SITE 741 HOLE A CORE 1R CORED INTERVAL 0.0-4.1 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALENOMORPHS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
QUATERNARY	R/G *Neogloboquadrina pachyderma* Interval A/G	B	R/M *A. denticulata* Interval	C/M *Thalassiosira lentiginosa*	B		● 0.45% V=1772 ● 2.04 W=24%	● %$CaCO_3$=0.0 %TOC=0.22	1	0.5				*	DIATOM OOZE and CLAYEY SILT WITH MINOR DIATOMS
							V=1845 ● 0.74% W=54% ● 1.49	● %$CaCO_3$=0.1 %TOC=0.15		1.0				*	Major lithologies: Diatom ooze, olive (5Y 5/4); homogeneous and soft; Section 1, 0-66 cm. Clayey silt with minor diatoms, greenish gray (7.5GY 5/0) to gray (5Y 5/1); homogeneous and soft; Section 1, 66 cm, through Section 3, 100 cm.
									2					*	Drilling disturbance: top of Section 1 (0-66 cm) contains a few gravel components (up to 4 cm in length) of predominantly metamorphic origin and coarse sand (55-66 cm), probably owing to contamination; soft sediment is highly disturbed throughout the core and soupy.
									3					IW	

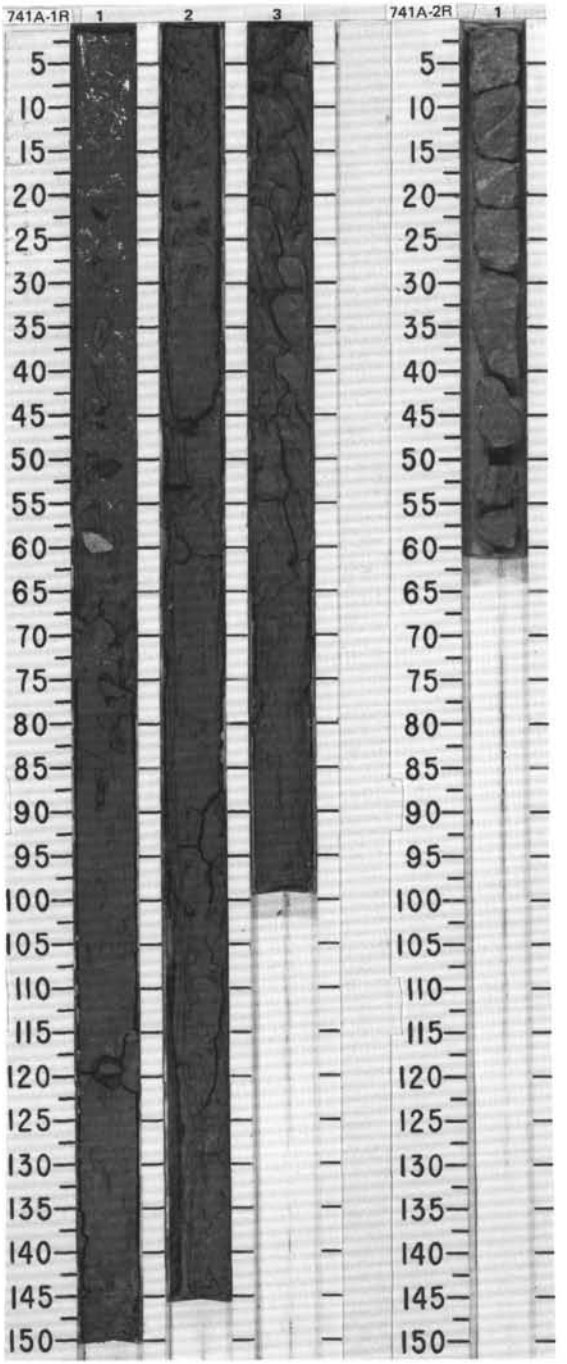
SMEAR SLIDE SUMMARY (%):

	1, 22 D	1, 47 D	1, 100 D	2, 70 D
TEXTURE:				
Sand	10	2	2	3
Silt	60	68	50	60
Clay	30	30	48	37
COMPOSITION:				
Amphibole	—	3	2	5
Biotite	—	2	1	3
Clay	30	—	48	35
Diatoms	20	75	20	10
Feldspar	15	—	—	—
Garnet	5	1	2	2
Plant	—	Tr	—	—
Pyroxene	5	Tr	Tr	Tr
Quartz	20	15	20	40
Radiolarians	—	1	1	—
Silicoflagellates	—	1	2	—
Spicules	—	Tr	1	Tr
Zircon	—	1	Tr	Tr

SITE 741 HOLE A CORE 2R CORED INTERVAL 4.1-13.9 mbsf

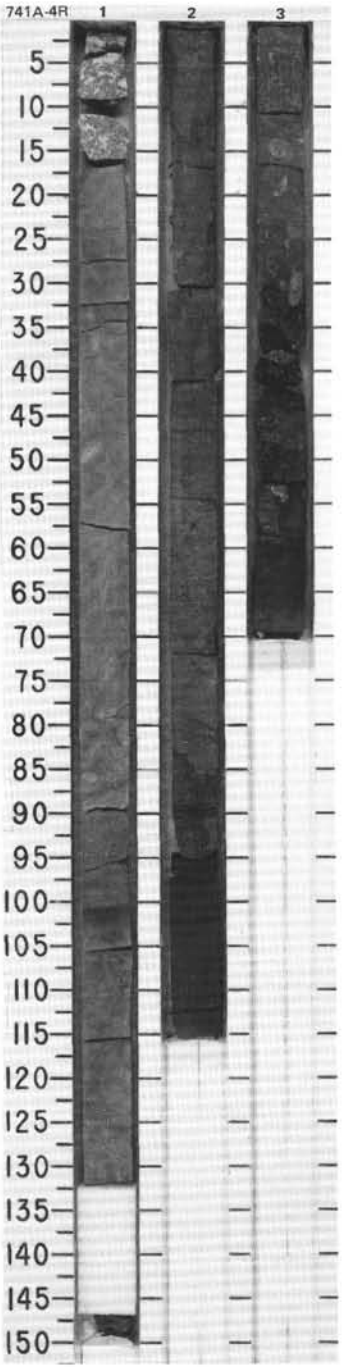
TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALENOMORPHS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
									1	0.5		X X X			Major lithology: Drilling breccia, composed of predominantly metamorphic clasts.

741 A 3R NO RECOVERY

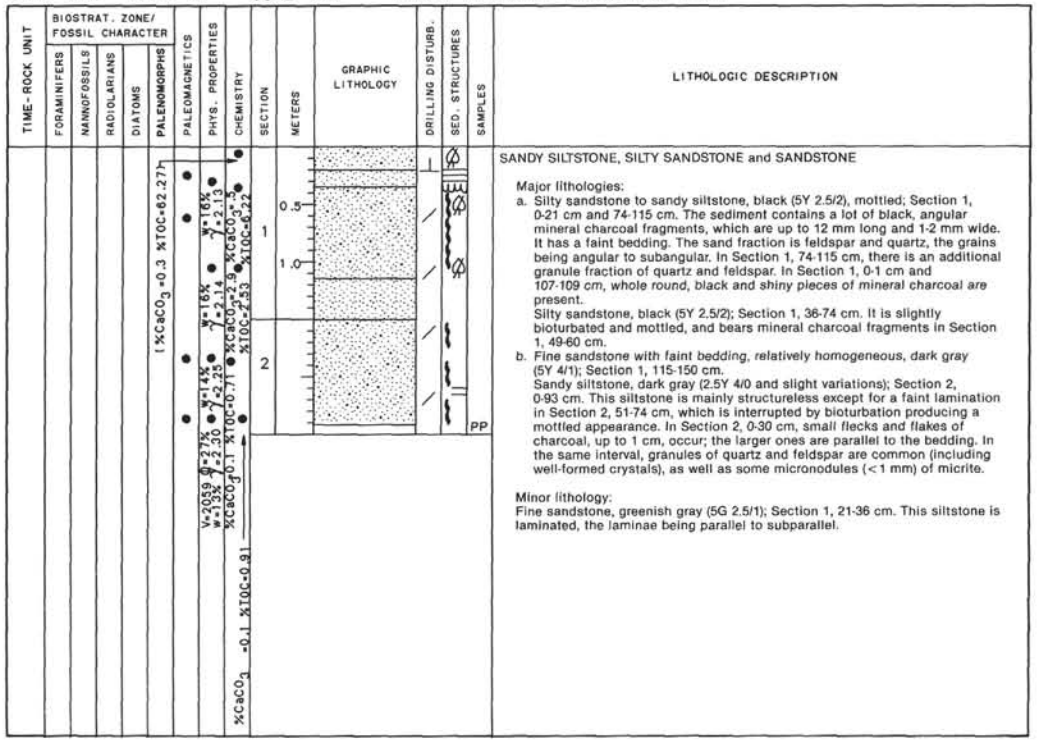


SITE 741 HOLE A CORE 4R CORED INTERVAL 23.9-33.5 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEONOMORPHS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
	B	B	R/P		B		Ø=29% V=1983 ρ=2.26 w=16% Ø=26% V=1983 ρ=2.45 w=12% ρ=2.28 w=14%	%CaCO3=0.0 %TOC=0.17 %CaCO3=17.7 %TOC=0.50 %CaCO3=0.1 %TOC=2.65	1 2 3	0.5 1.0			PP OG IW		SANDSTONE Major lithology: Sandstone; Section 1, 15-150 cm, Section 2, 0-95 cm, Section 3, 0-70 cm. It is mottled, unnamed colors (2.5G 4/0, 2.5G 5/0); greenish gray (5G 5/1) and black (5Y 2.5/1) in Section 3. The sandstone is mainly fine grained in Section 1, mainly medium grained in Section 2, and mainly coarse grained in Section 3, 0-25 cm, and mainly fine grained in Section 3, 25-70 cm. It contains subangular to subrounded granules of quartz and feldspar, while the matrix grains are angular to subangular. It is generally unstratified, but laminated in Section 1, 95-105 cm. Bioturbation with Spreiten and "Planolites"-like burrows occur in Section 3, 40-70 cm, flaky, up to 15 mm-long charcoal fragments in Section 2, 54-61 cm, and Section 3, 54 cm. Minor lithology: Claystone with unnamed color (2.5G 2.5/0); Section 2, 95-115 cm. The claystone is laminated. It has sand pockets and is somewhat more silty at its base. Drilling disturbance: Section 1, 0-15 cm, contains as cave in granulite with garnet and feldspar clasts.



SITE 741 HOLE A CORE 5R CORED INTERVAL 33.5-43.2 mbsf



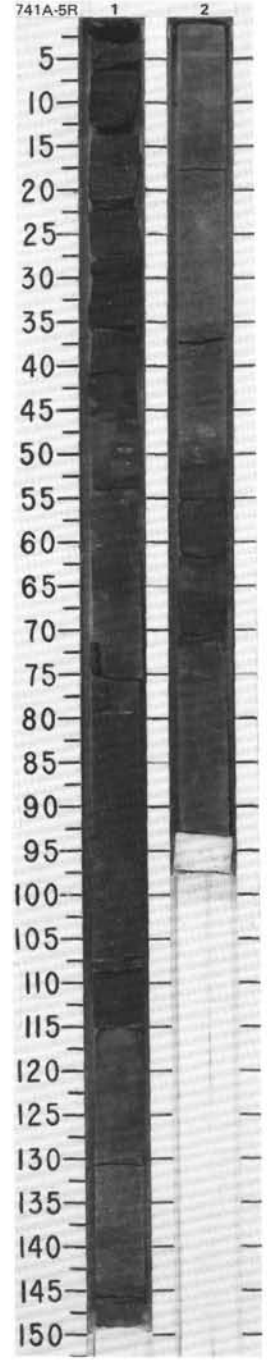
SANDY SILTSTONE, SILTY SANDSTONE and SANDSTONE

Major lithologies:

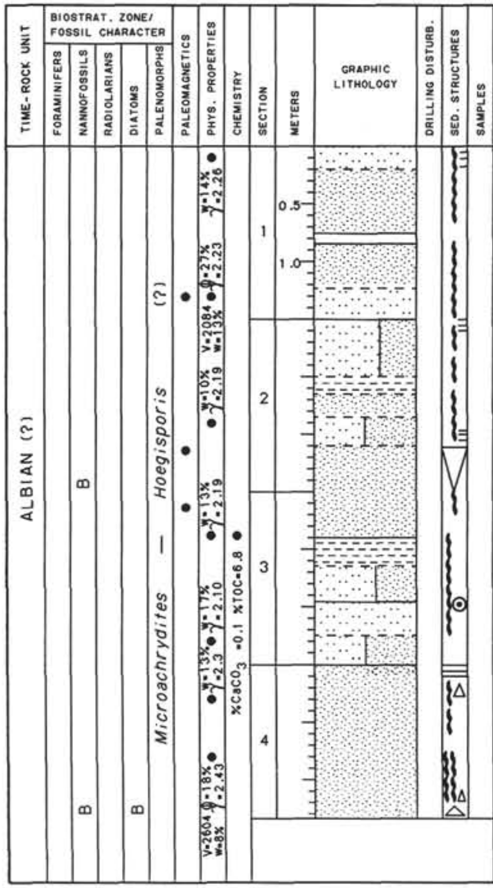
a. Silty sandstone to sandy siltstone, black (5Y 2.5/2), mottled; Section 1, 0-21 cm and 74-115 cm. The sediment contains a lot of black, angular mineral charcoal fragments, which are up to 12 mm long and 1-2 mm wide. It has a faint bedding. The sand fraction is feldspar and quartz, the grains being angular to subangular. In Section 1, 74-115 cm, there is an additional granule fraction of quartz and feldspar. In Section 1, 0-1 cm and 107-109 cm, whole round, black and shiny pieces of mineral charcoal are present.
Silty sandstone, black (5Y 2.5/2); Section 1, 36-74 cm. It is slightly bioturbated and mottled, and bears mineral charcoal fragments in Section 1, 49-60 cm.

b. Fine sandstone with faint bedding, relatively homogeneous, dark gray (5Y 4/1); Section 1, 115-150 cm.
Sandy siltstone, dark gray (2.5Y 4/0 and slight variations); Section 2, 0-93 cm. This siltstone is mainly structureless except for a faint lamination in Section 2, 51-74 cm, which is interrupted by bioturbation producing a mottled appearance. In Section 2, 0-30 cm, small flecks and flakes of charcoal, up to 1 cm, occur; the larger ones are parallel to the bedding. In the same interval, granules of quartz and feldspar are common (including well-formed crystals), as well as some micronodules (< 1 mm) of micrite.

Minor lithology:
Fine sandstone, greenish gray (5G 2.5/1); Section 1, 21-36 cm. This siltstone is laminated, the laminae being parallel to subparallel.



SITE 741 HOLE A CORE 6R CORED INTERVAL 43.2-52.9 mbsf



LITHOLOGIC DESCRIPTION

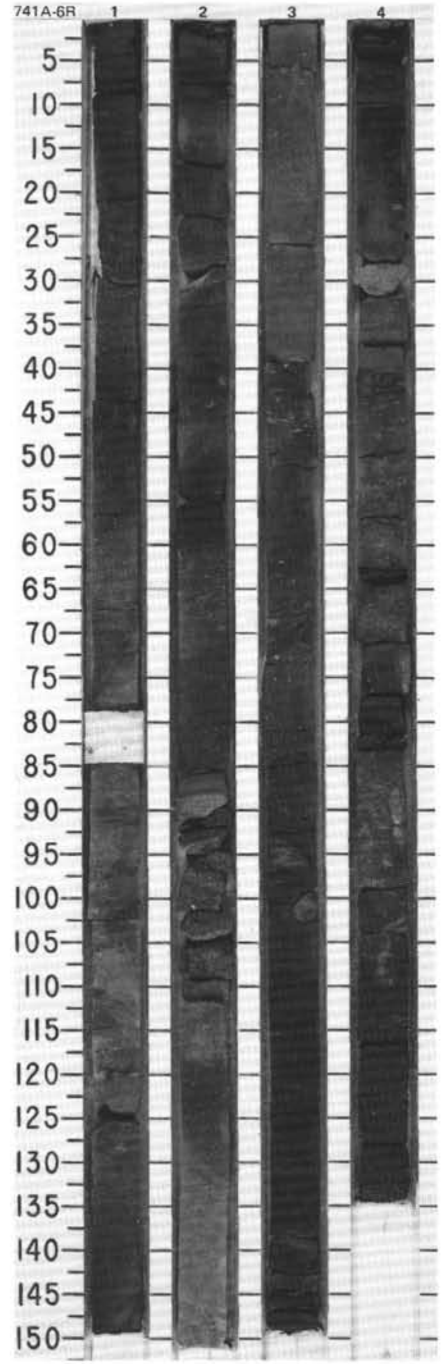
SANDSTONE, SILTSTONE and CLAYSTONE

Major lithologies:

a. Sandstone, poorly sorted coarse, medium and fine varieties with the following colors: black (7.5G 2.5/0, 2.5G 2.5/0), very dark gray (7.5G 3/0, 5Y 3/1), dark gray (7.5G 4/0, 2.5Y 4/0), dark olive gray (2.5Y 3/2), unnamed (2.5G 4/0, 2.5G 5/0). The sandstone is laminated to diffusely stratified to nonstratified where bioturbated. Disseminated throughout the core are mineral charcoal fragments, and in some horizons angular to subangular grains up to granule size of quartz and feldspar (altered to kaolin in part?). Both fining- and coarsening-upward sequences occur over centimeters to decimeters. A well-formed spreiten occurs in Section 4, 105 cm; elsewhere diffuse mottling with concentrations of very pale brown (10YR 7/4) sand and silt are probably bioturbation features. A pyrite-rich lens occurs in Section 4, 27-31 cm.
b. Siltstone, poorly sorted, with the following colors: black (7.5G 2.5/0, 2.5G 2.5/0), very dark gray (7.5G 3/0), unnamed (2.5G 3/0). It has a similar range of features as the sandstones. Claystone, black (7.5G 2.5/), unnamed (2.5G 3/0), laminated to bioturbated with disseminated silt grains and diffuse silt stringers. A concretion of siltstone with minor carbonate and possible disseminated pyrite occurs in Section 3, 100 cm.

Minor lithology:

Mineral charcoal bands up to 1 cm thick occur in Sections 2, 6-9 cm, and Section 4, 62-64 cm.



SITE 741 HOLE A CORE 7R CORED INTERVAL 42.9-62.5 mbsf

TIME-ROCK UNIT	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALENOMORPHS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
		B		B	B	○ ●	● φ=29% V=2092 γ=2.25 W=14%	● %$CaCO_3$=0.4 %TOC=0.31	1, 2	0.5, 1.0				

LITHOLOGIC DESCRIPTION

SANDSTONE and CONGLOMERATE

Major lithologies:

a. Sandstone, gray (N6/), carbonate-cemented, hard; Section 1, 2-10 cm, 41-150 cm, and Section 2, 0-14 cm. Quartz and feldspar grains up to 5 mm in diameter are concentrated in certain, but indistinct layers at Section 1, 2-4 cm, 75-77 cm, 85-87 cm, 103-104 cm, 130-132 cm, 137-139 cm. Cross-bedding is indicated every 1-5 cm by an enrichment of fine grained black minerals (?pyroxene, ?garnet). The sandstone components are predominantly subrounded.

b. Conglomerate, carbonate-cemented, hard; Section 1, 10-41 cm, and Section 2, 14-41 cm. The conglomerates are clast-supported and have an unordered fabric. The gravel content is around 50%. Clasts include quartz and K-feldspar (largest clasts), garnet, biotite, ilmenite, pyrite, rare orthopyroxenes and amphiboles, chlorite. The matrix consists of quartz, feldspar, biotite, garnet, pyroxene, and is of coarse sand-size. Grain shape analysis indicate 4% angular, 14% subangular, 38% subrounded, and 44% rounded clasts (sample size 50). A slight stratification is shown by an enrichment of fine grained black minerals (?pyroxene, ?garnet).

Minor lithology:

Silty sandstone, dark gray (5Y 4/1); Section 2, 41-59 cm. The sandstone is compacted but not cemented and friable. It is slightly bioturbated and contains black flakes of mineral charcoal.

Drilling disturbance:

In Section 1, 0-2 cm, occurs an uncemented, friable, very dark gray (10YR 3/1) sandstone with fragments of charcoal and quartz grains up to 5 mm in diameter. It is regarded as cave-in. The contact between the conglomerate in Section 2 and the underlying sandstone is not recovered.

SITE 741 HOLE A CORE 8R CORED INTERVAL 62.5-72.2 mbsf

TIME-ROCK UNIT	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALENOMORPHS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
ALBIAN (?)					*Microachrydites — Hoegisporis* (?)	●	● V=2094 φ=32% W=17% γ=2.16	● %$CaCO_3$=0.2 %TOC=47.	1					

LITHOLOGIC DESCRIPTION

SANDSTONE

Major lithology:

Sandstone, black (5Y 2.5/1) to gray (5Y 5/1), coarse (with granules) to fine, weakly laminated to bioturbated. A coarse-medium sandstone in Section 1, 15-18 cm contains intraclasts of mudstone, and mineral charcoal fragments are disseminated throughout. At 11-13 cm the sandstone contains abundant disseminated pyrite (diagenetic).

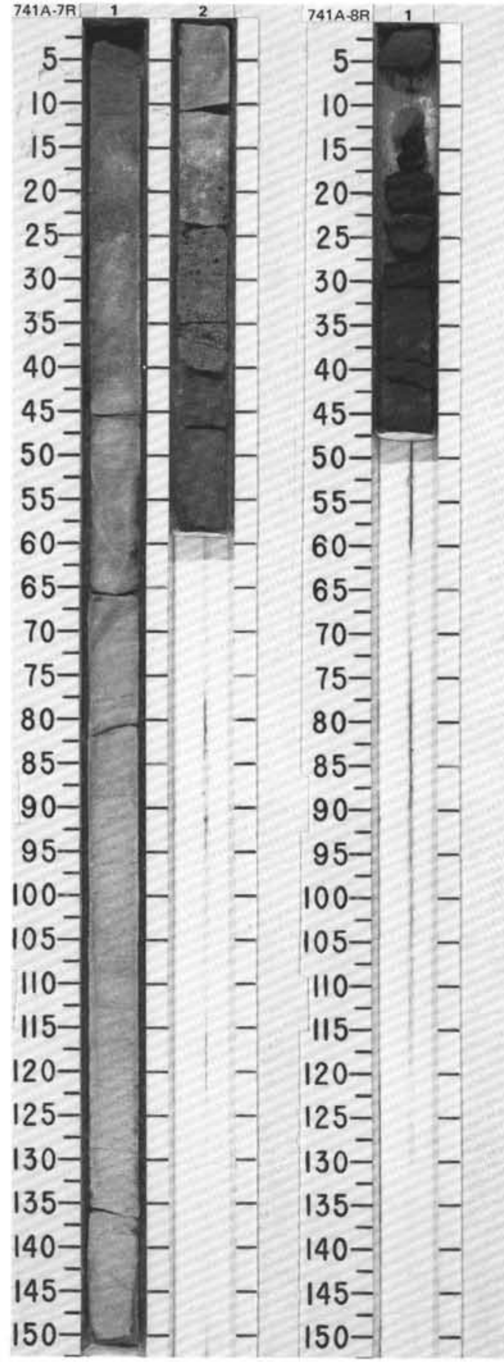
Minor lithologies:

a. Siltstone, black (5Y 2.5/1) with sand, including quartz sand grains at 20-22 cm.

b. Mineral charcoal fragment, black (5Y 2.5/1) and shiny, Section 1, 6-8 cm.

Drilling disturbance:

Core is highly fragmented and the pieces are loose; the above positions are therefore approximate.



SITE 741 HOLE A CORE 9R CORED INTERVAL 72.2-81.9 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALENOMORPHS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
					B				1			X		**	SANDSTONE

Major lithology: Sandstone, gray (5Y 6/1), medium grained, consolidated but friable.

SMEAR SLIDE SUMMARY (%):

	1, 2 D	1, 2 M
TEXTURE:		
Sand	80	90
Silt	20	10
Clay	—	—
COMPOSITION:		
Clay	3	5
Diatoms	20	—
Feldspar	35	40
Mica	—	5
Opaques	—	10
Quartz	40	40

SITE 741 HOLE A CORE 10R CORED INTERVAL 81.9-91.5 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALENOMORPHS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
ALBIAN (?)		B			*Microachrydites - Hoegisporis* (?)		V=2291 ϕ=26% w=12% V=2220 ϕ=25% w=12% ρ=2.33 ρ=2.25	%CaCO$_3$=6.0 %TOC=0.59 %CaCO$_3$=0.6 %TOC=1.16	1 2	0.5 1.0				OG IW PP	SILTSTONE

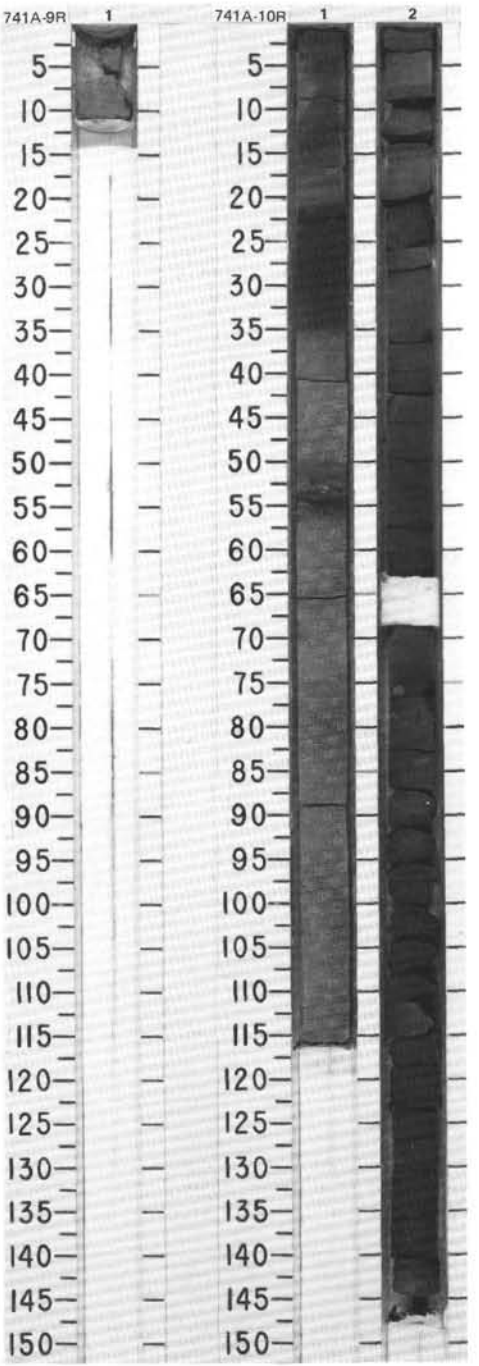
Major lithology:
Siltstone, fine, very dark gray (5Y 3/1) to pale gray (5Y 4/1, 5Y 5/1); vague irregular laminae in Section 1, 0-10 cm and 50-52 cm, and Section 2, 5-10 cm; black flecks of carbonized organic matter (plants?) and pyrite specks in Section 1, 23-36 cm; whitish sand-sized (quartz?) grains scattered throughout unit.

Minor lithologies:
a. Silty claystone, gray black (5Y 2/2) with occasional black carbonaceous chips and whitish sand-sized particles; Section 1, 23-36 cm.
b. Sandstone, dark gray (5Y 3/1), with carbonaceous chips and thin coal layers; speckled with whitish coarse quartz sand; Section 2, 87-111 cm.
c. Silty sandstone, gray black (5Y 2/2) with whitish coarse sand; Section 2, 111-146 cm.

SMEAR SLIDE SUMMARY (%):

	1, 44 M	1, 54 D
TEXTURE:		
Sand	40	55
Silt	50	35
Clay	10	10
COMPOSITION:		
Access. Minerals	5	5
Amphibole	35	—
Biotite	5	30
Dolomite	35	—
Feldspar	—	5
Opaques	5	—
Plant	—	30
Quartz	10	30

741 A 11R NO RECOVERY



SITE 741 HOLE A CORE 12R CORED INTERVAL 101.2-110.8 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALENOMORPHS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
ALBIAN (?)					*Microachrydites* — *Hoegisporis* (?)	● ●	V=2180 Φ=26% W=13% γ=2.21 ● V=2142 Φ=29% W=13% γ=2.24 ●	%TOC=0.81 ● %CaCO$_3$=0.0	1, 2	0.5, 1.0				* *

LITHOLOGIC DESCRIPTION

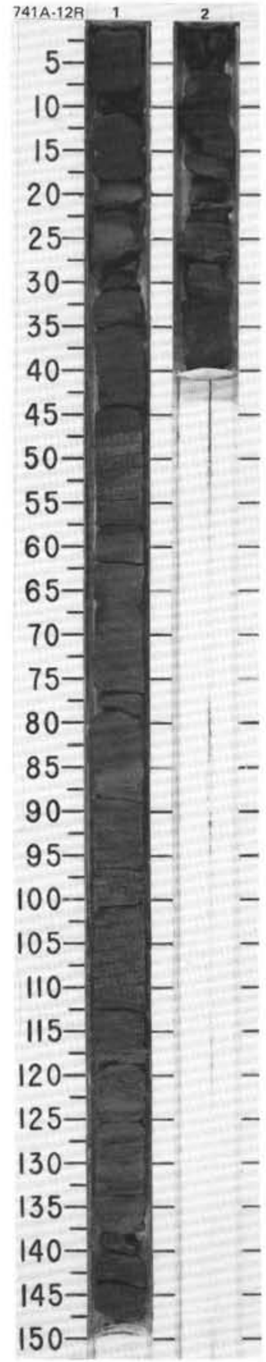
SANDSTONE

Major lithology:
Sandstone, fine to medium, very dark gray (5Y 3/1) to pale gray (7.5GY 4/1); vague layering throughout core, some layers apparently more organic rich; black elongated lenticules (carbonized plant matter?) in Section 1, 0-30 cm.

Minor lithologies:
a. Claystone, pale gray (10Y 6/1), massive, soft; Section 2, 22-24 cm.
b. Thin coal layers and coal chips; coal layers burrowed horizontally; Section 2, 26-40 cm.

SMEAR SLIDE SUMMARY (%):

	1, 20 D	1, 131 D
TEXTURE:		
Sand	50	70
Silt	40	25
Clay	10	5
COMPOSITION:		
Access. Minerals	5	5
Biotite	7	15
Clay	10	5
Feldspar	5	10
Garnet	2	5
Plant	3	15
Quartz	65	40
Zircon	1	1



SITE 741 HOLE A CORE 13R CORED INTERVAL 110.8-120.5 mbsf

TIME-ROCK UNIT: ALBIAN (?)

BIOSTRAT. ZONE/FOSSIL CHARACTER: FORAMINIFERS; NANNOFOSSILS: B; RADIOLARIANS; DIATOMS; PALENOMORPHS: *Microachryadites* — *Hoegisporis* (?)

PALEOMAGNETICS; PHYS. PROPERTIES; CHEMISTRY: %CaCO3=0.1 %TOC=2.40; %CaCO3=0.1 %TOC=6.80%CaCO3=1.5 %TOC=2.52

SECTION; METERS; GRAPHIC LITHOLOGY; DRILLING DISTURB.; SED. STRUCTURES; SAMPLES: OG, IW

LITHOLOGIC DESCRIPTION

SANDSTONE and SILTSTONE

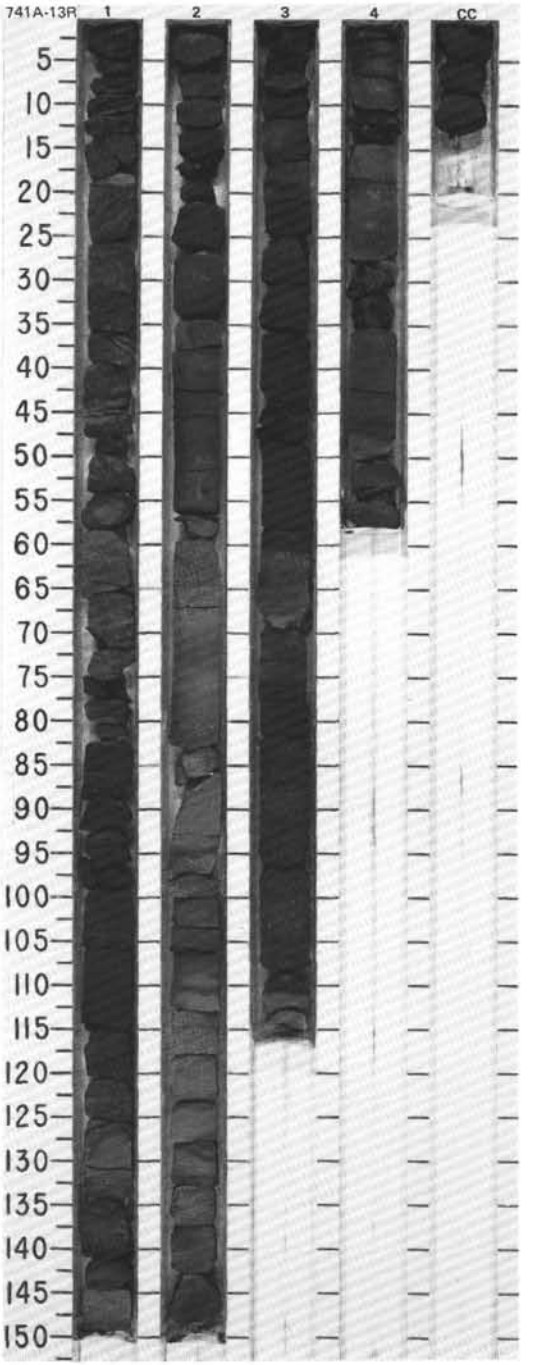
Major lithologies: Sandstone, pale gray (7.5GY 4/1, 5Y 4/1) to gray (7.5GY 4/1), very dark gray (5Y 3/1), and black (7.5GY 2.5/1); coarse to finely grained, poorly sorted; black chips of carbonized plant (?) material disseminated throughout, also patches of whitish sand-sized grains; few organic-rich siltstone intraclasts. Siltstone, dark olive gray (5Y 3/2) to very dark gray (5Y 3/1), and black (5Y 2.5/1; small coal chips (up to 4 mm in length) in Section 4, 0-10 cm.

Minor lithology:
a. Thin (<10 mm) coal layers in Section 2, 22-25 cm, and Section 4, 10-13 cm.

Drilling disturbance: Section 1 is very to moderately disturbed, Sections 3 and 4 moderately.

SMEAR SLIDE SUMMARY (%):

	1, 60 D	3, 63 M
TEXTURE:		
Sand	60	35
Silt	30	55
Clay	10	10
COMPOSITION:		
Access. Minerals	5	5
Biotite	25	20
Clay	10	10
Feldspar	10	10
Garnet	5	1
Plant	5	5
Quartz	35	45
Zircon	1	1



SITE 741 HOLE A CORE 14R CORED INTERVAL 120.5-128.1 mbsf

TIME-ROCK UNIT	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALENOMORPHS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
ALGIAN (?)		B			*Microachrydites* – *Hoegisporis* (?)	● ● ● ●	V=2289 w=12% φ=24% γ=1.67 ● ● w=13% γ=2.44 w=12% φ=25% γ=2.67 ● w=12% γ=1.88 ●	%CaCO₃=0.1 %TOC=2.57 ● %CaCO₃=0.3 %TOC=3.35 ●	1, 2, 3	0.5, 1.0				*

BIOSTRAT. ZONE/ FOSSIL CHARACTER

LITHOLOGIC DESCRIPTION

SILTSTONE and SANDSTONE

Major lithologies:

a. Siltstone, very dark gray (5Y 3/1) to olive gray (5Y 4/2), and black (5Y 2.5/1); occasionally speckled with whitish grains (concretions?) of sand size; small coal chips in Section 3, 10-30 cm.

b. Sandstone, gray (7.5G 4/1) to dark gray (5Y 3/1), and olive gray (5Y 4/2); partially irregular thin carbon-rich laminae.

Minor lithology:

Claystone, black (5Y 2.5/1) in Section 1, 2-4 cm.

SMEAR SLIDE SUMMARY (%):

	1, 94
	D
TEXTURE:	
Sand	25
Silt	65
Clay	10
COMPOSITION:	
Access. Minerals	2
Biotite	20
Clay	5
Feldspar	10
Garnet	1
Plant	7
Quartz	50
Zircon	1