OCEAN DRILLING PROGRAM

LEG 100 REPORT

NORTHEASTERN GULF OF MEXICO

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SCIENTIFIC REPORT

SITE 625: NORTHEASTERN GULF OF MEXICO

HOLE 625A

Date occupied: 12 January 1985
Date departed: 17 January 1985
Time on hole: 4.3 days
Position (latitude; longitude): 28°49.9'N, 87°09.6'W
Water depth (sea level; corrected m, echo-sounding): 889
Water depth (rig floor; corrected m, echo-sounding): 899.5
Bottom felt (m, drill pipe): 899.9
Penetration (m): 234.9
Number of cores: 6
Total length of cored section (m): 50.3
Total core recovered (m): 19.0
Core recovery (%): 37.8
Oldest sediment cored: Pliocene
 Depth sub-bottom (m): 234.9
 Nature: Nannofossil ooze
 Age: Lower Pliocene (NN 13?)
 Measured velocity (km/s): 1.524

HOLE 625B

Date occupied: 18 January 1985
Date departed: 20 January 1985
Time on hole: 2.3 days
Position (latitude; longitude): 28°49.9'N, 87°09.6'W
Water depth (sea level; corrected m, echo-sounding): 889
Water depth (rig floor; corrected m, echo-sounding): 899.5
Bottom felt (m, drill pipe): 899.9
Penetration (m): 235.2
Number of cores: 27
Total length of cored section (m): 235.2
Total core recovered (m): 222.9
Core recovery (%): 94.8
Oldest sediment cored: Pliocene
 Depth sub-bottom (m): 235.2
 Nature: Nannofossil ooze
 Age: Lower Pliocene (NN14 - NN16)?
 Measured velocity (km/s): 1.541

HOLE 625C

Date occupied: 21 January 1985
Date departed: 21 January 1985
Time on hole: 19 hrs
Position (latitude; longitude): 28°49.9'N, 87°09.6'W
Water depth (sea level; corrected m, echo-sounding): 889
Water depth (rig floor; corrected m, echo-sounding): 899.5
Bottom felt (m, drill pipe): 900
Penetration (m): 44.5
Number of cores: 4
Total length of cored section (m): 39.5

Total core recovered (m): 39.5
Core recovery (%): 100
Oldest sediment cored: Pleistocene
Depth sub-bottom (m): 44.5
Nature: Marly nannofossil ooze
Age: U. Pleistocene (NN 21/20?)
Measured velocity (km/s): 1.548

PRINCIPAL RESULTS

Three holes were drilled at Site 625 (target site FLA-1), located near De Soto Canyon on the west Florida Shelf (Figure 1). Hole 625A penetrated to a total sub-bottom depth of 234.9 m, and collected one rotary core and five wash cores containing Pleistocene-lower Pliocene nannofossil ooze while testing rotary bit coring techniques. Hole 625B continuously cored a Pleistocene-lower Pleistocene section of nannofossil ooze, calcareous marl and marly nannofossil ooze to a total depth of 235.2 m. The upper 197.1 m were hydraulically piston cored with the APC (Cores 625B-1 through 625B-23), below which four additional extended core barrel (XCB) cores were taken (Cores 625B-24 through 625B-27) before the hole was terminated. Hole 625C was drilled to test the overlap of APC coring with cores recovered from Hole 625B. Continuous APC cores were taken from 5 m to 44.5 m sub-bottom with good overlap providing an almost complete upper Quaternary sequence.

BACKGROUND AND OBJECTIVES

Site 625 is located south of the axis of De Soto Canyon in the northeastern Gulf of Mexico (Figure 1). De Soto Canyon separates the predominantly terrigenous sediments of the northern Gulf of Mexico from the carbonates of the West Florida Slope. Site 625 lies in 900 m of water within the carbonate province.

Paleontologic and lithologic examinations of industry cores and seismic stratigraphic studies by Lamb and Beard (1972) and Mitchum (1978) demonstrate that intermittent depositional and erosional events have occurred from Early Cretaceous through Recent time in the De Soto Canyon region. The Cenozoic units observed by these researchers in industry cores taken near Site 625 are foraminiferal-nannofossil oozes, with siliceous microfossils and volcanic ash present in older units (Eocene through Oligocene-lower Miocene). Units of middle Miocene through Pleistocene age contain increasingly abundant clays and transported shallow water fossils. These discontinuous industry cores, and cores collected by several other DSDP legs in the Gulf of Mexico (Ewing et al., 1969; Lamb and Beard, 1972; Worzel et al., 1973; Mitchum, 1978), have produced an incomplete biostratigraphic reference section for the region. The seismic section at Site 625 showed that drilling at that location would provide a continuous record of lower Miocene through Pleistocene sediment deposition, and an opportunity to document the occurrence of several unconformities that were expressed as biostratigraphic gaps.

Some biostratigraphic gaps in the West Florida Slope sections appear as boundaries to groups of reflecting horizons on regional seismic profiles. A particularly striking example is noted by Mitchum (1978) between flat-lying, continuous Oligocene-lower Miocene and older sediments, and the strongly downlapping middle Miocene and younger progradational units (Figure 2). A relationship between the unconformity-bounded depositional sequences of the West Florida Slope and the Vail model of eustatic sea level change (Vail et al., 1977) is suggested (Mitchum, 1978), although more stratigraphic control is needed to support this interpretation. Several recent DSDP Legs, including the Goban Spur (Leg 80) and New Jersey (Leg 95) transects, have investigated the record of disconformities in passive margin sequences with regard to cyclic sea level fluctuations. Preliminary results from these legs indicate a correlation of regional unconformities with eustatic cycles, and additional data from Site 625 might further substantiate the Vail model.

The scientific objectives of drilling at Site 625 were:

(1) To recover high-quality biostratigraphic reference sections in the Gulf of Mexico region;

(2) To document sedimentologic, paleontologic, geochemical, geotechnical and paleomagnetic characteristics of the depositional sequences recorded on seismic profiles;

(3) To date and define unconformities in the section and determine their relationships to seismic boundaries; and,

(4) To correlate biostratigraphic and magnetostratigraphic results with global geochronology and the Vail model of eustatic sea level change.

As this was the first site drilled during the shakedown cruise of JOIDES Resolution, equally major non-scientific objectives were necessary to test rotary, APC and XCB drilling and coring systems, and to familiarize ODP staff scientists and marine technicians with shipboard lab equipment, core handling, and sampling procedures.

OPERATIONS

JOIDES Resolution did not stream seismic gear either during transit to or upon arrival at Site 625. In addition, the precision depth recorder was working only intermittently and therefore no unequivocal water depth could be determined. The site was located with LORAN-C and satellite navigation at about 0800 hrs on January 11, 1985, based on the target site coordinates determined prior to the cruise (Lat. 28°49.9'N; Long. 87°09.6'W).

The beacon was not dropped upon initial arrival at the site as SEDCO personnel first undertook 31 hours of extensive dynamic positioning tests. Following those tests, an acoustic beacon was dropped at 2210 hrs on 12 January while seas were increasing to 6 feet and winds were gusting to 30 knots. The water depth at Site 625 was determined at 889 m (corrected) from the echo-sounder system on the bridge.

Hole 625A

We began tripping pipe at 0815 hrs on 15 January and a mudline core was taken at 0015 hrs with 899.9 m of drillpipe below the rig floor.

The first core of the Ocean Drilling Program came on deck at 0250 hrs on 16 January, 1985. This was effectively a punch-core with a recovery of the mudline and 2.8 m of sediment (Table 1). A 40.2-m interval was then washed ahead and Core 625A-2W was brought on board at 0703 hrs. This core contained sediment only in the core catcher. We then proceeded to drill a series of four more wash cores at approximately 48-m intervals in the hole. Core 625A-3W recovered 3.8 m of sediment; Core 625A-4W was totally empty; and, Core 625A-5W contained 8.3 m of sediment (Table 1). The final washed interval penetrated to 234.9 m sub-bottom, the terminal depth for Hole 625A. The lowermost core, Core 625A-6W, recovered 4.1 m of sediment.

At this point we declared rotary coring trials a success and decided to begin hydraulic piston coring as we felt that our scientific objectives would be best served by a second hole that continuously cored the Plio-Pleistocene section. We began retrieving pipe at 0730 hrs on 17 January and cleared the mudline at 0000 on 18 January.

Hole 625B

Hole 625B was spud-in with no offset, and Core 625B-1H was brought on deck at 0615 hrs on 18 January. Its core liner was fractured and split, but 7.9 m of sediment were recovered (Table 2). Assuming that the recovered length equalled the amount of APC stroke-out, the recovery length was taken as the amount by which the drillbit should be advanced before the next APC core was shot. Core 625B-2H was brought on deck at 0915 hrs. It measured a full 9.5 m in length and the bit was again advanced by this amount. We continued with this method of APC coring to total depth of 197.1 m in this hole; unfortunately, inaccuracies in measurement of core recovery on the catwalk, such as not including the core catcher, and subsequent correction later in the core laboratory, meant that percentage core recoveries were frequently over 100% (Table 2).

Core 625B-3H was recovered at 1035 hrs on 18 January with no liner in the barrel. The core had to be manually extruded into 9 separate short pieces of liner resulting in a severely disturbed 7.2 m of sediment. Cores 625B-4H through 625B-19H recovered variable lengths of sediment, ranging between 4.7 and 9.9 m, in generally undisturbed condition (Table 2). Sections 1 and 2 of Core 625B-20H were soupy, and Core 625B-21H came on deck at 1700 hrs 19 January with its liner damaged. The liner for Core 625B-22H was even more severely damaged at its lower end, an effect presumably caused by lack of pressure sealing in the core barrel. Rubber seals were subsequently found displaced inside the liner of a number of these deeper APC cores, including Core 625B-23H which was the last APC core collected in Hole 625B. It arrived on deck at 2015 hrs, 19 January.

We began extended core barrel (XCB) operations at Hole 625B at 0030 hrs on 20 January. Each XCB core advanced downhole by a complete 9.5 m barrel length. Core 625B-24X came on deck at 0230 hrs containing 6.4 m of sediment. Three additional XCB cores (Cores 625B-25X through 625B-27X) were recovered in Hole 625B to a terminal depth of 235.2 m sub-bottom (Table 2).

At 1200 hrs on 20 January we began to pull pipe with the intention of leaving the site and cleared the mudline by 0100 hrs. Most of our operations in Hole 625B had been conducted in gale force sea conditions with waves up to 18 feet and wind speeds up to 50 knots. Upon retrieving most of the pipe we found at 1515 hrs that sea conditions were so bad that we were unable to bring the drill collars on board. A period of 5-1/4 hours elapsed before we decided that no abatement in sea state was likely for some time. We therefore decided to trip pipe again at 2050 hrs and drill an overlapping APC Hole, Hole 625C, adjacent to Hole 625B.

Hole 625C

The first core in Hole 625C was taken to overlap with Cores 625B-1H and 625B-2H so, assuming a water depth of 900 meters, the drillstring was lowered to the 905 meters below sea level datum (Table 3).

Core 625C-1H was retrieved at 0415 hrs, 21 January with a recovery of 10 m. Three further HPC cores were taken continuously to a terminal depth of 44.5 m sub-bottom (Table 3). Core recovery was good in these four cores despite 14 foot waves during operations. When split, they showed excellent correlation with color banding in cores from the previous hole. Core 625C-3H was more disturbed than the others and contained a displaced O-ring.

With the prospect of better sea conditions allowing us to retrieve the drill collars, we began to pull pipe in Hole 625C at 1030 hrs and cleared the mudline at 1130 hrs on 21 January.

All drilling operations were completed at Site 625 by 2018 hrs on 21 January. We got underway at about 2300 hrs and began streaming the seismic gear, employing an 80 cu. in. water gun, in a northward direction away from the site. After some initial delays because of inexperience with deployment of the new equipment, we were able to turn and run southeast towards the site. The ship passed within 0.5 km of the beacon position at 0507 hrs, 22 January and we obtained a reasonable reference seismic record over Site 625 which showed evidence of a slump unit at depth in the section (Figure 3). We departed the Site 625 area at about 0600 hrs on 22 January and headed in the direction of Key West.

LITHOSTRATIGRAPHY

The sediments recovered from the three holes drilled at Site 625 show a general increase in carbonate content downhole and consist of nannofossil ooze, marly nannofossil ooze, and calcareous mud that can be divided into two lithologic units (Figure 4) as follows:

(1) Lithologic Unit I, recovered from 0 to 75 m sub-bottom, containing interbedded calcareous mud and marly nannofossil ooze; and, indicating a late Pleistocene age.

(2) Lithologic Unit II, recovered from 75 to 235 m sub-bottom, containing interbedded marly nannofossil ooze and nannofossil ooze.

Hole 625A

Hole 625A consisted of one mudline core and five wash cores separated by large washed intervals (Table 1). Two of the wash cores (Cores 625A-2W and 625A-4W) were empty. Three of the four cores that recovered sediment were described; all were strongly deformed by drilling. The cores contain interbedded gray, light gray, and olive gray calcareous mud, marly nannofossil ooze, and nannofossil ooze. Both the cored lithologies and carbonate bomb data document a general increase in the abundance of calcareous components downhole, from about 20% at the top to about 70% at the bottom of the hole (Figure 4). Pyrite occurs throughout all the cores as specks, blebs, and nodules.

Hole 625B

Hole 625B was the deepest and most continuous of the holes drilled at Site 625. The continuous recovery at this hole allowed division of the sedimentary section into the two lithologic units described above (Figure 4), based on cored lithologies and carbonate bomb data. All the recovered sediments contain pyrite specks and blebs; at several horizons, pyrite nodules were found. APC/XCB coring techniques provided generally undisturbed cores that preserved sedimentary structures and evidence of bioturbation (mainly *Zoophycos* and *Chondrites*). Several vertical burrows were described. Also, many shell fragments ranging between 0.5 mm and 2-3 mm in diameter occur in the column.

Hole 625C

This hole was the shallowest drilled at Site 625. The sedimentary column consists of Pleistocene calcareous mud and marly nannofossil ooze typical of the Lithologic Unit I sediments described at Holes 625A and 625B (Figure 4). The four cores recovered from this hole were slightly disturbed by coring, although structures were still clearly observable. Most of the observed structures resulted from bioturbation (*Chondrites* and other burrows). Pyrite streaks and spots and shell fragments (0.5 to 3 mm) appear throughout the column.

BIOSTRATIGRAPHY

The Pliocene to Pleistocene sediments recovered at Site 625 contain variable amounts of planktonic and benthic foraminifers, calcareous shells, and skeletal material, including ostracods, pteropods, sponge spicules, bryozoans, tintinnids, algal cysts and small gastropods. The frequent occurrence of many shallow-water taxa indicates downslope transport of material to

Site 625 throughout Plio-Pleistocene time.

As no calcareous microfossil specialists were present among the shipboard party and time for paleontologic studies was limited, the age determinations presented here are subject to significant revision based on further shorebased study of Leg 100 samples. Calcareous nannofossil determinations were based on Martini (1971), Gartner (1977) and Haq (1979). Foraminiferal dates were obtained using Lamb and Beard (1972) and Stainforth et al. (1975).

Hole 625A

The presence of *Emiliania huxleyi* in the nannofossil assemblage of Sample 625A-1R,CC (2.8 m sub-bottom) indicates an uppermost Pleistocene age (NN 21), suggesting that the mudline was successfully recovered in Hole 625A. Sample 625-2W,CC (43.0 m sub-bottom) contains an upper Pleistocene nannofossil assemblage including *Helicopontosphaera kamptneri*, *Gephyrocapsa caribbeanica*, *Gephyrocapsa oceanica*, and small *Gephyrocapsa*. The foraminifers in the first two cores include pink *Globigerinoides ruber*, *Globorotalia truncatulinoides*, *Orbulina universa*, *Globorotalia crassoformis*, and *Globorotalia menardii*, all indicating an upper Pleistocene age.

The nannofossil *Pseudoemiliania lacunosa* appears in Sample 625A-3W,CC (91.0 m sub-bottom), suggesting a middle Pleistocene

(NN 19) age. Core 625A-4W (129.7 - 139.2 m sub-bottom) was a water core. Sample 625A-5W,CC (187.2 m sub-bottom) contains the first discoasters observed in this hole, indicating that the Pliocene-Pleistocene boundary lies between 91.0 and 177.7 m sub-bottom depth in Hole 625A. Samples 625A-5W,CC (187.2 m sub-bottom) and 625A-6W,CC (234.9 m sub-bottom) contain the nannofossils Discoaster brouweri and D. c.f. asymmetricus, suggesting a late Pliocene age (NN 18).

Reworked older Pliocene and Miocene nannofossils provide evidence of erosion and redeposition of sediments.

Hole 625B

Sample 625B-1H,CC (7.9 m sub-bottom) is barren of nannofossils, but Samples 625B-2H,CC (17.4 m sub-bottom) and 625B-3H,CC (26.9 m sub-bottom) contain E. huxleyi, suggesting an latest Pleistocene age (NN 21). The foraminiferal assemblage, including pink G. ruber and G. truncatulinoides, supports this assignment.

Pleistocene material occurs down through Sample 625B-11H,CC (92.2 m sub-bottom), where lower Pliocene nannofossils (such as Cyclococcolithinia macintyrei) and foraminifers (such as Globorotalia tosaensis) are found. In Sample 625B-12H,CC (100.8 m sub-bottom), the first abundant D. brouweri are noted, indicating a Pliocene age (NN 18). The rest of the section in

Hole 625B, Samples 625B-13H,CC (109.5 m sub-bottom) through 625B-27X,CC (235.2 m sub-bottom), contains an apparently complete Pliocene sequence (to NN 13?). No significant biostratigraphic gaps were detected on the basis of cursory shipboard nannofossil scans.

Hole 625C

Four HPC cores were recovered from Hole 625C for a total penetration of 44.5 m sub-bottom. All four cores contain Pleistocene nannofossils.

PHYSICAL PROPERTIES

Cores retrieved at Site 625 were processed through a systematic series of analyses in the shipboard physical properties laboratory. A density scan using the GRAPE was made on all whole-round sections (excluding core catcher samples) soon after the sections were brought into the lab. All cores were then allowed to reach thermal equilibrium (a four-hour wait), after which measurements of thermal conductivity were made utilizing the von Herzen probe technique. Core sections were then split and sampled immediately in order to avoid any changes resulting from desiccation. Analyses performed on samples of the split sections were (in order of execution) vane-shear strength, compressional-wave velocity, and index properties. All tests were performed where minimal coring disturbance was observed.

The vane-shear test was done adjacent to the location of the sample used for compressional-wave velocity and index properties. These physical properties tests were performed following standard routines described by Boyce (1976, 1977). Index properties were measured using a compensated balance technique and a pycnometer for volumetric determinations. Helium was used as the purging gas.

All index properties (bulk density, water content, porosity, void ratio, and grain density) were corrected for an interstitial water salinity of 35^{o}/oo. Carbonate bomb analyses (Mueller and Gastner, 1971) were carried out on dry residues of the physical properties samples.

Results

Index properties from Site 625 show the strongest gradient in the uppermost 60 m (Figure 5). In this interval, bulk densities increase from surficial lows of 1.52 g/cm^3 to approximately 1.65 g/cm^3. Similarly, water contents (expressed relative to the weight of dry solids) decrease from 94% at 1.25 m to an average of 65% at 60 m sub-bottom. Porosity follows suit, decreasing from 80% to 65% over the same interval.

Below 60 m sub-bottom, the gradients of index properties decrease dramatically. With the exception of a few outliers, bulk densities change only 0.15 g/cm^3 over the interval from 60 to 230 sub-bottom. Other index properties such as water content and porosity behave similarly (Figure 5).

Undrained shear strength, as measured by the miniature vane, is plotted in Figure 5 as a function of depth. Strengths show a slow increase with depth to approximately 80 m sub-bottom, ranging from 3.5 to 38 kPa, and have less scatter than strengths from the underlying section. Below 80 m sub-bottom, the sediment shear strength increases abruptly and exhibits much greater variability. This may be a combined result of sediment lithologic changes and artifacts resulting from drilling. The depth interval 150-170 m sub-bottom includes the highest strengths measured, reaching values in excess of 110 kPa.

Compressional wave velocity analyses were performed using the Hamilton frame device. All measurements discussed were made perpendicular to the bedding plane. Compressional wave velocities ranged from a low of 1.47 km/sec to a high of 1.67 km/sec (Figure 5). In general, the downhole trend follows that of index properties, with most changes occurring in the upper 60 m, becoming relatively constant below that depth. Velocities at the base of the hole are 1.54-1.63 km/sec.

Thermal conductivities were generally measured every third core section (i.e., two per core). A unit supplied by Dr. R. Von Herzen (Woods Hole Oceanographic Institution) provided the link between a Pro-350 microcomputer and up to five probes. All tests were made by inserting a probe through a small hole in the liner. Thus, measurements were performed parallel to bedding. Figure 5 shows the distribution of thermal conductivities at Site 625. These range from near mudline lows of $2.05x10^{-3}$ cal/cm·sec·deg to $2.91x10^{-3}$ cal/cm·sec·deg at 218 m sub-bottom. A rapid increase in conductivity takes place in the uppermost 30 m. Between 30-60 m sub-bottom, values fluctuate around $2.5x10^{-3}$ cal/cm·sec·deg. A noticeable increase in thermal conductivity occurs at 70 m sub-bottom, which may be correlated with the change in carbonate content and lithology.

Discussion

The downhole distribution of physical properties data appears to be mainly a function of burial, although the undrained shear strength does reflect the lithologic boundary at 75 meters sub-bottom. This lithologic break is represented primarily by an increase in the percentage of calcium carbonate and, although slight, it appears to affect both shear strength and magnetic intensity which decreases at 60 m sub-bottom (see Paleomagnetics section). However, a plot of shear strength against calcium carbonate content (Figure 6A) illustrates the lack of an overall coherent relationship between these two components. Similarly, compressional wave velocity does not have a simple relationship with carbonate content (Figure 6B).

Burial is the primary agent in the early diagenetic history of a deposit. Terrigenous and calcareous sediments typically show a strong gradient in the uppermost section (0-20 m sub-bottom) and more gradual gradients with depth. Bryant et al. (1981) describe typical porosity profiles for sediments with various amounts of carbonate. The reported porosity shifts that they discuss for sediments with carbonate contents between 20% and 50% and grain sizes of 60-80% clay-sized material is 65% to 50% over the uppermost 90 m. Results from Site 625 follow similar gradients, although the actual values of porosity are somewhat higher.

Another aspect of burial and its effect on changing physical properties is the effective overburden stress applied by the weight of the sediment pile. Skempton (1970) described a relationship between undrained shear strength and effective overburden stress for normally consolidated marine clays. This relationship, expressed as a ratio of strength to stress, ranges from 0.2 to 0.7. Figure 7 is a plot of the measured undrained shear strength of Hole 625B sediments against the effective overburden stress. The range defined by Skempton is also shown. It is clear that sediments at Site 625 fall below the range defined, which suggests that they are underconsolidated. This, however, has been commonly observed in calcareous sediments (Geotechnical Consortium, 1984). Comparison of the shear strength-depth profile for Site 625 falls between those shown by

Bryant et al. (1981) defined for calcareous oozes and hemipelagic terrigenous clays. The actual state of consolidation will be addressed by later shorebased consolidation tests.

GRAPE analyses yielded several interesting pieces of information. First, a number of pyrite nodules were located within the calcareous sediments after the GRAPE scan exhibited abrupt peaks of bulk density, commonly reaching values of 2.3-2.5 g/cm^3. Secondly, the GRAPE scan record was used to cross-correlate Holes 625B and 625C (see Summary section). Shifts in the bulk density trends at Samples 625B-2H-1,90cm; 625B-2H-2,100cm; and 625B-2H-3,50cm correlate within 10 cm with related shifts and values at Samples 625C-1H-3,90cm; 625C-1H-4,100cm; and 625C-1H-5,55cm; respectively.

Core disturbance was visibly apparent in several cores where flow-in or distorted bedding could be documented. Analysis of water contents and porosities of sediments at this site reveal that compaction is an additional source of core disturbance. Decreases in both water content and porosity within given cores are systematically repeated downhole. This is noticeable regardless of the care taken to avoid disturbance (and Section 1 of any core). Similar effects of HPC performance were discussed by Walton et al. (1983).

PALEOMAGNETICS

The advanced hydraulic piston corer (APC) and extended core barrel (XCB) corer recovered over 235 m of relatively undisturbed Quaternary to Pliocene sediment at Hole 625B. The APC was also used to recover over 34 m of Quaternary to Pleistocene sediment at Hole 625C. Both of these holes were sampled for paleomagnetic study. The rotary and wash cores obtained at Hole 625A were not sampled because of the discontinuous (and highly disturbed) nature of the cored section.

Whole-core magnetic susceptibility measurements were made on each core section before the cores were split. The core sections were passed through a 400-mm sensing loop which is part of the shipboard Bartington Susceptibility Meter system. The meter is interfaced to the Epson computer to allow for rapid measurements. Measurements were made every 10 cm as each core section was passed through the loop. The observed variations in magnetic susceptibility downhole (Figure 8) appear to be related to lithologic variations and provide a useful tool for correlating between holes at a given site.

Discrete paleomagnetic samples were taken by pressing 7-cc plastic cubes into the split face of the work halves of the cores. The samples were oriented with respect to the vertical by aligning an arrow marked on the box parallel to the edge of the core liner and pointing up core. Relative horizontal orientation within each core was maintained by splitting each core so that the double black line marked on the core liner was in the center of the working half.

Samples were taken at nominal 1.5-m intervals (one per core section). The direction and magnitude of the natural remanent magnetization (NRM) of each sample were measured using a Molspin spinner magnetometer. Five pilot samples were subjected to progressive alternating field (A.F.) demagnetization studies at 50 - 100 Oe increments. The results of these studies indicate that the magnetizations are univectorial and that A.F. treatment at 50 Oe is adequate to isolate the characteristic remanent magnetizations. On the basis of these studies, the remaining samples which exhibited magnetizations well above the instrumental noise level were demagnetized using a peak A.F. of 50 Oe.

The results after A.F. treatment at 50 Oe are presented in Figure 9 as inclination and intensity plotted versus sub-bottom depth. The declinations are not shown because of the lack of orientation between cores. A dramatic drop in intensity is observed at 64 m sub-bottom. Below this depth the magnetizations are below the noise level of the magnetometer, and the results are not plotted.

The inclinations observed above 58 m sub-bottom group about the axial dipole field value of 47.8° for the site latitude (28.9°N), but exhibit a significant variation (of up to 20°) about this value. Reversed polarity directions are observed between 58 m and 63 m sub-bottom. Interpreting the normal polarity zone observed from 0 to 58 m sub-bottom as the Brunhes Chronozone is consistent with the placement of the Pleistocene/Pliocene boundary between Cores 625B-11H and 625B-12H by the shipboard paleontologists (Berggren et al., in press). The magnetic reversal at 63 m sub-bottom is correlated with the upper Jaramillo reversal, although this correlation is not well supported because of the incomplete record downhole.

The inclination and intensity records obtained at Hole 625C are plotted in Figure 9B. The positive inclination values are consistent with the results observed in Hole 625B and are interpreted as being correlative with the Brunhes Chron based on the biostratigraphic results.

Orientation Tests

Four oriented cores were taken from Holes 625B and 625C. The Eastman-Whipstock multishot downhole tool was deployed twice at each hole. The tool worked successfully all four times, and appears capable of providing the azimuth of the fiducial line marked on the core liner with respect to magnetic north.

The general agreement of the observed inclinations with the predicted axial dipole field supports the interpretation that these sediments are reliable recorders of the Earth's magnetic field. Therefore, the normal polarity declinations should point towards magnetic north. This allows a test of the accuracy of the downhole orientation tool; i.e., the normal polarity declinations should agree with the azimuth obtained from the multishot system.

Unfortunately, in the two cores oriented at Hole 625B (Cores 625B-22H and 625B-23H), the remanent magnetizations were so weak that it was not possible to make reliable measurements on any but the uppermost sample from Core 625B-22H. This measurement agreed well with the multishot results after a 180° orientation error was discovered in the multishot assembly.

The tool was tested again at Hole 625C (Cores 625C-3H and 625C-4H). In these two cases, the quality of the paleomagnetic data is good, but the observed declinations in the cores do not agree with the multishot readings. Severe coring disturbance, including 5 m of flow-in in the top of Core 625C-3H, makes it difficult to relate the paleomagnetic data to the multishot readings since the position of the undisturbed sediment within the cored interval is not known.

Further examination of the declination records obtained at Holes 625B and 625C using the APC reveals that a number of cores exhibit a rotation downcore. Detailed declination records from Holes 625B and 625C are plotted in Figure 10. With the exception of Core 625C-4H (Figure 10E), each of these cores shows a counterclockwise rotation of the declinations when viewed downcore. The magnitude of this rotation varies from 142° in Core 625B-2H (Figure 10A) to 22° in Core 625C-1H (Figure 10C). The magnitude of the rotation does not appear to be directly related to the nature or amount of disturbance observed in the tops of the cores. Unfortunately, the limited number of cores suitable for paleomagnetic study obtained at this site make it difficult to examine possible relationships between the nature, magnitude and sense of rotation with lithologic characteristics such as shear strength or water content.

In each case the rotations are counterclockwise looking downcore. The APC was designed to prevent spiraling of the core barrel as it enters the sediment by using a key-in-groove which couples the scoping portion of the core barrel to the piston rod. Examination of the core liners failed to reveal evidence that the orientation pin had sheared, so it therefore appears that the liners did not rotate during the coring process. Instead, declination records suggest that a decoupling occurs between the sediment and the core liner and that the sediment twists as it enters the liner. Further documentation of this behavior in different sediment types is needed to clearly define the parameters controlling the twisting process and to allow a solution to this problem to be developed.

GEOCHEMISTRY

Geochemical investigations at Site 625 included carbonate bomb and coulometer determinations of $CaCO_3$ and interstitial water analysis to determine salinity. Coulometer determination of carbonate was used on only a limited number of samples; methods are described below. Carbonate bomb samples were generally taken from the same intervals where smear slide samples and physical property samples had been removed. 10-cm whole-round interstitial water samples were taken from selected cores in Holes 625A and 625B.

Analytical Methods

Determination of Carbonate

Oven-dried samples were ground to 50-100 mesh to ensure homogenization and complete digestion of the sample during carbonate bomb analysis (Mueller and Gastner, 1971). A one gram sample was taken and placed in a carbonate bomb and 4 mls of concentrated hydrochloric acid added to dissolve the carbonate. The partial pressure of the evolved CO_2 (in p.s.i.) was compared with a standard calibration curve. Precision is $\pm 5\%$.

Analysis by CO_2 coulometer required 30 milligrams of sample powder prepared as above, digested with 2-4 ml 2N hydrochloric acid. The evolved CO_2 was scrubbed, and transferred to a coulometer cell where it dissolved in an ethanolamine solution forming a titrable acid. The coulometer generates a base to neutralize the acid. The amount of current required to complete the reaction was registered, converted to units of CO_2 evolved from the sample, and normalized to percent $CaCO_3$. Precision is $\pm 1\%$.

The coulometer provides a very reliable, though more time-consuming, measure of carbonate content. Results from several samples analyzed by both the bomb and coulometer methods fall within 5% of each other.

Interstitial Water and Salinity

Interstitial water samples were obtained by squeezing sediment samples in Carver presses at pressures of 25,000-30,000 pounds. A few drops of the squeezed water were placed on a temperature-compensated refractometer, measuring salinity (or total dissolved solids) with a precision of $\pm 1\%$.

Results

Carbonate

The $CaCO_3$ contents of analyzed samples from equivalent positions in Holes 625B and 625C are comparable, indicating a certain lateral continuity to sedimentary horizons. Figure 4 shows a plot of percent $CaCO_3$ versus depth at Site 625. There is a steady increase in $CaCO_3$ content with depth, from around 10-20% $CaCO_3$ at the top of the holes, to around 60-75% $CaCO_3$ at the bottom. Variation in $CaCO_3$ contents in the upper portion of the section (above about 100 m sub-bottom) is much greater than at the bottom (below about 170 m sub-bottom), indicating a greater variety in the types or composition of sediments in the upper parts of the holes.

Salinity

Salinity results for interstitial water samples are plotted against depth in Figure 11. There is a steady decrease in salinity from seawater values of about $34^{o}/oo$ at the sediment/seawater boundary (dashed line) to a low of around 32.1 $^{o}/oo$ at 75 m sub-bottom. Values then steadily increase with depth to $35.2^{o}/oo$ at 215 m sub-bottom, the lowermost sample analyzed at Hole 625B. Results from Hole 625A appear to support the steady increase in salinity in the lower portion of Hole 625B. The salinity minimum at 75 m sub-bottom corresponds to changes in sediment physical properties at a similar depth, as discussed elsewhere in this report.

SUMMARY AND CONCLUSIONS

Site 625 (target site FLA-1) was located on the West Florida slope in 900 m of water and had as one prime objective the testing of drilling operations and scientific laboratory equipment during the shakedown cruise of JOIDES Resolution. Drilling, scientific and technical staff were to be trained in shipboard procedures prior to the first operational leg of the Ocean Drilling Program.

Three holes were drilled at Site 625, the deepest of which (Hole 625B) penetrated to a total depth of 235.2 m sub-bottom. This hole was continuously hydraulic piston-cored with the APC to a depth of 197.1 m through a Plio-Pleistocene section. It was further deepened with the extended core barrel (XCB) to the termination depth in the lower Pliocene. An earlier hole (Hole 625A) penetrated almost as deeply (234.9 m sub-bottom), but recovered only one rotary core and a few wash cores while testing rotary coring. The third hole (Hole 625C) attempted to obtain a complete section of the uppermost Quaternary sediments by overlapping APC cores taken in the previous hole between 5 m and 44.5 m sub-bottom.

The primary scientific rationale in choosing to drill Site 625 was that we might date and define a number of unconformities identified on regional seismic profiles that we expected would be expressed as biostratigraphic gaps. Secondly, we hoped to establish a refined magnetostratigraphic and biostratigraphic history for the area that could be compared with models of eustatic sea level change. Our lack of significant penetration while testing drilling operations prevented our resolving the ages of any of the regional unconformities. On the other hand, we did recover a continuous Plio-Pleistocene sedimentary section to the lower Pliocene (NN 18?) that will be of biostratigraphic and paleoenvironmental significance.

Sediments recovered consist of calcareous ooze, marly nannofossil ooze and calcareous hemipelagic mud. These sediments become generally more calcareous downhole: $CaCO_3$ content increases from 10-20% at the top to 60-75% in the Pliocene nannofossil ooze at the base of Holes 625A and 625B.

Preliminary nannofossil studies suggest that the Plio-Pleistocene boundary is located between Cores 625B-11H and 625B-12H at around 92 m sub-bottom. This agrees well with the location of the base of the Brunhes Chronozone at 58 m sub-bottom and the location of the Jaramillo event at 65 m sub-bottom from paleomagnetic measurements. Quaternary sedimentation rates were thus about 51 m per million years.

The sediment section was divided into two lithologic units based upon a decrease in terrigenous content below 75 m sub-bottom. A concurrent change at approximately 70-75 m sub-bottom was observed in most of the physical properties measured at this site.

One useful test that was carried out when Hole 625C was drilled was a detailed comparison of Core 625C-1H (shot from 5 to 15 m sub-bottom) with the lower part of Core 625B-1H (0.0-7.9 m sub-bottom) and upper part of Core 625B-2H (7.9-17.4 m sub-bottom). Visual comparison between these cores shows that the two sequences match very closely, and apparently no more than about ten centimeters of material remained unsampled after this double HPC coring. This was remarkable because these cores were collected in adverse sea conditions during gale force winds. Support for these findings also comes from the GRAPE physical property data and the magnetic susceptibility logs, which show a similar match between the upper parts of the two holes.

A successful test of the multishot core orientation device was made at this site. Evidence of an apparent twisting of the core material as it enters the core liner is an observation that will require assessment with further shorebased work.

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FIGURE CAPTIONS

Figure 1. Bathymetric map of the northeastern Gulf of Mexico showing location of Site 625 and seismic profile tracklines. Line 126 shown in Figure 2. Contours in fathoms (meters). After Mitchum (1978).

Figure 2. Seismic profile line 126 from Mitchum (1978) (see Fig. 1 for location). A major change in sedimentary regime is interpreted to occur between the Oligocene-lower Miocene unit and younger beds (horizon F of Mitchum, 1978).

Figure 3. Water gun seismic profile over Site 625 collected onboard JOIDES Resolution.

Figure 4. Core recovery, lithology, age, carbonate content, and porosity of Hole 625B sediments.

Figure 5. Lithology and physical properties of Site 625 sediments. A. Bulk density; B. Water content; C. Porosity; D. Undrained shear strength; E. Compressional-wave velocity; F. Thermal conductivity. G. $CaCO_3$ Content. Graphic lithology symbols given in Figure 4.

Figure 6. Undrained shear strength (A) and compressional-wave velocity (B) versus carbonate content of Site 625 sediments.

Figure 7. Undrained shear strength as a function of depth. The upper right curve represents the *in situ* effective overburden, and the hatched area is the zone defined as normally consolidated using Skempton's (1970) criteria. Hole 625B sediments appear underconsolidated based on this interpretation.

Figure 8. Whole-core magnetic susceptibility plotted versus sub-bottom depth for Holes 625B and 625C.

Figure 9. Details of inclination and intensity records obtained from individual cores taken at Hole 625B (A) and 625C (B) plotted versus sub-bottom depth.

Figure 10. Declination records plotted versus sub-bottom depth. A. Core 625B-2H; B. Core 625B-4H; C. Core 625C-1H; D. Core 625C-2H; E. Core 625C-4H.

Figure 11. Plot of salinity (^{o}/oo) versus sub-bottom depth in sediment samples from Hole 625A (open squares) and Hole 625B (open triangles). Seafloor salinity value of 35 ^{o}/oo shown in solid dot.

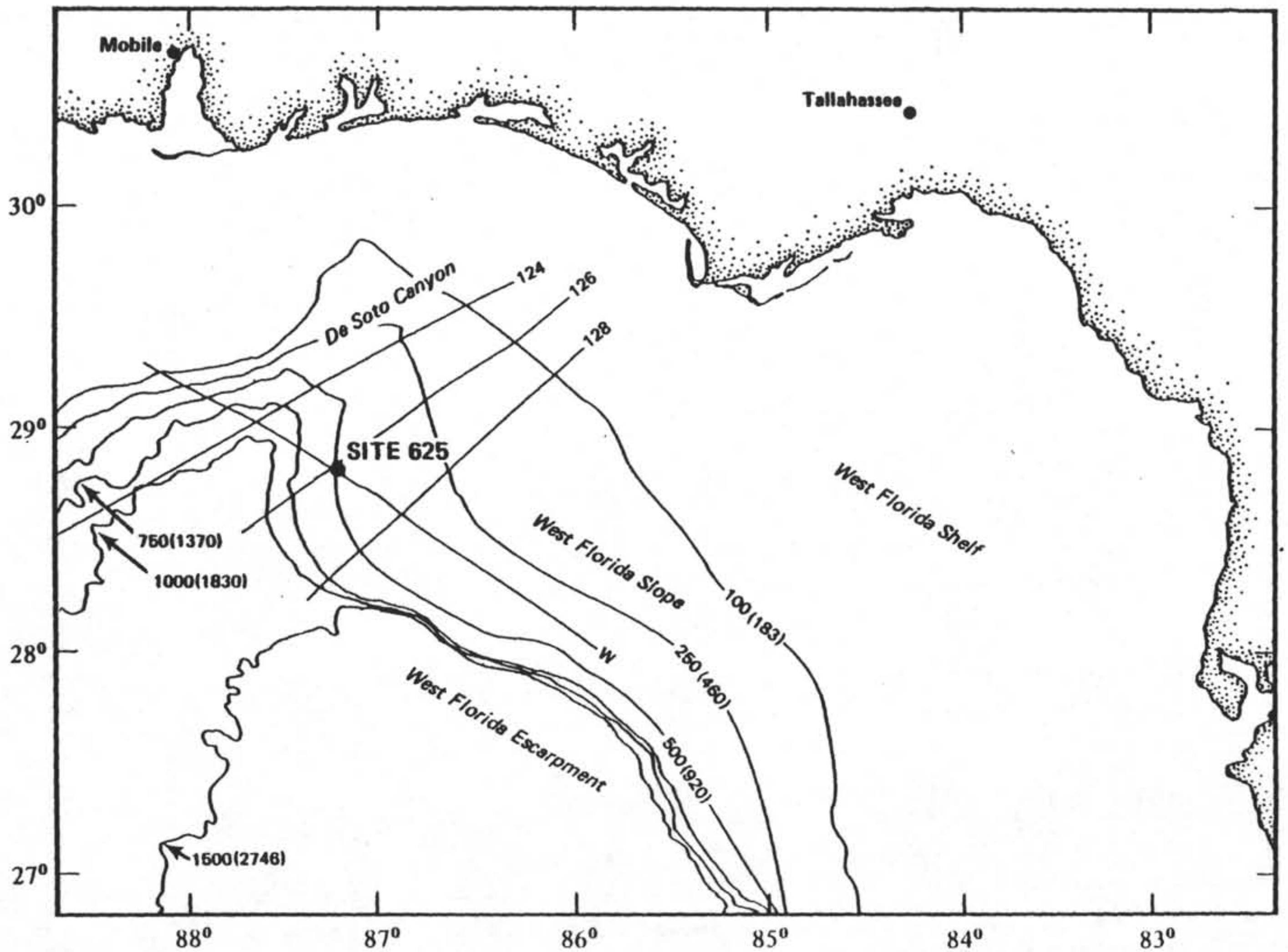

Mobile
Tallahassee
30°
29°
28°
27°
De Soto Canyon
124
126
128
SITE 625
750(1370)
1000(1830)
West Florida Slope
West Florida Shelf
100(183)
W
250(460)
500(920)
West Florida Escarpment
1500(2746)
88°
87°
86°
85°
84°
83°

Figure 1.

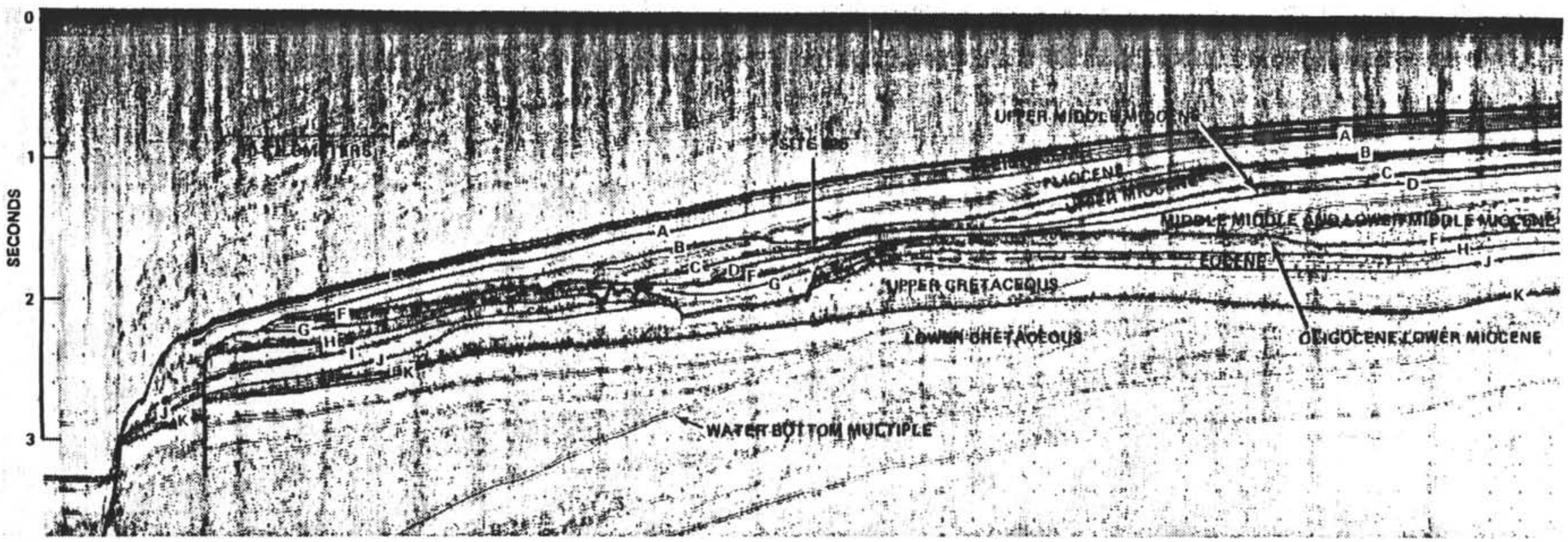

SECONDS
0
1
2
3
UPPER MIDDLE MIOCENE
PLIOCENE
MIDDLE MIDDLE AND LOWER MIDDLE MIOCENE
EOCENE
UPPER CRETACEOUS
LOWER CRETACEOUS
OLIGOCENE-LOWER MIOCENE
WATER BOTTOM MULTIPLE

Figure 2.

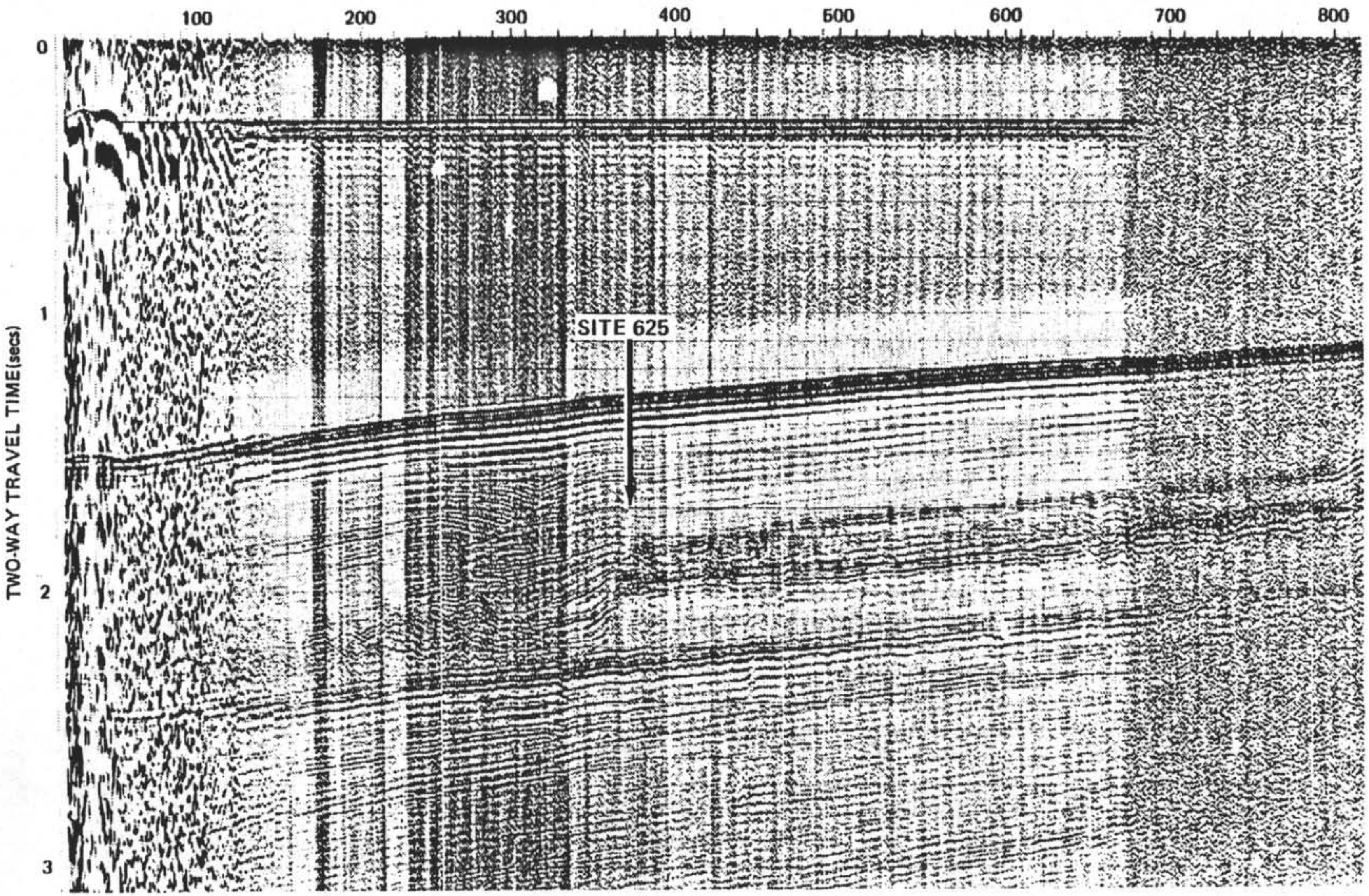

100
200
300
400
500
600
700
800
0
1
2
3
TWO-WAY TRAVEL TIME(secs)
SITE 625

Figure 3.

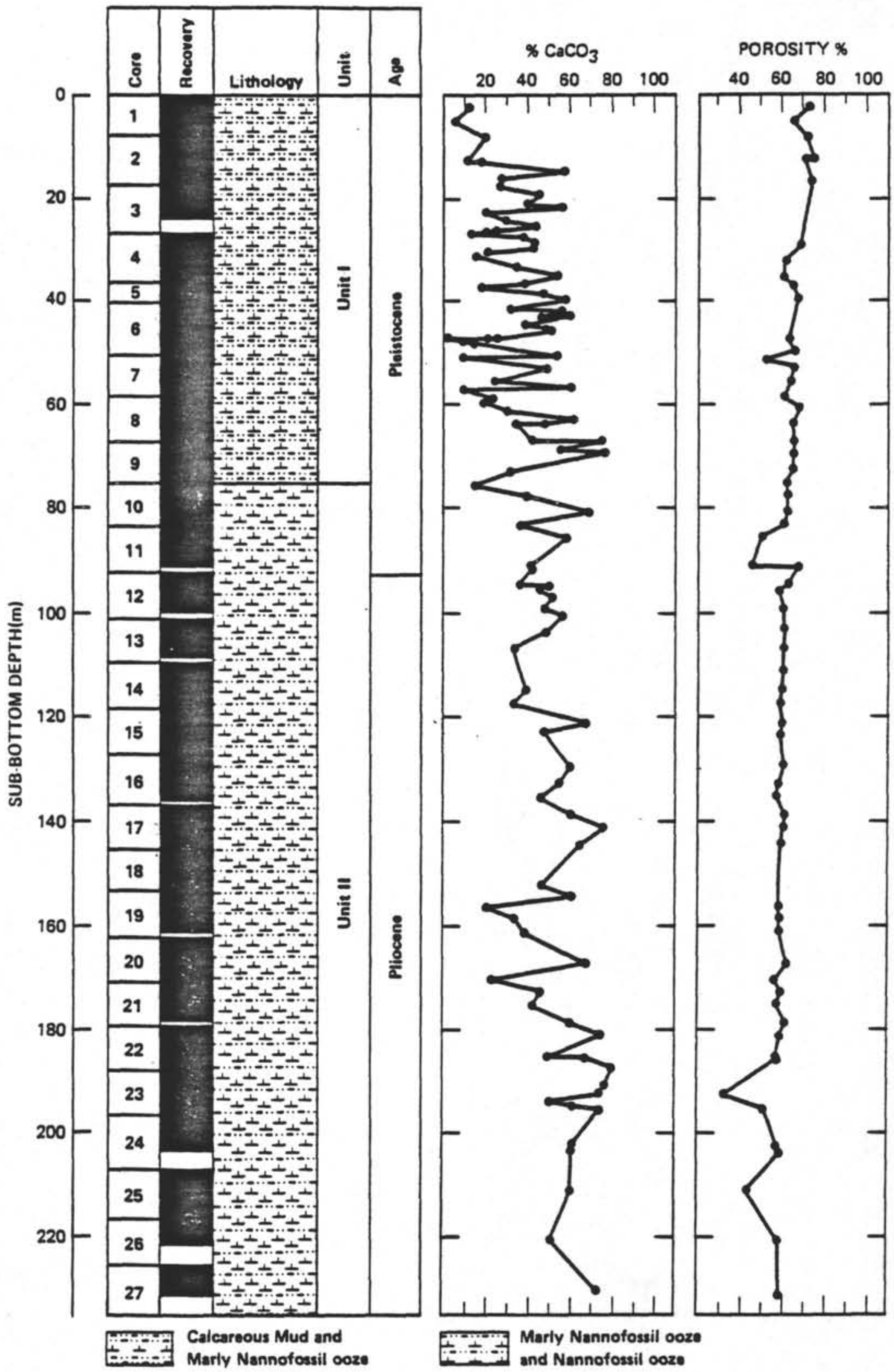
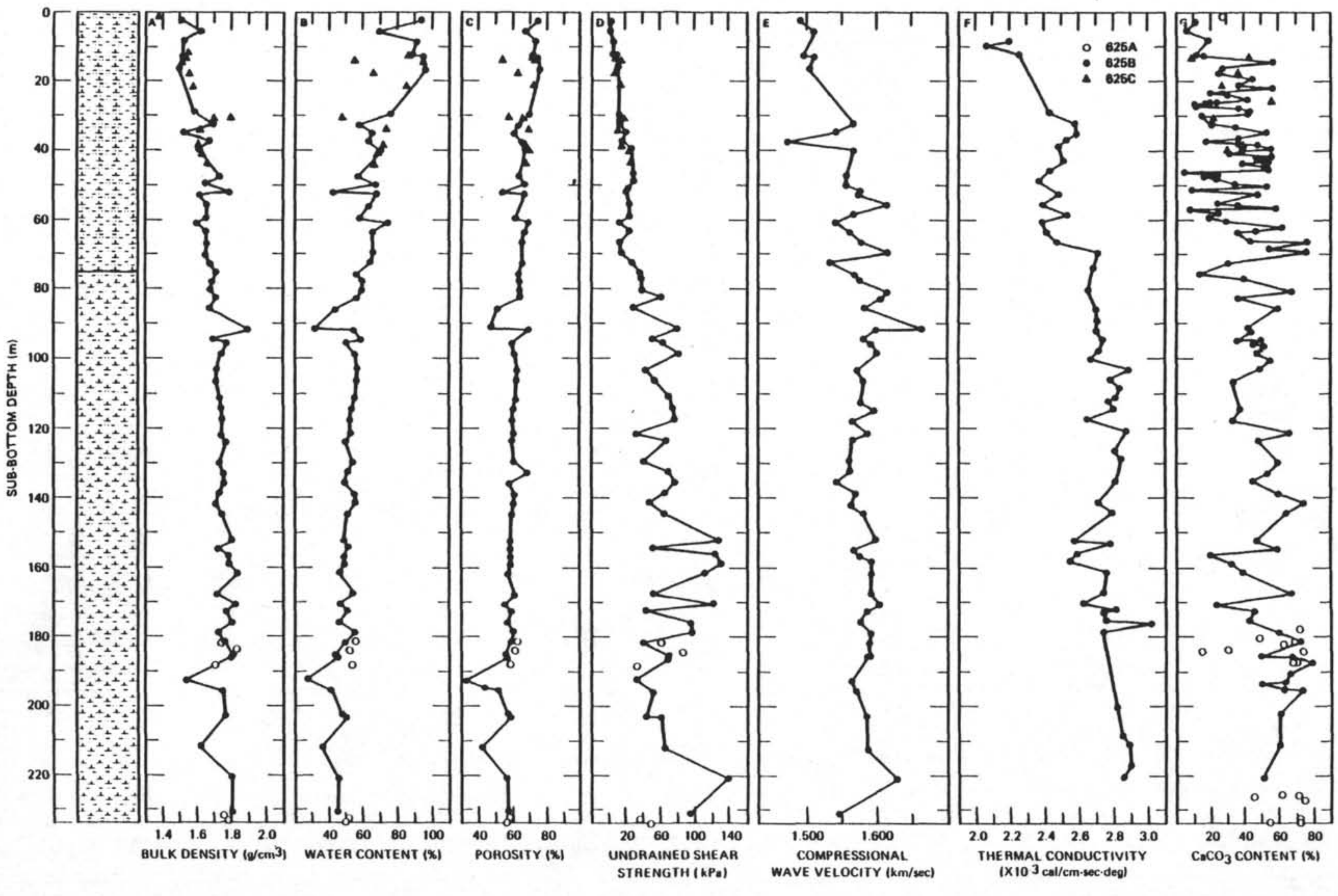
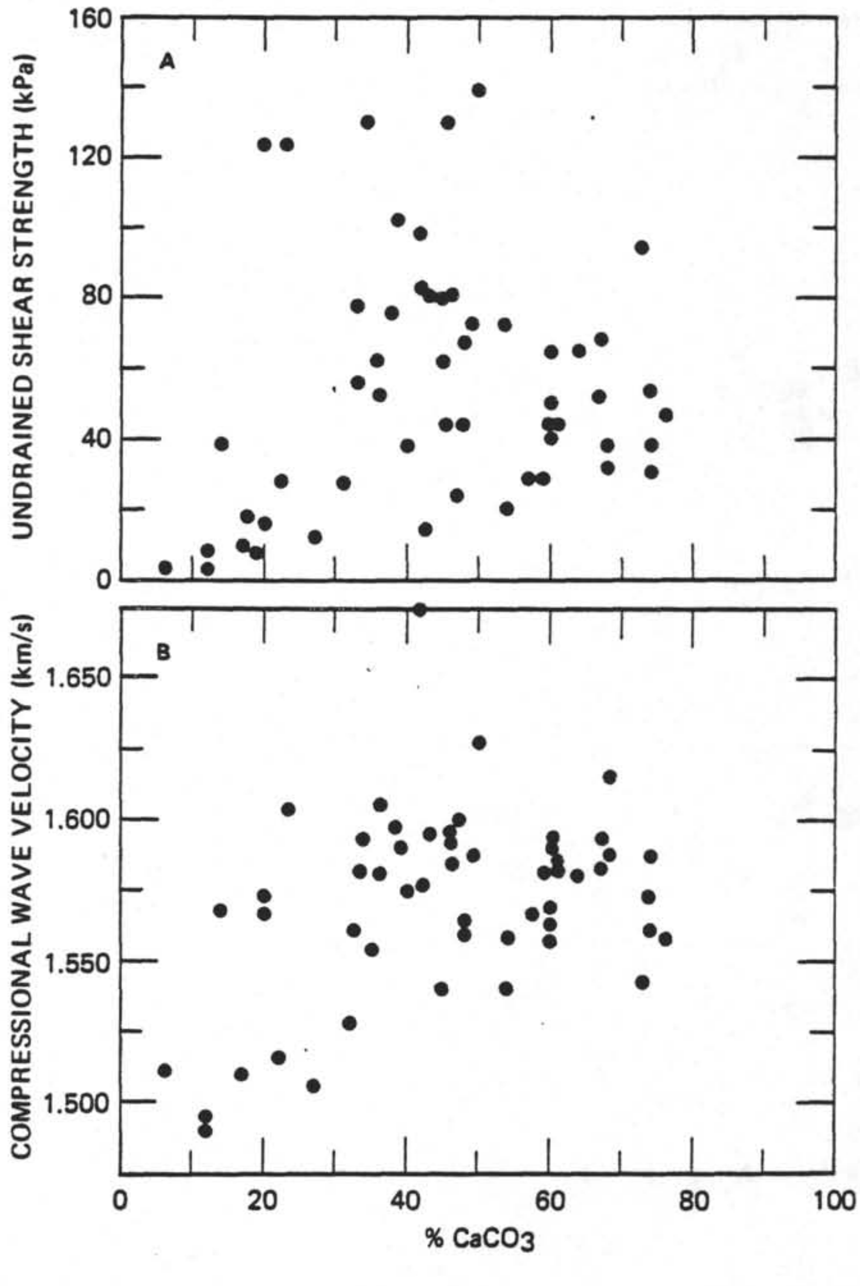

Core
Recovery
Lithology
Unit
Age
% $CaCO_3$
20 40 60 80 100
POROSITY %
40 60 80 100
SUB-BOTTOM DEPTH(m)
0
20
40
60
80
100
120
140
160
180
200
220
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
Unit I
Unit II
Pleistocene
Pliocene
Calcareous Mud and Marly Nannofossil ooze
Marly Nannofossil ooze and Nannofossil ooze

Figure 4.



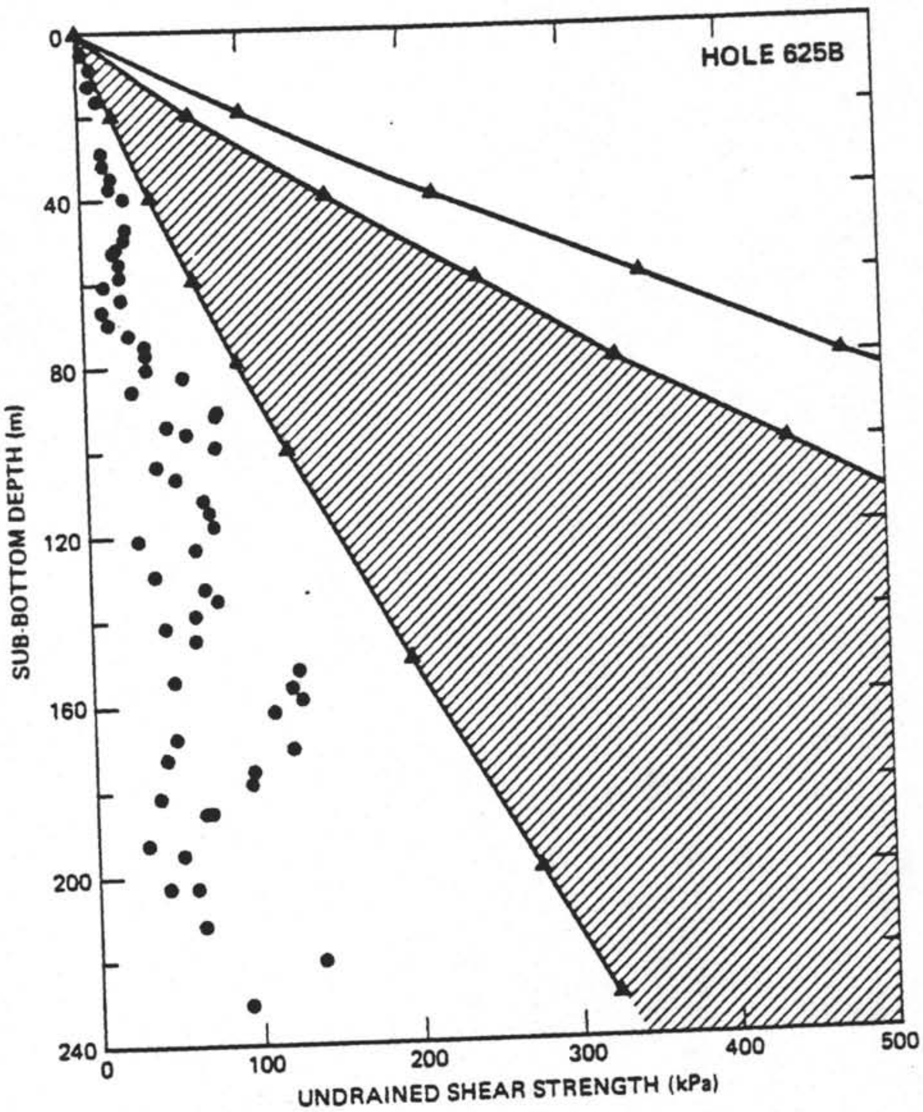
SUB-BOTTOM DEPTH (m)
BULK DENSITY (g/cm3)
WATER CONTENT (%)
POROSITY (%)
UNDRAINED SHEAR STRENGTH (kPa)
COMPRESSIONAL WAVE VELOCITY (km/sec)
THERMAL CONDUCTIVITY (X10 3 cal/cm·sec·deg)
$CaCO_3$ CONTENT (%)
625A
625B
625C

Figure 5.



A
B
UNDRAINED SHEAR STRENGTH (kPa)
COMPRESSIONAL WAVE VELOCITY (km/s)
0
40
80
120
160
1.500
1.550
1.600
1.650
0
20
40
60
80
100
% CaCO3

Figure 6.



HOLE 625B
SUB-BOTTOM DEPTH (m)
0
40
80
120
160
200
240
0
100
200
300
400
500
UNDRAINED SHEAR STRENGTH (kPa)

Figure 7.

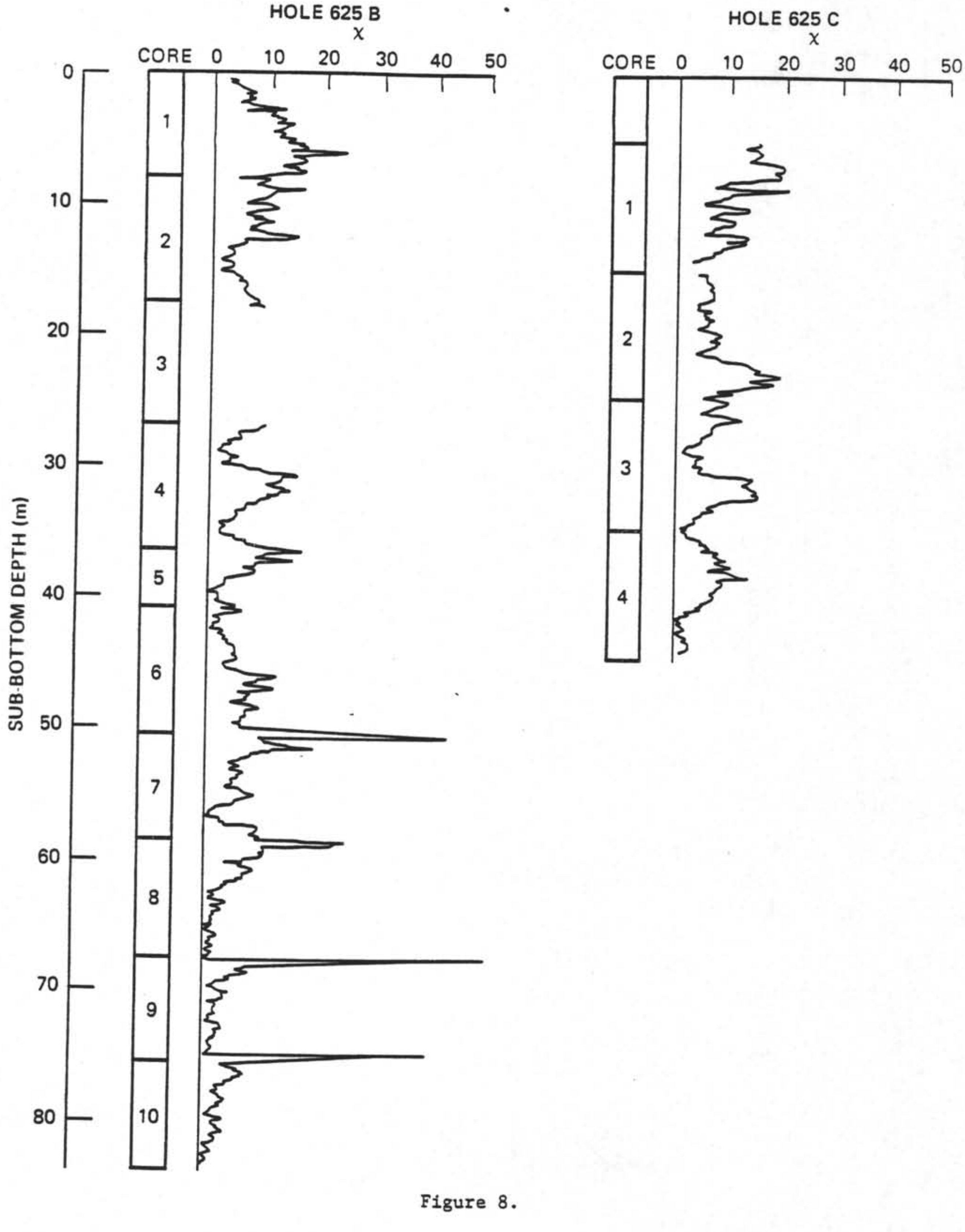

HOLE 625 B
χ
CORE
0
10
20
30
40
50
1
2
3
4
5
6
7
8
9
10
SUB-BOTTOM DEPTH (m)
0
10
20
30
40
50
60
70
80
HOLE 625 C
χ
CORE
0
10
20
30
40
50
1
2
3
4

Figure 8.

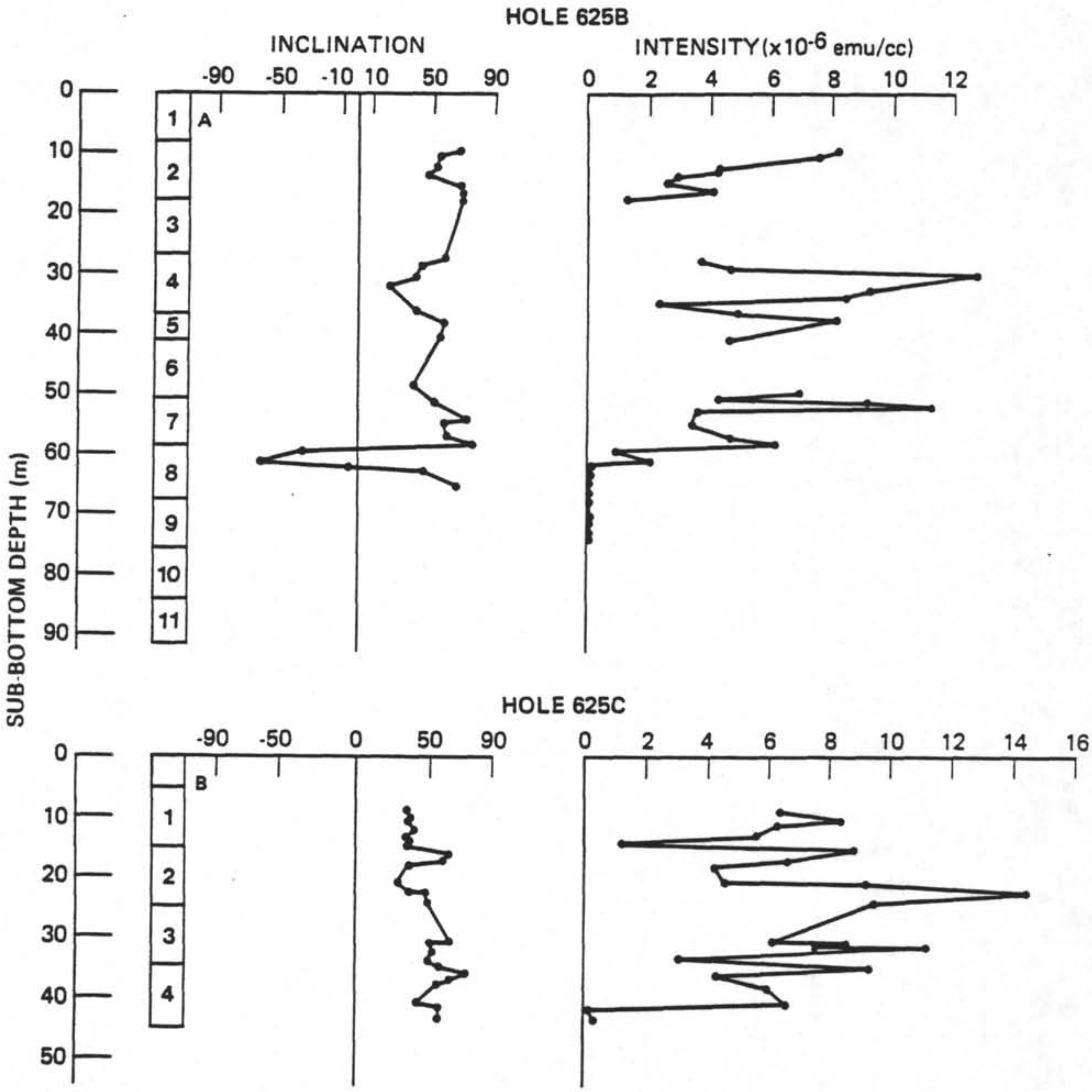

HOLE 625B
INCLINATION
INTENSITY(x10-6 emu/cc)
-90 -50 -10 10 50 90
0 2 4 6 8 10 12
A
1 2 3 4 5 6 7 8 9 10 11
SUB-BOTTOM DEPTH (m)
0 10 20 30 40 50 60 70 80 90
HOLE 625C
-90 -50 0 50 90
0 2 4 6 8 10 12 14 16
B
1 2 3 4
0 10 20 30 40 50

Figure 9.

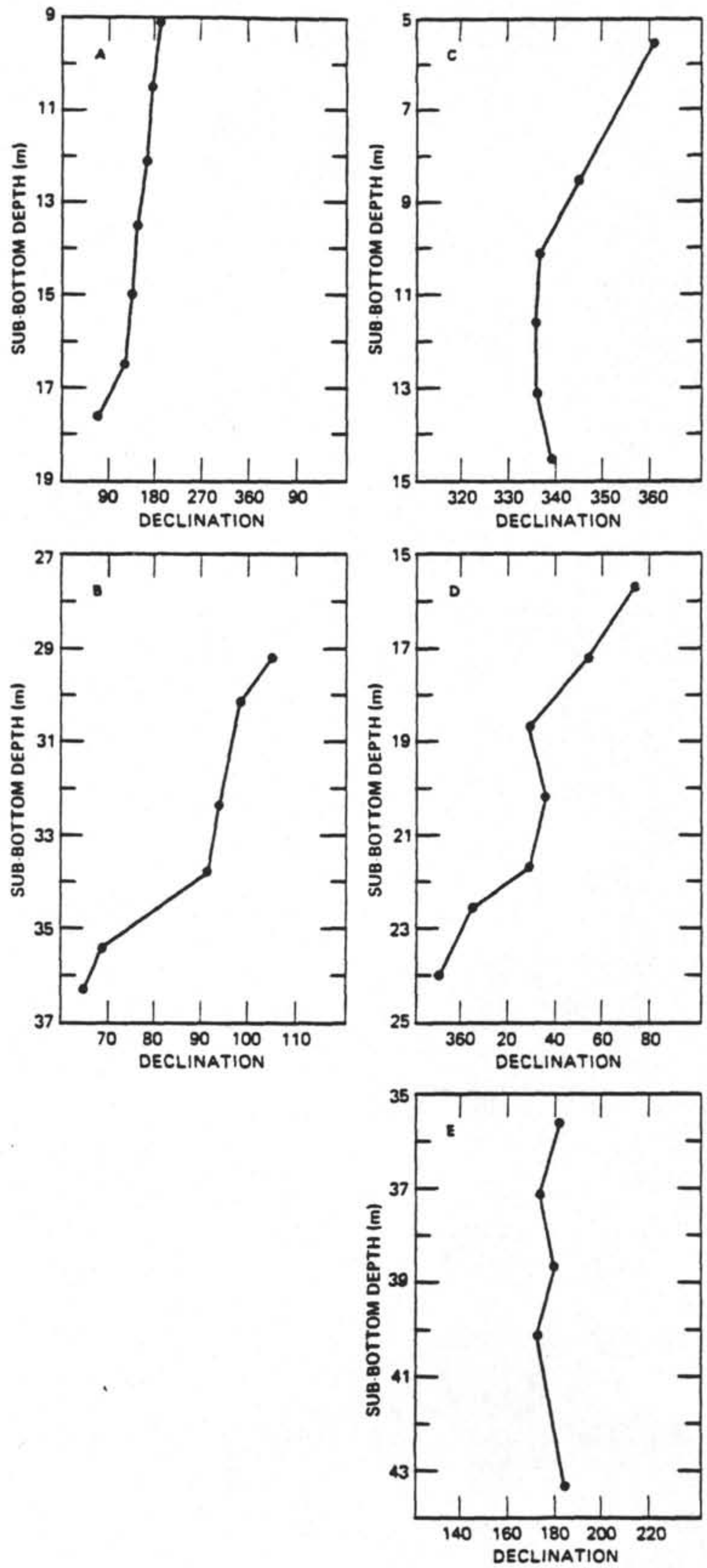

A
B
C
D
E
SUB-BOTTOM DEPTH (m)
DECLINATION
90 180 270 360 90
70 80 90 100 110
320 330 340 350 360
360 20 40 60 80
140 160 180 200 220

Figure 10.

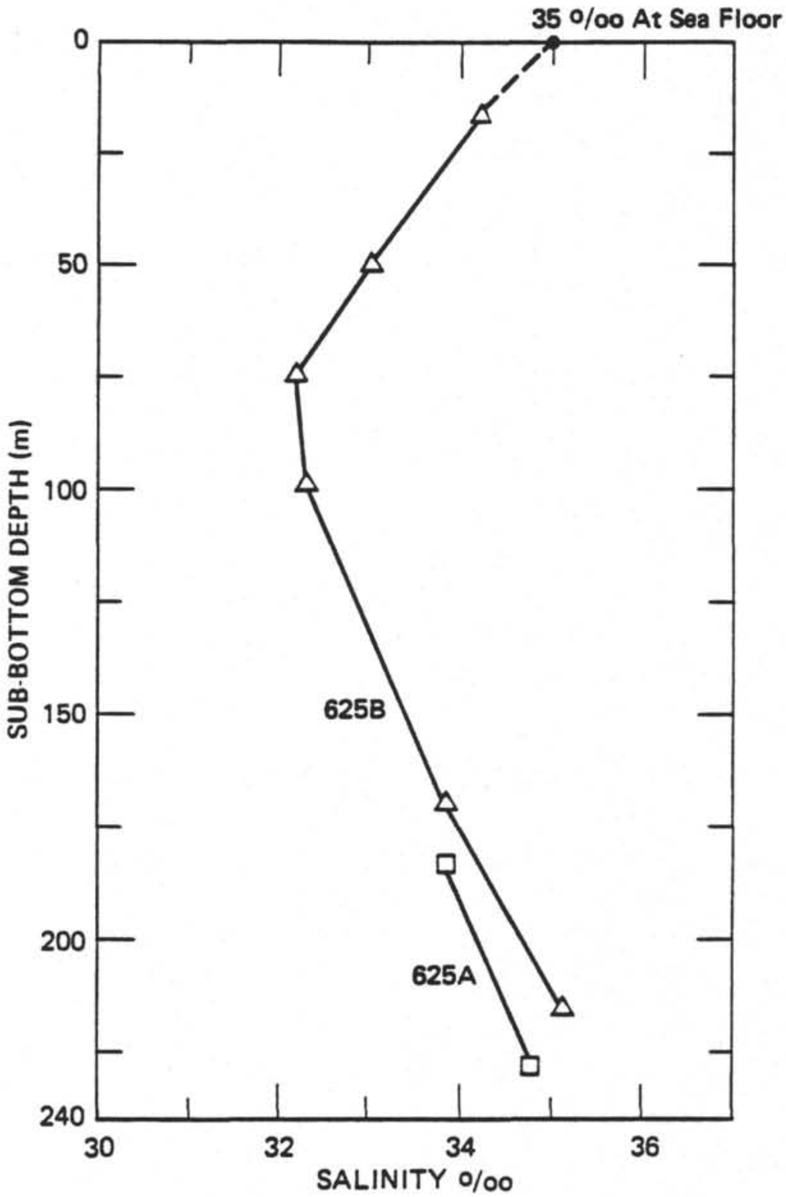

35 o/oo At Sea Floor
0
50
100
150
200
240
SUB-BOTTOM DEPTH (m)
625B
625A
30
32
34
36
SALINITY o/oo

Figure 11.

TABLE 1

HOLE 625A

CORE[1]	SUB-BOTTOM DEPTH TOP (m)	BOTTOM (m)	TOTAL RECOVERY (m)	PERCENT RECOVERED[2]
1R	0.0	2.8	2.8	100
2W	2.8	43.0	0.04	0
3W	43.0	91.0	3.8	40
4W	91.0	139.2	0.0	0
5W	139.2	187.2	8.3	87
6W	187.2	234.9	4.1	43

Penetration:	234.9 m
Number of cores:	6
Total length of cored section:	50.3 m
Total core recovered:	19.0 m
Core recovery:	37.8 %

1 R denotes rotary-drilled core. W denotes wash core. Wash cores are by convention placed at the bottom of the washed interval, though we recognize that material contained in those cores could come from any part of that interval.

2 Percent recovery was determined by dividing the length recovered by 9.5 meters (the total drilled interval at the bottom of each washed interval).

TABLE 2

HOLE 625B

CORES[1]	SUB-BOTTOM DEPTH TOP(m)	BOTTOM (m)	TOTAL RECOVERY (m)[2]	PERCENT RECOVERED
1H	0.0	7.9	7.9	100
2H	7.9	17.4	9.9	100
3H	17.4	26.9	7.2	57
4H	26.9	36.4	9.9	100
5H	36.4	40.9	4.7	103
6H	40.9	50.4	9.9	103
7H	50.4	58.5	8.8	108
8H	58.5	67.5	9.5	105
9H	67.5	75.4	8.3	109
10H	75.4	83.6	8.2	100
11H	83.6	92.2	8.5	98
12H	92.2	100.8	8.5	98
13H	100.8	109.5	8.1	92
14H	109.5	118.5	8.9	99
15H	118.5	127.3	8.6	98
16H	127.3	136.6	9.1	98
17H	136.6	145.8	9.2	99
18H	145.8	153.6	7.9	102
19H	153.6	162.1	8.1	95
20H	162.1	170.6	8.5	101
21H	170.6	179.3	8.6	97
22H	179.3	188.0	8.7	100
23H	188.0	197.1	8.9	99
24X	197.1	206.7	6.4	67
25X	206.7	216.3	9.6	100
26X	216.3	225.8	5.3	55
27X	225.8	235.2	5.7	61

Penetration:	235.2 m
Number of cores:	27
Total length of cored section:	235.2 m
Total core recovered:	222.9 m
Core recovery:	94.8 %

1 H refers to hydraulic piston cores.

2 By the method of hydraulic piston coring used on Leg 100, APC core recovery measured on deck was given to the driller as the amount to move the bit down before shooting the next core. Inaccuracy in measurement of core at this stage and failure to include core catcher length frequently resulted in subsequent percentage recovery calculations being greater than 100%.

TABLE 3

HOLE 625C

CORES[1]	SUB-BOTTOM DEPTH TOP (m)	BOTTOM (m)	TOTAL RECOVERY (m)	PERCENT RECOVERED
1H	5.0	15.0	10.0	99
2H	15.0	24.8	9.8	98
3H	24.8	34.7	9.9	98
4H	34.7	44.5	9.8	100

Penetration:	44.5 m
Number of cores:	4
Total length of cored section:	39.5 m
Total core recovered:	39.5 m
Core recovery:	100.0 %

1 H refers to hydraulic piston cores.

OPERATIONS REPORT

The ODP Operations and Engineering personnel aboard JOIDES Resolution for Leg 100 of the Ocean Drilling Program were as follows:

Operations Superintendent	Glen Foss
Operations Superintendent	Lamar Hayes
Supervisor of Drilling Operations	Archie McLerran
Special Tools Development Engineer	Pat Thompson
Operations	Steve Howard
Operations	Dave Huey
Operations	Claude Mabile
Operations	Stan Serocki
Operations	Mike Storms

LEG 100 OPERATIONS REPORT

Leg 100 was the shakedown cruise of the Ocean Drilling Program's research vessel JOIDES Resolution. This leg was informally divided into two parts, one from 11-18 January, 1985 and the other from 18-29 January, 1985. Transfer of personnel was accomplished via three helicopter flights on 18 January. A second helicopter personnel transfer occurred during Leg 100B after drilling Site 625. From an engineering/operations standpoint, the primary objectives of this shakedown cruise were crew training and rig floor compatibility.

Three holes were drilled at Site 625, the first site of Leg 100, during the period 12-21 January, 1985. Site 625 is located at 28°49.9'N, 87°09.6'W, in approximately 900 m water depth.

Hole 625A

An acoustic positioning beacon was deployed at Site 625 at 2210 hours on 12 January. The rotary coring system was then lowered to 890 meters water depth. This pipe trip began at 0815 hours on 15 January. Core 625A-1R, the first core of the Ocean Drilling Program, was recovered at 0250 hours on 16 January 1985. A total of six cores, separated by washed intervals, were taken from Hole 625A. Each core required from three to five hours recovery time. Coring operations were suspended at 1134.8 meters (234.9 mbsf), after shakedown of the rotary coring system was declared successful. To check the integrity of the hydraulic bit release, a go-devil was pumped down the drill pipe. The go-devil seated properly and the bit was released with 1250 psi pressure. The drill pipe was then tripped out of the hole. Hole 625A was terminated on 17 January 1985.

Hole 625B

Hole 625B was cored with the APC/XCB coring device. A non-magnetic drill collar was included in the APC/XCB bottom hole assembly (BHA). Twenty-three cores (625B-1H through 625B-23H) were collected with the advanced piston corer. Only one to one and a half hours were required to core and retrieve each core barrel. An Eastman-Whipstock Magnetic Multishot was deployed and successfully tested on cores 625B-22H and 625B-23H. The APC was replaced by the XCB coring system at 1097 m depth (197.1 mbsf). Four cores (Cores 625B-24X through 625B-27X) were retrieved with the XCB before reaching total depth at 1135.1 meters (235.2 mbsf). The drill string was then tripped out to the BHA.

The first helicopter transfer, involving a switch in members of both the ODP and SEDCO crews, occurred during drilling at Hole 625B.

Hole 625C

The weather had started deteriorating during recovery of the last three or four cores from Hole 625B, but the ship remained very stable and coring operations were not affected. The winds were gusting to 45 knots, causing 15-17 ft swells, when SEDCO decided that conditions were too bad to send personnel up in the derrick to set the drill collars back. 1515 hours to 2030 hours on 20 January were spent "waiting on weather" (WOW) while positioning over the beacon. Rather than lose more time while WOW, we decided to trip the same BHA back to the mud line for Hole 625C. Four cores (Cores 625C-1H to 625C-4H) were taken with the XCB from the mud line to 944.5 meters (44.5 mbsf). The weather had moderated sufficiently by 1030 hours on 21 January to resume normal operations. The pipe was pulled out of the hole (POOH) and the ship got underway to the second helicopter rendézvous area at 24°43'N, 79°49'W.

Drill Pipe Severing Test

While waiting for the helicopter to arrive with additional scientific personnel, crew training and equipment evaluation continued. With the ship positioned in approximately 500 meters of water, the drill pipe was tripped in to 364 meters below sealevel. Three joints of down-graded drill pipe were on the lower end of the drill string. A new drill pipe severing system consisting of 31 pellets of RDX explosives was lowered to 360 meters on the ODP logging line. The explosives were detonated, successfully severing the bottom joint of drill pipe. The drill pipe was tripped out and the second helicopter rendezvous completed. The ship got underway to a re-entry test site in the Florida Straits.

Re-entry Test Site (No Site Number)

A beacon was deployed at a re-entry test site in the Florida Straits at 0630 hours, 24 January 1985. This site was located at 25°43,71'N, 79°43.69'W, in 525 meters of water. A rotary core barrel (RCB) bottom hole assembly was made up for the jet-in test. Tripping-in operations were suspended with the bit 183 meters below the rig floor, when we began to experience severe drill string vibrations causing the drill pipe to slam into the aft side of the drill pipe guide shoe. These vibrations had started when the first stand of drill collars was lowered below the keel. The problem was attributed to a three to four knot current, and the decision was made to abandon this hole since these conditions could cause the loss of a BHA or damage to the drill pipe guide.

The ship was moved four miles south to target site BAH-1B (28°38'N, 79°39'W). We lowered a beacon suspended on the taut wire for temporary positioning to determine currents. One stand of drill collars was lowered below the keel, and we again felt the current-caused vibrations. The drill collar was raised above the keel and the taut wire and beacon retrieved.

The ship was then moved in dynamic mode to target site BAH-1C (25°24.6'N, 79°33'W). A 16-kHz beacon was deployed, but the ship was unable to position over the beacon due to erratic signal. The taut wire with a 15.5-kHz beacon was lowered and we experienced the same positioning problem, attributed to the beacon waving in the strong current. The 15.5-kHz beacon and taut wire were retrieved.

We decided to return to target site BAH-1A to position over the beacon that was deployed on 24 January. This was the only site of the three attempted at which the beacon provided a constant signal, and positioning was not a problem. Upon arrival at target site BAH-1A we had a good signal and positioning was no problem. However, due to the continuing strong currents we did not try to drill here. The vessel then proceeded to yet another re-entry test site located at $26^{O}22.7'N$, $79^{O}08.8'W$, at 1545 hours on 25 January 1985.

At this final re-entry test site, we deployed a beacon and tripped in with an RCB coring assembly. We recovered 6.7 meters of sediment in the first core (unnumbered), establishing the mud line at 525 meters below sealevel. A center bit was then deployed on the bottom of a core barrel to make a "jet-in test" for 16-inch casing from the mud line to 548 meters below sealevel (23 mbsf). The drill pipe was tripped out to assemble a re-entry cone, and a running tool was made up. The rotary table was set out and the re-entry cone run and landed on the moonpool doors so that the sonar reflectors could be installed. Two joints of 16-inch casing were made up and latched into the re-entry cone. The running tool was lowered into its housing and the system functions tested. The moonpool doors were then opened and the re-entry cone lowered until the bottom of the 16-inch casing was four meters above the mud line. The top drive was then picked up and the 16-inch casing washed down until the casing shoe was at 554 meters below sealevel (29 mbsf). The drill pipe was unlatched from the cone/casing assembly and raised until the 9-7/8 inch core bit was five meters above the re-entry cone.

The Mesotech Scanning Sonar tool was rigged up and run. The re-entry cone was located and re-entry achieved on the second attempt. The Mesotech Scanning Sonar tool was then retrieved and an EDO Western Sonar tool run. Re-entry was confirmed after scanning for half an hour. The following ten hours were used to check out the re-entry systems and maneuver the ship; no further cores were taken. The trip out of the hole was finished and the drill ship was underway at 2045 hours on the 28th of January 1985. Leg 100 ended when the ship arrived in Miami at 1045 hours, 29 January 1985.

Most of the rig floor equipment and all of the coring tools were new to the SEDCO crews, which caused some delays in drilling and tripping operations during the first few days of the shakedown. However, both crews had improved measurably by the end of Leg 100. A number of specific areas were identified where equipment changes and modifications to equipment are required before final acceptance of the drillship, but none of the modifications delayed the start of Leg 101.

OCEAN DRILLING PROGRAM
SITE SUMMARY
SHAKEDOWN - LEG 100

HOLE	LATITUDE	LONGITUDE	WATER DEPTH(m)	NUMBER CORES	METERS CORED	METERS RECRVD	PERCENT RECRVD	METERS DRILLED	TOTAL PENETRA.
625A	28°49.9N	87°09.6W	899.9	6	50.3	19.0	37.8	184.6	234.9
625B	28°49.9N	87°09.6W	899.9	27	235.2	222.9	94.8		235.2
625C	28°49.9N	87°09.6W	900.0	4	39.5	39.5	100		39.5
TOTAL				37	325.0	281.4	86.6	184.6	509.6

SPECIAL TOOLS REPORT

The special tools effort during the second half of Leg 100, the shakedown cruise of JOIDES Resolution, was aimed at:

(1) attempting to successfully run all of the general coring tools and associated equipment;

(2) familiarizing the operations/engineering staff with shipboard capabilities;

(3) training the rig crew members on the procedures and techniques required in using and maintaining the coring equipment; and,

(4) evaluating the new equipment which has either been changed or introduced to the coring operations during the break between the last cruise of Glomar Challenger and the shakedown cruise.

The operations/engineering staff also spent a significant amount of time checking out the general state of the coring equipment aboard the vessel, identifying missing parts, and doing modification work where necessary to keep the rig floor efforts from being delayed or handicapped.

General Equipment, Parts Inventory, Tool Shop

The new coring equipment tool shop is excellent, providing quick access to the many coring tools and parts needed to support rig floor coring operations. The shop is ideal for storage of about 60-70% of the spare parts which must be kept on hand. During the second half of the shakedown cruise, an effort was made to coordinate the computer inventory of these parts with actual inventory on board. Several significant discrepancies were found during this operation, most notably a quality control problem with the XCB cutter shoes recently fabricated in College Station.

Advanced Piston Corer (APC)

The latest version of the Hydraulic Piston Corer (APC Mod. II) was introduced during the shakedown cruise. Core quality varied from poor to good. We observed excessive flow-in in many of the cores, especially those with full-stroke penetration. There was also an abnormally high number of liner seal sub O-rings found in the cores (perhaps 75% of the cores had one or more O-ring). Both of these problems were attributed in part to balky flapper core catchers. The flapper core catchers are scheduled for a complete design review in the near future. The stock on hand will be inspected and modified as required during Leg 101 to ensure that the ones we have will give the best possible results.

Rig floor handling of the APC was very good. No problems with general piston coring capabilities were identified. The heave compensator cannot currently be used with the APC, although for reasons of core quality during poor weather as well as positive core depth control this would be highly desirable. A review of this subject is necessary to indicate the best ways to upgrade our capabilities.

Extended Core Barrel (XCB)

The latest version of the Extended Core Barrel (XCB-101C) was deployed for the first time on the second half of the shakedown cruise. A number of design improvements have been incorporated in the tool since it was last used during DSDP. The XCB performed without any difficulties during the four or five times it was deployed at Hole 625B. All of the new features appeared to function as designed. Core quality was up to our expectations for XCB coring.

APC Core Orientation

The all-new core orientation system based around the Eastman-Whipstock Magnetic Multishot tool was deployed successfully on Leg 100. Rigging up the non-magnetic sinker bar assembly and pressure case proved to be difficult. Both pressure cases required cleaning of the O-ring seal surfaces before being run, but once deployed performed perfectly. The pressure case and sinker bar assembly was first run empty to determine watertight integrity, then two oriented cores were taken. The films from these two deployments at Hole 625B were excellent; interpretation of the films to determine the shot containing the actual orientation of interest proved to be simply a matter of looking for the only clear photos.

Correspondence of the measured orientation azimuth with paleomagnetic data from the cores was inconclusive due to the amount of core disturbance and the relatively weak magnetic quality of these particular sediments.

The paleomagnetist did, however, detect enough data to suggest that our measurements appeared to be 180° out of phase with the slight indications he was getting. The mechanical alignment of the sinker bar assembly was inspected and a 180° error was indeed identified.

The orientation system was reprised on the next hole for two more cores higher in the sedimentary column (Cores 625C-3H and 625C-4H). Once again, the results were mechanically and photographically excellent but did not correlate well with actual core magnetic data. The cores were disturbed more than normal (possibly due to the flapper core catchers mentioned earlier), and it appeared that the core may have rotated into the liner rather than entering straight.

The minor shortcomings of the present pressure case design were evaluated. A redesign will be initiated immediately so that additional equipment can be ordered with the improvements already incorporated.

TECHNICAL REPORT

The ODP Technical and Logistics personnel aboard JOIDES Resolution for Leg 100 of the Ocean Drilling Program were as follows:

Manager of Logistics and Technical Support	Bob Olivas
Laboratory Officer	Dennis Graham
Laboratory Officer	Ted "Gus" Gustafson
Laboratory Officer	Burney Hamlin
Curatorial Technician	Steve Asquith
Curatorial Technician	Jerry Bode
Curatorial Technician	Bob Hayman
Curatorial Technician	Diana Stockdale
Supervisor of Computer Services	Jack Foster
Shipboard System Manager	Daniel Bontempo
Shipboard System Manager	John Eastlund
Shipboard System Manager	William Meyer
Chemistry Technician	Tamara Frank
Chemistry Technician	Bradley Julson
Chemistry Technician	Gail Peretsman
Chemistry Technician	Katie Sigler
Electronics Technician	Randy Current
Electronics Technician	Dan Larson
Electronics Technician	Dwight Mossman
Electronics Technician	Mike Reitmeyer
Yeoperson	Wendy Autio
Yeoperson	Michiko Hitchcox
Public Information - ODP	Karen Riedel

Photographer	John Beck
Photographer	Roy Davis
Photographer	Kevin DeMauret
Marine Technician	Larry Bernstein
Marine Technician	Mark Dobday
Marine Technician	Bettina Domeyer
Marine Technician	Jenny Glasser
Marine Technician	Henrike Groschel
Marine Technician	Skip Hutton
Marine Technician	Jessy Jones
Marine Technician	Bill Mills
Marine Technician	Matt Mefferd
Marine Technician	Mark "Trapper" Neschleba
Marine Technician	Joe Powers
Marine Technician	Kevin Rogers
Marine Technician	Christian Segade
Marine Technician	Don Sims
Marine Technician	John Tauxe
Marine Technician	John Weisbruch
Underway Geophysics	Ken Griffiths
Underway Geophysics	Bill Robinson
Underway Geophysics	Mark Wiederspahn

INTRODUCTION

The primary technical goals of the shakedown cruise were these:

(1) to verify that all drilling, navigation, drill pipe severing, logging winch, laboratory and geophysical systems are operational,

(2) to familiarize the scientists and technicians with laboratory equipment, core handling, and sampling procedures,

(3) to familiarize the SEDCO drilling crews with ODP equipment and procedures,

(4) to acquire instrumentation data on the ship's systems,

(5) to acquire cores from an area of scientific interest, and

(6) to familiarize ODP and SEDCO personnel with the drilling program.

On January 11, 1985, JOIDES Resolution sailed down the Pascagoula shipping channel to begin Leg 100. Leg 100 was divided into Parts A and B, with a mid-cruise personnel transfer by helicopter on January 19. Three holes were drilled, with 281.3 meters of core recovered. The leg ended January 29 in Miami, Florida.

FANTAIL

After leaving Pascagoula, the seismic gear was rigged in case a site survey was needed. One 80-cubic-inch water gun was readied but initial testing was postponed. Underway from Site 625 to Miami, a magnetometer, streamer, and two 80-cubic-inch water guns were deployed. Fantail-to-bridge communication was accomplished by walkie-talkie. Most replacement parts were stored in the fantail cabinet while bulky spares and cable were put in the lower sack storage area.

UNDERWAY GEOPHYSICS LABORATORY

Most equipment in the lab was checked out and functioned well on Leg 100. The 12 kHz transducer was installed but it is almost unusable at speeds greater than 4 or 5 knots. We have temporarily patched into the ship's 12 kHz transducer. The 3.5 kHz record was satisfactory especially when using the correlator at speeds less than 10 knots.

The dedicated regulated power for the lab was stable except when steaming at high speeds and during certain drilling operations. Then, distortion on the 60 Hz power line sometimes caused computer programs to crash.

Satellite navigation data are not available in the lab because RS-232 and video interface boards were not in the ship's Satellite Navigation system. We intend to obtain these boards from the Challenger system (similar to SEDCO/BP 471's) presently in storage. Software will be written soon to log Satellite Navigation and other data in the tape header.

RE-ENTRY SYSTEM

Both re-entry systems were installed and run on Leg 100. The Mesotech system was run first, using a 2-1/2" transducer, and two re-entries were made. To check the range of the tool, we offset the ship 300 feet from the cone and had a strong return all the way to the end of the deck unit's longest range scale (100 meters). This tool has been returned to Mesotech to have the sweep speed increased; it should be ready for Leg 102, with

Mesotech's standard 3" transducer. Except for the slow sweep speed, the tool's excellent resolution and range, color imaging, multiple display formats, self-calibrating capabilities, and ease of handling and operation left us very impressed and looking forward to our next chance to use it on Leg 102.

The EDO re-entry tool was also run, and operated satisfactorily. Multiple re-entries were made with it as well. The global high energy drill pipe severing tool was installed and tested. The Comprobe cable measuring system was installed and used for both the re-entry and shooting evolutions. The logging cable has been routed via the winch cab to the underway geophysics lab, three locations in the downhole logging lab, and the dynamic positioning room.

PHYSICAL PROPERTIES LABORATORY

The physical properties lab was equipped with the Hamilton frame velocimeter, Wykeham Farrance vane, a WHOI supplied thermal conductivity unit, a pycnometer, an O-haus triple beam balance, a convection oven, desiccator, and GRAPE unit. All equipment worked well after minor problems were identified and resolved.

Location of equipment was changed from original plans due to limitations of counter space. Work still to be done for this lab consists of setting up a balance system like that in the chemistry lab, with a link to the DACU in that lab. The thermal conductivity bench needs a short rack on which to store samples until they reach thermal equilibrium.

PALEOMAGNETICS LABORATORY

The paleomagnetics laboratory equipment, with the exception of the cryogenic magnetometer and accessories, was installed during the Pascagoula yard period. A significant amount of time during Leg 100 was devoted to testing the equipment, interfacing the equipment with the computers and writing software to facilitate the use of the equipment.

CURATORIAL REPORT

Very little core was recovered from Part A of the shakedown cruise. During Part B, core recovery was better but not as fast as is anticipated during normal operations. Cores were not split until physical properties analyses were completed, which in turn was dependent upon the rate of core description. As this was a training cruise for the staff scientists, describing the cores went very slowly. Sampling was always finished well ahead of the next available split core, so our procedures were not put to a test of time.

From the layout of the lab certain problems are anticipated. One is the handling of the shipboard and shorebased sampling programs at separate stations, making the curatorial tech primarily an overseer instead of a participant while the scientists do the bulk of sampling and data entry operations. This fact should be made clear to the scientists both in the shipboard handbook and at the beginning of the cruise to prevent possible conflicts. Another problem may be the boxing and stowing of the working halves of cores. If there are multiple holes at one site the present rack space will probably fill and require emptying before leaving the site.

Boxing the working halves and moving the boxes may cause some inconvenience to other workers in the core lab.

By monitoring the flow of cores through the core lab, we were able to eliminate or modify obvious problems. The curatorial technicians reversed a core rack so that the orientation of the cores would remain constant (top=aft) from time of being cut into sections until being boxed for storage. Of importance is a directive to split sediment cores from the top down to alleviate possible problems with contamination. This means the usual orientation will have to be reversed in the splitting room. The technical staff agreed that HPC cores will be cut such that the double line on the core liner will be on the working half and the single line on the archive half.

The sampling software (SAM) was not ready for use, but the current version was tested. Written documentation will make the program easier for first-time users. Overall, SAM is a good idea and once the bugs are worked out it will greatly facilitate data collection.

The problem arose of how to document core catcher samples. Paleontologists take a core catcher sample to date the core, but according to the ODP Curator, the samples need not be documented.

Another problem concerned the Interstitial Water (IW) samples. It was decided that all IW samples that are not part of a request will be shipped to the Gulf Coast Repository. Leg 100 IW samples are to be kept aboard until after Leg 101. The squeezed water is not a sample taken but a sample generated, and thus should not be part of the sample record until it is distributed to shipboard or shorebased scientists. All material generated from the IW whole round samples will have "IW" in the code. The Chemist will maintain a separate inventory of processed IW samples, poly tubes, and glass ampoules. The Curatorial Tech will cross check the inventory with the core log. It is the responsibility of the shorebased curatorial staff to maintain the inventory, keeping track of what is available to the scientific community and adjusting the inventory as samples are distributed.

CHEMISTRY LABORATORY

During the shakedown cruise, the Chemists set up and tested the major analytical systems, wrote computer software, resolved logistical problems, and ran standards and samples on the new equipment. The equipment was brought aboard in Pascagoula and set up after the ship left port. All systems were functional by the end of the cruise.

The main problems that slowed the set-up time had to do with power, water, and air conditioning. The air conditioning system must be balanced with the fume hoods: if the hoods are turned off when not in use, the room quickly overheats. Initially, the water was so bad on the ship that a pre-prefilter was installed ahead of the prefilter in the lab's water purification system. Regulated power was not available during much of the cruise, but must be seen as a necessity. Most of the instruments are point counters and any surge in power will ruin an analysis. If power surges kick off the hydrogen generators or the gas chromatographs, our ability to monitor hydrocarbons would be jeopardized. We need a reliable regulated power source.

X-RAY LABORATORY

Thirty percent of the equipment ordered for the X-ray laboratory has been delivered and installed; this includes the XRD system and most of the sample preparation equipment. Equipment still outstanding is the XRF system, Haskris water chiller and Claisse Fluxer.

During the yard period in Pascagoula, the XRD system was installed but was shut down until we were at sea. We hoped during the shakedown to accomplish two objectives: to become familiar with the system, and to prepare mineral standards for developing our own customized data base. We were unable to pursue the first objective because shortly after leaving port the goniometer controller began to malfunction. By manually readjusting the goniometer each time we ran a few samples and generated some diffraction data. We ran only a few samples because of the possibility of damage to the X-ray tube from fluctuating voltage after the loss of regulated power. We completed grinding our mineral standards. On Legs 101 and 102 we hope to generate a data base.

THIN SECTION LABORATORY

An automated thin section production system with polishing system and vacuum impregnation unit was set up in the lab, as well as a lap wheel, thin section grinder, and precision saw. Zeiss microscopes were set up at stations outside the paleontology sample preparation area and the thin section lab. Technicians on both parts of the shakedown cruise made thin sections from materials brought aboard.

The ISI scanning electron microscope performed poorly after installation. Replacement electronic components were sent out at mid-cruise but the problems remained unresolved. A technical representative was scheduled for the Miami port call to repair the unit.

COMPUTER SERVICES

The VAX computer system has performed flawlessly, even with the power problems. All the installed work stations had diagnostic tests run on them. Several Pro-350's had problems but we had adequate spares to keep them going.

User training was performed both on an individual and group basis. Application software developed during Leg 100 included CORELOG, CORE SAMPLING (preview), GRAPE, VIDEO, PALEO, and THERMAL COND. Debugging was done on site as operational functions were refined.

No reliable source of regulated power is the biggest problem for the Computer Services Group. Even with our own power conditioning system in addition to the "regulated" power supplied to the lab stack, we are not sufficiently isolated from severe voltage fluctuations or spikes. The generator strained whenever the draw works or thrusters were active. The power regulator for the lab stack was down the second day at sea and still had not been repaired by the end of the leg.

Inadequate air circulation in the machine room allowed the average temperature to rise to 75 F. The main air conditioning blower seems to die at irregular intervals. The auxiliary air conditioning is very noisy and takes up needed space in the user's room. A remote temperature sensor was connected to the power conditioning system to shut down the computer in the event of extreme heat.

The Aeroflex vibration isolators work well for the VAX system. The ship seems stable enough so that the microcomputers will not need any additional isolation. All equipment has been secured for rough weather.

YEOPERSON'S REPORT

All library books were stamped and placed on the shelves. Both library and paleontology lab books were inventoried and the library database was updated. The two Xerox copiers, one in library and the other on the new main deck, functioned well during the shakedown cruise.

SCIENCE LOUNGE

Only part of the equipment arrived in time for the cruise. The color monitors were mounted and a VCR, borrowed from the photographic lab, was used to play movie tapes. The remainder of the components should be in Miami for Leg 101 installation.

SECOND LOOK LABORATORY

As the leg progressed, the consumables that filled the lab were stored elsewhere. Some laboratory equipment (a set of drawers and a computer terminal) was installed. This facility will make an ideal overflow lab on specialized legs.

PHOTO LABORATORY

This lab proved to be able to provide advanced photographic services aboard ship, while managing large volumes of work and at the same time maintaining high quality production. Most of the equipment is functioning well and the work areas are adequate.

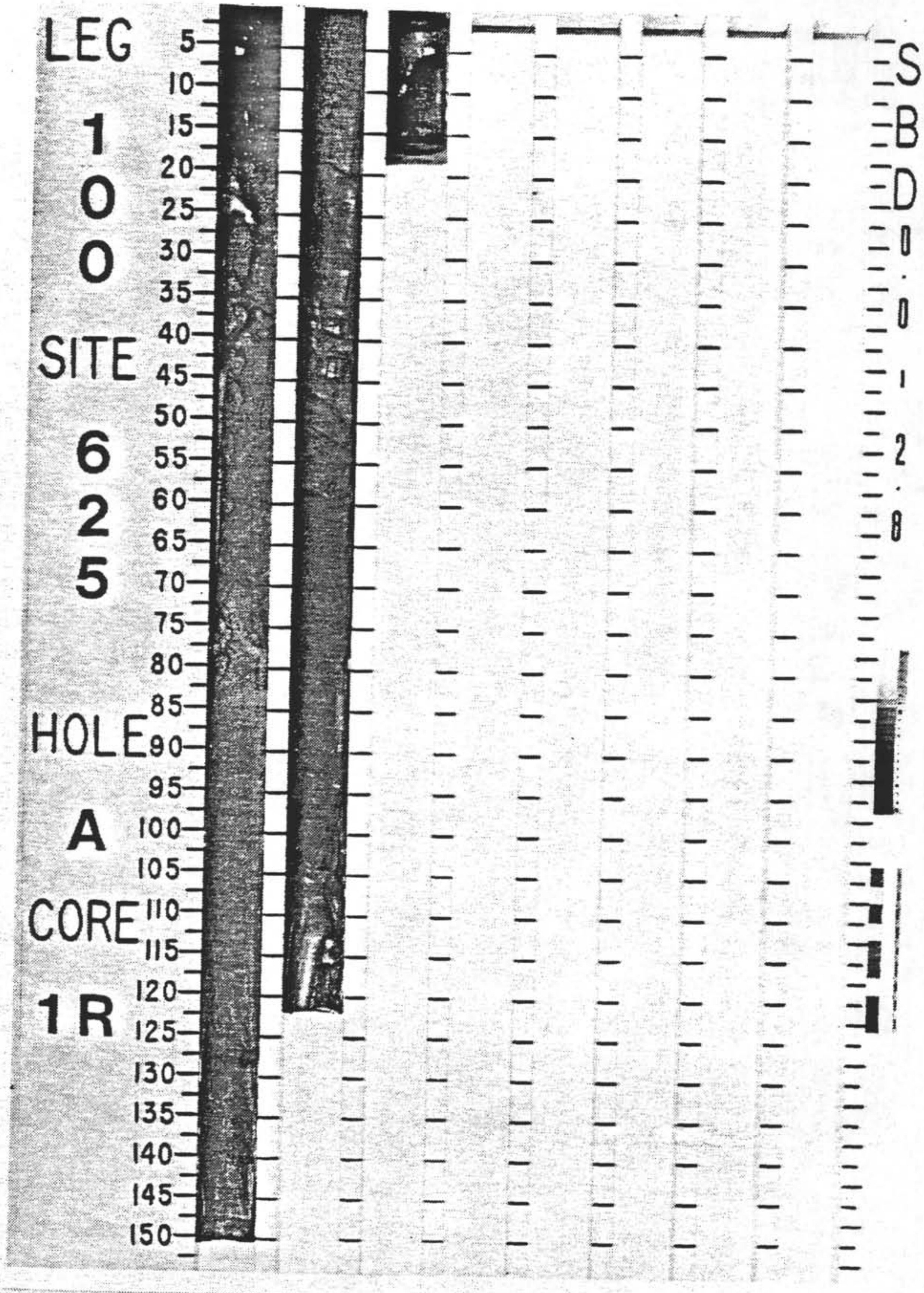
Problem areas in this lab concern communications, air conditioning, and water supply. The lab lacks a telephone extension and P.A. speaker. The air conditioning in the hold deck storage is inadequate for the chemicals stored there. Finally, it is imperative that the ship's water flow not be interrupted, since some of the equipment requires chilled water for operation.

REEFER CORE STORAGE AND FREEZER

We experienced no problems with these units. Stores requiring refrigeration and some bulk stores were kept here for convenience. A caged area was built for the items needing refrigeration. Shelves for the walk-in freezer were delayed so the few frozen samples were boxed. The refrigerated and monitored storage for flammables was down the entire cruise.

STORES

The storage areas proved satisfactory for holding an estimated year's supply of laboratory and office consumables. Air volume to the area dropped during the leg, allowing temperatures to rise; if the problem is not resolved, bulk supplies such as photo chemicals will have to be refrigerated. The casing hold was decked with rough 3 x 12 oak and proved to be a convenient staging and storage area for the remaining bulk supplies. Plans were initiated to put in a second story level in the casing hold for bulk consumables, stores, a work shop, and a gym.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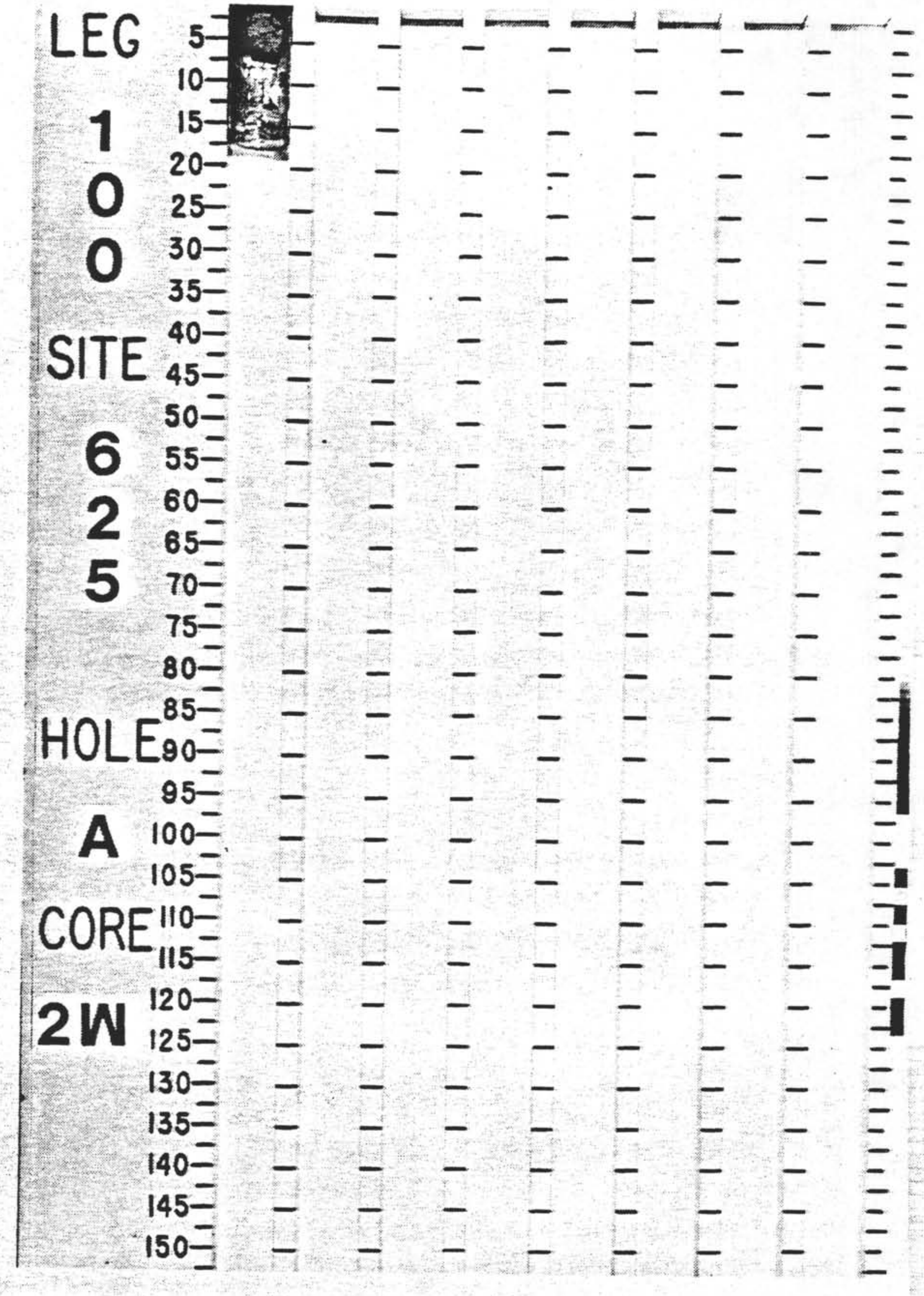
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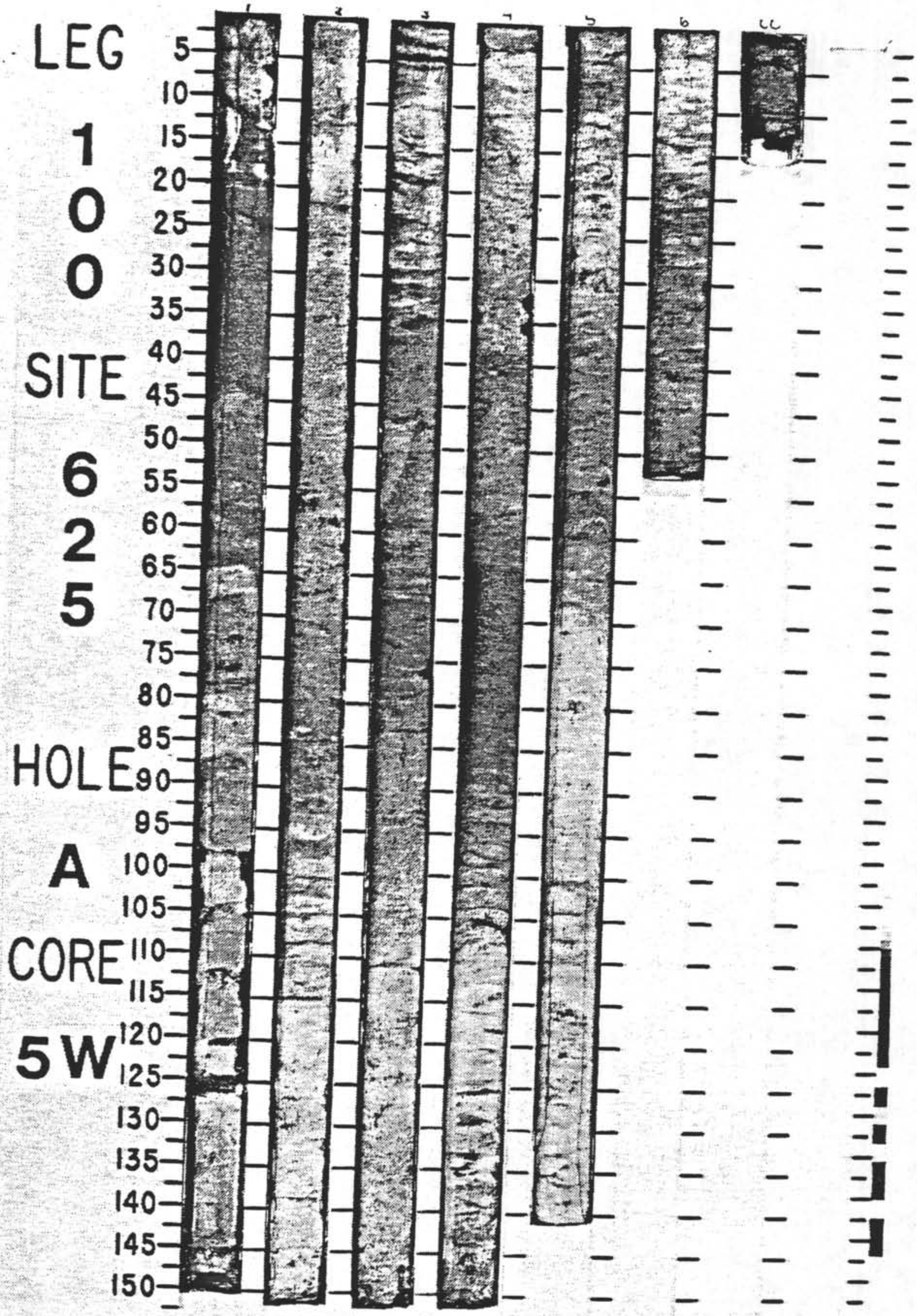
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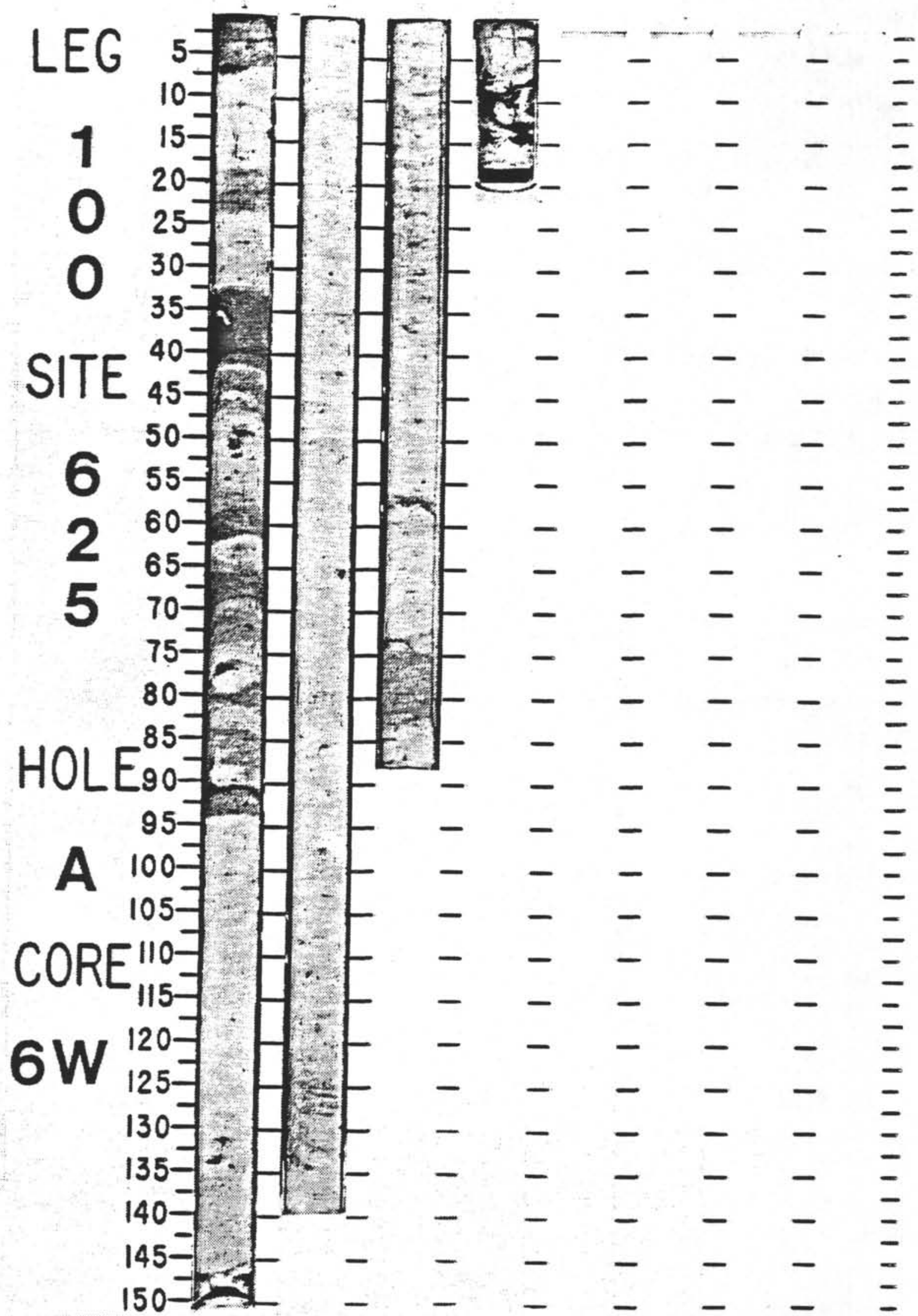
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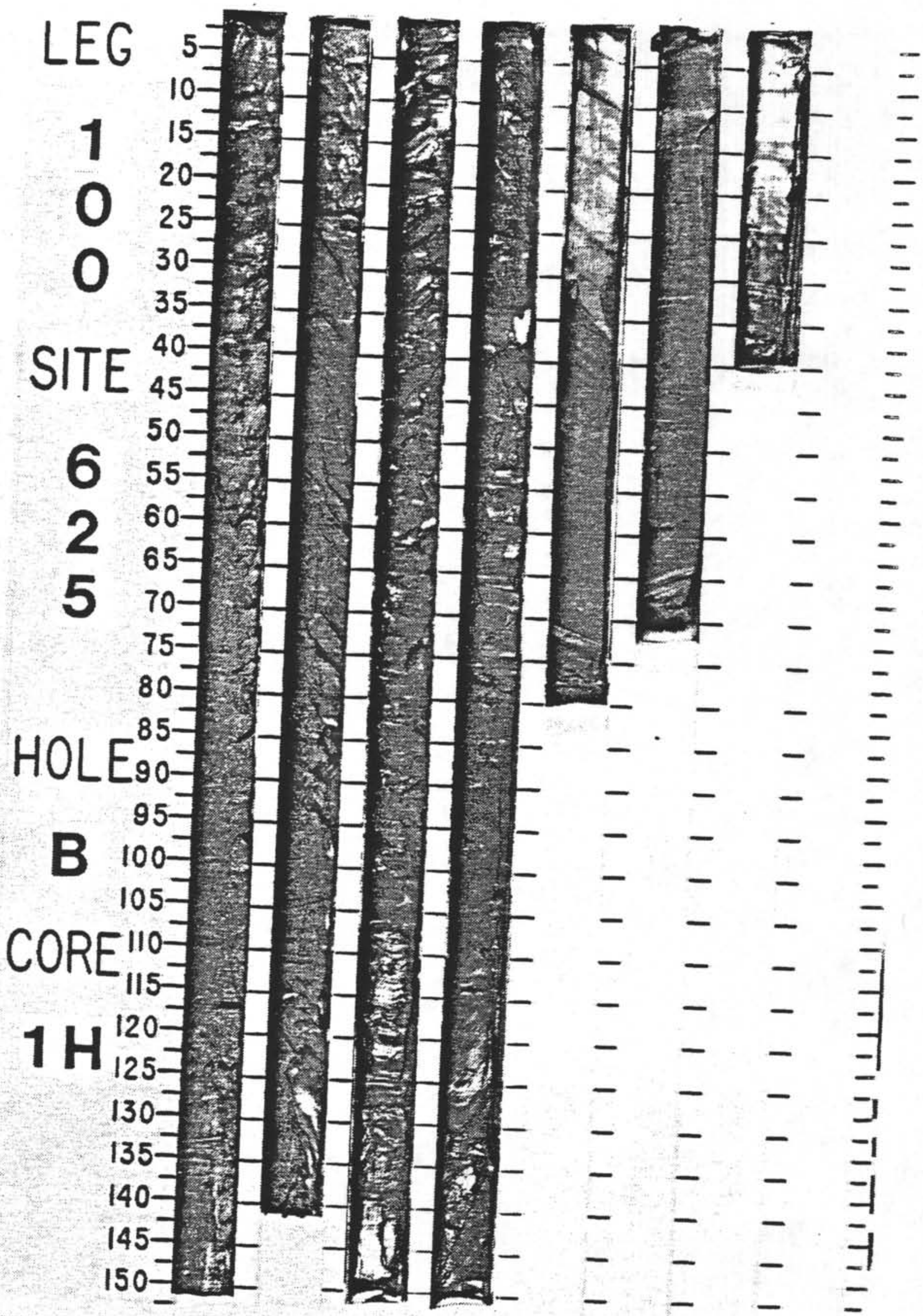
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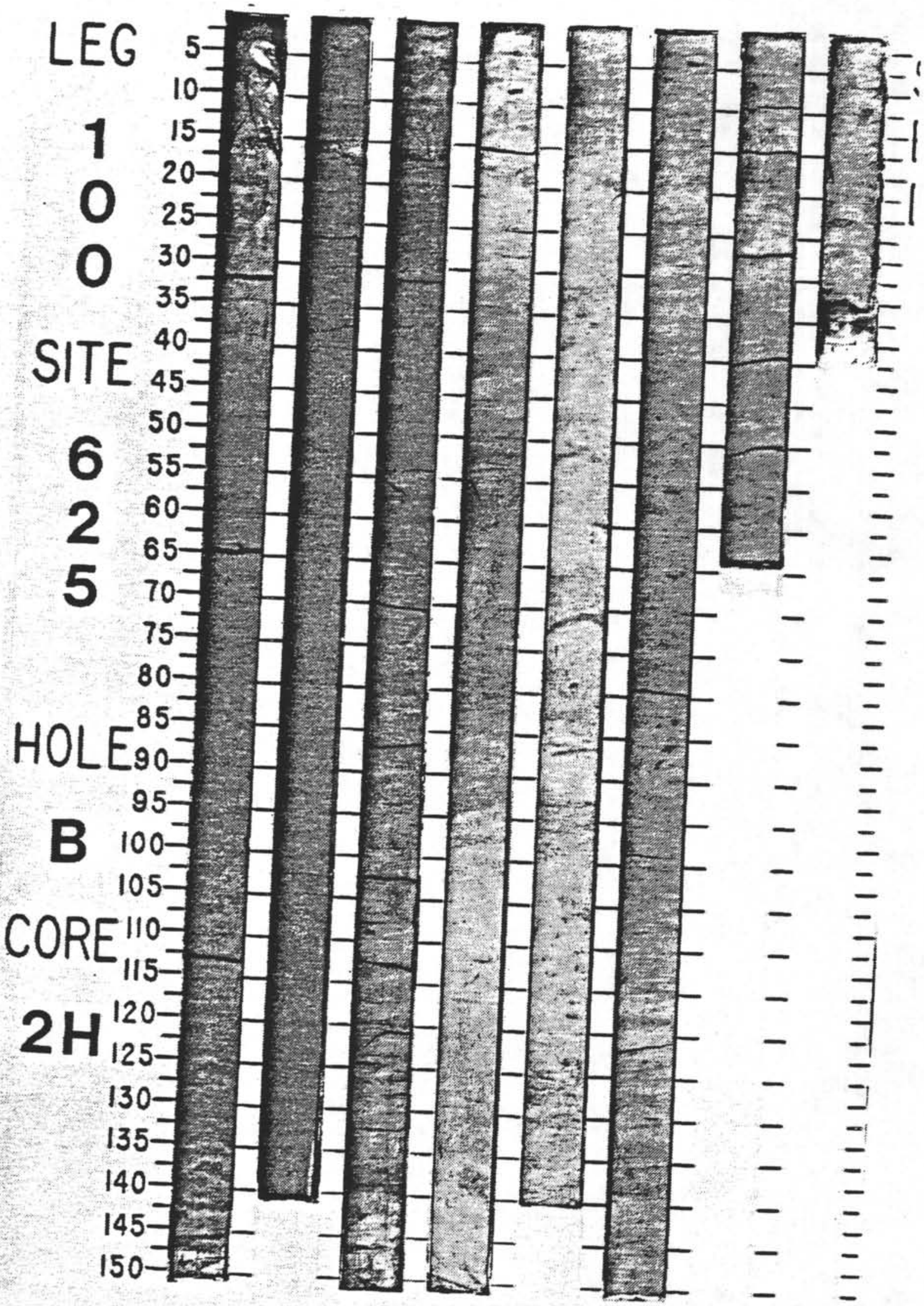
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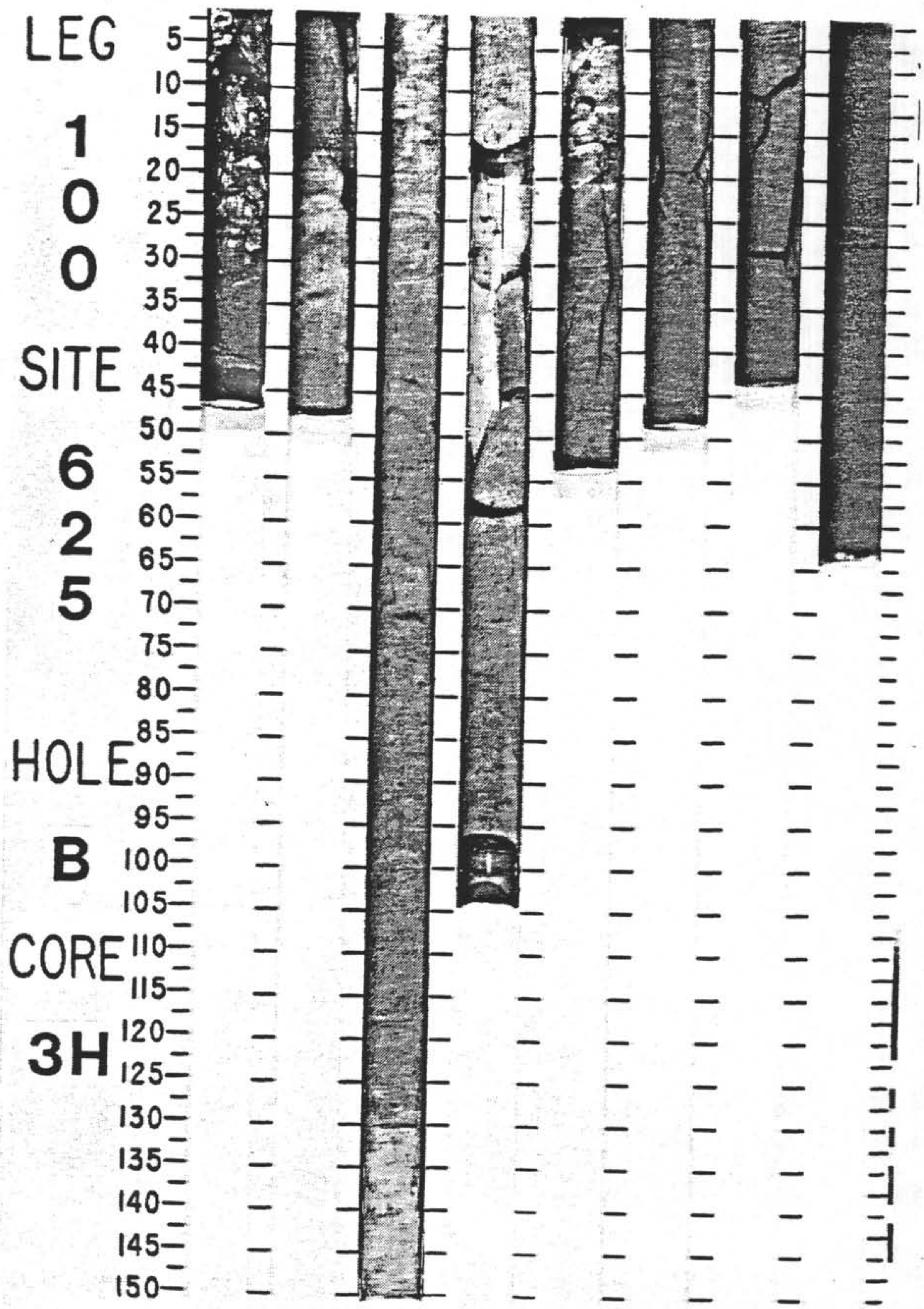
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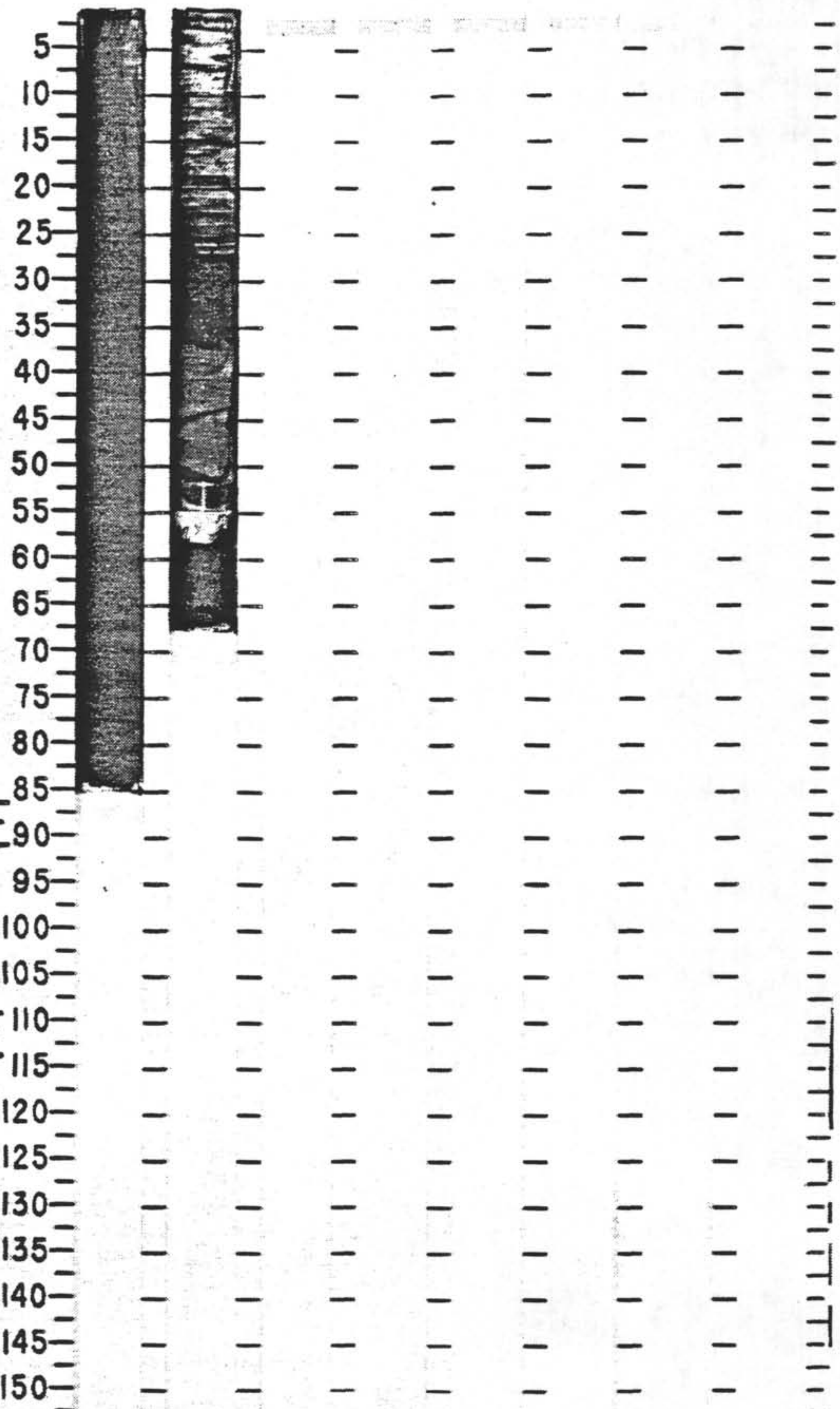
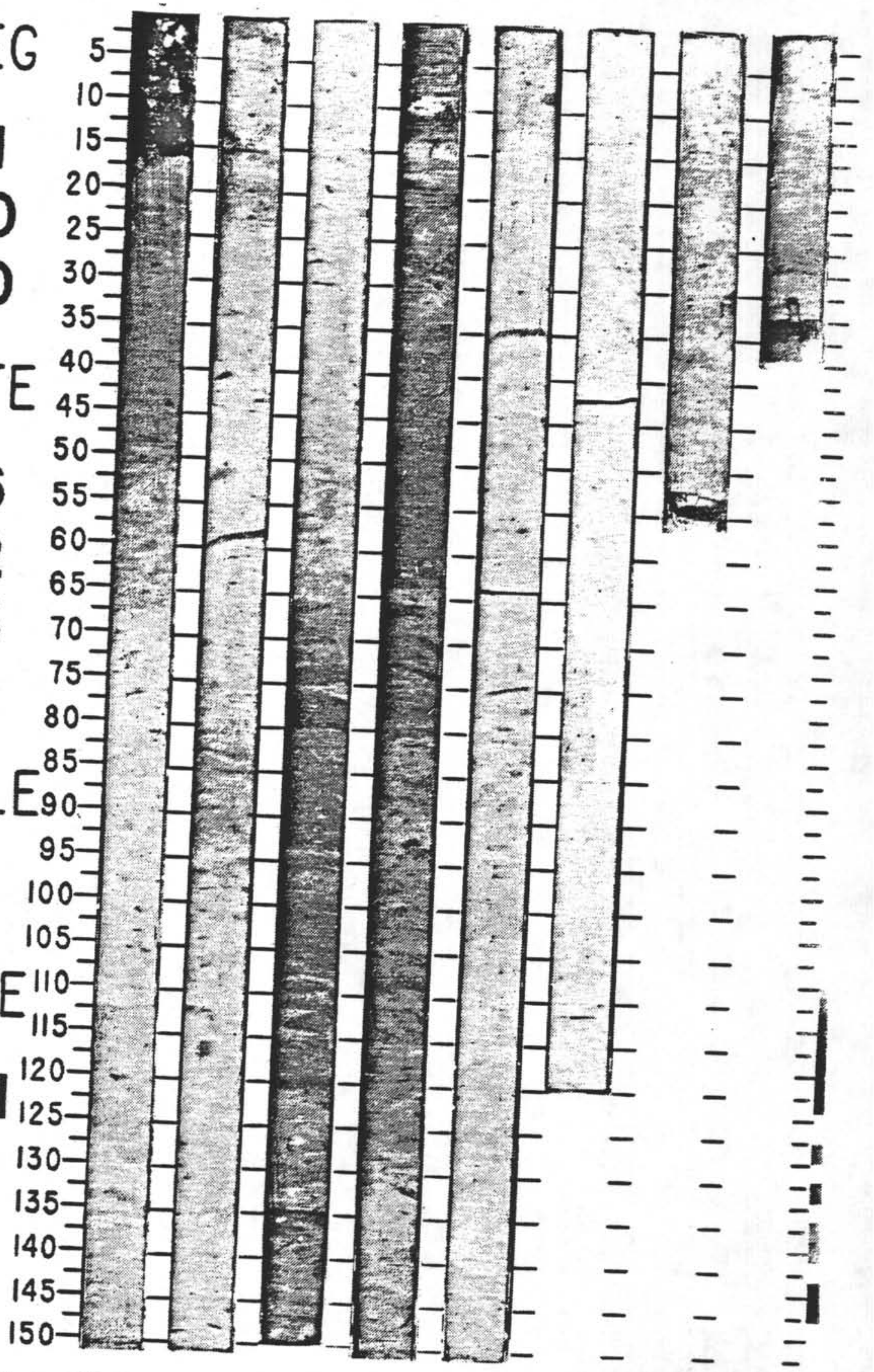
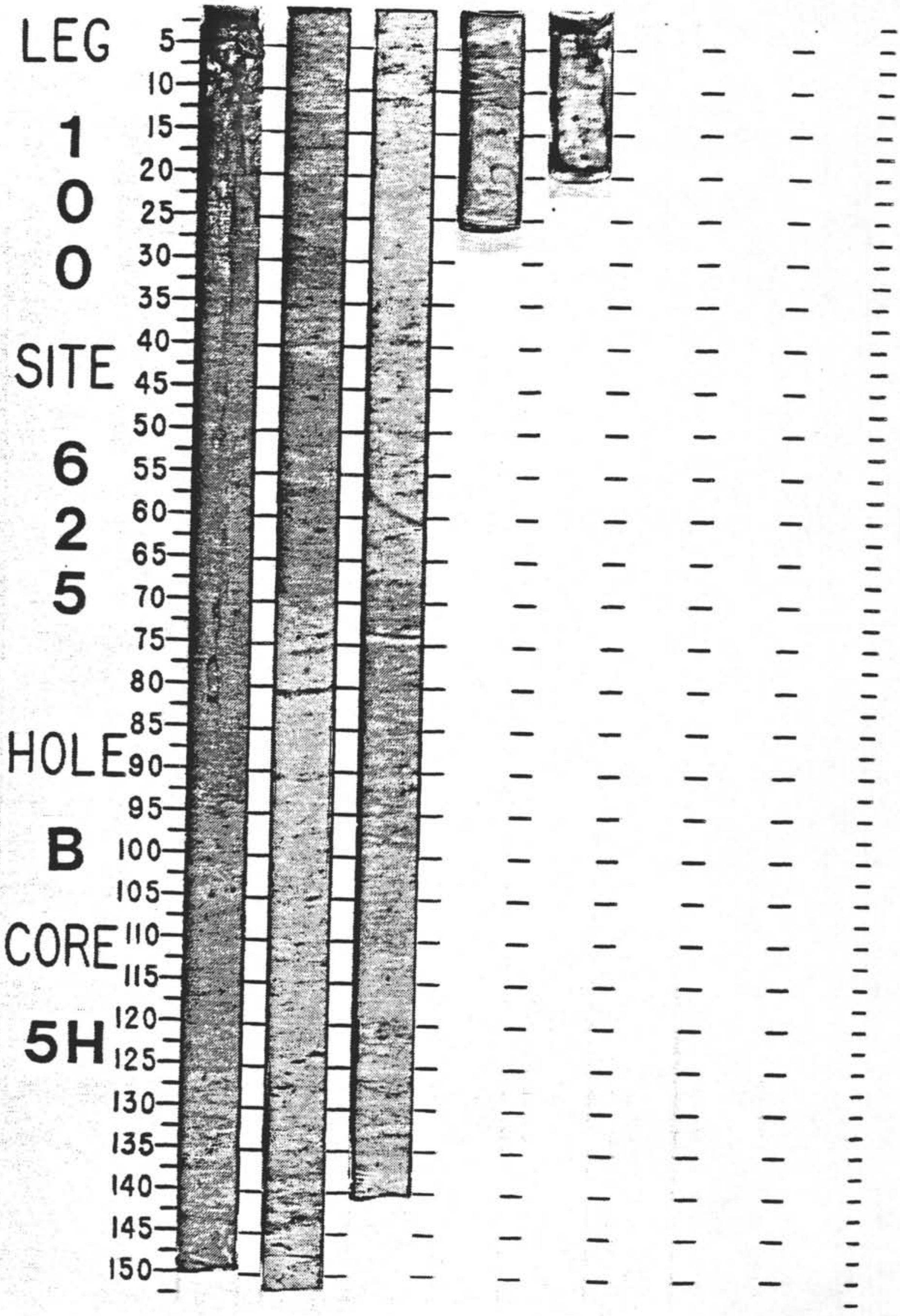
HOLE B

CORE 3H



LEG 100 SITE 625 HOLE B CORE 4H

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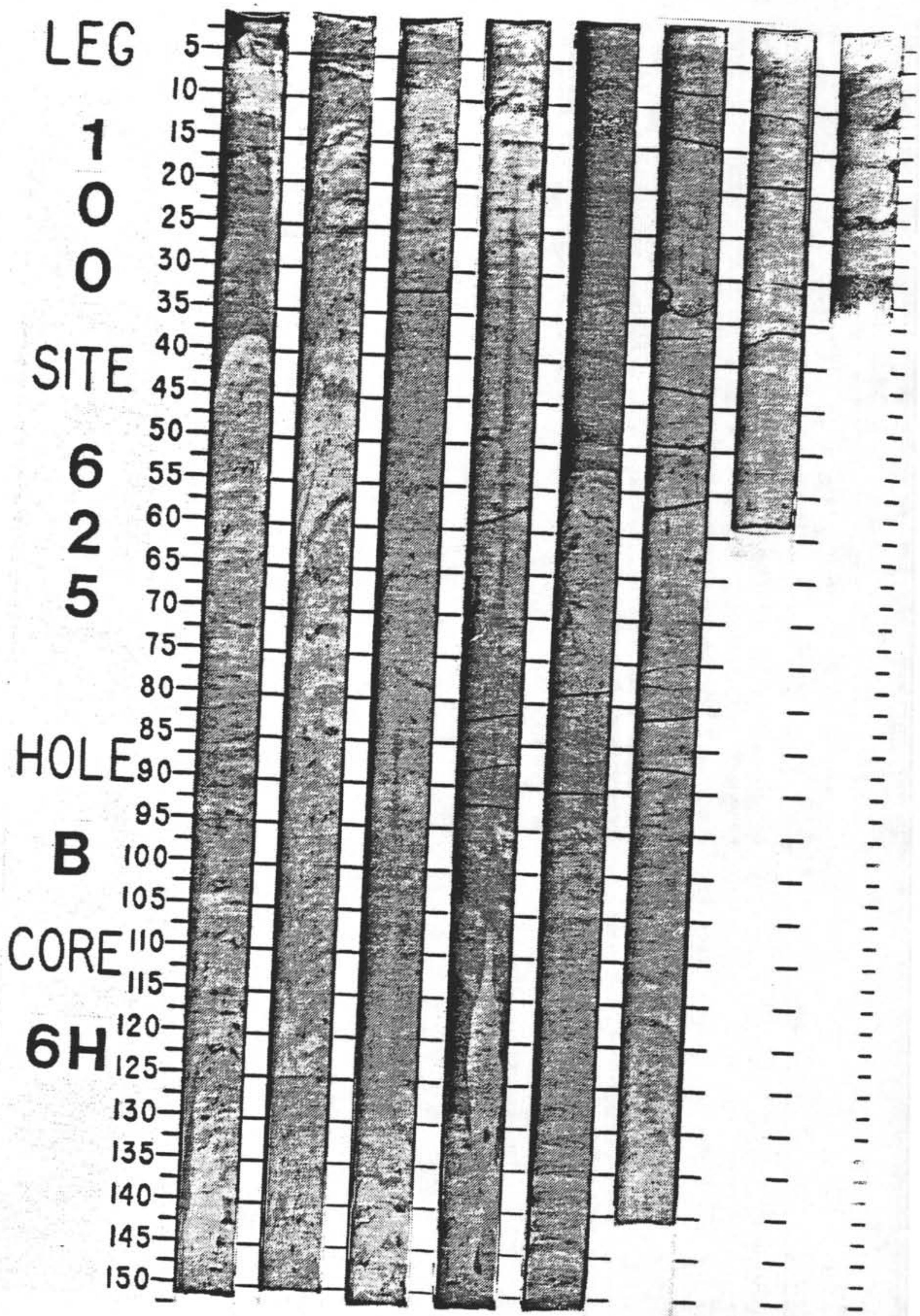
SITE
625
HOLE
B
CORE
5H



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HOLE
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CORE
6H
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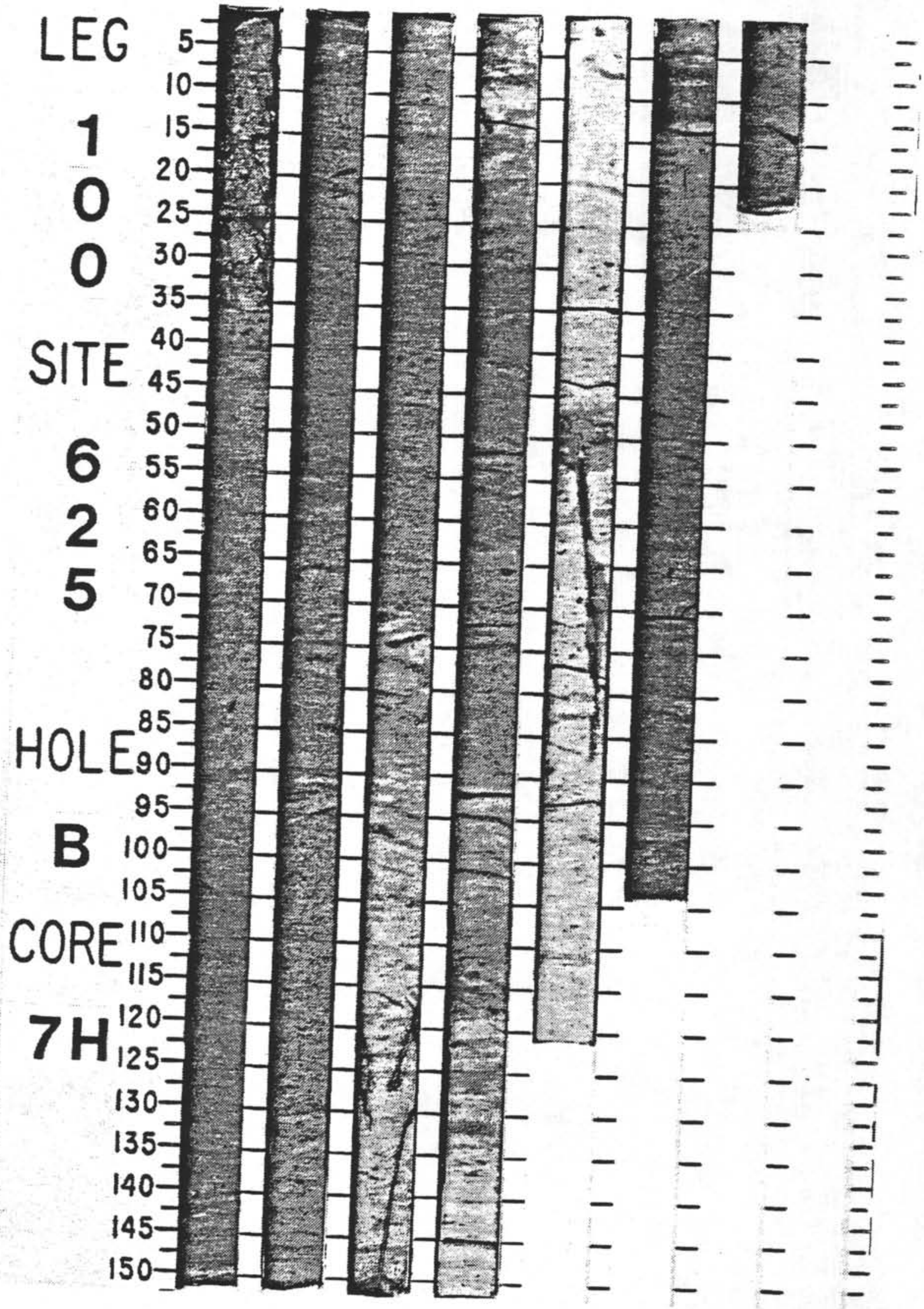

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SITE
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HOLE
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CORE
7H
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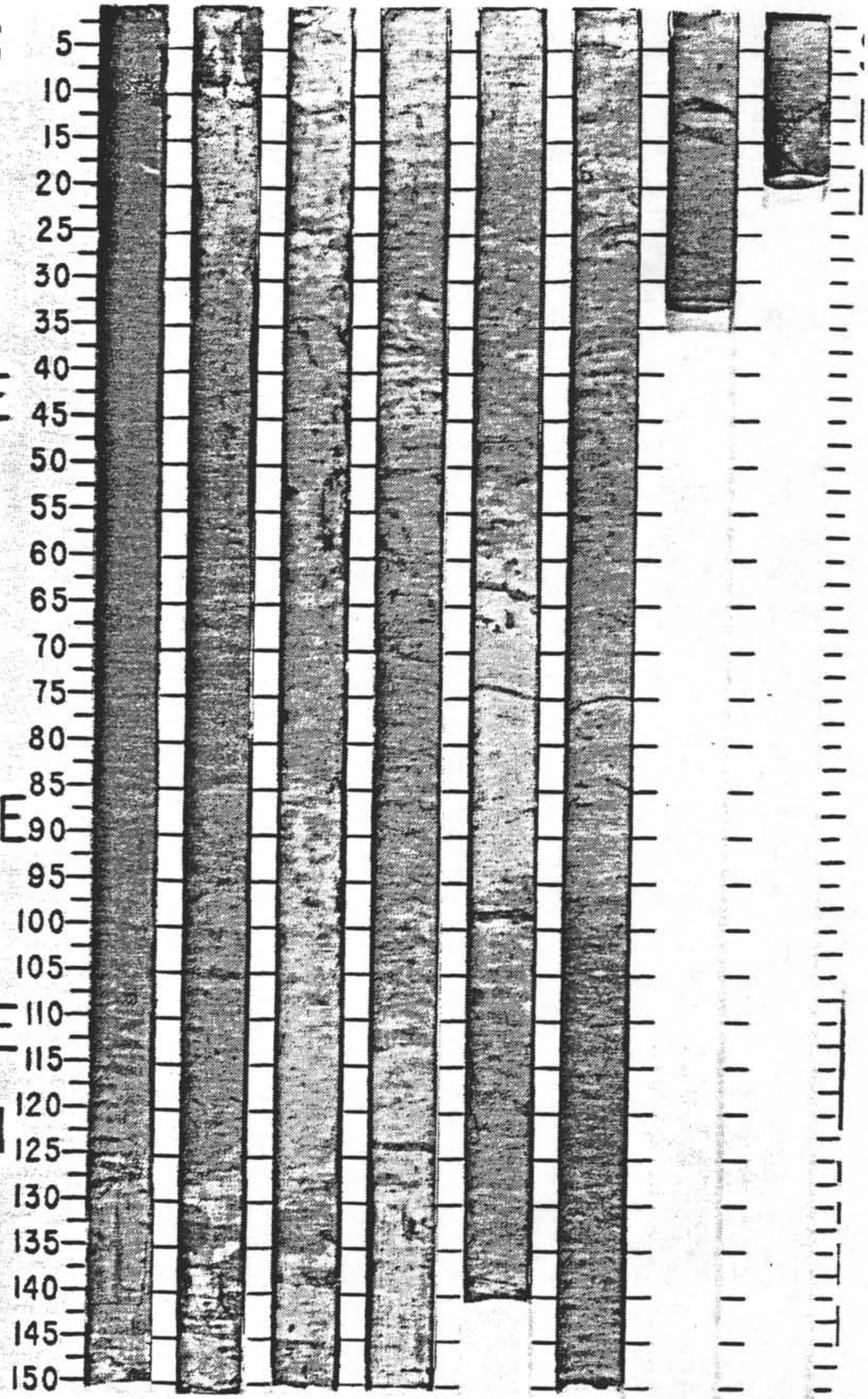
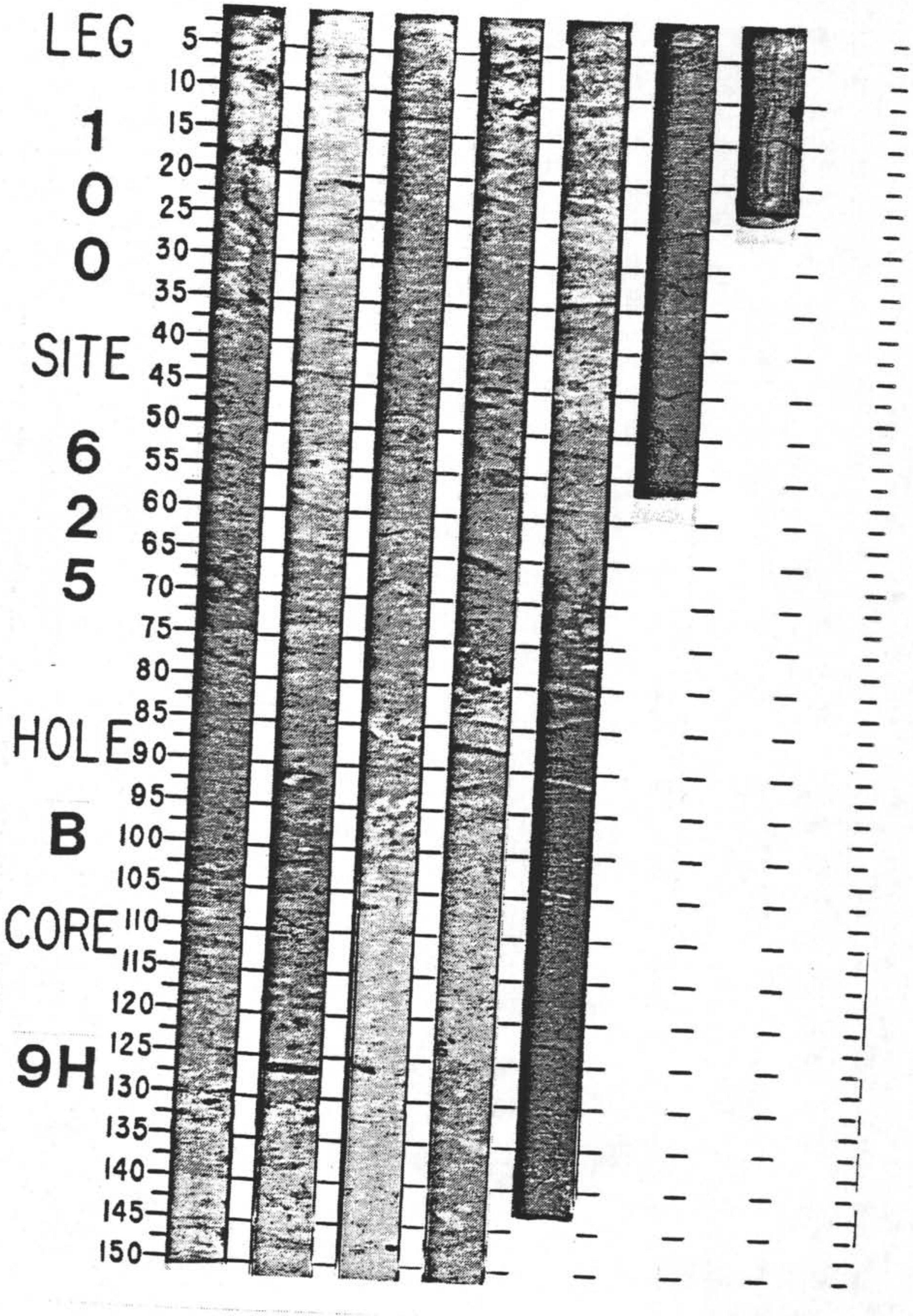
LEG 100 SITE 625 HOLE B CORE 8H





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SITE
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HOLE
B
CORE
9H
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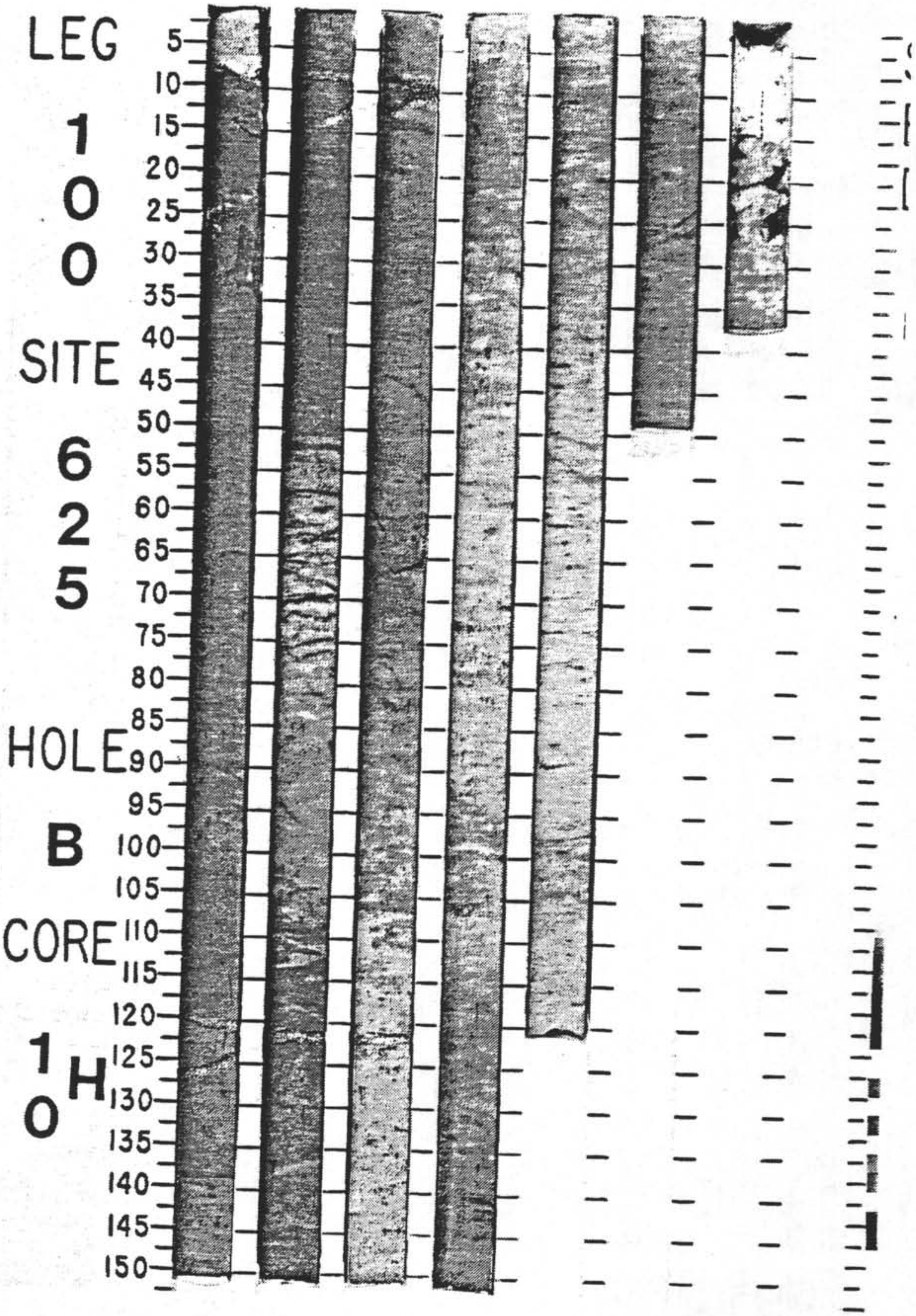
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SITE 625
HOLE B
CORE 10H
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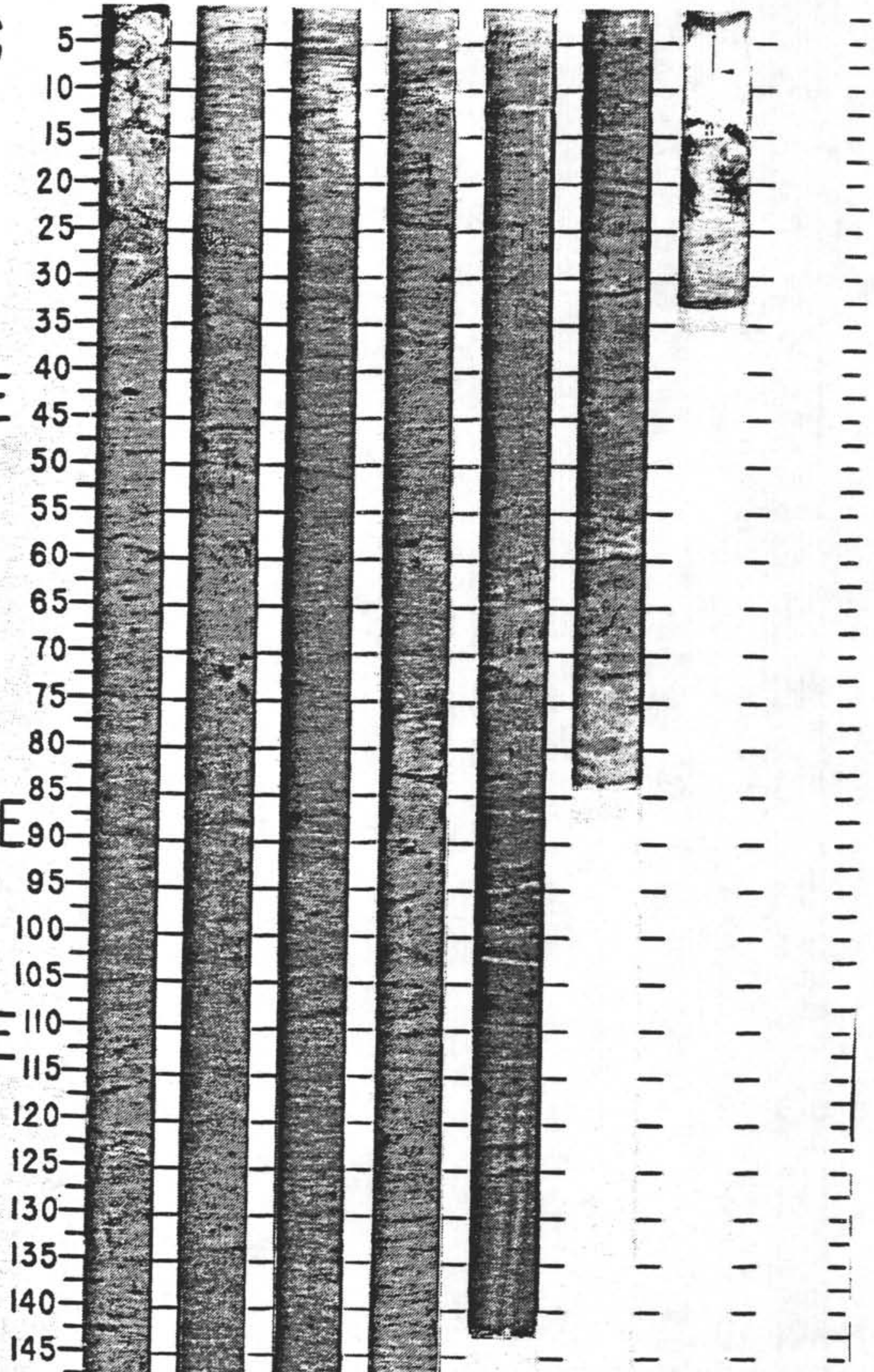
LEG 100 SITE 625 HOLE B CORE 11H 1

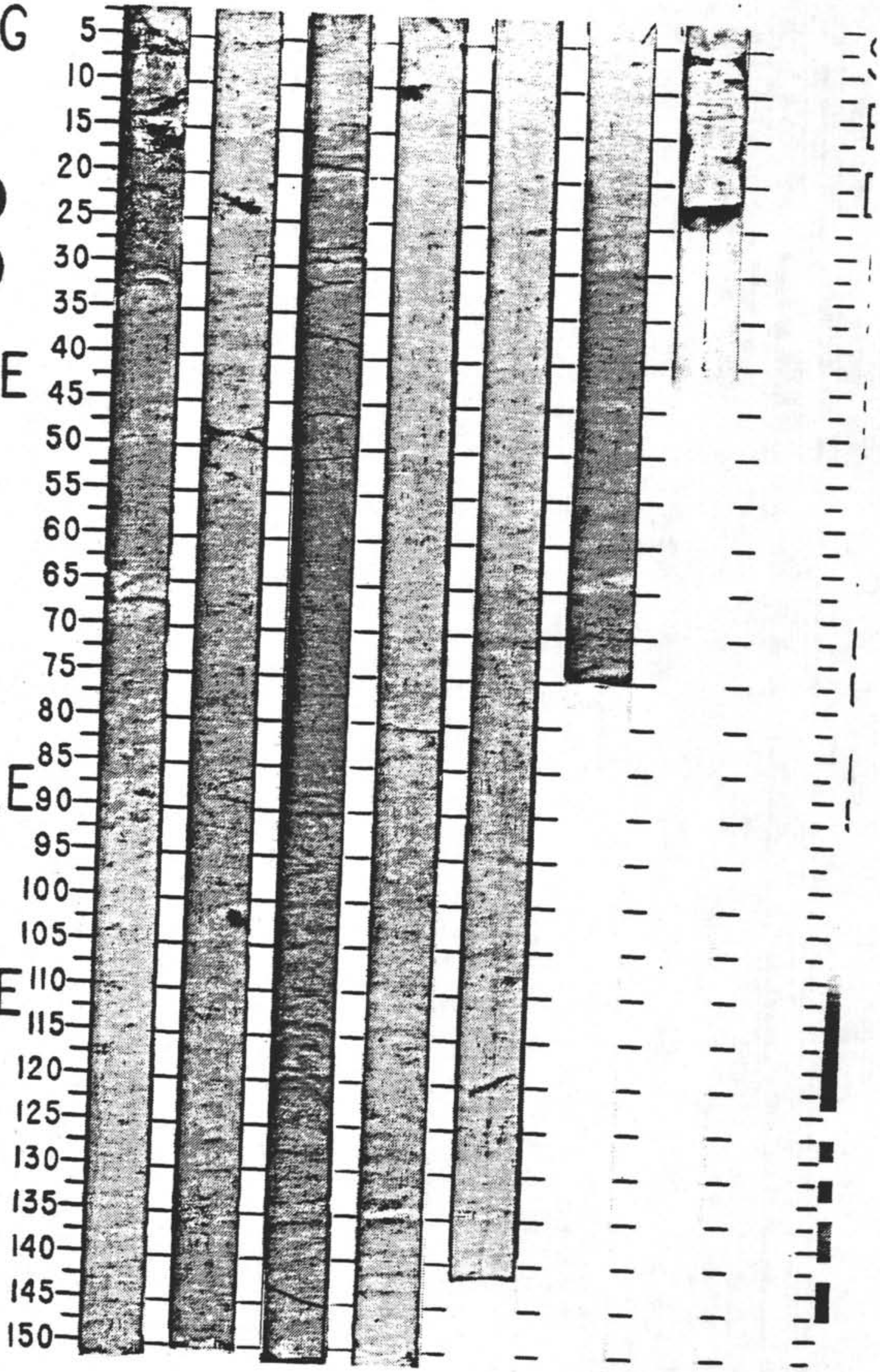


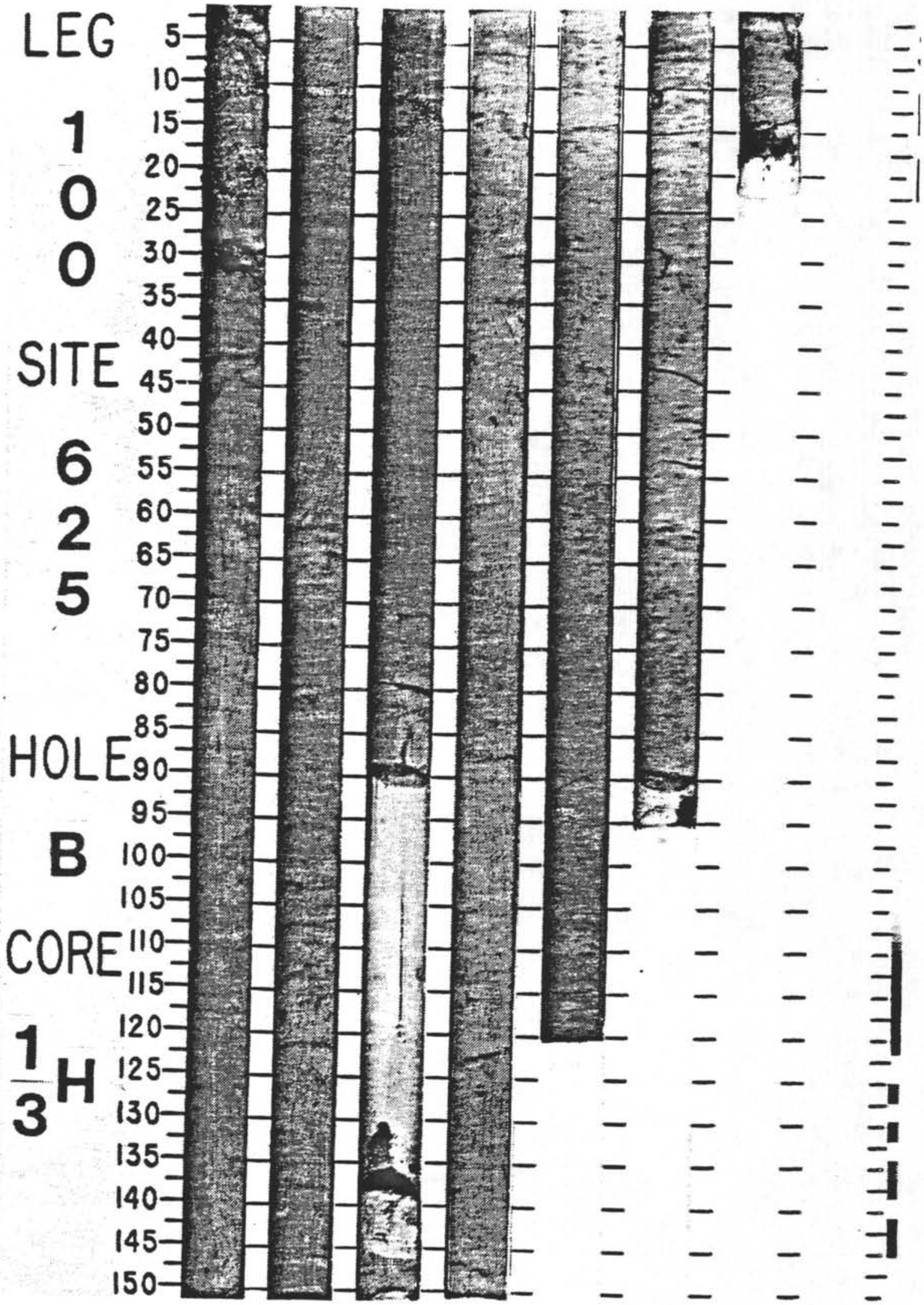
LEG 100

SITE 625

HOLE B

CORE 1H 2





LEG
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SITE
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HOLE
B
CORE
1/3H
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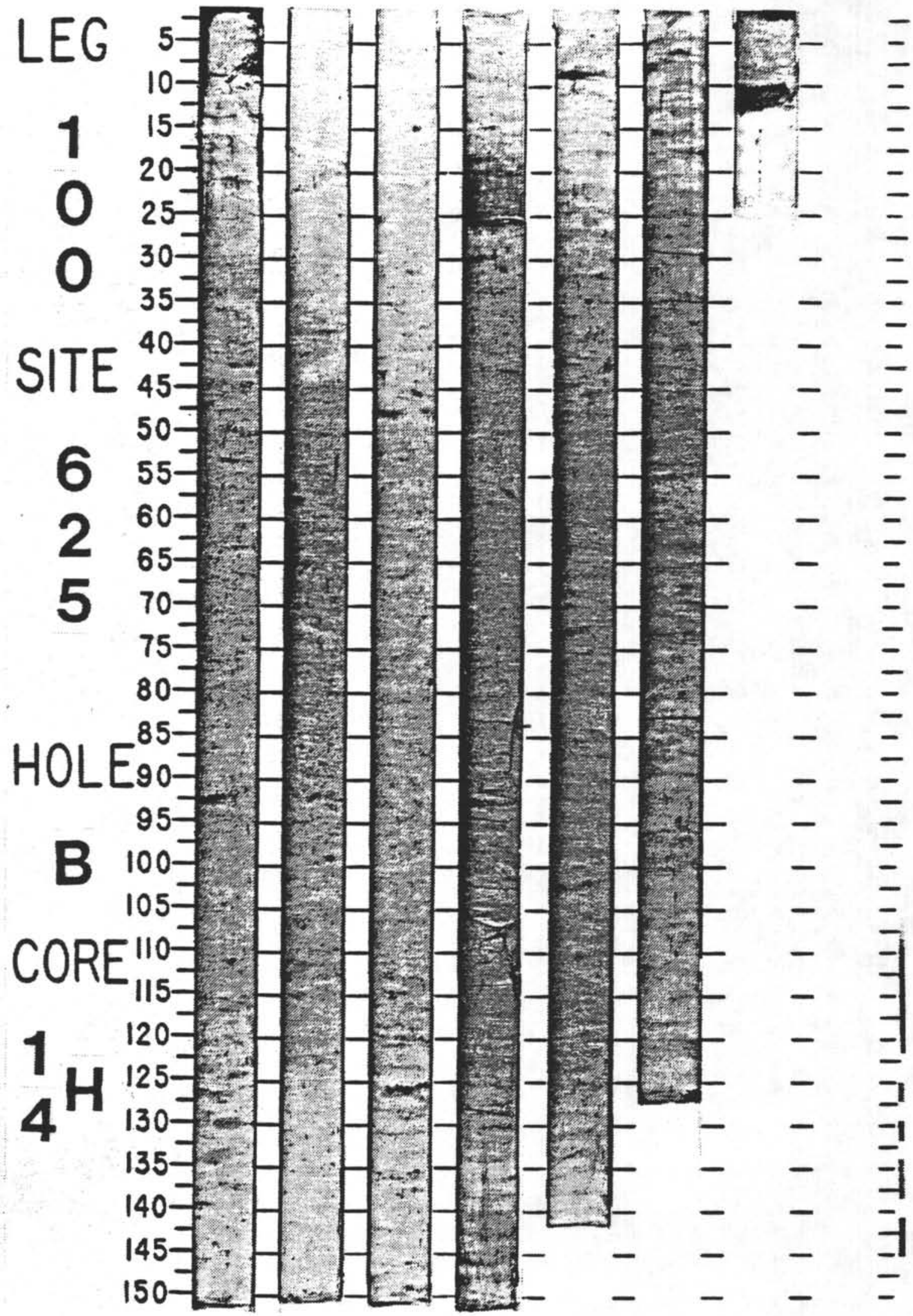
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SITE
625
HOLE
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14H
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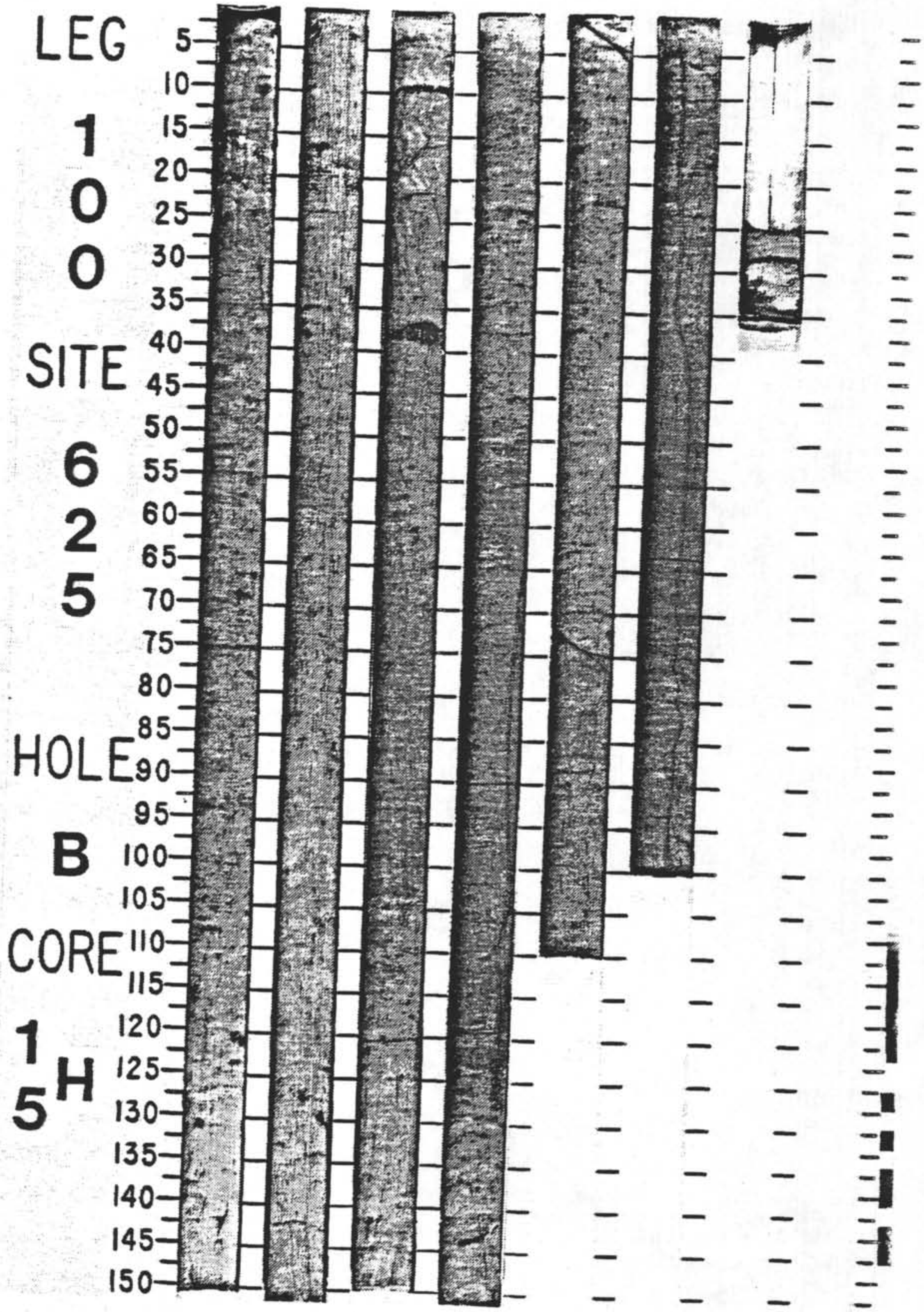
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SITE
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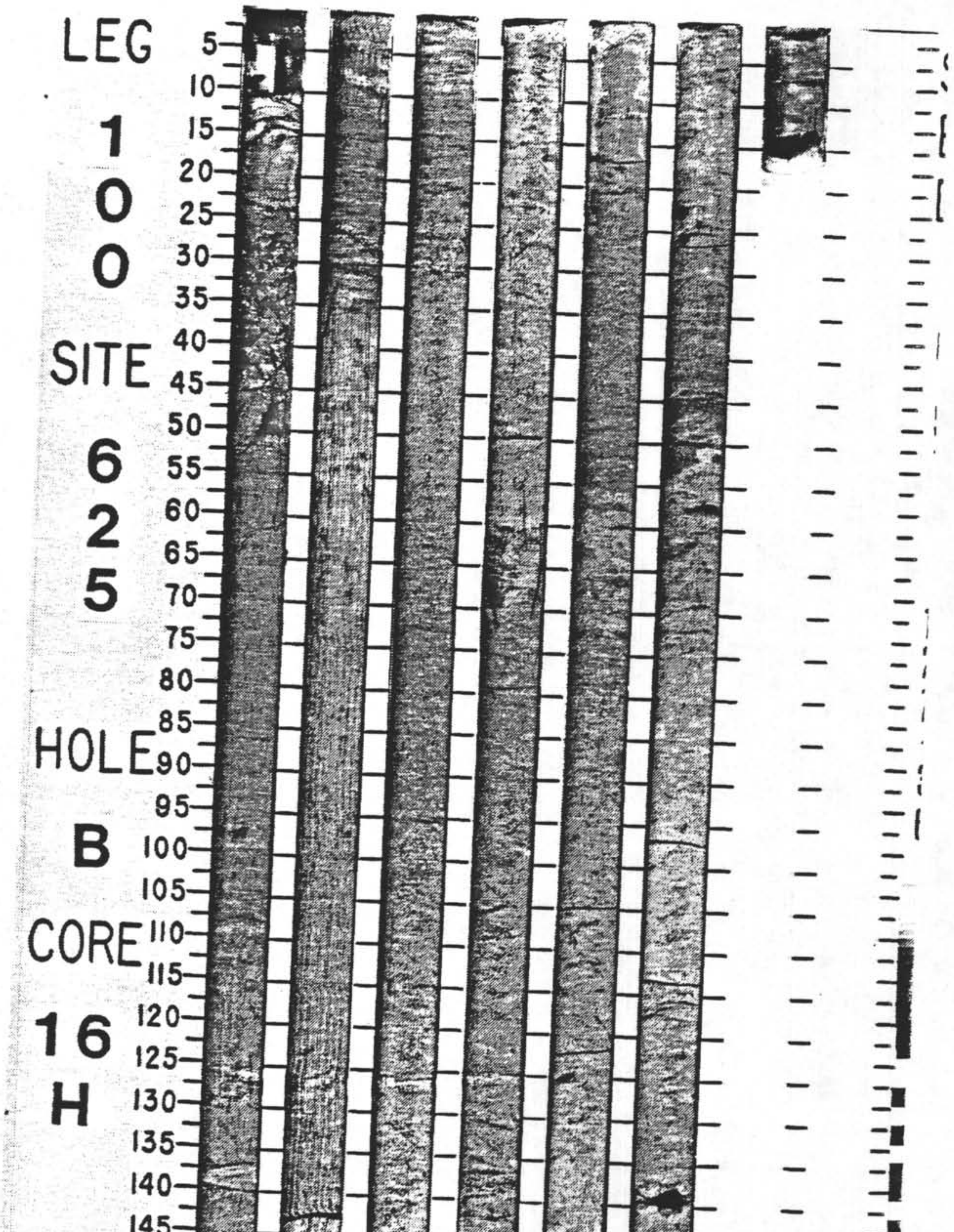
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SITE
625
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B
CORE
16
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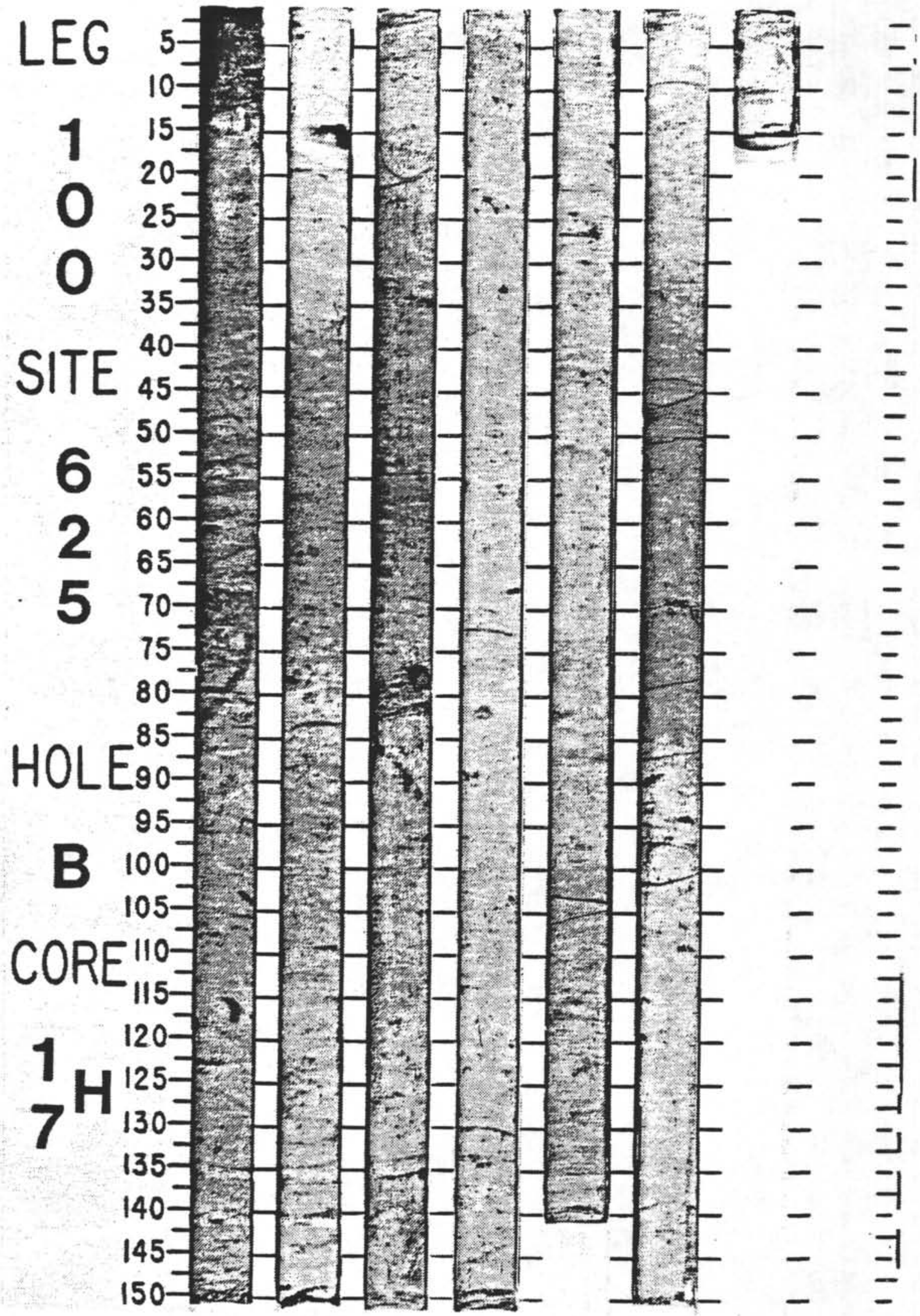
LEG 100
SITE 625
HOLE B
CORE 17H
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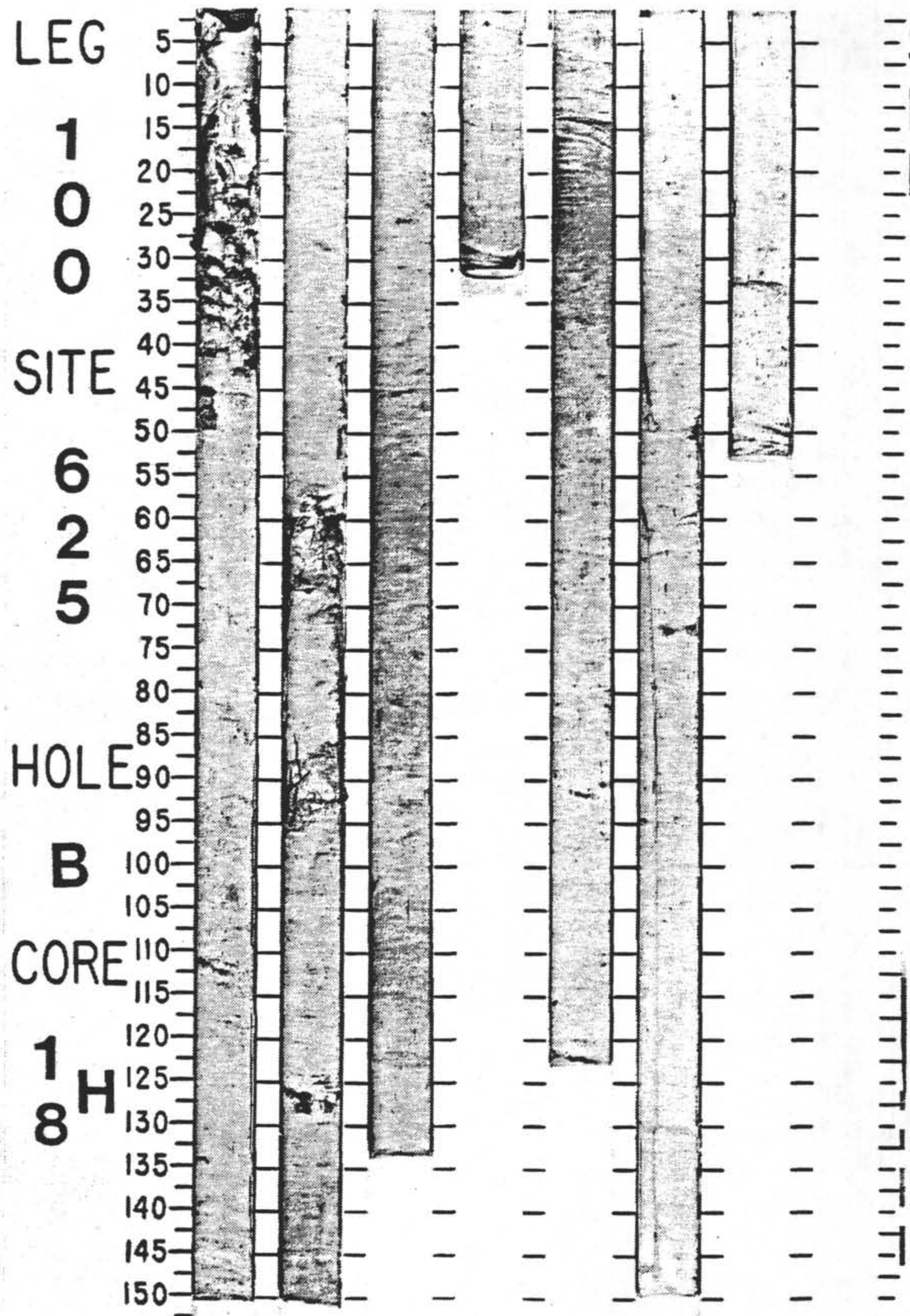
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18H
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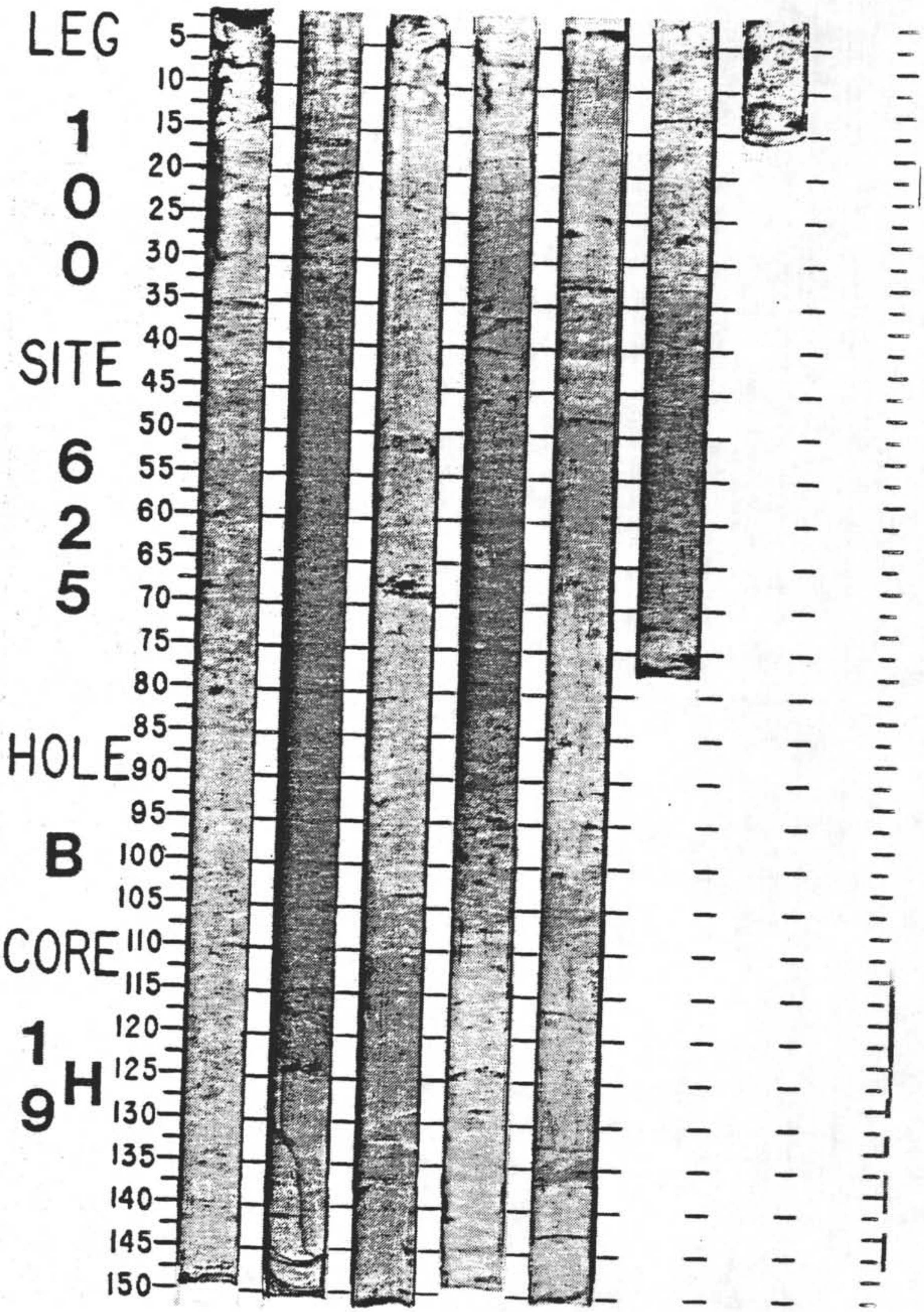
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SITE
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HOLE
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CORE
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9H
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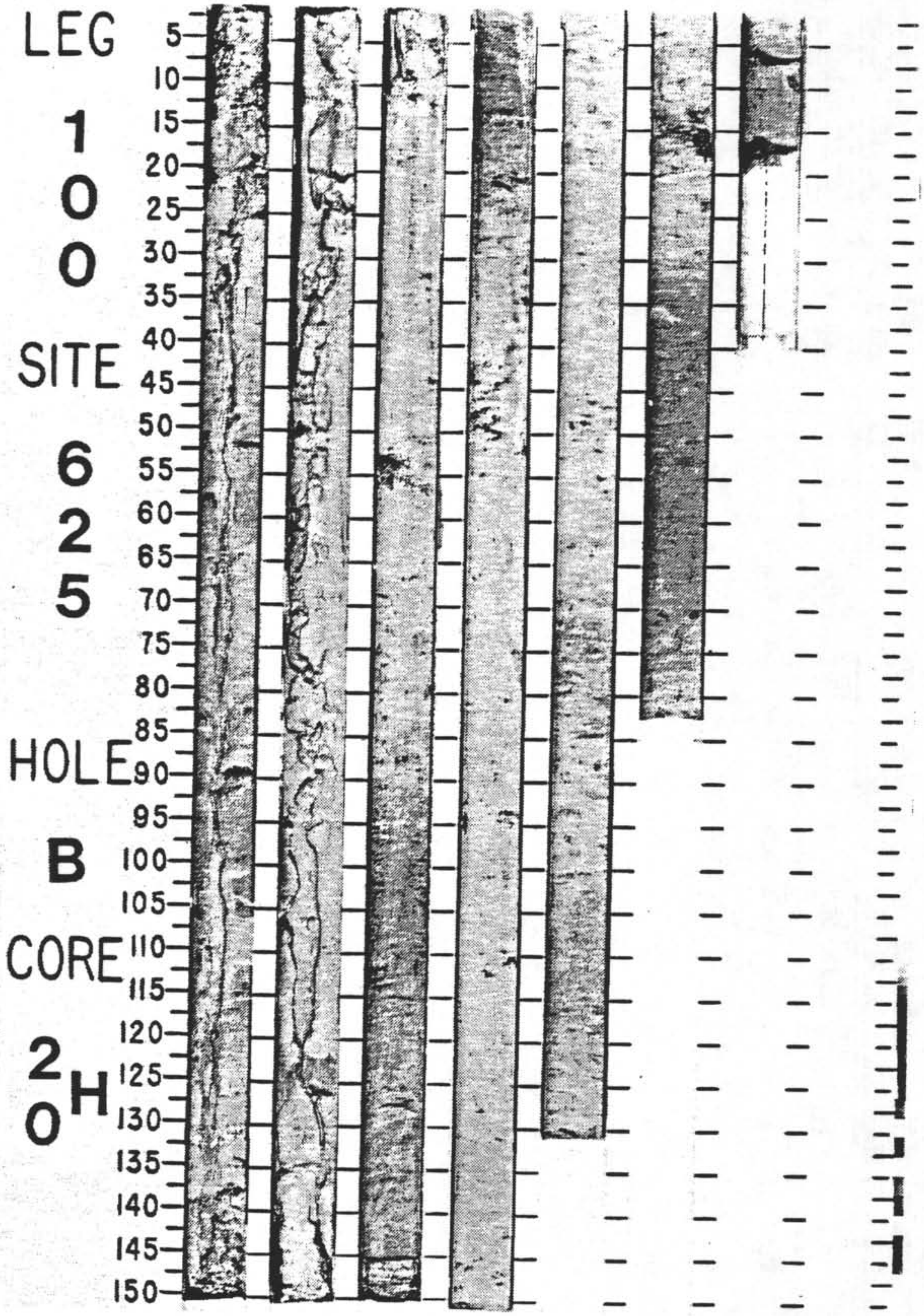
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SITE
625
HOLE
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20H
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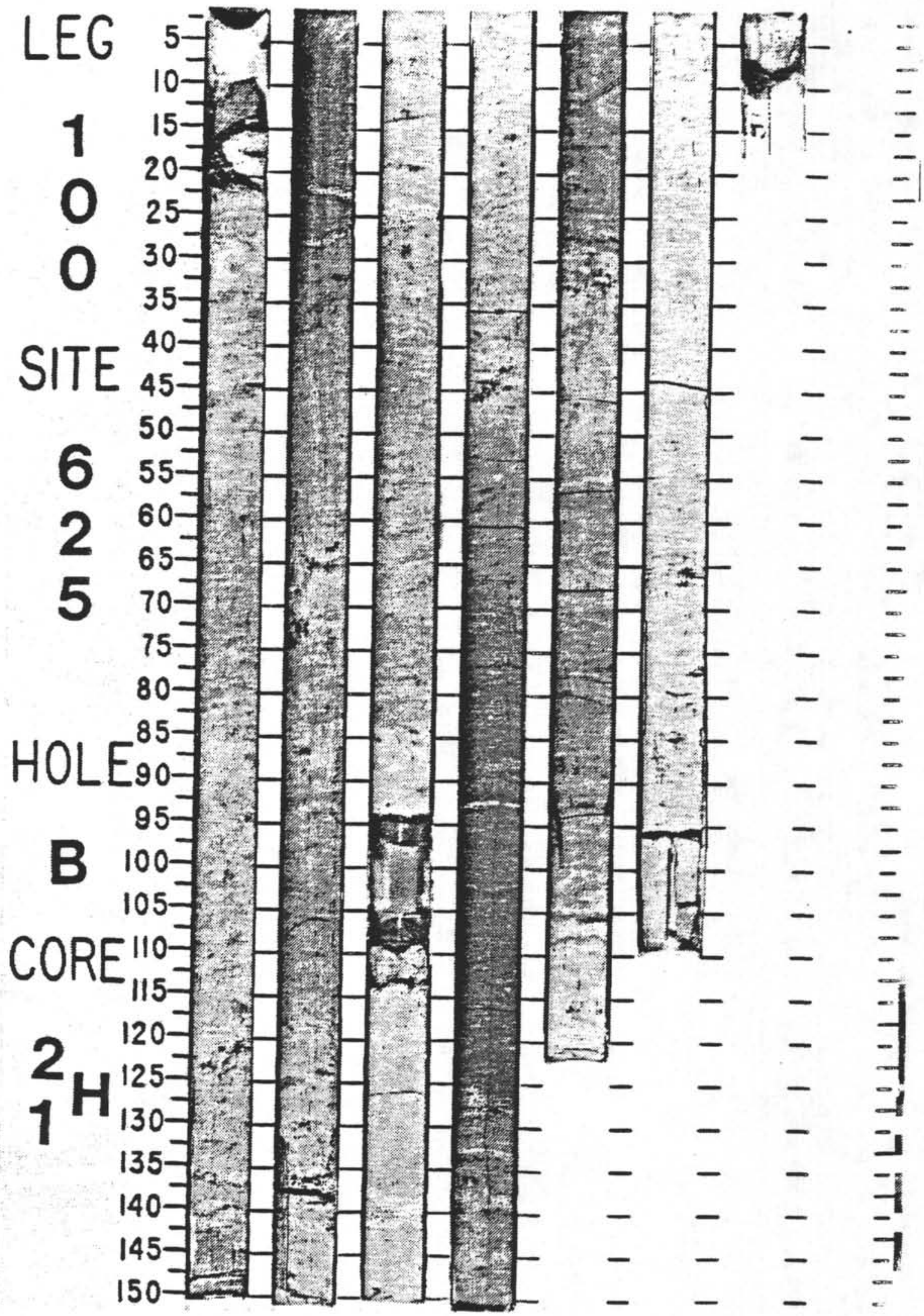

LEG
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SITE
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HOLE
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CORE
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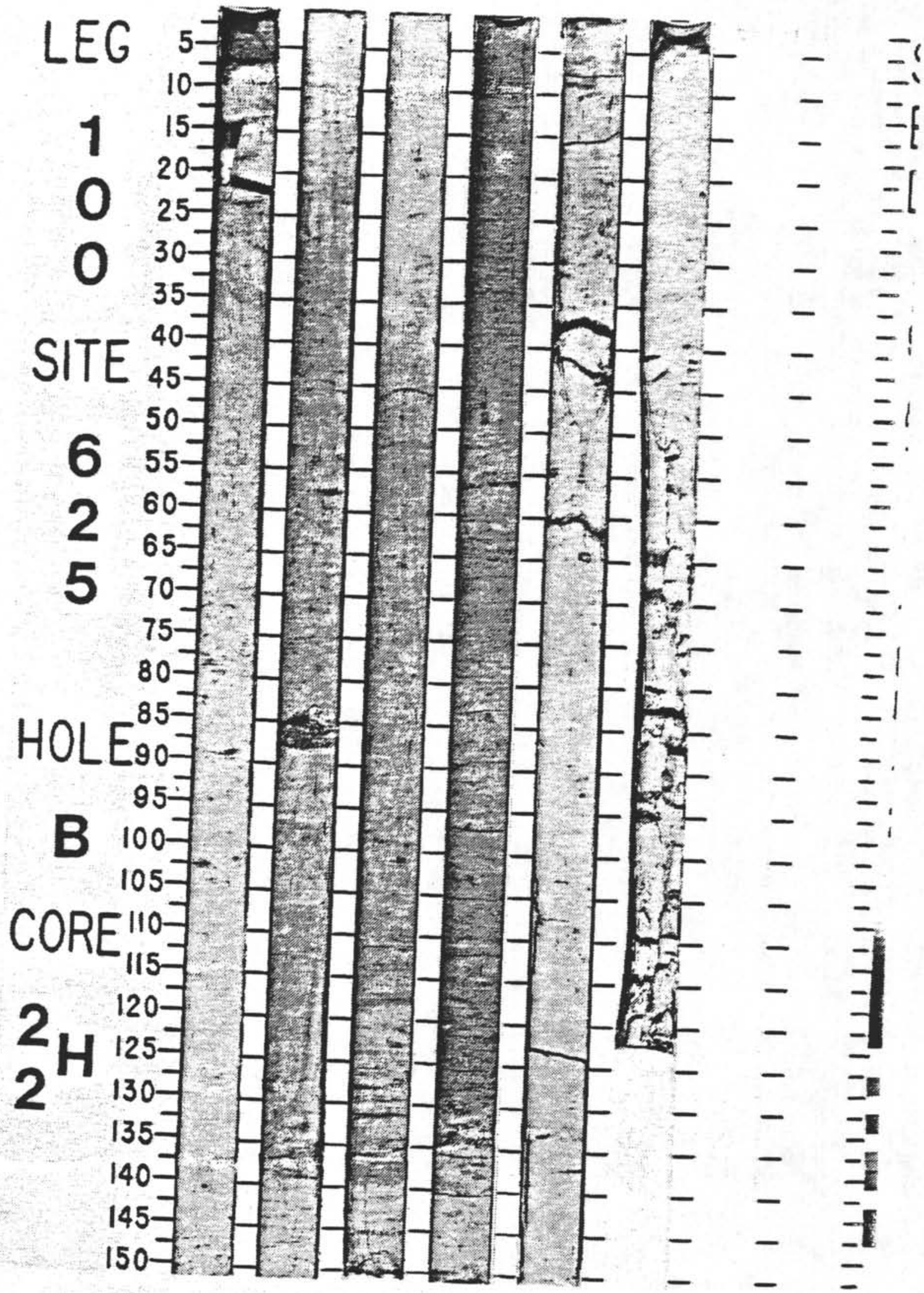
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SITE
625
HOLE
B
CORE
2H
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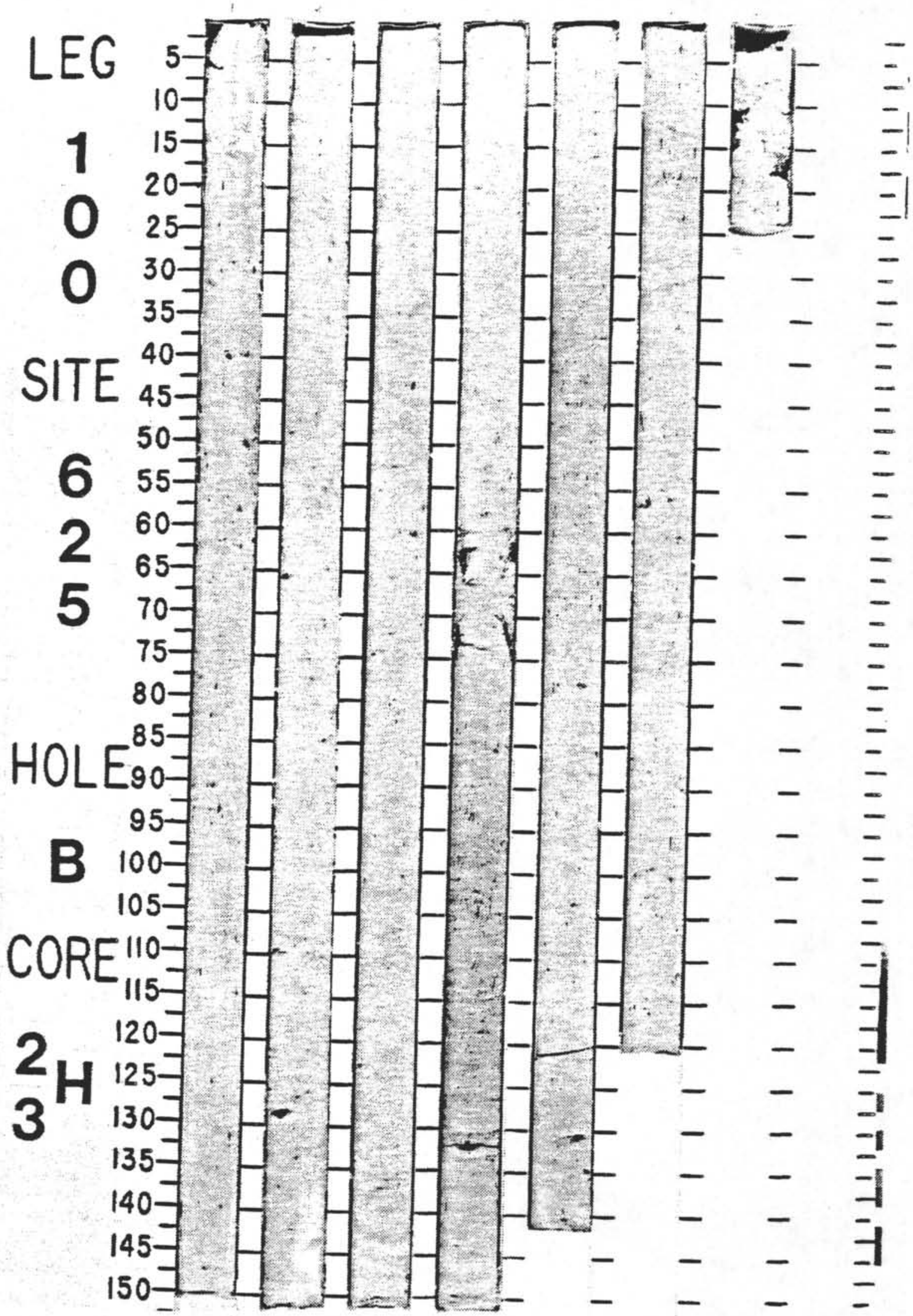
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HOLE
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CORE
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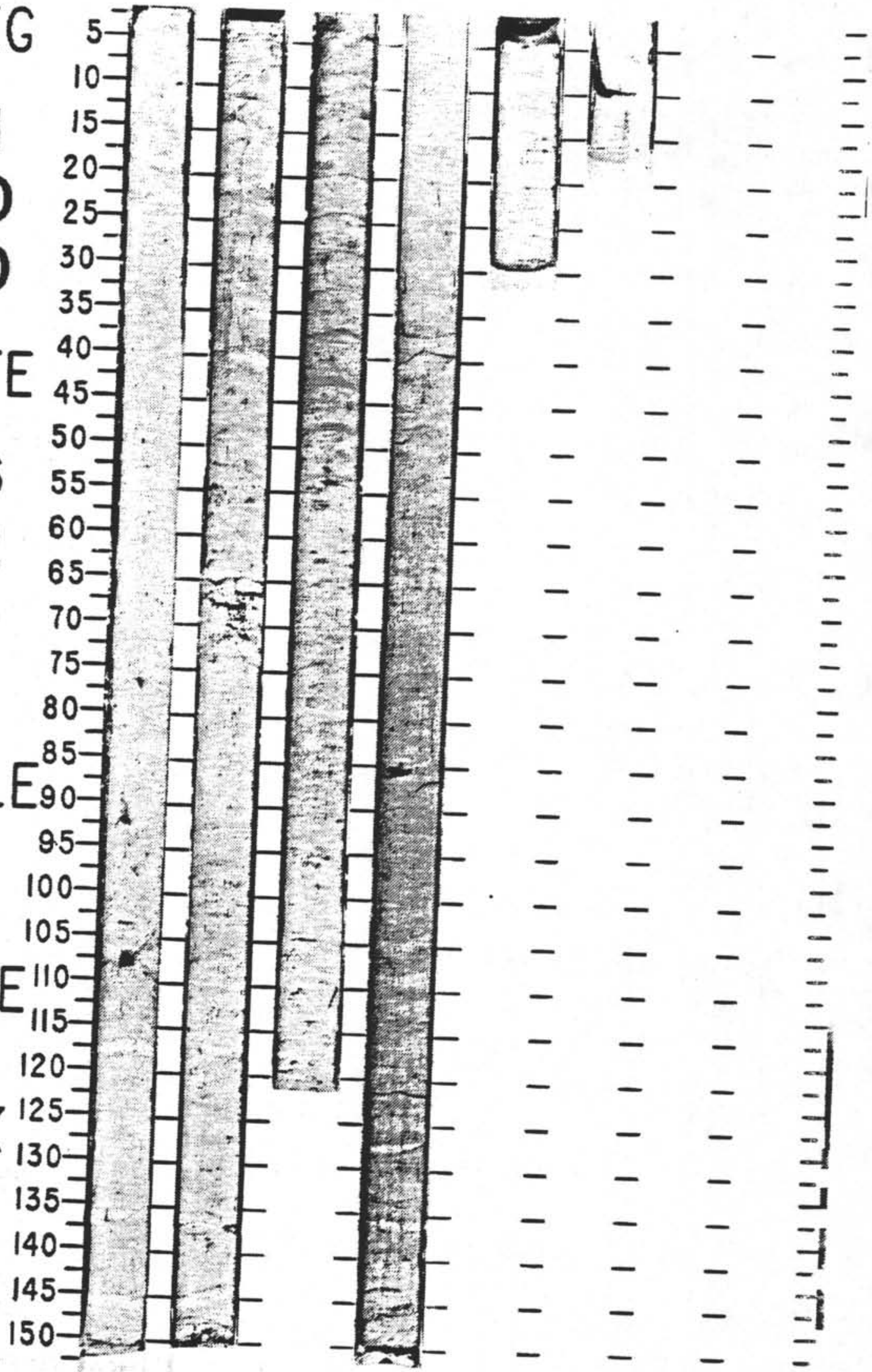
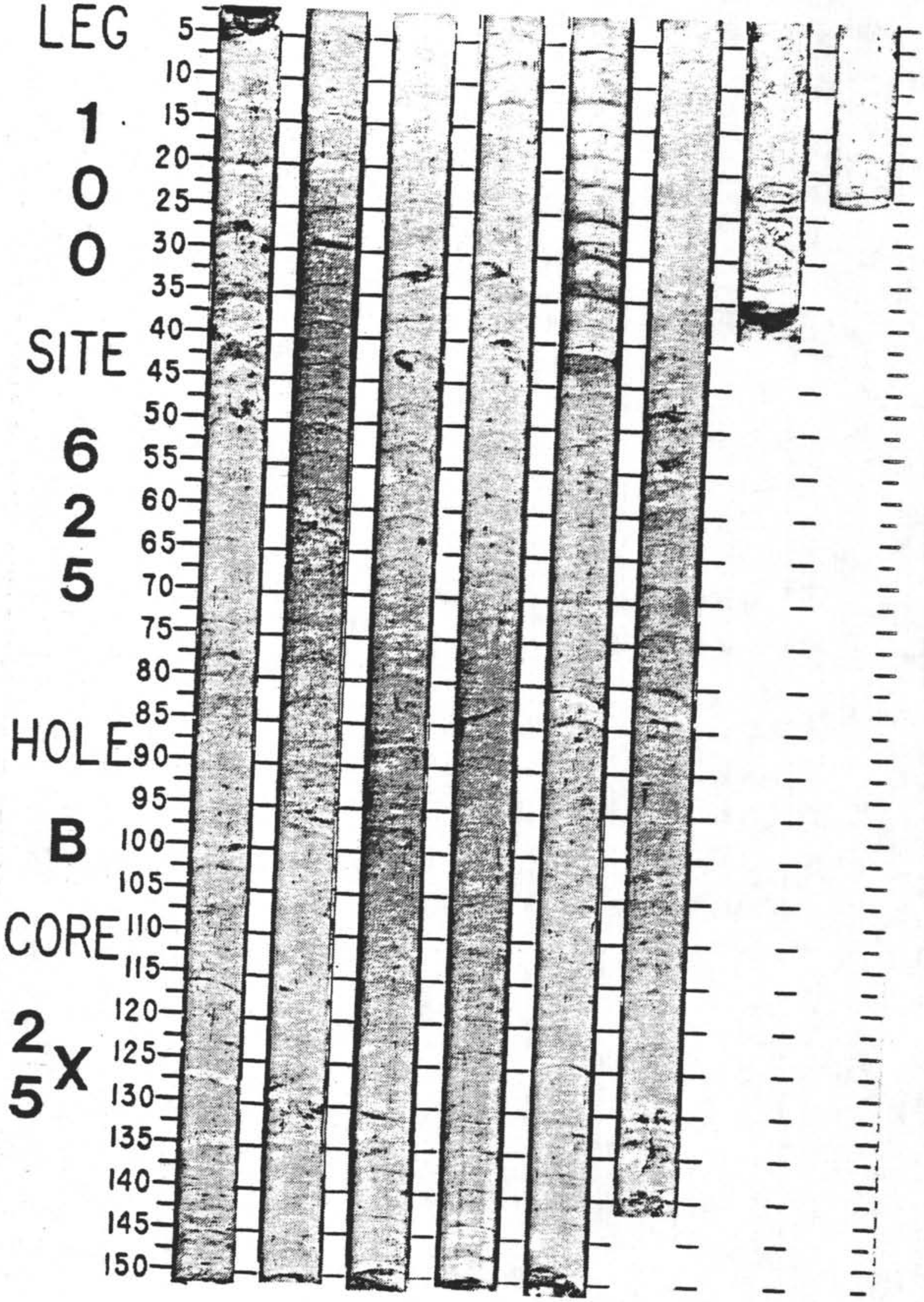
LEG 100

SITE 625

HOLE B

CORE 24X





LEG
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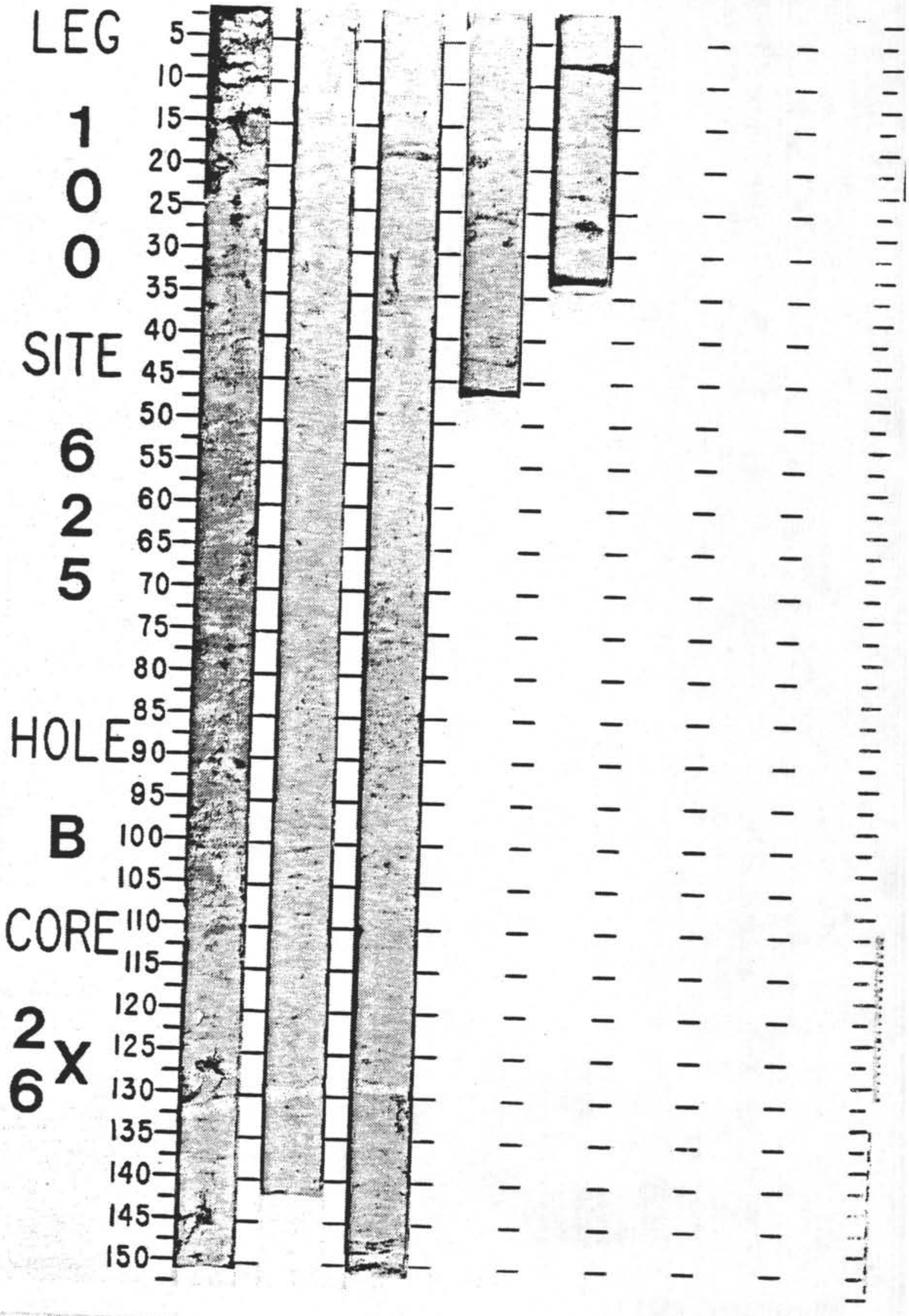
SITE
625
HOLE
B
CORE
25X


LEG
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SITE
625
HOLE
B
CORE
26X
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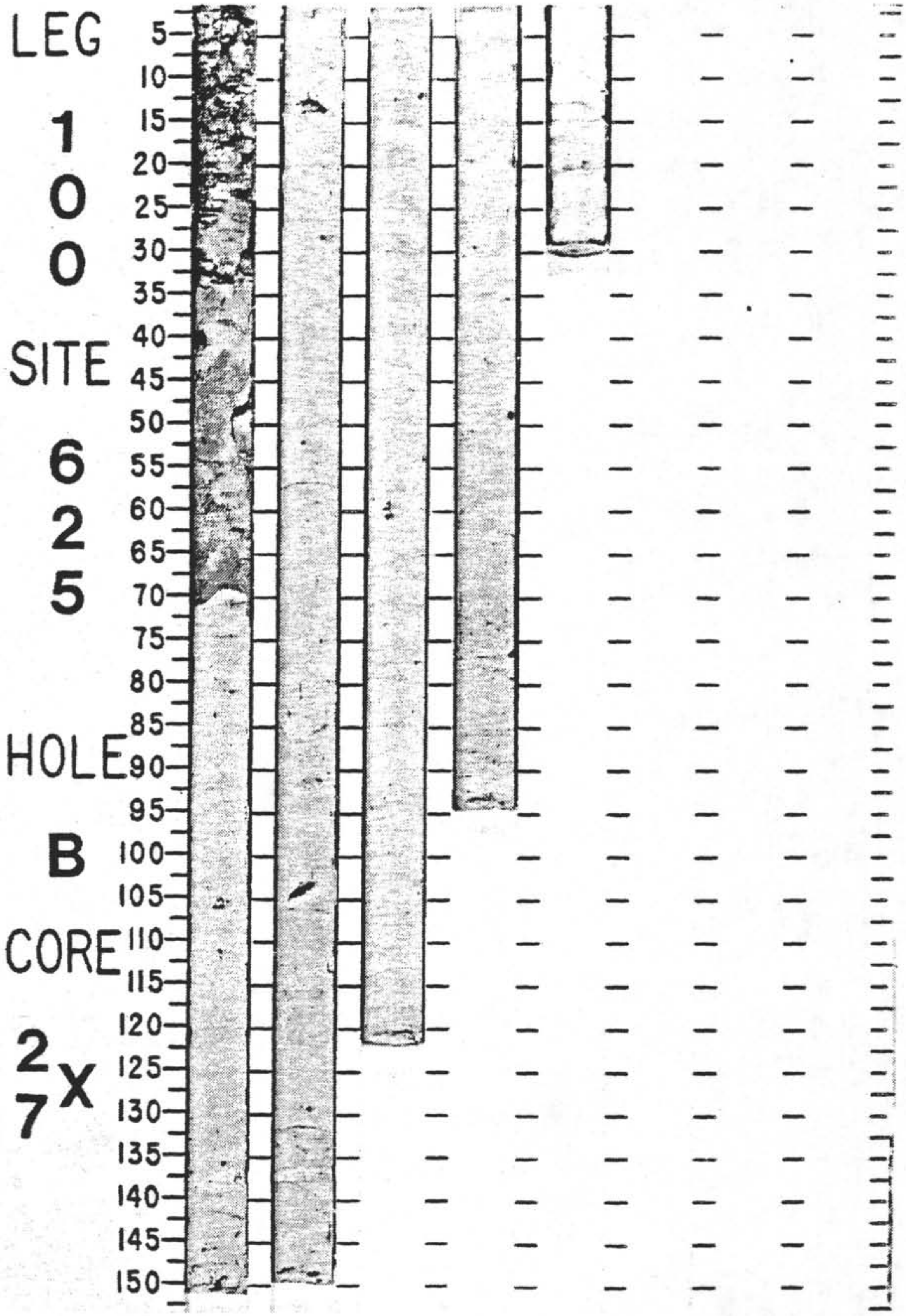
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CORE
27X
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150

LEG

100

SITE

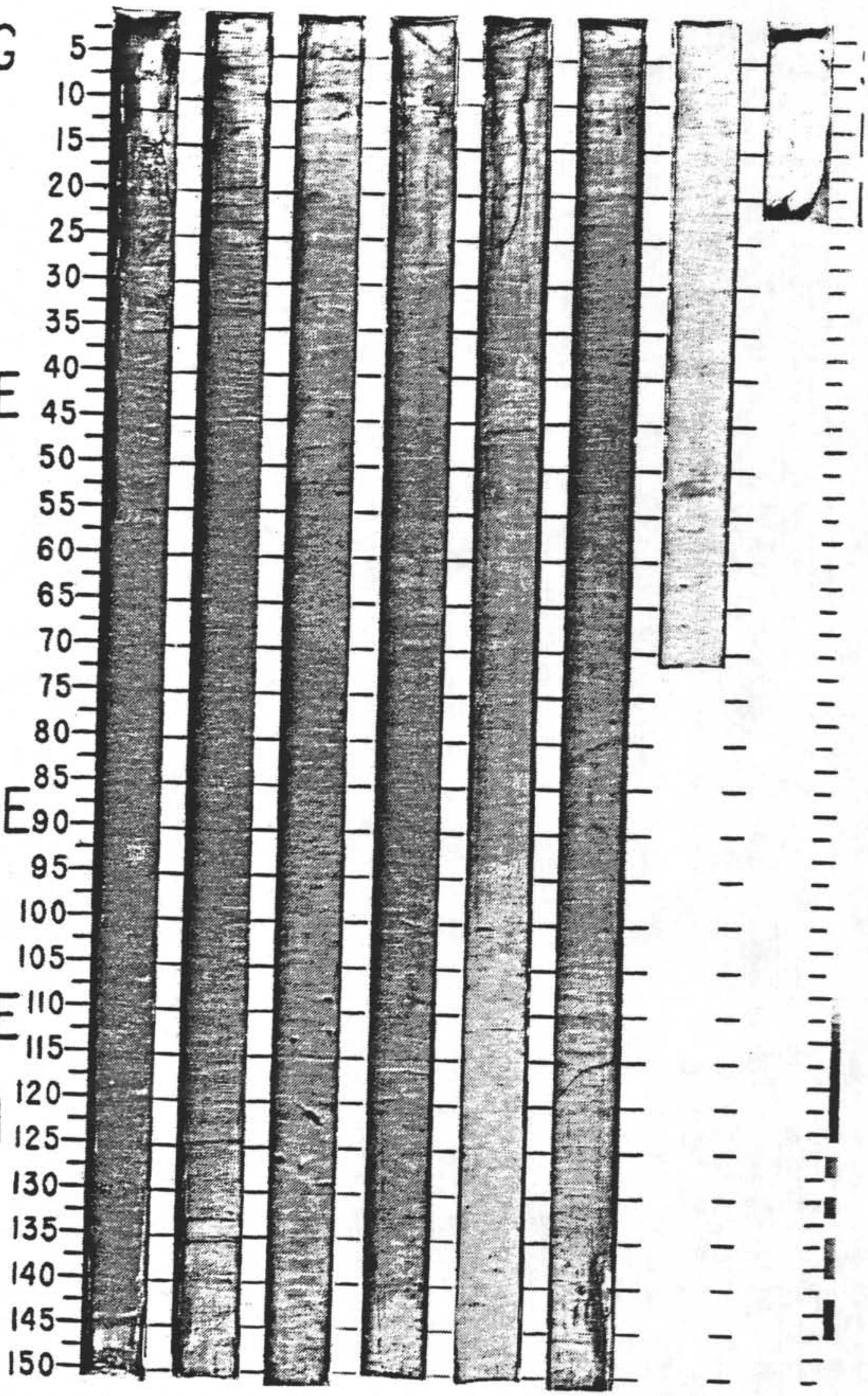
625

HOLE

C

CORE

1H



LEG

100

SITE

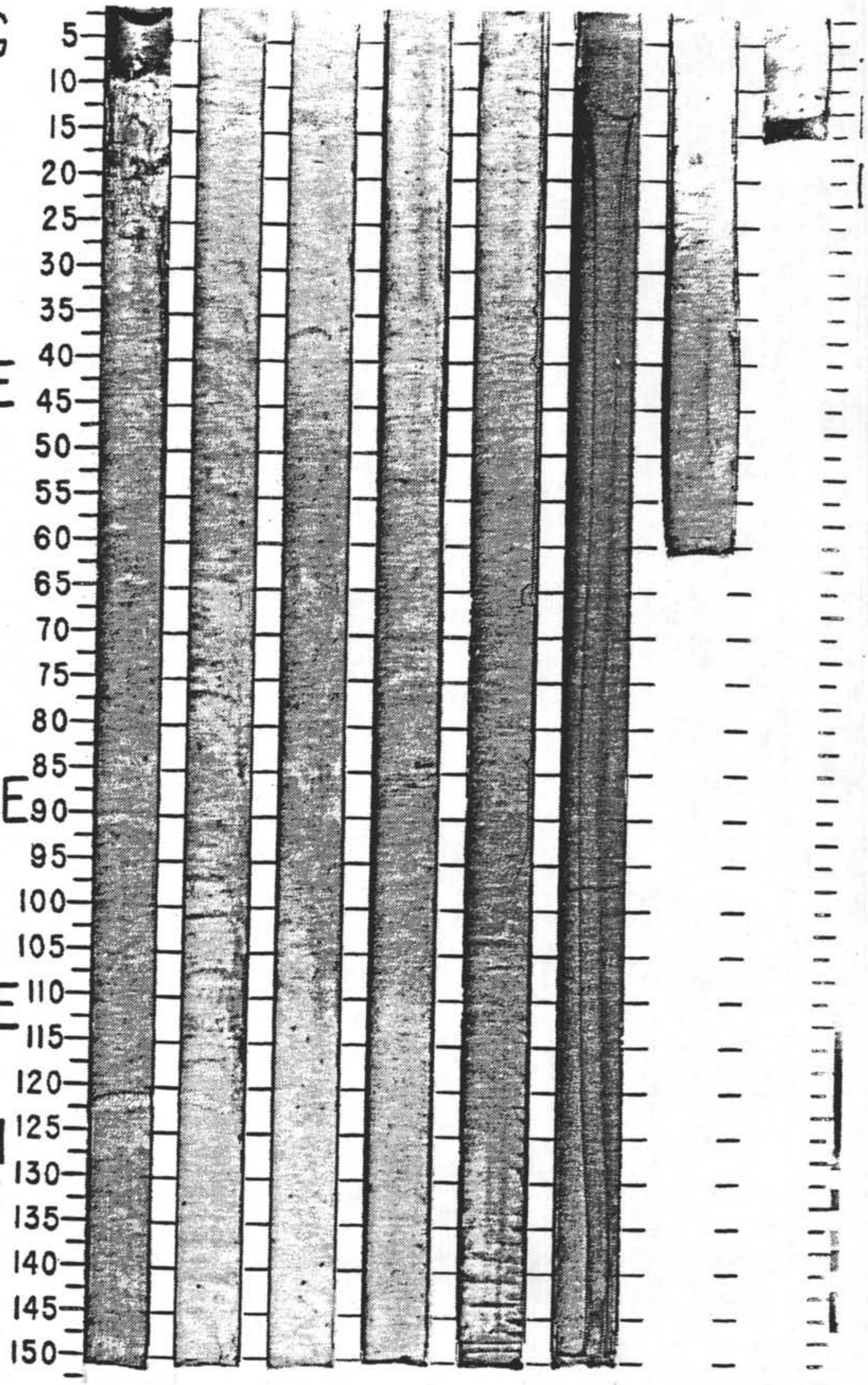
625

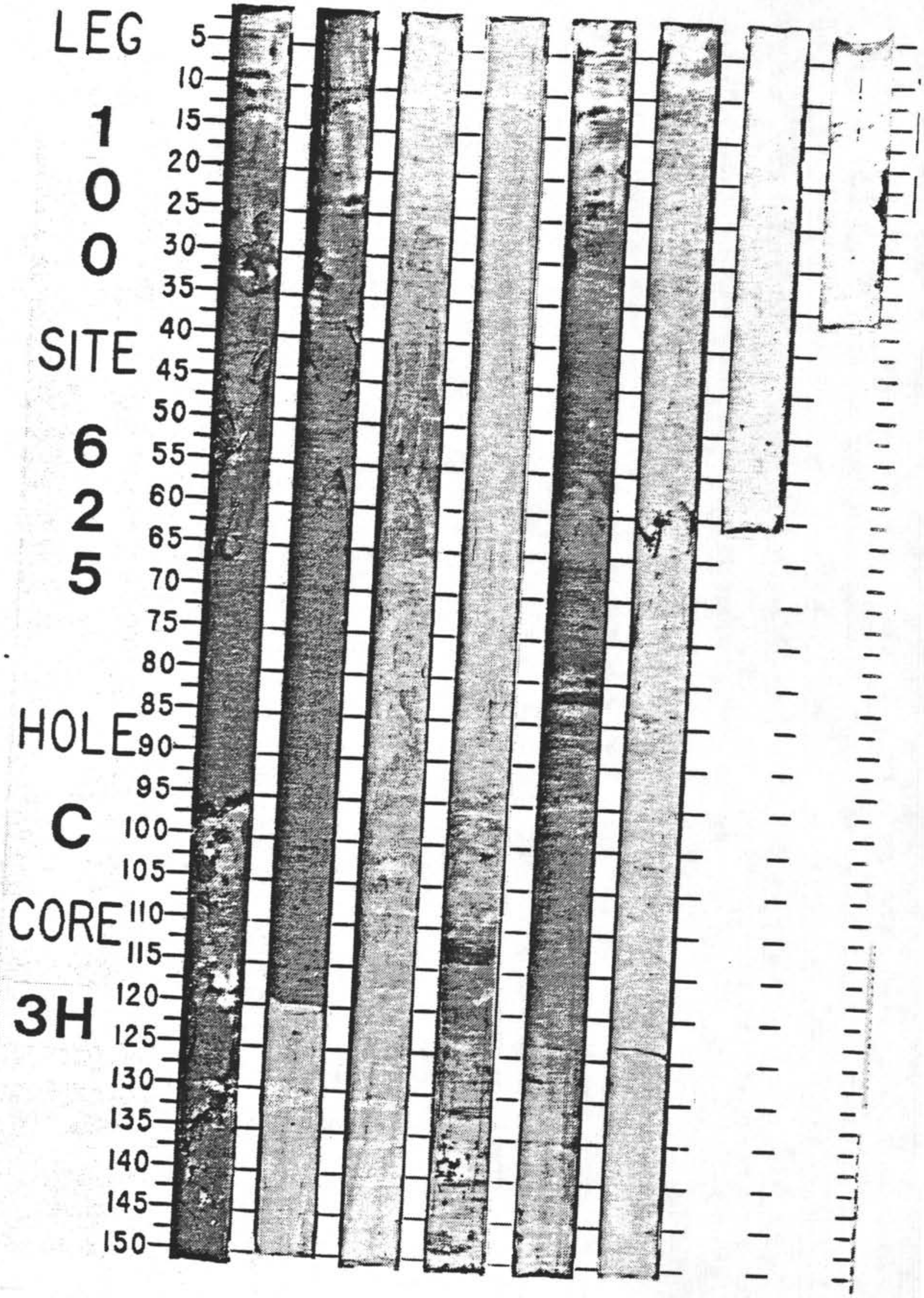
HOLE

C

CORE

2H




LEG
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SITE
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HOLE
C
CORE
3H
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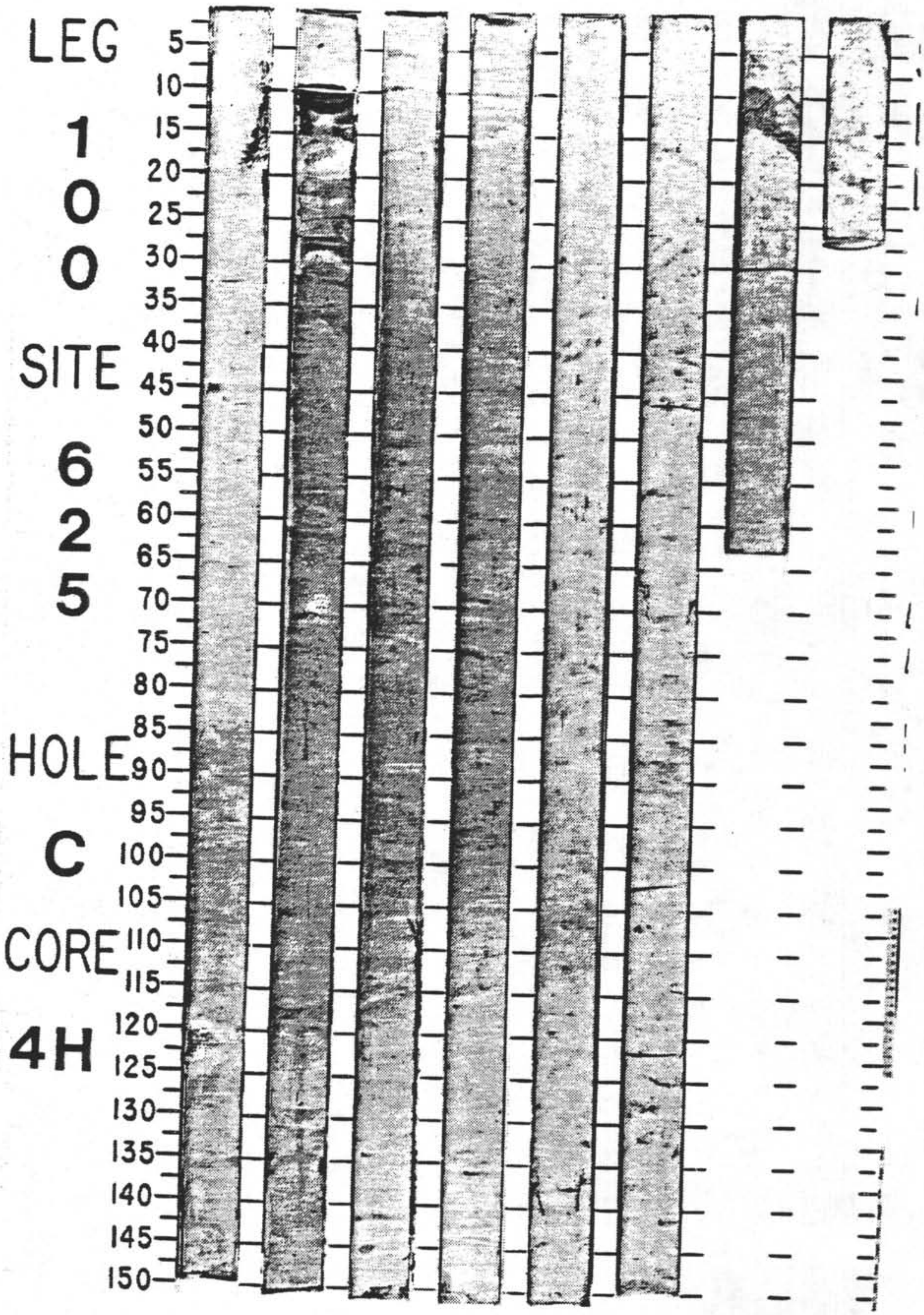
LEG
100
SITE
625
HOLE
C
CORE
4H
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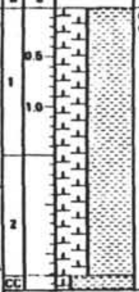
SITE 625 HOLE A CORE 1R CORED INTERVAL 899.9-902.7 mbsl; 0.0-2.8 mbsf

TIME-ROCK UNIT: LATE PLEISTOCENE

BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS, NANNOFOSSILS, RADIOLARIANS, DIATOMS | PALEOMAGNETICS | PHYSICAL PROPERTIES | CHEMISTRY | SECTION | METERS | GRAPHIC LITHOLOGY | DRILLING DISTURB. | SED. STRUCTURES | SAMPLES



LITHOLOGIC DESCRIPTION

This core contains MARLY NANNOFOSSIL OOZE and CALCAREOUS SILTY CLAY that has been very disturbed by drilling.

Section 1, 0-18 cm contains dark greyish brown (2.5Y4/2) MARLY NANNOFOSSIL OOZE.

Below Section 1, 18 cm, in the rest of Section 1 and in Section 2, the core contains grey (5Y5/1 10YR5/1) MARLY NANNOFOSSIL OOZE with minor, irregular areas of light gray to dark gray (10YR6/1 5Y4/1) ooze. Minor mottles and burrows occur in Sections 1, 100 cm through 2, 30 cm. A patch of coral and pteropods occurs at Section 1, 137-141 cm.

The core catcher contains olive grey (5Y5/2) CALCAREOUS SILTY CLAY. The silt component includes common to abundant quartz and mica.

SMEAR SLIDE SUMMARY (%):

	1,8 D	1,124 D	2,25 D	2,49 D	CC,12 D
TEXTURE:					
Sand	–	–	5	2	Tr
Silt	10	10	10	18	40
Clay	90	90	85	80	60
COMPOSITION:					
Quartz	4	8	2	20	23
Feldspar	Tr	–	Tr	2	5
Mica	2	3	Tr	3	10
Clay	50	45	55	30	40
Accessory Min./Opq.	2	2	Tr	Tr	2
Foraminifers	1	1	5	–	Tr
Nannofossils	40	40	35	45	20
Diatoms	1	–	–	–	–
Radiolarians	Tr	Tr	Tr	–	–
Sponge Spicules	Tr	1	1	–	–
Fish Remains	–	–	Tr	Tr	–
Plant Debris	–	–	Tr	–	–
Algal Cysts	–	–	2	Tr	–

SITE 625 HOLE A CORE 2W CORED INTERVAL 902.7-942.9 mbsl; 2.8-43.0 mbsf

TIME-ROCK UNIT: LATE PLEISTOCENE

BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS, NANNOFOSSILS, RADIOLARIANS, DIATOMS | PALEOMAGNETICS | PHYSICAL PROPERTIES | CHEMISTRY | SECTION | METERS | GRAPHIC LITHOLOGY | DRILLING DISTURB. | SED. STRUCTURES | SAMPLES

LITHOLOGIC DESCRIPTION

This core is empty except for a 4 cm long piece of very deformed, light olive grey (5Y6/2) MARLY NANNOFOSSIL OOZE in the core catcher. A grey (5Y5/1) diffuse band approximately 3 mm thick occurs near the top of the recovered material. Several very dark gray (5Y3/1) small specs occur scattered throughout the sediment.

SMEAR SLIDE SUMMARY (%):

	CC,2 D
TEXTURE:	
Silt	10
Clay	90
COMPOSITION:	
Quartz	3
Feldspar	1
Mica	1
Clay	37
Accessory Min./Opq.	2
Foraminifers	5
Nannofossils	50
Radiolarians	Tr
Sponge Spicules	1
Plant Debris	Tr

SITE 625 HOLE A CORE 3W CORED INTERVAL 942.9 990.9 mbsl; 43.0 91.0 mbsf

TIME-ROCK UNIT: MIDDLE PLEISTOCENE

BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS, NANNOFOSSILS, RADIOLARIANS, DIATOMS | PALEOMAGNETICS | PHYSICAL PROPERTIES | CHEMISTRY | SECTION | METERS | GRAPHIC LITHOLOGY | DRILLING DISTURB. | SED. STRUCTURES | SAMPLES

SECTION: 1, 2, 3

METERS: 0.5, 1.0

GRAPHIC LITHOLOGY: WAS NOT OPENED ABOARD SHIP

LITHOLOGIC DESCRIPTION

3.8 m of sediment were recovered in this core. The core was not split or described; the material was preserved in whole-round sections to be used as test material for shipboard equipment at a later date.

SITE 625 HOLE A CORE 5W CORED INTERVAL 1039.1 1087.1 mbsl, 139.2 187.2 mbsf

TIME-ROCK UNIT: LATE PLIOCENE

BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS, NANNOFOSSILS, RADIOLARIANS, DIATOMS | PALEOMAGNETICS | PHYSICAL PROPERTIES | CHEMISTRY | SECTION | METERS | GRAPHIC LITHOLOGY | DRILLING DISTURB. | SED. STRUCTURES | SAMPLES

SECTION: 1, 2, 3, 4, 5, 6, CC

METERS: 0.5, 1.0

GRAPHIC LITHOLOGY: EMPTY, EMPTY, EMPTY

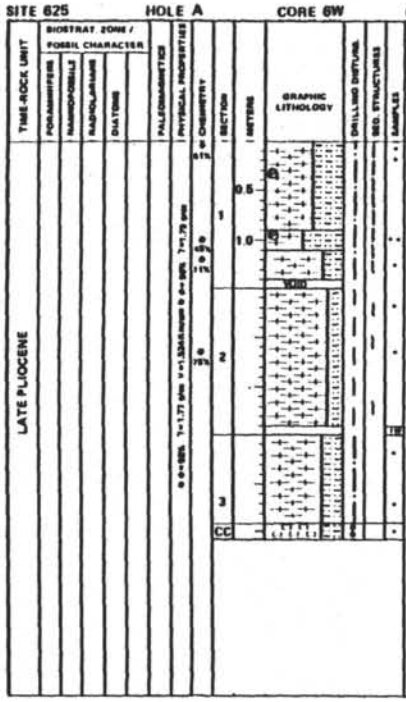
LITHOLOGIC DESCRIPTION

This core contains moderately deformed mottled NANNOFOSSIL OOZE, dominantly grey to olive grey (5Y5/1, 5Y6/1, 5Y5/2 and 5Y6/2) in color with minor intervals of light gray (5Y7/1), dark gray (5Y3/1 5Y4/1), and dark olive gray (5Y3/2 5Y4/2). All color variations are gradational. Burrows are most evident in the least disturbed portions of the core. Pyrite specs and blebs are present throughout the core, a pyrite lens occurs at Section 1, 77 cm.

SMEAR SLIDE SUMMARY (%):

	1,78 M	2,26 D	3,13 D	4,5 D	5,80 D	6,38 D	CC D
TEXTURE:							
Sand	40	–	1	Tr	5	–	1
Silt	40	–	39	12	10	10	4
Clay	20	28	60	88	85	90	95
COMPOSITION:							
Quartz	2	–	Tr	–	2	4	2
Feldspar	Tr	–	Tr	–	–	Tr	–
Mica	Tr	–	Tr	–	–	4	–
Clay	10	–	30	54	25	40	15
Accessory Min.	–	1	–	–	1	1	1
Pyrite	20	–	Tr	10	–	–	–
Foraminifers	8	10	2	1	5	1	2
Nannofossils	60	60	67	35	67	50	80
Radiolarians	–	–	–	–	–	2	–
Sponge Spicules	–	1	1	–	–	1	–
Fish Remains	–	–	–	Tr	–	–	–

SITE 625 HOLE A CORE 6W CORED INTERVAL 1087.1 - 1134.8 mbsl; 187.2 - 234.9 mbsf



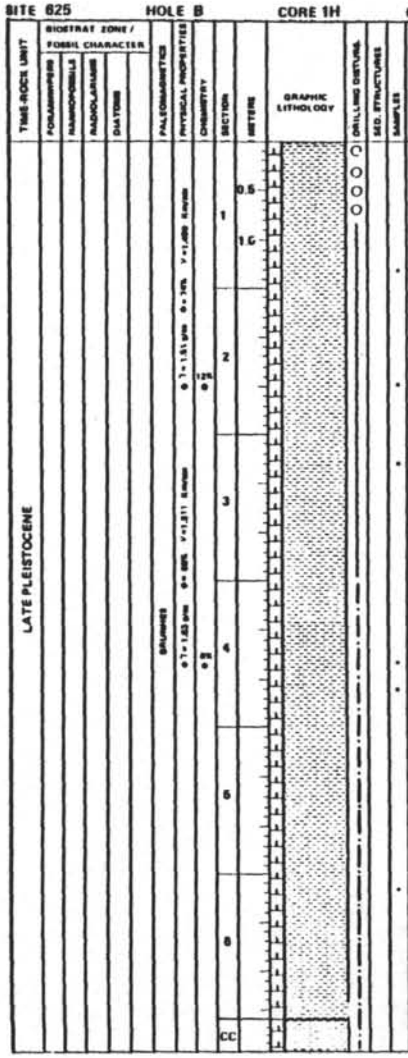
LITHOLOGIC DESCRIPTION

This core contains slightly deformed, mottled NANNOFOSSIL OOZE and MARLY NANNOFOSSIL OOZE. The oozes are dominantly gray to olive grey (5Y6/1 5Y6/2) in color, with minor intervals of olive gray (5Y5/2), light gray (5Y7/1), gray (5Y5/1), white (5Y8/1), and dark gray (5Y4/4). These color variations occur as both diffuse and sharp bands and as distinct burrowed blebs. Pyrite occurs as specs, blebs, and stringers throughout the core; large pyrite nodules (4 cm x 2 cm x 2 cm) occur in Section 1, 36 cm and 96 cm.

SMEAR SLIDE SUMMARY (%):

	1,5	1,97	1,120	2,20	2,70	3,14	CC
	D	M	D	D	D	D	D
TEXTURE:							
Sand	5	10	3	–	Tr	–	Tr
Silt	45	40	42	5	15	5	10
Clay	50	50	55	95	85	95	90
COMPOSITION.							
Quartz	2	1	1	–	–	–	2
Feldspar	1	Tr	Tr	–	–	–	–
Mica	Tr	Tr	Tr	–	–	–	–
Clay	30	36	37	55	35	5	25
Calcite/Dolomite	–	Tr	Tr	5	15	–	–
Pyrite	Tr	1	–	–	–	2	1
Foraminifers	7	8	2	–	–	3	2
Nannofossils	60	50	60	40	50	90	70
Radiolarians	Tr	–	–	–	–	–	–
Sponge Spicules	Tr	–	–	–	–	–	–

SITE 625 HOLE B CORE 1H CORED INTERVAL 899.9 - 907.8 mbsl; 0.0 - 7.9 mbsf



LITHOLOGIC DESCRIPTION

The dominant lithology is SILTY CALCAREOUS MUD

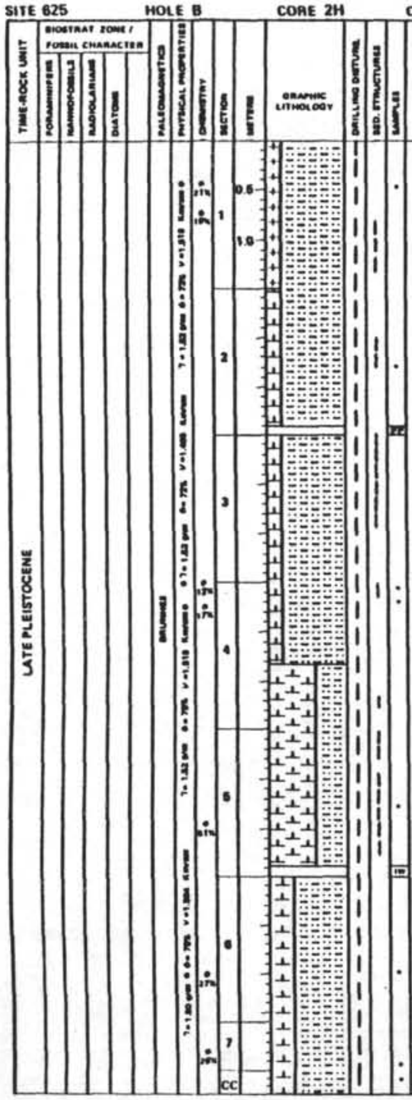
Drilling disturbance resulted in very deformed sediments in Sections 2 and 3. Moderately deformed sediments below Section 3

Top 80 cm of Section 1 is soupy, olive gray (5Y 5/2), SILTY CALCAREOUS MUD. The remainder of the core consists of gray (5Y 3/1) to dark grey (5Y 4/1), SILTY CALCAREOUS MUD.

SMEAR SLIDE SUMMARY (%).

	2,100	3,30	4,86	4,112	6,20
	D	D	M	D	D
TEXTURE:					
Silt	15	20	25	26	27
Clay	85	80	75	74	73
COMPOSITION:					
Quartz	7	12	10	15	10
Feldspar	Tr	Tr	–	–	–
Mica	Tr	Tr	–	Tr	–
Clay	59	38	65	57	72
Calcite/Dol./Carb.	8	–	15	–	15
Accessory Min./opq.	2	10	–	–	–
Pyrite	–	-	–	-	Tr
Foraminifers	Tr	–	–	–	–
Nannofossils	12	15	5	5	Tr
Sponge Spicules	Tr	Tr	–	–	–
Plant Debris	5	5	5	3	–

SITE 625 HOLE B CORE 2H CORED INTERVAL 907.8 - 917.3 mbsl; 7.9 - 17.4 mbsf



LITHOLOGIC DESCRIPTION

This core contains CALCAREOUS MUD and MARLY NANNOFOSSIL OOZE, relatively undisturbed by drilling.

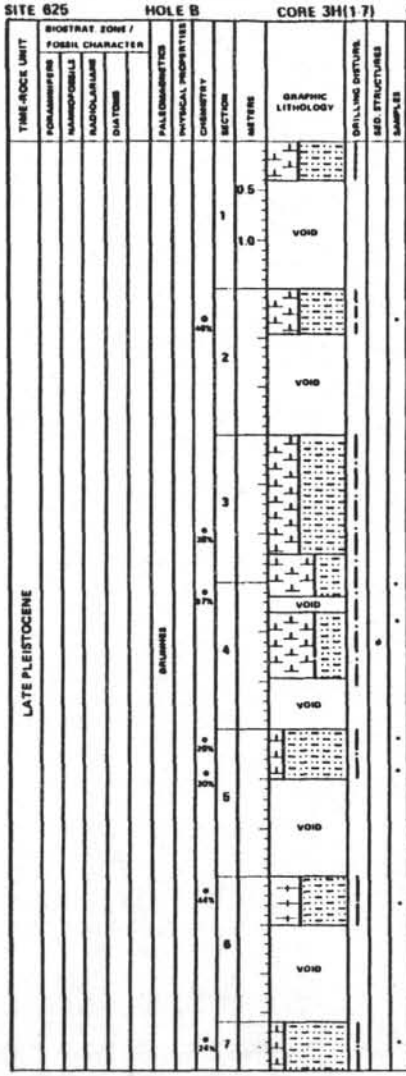
Section 1 through Section 4, 85 cm, and the top of Section 6 through the base of the core contain olive gray (5Y5/2) CALCAREOUS HEMIPELAGIC MUD. Black pyrite specks and burrow mottles occur throughout.

An interval of light olive gray and light gray (5Y6/2 to 5Y6/1) MARLY NANNOFOSSIL OOZE with pyrite stringers throughout occurs from Section 4, 85 cm through the base of Section 5. Graded beds occur in Section 4 at 94, 98 and 101 cm. Foraminifers and small (<1 mm) shell fragments constitute the sand fraction in these intervals.

SMEAR SLIDE SUMMARY (%).

	1,50 D	2,88 D	4,8 D	4,24 D	5,78 D	6,100 D	7,48 D
TEXTURE:							
Sand	4	5	5	2	30	20	10
Silt	26	55	55	50	50	50	40
Clay	70	40	40	58	20	30	50
COMPOSITION.							
Quartz	5	20	20	20	4	25	5
Feldspar	2	–	2	Tr	2	Tr	–
Mica	1	–	Tr	Tr	Tr	Tr	Tr
Clay	60	45	62	58	30	32	50
Calcite/Dolomite	Tr	Tr	Tr	–	–	–	–
Pyrite	Tr	Tr	Tr	Tr	Tr	Tr	–
Foraminifers	10	4	5	2	5	4	4
Nannofossils	20	30	20	20	50	25	25
Sponge Spicules	Tr	1	Tr	Tr	1	1	1
Fish Remains	–	–	Tr	–	–	–	–
Calc. Skeletal Frags.	2	–	1	Tr	10	10	10
Algal Cysts	–	–	Tr	Tr	3	3	5

SITE 625 HOLE B CORE 3H(1-7) CORED INTERVAL 917.3 - 926.8 mbsl; 17.4 - 26.9 mbsf



LITHOLOGIC DESCRIPTION

This core contains MARLY NANNOFOSSIL OOZE and CALCAREOUS HEMIPELAGIC MUD highly disturbed as a result of being taken without a plastic core liner (the liner was hammered into the core barrel after arrival on deck). This procedure produced nine sections plus a core catcher.

Section 1, 0 cm through Section 3, 140 cm consists of MARLY NANNOFOSSIL OOZE, alternating in color between gray (5Y5/1) and olive gray (5Y5/2) on approximately a 10 cm scale.

From Section 3, 140 cm to the base of Section 4, more calcareous gray (5Y5/1 to 5Y6/1) MARLY NANNOFOSSIL OOZE occurs.

Sections 5, 7 and CC contain light olive gray (5Y6/2) to gray (5Y5/1) CALCAREOUS HEMIPELAGIC MUD.

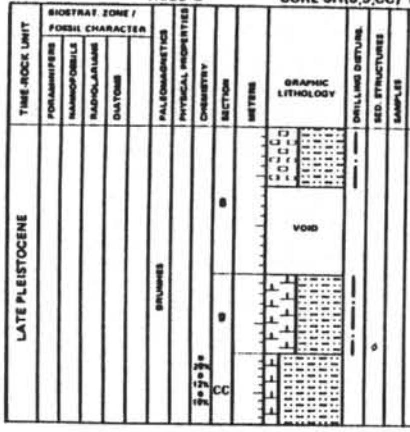
Section 6, 0-50 cm and all of Sections 8 and 9 contain olive gray (5Y5/2) MARLY NANNOFOSSIL OOZE.

Pyrite specks and small (< 1 mm) calcareous shell fragments occur scattered throughout the core.

SMEAR SLIDE SUMMARY (%):

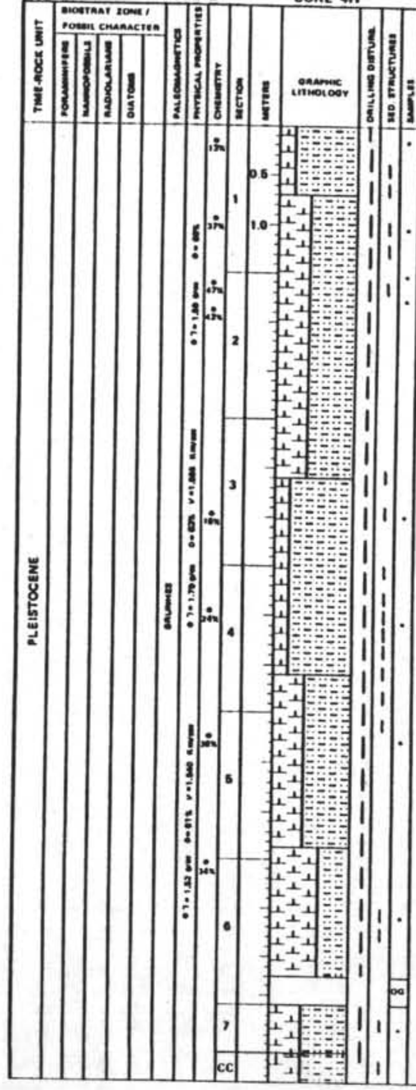
	4,8 D	5,9 D	5,43 D	6,28 D	7,20 D
TEXTURE:					
Sand	5	5	2	5	2
Silt	10	10	60	10	5
Clay	85	85	38	85	93
COMPOSITION:					
Quartz	2	10	2	5	2
Mica	–	–	–	Tr	Tr
Volcanic Glass	46	60	64	42	58
Aragonite	2	1	–	2	1
Pyrite	Tr	–	–	2	Tr
Foraminifers	5	5	1	10	2
Nannofossils	40	20	30	35	30
Sponge Spicules	–	1	–	–	–
Fish Remains	–	–	–	1	2
Calc. Skeletal Frags.	5	2	3	3	5

SITE 625 HOLE B CORE 3H(8,9,CC) CORED INTERVAL 917.3 - 926.8 mbsl; 17.4 - 26.9 mbsf



LITHOLOGIC DESCRIPTION

SITE 625 HOLE B CORE 4H CORED INTERVAL 926.8 - 936.3 mbsl; 26.9 - 36.4 mbsf



LITHOLOGIC DESCRIPTION

This core contains MARLY NANNOFOSSIL OOZE and CALCAREOUS SILTY CLAY with little drilling disturbance.

Grey (5Y5/1 to 5Y6/1) MARLY NANNOFOSSIL OOZE is found from Section 1, 70 cm through Section 3, 60 cm, and in Section 4, 103 cm through the base of the core.

A highly calcareous, light grey (5Y7/1) interval of MARYLY NANNO FOSSIL OOZE occurs from Section 5, 143 cm through Section 6, 120 cm.

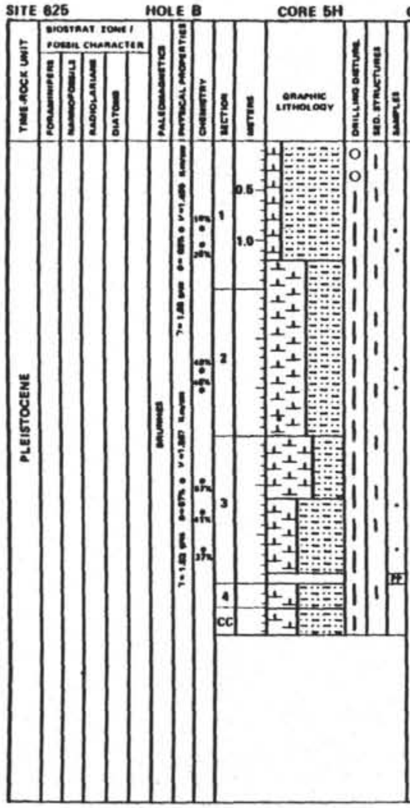
Grey (5Y5/1) CALCAREOUS SILTY CLAY occurs in Section 1, 0 70 cm, and olive grey (5Y5/2) to dark grey (5Y4/1) CALCAREOUS SILTY CLAY is found from Section 3, 60 cm through Section 4, 103 cm. Small (< 1 mm) calcareous shell fragments constitute the predominant calcareous component in this material.

Pyrite occurs throughout the core. Discrete burrows are more prominent in darker intervals of mud, while mottling is more common in the lighter ooze intervals.

SMEAR SLIDE SUMMARY (%):

	1,106 D	2,10 D	3,99 D	4,63 D	5,29 D	6,80 D	7,24 D
TEXTURE:							
Sand	5	5	Tr	20	5	10	20
Silt	50	65	20	20	45	50	40
Clay	45	30	80	60	50	40	40
COMPOSITION:							
Quartz	1	2	1	6	5	2	7
Feldspar	–	–	Tr	–	–	–	Tr
Mica	–	Tr	2	1	Tr	–	–
Clay	45	30	80	60	50	35	45
Calcite/Dol./Rhombs	Tr	–	Tr	1	Tr	–	4
Accessory Min.	Tr	1	Tr	1	1	–	3
Aragonite	–	Tr	Tr	Tr	–	–	Tr
Foraminifers	4	7	Tr	10	7	8	20
Nannofossils	40	50	7	10	30	40	20
Radiolarians	–	Tr	–	Tr	–	–	–
Sponge Spicules	–	–	–	–	–	Tr	–
Plant Debris	–	–	Tr	–	Tr	–	–
Calc. Skeletal Frags.	10	10	10	10	5	15	5
Algal Cysts	–	–	–	1	2	–	Tr

SITE 625 HOLE B CORE 5H CORED INTERVAL 936.3 - 940.8 mbsl; 36.4 - 40.9 mbsf



LITHOLOGIC DESCRIPTION

This core contains MARLY NANNOFOSSIL OOZE and CALCAREOUS SILTY CLAY, relatively undisturbed by drilling, apart from the top 20 cm of the core, which is soupy.

Light olive gray (5Y6/2) MARLY NANNOFOSSIL OOZE is found from Section 1, 72 cm through the base of the core. A highly calcareous interval occurs from Section 2, 150 cm through Section 3, 62 cm.

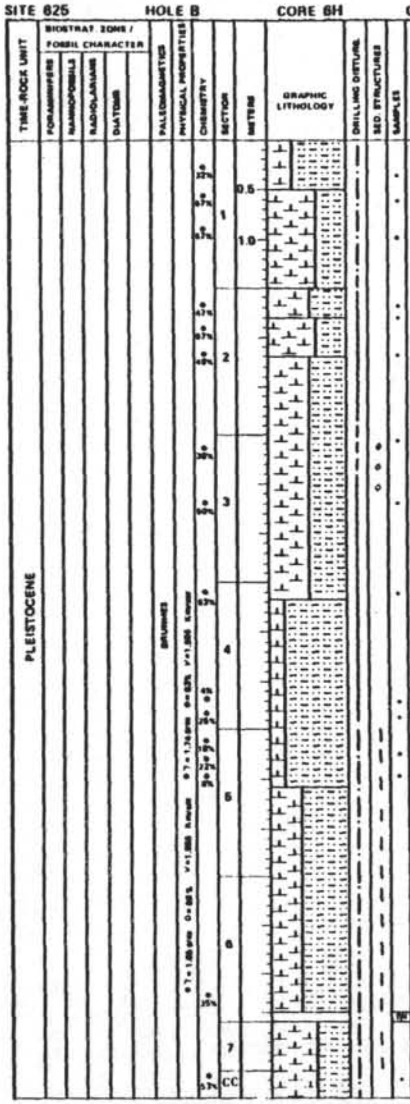
Olive gray (5Y5/2) CALCAREOUS SILTY CLAY occurs in Section 1, 0-72 cm.

Sediments in this core are burrow-mottled throughout, with small discrete horizontal burrows present. Pyrite specks and small (< 1 mm) calcareous shell fragments occur through the core.

SMEAR SLIDE SUMMARY (%):

	1,89 D	1,106 D	2,81 D	2,102 D	3,74 D	3,114 D
TEXTURE:						
Sand	5	20	5	20	20	20
Silt	35	20	45	45	40	30
Clay	65	60	50	35	40	50
COMPOSITION:						
Quartz	3	Tr	Tr	Tr	–	Tr
Feldspar	–	–	–	–	–	Tr
Mica	–	–	–	Tr	–	–
Clay	60	60	45	30	37	50
Calcite/Dol. Rhombs	2	–	–	–	1	–
Aragonite	Tr	Tr	Tr	Tr	–	Tr
Foraminifers	5	10	5	10	10	5
Nannofossils	20	20	50	50	40	30
Sponge Spicules	Tr	–	Tr	–	Tr	–
Fish Remains	–	Tr	–	–	–	–
Calc. Skeletal Frags.	5	10	Tr	10	10	15
Algal Cysts	–	Tr	–	Tr	2	Tr

SITE 625 HOLE B CORE 6H CORED INTERVAL 940.8 - 950.3 mbsl; 40.9 - 50.4 mbsf



LITHOLOGIC DESCRIPTION

This core contains MARLY NANNOFOSSIL OOZE and CALCAREOUS MUD, slightly to moderately disturbed by drilling, with a distinct flow in structure visible from Section 3, 82 cm through Section 4, 72 cm.

Gray to olive gray (5Y 5/1 to 5Y 5/2) MARLY NANNOFOSSIL OOZE is found from the top of the core through Section 4, 30 cm, and from Section 5, 50 cm to the base of the core. Flow in material may occur in Sections 1, 3 and 4.

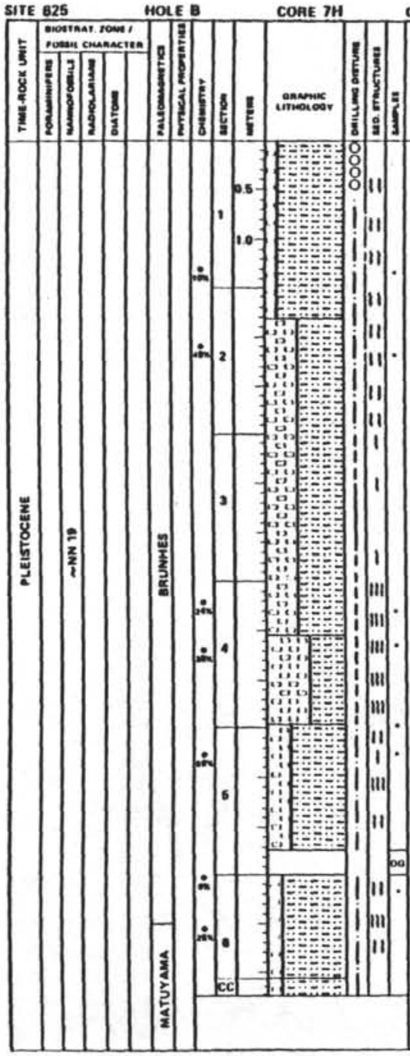
At Section 4, 30 cm a transition into darker gray (5Y 4/1) CALCAREOUS MUD occurs, this lithology continues through Section 5, 50 cm.

Small (<1 mm) calcareous shell fragments and specks of pyrite occur throughout.

SMEAR SLIDE SUMMARY (%):

	1,36 D	1,100 D	2,74 D	3,72 D	4,9 D	5,25 D	CC,5 M
TEXTURE:							
Sand	5	20	5	–	5	3	–
Silt	25	30	40	35	35	37	35
Clay	70	50	55	65	60	60	65
COMPOSITION:							
Quartz	5	–	5	5	3	10	5
Feldspar	Tr	–	–	–	Tr	3	Tr
Mica	Tr	3	Tr	Tr	Tr	2	Tr
Clay	50	15	25	35	35	50	20
Pyrite	Tr	3	–	–	2	Tr	–
Aragonite	–	5	Tr	–	–	–	–
Foraminifers	10	20	20	5	10	5	5
Nannofossils	30	50	45	50	45	20	60
Sponge Spicules	Tr	Tr	Tr	Tr	Tr	–	Tr
Plant Debris	Tr	3	–	Tr	Tr	3	Tr
Calc. Skeletal Frags.	5	–	5	5	5	2	5

SITE 825 HOLE B CORE 7H CORED INTERVAL 950.3 - 958.4 mbsl; 50.4 - 58.5 mbsf



LITHOLOGIC DESCRIPTION

The dominant lithology is dark gray to olive gray CALCAREOUS MARL.

Moderate to severe drilling disturbance is observed in Section 1, 0 35 cm and in Section 3, 70 110 cm. The core is uniformly mottled throughout; evidence of moderate to heavy bioturbation of the sediment. A large vertical burrow is observed in Section 5, 50 85 cm.

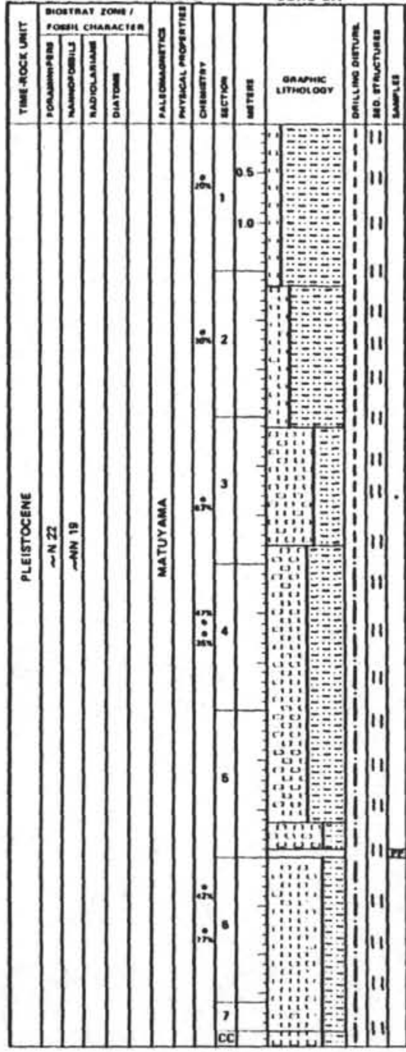
The major lithology is dark gray (5Y4/1) to olive gray (5Y2/1) CALCAREOUS MARL. Pyrite occurs as dark particles visible on the split face of the core, and a small (1 cm) pocket of pyrite is present at Section 6, 65 cm.

The CALCAREOUS MARL grades into an interval of olive gray (5Y5/1) to gray (5Y6/1) MARLY CALCAREOUS OOZE from Section 2, 40 cm to Section 4, 145 cm.

SMEAR SLIDE SUMMARY (%):

	1,135 D	2,72 D	4,29 D	4,70 D	4,150 D	5,30 D	6,11 D
TEXTURE:							
Sand	1	5	10	20	10	8	15
Silt	69	65	75	45	15	15	40
Clay	30	30	15	35	75	77	45
COMPOSITION:							
Quartz	50	30	30	10	2	5	30
Feldspar	–	–	1	–	–	–	–
Mica	–	–	–	–	–	–	Tr
Clay	30	30	12	34	60	35	40
Calcite/Dolomite	2	Tr	–	Tr	11	–	Tr
Accessory Min/Opq.	Tr	–	–	–	Tr	–	–
Pyrite	–	–	25	–	–	Tr	1
Foraminifers	8	10	5	10	3	5	2
Nannofossils	2	30	20	30	25	45	5
Sponge Spicules	–	Tr	–	Tr	–	–	–
Fish Remains	Tr	–	–	–	–	–	–
Plant Debris	Tr	–	–	Tr	–	Tr	2
Skeletal Frags.	10	Tr	Tr	15	7	10	15
Aragonite Needles	–	Tr	Tr	1	2	Tr	–

SITE 825 HOLE B CORE 8H CORED INTERVAL 958.4 - 967.4 mbsl; 58.5 - 67.5 mbsf



LITHOLOGIC DESCRIPTION

This core consists of light gray to light olive gray MARLY CALCAREOUS OOZE.

Slight to moderate drilling disturbance is evident from Section 1, 0 cm to Section 2, 60 cm and again in Section 3, 0 150 cm. A fossil horn coral was found at Section 1, 105 cm.

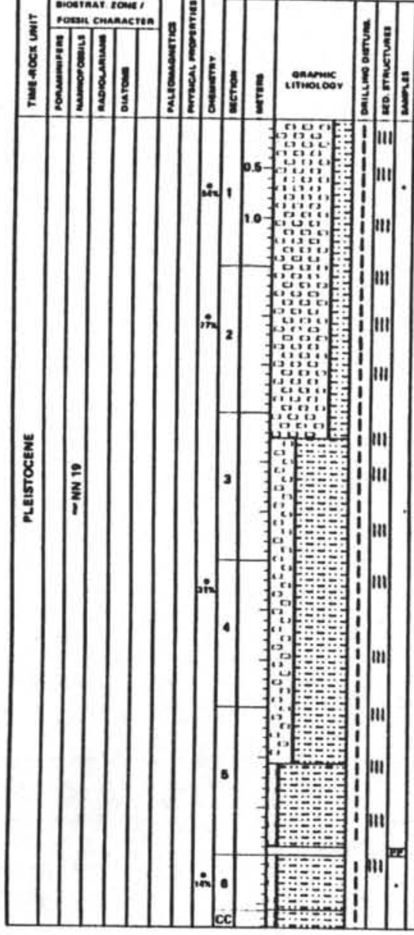
The dominant lithology is light olive gray (5Y8/1) to light gray (5Y7/1) MARLY CALCAREOUS OOZE. Pyrite occurs throughout this interval as dark particles visible on the split face of the core.

Light olive gray (5Y5/1) CALCAREOUS MARL occurs from Section 1, 0 cm to Section 3, 10 cm with a gradational contact with the MARLY CALCAREOUS OOZE.

SMEAR SLIDE SUMMARY (%):

	3,75 D
TEXTURE:	
Silt	17
Clay	83
COMPOSITION:	
Quartz	2
Clay	53
Calcite/Dolomite	2
Pyrite	1
Foraminifers	10
Nannofossils	30
Plant Debris	Tr
Aragonite Needles	2

SITE 625 HOLE B CORE 9H CORED INTERVAL 967.4 - 975.3 mbsl; 67.5 - 75.4 mbsf



LITHOLOGIC DESCRIPTION

This core consists of CALCAREOUS MARL.

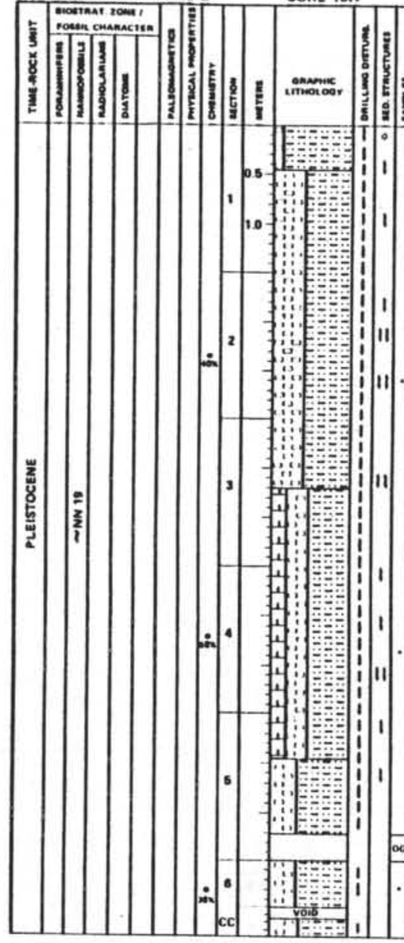
There is little to no evidence of drilling disturbance. The core is extensively mottled with Zoophycus burrows common throughout. Fragments of calcareous skeletal material and pyrite are common. A microfault with an apparent normal displacement is observed at Section 6, 44 cm.

The dominant lithology is dark gray (5Y4/1) to olive gray (5Y4/2) CALCAREOUS MARL which occurs from Section 3, 25 cm to the base of the core. This lithology grades upcore into light olive gray (5Y6/2) to olive gray (5Y4/2) MARLY CALCAREOUS OOZE which occurs from Section 1, 0 cm to Section 3, 25 cm.

SMEAR SLIDE SUMMARY (%):

	1,70 D	6,23 D
TEXTURE:		
Sand	15	Tr
Silt	35	10
Clay	50	90
COMPOSITION:		
Quartz	12	5
Clay	38	70
Pyrite	Tr	10
Foraminifers	Tr	Tr
Nannofossils	Tr	10
Plant Debris	Tr	Tr
Calc. Skeletal Frags.	30	5

SITE 625 HOLE B CORE 10H CORED INTERVAL 975.3 - 983.5 mbsl; 75.4 - 83.6 mbsf



LITHOLOGIC DESCRIPTION

This core consists of MARLY CALCAREOUS OOZE.

There is little to no evidence of drilling disturbance. The sediment is mottled with abundant burrows at Section 2, 55 cm to 80 cm and in Section 3, 100 cm to 130 cm. Pyrite and fragments of calcareous macrofossils are visable on the split face of the core

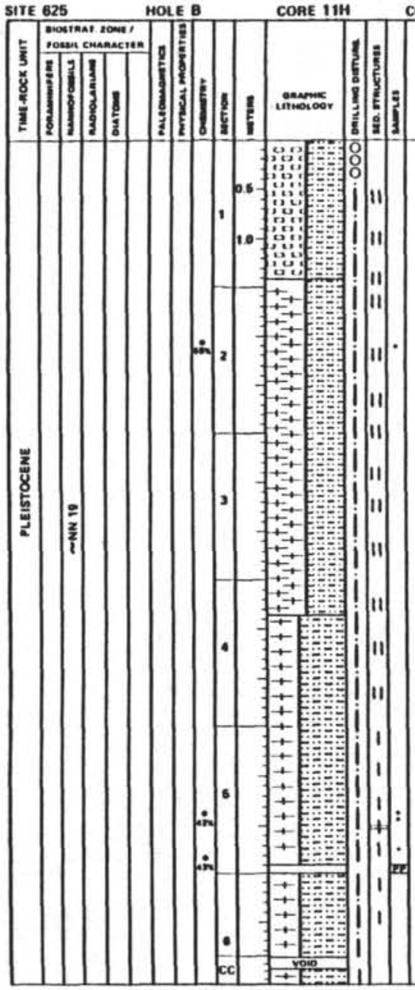
The dominant lithology through this interval is a light gray (5Y8/2) to light olive gray (5Y6/1) to gray (5Y5/1) MARLY CALCAREOUS OOZE.

An interval of light gray (5Y6/1) MARLY CALCAREOUS OOZE with thin layers of foram and skeletal clast sand occurs from Section 5, 55 cm to 98 cm. From Section 3, 94 cm to Section 5, 55 cm, an interval of light olive gray (5Y6/2) MARLY FORAM SAND occurs

SMEAR SLIDE SUMMARY (%):

	2,100 D	4,81 D	6,29 D
TEXTURE:			
Sand	5	35	15
Silt	30	25	25
Clay	65	40	50
COMPOSITION:			
Quartz	10	10	15
Mica	–	3	Tr
Clay	45	25	35
Opaques	Tr	–	Tr
Foraminifers	5	20	5
Nannofossils	20	15	15
Calc. Skeletal Frags.	25	22	20

SITE 625 HOLE B CORE 11H CORED INTERVAL 983.5 - 992.1 mbsl; 83.6 - 92.2 mbsf



LITHOLOGIC DESCRIPTION

This core consists of MARLY NANNO FORAM OOZE.

The core is severely disturbed from Section 1, 0 to 30 cm, and the CC is severely disturbed and contains an O ring which probably originated in the hydraulic piston corer. Uniform mottling is present throughout with occasional large burrows present.

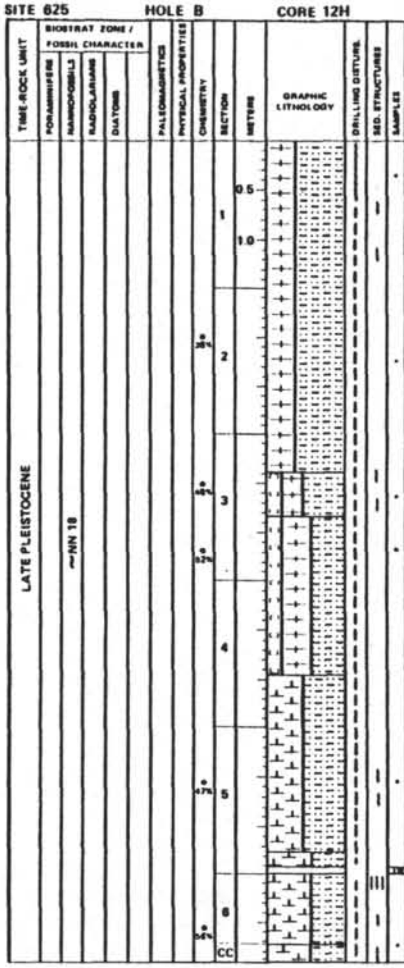
The dominant lithology is grey (5Y6/1) to light grey (5Y8/1) MARLY NANNO FORAM OOZE which contains forams and skeletal fragments which are visible on the split face of the core.

An ungraded, burrowed, dark gray (5Y4/1) FORAM SAND layer occurs from Section 5, 92 to 98 cm.

SMEAR SLIDE SUMMARY (%):

	2,64 D	5,84 D	5,96 M	5,126 D
TEXTURE:				
Sand	60	40	40	3
Silt	26	15	40	15
Clay	14	45	20	82
COMPOSITION:				
Quartz	Tr	5	5	3
Mica	–	1	Tr	–
Clay	25	52	20	60
Calcite/Dolomite	–	1	Tr	–
Pyrite	–	Tr	1	Tr
Glauconite	–	–	1	–
Foraminifers	35	10	40	2
Nannofossils	10	10	15	22
Sponge Spicules	Tr	–	–	–
Plant Debris	–	–	–	Tr
Calc. Skeletal Frags.	30	30	20	13
Aragonite Needles	–	1	Tr	–

SITE 625 HOLE B CORE 12H CORED INTERVAL 992.1 - 1000.7 mbsl; 92.2 - 100.8 mbsf



LITHOLOGIC DESCRIPTION

This core consists of light gray MARLY NANNOFOSSIL OOZE.

The core is relatively undisturbed with drilling disturbance evident only from Section 1, 0 to 60 cm. Mottling is uniform throughout the core.

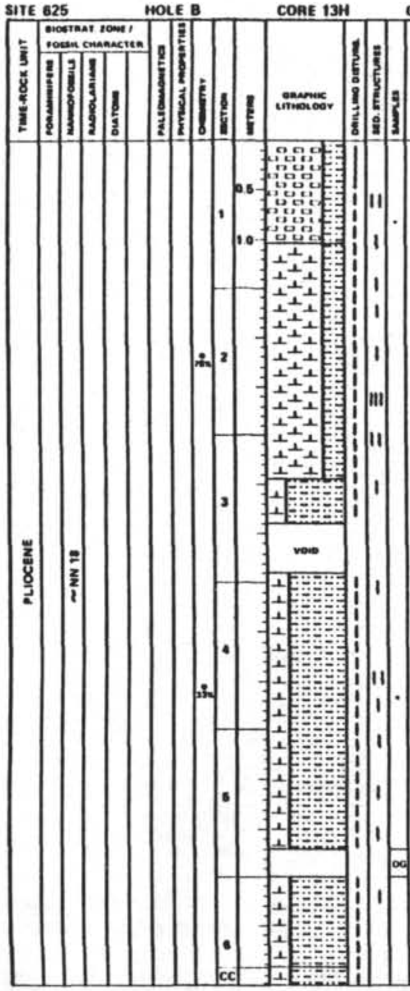
The dominant lithology is a light gray (5Y8/1) MARLY NANNOFOSSIL OOZE which occurs from Section 4, 145 cm to the base of the CC section.

Minor lithologies include a light olive gray (5Y6/2) MARLY FORAM NANNOFOSSIL OOZE which occurs from Section 1, 0 cm to Section 3, 55 cm. From Section 3, 55 to 120 cm a dark gray (5Y4/2) MARLY CALCAREOUS OOZE occurs. Light gray (5Y6/1) MARLY CALCAREOUS OOZE occurs from Section 3, 120 cm to Section 4, 145 cm.

SMEAR SLIDE SUMMARY (%):

	1,36 D	2,80 D	3,86 D	3,117 D	5,85 D	6,70 D
TEXTURE:						
Sand	–	5	5	1	–	–
Silt	38	22	15	24	20	20
Clay	62	73	80	86	80	80
COMPOSITION:						
Quartz	10	6	10	10	Tr	1
Feldspar	–	–	5	5	–	–
Mica	–	–	Tr	–	–	–
Clay	45	57	45	40	58	40
Calcite/Dolomite	10	5	1	Tr	5	–
Pyrite	2	1	1	–	–	Tr
Rust	–	–	Tr	–	–	–
Foraminifers	15	5	2	5	5	10
Nannofossils	15	25	15	20	40	40
Sponge Spicules	1	–	Tr	Tr	–	Tr
Plant Debris	Tr	Tr	–	–	Tr	1
Aragonite	2	2	–	–	–	3
Calc. Skeletal Frags.	–	–	20	20	–	–

SITE 625 HOLE B CORE 13H CORED INTERVAL 1000.7 - 1009.4 mbsl; 100.8 - 109.5 mbsf



LITHOLOGIC DESCRIPTION

This core consists of olive gray NANNOFOSSIL MARL.

Drilling disturbance is evident from Section 1, 0 50 cm. The core is mottled throughout with intervals of numerous burrows observed from Section 2, 100 cm to Section 3, 40 cm. Shell fragments and pyrite occur sporadically on the split face of the core.

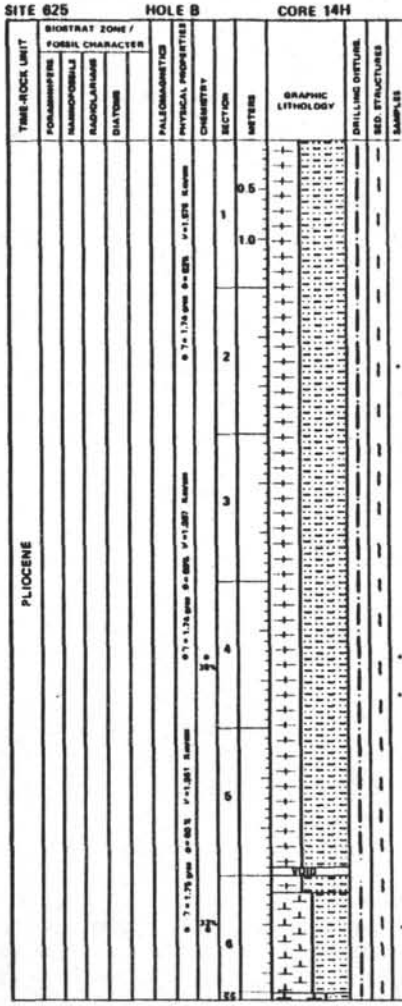
The dominant lithology is an olive gray (5Y5/2) NANNOFOSSIL MARL which occurs from Section 3, 45 cm to the base of the core.

Minor lithologies observed in the upper part of this core include grey (5Y8/1) MARLY CALCAREOUS OOZE in Section 1, 0 105 cm and olive gray (5Y8/2) MARLY NANNOFOSSIL OOZE from Section 1, 105 cm to Section 3, 45 cm.

SMEAR SLIDE SUMMARY (%):

	1,75 D	4,110 D
TEXTURE.		
Sand	Tr	–
Silt	15	10
Clay	85	90
COMPOSITION:		
Quartz	5	2
Mica	1	1
Clay	56	65
Pyrite	Tr	Tr
Foraminifers	Tr	Tr
Nannofossils	30	25
Calc. Skeletal Frag.	9	7

SITE 625 HOLE B CORE 14H CORED INTERVAL 1009.4 - 1018.4 mbsl; 109.5 118.5 mbsf



LITHOLOGIC DESCRIPTION

The dominant lithology is MARLY NANNOFOSSIL OOZE.

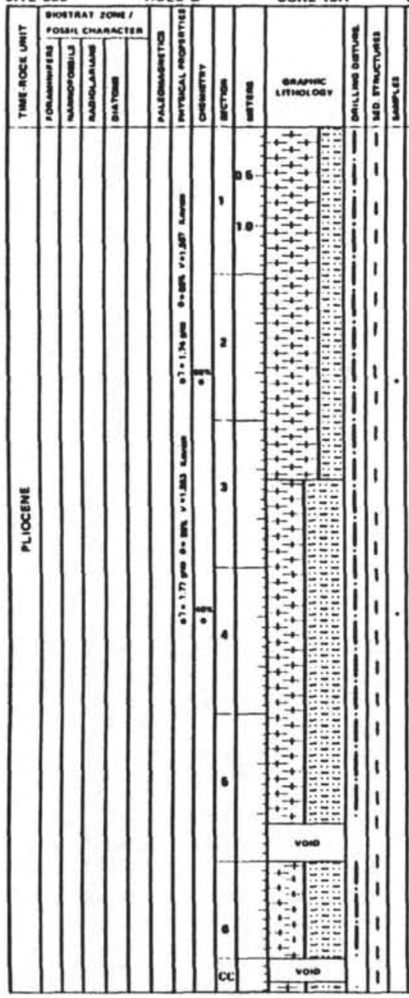
Moderate drilling disturbance is observed in all sections. The core shows minor bioturbation. Pyrite occurs at traces and in local concentrations on the split face of the core. Shell debris can be seen as white particles varying in size from 0.5 to 2 mm.

Sections 1 and 2 show a gradual change in color from light olive gray (5Y 7/1) MARLY NANNOFOSSIL OOZE at the top of Section 1 to olive gray (5Y 6/1) at the bottom of Section 2. From Section 3 to the bottom of the core, the sediment is light olive gray (5Y 5/2 to 5Y 6/2) in color.

SMEAR SLIDE SUMMARY (%):

	2,75 D	4,75 D	4,120 D	6,54 D
TEXTURE:				
Silt	22	18	17	20
Clay	78	82	83	80
COMPOSITION:				
Quartz	5	1	Tr	2
Clay	58	72	63	51
Calcite/Dolomite	5	5	1	5
Pyrite	1	5	1	20
Aragonite	1	2	–	2
Foraminifers	10	5	15	5
Nannofossils	20	10	20	15
Plant Debris	Tr	Tr	Tr	Tr

SITE 625 HOLE B CORE 15H CORED INTERVAL 1018.4 - 1027.2 mbsl, 118.5 - 127.3 mbsf



LITHOLOGIC DESCRIPTION

The dominant lithology is MARLY NANNOFOSSIL OOZE.

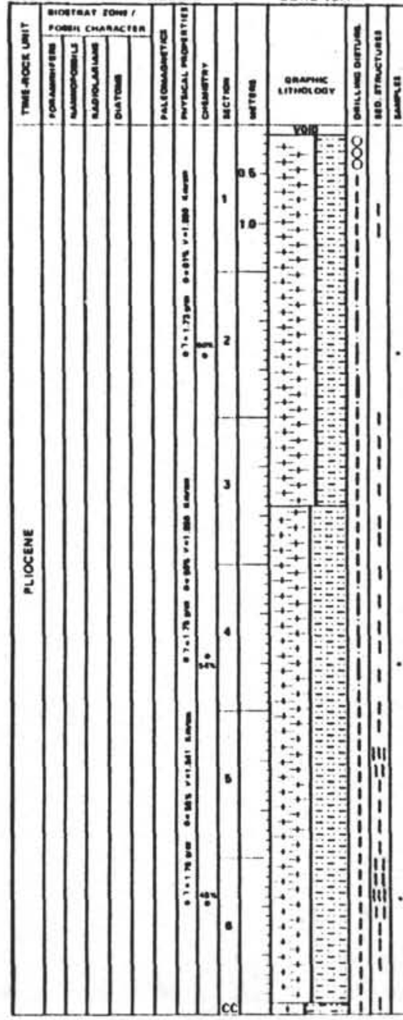
Moderate drilling disturbance is observed in all sections. The core shows minor bioturbation. Pyrite occurs as traces and in local concentrations on the split face of the core. Shell debris can be seen as white particles varying in size from 0.5 to 2 mm.

Sections 1 and 2 show a gradual change in color from light olive grey (5Y7/1) MARLY NANNOFOSSIL OOZE at the top of Section 1 to olive grey (5Y6/1) at the bottom of Section 2. From Section 3 to the bottom of the core, the sediment is light olive gray (5Y5/2 to 5Y6/2) in color.

SMEAR SLIDE SUMMARY (%):

	2,112 D	4,50 D
TEXTURE:		
Sand	5	10
Silt	15	15
Clay	80	75
COMPOSITION:		
Quartz	2	3
Mica	1	–
Clay	65	56
Calcite/Dolomite	12	19
Pyrite	2	1
Foraminifers	3	2
Nannofossils	15	20

SITE 625 HOLE B CORE 16H CORED INTERVAL 1027.2 - 1036.5 mbsl, 127.3 - 136.6 mbsf



LITHOLOGIC DESCRIPTION

The dominant lithology is MARLY NANNOFOSSIL OOZE

Moderate drilling disturbance is observed in Sections 2 and 4. The core shows minor bioturbation throughout, except for Section 2. Bioturbation is particularly intense at two horizons in Sections 5 and 6. Pyrite is locally concentrated. Shell fragments 0.5 to 2 mm in diameter can be seen on the split face of the core.

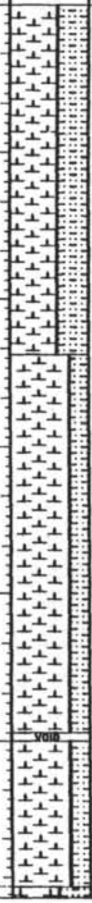
The MARLY NANNOFOSSIL OOZE is a uniform gray (5Y5/1) color in Sections 1, 2 and 3. In Sections below this, color alternates between light olive gray (5Y6/2), olive gray (5Y5/2), and black (5Y2.5/1), as broad layers of varying thickness.

SMEAR SLIDE SUMMARY (%):

	2,84 D	4,100 D	6,40 D
TEXTURE:			
Sand	2	–	5
Silt	20	10	15
Clay	78	90	80
COMPOSITION:			
Quartz	5	3	5
Mica	2	–	–
Clay	58	60	60
Skeletal Frags.	12	5	15
Pyrite	–	1	Tr
Foraminifers	3	1	–
Nannofossils	20	30	20

SITE 625 HOLE B CORE 17H CORED INTERVAL 1036.5 - 1045.7 mbsl; 136.6 - 145.8 mbsl

TIME-ROCK UNIT	BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYSICAL PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
PLIOCENE								1, 2, 3, 4, 5, 6, CC	0.5, 1.0	VOID			



LITHOLOGIC DESCRIPTION

The dominant lithology is MARLY NANNOFOSSIL OOZE.

Moderate drilling disturbance is observed in Sections 1 to 4. The core shows minor bioturbation with local concentrations at three different horizons. Pyrite occurs as traces and in local concentrations on the split face of the core. Pyrite nodules can be found in Section 2, 20 cm and Section 3, 80 cm. Shell debris can be seen as white particles 0.5 to 2 mm in diameter.

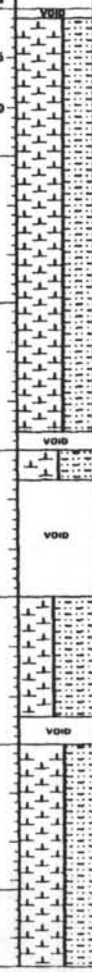
The MARLY NANNOFOSSIL OOZE gradually changes from light olive gray (5Y6/2) to olive gray (5Y5/2) color along the length of the core. There is a light olive gray (5Y5/2) horizon forming Section 5 and light grey (5Y5/1) sediments form the core below Section 6, 140 cm.

SMEAR SLIDE SUMMARY (%):

	2,50 D	4,50 D	6,50 D
TEXTURE:			
Sand	5	3	10
Silt	60	60	60
Clay	35	37	30
COMPOSITION:			
Quartz	5	4	5
Feldspar	–	–	Tr
Mica	Tr	1	–
Clay	26	17	20
Calcite/Dolomite	–	17	–
Pyrite	Tr	1	Tr
Aragonite	Tr	–	5
Foraminifers	3	Tr	10
Nannofossils	60	60	60

SITE 625 HOLE B CORE 18H CORED INTERVAL 1045.7 - 1053.5 mbsl; 145.8 - 153.6 mbsl

TIME-ROCK UNIT	BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYSICAL PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
PLIOCENE								1, 2, 3, 4, 5, 6, 7	0.5, 1.0	VOID			



LITHOLOGIC DESCRIPTION

The dominant lithology is MARLY NANNOFOSSIL OOZE.

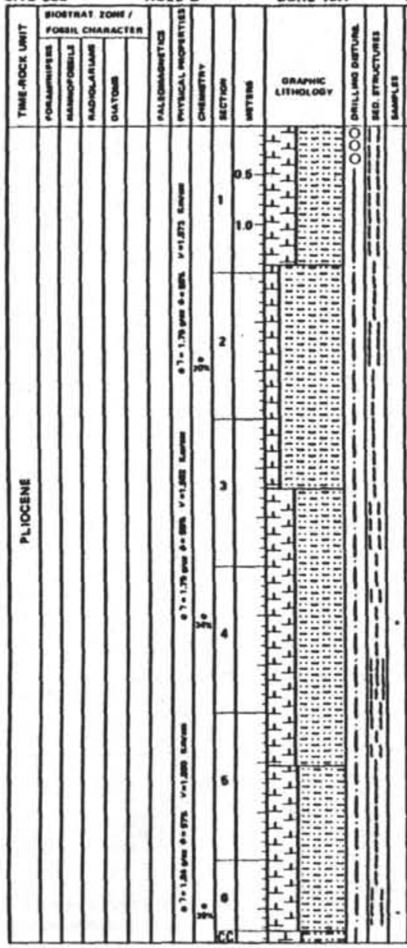
Drilling disturbance is observed in Sections 1, 2 and 4. The core shows minor bioturbation in Sections 1, 2, 5, 6 and 7, with local concentrations in Section 1. Pyrite can be seen on the split face of the core and there is a pyrite nodule present in Section 2, 126 cm. Shell debris is commonly 0.5 to 2 mm in diameter and is evenly distributed along the core.

The MARLY NANNOFOSSIL OOZE exhibits a number of color changes along the core. Sections 1, 2 and 3 are light olive gray (5Y6/2) with a light gray (5Y7/1) horizon forming Section 2. Sections 5 and 6 change with depth from light gray (5Y5/1), to gray (5Y6/1), to light olive gray (5Y5/2), and back to light gray (5Y7/1) at the bottom of Section 6. Section 7 is olive gray (5Y6/2).

SMEAR SLIDE SUMMARY (%):

	5,50 D	6,90 D
TEXTURE:		
Sand	5	10
Silt	45	60
Clay	50	30
COMPOSITION:		
Quartz	Tr	Tr
Clay	50	36
Calcite/Dolomite	–	1
Pyrite	Tr	1
Aragonite	–	2
Foraminifers	5	5
Nannofossils	20	55
Plant Debris	–	Tr
Skeletal Frags.	25	Tr

SITE 625 HOLE B CORE 19H CORED INTERVAL 1053.5 - 1062.0 mbsl; 153.6 - 162.1 mbsf



LITHOLOGIC DESCRIPTION

The dominant lithology is gradational between MARLY NANNOFOSSIL OOZE and CALCAREOUS MUD.

Severe drilling disturbance is observed in Section 1. Minor bioturbation occurs throughout the core and seven occurrences of Chondrites bioturbation were observed.

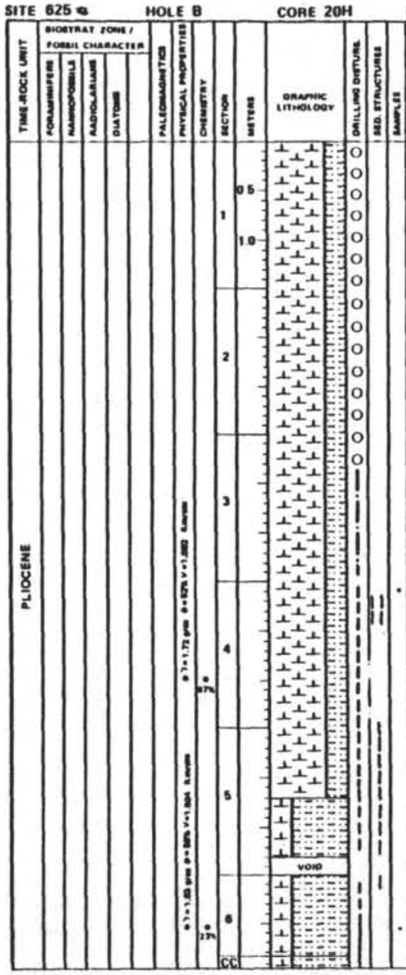
The major lithologies grade from MARLY NANNOFOSSIL OOZE in Section 1 to CALCAREOUS MUD in Sections 2 and 3, and back to MARLY NANNOFOSSIL OOZE below Section 3, 70 cm. Sediments exhibit various tones and shades of gray, proceeding from gray (5Y 5/1) in Section 1 and 2, (120 cm), to dark gray (5Y 4/1) in Section 2, (120 cm to 150 cm). The remainder of the core shows changes from olive gray (5Y 4/2) to gray (5Y 5/1) occurring on the order of 40 70 cm bands.

Minor lithologies are pyrite traces and concentrations occurring as dark specks and streaks. Small shell fragments occasionally found.

SMEAR SLIDE SUMMARY (%):

	4,60 D	6,53 D
TEXTURE:		
Sand	–	5
Silt	15	20
Clay	85	75
COMPOSITION:		
Quartz	2	–
Clay	55	60
Skeletal Frags.	13	5
Pyrite	–	5
Foraminifers	Tr	10
Nannofossils	30	20

SITE 625 HOLE B CORE 20H CORED INTERVAL 1062.0 - 1070.5 mbsl; 162.1 - 170.6 mbsf



LITHOLOGIC DESCRIPTION

The dominant lithology is gradational between MARLY NANNOFOSSIL OOZE in Sections 1 to 5 and CALCAREOUS MUD in Section 5, 6 and 7.

Drilling disturbance is severe in Sections 1 and 2 appearing as slurry. Section 3 shows moderate disturbance. Minor bioturbation in sections 4 and 5.

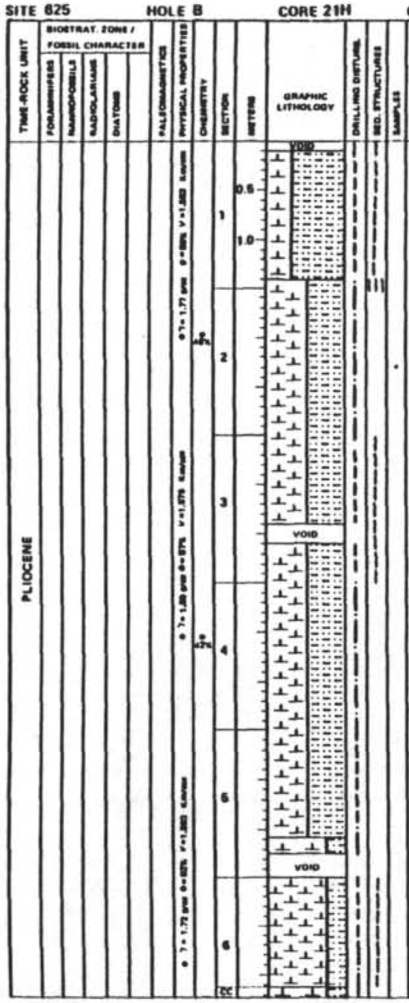
Most changes in the core are color variations occurring in both MARLY NANNOFOSSIL OOZES and CALCAREOUS MUDS. The MARLY NANNOFOSSIL OOZES grade from gray (6Y5/1) in Sections 1 and 2 to olive gray (5Y6/2) in Sections 3 and 5. Section 4 presents numerous shades of dark gray (5Y4/1). The CALCAREOUS MUD in Sections 5, 6 and 7 is predominantly light olive gray (5Y6/2).

Minor lithologies consist of black pyrite flecks and streaks and occasional fine shell fragments.

SMEAR SLIDE SUMMARY (%):

	4,10 D	6,62 D
TEXTURE:		
Sand	10	–
Silt	70	25
Clay	20	75
COMPOSITION:		
Quartz	2	2
Clay	28	72
Calcite/Dolomite	5	1
Pyrite	1	Tr
Aragonite	1	Tr
Foraminifers	5	Tr
Nannofossils	60	25
Plant Debris	Tr	Tr

SITE 625 HOLE B CORE 21H CORED INTERVAL 1070.5 - 1079.2 mbsl; 170.6 - 179.3 mbsf



LITHOLOGIC DESCRIPTION

The dominant lithology is MARLY NANNOFOSSIL OOZE.

Drilling disturbance is limited, with slight deformation in Sections 2 and 4.

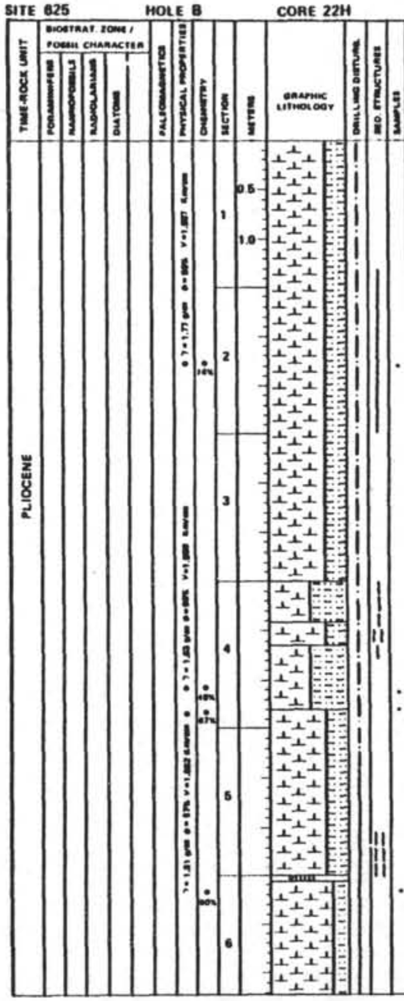
Most of the sequence is a bioturbated MARLY NANNOFOSSIL OOZE. A gradational color contact at Section 1 (130 cm) marks transition from light olive gray (5Y 6/2) above to olive gray (5Y 5/2) grading to dark gray (5Y 4/1) below. Sharp color contact observed at Section 5 (108 cm) from dark gray to light olive gray (5Y 6/2) also matches zone of strong burrowing.

Minor lithologies are calcareous fragments and pyrite grains distributed throughout the core.

SMEAR SLIDE SUMMARY (%):

	2,80
	D
TEXTURE:	
Sand	5
Silt	10
Clay	85
COMPOSITION:	
Quartz	4
Clay	45
Calcite/Dolomite	Tr
Calc. Fragments	9
Foraminifers	2
Nannofossils	40

SITE 625 HOLE B CORE 22H CORED INTERVAL 1079.2 - 1087.9 mbsl; 179.3 - 188.0 mbsf



LITHOLOGIC DESCRIPTION

The dominant lithology is a slightly bioturbated MARLY NANNOFOSSIL OOZE.

Drilling disturbance is found as severely deformed sediments in Sections 5 and 6.

The core is in general a sequence of alternating color bands and layers with diffuse contacts of MARLY NANNOFOSSIL OOZE. Colors are gradational between gray (5Y7/1), light olive gray (5Y6/2), and light gray (5Y6/2). Bioturbation in the form of burrows are common in Sections 2 and 4, and are concentrated at Section 4 (60 cm) and Section 5 (110 150 cm).

Minor lithologies are calcareous shell debris and black pyrite flecks

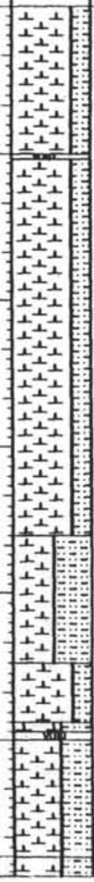
SMEAR SLIDE SUMMARY (%):

	2,71	4,119	4,139	6,20
	D	D	D	D
TEXTURE:				
Sand	5	1	5	5
Silt	45	24	45	55
Clay	50	75	50	40
COMPOSITION:				
Quartz	10	3	8	3
Mica	–	Tr	–	–
Calcite/Dolomite	Tr	–	Tr	–
Aragonite Needles	Tr	Tr	Tr	Tr
Pyrite	–	5	–	–
Glauconite	–	Tr	–	–
Fish Remains	–	Tr	–	–

SITE 625 HOLE B CORE 23H CORED INTERVAL 1087.9 - 1097.0 mbsl; 188.0 - 197.1 mbsf

TIME-ROCK UNIT | BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS, NANNOFOSSILS, RADIOLARIANS, DIATOMS | PALEOMAGNETICS | PHYSICAL PROPERTIES | CHEMISTRY | SECTION | METERS | GRAPHIC LITHOLOGY | DRILLING DISTURB. | SED. STRUCTURES | SAMPLES

PLIOCENE



LITHOLOGIC DESCRIPTION

The dominant lithology is a bioturbated MARLY NANNOFOSSIL OOZE.

Drilling disturbance is severe in the top 100 cm of Section 1 and becomes moderate in Sections 2, 4 and 5.

This core consists of bioturbated MARLY NANNOFOSSIL OOZE with diffuse color bands and layers. Colors are gradational between gray (5Y 7/1), light gray (5Y 8/2), light olive gray (5Y 6/2) and dark gray (5Y 4/1). Burrowing is found in the lower 30 cm of Section 1 and all of Section 2. Section 4 (85-100 cm) shows strong burrowing and becoming moderately burrowed in the remainder of Section 4 and in Section 6.

Minor lithologies are pyrite and calcareous shell fragments.

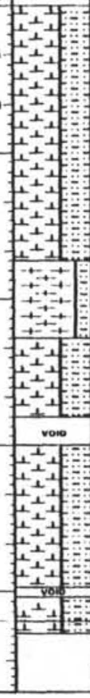
SMEAR SLIDE SUMMARY (%):

	2,71	3,111	4,120	5,99	6,59
	D	D	D	D	D
TEXTURE:					
Sand	10	–	–	5	2
Silt	17	13	5	20	15
Clay	73	87	95	75	83
COMPOSITION:					
Quartz	Tr	1	Tr	2	3
Feldspar	–	–	–	Tr	Tr
Clay	28	27	55	20	40
Calcite/Dolomite	–	1	–	1	Tr
Aragonite Needles	Tr	–	–	–	–
Pyrite	1	1	Tr	–	–
Calc. Fragments	10	10	–	–	10
Foraminifers	15	10	5	10	5
Nannofossils	45	50	40	65	40
Sponge Spicules	Tr	–	Tr	1	–
Plant Debris	Tr	Tr	Tr	–	–

SITE 625 HOLE B CORE 24X CORED INTERVAL 1097.0 - 1106.6 mbsl; 197.1 - 206.7 mbsf

TIME-ROCK UNIT | BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS, NANNOFOSSILS, RADIOLARIANS, DIATOMS | PALEOMAGNETICS | PHYSICAL PROPERTIES | CHEMISTRY | SECTION | METERS | GRAPHIC LITHOLOGY | DRILLING DISTURB. | SED. STRUCTURES | SAMPLES

PLIOCENE



LITHOLOGIC DESCRIPTION

The dominant lithology is MARLY NANNOFOSSIL OOZE.

Moderate drilling disturbance is observed in Sections 1, 2, 3 and 4. Minor bioturbation occurs in Sections 2 and 3.

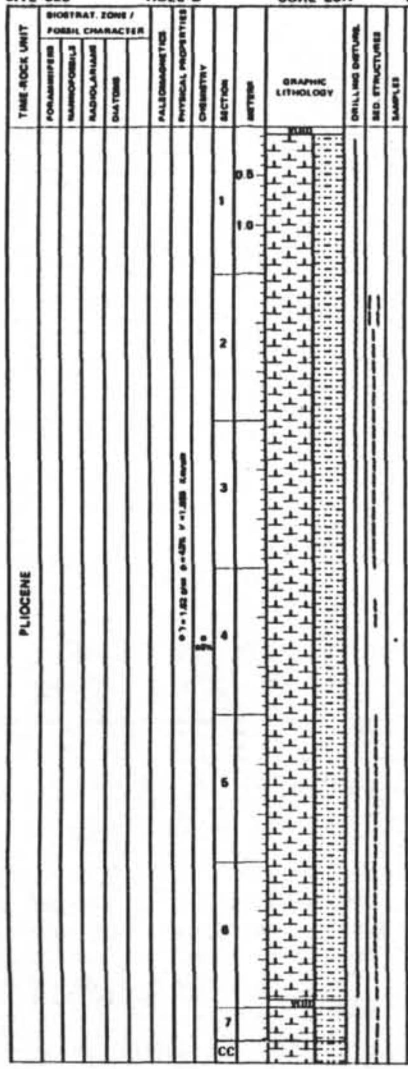
The MARLY NANNOFOSSIL OOZE gradually changes in color from olive gray (5Y7/1) to olive gray (5Y5/2) and gray (5Y6/1) in Sections 1 and 2. A change from olive gray (5Y5/2) and (5Y5/1) to light olive gray (5Y6/2) is observed in Sections 3 and 4. Sections 5 and 6 are light gray (5Y7/1).

Minor lithologies are pyrite traces indicated as black streaks. Shell debris that is evenly distributed down the core varies in size from 0.5 to 2 mm.

SMEAR SLIDE SUMMARY (%):

	2,90	2,130	5,28
	D	D	D
TEXTURE:			
Sand	2	50	–
Silt	15	30	15
Clay	83	20	85

SITE 625 HOLE B CORE 25X CORED INTERVAL 1106.6 - 1116.2 mbsl; 206.7 - 216.3 mbsf



LITHOLOGIC DESCRIPTION

The dominant lithology is MARLY NANNOFOSSIL OOZE.

Severe drilling disturbance is observed in Sections 1, 2, 3, 4, 5, 6, 7, and CC. Minor bioturbation found in Sections 2, 3, 4, 5, 6, 7, and CC.

The MARLY NANNOFOSSIL OOZE gradually changes color from light olive grey (5Y6/2) in Section 1 to olive grey (5Y5/2 and 5Y7/1) in sections 2 and 3. Section 4 is olive grey (5Y5/2) and Section 5 changes from light grey (5Y6/1) to light olive gray (5Y6/2). Sections 6 and 7 are light grey (5Y6/1). The CC is light grey (5Y6/1).

Minor lithologies are pyrite, occurring as black traces and in local concentrations on the split face of the core, and shell debris which is evenly distributed down the core varying in size from 0.5 to 2 mm.

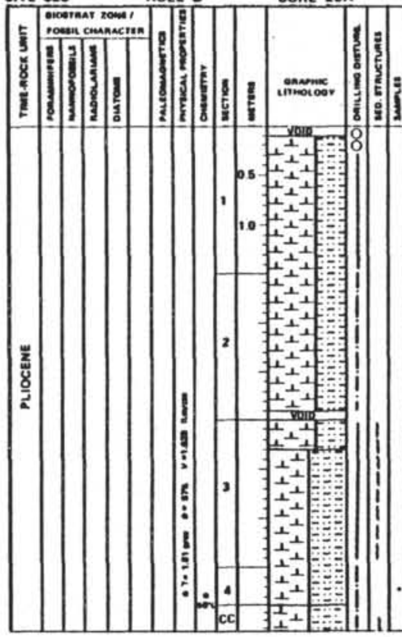
SMEAR SLIDE SUMMARY (%):

	4,70
	D

TEXTURE.

Silt	5
Clay	95

SITE 625 HOLE B CORE 26X CORED INTERVAL 1116.2 - 1125.7 mbsl; 216.3 - 225.8 mbsf



LITHOLOGIC DESCRIPTION

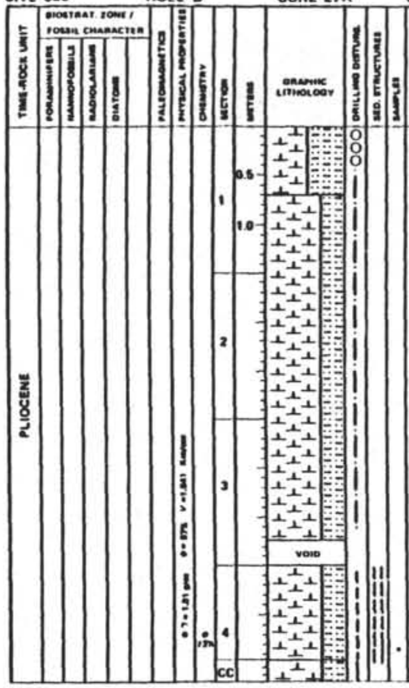
The dominant lithology is MARLY NANNOFOSSIL OOZE.

Severe drilling disturbance is observed in the top 10 cm of Section 1. Sections 1, 2, 3 and CC exhibit moderate to slight disturbance. Minor bioturbation found in Sections 3 and 4.

The MARLY NANNOFOSSIL OOZE gradually changes color from gray (5Y6/1) to olive gray (5Y7/1) and light olive grey (5Y6/2) in Sections 1 and 2. Changes from light gray (5Y7/1) to light olive gray (5Y6/2) and olive gray (5Y5/2) are observed in Sections 3 and 4. The CC is olive gray (5Y5/2) and light gray (5Y7/1).

Minor lithologies are pyrite, occurring as black traces and in local concentrations on the split face of the core, and shell debris which is evenly distributed down the core varying in size from 0.5 to 2 mm.

SITE 625 HOLE B CORE 27X CORED INTERVAL 1125.7 - 1135.1 mbsl; 225.8 - 235.2 mbsf



LITHOLOGIC DESCRIPTION

The dominant lithology is MARLY NANNOFOSSIL OOZE.

Severe drilling disturbance is observed in the top 30 cm of Section 1. Sections 1, 2, 3 and CC exhibit moderate to slight disturbance. Major bioturbation found in Section 4.

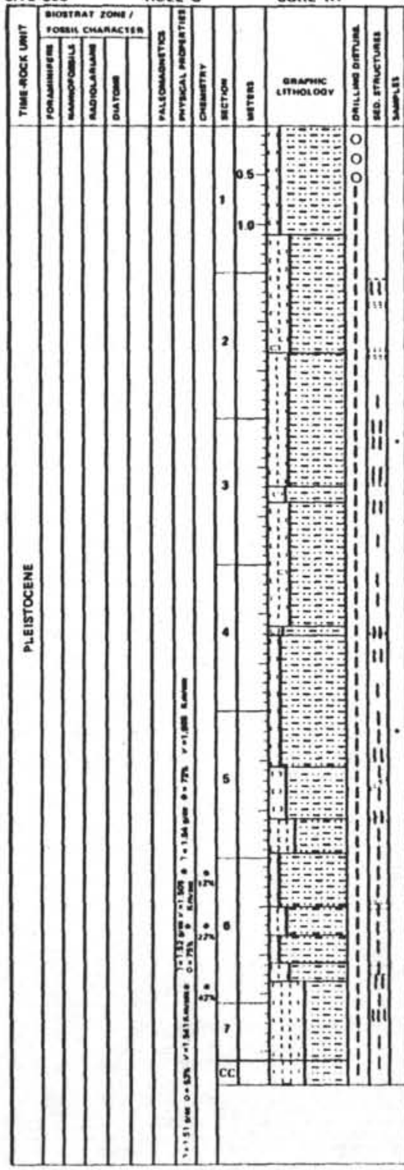
The MARLY NANNOFOSSIL OOZE gradually changes color from gray (5Y5/1) to olive gray (5Y7/1) and light olive gray (5Y6/2) in Section 1 and 2. Section 3 is light gray (5Y7/2). Section 4 and the CC are light olive gray (5Y6/2).

Minor lithologies are pyrite, occurring as black traces and in local con centrations on the split face of the core, and shell debris which is evenly distributed down the core varying in size from 0.5 to 2 mm.

SMEAR SLIDE SUMMARY (%).

	4,86 D
TEXTURE:	
Silt	10
Clay	90

SITE 625 HOLE C CORE 1H CORED INTERVAL 905.0 - 915.0 mbsl; 5.0 - 15.0 mbsf



LITHOLOGIC DESCRIPTION

The dominant lithology is gradational between CALCAREOUS MUD at the top and MARLY CALCAREOUS OOZE at the base.

Disturbance is limited to a slurry in Section 1 (0 60 cm).

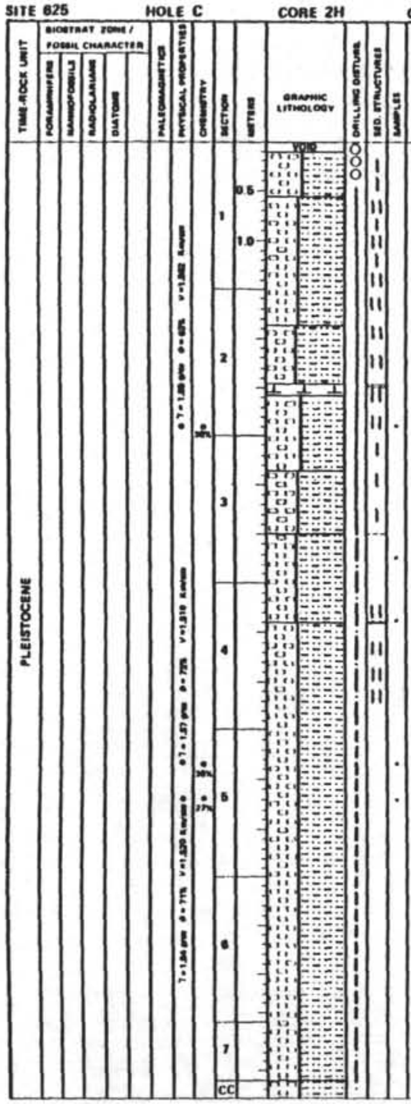
Major lithologies are gradational interlayering of MARLY CALCAREOUS OOZE and CALCAREOUS MUD of different colors. Interlayering con sists of diffuse bands of dark gray (5Y4/1), grayish brown (2.5Y5/2), gray (10Y5/1), olive gray (5Y5/2) and grayish brown (10YR5/2). Core shows moderate bioturbation throughout in the form of mottling and burrows.

Minor lithology is black pyrite specks and streaks, that are ubiquitous.

SMEAR SLIDE SUMMARY (%):

	3,20 D	5,20 D
TEXTURE:		
Sand	15	5
Silt	20	30
Clay	65	65
COMPOSITION:		
Quartz	15	10
Feldspar	–	Tr
Mica	Tr	Tr
Clay	48	75
Accessory Min./Opq.	–	1
Aragonite Needles	2	1
Foraminifers	10	1
Nannofossils	10	10
Sponge Spicules	Tr	Tr
Fish Remains	-	Tr
Calc. Biogenic Debris	15	–

SITE 625 HOLE C CORE 2H CORED INTERVAL 915.0 - 924.8 mbsl; 15.0 - 24.8 mbsf



LITHOLOGIC DESCRIPTION

The dominant lithology consists of a bioturbated MARLY CALCAREOUS OOZE.

Drilling disturbance appears as a slurry in Section 1 (10-15 cm) and as possible flow in or extreme downwarping along one edge of Section 2 and Section 3 (0-80 cm). Section 8 split surface is disturbed by pulling through an O-ring during splitting.

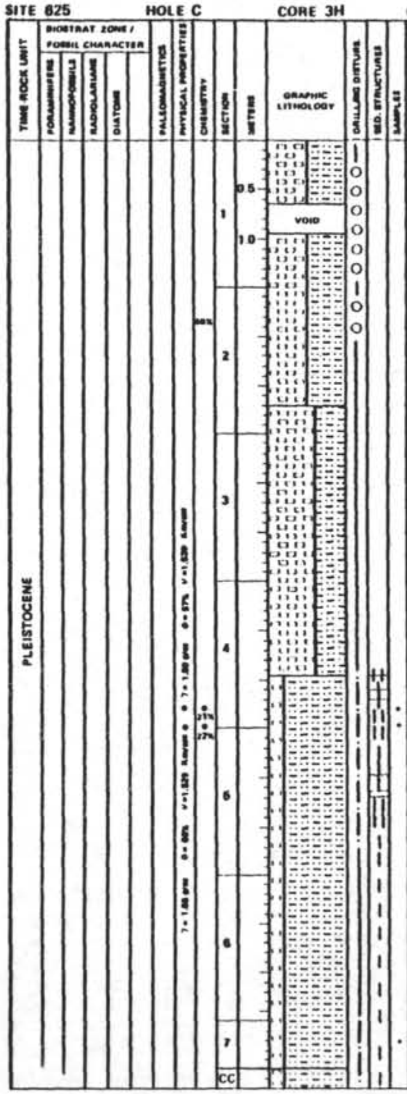
Major lithology is a light olive grey (5Y6/2) to olive grey (5Y5/2) MARLY CALCAREOUS OOZE. Bioturbation appears as mottling and burrows, with frequent burrowing in Sections 1 and 2, and decreasing in abundance down the core. Color banding is diffuse but prevalent throughout the core. Bands are on the order of 10-100 cm thick.

Minor lithologies are black, pyrite specks and streaks, a FORAM RICH SAND (Section 2, 85-99 cm) and MARLY NANNOFOSSIL OOZE in-filling burrows in Section 2 (100-103 cm) and Section 4 (40-41 cm). Shell fragments in Section 8 (95 cm) and a few scattered in Section 7 and CC.

SMEAR SLIDE SUMMARY (%):

	2,142 D	4,40 M	5,35 D	5,70 D
TEXTURE:				
Sand	5	10	–	–
Silt	15	55	–	–
Clay	80	35	–	–
COMPOSITION:				
Quartz	5	2	Tr	Tr
Feldspar	–	–	Tr	–
Mica	Tr	Tr	Tr	Tr
Clay	68	33	56	65
Calcite/Dolomite	Tr	–	–	Tr
Aragonite Needles	1	Tr	Tr	–
Opaques	1	–	–	–
Foraminifers	2	10	10	5
Nannofossils	12	45	20	20
Fish Remains	–	–	–	Tr
Plant Debris	Tr	–	–	–
Calc. Skeletal Debris	13	10	15	10

SITE 625 HOLE C CORE 3H CORED INTERVAL 924.8 - 934.7 mbsl; 24.8 - 34.7 mbsf



LITHOLOGIC DESCRIPTION

This core consists of a MARLY CALCAREOUS OOZE showing a decrease of the carbonate fraction down core.

Disturbance in the form of slurry and flow in occurs from the top of the core to Section 4 (96 cm). From Section 5 (120 cm) to Section 6 (70 cm) and below Section 7 (30 cm) the core shows minor coring disturbance. Void in Section 1 (66-96 cm).

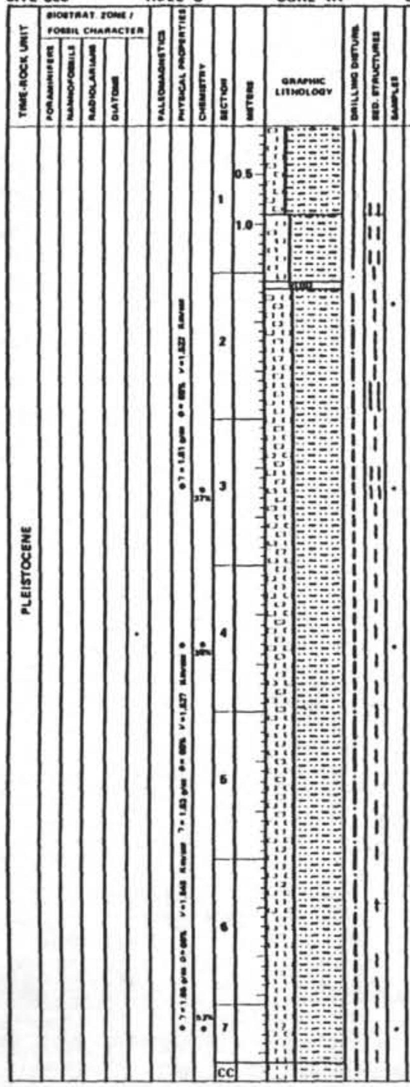
The major lithology of the core is a bioturbated, MARLY CALCAREOUS OOZE. The core grades downward from a grayish brown (10YR4/2) into gray (5Y5/1), olive grey (5Y5/2) and light olive gray (5Y6/2). A gradational contact in Section 4 (96 cm) marks the transition from the above colors to a brown (7.5YR5/2), grayish brown (2.5Y5/2) and dark grey (5Y4/1). Color banding occurs on a 5-10 cm scale in lower Section 4 and gradually becomes thicker (approx. 20 cm) in Section 5. Bioturbation appears as burrowing and mottling.

Minor lithologies are Chondrites intervals (Section 4, 138-140 cm and Section 5, 0-30 cm), 2-3 mm MUDSTONE( ) chips in Section 5, 80 cm and black, pyrite specks. Minor shell fragments (1-2 mm) found in Sections 3, 6 and 7.

SMEAR SLIDE SUMMARY (%):

	4,128 D	4,147 D	7,23 D
TEXTURE:			
Sand	–	2	–
Silt	30	10	15
Clay	70	88	85
COMPOSITION:			
Quartz	15	4	10
Feldspar	–	–	Tr
Mica	Tr	Tr	–
Clay	44	46	65
Pyrite	Tr	Tr	–
Aragonite	Tr	Tr	Tr
Foraminifers	–	Tr	5
Nannofossils	5	40	5
Sponge Spicules	Tr	–	–
Plant Debris	3	Tr	–
Calc. Biogenic Debris	23	10	16

SITE 625 HOLE C CORE 4H CORED INTERVAL 934.7 - 944.5 mbsl; 34.7 - 44.5 mbsf



LITHOLOGIC DESCRIPTION

This core consists of a bioturbated MARLY CALCAREOUS OOZE.

Core disturbance proceeds from moderate to slight throughout Sections 1 and 2. Section 5 split surface is disrupted by pulling through an O-ring during splitting. Section 7 (7-35 cm) is moderately disturbed. Section 2 (10 15 cm) is void.

Major lithology consists of a moderately bioturbated, MARLY CALCAREOUS OOZE. The sediment proceeds from a light gray (5Y7/2) to olive gray (5Y5/2) in Section 1 (90 cm). Mottled olive gray blends into grayish brown (2.5Y5/2) at the base of Section 2. Below Section 3 (70 cm) the core exhibits tones of gray (5Y5/2 and 5Y6/1). A dark gray (5Y4/1) band with sharp contacts is encountered in Section 7 (8 16 cm). Color banding varies from 1-5 cm thick in Sections 2, 4 and 7 to on the order of 150 cm in the remainder of the core.

Minor lithologies consist of a pyrite nodule (Section 1, 45 cm), small inclusions of black pyrite specks occuring throughout, and shell fragments in Section 6 (20 and 70 cm). Slightly pyritized sandy layers occur in Section 6 (43, 47, 56 60, 89, 108 and 129 cm).

SMEAR SLIDE SUMMARY (%):

	2,32 D	3,70 D	4,82 D	7,24 D
TEXTURE:				
Sand	–	2	5	–
Silt	–	5	15	–
Clay	–	93	80	–
COMPOSITION:				
Quartz	5	2	5	10
Mica	Tr	Tr	–	1
Clay	45	60	55	50
Calcite/Dolomite	Tr	–	–	–
Aragonite Needles	Tr	Tr	2	–
Foraminifers	5	3	1	8
Nannofossils	30	30	25	10
Sponge Spicules	Tr	Tr	–	–
Calc. Skeletal Debris	15	5	12	20
Tintinnids	–	–	–	Tr
Algal Cysts	–	–	–	Tr