	178	156	7	23	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY $\times 10^7$	$\Sigma\Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at/l	CHL-A	SiO_4-Si µg-at/l	pH	SCC
		STD	0000	1780	3393	2452	0034220	0000	15146	569							
211		OBS	0000	1780	33930	2452			15146	569				015			
		STD	0010	1772	3391	2453	0034212	0034	15145	578							
		OBS	0010	1772	33910	2453			15145	578				018			
		STD	0020	1662	3388	2476	0031974	0067	15114	605							
003		OBS	0020	1662	33880	2476			15114	605				032			
		STD	0030	1120	3386	2587	0021439	0094	14937	623							
		OBS	0030	1120	33860	2587			14937	623				041			
		OBS	0033	0930	33840	2618			14869								
		OBS	0040	0956	34070	2632			14882	612				079			
		STD	0050	0985	3420	2637	0016720	0132	14896	600							
		OBS	0050	0985	34200	2637			14896	600				033			
		STD	0075	1200	3495	2657	0014946	0172	14986	544							
		OBS	0075	1200	34950	2657			14986	544				007			
		OBS	0079	1247	35390	2682			15009								
		STD	0100	1250	3547	2687	0012160	0406	15014	472							
		OBS	0100	1250	35465	2687			15014	472				000			
		STD	0125	1235	3556	2697	0011247	0235	15014	430							
		STD	0150	1220	3557	2701	0010973	0263	15013	390							
		OBS	0150	1220	35568	2701			15013	390							
		STD	0200	1035	3535	2718	0009392	0314	14954	316							
		OBS	0200	1035	35350	2718			14954	316							
		STD	0250	0887	3518	2730	0008325	0358	14906	319							
		OBS	0250	0887	35181	2730			14906	319							
		STD	0300	0752	3506	2741	0007269	0397	14861								
		OBS	0300	0752	35062	2741			14861								
		STD	0400	0565	3499	2761	0005465	0461	14802								
		OBS	0400	0565	34985	2761			14802								
		STD	0500	0497	3502	2771	0004525	0510	14791								
		OBS	0500	0497	35015	2771			14791								
		STD	0600	0465	3502	2775	0004216	0554	14795								
		OBS	0600	0465	35020	2775			14795								
		STD	0700	0450	3503	2778	0004070	0596	14805								
		OBS	0700	0450	35030	2778			14805								
		STD	0800	0435	3504	2780	0003927	0636	14816								
		OBS	0800	0435	35039	2780			14816								
		STD	0900	0420	3503	2781	0003913	0675	14826								
		OBS	0900	0420	35030	2781			14826								
		STD	1000	0410	3503	2782	0003895	0714	14839								
		OBS	1000	0410	35029	2782			14839								
		STD	1100	0400	3503	2783	0003867	0753	14851								
		STD	1200	0392	3503	2784	0003867	0791	14864								
		OBS	1200	0392	35028	2784			14864								
		STD	1300	0386	3503	2785	0003867	0830	14879								
		STD	1400	0381	3503	2785	0003891	0869	14893								
		STD	1500	0378	3503	2786	0003932	0908	14909								
		OBS	1500	0378	35031	2786			14909								


REFERENCE
CRUISE NO.
ID NO.
SHIP CODE
LATITUDE
LONGITUDE
DUPLICATE INDICATOR
MARSDEN SQUARE
STATION TIME (GMT)
YEAR
ORIGINATOR'S CRUISE NO.
ORIGINATOR'S STATION NUMBER
DEPTH TO BOTTOM
MAX DEPTH OF SMPL'S
WAVE OBSERVATIONS
WEATHER CODE
CLOUD CODES
NODC STATION NUMBER
WATER
WIND
BARO-METER (mbs)
AIR TEMP. °C
VIS. CODE
NO. OBS. DEPTHS
SPECIAL OBSERVATIONS
MESSENGER TIME
CAST NO.
CARD TYPE
DEPTH (m)
SIGMA-T
SPECIFIC VOLUME ANOMALY
SOUND VELOCITY
O2 ml/l
PO4-P
TOTAL-P
NO2-N
CHL-A
SiO4-Si
CCC

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° ' 1/10	LONGITUDE ° ' 1/10	DRIFT INDICTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR 1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT PER SEA	AIR-THER CODE	CLOUD CODES TYPE AMT
31	8023	EV	47.1 N	.7500 W		116	75	09	25	036	1967	102	047	0044	00	24	0		x1

WATER COLOR CODE	WATER TRANS (m)	WIND DIR	WIND SPEED OR FORCE	BARO-METER (mbs)	AIR TEMP °C DRY BULB	AIR TEMP °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	50	25	12	154	144	167	8	03	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10⁸	Δ D DYN. M x 10³	SOUND VELOCITY	O2 ml/l	PO4-P µg-at/l	TOTAL-P µg-at/l	NO3-N µg-at/l	CHL-A	SI(OH)4-Si µg-at/l	FM
		STD	0000	1680	3245	2253	0042744	0000	15099	596						
036		OBS	0000	168	32450	2253			15099	596				054		
		STD	0010	1621	3258	2386	0040527	0042	15084	618						
		OBS	0010	1621	3.281	2386			15084	618				065		
		STD	0020	1528	3260	2409	0038414	0081	15057	607						
033		OBS	0020	1528	3302P	2441F				607				187		
		STD	0030	1504	3283	2416	0037776	0119	15051	530						
		OBS	0030	1504	3208P	2374P				530				041		
		OBS	0040	1092	32650	2494			14914	514				145		

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° ' 1/10	LONGITUDE ° ' 1/10	DRIFT INDICTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR 1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF SAMPLES	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT PER SEA	AIR-THER CODE	CLOUD CODES TYPE AMT
31	8023	EV	3669 N	07530 W		116	65	09	25	058	1967	102	048	3020	00				

WATER COLOR CODE	WATER TRANS (m)	WIND DIR	WIND SPEED OR FORCE	BARO-METER (mbs)	AIR TEMP °C DRY BULB	AIR TEMP °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD							03	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10⁸	Δ D DYN. M x 10³	SOUND VELOCITY	O2 ml/l	PO4-P µg-at/l	TOTAL-P µg-at/l	NO3-N µg-at/l	CHL-A	SI(OH)4-Si µg-at/l	FM
		STD	0000	1942	3080	2174	0050774	0000	15155							
068		OBS	0000	1940	30800	2174			15155							
		STD	0010	1943	3089	2181	0050186	0060	15158							
		OBS	0010	1941	30885	2181			15158							
		STD	0020	1891	3117	2215	0056961	0119	15149							
000		OBS	0020	1891	31171	2215			15149							

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	DRIFT INDICTR	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES			NODC STATION NUMBER
CTRY CODE	ID. NO.		° ' 1/10	° ' 1/10		10°	1°	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT		
318	023	EV	35589N	075302W		116	55	09	25	155	1967	102	051	0018	00	02	3	2		X0				0047

WATER		WIND		BARO-METER (mbs)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR	SPEED OR FORCE		DRY BULB	WET BULB			
DT	SD	02	S14	234	167	128	8	02	

MESSENGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA–T	SPECIFIC VOLUME ANOMALY–x10⁷	Σ Δ D DYN. M. x 10³	SOUND VELOCITY	O_2 ml/l	PO_4–P µg-at/l	TOTAL–P µg-at/l	NO_2–N µg-at/l	CHL–A	SiO_4–Si µg-at/l	pH	SOC
		STD	0000	2057	2884	1995	0077938	0000	15165	554							
155		OBS	0000	2057	28835	1995			15165	554				094			
		STD	0010	2055	2996	2081	0069737	0074	15179	521							
		OBS	0010	2055	29960	2081			15179	521				146			

REFERENCE		SHIP CODE	LATITUDE	LONGITUDE	DRIFT INDICTR	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES			NODC STATION NUMBER
CTRY CODE	ID. NO.		° ' 1/10	° ' 1/10		10°	1°	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT		
318	023	EV	3559 N	07500 W		116	55	09	25	177	1967	102	052	0028	00	36	1	2		X0				0048

WATER		WIND		BARO-METER (mbs)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR	SPEED OR FORCE		DRY BULB	WET BULB			
DT	SD	02	S12	237	178	100	8	03	

MESSENGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA–T	SPECIFIC VOLUME ANOMALY–x10⁷	Σ Δ D DYN. M. x 10³	SOUND VELOCITY	O_2 ml/l	PO_4–P µg-at/l	TOTAL–P µg-at/l	NO_2–N µg-at/l	CHL–A	SiO_4–Si µg-at/l	pH	SOC
		STD	0000	1779	3196	2302	0048544	0000	15123	589							
177		OBS	0000	1779	31960	2302			15123	589				032			
		STD	0010	1760	3199	2309	0047943	0048	15119	588							
		OBS	0010	1760	31987	2309			15119	588				034			
		STD	0020	1760	3199	2309	0047950	0096	15121	584							
000		OBS	0020	1760	31990	2309			15121	584				037			

REFERENCE		SHIP	LATITUDE	LONGITUDE	INDICES	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX DEPTH OF SAMPLES	WAVE OBSERVATIONS				WEATHER CODE	CRT	WAT IN WATER
CTRY CODE	ID. NO.	CODE	° ' 1/10	° ' 1/10		10°	1°	MO.	DAY	HR 1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	
31	8023	EV	36 10 N	074 30 W		116	64	09	25	200	1967	102	053	1825	15	36	1	3		x1		0049

WATER		WIND		BARO-METER (mbs)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR	SPEED OR FORCE		DRY BULB	WET BULB			
07	30	35	312	234	183	133	8	29	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY $\times 10^7$	$\Sigma\Delta D$ DYN M $\times 10^1$	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at/l	CHL-A	SiO_4-Si µg-at/l	pH	H_2S
		STD	0000	2103	3396	2372	0041907	0000	15237								
200		OBS	0000	2103	33960	2372			15237								
		OBS	0005	2112	34150	2384			15242								
103		OBS	0009	2048	34230	2405			15226								
		STD	0010	2085	3522	2472	0032356	0037	15248								
		OBS	0010	2085	35220	2472			15248								
		OBS	0011	1692	34200	2494			15125								
		OBS	0017	1942	35200	2609			15210								
		STD	0020	1700	3471	2530	0026853	0067	15135								
		OBS	0020	1700	34700	2530			15135								
		OBS	0022	1607	34820	2561			15109								
		OBS	0026	1717	35420	2581			15150								
		STD	0030	1663	3570	2616	0018702	0090	15137								
		OBS	0030	1660	35700	2616			15137								
		OBS	0031	1617	35800	2634			15125								
		OBS	0036	1731	36205	2638			15165								
		OBS	0040	1600	35900	2646			15123								
		STD	0050	1519	3573	2649	0013691	0124	15097								
		OBS	0050	1519	35730	2649			15097								
		STD	0075	1339	3565	2683	0012451	0159	15042								
		OBS	0075	1339	35650	2683			15042								
		STD	0100	1270	3569	2700	0010927	0188	15024								
		OBS	0100	1270	35685	2700			15024								
		STD	0125	1127	3547	2711	0009933	0214	14976								
		STD	0150	1002	3531	2721	0009041	0238	14933								
		OBS	0150	1003	35307	2721			14933								
		STD	0200	0810	3513	2738	0007456	0279	14868								
		OBS	0200	0810	35127	2738			14868								
		STD	0250	0695	3508	2751	0006251	0314	14831								
		OBS	0250	0695	35080	2751			14831								
		STD	0300	0609	3503	2758	0005591	0343	14804								
		OBS	0300	0609	35025	2758			14804								
		STD	0400	0515	3500	2768	0004705	0395	14782								
		OBS	0400	0515	35004	2768			14782								
		STD	0500	0478	3501	2773	0004363	0440	14783								
		OBS	0500	0478	35006	2773			14783								
		STD	0600	0462	3502	2775	0004195	0483	14794								
		OBS	0600	0462	35018	2775			14794								
		STD	0700	0449	3502	2777	0004117	0524	14805								
		OBS	0700	0449	35022	2777			14805								
		STD	0800	0434	3502	2779	0004048	0565	14815								
		OBS	0800	0434	35021	2779			14815								
		STD	0900	0424	3502	2780	0004006	0605	14828								
		OBS	0900	0424	35024	2780			14828								
		STD	1000	0411	3502	2781	0003967	0645	14839								
200		OBS	1000	0411	35021	2781			14839								
		STD	1100	0406	3502	2782	0004000	0685	14853								
		STD	1200	0401	3502	2782	0004039	0725	14868								
		OBS	1200	0401	35020	2782			14868								
		STD	1300	0396	3502	2783	0004067	0766	14883								
		STD	1400	0390	3502	2783	0004073	0807	14897								
		STD	1500	0384	3503	2784	0004084	0847	14911								
003		OBS	1500	0384	35021	2784			14911								

REFERENCE CTRY CODE	REFERENCE IO. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDCTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR 1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
31	8029	EV	3600 N	07400 W		116	64	09	25	225	1967	102	054	2834	15	35	3	2		X0				0050

WATER COLOR CODE	WATER TRANS (m)	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	35	S16	240	167	128	8	25	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA–T	SPECIFIC VOLUME ANOMALY–x10⁷	Σ Δ D DYN. M. x 10³	SOUND VELOCITY	O₂ ml/l	PO₄–P µg-at/l	TOTAL–P µg-at/l	NO₂–N µg-at/l	CHL–A	SiO₄–Si µg-at/l	pH	SDC
		STD	0000	2308	3315	2253	0053216	0000	15281	477							
225		OBS	0000	2308	33150	2253			15281	477				017			
		OBS	0008	2312	33180	2254			15283								
		STD	0010	2345	3332	2255	0053042	0053	15294	520							
003		OBS	0010	2345	33320	2255			15294	520				015			
		OBS	0012	2306	33730	2298			15289								
		STD	0020	2581	3580	2372	0041979	0101	15379	516							
		OBS	0020	2581	35800	2372			15379					022			
		STD	0030	2610	3619	2392	0040081	0142	15392	512							
		OBS	0030	2610	36190	2392			15392	512				041			
		OBS	0040	2515	36260	2427			15372	471				046			
		STD	0050	2169	3629	2530	0026974	0209	15289	476							
		OBS	0050	2169	36290	2530			15289	476				042			
		OBS	0069	1211	34300	2604			14981								
		STD	0075	1430	3505	2618	0018662	0266	15064	464							
		OBS	0075	1430	35050	2618			15064	464				028			
		OBS	0084	1760	36300	2638			15183								
		STD	0100	1485	3605	2683	0012572	0305	15098	457							
		OBS	0100	1485	36050	2683			15098	457				012			
		STD	0125	1243	3571	2707	0010298	0333	15019	384							
		STD	0150	1068	3545	2720	0009106	0358	14959	338							
		OBS	0150	1068	35450	2720			14959	338							
		STD	0200	0920	3520	2726	0008604	0402	14910	326							
		OBS	0200	0920	35200	2726			14910	326							
		STD	0250	0888	3525	2735	0007832	0443	14907	325							
		OBS	0250	0888	35250	2735			14907	325							
		STD	0300	0750	3511	2746	0006871	0480	14861								
		OBS	0300	0750	35112	2746			14861								
		STD	0400	0519	3501	2768	0004686	0538	14784								
		OBS	0400	0519	35013	2768			14784								
		STD	0500	0480	3501	2772	0004395	0583	14784								
		OBS	0500	0480	35005	2772			14784								
		STD	0600	0462	3502	2775	0004217	0626	14794								
		OBS	0600	0462	35015	2775			14794								
		STD	0700	0442	3502	2778	0004048	0667	14802								
		OBS	0700	0442	35020	2778			14802								
		STD	0800	0430	3503	2780	0003941	0707	14814								
		OBS	0800	0430	35029	2780			14814								
		STD	0900	0420	3503	2781	0003920	0747	14826								
		OBS	0900	0420	35029	2781			14826								
		STD	1000	0409	3503	2782	0003913	0786	14838								
		OBS	1000	0409	35025	2782			14838								
		STD	1100	0399	3502	2783	0003899	0825	14851								
		STD	1200	0391	3502	2783	0003913	0864	14864								
		OBS	1200	0391	35020	2783			14864								
		STD	1300	0384	3502	2784	0003893	0903	14878								
		STD	1400	0379	3503	2785	0003888	0942	14892								
		STD	1500	0375	3503	2786	0003901	0981	14908								
		OBS	1500	0375	35030	2786			14908								

REFERENCE		SHIP	LATITUDE	LONGITUDE	DUPLICATE	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAT DEPTH OF SMPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES			NODC STATION NUMBER
CTRY CODE	ID. NO.	CODE	° 1/10	° 1/10	INDICATOR	10°	1°	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT		
31	8023	EV	3604 N	07330 W		116	63	09	26	016	1967	102	055	3300	15	02	2	2		X0				0051

WATER		WIND		BARO-METER (mbs)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
DT	SD	02	S18	251	183	178	8	19	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA–T	SPECIFIC VOLUME ANOMALY–x10⁷	Σ Δ D DYN. M. x 10³	SOUND VELOCITY	O_2 ml/l	PO_4–P µg-at/l	TOTAL–P µg-at/l	NO_3–N µg-at/l	DB–A	SiO_4–Si µg-at l	pH	SCC
		STD	0000	2626	3629	2394	0039753	0000	15392	477							
016		OBS	0000	2626	36285	2394			15392	477				008			
		STD	0010	2625	3629	2395	0039750	0040	15393	479							
		OBS	0010	2625	36287	2395			15393	479				008			
		STD	0020	2625	3629	2395	0039777	0080	15395	493							
003		OBS	0020	2625	36289	2395			15395	493				010			
		STD	0030	2625	3629	2395	0039819	0119	15396	481							
		OBS	0030	2625	36289	2395			15396	481				008			
		OBS	0040	2625	36290	2395			15398	479				012			
		STD	0050	2583	3634	2412	0038279	0197	15391	479							
		OBS	0050	2583	36340	2412			15391	479				015			
		STD	0075	2379	3669	2500	0029948	0283	15351	477							
		OBS	0075	2379	36690	2500			15351	477				013			
		STD	0100	2185	3678	2563	0024058	0350	15307	448							
		OBS	0100	2185	36780	2563			15307					017			
		STD	0125	2071	3674	2592	0021437	0407	15281	433							
		STD	0150	1976	3670	2614	0019391	0458	15259	430							
		OBS	0150	1976	36700	2614			15259	430							
		STD	0200	1843	3663	2643	0016799	0549	15230	463							
		OBS	0200	1843	36629	2643			15230	463							
		STD	0250	1749	3636	2646	0016679	0632	15207	473							
		OBS	0250	1749	36360	2646			15207	473							
		STD	0300	1578	3617	2671	0014325	0710	15162								
		OBS	0300	1578	36170	2671			15162								
		STD	0400	1218	3551	2697	0012005	0841	15053								
		OBS	0400	1218	35510	2697			15053								
		OBS	0450	1057	35360	2715			15003								
		STD	0500	0961	3527	2725	0009385	0948	14975								
		STD	0600	0780	3513	2743	0007704	1034	14922								
		OBS	0600	0780	35130	2743			14922								
		STD	0700	0583	3505	2763	0005620	1100	14860								
		STD	0800	0459	3501	2775	0004436	1151	14825								
		OBS	0800	0459	35010	2775			14825								
		STD	0900	0444	3502	2778	0004282	1194	14836								
		STD	1000	0430	3503	2780	0004136	1236	14847								
		OBS	1000	0430	35030	2780			14847								
		STD	1100	0415	3503	2782	0004047	1277	14857								
		STD	1200	0403	3503	2783	0004020	1318	14869								
		OBS	1200	0403	35026	2783			14869								
		STD	1300	0394	3503	2784	0003991	1358	14882								
		STD	1400	0389	3503	2784	0004009	1398	14897								
		STD	1500	0386	3503	2785	0004051	1438	14912								
		OBS	1500	0386	35029	2785			14912								

REFERENCE		SHIP	LATITUDE	LONGITUDE	DRIFT INDICATOR	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES			NODC STATION NUMBER
CTRY CODE	ID. NO.	CODE	° ' 1/10	° ' 1/10		10°	1°	MO	DAY	HR. 1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT		
31	8023	EV	3530 N	07395 W		116	53	09	26	055	1967	108	056	3621	15	36	01	2		X0				0052

WATER		WIND		BAROMETER (mbs)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
D1	SD	04	S12	261	200	200	7	19	

MESSENGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S °..	SIGMA-T	SPECIFIC VOLUME ANOMALY-10^7	$\Sigma\Delta D$ DYN. M. x 10^3	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_3-N µg-at/l	CHL-A	SiO_4-Si µg-at/l	pH	
		STD	0000	2550	3633	2421	0037196	0000	15375	481							
	055	OBS	0000	2550	36326	2421			15375	481				005			
		STD	0010	2550	3633	2421	0037237	0037	15376	493							
		OBS	0010	2550	36326	2421			15376	493				003			
		STD	0020	2550	3633	2421	0037279	0074	15378	486							
	003	OBS	0020	2550	36326	2421			15378	486				004			
		STD	0030	2550	3633	2421	0037321	0112	15380	487							
		OBS	0030	2550	36326	2421			15380	487				007			
		OBS	0040	2550	36460	2437			15378	484				005			
		STD	0050	2400	3668	2493	0030514	0180	15352	486							
		OBS	0050	2400	36680	2493			15352	486				005			
		STD	0075	2261	3677	2541	0026061	0250	15323	488							
		OBS	0075	2261	36774	2541			15323	488				026			
		STD	0100	2112	3672	2579	0022556	0311	15288	481							
		OBS	0100	2112	36720	2579			15288	481				017			
		STD	0125	1998	3667	2607	0019427	0364	15261	434							
		STD	0150	1921	3666	2625	0018305	0412	15244	411							
		OBS	0150	1921	36660	2625			15244	411							
		STD	0200	1880	3661	2632	0017837	0502	15240	434							
		OBS	0200	1880	36610	2632			15240	434							
		STD	0250	1808	3656	2646	0016630	0589	15227	466							
		OBS	0250	1808	36560	2646			15227	466							
		STD	0300	1759	3647	2652	0016273	0671	15220								
		OBS	0300	1759	36472	2652			15220								
		STD	0400	1600	3614	2664	0015346	0829	15185								
		OBS	0400	1600	35138	25878											
		OBS	0450	1478	35963	2678			15152								
		STD	0500	1327	3573	2692	0012804	0970	15109								
		STD	0600	1060	3538	2716	0010518	1086	15029								
		OBS	0600	1050	35380	2716			15029								
		STD	0700	0834	3520	2740	0008212	1180	14960								
		STD	0800	0662	3509	2757	0006742	1254	14908								
		OBS	0800	0661	35040	2757			14908								
		STD	0900	0545	3509	2771	0005074	1312	14878								
		STD	1000	0467	3508	2780	0004237	1358	14863								
		OBS	1000	0467	35080	2780			14863								
		STD	1100	0441	3506	2781	0004156	1400	14868								
		STD	1200	0420	3504	2782	0004133	1442	14876								
		OBS	1200	0420	35042	2782			14876								
		STD	1300	0405	3504	2783	0004036	1483	14887								
		STD	1400	0395	3504	2784	0003990	1523	14899								
		STD	1500	0391	3504	2785	0004036	1563	14914								
		OBS	1500	0391	35040	2785			14914								

REFERENCE		SHIP	LATITUDE	LONGITUDE	DRIFT INDICTR	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAT. DEPTH OF SMPL'S	WAVE OBSERVATIONS			WEATHER CODE	CLOUD		STATION NUMBER
CTRY CODE	ID. NO.	CODE	° 1/10	° 1/10		10°	1°	MO	DAY	HR, 1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT.	PER.	SEA	TYPE	AMT	
31	8023	EV	3527 N	07348 W		116	53	09	26	095	1967	102	257	3475	15	25	1	2				053

WATER		WIND		BARO-METER (mbs)	AIR TEMP °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR	SPEED OR FORCE		DRY BULB	WET BULB			
DT	SD	05	512	251	200	197	8	19	

MESSENGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA–T	SPECIFIC VOLUME ANOMALY–10^{7}	$\Sigma\Delta D$ DYN. M x 10^{3}	SOUND VELOCITY	O_2 ml l	PO_4–P µg-at/l	TOTAL–P µg-at l	NO_3–N µg-at.	CHL–A	SiO_4–Si µg-at	DH
		STD	0000	25466	36331	24222	0037076	0000	15374	486						
095		OBS	0000	25466	36326	24224			15374	486				018		
		STD	0010	25455	36331	24233	0037061	0037	15375	500						
		OBS	0010	25455	36330	24233			15375	500				007		
		STD	0020	25455	36331	24233	0037048	0074	15377	505						
003		OBS	0020	25455	36332	24233			15377	505				007		
		STD	0030	25455	36334	24233	0037036	0111	15379	498						
		OBS	0030	25455	36338	24233			15379	498				007		
		OBS	0040	25455	36345	24234			15380	508				007		
		STD	0050	23388	36766	25188	0028191	0177	15337	512						
		OBS	0050	23388	36760	25188			15337	512				007		
		STD	0075	21655	36731	25644	0023824	0242	15298	497						
		OBS	0075	21655	36725	25644			15298	497				032		
		STD	0100	20455	36755	25994	0020592	0297	15270	490						
		OBS	0100	20455	36751	25994			15270	490				019		
		STD	0125	19722	36711	26166	0019126	0347	15254	502						
		STD	0150	19233	36688	26277	0018136	0393	15244	508						
		OBS	0150	19230	36683	26277			15244	508						
		STD	0200	18822	36677	26366	0017452	0482	15241	504						
		OBS	0200	18822	36670	26366			15241	504						
		STD	0250	18422	36644	26444	0016871	0568	15238	468						
		OBS	0250	18422	36640	26444			15238	468						
		STD	0300	18111	36611	26499	0016521	0652	15237							
		OBS	0300	18111	36609	26499			15237							
		STD	0400	17377	36477	26577	0016142	0815	15230							
		OBS	0400	17377	36465	26577			15230							
		OBS	0450	16866	36372	26622			15222							
		STD	0500	15266	36088	26766	0014451	0968	15177							
		STD	0600	12777	35622	26944	0012870	1104	15107							
		OBS	0600	12777	35620	26944			15107							
		STD	0700	12033	35411	26922	0013200	1235	15096							
		STD	0800	10688	35255	27055	0012045	1361	15063							
		OBS	0800	10688	35252	27055			15063							
		STD	0900	08033	35166	27411	0008369	1463	14981							
		STD	1000	06144	35100	27633	0006094	1535	14923							
		OBS	1000	06144	35100	27633			14923							
		STD	1100	05299	35088	27733	0005177	1592	14905							
		STD	1200	04688	35077	27788	0004577	1640	14896							
		OBS	1200	04688	35065	27788			14896							
		STD	1300	04533	35066	27800	0004523	1686	14907							
		STD	1400	04399	35066	27811	0004429	1731	14918							
		STD	1500	04244	35066	27833	0004329	1775	14928							
		OBS	1500	04244	35060	27833			14928							

REFERENCE		SHIP	LATITUDE	LONGITUDE	DRIFT	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES			NODC STATION NUMBER
CTRY CODE	NO.	CODE	° 1/10	° 1/10	INDEX	10°	1°	MO	DAY	HR.1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT		
31	8023	EV	3506 N	07419 W		116	54	09	26	128	1967	102	058	3036	15	06	1	2		X1				0054

WATER		WIND		BARO-METER (mbs)	AIR TEMP. °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR	SPEED OR FORCE		DRY BULB	WET BULB			
DT	SD	07	S06	268	250	250	8	21	

MESSENGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S °/₀₀	SIGMA-T	SPECIFIC VOLUME ANOMALY-10^7	$\Sigma\Delta D$ DYN. M. x 10^3	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at/l	CHL-A	SiO_4-Si µg-at/l	pH	SCC
		STD	0000	2644	3630	2390	0040187	0000	15396								
128		OBS	0000	2644	36300	2390			15396								
		STD	0010	2644	3630	2390	0040229	0040	15397								
		OBS	0010	2644	36300	2390			15397								
		STD	0020	2644	3630	2390	0040270	0080	15399								
003		OBS	0020	2644	36300	2390			15399								
		STD	0030	2644	3630	2390	0040312	0121	15401								
		OBS	0030	2644	36300	2390			15401								
		OBS	0040	2499	36600	2457			15373								
		STD	0050	2392	3675	2501	0029782	0191	15350								
		OBS	0050	2392	36750	2501			15350								
		STD	0075	2258	3680	2544	0025792	0260	15322								
		OBS	0075	2258	36800	2544			15322								
		STD	0100	2164	3680	2570	0023353	0322	15302								
		OBS	0100	2164	36800	2570			15302								
		STD	0125	2077	3674	2590	0021593	0378	15283								
		STD	0150	2005	3671	2607	0020089	0430	15267								
		OBS	0150	2005	36705	2607			15267								
		STD	0200	1908	3668	2630	0018020	0525	15248								
		OBS	0200	1908	36680	2630			15248								
		STD	0250	1820	3659	2646	0016701	0612	15231								
		OBS	0250	1820	36590	2646			15231								
		STD	0300	1781	3658	2654	0016050	0694	15227								
		OBS	0300	1781	36575	2654			15227								
		STD	0400	1640	3625	2663	0015452	0851	15198								
		OBS	0400	1643	36250	2663			15198								
		STD	0500	1385	3582	2687	0013371	0996	15129								
		OBS	0500	1385	35815	2687			15129								
		STD	0600	1099	3541	2712	0011004	1117	15043								
		OBS	0600	1099	35410	2712			15043								
		STD	0700	0870	3509	2726	0009598	1220	14972								
		OBS	0700	0870	35090	2726			14972								
		STD	0800	0600	3506	2762	0005914	1298	14883								
		OBS	0800	0600	35060	2762			14883								
		STD	0900	0485	3506	2776	0004505	1350	14853								
		OBS	0900	0485	35060	2776			14853								
		STD	1000	0477	3506	2777	0004550	1395	14867								
		OBS	1000	0477	35055	2777			14867								
		STD	1100	0455	3506	2779	0004373	1440	14874								
		STD	1200	0436	3506	2781	0004229	1483	14883								
		OBS	1200	0436	35055	2781			14883								
		STD	1300	0419	3505	2783	0004144	1525	14893								
		STD	1400	0404	3504	2784	0004116	1566	14903								
		STD	1500	0391	3502	2783	0004168	1608	14914								
		OBS	1500	0391	35022	2783			14914								

REFERENCE		SHIP	LATITUDE	LONGITUDE	DRIFT	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES		NET STATION NUMBER
CTRY CODE	NO.	CODE	° 1/10	° 1/10	INDIC'R	10°	1°	MO	DAY	HR.I.10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT	
31	8023	EV	3500 N	07500 W		116	55	09	26	161	1967	102	059	2651	15	10	0	2		x 1			0059

WATER		WIND		BARO-METER (mbs)	AIR TEMP °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR	SPEED OF FORCE		DRY BULB	WET BULB			
DT	SD	10	507	281	272	266	8	21	

MESSENGR TIME OF HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10^7	$\Sigma\Delta D$ DYN. M. x 10^3	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at/l	CHL-A	Si-(OH)$_4$ µg-at/l	pH	S.C.
		STD	0000	2760	3631	2353	0043666	0000	15422	468							
161		OBS	0000	2760	36310	2353			15422	468				009			
		STD	0010	2760	3632	2354	0043637	0044	15423	443							
		OBS	0010	2760	36320	2354			15423	443				008			
		STD	0020	2754	3636	2359	0043206	0087	15424	463							
003		OBS	0020	2754	36360	2359			15424	463				006			
		STD	0030	2620	3625	2393	0039949	0129	15395	463							
		OBS	0030	2620	36250	2393			15395	463				008			
		OBS	0040	2555	36380	2423			15383	463				009			
		STD	0050	2429	3635	2460	0033715	0202	15355	451							
		OBS	0050	2429	36350	2460			15355	451				029			
		STD	0075	2169	3660	2554	0024832	0275	15297	436							
		OBS	0075	2169	36600	2554			15297	436				025			
		STD	0100	1990	3660	2603	0020282	0332	15254	377							
		OBS	0100	1990	36600	2603			15254	377				012			
		STD	0125	1873	3655	2629	0017833	0380	15225	371							
		STD	0150	1785	3650	2647	0016171	0422	15203	364							
		OBS	0150	1785	36500	2647			15203	364							
		STD	0200	1700	3640	2661	0015083	0500	15185	429							
		OBS	0200	1700	36400	2661			15185	429							
		STD	0250	1510	3603	2676	0013707	0572	15131	397							
		OBS	0250	1510	36030	2676			15131	397							
		STD	0300	1339	3579	2694	0012057	0637	15081								
		OBS	0300	1339	35790	2694			15081								
		STD	0400	1095	3545	2715	0010171	0748	15009								
		OBS	0400	1095	35450	2715			15009								
		STD	0500	0845	3514	2733	0008454	0841	14930								
		OBS	0500	0845	35140	2733			14930								
		STD	0600	0564	3509	2769	0004939	0908	14836								
		OBS	0600	0564	35090	2769			14836								
		STD	0700	0489	3507	2776	0004260	0954	14822								
		OBS	0700	0489	35069	2776			14822								
		STD	0800	0461	3506	2779	0004083	0995	14827								
		OBS	0800	0461	35061	2779			14827								
		STD	0900	0434	3507	2782	0003826	1035	14832								
		OBS	0900	0434	35065	2782			14832								
		STD	1000	0437	3507	2782	0003936	1074	14850								
		OBS	1000	0437	35069	2782			14850								
		STD	1100	0418	3504	2782	0004011	1114	14859								
		STD	1200	0402	3503	2783	0004015	1154	14868								
		OBS	1200	0402	35025	2783			14868								
		STD	1300	0390	3503	2784	0003954	1194	14880								
		STD	1400	0383	3502	2784	0003961	1233	14894								
		STD	1500	0379	3502	2785	0003997	1273	14909								
		OBS	1500	0379	35024	2785			14909								

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	CHIEF INDICTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
31	8023	EV	3503 N	075261W		116	55	09	26	208	1967	102	060	0035	00	10	1	2		61				0056

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR.	WIND SPEED OR FORCE	BARO-METER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	13	505	257	250	189	8	07	

MESSENGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S °/₀₀	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ Δ D DYN. M. x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	CHL-A	SiO₄-Si µg-at/l	pH	SCC
		STD	0000	2188	3123	2141	0063931	0000	15228								
208		OBS	0000	2188	31225	2141			15228								
		OBS	0009	2181	32000	2202			15236								
		STD	0010	2228	3282	2251	0053475	0059	15258								
000		OBS	0010	2228	32820	2251			15258								
		OBS	0014	2403	34100	2297			15317								
		STD	0020	2438	3452	2319	0047035	0109	15331								
		OBS	0020	2438	34520	2319			15331								
		OBS	0023	2520	36095	2413			15369								
		STD	0030	2520	3610	2413	0038065	0152	15370								
		OBS	0030	2520	36100	2413			15370								

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	CHIEF INDICTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
31	8023	EV	3500 N	07602 W		116	56	09	26	238	1967	102	061		00									0057

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR.	WIND SPEED OR FORCE	BARO-METER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD							02	

MESSENGR TIME HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S °/₀₀	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ Δ D DYN. M x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	CHL-A	SiO₄-Si µg-at/l	pH	SCC
		STD	0000	2200	3047	2081	0069720	0000	15223	537							
238		OBS	0000	2200	30470	2081			15223	537				042			
		STD	0010	2200	3130	2144	0063736	0067	15234								
		OBS	0010	2200	31300	2144			15234								

TABLE II.—*Observed and interpolated oceanographic data taken by USCGC Evergreen, 11–23 December 1967, on ICNAF Cruise 67–3; prepared from NoDC Listing No. 31–8029.*

REFERENCE		SHIP	LATITUDE	LONGITUDE	QUAD	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX DEPTH OF SAMPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD		STATION NUMBER
CTRY CODE	ID. NO.	CODE	° 1/10	° ' 1/10	NUMBER	10°	1°	MO	DAY	HR 1/10		CRUISE NO	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT	
31	8029	EV	4100 N	07006 W		152	10	12	15	154	1967		001	0022	00	13	3	2		x1			0001

WATER		WIND		BARO-METER (mbs)	AIR TEMP °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
DT	50	31	527	119	039	017	7	03	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA–T	SPECIFIC VOLUME ANOMALY–10^5	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O_2 ml/l	PO_4–P µg-at/l	TOTAL–P µg-at/l	NO_2–N µg-at/l	CHL–A	SiO_4–Si µg-at/l	pH
		STD	0000	0555	3203	2528	0026976	0000	14693	716						
154		OBS	00000	05550	32027	2528			14693	716				204		
		STD	0010	0558	3203	2528	0026981	0027	14696	726						
		OBS	00100	05580	32032	2528			14696	726				218		
		STD	0020	0558	3203	2528	0026991	0054	14698	721						
		OBS	00200	05580	32032	2528			14698	721				200		

REFERENCE CTRY CODE	REFERENCE IO. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDCTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT.	WAVE OBSERVATIONS PER.	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
31	8029	EV	4045	N 070 35	W	152	00	12	15	182	1967		002	0063	00	13	4	2		X1				0002

WATER COLOR CODE	WATER TRANS (m)	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	31	S26	105	039	017	7	07	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10^7	Σ Δ D DYN. M. x 10^3	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at/l	CHL-A	SiO_4-Si µg-at/l	pH	SCC
		STD	0000	0691	3208	2516	0028166	0000	14749	672							
180		OBS	00000	06910	32082	2516			14749	672				104			
		STD	0010	0691	3209	2516	0028141	0028	14750	691							
		OBS	00100	06910	32087	2516			14750	691				083			
		STD	0020	0691	3209	2516	0028153	0056	14752	689							
		OBS	00200	06910	32087	2516			14752	689				076			
		OBS	00250	06909	32087	2516			14753								
		STD	0030	0691	3209	2516	0028158	0084	14754	687							
		OBS	00300	06910	32088	2516			14754	687				074			
		OBS	00400	06910	32088	2516			14755	690				074			
		STD	0050	0691	3209	2516	0028182	0141	14757	690							
		OBS	00500	06910	32088	2516			14757	690				069			

REFERENCE CTRY CODE	REFERENCE IO. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDCTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT.	WAVE OBSERVATIONS PER.	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
31	8029	EV	3959	N 07001	W	116	90	12	15	213	1967		003	0165	01	12	5	3		X1				0003

WATER COLOR CODE	WATER TRANS (m)	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	31	S30	085	050	028	7	17	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10^7	Σ Δ D DYN. M. x 10^3	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at/l	CHL-A	SiO_4-Si µg-at/l	pH	SCC
		STD	0000	0825	3286	2558	0024135	0000	14811	658							
213		OBS	00000	08250	32862	2558			14811	658				068			
		STD	0010	0825	3286	2558	0024151	0024	14813	667							
		OBS	00100	08250	32862	2558			14813	667				065			
		OBS	00190	08250	32862	2558			14814	658							
		STD	0020	0825	3286	2558	0024167	0048	14814	660							
		OBS	00200	08250	32862	2558			14814					061			
		OBS	00250	08250	32867	2559			14815								
		OBS	00280	08250	32877	2559			14816	661							
		STD	0030	0825	3289	2560	0023997	0072	14816	656							
		OBS	00300	08250	32887	2560			14816					059			
		OBS	00370	08410	32927	2561			14824	636							
		OBS	00400	08750	32997	2561			14838					072			
		OBS	00470	09300	33250	2572			14863	603							
		STD	0050	0940	3331	2575	0022619	0119	14868	598							
		OBS	00500	09400	33307	2575			14868					059			
		OBS	00700	10380	33527	2576			14910	566							
		STD	0075	1010	3393	2612	0019194	0171	14906	558							
		OBS	00750	10100	33927	2612			14906					036			
		OBS	00940	08320	33871	2636			14842	524							
		STD	0100	0870	3433	2666	0014052	0213	14864	512							
		OBS	01000	08700	34332	2666			14864					011			
		STD	0125	0943	3495	2703	0010661	0244	14903	456							
		OBS	01400	09600	35131	2714			14914	418							
		STD	0150	0960	3518	2718	0009311	0269	14916								
		OBS	01500	09600	35177	2718			14916								

REFERENCE		SHIP	LATITUDE	LONGITUDE	DRIFT INDEX	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES		NODC STATION NUMBER
CTRY CODE	ID. NO.	CODE	° 1/10	° 1/10		10°	1°	MO	DAY	HR. 1/10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA		TYPE	AMT	
31	8029	EV	39287N	07000 W		116	90	12	17	166	1967		004	2468	15	13	4	3		X1			0004

WATER		WIND		BARO-METER (mbs)	AIR TEMP °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR	SPEED OR FORCE		DRY BULB	WET BULB			
0T	SD	29	S22	122	083	061	8	22	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY=10⁵	ΣΔD DYN. M x 10³	SOUND VELOCITY	O₂ ml l	PO₄-P µg-at l	TOTAL-P µg-at l	NO₂-N µg-at l	CHL-A	SiO₄-Si µg-at l	pH
		STD	0000	0900	3311	2566	0023403	0000	14843	634						
166		OBS	00000	09000	33107	2566			14843	634				045		
		STD	0010	0900	3311	2566	0023421	0023	14844	631						
		OBS	00100	09000	33107	2566			14844	631				057		
		STD	0020	1225	3473	2635	0016905	0044	14983	631						
		OBS	00200	12250	34727	2635			14983	631				044		
		OBS	00250	13246	35097	2644			15022							
		STD	0030	1385	3527	2645	0016010	0060	15045	611						
		OBS	00300	13850	35271	2645			15045	611				047		
		OBS	00400	13950	35307	2645			15050	558				039		
		STD	0050	1398	3532	2645	0015990	0092	15053	557						
		OBS	00500	13980	35317	2645			15053	557				039		
		STD	0075	1442	3551	2651	0015568	0131	15074	536						
		OBS	00750	14420	35507	2651			15074	536				032		
		STD	0100	1459	3556	2651	0015612	0170	15084	539						
		OBS	01000	14590	35559	2651			15084	539				032		
		STD	0125	1450	3572	2665	0014314	0208	15087	447						
		STD	0150	1440	3578	2672	0013776	0243	15089	388						
		OBS	01500	14400	35777	2672			15089	388						
		STD	0200	1255	3560	2696	0011553	0306	15034	366						
		OBS	02000	12550	35597	2696			15034	366						
		STD	0250	1100	3529	2702	0011100	0363	14984	366						
		OBS	02500	11000	35287	2702			14984	366						
		STD	0300	0920	3511	2719	0009458	0414	14925							
		OBS	03000	09200	35112	2719			14925							
		OBS	03500	08010	35037	2732			14888							
		STD	0400	0679	3489	2738	0007662	0500	14847							
		OBS	04000	06790	34892	2738			14847							
		OBS	04500	05950	34887	2749			14821							
		STD	0500	0552	3490	2756	0006047	0568	14812							
		OBS	05000	05520	34902	2756			14812							
		STD	0600	0482	3491	2764	0005260	0625	14800							
		OBS	06000	04820	34907	2764			14800							
		STD	0700	0459	3493	2769	0004920	0676	14808							
		STD	0800	0444	3495	2772	0004680	0724	14818							
		OBS	08000	04440	34952	2772			14818							
		STD	0900	0443	3498	2775	0004559	0770	14835							
		STD	1000	0441	3499	2775	0004591	0816	14851							
		OBS	10000	04410	34987	2775			14851							
		STD	1100	0429	3498	2776	0004591	0862	14863							
		STD	1200	0418	3498	2777	0004571	0908	14875							
		OBS	12000	04180	34977	2777			14875							
		STD	1300	0408	3498	2778	0004552	0953	14887							
		STD	1400	0399	3497	2779	0004534	0999	14900							
		STD	1500	0391	3497	2779	0004534	1044	14914							
		OBS	15000	03910	34972	2779			14914							

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDCTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR,1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
31	8029	EV	3859 N	070015W		116	80	12	17	199	1967		005	2834	15	11	3	2		X1				0005

WATER COLOR CODE	WATER TRANS (m)	WIND DIR.	WIND SPEED OR FORCE	BARO-METER (mbs)	AIR TEMP °C DRY BULB	AIR TEMP °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	50	30	S22	146	094	067	7	22	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S °/₀₀	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ Δ D DYN. M. x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	CHL-A	SiO₄-Si µg-at/l	pH	ICC
		STD	0000	0939	3333	2577	0022362	0000	14860	627							
199		OBS	00000	09390	33327	2577			14860	627				054			
		STD	0010	1100	3433	2627	0017605	0020	14933	638							
		OBS	00100	11000	34327	2627			14933	638				056			
		STD	0020	1450	3544	2644	0016082	0037	15067	578							
		OBS	00200	14500	35437	2644			15067	578				049			
		OBS	00250	14390	35438	2646			15064								
		STD	0030	1434	3545	2648	0015710	0053	15063	539							
		OBS	00300	14340	35447	2648			15063	539				036			
		OBS	00400	14420	35472	2648			15068	528				026			
		STD	0050	1444	3549	2649	0015674	0084	15070	535							
		OBS	00500	14440	35488	2649			15070	535				022			
		STD	0075	1460	3560	2654	0015267	0123	15081	525							
		OBS	00750	14600	35599	2654			15081	525				028			
		STD	0100	1550	3596	2661	0014635	0160	15118	518							
		OBS	01000	15500	35957	2661			15118	518				025			
		STD	0125	1494	3582	2663	0014515	0197	15103	432							
		STD	0150	1430	3571	2669	0014088	0232	15085	376							
		OBS	01500	14300	35706	2669			15085	376							
		STD	0200	1275	3556	2690	0012193	0298	15040	358							
		OBS	02000	12750	35562	2690			15040	358							
		STD	0250	1160	3540	2699	0011372	0357	15007	363							
		OBS	02500	11600	35397	2699			15007	363							
		STD	0300	1040	3527	2711	0010315	0411	14971								
		OBS	03000	10400	35267	2711			14971								
		OBS	03500	09100	35097	2720			14929								
		STD	0400	0776	3500	2733	0008274	0504	14886								
		OBS	04000	07760	34997	2733			14886								
		OBS	04500	06500	34946	2747			14844								
		STD	0500	0598	3487	2747	0006901	0580	14830								
		OBS	05000	05980	34867	2747			14830								
		STD	0600	0501	3493	2764	0005352	0641	14808								
		OBS	06000	05010	34926	2764			14808								
		STD	0700	0471	3494	2768	0004993	0693	14813								
		STD	0800	0450	3495	2771	0004791	0742	14821								
		OBS	08000	04500	34947	2771			14821								
		STD	0900	0444	3496	2773	0004725	0789	14835								
		STD	1000	0435	3497	2774	0004670	0836	14848								
		OBS	10000	04350	34966	2774			14848								
		STD	1100	0423	3497	2776	0004619	0883	14860								
		STD	1200	0412	3497	2777	0004583	0929	14872								
		OBS	12000	04120	34965	2777			14872								
		STD	1300	0403	3497	2778	0004561	0975	14885								
		STD	1400	0395	3497	2779	0004541	1020	14898								
		STD	1500	0388	3497	2779	0004538	1066	14912								
		OBS	15000	03880	34966	2779			14912								

REFERENCE		SHIP	LATITUDE	LONGITUDE		MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX DEPTH OF SMPLS	WAVE OBSERVATIONS		AEA-THER			
CTRY CODE	ID. NO.	CODE	° ' 1/10	° ' 1/10	QUAD	10°	1°	MO	DAY	HR 1/10		CRUISE NO.	STATION NUMBER								
318	029	EV	38303N	07057 W		116	80	12	18	016	1967		006	3200	15	12	4	x2			0006

WATER		WIND		BARO-METER (mbs)	AIR TEMP °C		VIS CODE	NO. OBS DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR SCALE		DRY BULB	WET BULB			
DT	SD	31	S16	183	089	072	7	23	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY (10⁻⁵ m³/kg)	Σ D DYN. M x 10³	SOUND VELOCITY	O2 ml/l	PO4-P µg-at/l	TOTAL-P µg-at/l	NO3-N µg-at/l	CHL-A µg/l	
		STD	0000	1515	3550	2634	0016950	0000	15085	537					
	017	OBS	00000	15150	35495	2634			15085	537				024	
		STD	0010	1515	3550	2634	0016981	0017	15086	555					
		OBS	00100	15150	35495	2634			15086	555				031	
		STD	0020	1524	3552	2634	0017004	0034	15091	542					
		OBS	00200	15240	35522	2634			15091	542				027	
		OBS	00250	15260	35527	2634			15093						
		STD	0030	1527	3553	2634	0017033	0051	15094	536					
		OBS	00300	15270	35531	2634			15094	536				027	
		OBS	00400	15270	35531	2634			15095	535				017	
		STD	0050	1527	3554	2635	0017014	0085	15097	533					
		OBS	00500	15270	35542	2635			15097	533				009	
		STD	0075	1490	3548	2638	0016783	0127	15089	542					
		OBS	00750	14900	35477	2638			15089	542				016	
		OBS	00850	12000	35247	2680			14992						
		STD	0100	1290	3548	2680	0012797	0164	15028	485					
		OBS	01000	12900	35482	2680			15028	485				014	
		STD	0125	1246	3544	2686	0012334	0196	15016	432					
		STD	0150	1185	3537	2692	0011799	0226	14999	399					
		OBS	01500	11850	35367	2692			14999	399					
		STD	0200	1009	3517	2709	0010307	0281	14942	391					
		OBS	02000	10090	35166	2709			14942	391					
		STD	0250	0839	3503	2726	0008723	0329	14885	342					
		OBS	02500	08390	35027	2726			14885	342					
		STD	0300	0728	3499	2739	0007490	0369	14851						
		OBS	03000	07280	34986	2739			14851						
		OBS	03500	06350	34927	2747			14821						
		STD	0400	0565	3492	2755	0005970	0436	14801						
		OBS	04000	05650	34917	2755			14801						
		OBS	04500	05350	34935	2760			14798						
		STD	0500	0511	3494	2763	0005268	0493	14796						
		OBS	05000	05110	34938	2763			14796						
		STD	0600	0475	3495	2768	0004878	0543	14798						
		OBS	06000	04750	34947	2768			14798						
		STD	0700	0456	3497	2772	0004587	0591	14807						
		STD	0800	0440	3498	2775	0004447	0636	14817						
		OBS	08000	04400	34977	2775			14817						
		STD	0900	0433	3498	2776	0004441	0680	14830						
		STD	1000	0420	3497	2776	0004439	0725	14842						
		OBS	10000	04200	34972	2776			14842						
		STD	1100	0409	3497	2777	0004413	0769	14854						
		STD	1200	0399	3497	2778	0004403	0813	14867						
		OBS	12000	03990	34967	2778			14867						
		STD	1300	0391	3497	2779	0004393	0857	14880						
		STD	1400	0385	3497	2780	0004397	0901	14894						
		STD	1500	0380	3497	2780	0004419	0945	14909						
		OBS	15000	03800	34968	2780			14909						

REFERENCE		SHIP	LATITUDE	LONGITUDE	DRIFT INDICATOR	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS				WEATHER CODE	CLOUD CODES			NODC STATION NUMBER
CTRY CODE	ID. NO.	CODE	° ' 1/10	° ' 1/10		10°	1°	MO	DAY	HR. 1/10		CRUISE NO.	STATION NUMBER			DIR.	HGT	PER	SEA		TYPE	AMT		
31	8029	EV	3859 N	07058 W		116	80	12	18	063	1967		007	2834	15	12	3	2		X2				0007

WATER		WIND		BARO-METER (mbs)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
0T	S0	34	S12	193	100	078	8	23	

MESSENGR TIME OF HR. 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA–T	SPECIFIC VOLUME ANOMALY–x10⁷	Σ Δ D DYN. M. x 10³	SOUND VELOCITY	O_2 ml/l	PO_4–P µg-at/l	TOTAL–P µg-at/l	NO_2–N µg-at/l	CHL–A	SiO_4–Si µg-at/l	pH	SCC
		STD	0000	1398	3530	2644	0015993	0000	15045	553							
063		OBS	00000	13980	35297	2644			15045	553				039			
		STD	0010	1398	3530	2644	0016000	0016	15046	578							
		OBS	00100	13980	35300	2644			15046	578				039			
		STD	0020	1399	3530	2644	0016020	0032	15048	570							
		OBS	00200	13990	35304	2644			15048	570				035			
		OBS	00250	13900	35300	2646			15046								
		STD	0030	1380	3530	2648	0015719	0048	15044	569							
		OBS	00300	13800	35297	2648			15044	569				038			
		OBS	00400	13790	35297	2648			15045	570				032			
		STD	0050	1375	3529	2648	0015743	0079	15045	564							
		OBS	00500	13750	35288	2648			15045	564				035			
		STD	0075	1360	3527	2650	0015654	0119	15044	553							
		OBS	00750	13600	35269	2650			15044	553				034			
		OBS	00900	13980	35727	2677			15065								
		STD	0100	1363	3565	2678	0013018	0154	15054	367							
		OBS	01000	13630	35647	2678			15054	367				002			
		STD	0125	1232	3551	2694	0011557	0185	15013	334							
		STD	0150	1125	3539	2705	0010568	0213	14978	312							
		OBS	01500	11250	35387	2705			14978	312							
		STD	0200	0980	3522	2718	0009443	0263	14932	301							
		OBS	02000	09800	35218	2718			14932	301							
		STD	0250	0875	3511	2726	0008699	0308	14900	323							
		OBS	02500	08750	35105	2726			14900	323							
		STD	0300	0763	3501	2735	0007835	0350	14864								
		OBS	03000	07630	35007	2735			14864								
		OBS	03500	07000	35008	2745			14848								
		STD	0400	0601	3498	2756	0005934	0418	14817								
		OBS	04000	06010	34984	2756			14817								
		OBS	04500	05490	34970	2761			14804								
		STD	0500	0519	3498	2766	0005040	0473	14800								
		OBS	05000	05190	34982	2766			14800								
		STD	0600	0481	3497	2769	0004795	0522	14801								
		OBS	06000	04810	34968	2769			14801								
		STD	0700	0458	3498	2773	0004538	0569	14808								
		STD	0800	0440	3499	2775	0004373	0614	14817								
		OBS	08000	04400	34987	2775			14817								
		STD	0900	0429	3499	2776	0004355	0657	14829								
		STD	1000	0419	3498	2777	0004346	0701	14842								
		OBS	10000	04190	34983	2777			14842								
		STD	1100	0409	3498	2778	0004340	0744	14854								
		STD	1200	0400	3498	2779	0004342	0788	14867								
		OBS	12000	04000	34977	2779			14867								
		STD	1300	0392	3498	2780	0004332	0831	14881								
		STD	1400	0385	3498	2780	0004339	0874	14894								
		STD	1500	0379	3498	2781	0004348	0918	14909								
		OBS	15000	03790	34976	2781			14909								

REFERENCE		SHIP	LATITUDE	LONGITUDE	DRIFT INDICTR	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX DEPTH OF SMPL'S	WAVE OBSERVATIONS				WEATHER CODE	DES		N
CTRY CODE	ID. NO.	CODE	° ' 1/10	° ' 1/10		10°	1°	MO	DAY	HR 1/10		CRUISE NO	STATION NUMBER			DIR	HGT	PER	SEA		TEMP	AMT	
31	8029	EV	39287N	070595W		116	90	12	18	093	1967		008	2514	15	12	2	3		X1			0008

WATER		WIND		BARO-METER (mbs)	AIR TEMP. °C		VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR	SPEED OR FORCE		DRY BULB	WET BULB			
DT	SD	35	S07	213	089	067	7	22	

MESSENGR. TIME OF T HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10^7	$\Sigma\Delta D$ DYN. M. x 10^3	SOUND VELOCITY	O_2 ml l	PO_4-P µg-at l	TOTAL-P µg-at l	NO_3-N µg-at l	CHL-A	SiO_4-Si µg-at l	pH	S/C
		STD	0000	1457	3531	2632	0017117	0000	15064	544							
093		OBS	00000	14570	35307	2632			15064	544				027			
		STD	0010	1458	3531	2632	0017145	0017	15066	553							
		OBS	00100	14580	35310	2632			15066	553				023			
		STD	0020	1458	3531	2632	0017167	0034	15068	555							
		OBS	00200	14580	35311	2632			15068	555				023			
		OBS	00250	14590	35312	2632			15069								
		STD	0030	1459	3531	2632	0017195	0051	15070	558							
		OBS	00300	14590	35314	2632			15070	558				032			
		OBS	00400	14590	35314	2632			15071					033			
		STD	0050	1460	3532	2632	0017253	0086	15073	548							
		OBS	00500	14600	35317	2632			15073	548				027			
		STD	0075	1431	3542	2646	0015985	0127	15069	545							
		OBS	00750	14310	35419	2646			15069	545				035			
		STD	0100	1430	3543	2647	0015950	0167	15073	491							
		OBS	01000	14300	35431	2647			15073	491				011			
		STD	0125	1331	3553	2676	0013311	0204	15046	413							
		STD	0150	1239	3555	2696	0011476	0235	15020	357							
		OBS	01500	12390	35548	2696			15020	357							
		STD	0200	1075	3533	2710	0010220	0289	14968	309							
		OBS	02000	10750	35331	2710			14968	309							
		STD	0250	0995	3516	2710	0010242	0340	14945	299							
		OBS	02500	09950	35158	2710			14945	299							
		STD	0300	0790	3503	2733	0008060	0386	14875								
		OBS	03000	07900	35030	2733			14875								
		OBS	03500	06530	34956	2747			14829								
		STD	0400	0571	3491	2754	0006120	0457	14804								
		OBS	04000	05710	34907	2754			14804								
		OBS	04500	05390	34927	2759			14799								
		STD	0500	0525	3492	2760	0005567	0515	14802								
		OBS	05000	05250	34921	2760			14802								
		STD	0600	0482	3496	2768	0004889	0568	14801								
		OBS	06000	04820	34957	2768			14801								
		STD	0700	0465	3498	2772	0004623	0615	14811								
		STD	0800	0450	3500	2775	0004421	0660	14822								
		OBS	08000	04500	34997	2775			14822								
		STD	0900	0440	3499	2776	0004454	0705	14834								
		STD	1000	0428	3499	2777	0004421	0749	14846								
		OBS	10000	04280	34988	2777			14846								
		STD	1100	0411	3498	2778	0004365	0793	14855								
		STD	1200	0397	3498	2779	0004312	0837	14866								
		OBS	12000	03970	34976	2779			14866								
		STD	1300	0387	3498	2780	0004276	0879	14878								
		STD	1400	0382	3498	2781	0004293	0922	14893								
		STD	1500	0380	3498	2781	0004354	0966	14909								
		OBS	15000	03800	34977	2781			14909								

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° '1/10	DRIFT INDICTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
31	8029	EV	39585N	07101 W		116	91	12	18	134	1967		009	0412	04	17	1	3		X1				0009

WATER COLOR CODE	WATER TRANS (m)	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP °C DRY BULB	AIR TEMP °C WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	21	S02	885	078	061	7	15	

MESSENGR TIME OR HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA–T	SPECIFIC VOLUME ANOMALY–x10⁷	Σ△D DYN. M. x 10³	SOUND VELOCITY	O₂ ml/l	PO₄–P µg-at/l	TOTAL–P µg-at/l	NO₂–N µg-at/l	CHL–A	SiO₄–Si µg-at/l	pH	SCC
		STD	0000	0809	3276	2552	0024692	0000	14804	642							
134		OBS	00000	08090	32757	2552			14804	642				050			
		STD	0010	0809	3276	2553	0024678	0025	14805	653							
		OBS	00100	08090	32761	2553			14805	653				047			
		STD	0020	0809	3277	2553	0024656	0049	14807	656							
		OBS	00200	08090	32766	2553			14807	656				049			
		OBS	00250	08090	32767	2553			14808								
		STD	0030	0809	3277	2553	0024649	0074	14809	656							
		OBS	00300	08090	32769	2553			14809	656				046			
		OBS	00400	08100	32987	2570			14813	666				047			
		STD	0050	1110	3411	2608	0019490	0118	14940	653							
		OBS	00500	11100	34107	2608			14940	653				049			
		STD	0075	1419	3523	2634	0017144	0164	15063	528							
		OBS	00750	14190	35227	2634			15063	528				021			
		STD	0100	1370	3536	2654	0015279	0204	15053	412							
		OBS	01000	13700	35357	2654			15053	412				002			
		STD	0125	1264	3535	2675	0013334	0240	15021	401							
		STD	0150	1170	3533	2692	0011819	0272	14993	382							
		OBS	01500	11700	35327	2692			14993	382							
		STD	0200	1016	3521	2710	0010123	0327	14945	320							
		OBS	02000	10160	35207	2710			14945	320							
		STD	0250	0922	3515	2722	0009093	0375	14918	315							
		OBS	02500	09220	35152	2722			14918	315							
		STD	0300	0792	3503	2733	0008097	0418	14876								
		OBS	03000	07920	35029	2733			14876								
		OBS	03500	06400	34896	2744			14823								
		STD	0400	0565	3496	2759	0005658	0486	14802								
		OBS	04000	05650	34959	2759			14802								

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° '1/10	DRIFT INDICTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
31	8029	EV	40325N	070590W		152	00	12	18	169	1967		010	0079	00	19	1	2		X2				0010

WATER COLOR CODE	WATER TRANS (m)	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP °C DRY BULB	AIR TEMP °C WET BULB	VIS. CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	16	S04	224	067	044	7	07	

MESSENGR TIME OR HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA–T	SPECIFIC VOLUME ANOMALY–x10⁷	Σ△D DYN. M x 10³	SOUND VELOCITY	O₂ ml/l	PO₄–P µg-at/l	TOTAL–P µg-at/l	NO₂–N µg-at/l	CHL–A	SiO₄–Si µg-at/l	pH	SCC
		STD	0000	0800	3227	2515	0028202	0000	14794	640							
169		OBS	00000	08000	32269	2515			14794	640				043			
		STD	0010	0800	3228	2516	0028157	0028	14795	653							
		OBS	00100	08000	32277	2516			14795	653				042			
		STD	0020	0804	3229	2516	0028167	0056	14799	647							
		OBS	00200	08040	32285	2516			14799	647				040			
		OBS	00250	08040	32285	2516			14800								
		STD	0030	0804	3229	2516	0028182	0085	14800	642							
		OBS	00300	08040	32285	2516			14800	642				040			
		OBS	00400	08310	32352	2517			14813	640				046			
		STD	0050	0845	3239	2518	0028038	0141	14821	640							
		OBS	00500	08450	32386	2518			14821	640				030			

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° ′ .1	LONGITUDE ° ′ .1	DRIFT INDICES	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR .1/.10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM M	MAX DEPTH OF SMPLS	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT	AGCP STATION NUMBER
31	8029	EV	41000N	071000W		152	11	12	18	195	1967		011	0049	00	18	0	2	X2			0011

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP °C DRY BULB	AIR TEMP °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	36	S08	213	106	083	7	06	

MESSENGR TIME OF HR .1 .10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY ×10⁷	ΣΔD DYN. M ×10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	CHL-A	SiO₄-Si µg-at/l	pH
		STD	0000	0740	3218	2517	0028084	0000	14769	658						
195		OBS	00000	07400	32177	2517			14769	658				054		
		STD	0010	0740	3218	2517	0028060	0028	14771	663						
		OBS	00100	07400	32182	2517			14771	663				050		
		STD	0020	0740	3220	2518	0027961	0056	14773	666						
		OBS	00200	07400	32197	2518			14773	666				045		
		OBS	00250	07450	32216	2519			14776							
		STD	0030	0750	3224	2520	0027823	0084	14779	659						
		OBS	00300	07500	32235	2520			14779	659				061		
		OBS	00400	07520	32239	2520			14781	667				053		

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° ′ .1	LONGITUDE ° ′ .1	DRIFT INDICES	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR .1/.10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX DEPTH OF SMPLS	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT	AGCP STATION NUMBER
31	8029	EV	40580N	071580W		152	01	12	18	239	1967		012	0018	00	01	0	2	X1			0012

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP °C DRY BULB	AIR TEMP °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	18	S12	176	078	072		02	

MESSENGR TIME OF HR .1 .10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY ×10⁷	ΣΔD DYN. M ×10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	CHL-A	SiO₄-Si µg-at/l	pH
		STD	0000	0675	3170	2488	0030846	0000	14737	670						
239		OBS	00000	06750	31697	2488			14737	670				201		
		STD	0010	0680	3175	2491	0030500	0031	14742	678						
		OBS	00100	06800	31753	2491			14742	678				215		

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDCTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT	NODC STATION NUMBER
31	8029	EV	40315N	072020W		15	2	12	19	026	1967		013	0057	00	01	1	2		X1			0013

WATER COLOR CODE	WATER TRANS (m)	WIND DIR	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	18	S15	169	100	094	7	07	

MESSENGR TIME OF HR 1.10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ Δ D DYN. M x 10³	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at/l	CHL-A	SiO_4-Si µg-at/l	pH	SCC
		STD	0000	0862	3257	2530	0026842	0000	14821	633							
	026	OBS	00000	08620	32569	2530			14821	633				059			
		STD	0010	0862	3257	2530	0026858	0027	14823	640							
		OBS	00100	08620	32569	2530			14823	640				069			
		STD	0020	0863	3257	2530	0026874	0054	14825	639							
		OBS	00200	08630	32571	2530			14825	639				053			
		OBS	00250	08646	32573	2530			14826								
		STD	0030	0866	3258	2530	0026890	0081	14828	644							
		OBS	00300	08660	32577	2530			14828	644				078			
		OBS	00400	08680	32583	2530			14830	640				061			
		STD	0050	0868	3258	2530	0026907	0134	14832	633							
		OBS	00500	08680	32583	2530			14832	633				049			

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDCTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR.1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT	NODC STATION NUMBER
31	8029	EV	39590N	072010W		16	92	12	19	058	1967		014	0091	01	03	0	2		X2			0014

WATER COLOR CODE	WATER TRANS (m)	WIND DIR	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SO	22	S15	156	111	111	5	08	

MESSENGR TIME OF HR 1.10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ Δ D DYN. M. x 10³	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at/l	CHL-A	SiO_4-Si µg-at/l	pH	SCC
		STD	0000	0875	3266	2535	0026362	0000	14827	624							
	058	OBS	00000	08750	32659	2535			14827	624				052			
		STD	0010	0873	3266	2535	0026357	0026	14828	636							
		OBS	00100	08730	32658	2535			14828	636				050			
		STD	0020	0873	3266	2535	0026366	0053	14830	630							
		OBS	00200	08730	32659	2535			14830	630				044			
		OBS	00250	08720	32659	2535			14830								
		STD	0030	0872	3266	2535	0026368	0079	14831	629							
		OBS	00300	08720	32659	2535			14831	629				041			
		OBS	00400	08710	32657	2535			14832	624				036			
		STD	0050	0871	3268	2537	0026253	0132	14834	624							
		OBS	00500	08710	32677	2537			14834	624				052			
		STD	0075	1081	3288	2518	0028123	0200	14918	552							
		OBS	00750	10810	32877	2518			14918	552				027			

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDEX	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR, 1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	ICE CODES TYPE	ICE CODES AMT	STATION NUMBER
31	8029	EV	39310N	072025W		11	6	92	12	19 087	1967		015	0667	06	03	1	2		X2			0015

WATER COLOR CODE	WATER TRANS (m)	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP °C DRY BULB	AIR TEMP °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	25	S11	152	111	111	5	20	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY $\times 10^7$	$\Sigma \Delta D$ DYN. M. $\times 10^3$	SOUND VELOCITY	O_2 ml l	PO_4-P µg-at l	TOTAL-P µg-at l	NO_2-N µg-at l	CHL-A	SiO_4-Si µg-at	pH
		STD	0000	1125	3434	2623	0017947	0000	14940	587						
087		OBS	00000	11250	34336	2623			14940	587				054		
		STD	0010	1286	3493	2638	0016550	0017	15005	590						
		OBS	00100	12860	34927	2638			15005	590				040		
		STD	0020	1328	3504	2639	0016531	0034	15022	587						
		OBS	00200	13280	35043	2639			15022					033		
		OBS	00250	13390	35080	2639			15027							
		STD	0030	1350	3512	2640	0016445	0050	15032	583						
		OBS	00300	13500	35117	2640			15032	583				031		
		OBS	00400	13860	35227	2641			15047	552				027		
		STD	0050	1400	3528	2642	0016279	0083	15053	555						
		OBS	00500	14000	35283	2642			15053	555				020		
		STD	0075	1349	3524	2650	0015657	0123	15040	488						
		OBS	00750	13490	35239	2650			15040	488				010		
		OBS	00850	13550	35567	2674			15048							
		OBS	00900	13650	35604	2674			15053							
		STD	0100	1335	3564	2683	0012552	0158	15045	380						
		OBS	01000	13350	35635	2683			15045	380				002		
		STD	0125	1278	3553	2687	0012283	0189	15028	368						
		STD	0150	1200	3543	2694	0011650	0219	15005	352						
		OBS	01500	12000	35425	2694			15005	352						
		STD	0200	0984	3522	2717	0009472	0272	14934	309						
		OBS	02000	09840	35223	2717			14934	309						
		STD	0250	0896	3513	2725	0008836	0318	14908	300						
		OBS	02500	08960	35131	2725			14908	300						
		STD	0300	0803	3504	2732	0008164	0360	14880							
		OBS	03000	08030	35042	2732			14880							
		OBS	03500	07150	34998	2742			14854							
		STD	0400	0629	3499	2752	0006295	0433	14828							
		OBS	04000	06290	34985	2752			14828							
		OBS	04500	05620	34928	2756			14809							
		STD	0500	0534	3493	2760	0005627	0492	14805							
		OBS	05000	05340	34928	2760			14805							
		STD	0600	0515	3494	2763	0005408	0547	14814							
		OBS	06000	05150	34942	2763			14814							

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° ' 1/10	LONGITUDE ° ' 1/10	DEPTH INDEX	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR 1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
318029	EV	38599N	072011W		116	82	12	19	121	1967		016		2360	15	20	3	3		X2				0016

WATER COLOR CODE	WATER TRANS (m)	WIND DIR.	WIND SPEED OR FORCE	BARO-METER (mbs)	AIR TEMP °C DRY BULB	AIR TEMP °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
OT	SD	29	S22	179	122	122	4	22	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA–T	SPECIFIC VOLUME ANOMALY–10^5	$\Sigma\Delta D$ DYN M x 10^3	SOUND VELOCITY	O_2 ml l	PO_4–P µg-at l	TOTAL–P µg-at l	NO_3–N µg-at l	CHL–A	SiO_4–Si µg-at l	pH	CODE
		STD	0000	1370	3511	2635	0016829	0000	15033	554							
121		OBS	00000	13700	35107	2635			15033	554				047			
		STD	0010	1374	3537	2654	0015016	0016	15039	565							
		OBS	00100	13740	35369	2654			15039	565				039			
		STD	0020	1374	3537	2655	0015023	0031	15041	554							
		OBS	00200	13740	35372	2655			15041	554				045			
		OBS	00250	13740	35374	2655			15042								
		STD	0030	1374	3538	2655	0015029	0046	15043	554							
		OBS	00300	13740	35375	2655			15043	554				040			
		OBS	00400	13700	35367	2655			15043	547				046			
		STD	0050	1370	3538	2656	0014992	0076	15045	552							
		OBS	00500	13700	35377	2656			15045	552				033			
		STD	0075	1361	3537	2657	0014957	0113	15046	536							
		OBS	00750	13610	35367	2657			15046	536				036			
		STD	0100	1210	3541	2691	0011801	0147	15000	536							
		OBS	01000	12100	35412	2691			15000	536				025			
		STD	0125	1073	3531	2708	0010164	0174	14955	394							
		STD	0150	0970	3522	2720	0009141	0198	14920	308							
		OBS	01500	09700	35222	2720			14920	308							
		STD	0200	0870	3507	2724	0008805	0243	14889	302							
		OBS	02000	08700	35067	2724			14889	302							
		STD	0250	0760	3502	2737	0007594	0284	14855	327							
		OBS	02500	07600	35022	2737			14855	327							
		STD	0300	0600	3500	2757	0005650	0317	14800								
		OBS	03000	06003	35002	2757			14800								
		OBS	03500	05600	34968	2760			14792								
		STD	0400	0522	3496	2764	0005102	0371	14784								
		OBS	04000	05220	34962	2764			14784								
		OBS	04500	05020	34955	2766			14784								
		STD	0500	0496	3500	2770	0004647	0420	14791								
		OBS	05000	04960	34997	2770			14791								
		STD	0600	0453	3496	2772	0004541	0466	14789								
		OBS	06000	04530	34957	2772			14789								
		STD	0700	0441	3496	2773	0004481	0511	14801								
		STD	0800	0432	3497	2775	0004439	0556	14814								
		OBS	08000	04320	34965	2775			14814								
		STD	0900	0427	3497	2775	0004471	0600	14828								
		STD	1000	0420	3497	2776	0004476	0645	14842								
		OBS	10000	04200	34967	2776			14842								
		STD	1100	0409	3497	2777	0004436	0689	14854								
		STD	1200	0400	3497	2778	0004416	0734	14867								
		OBS	12000	04000	34967	2778			14867								
		STD	1300	0392	3497	2779	0004406	0778	14880								
		STD	1400	0385	3497	2780	0004405	0822	14894								
		STD	1500	0380	3497	2780	0004427	0866	14909								
		OBS	15000	03800	34967	2780			14909								

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° ' 1/10	LONGITUDE ° ' 1/10	QUIP	MARSDEN SQUARE 10° 1°	STATION TIME (GMT) MO	DAY	HR 1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX DEPTH OF SAMPLES	WAVE HEIGHT	WAVE PERIOD	WEATHER	SEA STATE	
31	8029	EV	38285N	072011W		116	82	12	19	157	1967		017	2743	15	09	1		X0

WATER COLOR CODE	WATER TRANS (m)	WIND DIR	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP °C DRY BULB	AIR TEMP °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	30	S12	210	150	139	7	22	

MESSENGER TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY x10⁵	Σ Δ D DYN M x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂+NO₃-N µg-at/l	CHL-A µg/l	
		STD	0000	1160	3463	2639	0016417	0000	14956	606					
157		OBS	00000	11600	34627	2639			14956	606				034	
		STD	0010	1229	3488	2646	0015851	0016	14985	611					
		OBS	00100	12290	34877	2646			14985	611				041	
		STD	0020	1229	3488	2646	0015839	0032	14986	598					
		OBS	00200	12290	34882	2646			14986	598				033	
		OBS	00250	12470	34946	2647			14994						
		STD	0030	1271	3503	2649	0015585	0048	15004	582					
		OBS	00300	12710	35027	2649			15004	582				034	
		OBS	00400	13200	35162	2650			15024	564				028	
		STD	0050	1329	3528	2657	0014918	0078	15030	564					
		OBS	00500	13290	35277	2657			15030	564				006	
		STD	0075	1300	3555	2683	0012445	0112	15028	429					
		OBS	00750	13000	35547	2683			15028	429				003	
		STD	0100	1255	3555	2692	0011653	0143	15017	401					
		OBS	01000	12550	35547	2692			15017	401				000	
		STD	0125	1177	3543	2699	0011127	0171	14993	364					
		STD	0150	1100	3534	2706	0010494	0198	14969	337					
		OBS	01500	11000	35337	2706			14969	337					
		STD	0200	0950	3519	2720	0009181	0247	14921	314					
		OBS	02000	09500	35187	2720			14921	314					
		STD	0250	0840	3509	2730	0008295	0291	14887	323					
		OBS	02500	08400	35087	2730			14887	323					
		STD	0300	0750	3503	2739	0007500	0330	14860						
		OBS	03000	07500	35027	2739			14860						
		OBS	03500	06150	34977	2754			14814						
		STD	0400	0552	3499	2762	0005294	0394	14797						
		OBS	04000	05520	34986	2762			14797						
		OBS	04500	04850	34942	2767			14777						
		STD	0500	0480	3497	2769	0004677	0444	14784						
		OBS	05000	04800	34967	2769			14784						
		STD	0600	0455	3497	2772	0004490	0490	14790						
		OBS	06000	04550	34967	2772			14790						
		STD	0700	0442	3498	2775	0004345	0534	14801						
		STD	0800	0430	3498	2776	0004289	0577	14813						
		OBS	08000	04300	34982	2776			14813						
		STD	0900	0421	3499	2778	0004220	0620	14826						
		STD	1000	0412	3499	2779	0004193	0662	14839						
		OBS	10000	04120	34992	2779			14839						
		STD	1100	0403	3499	2780	0004191	0704	14852						
		STD	1200	0395	3499	2780	0004213	0746	14865						
		OBS	12000	03950	34986	2780			14865						
		STD	1300	0388	3499	2781	0004215	0788	14879						
		STD	1400	0383	3499	2782	0004232	0830	14894						
		STD	1500	0378	3499	2782	0004254	0873	14908						
		OBS	15000	03780	34987	2782			14908						

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° '1/10	DUPE INDCTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR 1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
31	8029	EV	38290N	073000W		116	83	12	19	226	1967		018	2286	15					X0				0018

WATER COLOR CODE	WATER TRANS (m)	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS. CODE	NO. OBS DEPTHS	SPECIAL OBSERVATIONS
DT	SD	28	S12	230	144		7	22	

MESSENGR TIME OF T HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ Δ D DYN M x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	CHL-A	SiO₄-Si µg-at/l	pH	SCC
		STD	0000	1059	3379	2592	0020877	0000	14910	628							
226		OBS	00000	10590	33787	2592			14910	628				050			
		STD	0010	1135	3424	2614	0018874	0020	14944	619							
		OBS	00100	11350	34237	2614			14944	619				043			
		STD	0020	1190	3453	2626	0017738	0038	14969	614							
		OBS	00200	11900	34527	2626			14969	614				034			
		OBS	00250	12110	34630	2630			14978								
		STD	0030	1229	3471	2632	0017151	0056	14986	614							
		OBS	00300	12290	34707	2632			14986	614				031			
		OBS	00400	13050	34928	2635			15016	587				041			
		STD	0050	1270	3496	2644	0016132	0089	15006	586							
		OBS	00500	12700	34957	2644			15006	586				037			
		STD	0075	1190	3493	2657	0014933	0128	14983	460							
		OBS	00750	11900	34927	2657			14983	460				011			
		STD	0100	1330	3563	2684	0012476	0162	15043	416							
		OBS	01000	13300	35632	2684			15043	416				003			
		STD	0125	1257	3547	2686	0012322	0193	15021	405							
		STD	0150	1195	3537	2691	0011946	0223	15002	390							
		OBS	01500	11950	35372	2691			15002	390							
		STD	0200	1105	3536	2707	0010518	0279	14979	349							
		OBS	02000	11050	35362	2707			14979	349							
		STD	0250	0985	3523	2717	0009568	0330	14942	327							
		OBS	02500	09850	35227	2717			14942	327							
		STD	0300	0840	3508	2730	0008427	0375	14895								
		OBS	03000	08400	35082	2730			14895								
		OBS	03500	07000	34977	2742			14848								
		STD	0400	0610	3492	2750	0006549	0450	14819								
		OBS	04000	06100	34917	2750			14819								
		OBS	04500	05650	34959	2759			14810								
		STD	0500	0509	3495	2764	0005176	0508	14795								
		OBS	05000	05090	34947	2764			14795								
		STD	0600	0470	3498	2771	0004595	0557	14796								
		OBS	06000	04700	34977	2771			14796								
		STD	0700	0453	3498	2773	0004477	0602	14806								
		STD	0800	0440	3499	2775	0004380	0647	14817								
		OBS	08000	04400	34986	2775			14817								
		STD	0900	0434	3501	2778	0004232	0690	14832								
		STD	1000	0425	3502	2779	0004177	0732	14845								
		OBS	10000	04250	35016	2779			14845								
		STD	1100	0411	3500	2780	0004217	0774	14855								
		STD	1200	0400	3499	2780	0004269	0816	14867								
		OBS	12000	04000	34987	2780			14867								
		STD	1300	0392	3499	2781	0004259	0859	14881								
		STD	1400	0386	3499	2781	0004271	0901	14895								
		STD	1500	0384	3499	2781	0004333	0945	14911								
		OBS	15000	03840	34987	2781			14911								

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR 1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF SMPL'S	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD TYPES	CLOUD AMT	NODC STATION NUMBER
31	8029	EV	38580N	073030W		11	6	83	12	20	025	1967		019		0086	01	36	0	2		X0			0019

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	27	S14	237	106	094	8	08	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S °/₀₀	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁵	Σ Δ D DYN. M. x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	CHL-A	SiO₄-Si µg-at/l	pH	STA. CODE
		STD	0000	0913	3284	2543	0025565	0000	14844	674							
	025	OBS	00000	09130	32842	2543			14844	674				057			
		STD	0010	0910	3284	2544	0025530	0026	14845	668							
		OBS	00100	09100	32843	2544			14845					053			
		STD	0020	0911	3288	2546	0025288	0051	14847	663							
		OBS	00200	09110	32880	2546			14847	663				054			
		OBS	00250	09210	32886	2545			14852								
		STD	0030	0923	3291	2547	0025287	0076	14854	659							
		OBS	00300	09230	32907	2547			14854	659				047			
		OBS	00400	09600	33126	2558			14872	648				038			
		STD	0050	1081	3386	2594	0020838	0122	14927	559							
		OBS	00500	10810	33857	2594			14927	559				026			
		STD	0075	1202	3462	2631	0017430	0170	14983	527							
		OBS	00750	12020	34617	2631			14983	527				030			

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR 1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX. DEPTH OF SMPL'S	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD TYPES	CLOUD AMT	NODC STATION NUMBER
31	8029	EV	39295N	072595W		11	6	92	12	20	057	1967		020		0064	00	16	1	2		X0			0020

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	33	S10	240	094	083	8	07	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S °/₀₀	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁵	Σ Δ D DYN. M. x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	CHL-A	SiO₄-Si µg-at/l	pH	STA. CODE
		STD	0000	0888	3257	2526	0027198	0000	14831	669							
	057	OBS	00000	08880	32572	2526			14831	669				142			
		STD	0010	0889	3258	2526	0027208	0027	14833	666							
		OBS	00100	08890	32575	2526			14833	666				195			
		STD	0020	0889	3258	2526	0027210	0054	14835	672							
		OBS	00200	08890	32577	2526			14835	672				124			
		OBS	00250	08890	32582	2527			14836								
		STD	0030	0889	3259	2527	0027115	0082	14837	663							
		OBS	00300	08890	32592	2527			14837	663				173			
		OBS	00400	08900	32718	2537			14840	649				087			
		STD	0050	0910	3294	2551	0024910	0134	14852	645							
		OBS	00500	09100	32936	2551			14852	645				061			

REFERENCE CTRY CODE	REFERENCE ID NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR 1/10	YEAR	ORIGINATOR'S CRUISE NO	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
31	8029	EV	40000N	073000W		152	03	12	20	089	1967		021	0051	00	16	1	2		X0				0021

WATER COLOR CODE	WATER TRANS (m)	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
0T	SD	34	S19	244	083	077	8	06	

MESSENGR TIME OF CAST HR 1/10	CAST NO	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ Δ D DYN. M x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	CHL-A	SiO₄-Si µg-at/l	pH	SCC
		STD	0000	0829	3236	2518	0027949	0000	14806								
089		OBS	00000	08290	32357	2518			14806					128			
		STD	0010	0829	3236	2518	0027927	0028	14808	675							
		OBS	00100	08290	32362	2518			14808	675				146			
		STD	0020	0839	3246	2525	0027340	0056	14814	675							
		OBS	00200	08390	32462	2525			14814					181			
		OBS	00250	08410	32496	2527			14816								
		STD	0030	0842	3252	2529	0026960	0083	14818	675							
		OBS	00300	08420	32521	2529			14818	675				146			
		OBS	00400	08780	32638	2533			14835	652				111			

REFERENCE CTRY CODE	REFERENCE ID NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR 1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
31	8029	EV	40350N	073000W		152	03	12	20	126	1967		022	0022	00	12	0	2		X1				0022

WATER COLOR CODE	WATER TRANS (m)	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	30	S10	179	078	061	8	03	

MESSENGR TIME OF CAST HR 1/10	CAST NO	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ Δ D DYN. M x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	CHL-A	SiO₄-Si µg-at/l	pH	SCC
		STD	0000	0620	3155	2483	0031312	0000	14713	712							
126		OBS	00000	06200	31547	2483			14713	712				329			
		STD	0010	0620	3159	2486	0031022	0031	14715	708							
		OBS	00100	06200	31587	2486			14715	708				288			
		STD	0020	0675	3174	2491	0030532	0062	14741	698							
		OBS	00200	06750	31742	2491			14741	698				275			

REFERENCE CTRY CODE	REFERENCE ID NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR 1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
31	8029	EV	40296N	073296W		152	03	12	20	147	1967		023	0020	00					X1				0023

WATER COLOR CODE	WATER TRANS (m)	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	23	S08	301	067	050	8	02	

MESSENGR TIME OF CAST HR 1/10	CAST NO	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-x10⁷	Σ Δ D DYN. M x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	CHL-A	SiO₄-Si µg-at/l	pH	SCC
		STD	0000	0680	3169	2486	0030990	0000	14739	678							
147		OBS	00000	06800	31686	2486			14739	678				347			
		STD	0010	0772	3200	2498	0029871	0030	14781	669							
		OBS	00100	07720	31996	2498			14781	669				354			

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR 1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT	NODC STATION NUMBER
31	8029	EV	39595N	07400 W		116	94	12	20	185	1967		024	0020	00	36	0	2		X1			0024

WATER COLOR CODE	WATER TRANS (m)	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP °C DRY BULB	AIR TEMP °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	00	S00	295	089	067	8	02	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S °/..	SIGMA-T	SPECIFIC VOLUME ANOMALY-10^7	$\Sigma\Delta D$ DYN. M x 10^3	SOUND VELOCITY	O_2 ml l	PO_4-P µg-at l	TOTAL-P µg-at l	NO_3-N µg-at l	CHL-A	SiO_4-Si µg-at l	pH	S ‰
		STD	0000	0672	3102	2435	0035898	0000	14727	718							
185		OBS	00000	06720	31017	2435			14727	718				522			
		STD	0010	0682	3156	2476	0031991	0034	14740	702							
		OBS	00100	06820	31557	2476			14740	702				328			

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR 1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT	NODC STATION NUMBER
31	8029	EV	39300N	074000W		116	94	12	20	211	1967		025	0018	00	18	0	2		X1			0025

WATER COLOR CODE	WATER TRANS (m)	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP °C DRY BULB	AIR TEMP °C WET BULB	VIS CODE	NO. OBS DEPTHS	SPECIAL OBSERVATIONS
DT	SD	05	S02	230	094	078	7	02	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S °/..	SIGMA-T	SPECIFIC VOLUME ANOMALY-10^7	$\Sigma\Delta D$ DYN. M x 10^3	SOUND VELOCITY	O_2 ml l	PO_4-P µg-at l	TOTAL-P µg-at l	NO_3-N µg-at l	CHL-A	SiO_4-Si µg-at l	pH	S ‰
		STD	0000	0700	3161	2477	0031829	0000	14746	713							
211		OBS	00000	07000	31607	2477			14746	713				333			
		STD	0010	0695	3163	2480	0031629	0032	14746	725							
		OBS	00100	06950	31627	2480			14746	725				369			

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	DRIFT INDICTR	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR 1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT	NODC STATION NUMBER
31	8029	EV	39015N	07401 W		116	94	12	20	237	1967		026	0034	00	18	0	2		X1			0026

WATER COLOR CODE	WATER TRANS (m)	WIND DIR.	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP °C DRY BULB	AIR TEMP °C WET BULB	VIS CODE	NO. OBS DEPTHS	SPECIAL OBSERVATIONS
DT	SD	05	S03	298	094	078	8	05	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S °/..	SIGMA-T	SPECIFIC VOLUME ANOMALY-10^7	$\Sigma\Delta D$ DYN. M x 10^3	SOUND VELOCITY	O_2 ml l	PO_4-P µg-at l	TOTAL-P µg-at l	NO_3-N µg-at l	CHL-A	SiO_4-Si µg-at l	pH	S ‰
		STD	0000	0889	3244	2516	0028179	0000	14830	670							
237		OBS	00000	08890	32442	2516			14830	670				391			
		STD	0010	0889	3244	2516	0028195	0028	14832	674							
		OBS	00100	08890	32442	2516			14832	674				351			
		STD	0020	0889	3247	2518	0028034	0056	14833	674							
		OBS	00200	08890	32466	2518			14833	674				404			
		OBS	00250	08890	32482	2519			14834								
		STD	0030	0889	3250	2520	0027783	0084	14836	670							
		OBS	00300	08890	32502	2520			14836	670				338			

REFERENCE		SHIP	LATITUDE	LONGITUDE	DRIFT	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH	MAX	WAVE OBSERVATIONS				WEA-	CLOUD			NODC
CTRY CODE	ID. NO.	CODE	° ' 1/10	° ' 1/10	INDICTR	10°	1°	MO	DAY	HR 1/10		CRUISE NO.	STATION NUMBER	TO BOTTOM	DEPTH OF S'MPL'S	DIR	HGT	PER	SEA	THER CODE	TYPE	AMT		STATION NUMBER
318029	EV	38295N	074464W		116	84	12	21	061		1967		028	0023	00	18	0	2		X0				0027

WATER		WIND		BARO-METER (mbs)	AIR TEMP °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
DT	SD	00	S00	305	094	083	6	03	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10^7	Σ Δ D DYN. M. x 10^3	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at/l	CHL-A	SiO_4-Si µg-at/l	pH	OBS
		STD	0000	0682	3056	2397	0039463	0000	14725	706							
061		OBS	00000	06820	30557	2397			14725	706				472			
		STD	0010	0862	3233	2511	0028672	0034	14820	683							
		OBS	00100	08620	32325	2511			14820	683				360			
		STD	0020	0866	3235	2512	0028568	0063	14823	638							
		OBS	00200	08660	32349	2512			14823	638				378			

REFERENCE		SHIP	LATITUDE	LONGITUDE	DRIFT	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH	MAX	WAVE OBSERVATIONS				WEA-	CLOUD			NODC
CTRY CODE	ID. NO.	CODE	° ' 1/10	° ' 1/10	INDICTR	10°	1°	MO	DAY	HR 1/10		CRUISE NO.	STATION NUMBER	TO BOTTOM	DEPTH OF S'MPL'S	DIR	HGT	PER	SEA	THER CODE	TYPE	AMT		STATION NUMBER
318029	EV	3800 N	074305W		116	84	12	21	116		1967		030	0034	00					X1				0028

WATER		WIND		BARO-METER (mbs)	AIR TEMP °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
DT	SD	12	S07	295	117	100	7	05	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10^7	Σ Δ D DYN. M. x 10^3	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at/l	CHL-A	SiO_4-Si µg-at/l	pH	OBS
		STD	0000	0952	3269	2525	0027307	0000	14857								
116		OBS	00000	09520	32687	2525			14857								
		STD	0010	0952	3269	2525	0027325	0027	14858								
		OBS	00100	09520	32687	2525			14858								
		STD	0020	0955	3271	2526	0027197	0055	14861								
		OBS	00200	09550	32713	2526			14861								
		OBS	00250	09580	32727	2527			14863								
		STD	0030	0961	3274	2528	0027086	0082	14866								
		OBS	00300	09610	32743	2528			14866								

REFERENCE		SHIP	LATITUDE	LONGITUDE	DRIFT	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH	MAX	WAVE OBSERVATIONS				WEA-	CLOUD			NODC
CTRY CODE	ID. NO.	CODE	° ' 1/10	° ' 1/10	INDICTR	10°	1°	MO	DAY	HR 1/10		CRUISE NO.	STATION NUMBER	TO BOTTOM	DEPTH OF S'MPL'S	DIR	HGT	PER	SEA	THER CODE	TYPE	AMT		STATION NUMBER
318029	EV	37595N	073585W		116	73	12	21	143		1967		031	0135	01	27	0	2		X1				0029

WATER		WIND		BARO-METER (mbs)	AIR TEMP °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS. (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
DT	SD	09	S04	301	122	100	8	10	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY-10^7	Σ Δ D DYN. M. x 10^3	SOUND VELOCITY	O_2 ml/l	PO_4-P µg-at/l	TOTAL-P µg-at/l	NO_2-N µg-at/l	CHL-A	SiO_4-Si µg-at/l	pH	OBS
		STD	0000	0953	3313	2559	0024075	0000	14863	647							
143		OBS	00000	09530	33125	2559			14863	647				227			
		STD	0010	0959	3320	2564	0023624	0024	14867	648							
		OBS	00100	09590	33201	2564			14867	648				122			
		STD	0020	0960	3324	2566	0023399	0047	14870	652							
		OBS	00200	09600	33236	2566			14870	652				178			
		OBS	00250	09640	33293	2570			14873								
		STD	0030	0970	3336	2574	0022679	0070	14877	652							
		OBS	00300	09700	33357	2574			14877	652				132			
		OBS	00400	09910	33447	2578			14887	629				068			
		STD	0050	1040	3375	2593	0020964	0114	14911	580							
		OBS	00500	10400	33747	2593			14911	580				037			
		STD	0075	1220	3496	2654	0015263	0159	14993	472							
		OBS	00750	12200	34957	2654			14993	472				019			
		STD	0100	1245	3528	2674	0013408	0195	15010	411							
		OBS	01000	12450	35282	2674			15010	411				007			
		STD	0125	1245	3542	2684	0012484	0228	15016								
		OBS	01250	12450	35417	2684			15016								

REFERENCE		SHIP	LATITUDE	LONGITUDE	DRIFT INCH	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX DEPTH OF SAMPLE	WAVE OBSERVATION			MEA THER		
CTRY CODE	ID. NO.	CODE	° ' 1/10	° ' 1/10		10°	1°	MO	DAY	HR 1/10		CRUISE NO.	STATION NUMBER			HT	PER	DIR			
318	029	EV	37585N	073310W		116	73	12	21	166	1967		032	1646	15	30	0	2		x1	0030

WATER		WIND		BARO-METER (mbs)	AIR TEMP °C		VIS CODE	NO. OBS DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR	SPEED OR FORCE		DRY BULB	WET BULB			
DT	SD	10	S06	298	122	111	8	22	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY $\times 10^5$	$\Sigma \Delta D$ DYN M $\times 10^3$	SOUND VELOCITY	O2 ml	PO4-P	TOTAL-P	NO2+NO3-N	CHL-A
		STD	0000	1070	3387	2597	0020470	0000	14915					
166		OBS	00000	10700	33867	2597			14915					
		STD	0010	1066	3426	2628	0017545	0019	14920					
		OBS	00100	10660	34257	2628			14920					
		STD	0020	1182	3454	2628	0017521	0037	14966					
		OBS	00200	11820	34537	2628			14966					
		OBS	00250	12640	34871	2638			14999					
		STD	0030	1335	3510	2642	0016299	0053	15027					
		OBS	00300	13350	35097	2642			15027					
		OBS	00400	13420	35197	2648			15032					
		STD	0050	1360	3525	2648	0015709	0085	15040					
		OBS	00500	13600	35252	2648			15040					
		STD	0075	1369	3541	2658	0014823	0124	15049					
		OBS	00750	13690	35407	2658			15049					
		STD	0100	1366	3560	2674	0013407	0159	15054					
		OBS	01000	13660	35602	2674			15054					
		STD	0125	1275	3550	2685	0012445	0191	15027					
		STD	0150	1195	3542	2694	0011616	0221	15003					
		OBS	01500	11950	35417	2694			15003					
		STD	0200	1069	3531	2709	0010300	0276	14965					
		OBS	02000	10690	35306	2709			14965					
		STD	0250	0905	3510	2721	0009228	0325	14911					
		OBS	02500	09050	35097	2721			14911					
		STD	0300	0780	3502	2734	0007972	0368	14871					
		OBS	03000	07800	35022	2734			14871					
		OBS	03500	06750	34967	2745			14838					
		STD	0400	0601	3499	2756	0005912	0437	14817					
		OBS	04000	06010	34987	2756			14817					
		OBS	04500	05300	34966	2763			14796					
		STD	0500	0500	3497	2767	0004926	0492	14792					
		OBS	05000	05000	34966	2767			14792					
		STD	0600	0485	3501	2772	0004562	0539	14803					
		OBS	06000	04850	35006	2772			14803					
		STD	0700	0452	3500	2775	0004317	0583	14806					
		STD	0800	0428	3500	2778	0004154	0626	14812					
		OBS	08000	04280	34997	2778			14812					
		STD	0900	0418	3499	2778	0004184	0667	14825					
		STD	1000	0410	3498	2778	0004242	0710	14838					
		OBS	10000	04100	34982	2778			14838					
		STD	1100	0405	3499	2779	0004253	0752	14853					
		STD	1200	0399	3499	2780	0004256	0795	14867					
		OBS	12000	03990	34987	2780			14867					
		STD	1300	0392	3499	2781	0004259	0837	14881					
		STD	1400	0384	3499	2781	0004253	0880	14894					
		STD	1500	0375	3499	2782	0004223	0922	14907					
		OBS	15000	03750	34986	2782			14907					

REFERENCE CTRY CODE	REFERENCE ID. NO.	SHIP CODE	LATITUDE ° 1/10	LONGITUDE ° 1/10	QUEST. INDICA.	MARSDEN SQUARE 10°	MARSDEN SQUARE 1°	STATION TIME (GMT) MO	STATION TIME (GMT) DAY	STATION TIME (GMT) HR 1/10	YEAR	ORIGINATOR'S CRUISE NO.	ORIGINATOR'S STATION NUMBER	DEPTH TO BOTTOM	MAX DEPTH OF S'MPL'S	WAVE OBSERVATIONS DIR.	WAVE OBSERVATIONS HGT	WAVE OBSERVATIONS PER	WAVE OBSERVATIONS SEA	WEATHER CODE	CLOUD CODES TYPE	CLOUD CODES AMT		NODC STATION NUMBER
318	029	EV	38005N	07301 W		116	83	12	21	195	1967		033	2560	15	36	0	2		X1				0031

WATER COLOR CODE	WATER TRANS. (m)	WIND DIR	WIND SPEED OR FORCE	BAROMETER (mbs)	AIR TEMP. °C DRY BULB	AIR TEMP. °C WET BULB	VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
DT	SD	14	S06	271	144	128	8	22	

MESSENGR TIME OF HR 1/10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY x10⁷	ΣΔD DYN. M. x 10³	SOUND VELOCITY	O₂ ml/l	PO₄-P µg-at/l	TOTAL-P µg-at/l	NO₂-N µg-at/l	CHL-A	SiO₄-Si µg-at l	pH	NODC
		STD	0000	1075	3418	2620	0018264	0000	14920	615							
195		OBS	00000	10750	34177	2620			14920	615				054			
		STD	0010	1180	3463	2636	0016798	0018	14965	608							
		OBS	00100	11800	34627	2636			14965	608				067			
		STD	0020	1250	3481	2636	0016780	0034	14993	630							
		OBS	00200	12500	34807	2636			14993	630				082			
		OBS	00250	12500	34824	2637			14994								
		STD	0030	1254	3483	2637	0016697	0051	14996	616							
		OBS	00300	12540	34832	2637			14996	616				054			
		OBS	00400	12700	34927	2641			15004	590				047			
		STD	0050	1290	3499	2642	0016292	0084	15013	608							
		OBS	00500	12900	34987	2642			15013	608				045			
		STD	0075	1310	3534	2665	0014178	0122	15029	581							
		OBS	00750	13100	35337	2665			15029	581				040			
		STD	0100	1324	3553	2677	0013090	0156	15040	449							
		OBS	01000	13240	35532	2677			15040	449				011			
		STD	0125	1235	3550	2693	0011687	0187	15013	415							
		STD	0150	1150	3544	2704	0010649	0215	14987	390							
		OBS	01500	11500	35437	2704			14987	390							
		STD	0200	0995	3523	2716	0009588	0266	14938	369							
		OBS	02000	09950	35232	2716			14938	369							
		STD	0250	0869	3505	2722	0009035	0312	14897	325							
		OBS	02500	08690	35047	2722			14897	325							
		STD	0300	0722	3504	2744	0007027	0352	14849								
		OBS	03000	07220	35037	2744			14849								
		OBS	03500	06500	34987	2750			14828								
		STD	0400	0578	3498	2758	0005689	0416	14807								
		OBS	04000	05780	34977	2758			14807								
		OBS	04500	05300	34977	2764			14796								
		STD	0500	0500	3498	2768	0004844	0469	14792								
		OBS	05000	05000	34977	2768			14792								
		STD	0600	0459	3499	2773	0004389	0515	14792								
		OBS	06000	04590	34987	2773			14792								
		STD	0700	0441	3499	2775	0004281	0558	14801								
		STD	0800	0425	3499	2777	0004191	0601	14811								
		OBS	08000	04250	34987	2777			14811								
		STD	0900	0411	3498	2778	0004173	0642	14822								
		STD	1000	0400	3498	2779	0004157	0684	14834								
		OBS	10000	04000	34977	2779			14834								
		STD	1100	0394	3498	2780	0004176	0726	14848								
		STD	1200	0388	3498	2780	0004192	0768	14862								
		OBS	12000	03880	34977	2780			14862								
		STD	1300	0382	3498	2781	0004183	0809	14876								
		STD	1400	0377	3498	2782	0004207	0851	14891								
		STD	1500	0372	3499	2783	0004176	0893	14906								
		OBS	15000	03720	34987	2783			14906								

REFERENCE		SHIP	LATITUDE	LONGITUDE	DUPLICATE	MARSDEN SQUARE		STATION TIME (GMT)			YEAR	ORIGINATOR'S		DEPTH TO BOTTOM	MAX DEPTH OF SAMPLES	WAVE OBSERVATIONS			WEATHER			
CTRY CODE	ID. NO.	CODE	° ' 1 10	° ' 1 10	INDICA	10°	1°	MO	DAY	HR 1 10		CRUISE NO.	STATION NUMBER			DIR	HGT	PER	SEA			
318	029	EV	37590N	072300W		116	72	12	21	225	1967		034	3017	15					X1		0032

WATER		WIND		BARO-METER (mbs)	AIR TEMP °C		VIS CODE	NO. OBS. DEPTHS	SPECIAL OBSERVATIONS
COLOR CODE	TRANS (m)	DIR.	SPEED OR FORCE		DRY BULB	WET BULB			
DT	S0	16	S07	271	150	133	8	22	

MESSENGER TIME OF HR 1 10	CAST NO.	CARD TYPE	DEPTH (m)	T °C	S ‰	SIGMA-T	SPECIFIC VOLUME ANOMALY ×10⁷	Σ Δ D DYN. M ×10³	SOUND VELOCITY	O₂ ml l	PO₄-P	TOTAL-P	NO₃-N	CHL-A
		STD	0000	1258	3489	2641	0016304	0000	14993	588				
225		OBS	00000	12580	34885	2641			14993	588				032
		STD	0010	1260	3492	2643	0016140	0016	14996	610				
		OBS	00100	12600	34916	2643			14996	610				046
		STD	0020	1260	3492	2643	0016166	0032	14997	598				
		OBS	00200	12600	34916	2643			14997	598				042
		OBS	00250	12600	34915	2643			14998					
		STD	0030	1260	3492	2643	0016192	0049	14999	608				
		OBS	00300	12600	34916	2643			14999	608				048
		OBS	00400	12600	34916	2643			15001	581				052
		STD	0050	1261	3493	2643	0016183	0081	15003	585				
		OBS	00500	12610	34927	2643			15003	585				062
		STD	0075	1299	3514	2652	0015424	0120	15022	574				
		OBS	00750	12990	35138	2652			15022	574				033
		STD	0100	1315	3558	2683	0012585	0155	15037	455				
		OBS	01000	13150	35577	2683			15037	455				010
		STD	0125	1269	3552	2688	0012184	0186	15025	425				
		STD	0150	1206	3545	2694	0011607	0216	15007	392				
		OBS	01500	12060	35446	2694			15007	392				
		STD	0200	1029	3528	2714	0009820	0270	14951	321				
		OBS	02000	10290	35278	2714			14951	321				
		STD	0250	0895	3512	2724	0008923	0317	14908	319				
		OBS	02500	08950	35117	2724			14908	319				
		STD	0300	0774	3506	2738	0007633	0358	14869					
		OBS	03000	07740	35056	2738			14869					
		OBS	03500	06750	35007	2748			14838					
		STD	0400	0585	3499	2758	0005712	0425	14810					
		OBS	04000	05850	34986	2758			14810					
		OBS	04500	05250	34987	2766			14794					
		STD	0500	0489	3498	2769	0004711	0477	14788					
		OBS	05000	04890	34977	2769			14788					
		STD	0600	0460	3499	2773	0004394	0522	14792					
		OBS	06000	04600	34988	2773			14792					
		STD	0700	0441	3499	2775	0004273	0566	14801					
		STD	0800	0427	3499	2777	0004208	0608	14812					
		OBS	08000	04270	34988	2777			14812					
		STD	0900	0420	3499	2778	0004230	0650	14826					
		STD	1000	0412	3499	2778	0004237	0693	14839					
		OBS	10000	04120	34986	2778			14839					
		STD	1100	0402	3498	2779	0004223	0735	14851					
		STD	1200	0393	3498	2780	0004218	0777	14864					
		OBS	12000	03930	34982	2780			14864					
		STD	1300	0386	3498	2781	0004205	0819	14878					
		STD	1400	0380	3499	2782	0004209	0861	14892					
		STD	1500	0375	3499	2782	0004215	0903	14907					
		OBS	15000	03750	34987	2782			14907					

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