SITE 832 HOLE A CORE 1H CORED INTERVAL 0.0-5.9 mbsf

TIME-ROCK UNIT: PLEISTOCENE

BIOSTRAT. ZONE/FOSSIL CHARACTER:
- FORAMINIFERS: A/G; N22; C/G
- NANNOFOSSILS: CN15
- RADIOLARIANS: R/G
- DIATOMS
- PALEOMAGNETICS: N
- PHYS. PROPERTIES: ● 78.3 1522 1.74; ● 69.2 1510 1.67; ● 11.2 0.2; ● 18.0
- CHEMISTRY: φ Vp ρ wt. %CaCO3 wt. %TOC

SECTION: 1, 2, 3, 4, CC

METERS: 0.5, 1.0

GRAPHIC LITHOLOGY

DRILLING DISTURB.

SED. STRUCTURES

SAMPLES

LITHOLOGIC DESCRIPTION

SANDY VOLCANIC SILT, CLAYEY VOLCANIC SILT, and COARSE VITRIC VOLCANIC ASH

Major lithology:

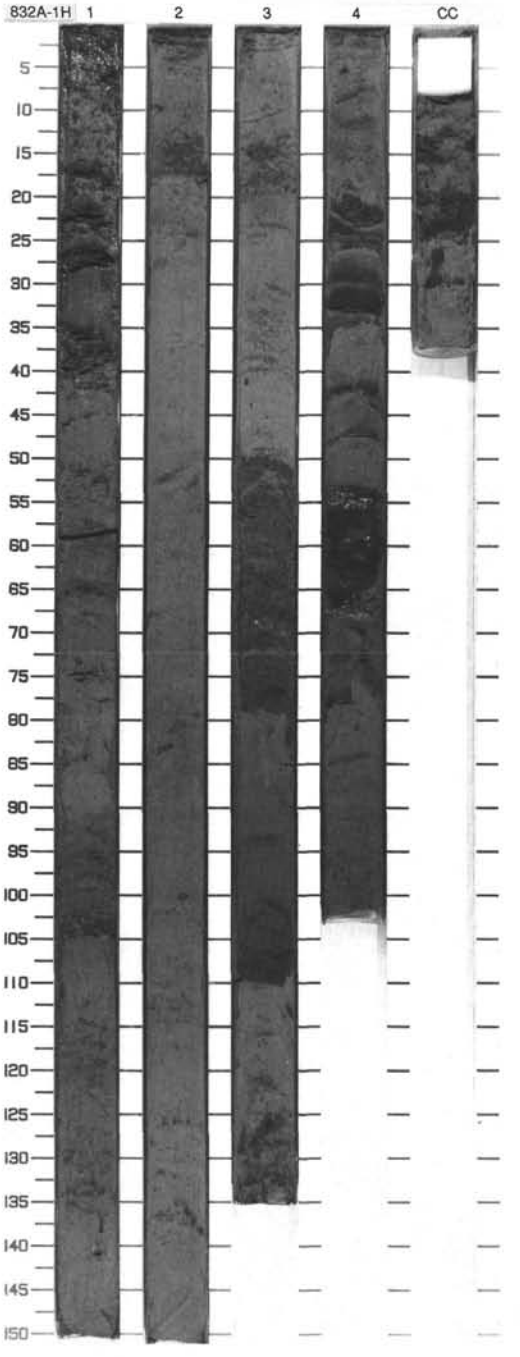
a. The upper part of the core from Section 1, 40 cm, to Section 3, 136 cm, consists primarily of unlithified olive gray (5Y 4/2), to dark gray (5Y 4/1), to very dark gray (5Y 3/1) SANDY VOLCANIC SILT with clay and foraminifers. Section 1, 0–40 cm, consists of approximately equal proportions of dark yellowish brown (10YR 4/4) SANDY VOLCANIC SILT with clay and foraminifers and very dark gray (5Y 3/1) volcanic ash, sometimes in layers up to 5 cm thick. Drilling disturbance in the upper 40 cm obscures any evidence of interbedding of the volcanic ash and volcanic sediment.

b. The interval from Section 4, 0 cm, to Section CC, 37 cm, consists dominantly of unlithified dark gray (5Y 4/4) to greenish gray (10Y 4/1) CLAYEY VOLCANIC SILT with sand and foraminifers.

c. Very dark gray (5Y 3/1) to black (5Y 2.5/1) COARSE VITRIC VOLCANIC ASH layers 1–10 cm thick comprise about 20% of the core. The volcanic ash also occurs as clots throughout the core. The clots may be a product of drilling disturbance. The precise color varies depending on the proportion of volcanic sediment and volcanic ash. Some of these interbeds may be from ash falls, but a few are most probably turbidites. For example, Section 4, 53–55 cm, is the base of a sand-sized interbed that is very rich in a sand-sized, sphere-shaped foraminifer. Some of the ash-rich interbeds have very sharp bases.

SMEAR SLIDE SUMMARY (%):

	1, 27 M	1, 78 D	4, 22 D	4, 58 M	4, 90 D
TEXTURE:					
Sand	30	10	20	100	20
Silt	40	50	50	---	50
Clay	30	40	30	---	30
COMPOSITION:					
Calcite	10	10	20	---	15
Chlorite	---	---	5	---	---
Clay	20	40	30	---	40
Clinopyroxene	5	3	3	17	3
Diatoms	Tr	1	Tr	---	4
Feldspar	15	5	10	---	5
Foraminifers	1	10	1	---	10
Glass	40	10	15	30	10
Nannofossils	1	5	5	---	5
Olivine	3	5	5	1	5
Opaques	1	2	1	---	1
Plagioclase	---	---	---	12	---
Radiolarians	Tr	1	Tr	---	1
Rock fragment	---	---	---	40	---
Silicoflagellates	Tr	Tr	Tr	---	Tr
Spicules	1	5	Tr	---	1



SITE 832 HOLE A CORE 2H CORED INTERVAL 5.9–15.4 mbsf

TIME-ROCK UNIT: PLEISTOCENE

BIOSTRAT. ZONE/FOSSIL CHARACTER: FORAMINIFERS N22 A/G; NANNOFOSSILS CN15 F/G; RADIOLARIANS X; DIATOMS

PALEOMAGNETICS: N

PHYS. PROPERTIES: ● 70.9 1532 1.67; ● 72.0 1525 1.68; ● 76.2 1516 1.69

CHEMISTRY: ● 9.2 0.2; ● 21.2 0.0; ● 3.8 0.0

Φ Vp β wt. %CaCO3 wt. %TOC

SECTION: 1 2 3 4 5 6 7 CC

METERS: 0.5 1.0

GRAPHIC LITHOLOGY

DRILLING DISTURB.

SED. STRUCTURES

SAMPLES

LITHOLOGIC DESCRIPTION

NANNOFOSSIL CLAYEY VOLCANIC SILTY MIXED SEDIMENT and COARSE VITRIC VOLCANIC ASH

Major lithology:

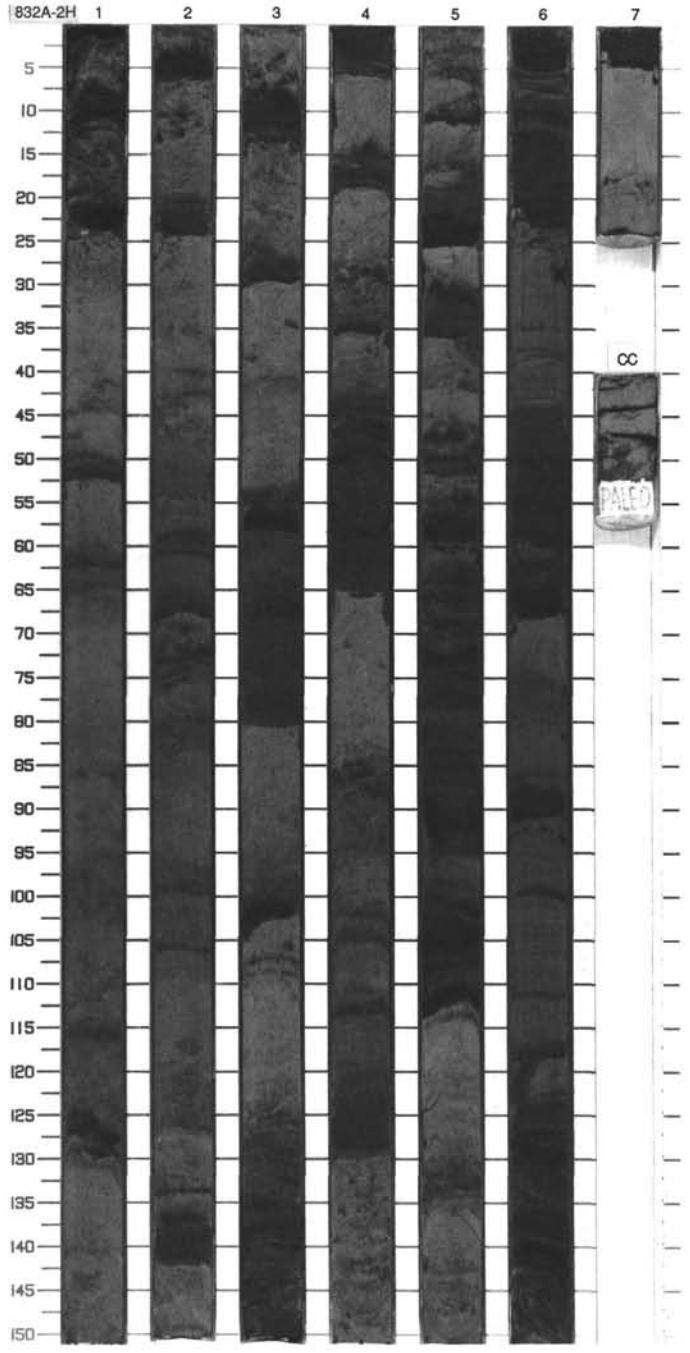
a. Approximately 75% of the core consists of dark gray (5Y 4/1) NANNOFOSSIL CLAYEY VOLCANIC SILTY MIXED SEDIMENT with foraminifers. From Section 7, 0 cm, to Section CC, 17 cm, the sediment has a similar composition, but is greenish gray (10Y 5/1) in color.

b. The remaining 25% of the core consists of interbeds of very dark gray (5Y 3/1) to black (5Y 2.5/1) COARSE VITRIC VOLCANIC ASH. The interbeds range in thickness from <1 cm to at least 15 cm, often exhibit sharp bases and fine upward. The ash layers appear to become thicker and more abundant downcore. Some of the ash layers may be turbidites. Some have sharp bases indicating scouring.

In Section 6, 121–125 cm, is an apparent slump feature in which a 1 cm thick ash layer is oriented nearly vertically between two horizontal ash layers. Slightly lower in Section 6, 125–150 cm, ash layers are convoluted. The disturbance may also be a product of drilling.

SMEAR SLIDE SUMMARY (%):

	1, 77 D	2, 6 M	5, 82 M	5, 90 M	7, 3 M
TEXTURE:					
Sand	10	70	100	60	60
Silt	50	30	---	40	40
Clay	40	---	---	---	---
COMPOSITION:					
Calcite	10	---	---	---	5
Clay	20	---	---	---	---
Clinopyroxene	Tr	5	5	3	3
Diatoms	1	---	---	---	---
Feldspar	5	10	---	5	10
Foraminifers	15	---	---	---	---
Glass	10	75	40	90	80
Nannofossils	30	---	---	---	---
Olivine	---	---	---	---	---
Opaques	1	---	---	1	2
Plagioclase	---	---	10	---	---
Radiolarians	1	---	---	---	---
Rock fragment	---	10	45	---	---
Spicules	5	---	---	---	---



SITE 832 HOLE A CORE 3H CORED INTERVAL 15.4-18.5 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
PLEISTOCENE	N22	CN15			N	● 59.4 ● 1.83 ● 0.2 φ wt. %CaCO3 wt. %TOC		1	0.5				* * *
	R/G	F/G	B					1	1.0				
								2				F	*
								CC					

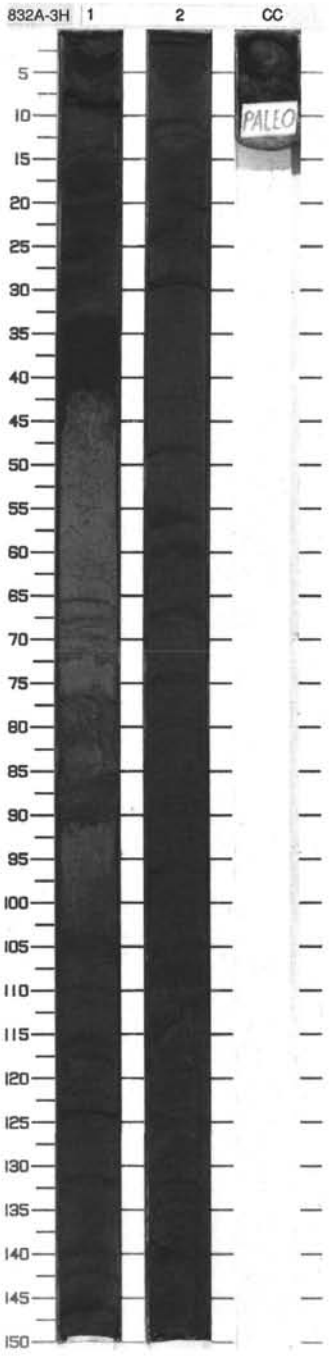
LITHOLOGIC DESCRIPTION

CLAYEY VOLCANIC SILT, CLAYEY SANDY VOLCANIC SILT, and COARSE VITRIC VOLCANIC ASH

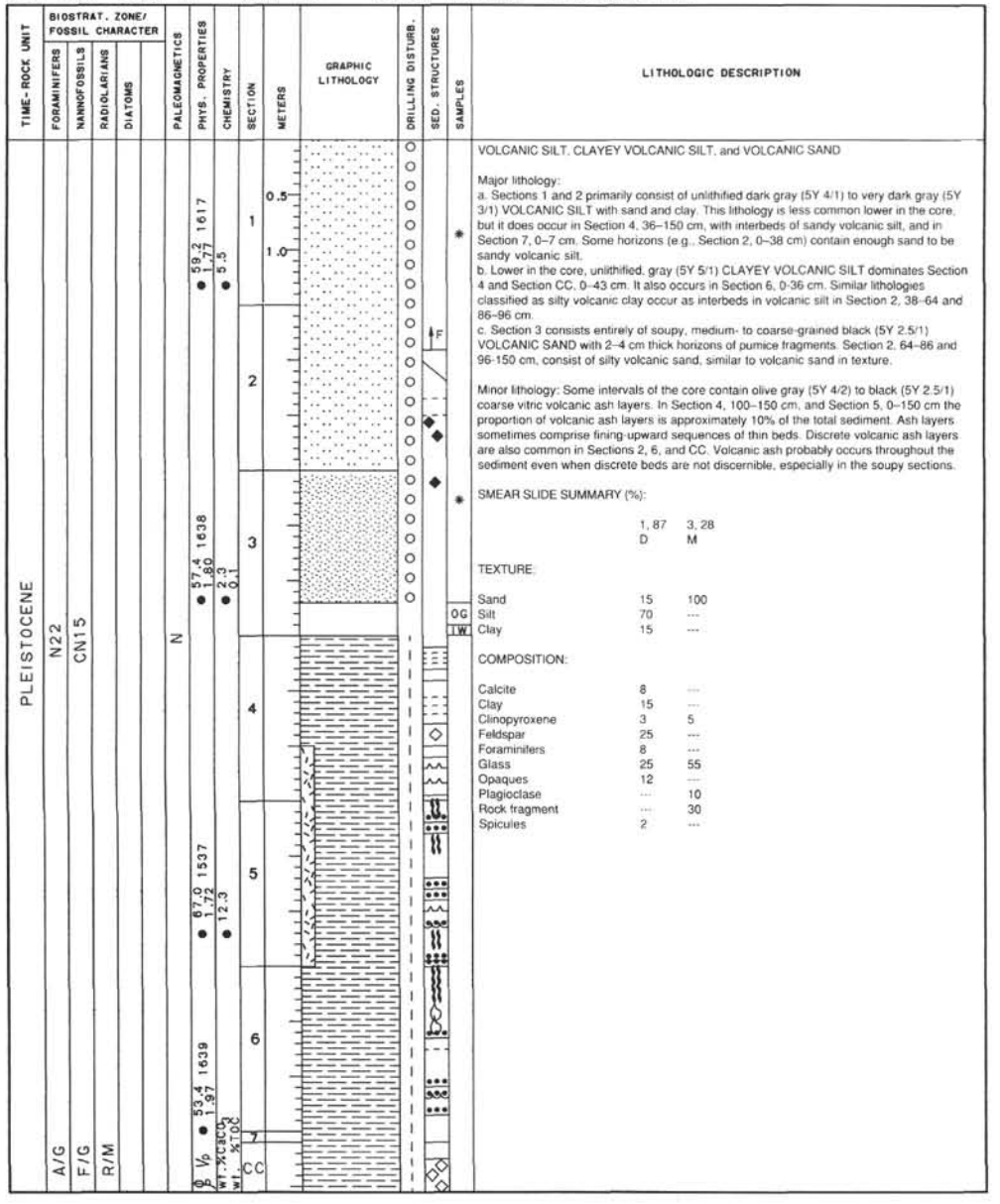
Major lithology:
a. Most of this core consists of very dark gray (5Y 3/1) CLAYEY VOLCANIC SILT.
b. In Section 1, 41–76 cm, the dominant lithology is dark gray (5Y 4/1) CLAYEY SANDY VOLCANIC SILT with foraminifers and nannofossils.
c. Interbedded with the other two major lithologies are layers of black (5Y 2.5/1) COARSE VITRIC VOLCANIC ASH. In Section 1, 0–90 cm, about 30% of the core consists of volcanic ash with layers ranging from 0.5 to 13 cm in thickness. Below this level, the proportion of volcanic ash is only about 10% and layers range from 0.5 to only 3 cm in thickness. There are about 30 of these thin ash layers in Section 2.

SMEAR SLIDE SUMMARY (%):

	1, 17 M	1, 40 M	1, 56 D	1, 135 D
TEXTURE:				
Sand	80	95	30	---
Silt	20	5	50	80
Clay	---	---	20	20
COMPOSITION:				
Celadonite	---	---	---	10
Chlorite	---	---	7	10
Clay	---	---	13	20
Clinopyroxene	7	10	3	5
Diatoms	---	---	Tr	Tr
Feldspar	10	15	6	15
Foraminifers	Tr	---	20	1
Glass	70	43	15	30
Nannofossils	Tr	---	10	1
Olivine	---	2	---	---
Opaques	1	---	---	2
Radiolarians	---	---	Tr	Tr
Rock fragment	10	30	25	---
Spicules	---	---	1	1



SITE 832 HOLE A CORE 4H CORED INTERVAL 18.5-28.0 mbsf



LITHOLOGIC DESCRIPTION

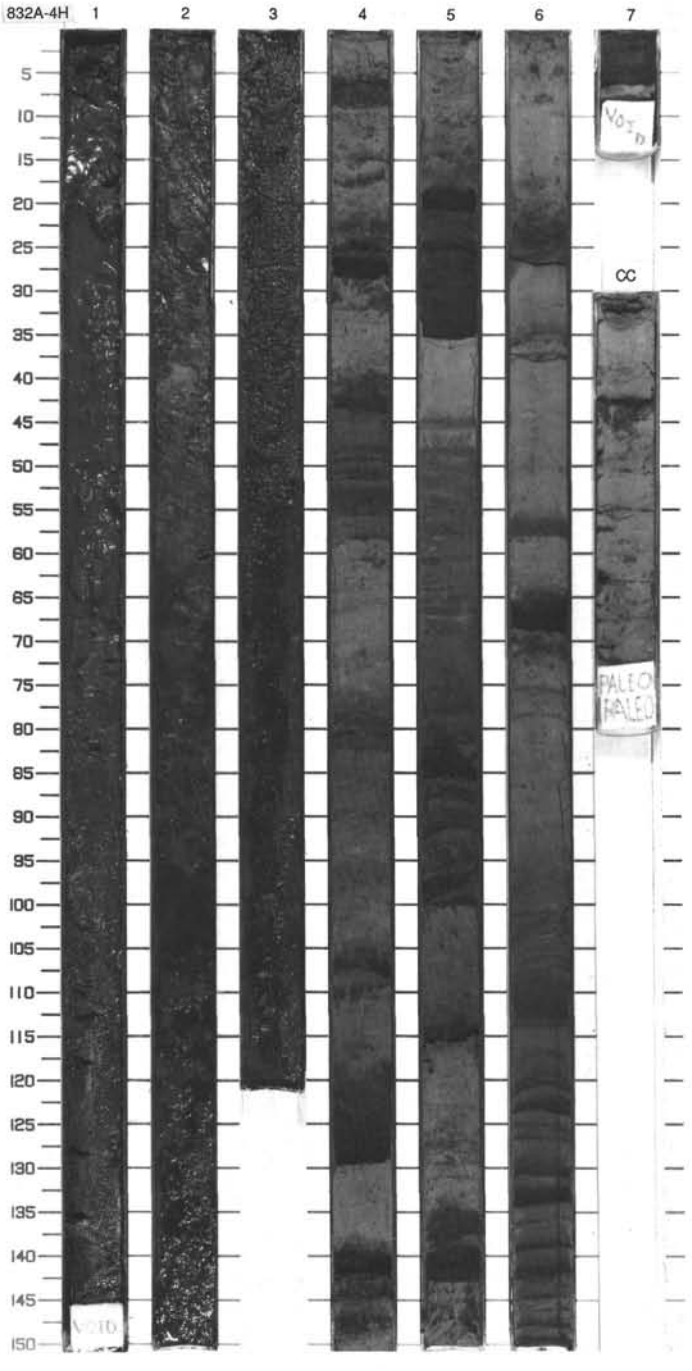
VOLCANIC SILT, CLAYEY VOLCANIC SILT, and VOLCANIC SAND

Major lithology:
a. Sections 1 and 2 primarily consist of unlithified dark gray (5Y 4/1) to very dark gray (5Y 3/1) VOLCANIC SILT with sand and clay. This lithology is less common lower in the core, but it does occur in Section 4, 36–150 cm, with interbeds of sandy volcanic silt, and in Section 7, 0–7 cm. Some horizons (e.g., Section 2, 0–38 cm) contain enough sand to be sandy volcanic silt.
b. Lower in the core, unlithified, gray (5Y 5/1) CLAYEY VOLCANIC SILT dominates Section 4 and Section CC, 0–43 cm. It also occurs in Section 6, 0-36 cm. Similar lithologies classified as silty volcanic clay occur as interbeds in volcanic silt in Section 2, 38–64 and 86–96 cm.
c. Section 3 consists entirely of soupy, medium- to coarse-grained black (5Y 2.5/1) VOLCANIC SAND with 2–4 cm thick horizons of pumice fragments. Section 2, 64–86 and 96-150 cm, consist of silty volcanic sand, similar to volcanic sand in texture.

Minor lithology: Some intervals of the core contain olive gray (5Y 4/2) to black (5Y 2.5/1) coarse vitric volcanic ash layers. In Section 4, 100–150 cm, and Section 5, 0–150 cm the proportion of volcanic ash layers is approximately 10% of the total sediment. Ash layers sometimes comprise fining-upward sequences of thin beds. Discrete volcanic ash layers are also common in Sections 2, 6, and CC. Volcanic ash probably occurs throughout the sediment even when discrete beds are not discernible, especially in the soupy sections.

SMEAR SLIDE SUMMARY (%):

	1, 87 D	3, 28 M
TEXTURE:		
Sand	15	100
Silt	70	---
Clay	15	---
COMPOSITION:		
Calcite	8	---
Clay	15	---
Clinopyroxene	3	5
Feldspar	25	---
Foraminifers	8	---
Glass	25	55
Opaques	12	---
Plagioclase	---	10
Rock fragment	---	30
Spicules	2	---



SITE 832 HOLE A CORE 5H CORED INTERVAL 28.0-37.5 mbsf

TIME-ROCK UNIT: PLEISTOCENE

BIOSTRAT. ZONE/FOSSIL CHARACTER: FORAMINIFERS A/G N22; NANNOFOSSILS R/G CN15; RADIOLARIANS R/M; DIATOMS

PALEOMAGNETICS: N

PHYS. PROPERTIES: ● 67.6 1502 1.71; ● 70.1 1524 1.57; ● 63.0 1692 1.75; ● 56.9 1.87

CHEMISTRY: ● 9.4; ● 4.7 0.1; ● 2.2; ● 3.8

Φ Vp ρ wt.%CaCO3 wt.%TOC

SECTION: 1 2 3 4 5 6 7 CC

METERS: 0.5, 1.0

GRAPHIC LITHOLOGY

DRILLING DISTURB.

SED. STRUCTURES

SAMPLES

LITHOLOGIC DESCRIPTION

COARSE VITRIC VOLCANIC ASH, SANDY VOLCANIC SILT, and CLAYEY VOLCANIC SILT

Major lithology:

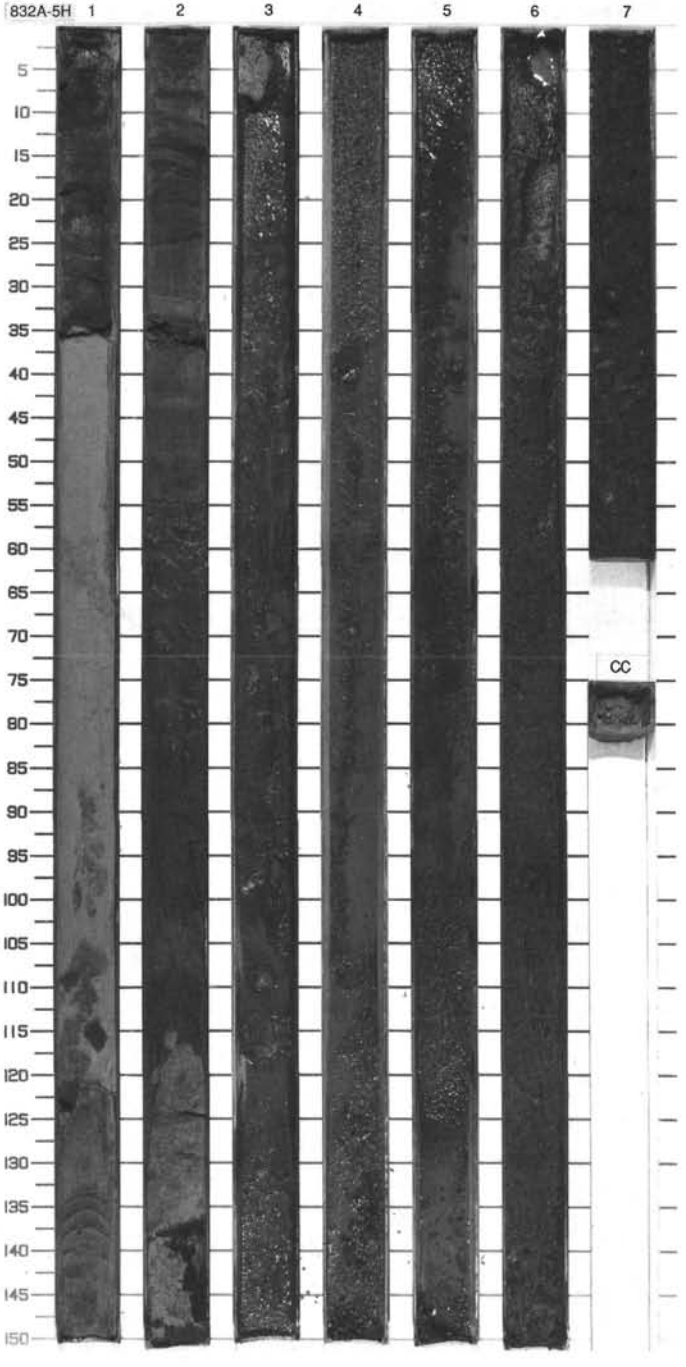
a. The dominant lithology in this core is unlithified,very dark gray (5Y 3/1) to black (5Y 2.5/1) COARSE VITRIC VOLCANIC ASH. Pebble-sized grains of lapilli, pumice, and scoria are common throughout Sections 4, 5, 6, and 7.

b. The second most common lithology is very dark gray (5Y 3/1) to black (5Y 2.5/1) SANDY VOLCANIC SILT sometimes with clay (Section 1, 0–35 cm) or as interbeds with foraminifers (Section 2, 0–56 cm). The sandy volcanic silt is the sole lithology in Section 3, 7–150 cm. Section 2, 56–120 cm, consists of similarly classified very dark gray (5Y 3/1) to black (5Y 2.5/1) silty volcanic sand.

c. The third most common lithology is gray (5Y 5/1) to very dark gray (5Y 3/1) CLAYEY VOLCANIC SILT which occurs in Section 1, 35–150 cm, and Section 2, 0–56 and 120–150 cm. In Section 3, 0–7 cm, is an interval of dark gray (5Y 4/1) clayey volcanic silt with calcareous grains and in Section CC, 0–5 cm, is an interval of gray (5Y 5/1) sandy clayey volcanic silt.

SMEAR SLIDE SUMMARY (%):

	1, 31 M	3, 82 D	5, 80 D
TEXTURE:			
Sand	30	15	70
Silt	50	80	20
Clay	20	5	10
COMPOSITION:			
Calcite	5	8	1
Clinopyroxene	7	15	10
Feldspar	15	20	10
Foraminifers	5	5	1
Glass	30	25	48
Nannofossils	5	---	---
Opaques	25	5	30
Oxide	8	---	---
Rock fragment	---	20	---
Spicules	Tr	---	Tr



SITE 832 HOLE A CORE 6H CORED INTERVAL 37.5-47.0 mbsf

TIME-ROCK UNIT: PLEISTOCENE

BIOSTRAT. ZONE/FOSSIL CHARACTER: FORAMINIFERS N22; NANNOFOSSILS CN15; RADIOLARIANS; DIATOMS

PALEOMAGNETICS: N

PHYS. PROPERTIES: ● 66.5 1539 1.75; ● 57.7 1571 1.82; ● 50.3 1.98; ● 49.6 1.99; ● 1871

CHEMISTRY: ● 14.0; ● 5.1 0.2; ● 2.8; ● 1.7

ρ Vp; wt. %CaCO3; wt. %TOC

SECTION; METERS; GRAPHIC LITHOLOGY; DRILLING DISTURB.; SED. STRUCTURES; SAMPLES

LITHOLOGIC DESCRIPTION

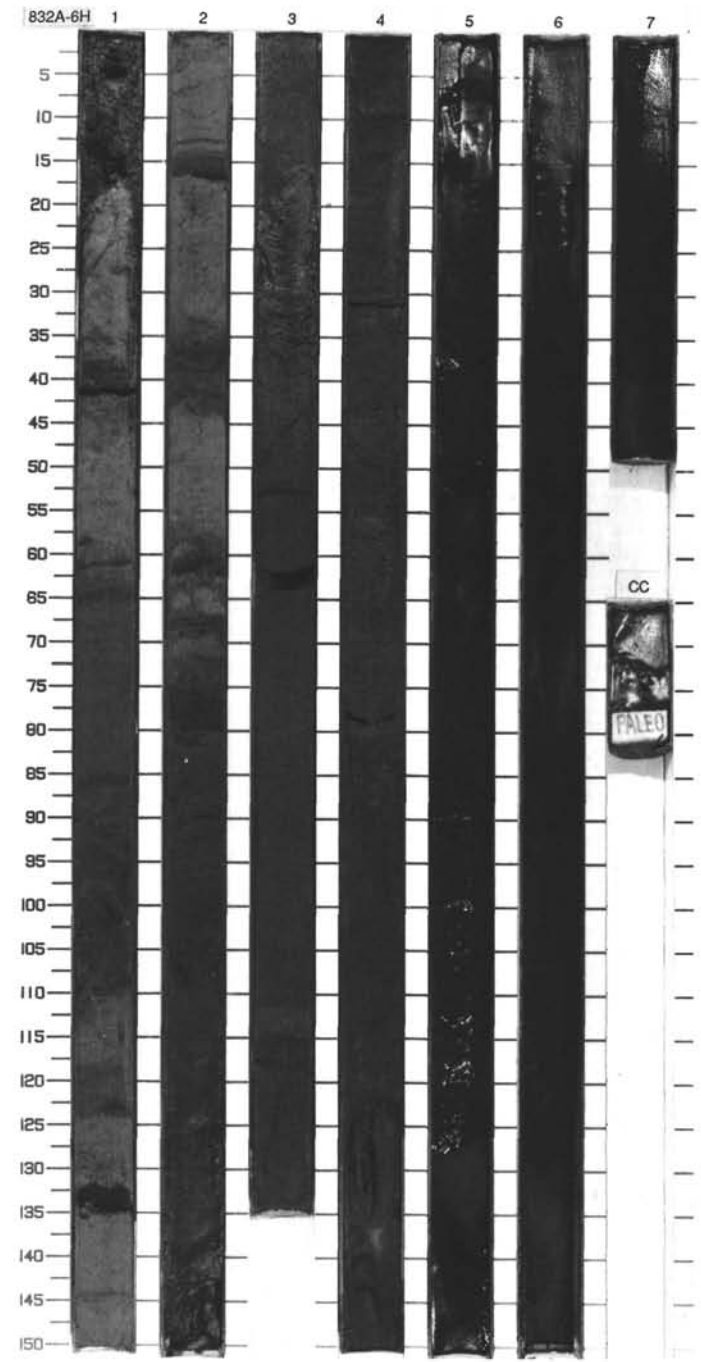
COARSE VITRIC VOLCANIC ASH and CLAYEY VOLCANIC SILT

Major lithology:
a. The dominant lithology in this core is unlithified black (5Y 2.5/1) COARSE VITRIC VOLCANIC ASH. This sediment appears to be reworked and is the sole lithology in Sections 5, 6, 7, and CC. It also occurs in Section 2, 75–80 cm, and Section 4, 80–150 cm. Sections 5, 6, 7, and CC are thoroughly disturbed by coring so that it is impossible to determine whether the ash occurs as discrete layers. A few thin ash layers occur in relatively undisturbed Sections 1 and 2.
b. The remainder of the core is dominantly gray (5Y 5/1) CLAYEY VOLCANIC SILT, including all of Section 1, Section 2, 0–115 cm, and Section 3, 30–135 cm.

Minor lithology:
a. An interval of very dark gray (5Y 3/1) sandy volcanic silt occurs in Section 2, 115–150 cm.
b. Section 3, 0–30 cm, is an interval of black (5Y 2.5/1) fine vitric volcanic ash.

SMEAR SLIDE SUMMARY (%):

	3, 5 D	3, 91 D	6, 40 D
TEXTURE:			
Sand	5	10	70
Silt	85	50	20
Clay	10	40	10
COMPOSITION:			
Calcite	5	4	---
Celadonite	---	Tr	---
Chlorite	---	2	---
Clay	10	25	2
Clinopyroxene	3	Tr	2
Feldspar	23	5	15
Foraminifers	2	3	2
Glass	35	43	42
Nannofossils	---	10	2
Opaques	5	3	30
Oxide	---	5	5
Quartz	3	---	---
Rock fragment	14	---	---
Spicules	---	Tr	Tr



SITE 832 HOLE A CORE 7H CORED INTERVAL 47.0-56.5 mbsf

TIME-ROCK UNIT: PLEISTOCENE

BIOSTRAT. ZONE/FOSSIL CHARACTER: FORAMINIFERS N22; NANNOFOSSILS CN14; RADIOLARIANS R/G; DIATOMS F/G; R/M

PALEOMAGNETICS: N

PHYS. PROPERTIES: ● 53.2 1.96 1592; ● 53.7 1.89 1592; ● 61.0 1.74; Φ Vp β; wt. %CaCO3; wt. %TOC

CHEMISTRY: ● 26.3; ● 3.2 0.1; ● 3.3

SECTION: 1, 2, 3, 4, 5, 6, 7, CC

METERS: 0.5, 1.0

GRAPHIC LITHOLOGY: VOID

DRILLING DISTURB.

SED. STRUCTURES

SAMPLES: OG

LITHOLOGIC DESCRIPTION

FINE VITRIC VOLCANIC ASH, VOLCANIC SILT, and CLAYEY VOLCANIC SILT

Major lithology:

a. The majority of the core consists of dark gray (5Y 4/1) to black (5Y 2.5/1) FINE VITRIC VOLCANIC ASH. Volcanic ash is more abundant in the lower part of the core, but occurs also in Section 3, 0–33 cm. Vitric volcanic ash occurs as discrete beds within the clayey volcanic silt layers of Section 1 and the volcanic silts of Section 2. We suspect that mucl of the volcanic ash is reworked.

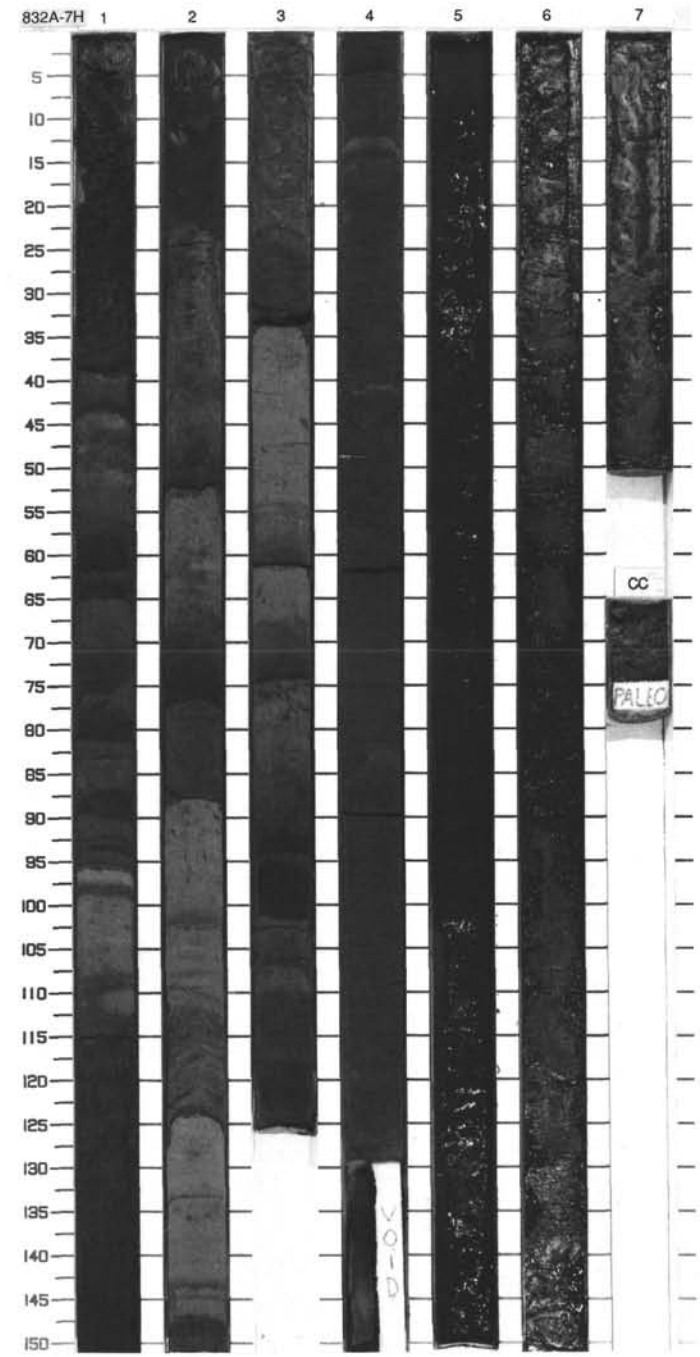
b. Section 2, 0–52 cm, and Section 4, 0–129 cm, consist of very dark gray (5Y 3/1) VOLCANIC SILT.

c. In the upper part of the core in Section 1, 39–120, and Section 2, 52–150 cm, are significant intervals of gray (5Y 5/1) to dark gray (5Y 4/1) CLAYEY VOLCANIC SILT. This sediment also occurs as the upper part of fining-upward sequences in the middle part of Section 3.

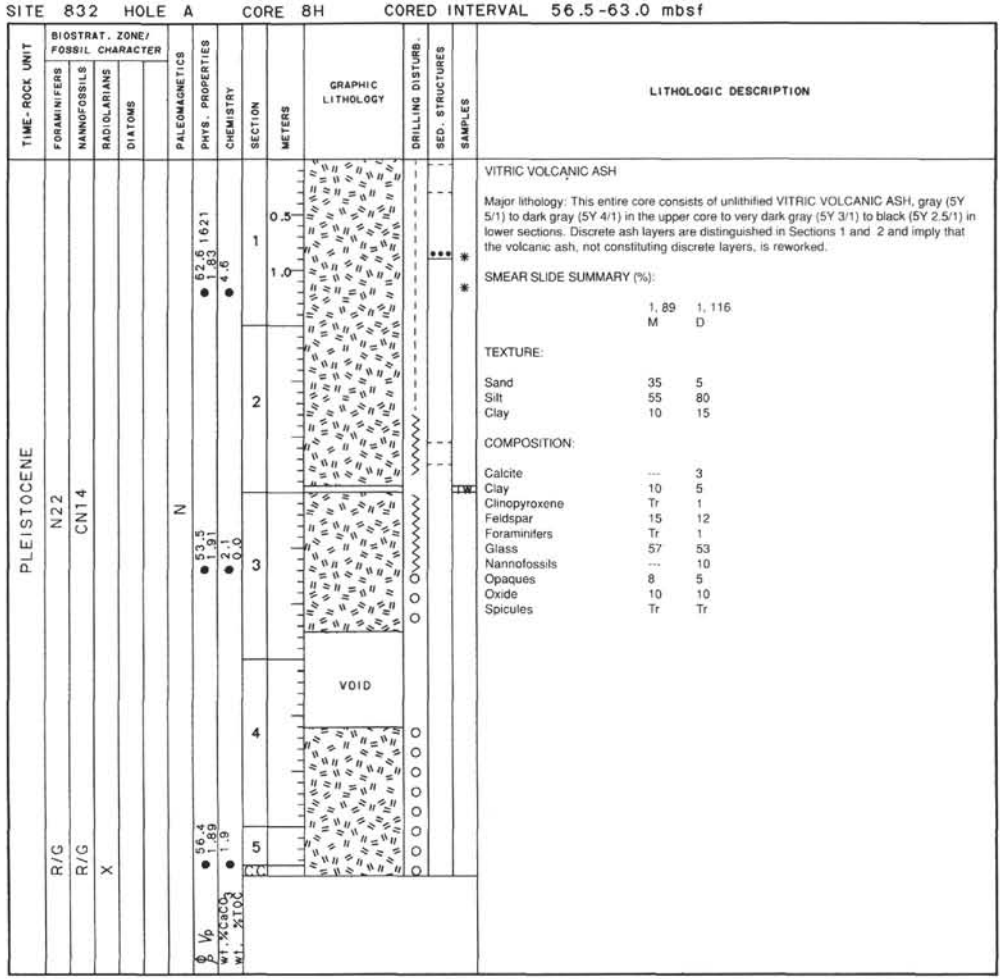
Minor lithology: In Section 1, 0–39 and 120–150 cm is black (5Y 2.5/1) coarse vitric volcanic ash with lapilli in the interval from 0–39 cm.

SMEAR SLIDE SUMMARY (%):

	1, 22 M	1, 26 M	7, 15 D
TEXTURE:			
Sand	80	100	---
Silt	15	---	65
Clay	5	---	35
COMPOSITION:			
Calcite	---	---	8
Clay	---	---	35
Clinopyroxene	6	20	1
Feldspar	15	---	25
Foraminifers	---	---	1
Glass	40	25	27
Nannofossils	---	---	Tr
Olivine	---	5	---
Opaques	25	---	3
Oxide	14	---	---
Plagioclase	---	10	---
Rock fragment	---	40	---



SITE 832 HOLE A CORE 8H CORED INTERVAL 56.5-63.0 mbsf

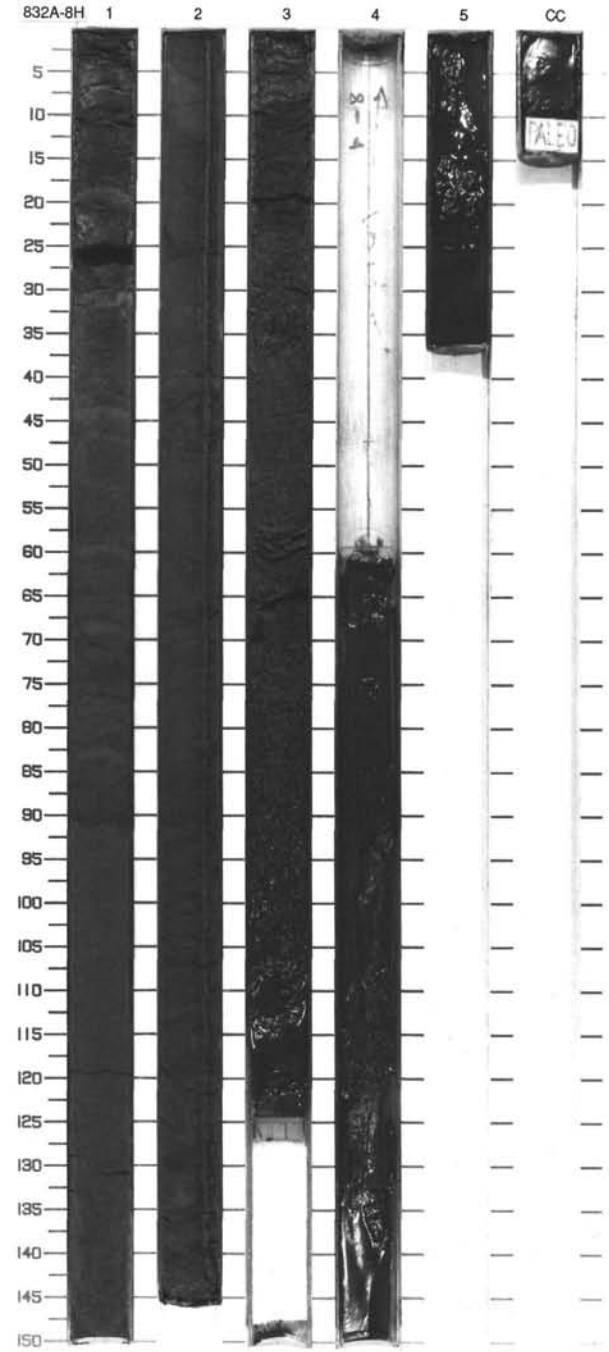


VITRIC VOLCANIC ASH

Major lithology: This entire core consists of unlithified VITRIC VOLCANIC ASH, gray (5Y 5/1) to dark gray (5Y 4/1) in the upper core to very dark gray (5Y 3/1) to black (5Y 2.5/1) in lower sections. Discrete ash layers are distinguished in Sections 1 and 2 and imply that the volcanic ash, not constituting discrete layers, is reworked.

SMEAR SLIDE SUMMARY (%):

	1, 89 M	1, 116 D
TEXTURE:		
Sand	35	5
Silt	55	80
Clay	10	15
COMPOSITION:		
Calcite	---	3
Clay	10	5
Clinopyroxene	Tr	1
Feldspar	15	12
Foraminifers	Tr	1
Glass	57	53
Nannofossils	---	10
Opaques	8	5
Oxide	10	10
Spicules	Tr	Tr



SITE 832 HOLE A CORE 9H CORED INTERVAL 63.0-72.5 mbsf

TIME-ROCK UNIT: PLEISTOCENE

BIOSTRAT. ZONE/FOSSIL CHARACTER: FORAMINIFERS N22 C/G; NANNOFOSSILS CN14 F/G; RADIOLARIANS B; DIATOMS

PALEOMAGNETICS: N

PHYS. PROPERTIES: ● 53.3 1524; ● 1.92; ● 2.3; ● 0.1; ● 65.0 1566; ● 1.74; ● 7.3; ϕ Vp β; wt. %CaCO3; wt. %TOC

CHEMISTRY

SECTION: 1 2 3 4 5 6 7 CC

METERS: 0.5 1.0

GRAPHIC LITHOLOGY

DRILLING DISTURB.

SED. STRUCTURES

SAMPLES

LITHOLOGIC DESCRIPTION

COARSE VITRIC VOLCANIC ASH and CLAYEY VOLCANIC SILT

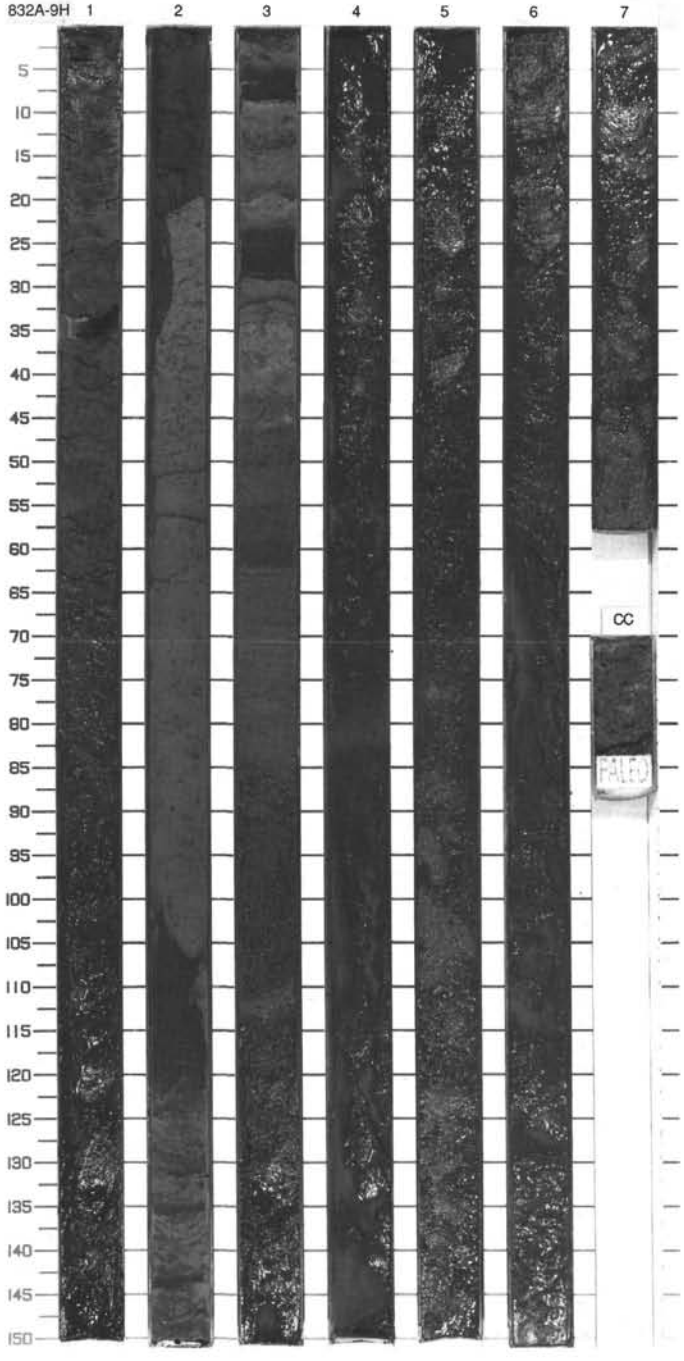
Major lithology:

a. The dominant lithology in this core is unlithified black (5Y 2.5/1) COARSE VITRIC VOLCANIC ASH. We suspect that much of the ash is reworked. Vitric volcanic ash is much more abundant in the lower part of the core and occurs as discrete beds within the silts in Sections 1, 2, and 3. In Section 3, the vitric volcanic ash occurs as beds 5–10 cm thick and comprises a significant proportion of the total sediment.

b. The second most common lithology is unlithified very dark gray (5Y 3/1) CLAYEY VOLCANIC SILT. This sediment occurs in the upper part of Section 1, 0–68 cm, Section 2, 44–98 and 122–150 cm, and Section 3, where it is interbedded with thick beds of vitric volcanic ash. A few layers or lenses of this sediment also occur in Sections 4 and 5, but it becomes progressively less abundant downcore.

SMEAR SLIDE SUMMARY (%):

	2, 16 M	3, 27 M	5, 39 M	5, 58 D
TEXTURE:				
Sand	85	30	5	80
Silt	10	65	30	15
Clay	5	5	65	5
COMPOSITION:				
Calcite	---	---	3	---
Celadonite	Tr	---	---	Tr
Clay	---	5	62	---
Clinopyroxene	8	7	2	2
Feldspar	15	15	15	18
Foraminifers	Tr	Tr	10	10
Glass	35	41	3	35
Opaques	32	10	2	20
Orthopyroxene	Tr	---	---	---
Oxide	10	10	---	5
Radiolarians	---	---	---	Tr
Rock fragment	---	12	---	10
Spicules	---	---	3	---



SITE 832 HOLE A CORE 10H CORED INTERVAL 72.5-82.0 mbsf

TIME-ROCK UNIT: PLEISTOCENE

BIOSTRAT. ZONE/FOSSIL CHARACTER: FORAMINIFERS: R/P, F/G, R/M; NANNOFOSSILS: N22, CN14; RADIOLARIANS: N; DIATOMS

PALEOMAGNETICS

PHYS. PROPERTIES: Vp; ρb; wt. %CaCO3; wt. %TOC; 65.6 1.72 11.3; 1567

CHEMISTRY: 32.1 2.00; 70.4 1.64; 2.3 0.1; 13.7

SECTION: 1, 2, 3, 4, 5, 6, 7, CC

METERS: 0.5, 1.0

GRAPHIC LITHOLOGY

DRILLING DISTURB.

SED. STRUCTURES

SAMPLES: FC, W, OG

LITHOLOGIC DESCRIPTION

SILTY VOLCANIC CLAY and CLAYEY VOLCANIC SILT

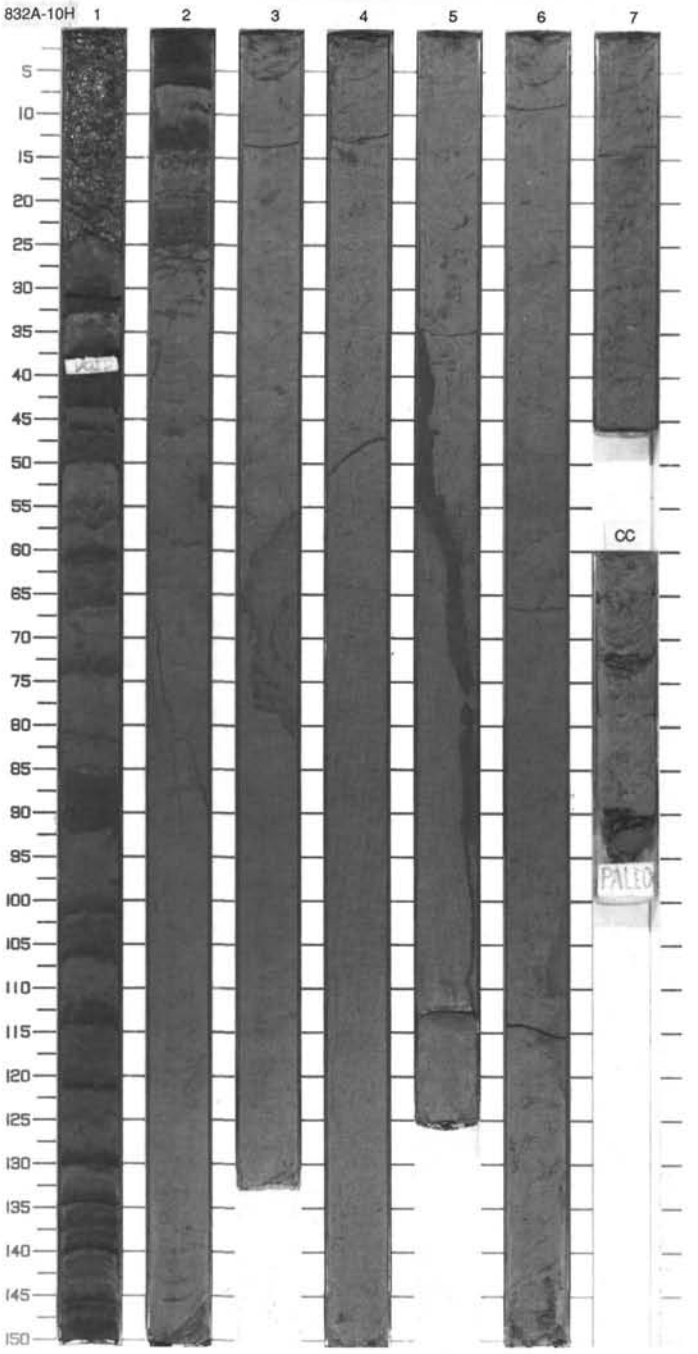
Major lithology:
a. Nearly the entire core, except Section 1 and some thin beds in other sections, consists of unlithified, heavily bioturbated dark gray (5Y 4/1) SILTY VOLCANIC CLAY.
b. The majority of Section 1 consists of dark gray (5Y 4/1) CLAYEY VOLCANIC SILT.

Minor lithology:
a. Black (5Y 2.5) vitric volcanic ash layers are common throughout the core. Ash layers 1.5 to 2 cm thick are particularly numerous in Section 1, 85–150 cm, but their numbers decrease markedly in Section 2.
b. Section 1, 0–24 cm, consists of very dark gray (5Y 5/1) volcanic lapilli.

Section 3, 53–81 cm, exhibits an apparent fold in a sand-sized layer, but this may be due to slumping or drilling disturbance.

SMEAR SLIDE SUMMARY (%):

	2, 129 D
TEXTURE:	
Silt	35
Clay	65
COMPOSITION:	
Calcite	5
Celadonite	Tr
Chlorite	1
Clay	70
Clinopyroxene	Tr
Feldspar	10
Foraminifers	1
Glass	7
Nannofossils	1
Opaques	2
Radiolarians	Tr
Spicules	3



TIME-ROCK UNIT: PLEISTOCENE

BIOSTRAT. ZONE/FOSSIL CHARACTER
- FORAMINIFERS: N22
- NANNOFOSSILS: CN14
- RADIOLARIANS: C/G
- DIATOMS: F/G
- PALEOMAGNETICS: R/M

PALEOMAGNETICS: N

PHYS. PROPERTIES: Φ ⅙ ρ; WT.-%CaCO3; WT. %TOC

CHEMISTRY

SECTION: 1, 2, 3, 4, 5, 6, 7, CC

METERS: 0.5, 1.0

GRAPHIC LITHOLOGY

DRILLING DISTURB.

SED. STRUCTURES

SAMPLES

LITHOLOGIC DESCRIPTION

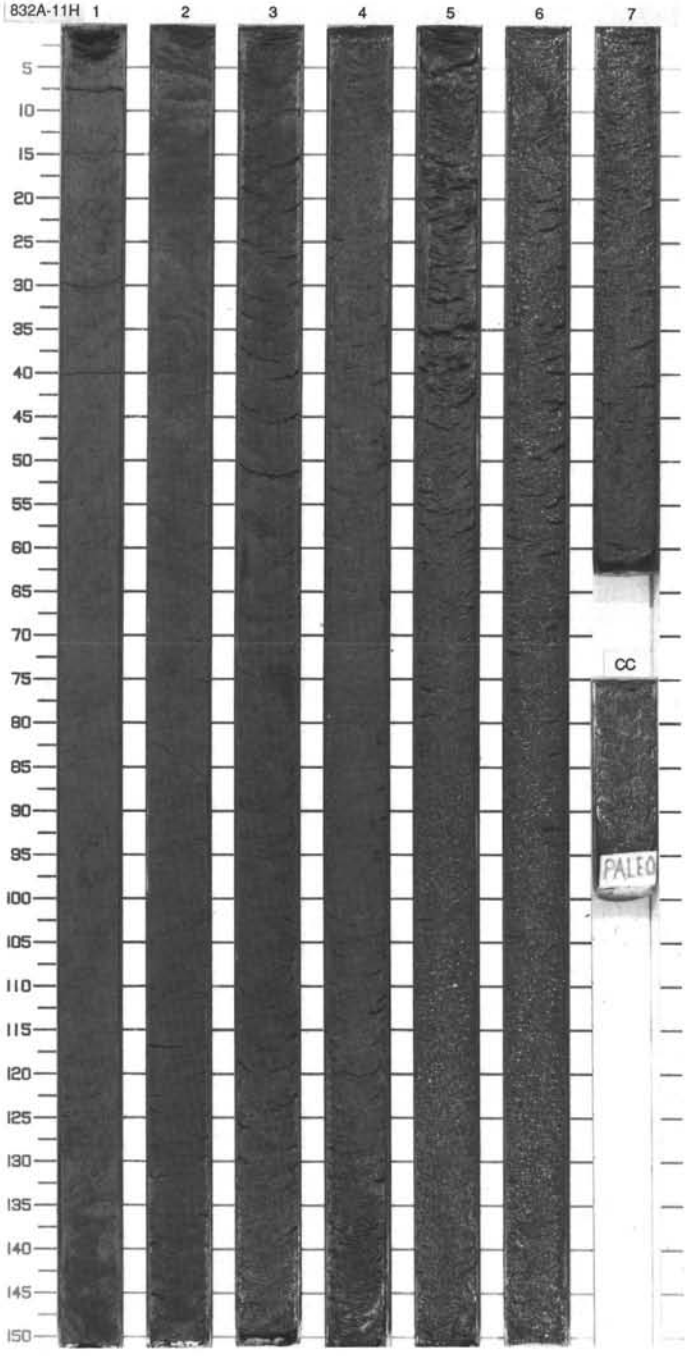
SILTY VOLCANIC CLAY

Major lithology: This entire core consists of unlithified, bioturbated, structureless, dark gray (5Y 4/1) SILTY VOLCANIC CLAY. The middle part of Section 3, 60–80 cm contains some wood fragments. Drilling disturbance, as well as bioturbation, have made any sedimentary structures difficult to distinguish.

Minor lithology: Section CC, 0–21 cm, consists of structureless, unlithified dark gray (5Y 4/1) silty calcareous clay.

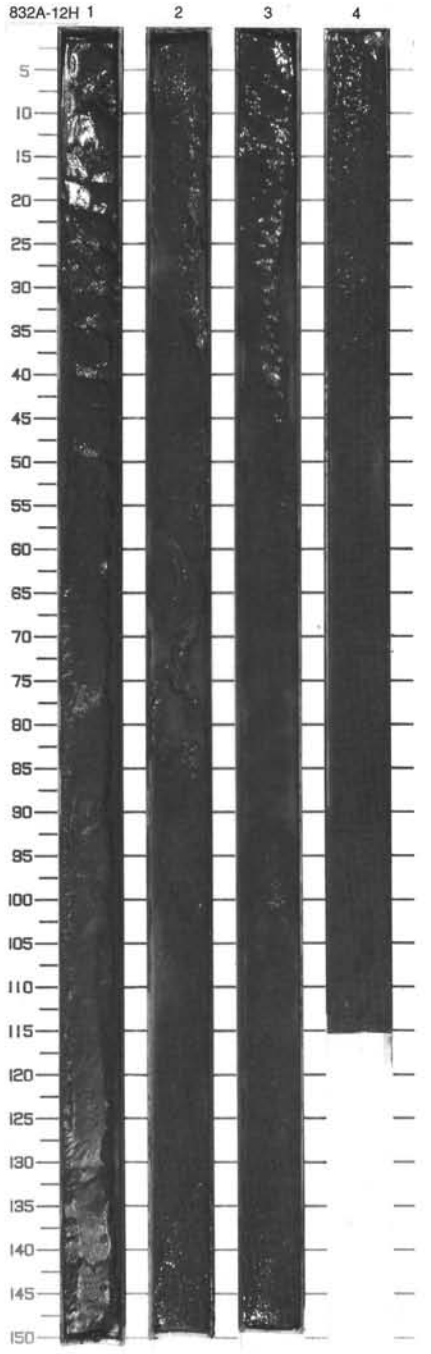
SMEAR SLIDE SUMMARY (%):

	4, 84 D
TEXTURE:	
Silt	40
Clay	60
COMPOSITION:	
Calcite	6
Celadonite	Tr
Chlorite	2
Clay	60
Feldspar	15
Foraminifers	2
Glass	10
Opaques	1
Spicules	3



SITE 832 HOLE A CORE 12H CORED INTERVAL 91.5-101.0 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
PLEISTOCENE	C/G	N22	R/G	CN14	B	?	wt.-%CaCO3 ● 5.2 wt. %TOC 0.6 ● 5.0 0.1	1 2 3 4	0.5 1.0				*	FINE VITRIC VOLCANIC ASH Major lithology: The entire core consists of soupy, very dark gray (5Y 3/1) FINE VITRIC VOLCANIC ASH which occurs in two varieties. The first has grains of plagioclase and pyroxene and the second has grains of pyroxene and magnetite. Each of these accessories comprises ≥10% of the sediment when it occurs in one of the two varieties. Section CC contained 10 cm of material that all went to paleontology. SMEAR SLIDE SUMMARY (%): 1, 80 D TEXTURE: Sand 35 Silt 60 Clay 5 COMPOSITION: Clinopyroxene 2 Feldspar 20 Foraminifers 7 Glass 48 Opaques 15 Oxide 5 Rock fragment 3 Spicules Tr



SITE 832 HOLE A CORE 13H CORED INTERVAL 101.0-102.0 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
PLEISTOCENE	C/G	N22	F/G	CN14		?	● 52.3 1.97 ● 3.2 0.0	wt. %CaCO3 wt. %TOC	1 2 3 CC	0.5 1.0 VOID			

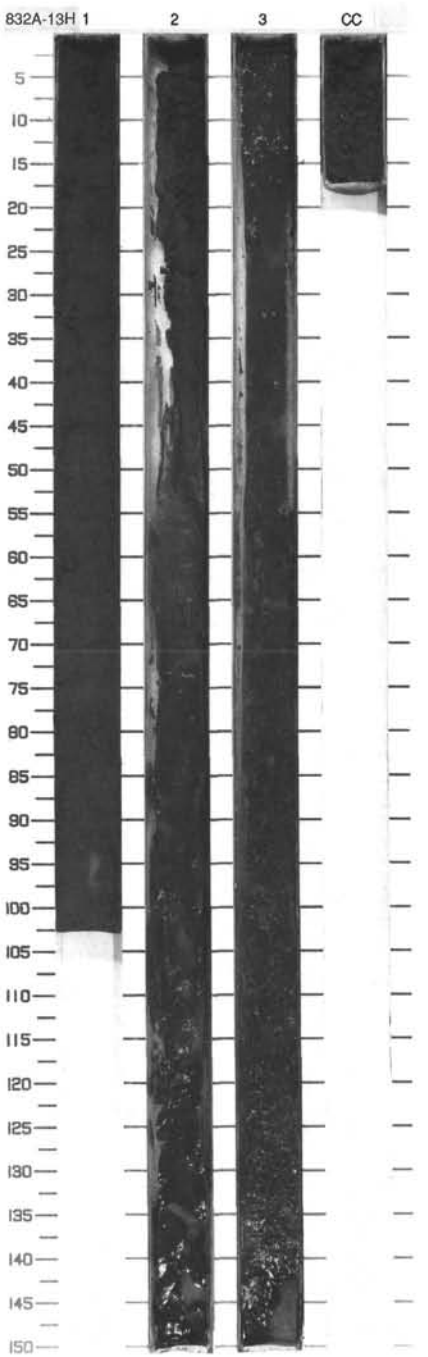
LITHOLOGIC DESCRIPTION

COARSE VITRIC VOLCANIC ASH

Major lithology: The entire core consists of soupy very dark gray (5Y 3/1) COARSE VITRIC VOLCANIC ASH. Some of the glass is very pale brown and appears fresh, whereas the remainder is black and partially devitrified. This indicates that some of the glass may be significantly older material that has been reworked into younger glass-rich sediment. Numerous clasts of pumice occur in Section 3, 90–150 cm, and Section CC, 0–17 cm. The pumice clasts become coarser downward.

SMEAR SLIDE SUMMARY (%):

	1, 50 D	3, 80 D
TEXTURE:		
Sand	80	65
Silt	20	35
COMPOSITION:		
Chlorite	---	Tr
Clinopyroxene	15	15
Feldspar	15	25
Foraminifers	Tr	1
Glass	50	40
Hornblende	1	Tr
Nannofossils	1	Tr
Opaques	15	10
Rock fragment	---	5
Spicules	Tr	Tr



SITE 832 HOLE A CORE 14H CORED INTERVAL 102.0-106.5 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
PLEISTOCENE	C/G	N22			?	● 53.0 2.02	● 3.5 0.1	1	0.5 1.0	VOID	○		
	R/G	CN14						2			○		*

Φ ρ wt. %CaCO3 wt. %TOC

LITHOLOGIC DESCRIPTION

COARSE VITRIC VOLCANIC ASH

Major lithology: The entire core consists of soupy,very dark gray (5Y 3/1) COARSE VITRIC VOLCANIC ASH with crystals of plagioclase and opaque minerals. Section CC contained 8 cm of material, all of which went to paleontology.

SMEAR SLIDE SUMMARY (%):

	2, 80 D
TEXTURE:	
Sand	70
Silt	30
COMPOSITION:	
Calcite	3
Chlorite	Tr
Clinopyroxene	7
Feldspar	20
Foraminifers	1
Glass	40
Nannofossils	1
Opaques	25

SITE 832 HOLE A CORE 15H CORED INTERVAL 106.5-116.0 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
PLEISTOCENE	F/G	N22			?	● 49.6 2.01	● 3.0 0.0	1	0.5 1.0		○	◇	
	R/G	CN14						2			○	◇	
								3			○		*
								CC					

Φ ρ wt. %CaCO3 wt. %TOC

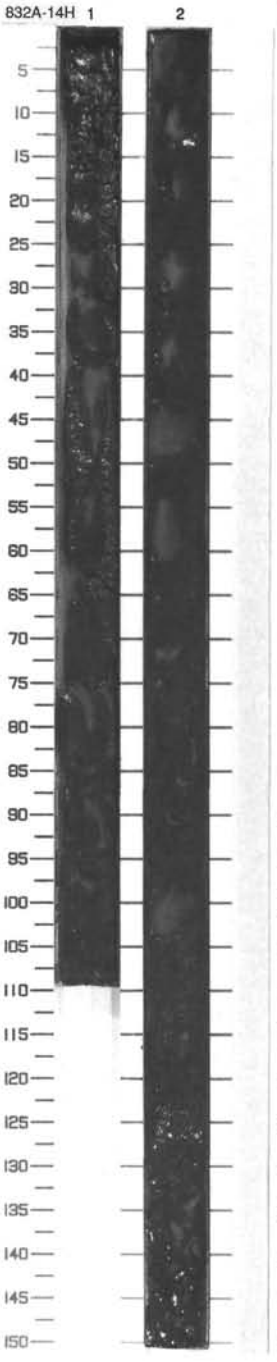
LITHOLOGIC DESCRIPTION

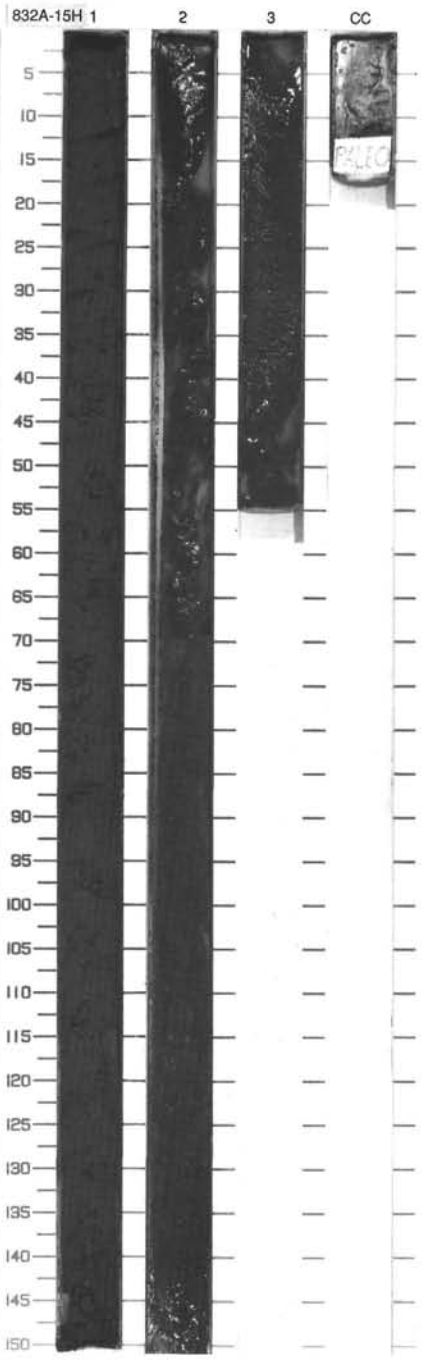
COARSE VITRIC VOLCANIC ASH

Major lithology: The entire core consists of soupy, black (5Y 2.5/1) COARSE VITRIC VOLCANIC ASH with crystals of plagioclase and opaque minerals. Pumice fragments up to 2 mm occur in Section 1 and up to 5 mm occur in Section 2.

SMEAR SLIDE SUMMARY (%):

	3, 30 D
TEXTURE:	
Sand	80
Silt	20
COMPOSITION:	
Chlorite	Tr
Clinopyroxene	15
Feldspar	20
Foraminifers	1
Glass	30
Hornblende	Tr
Nannofossils	Tr
Opaques	30





SITE 832 HOLE A CORE 16H CORED INTERVAL 116.0-125.5 mbsf

TIME-ROCK UNIT: PLEISTOCENE

BIOSTRAT. ZONE/FOSSIL CHARACTER: FORAMINIFERS N2; NANNOFOSSILS CN14; RADIOLARIANS; DIATOMS; PALEOMAGNETICS N; PHYS. PROPERTIES; CHEMISTRY

Φ Vp
wt. %CaCO3
wt. %TOC

SECTION: 1, 2, 3, 4, 5, 6, 7, CC

METERS: 0.5, 1.0

GRAPHIC LITHOLOGY

DRILLING DISTURB.

SED. STRUCTURES

SAMPLES: LEG TW

LITHOLOGIC DESCRIPTION

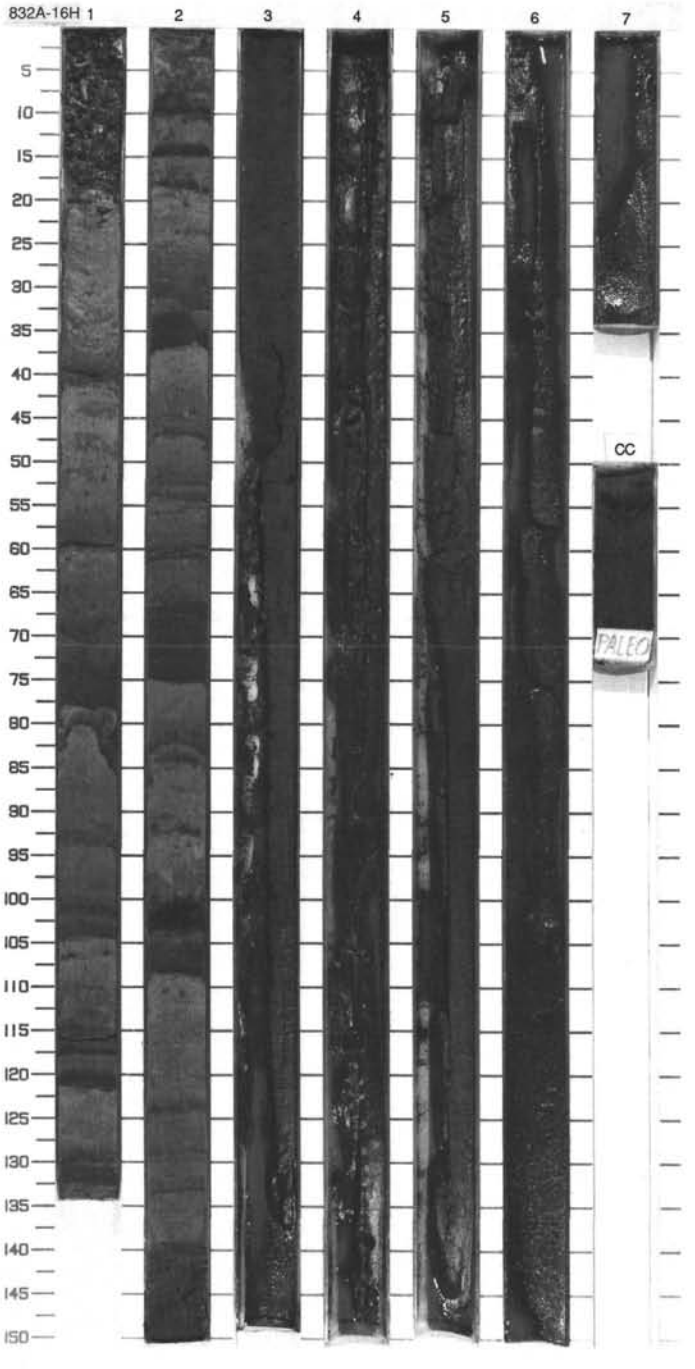
COARSE VITRIC VOLCANIC ASH and CLAYEY VOLCANIC SILT

Major lithology:
a. Most of the core consists of soupy, black (5Y 2.5/1) COARSE VITRIC VOLCANIC ASH with pyroxene and opaque mineral grains. This coarse vitric volcanic ash occurs as layers 1–4 cm thick comprising about 30% of the sediment in Section 1, 18–134 cm and as layers 0.5–7 cm thick in Section 2, 0–150 cm.
b. The second most abundant sediment is unlithified gray (5Y 5/1) CLAYEY VOLCANIC SILT occurring in Section 1, 18–134 cm, and all of Section 2, except for interbeds of vitric volcanic ash described above.

Minor lithology: Section 1, 0–18 cm, consists of unlithified black (5Y 2.5/1) pebble- to gravel-sized fragments of branching *Acropora* corals, bivalves, and pumice comprising a bioclastic pumice conglomerate.

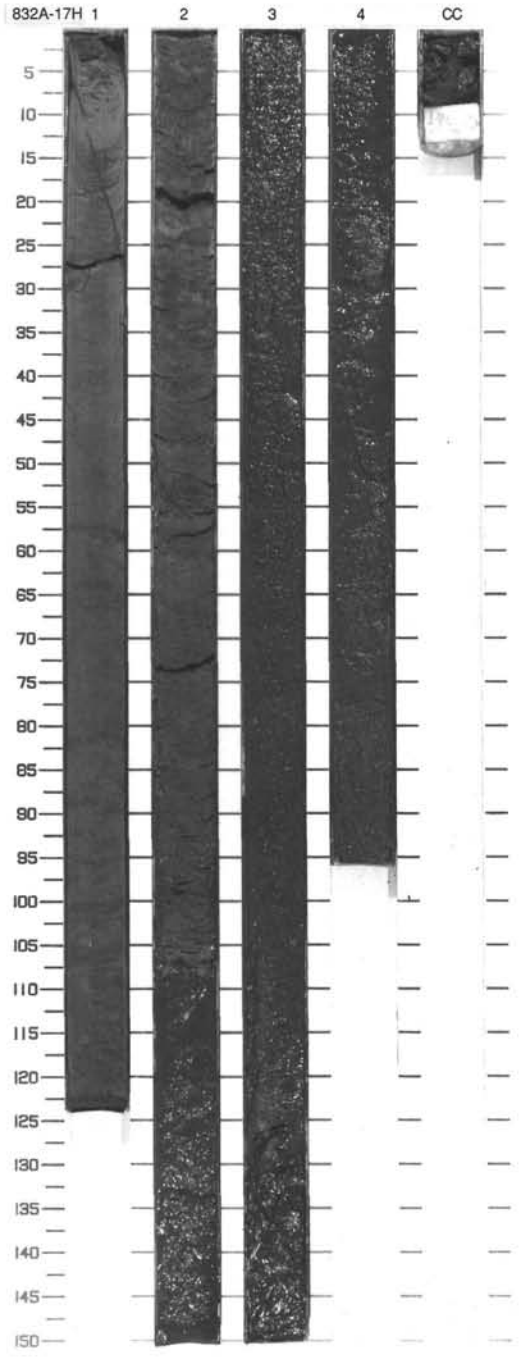
SMEAR SLIDE SUMMARY (%):

	1, 85 D	2, 70 M	6, 60 D
TEXTURE:			
Sand	10	70	90
Silt	60	30	10
Clay	30	---	---
COMPOSITION:			
Calcite	15	---	---
Chlorite	1	---	---
Clay	20	---	---
Clinopyroxene	Tr	10	20
Diatoms	Tr	---	---
Feldspar	15	15	5
Foraminifers	10	Tr	2
Glass	10	40	40
Nannofossils	20	---	Tr
Olivine	---	---	3
Opaques	1	10	15
Radiolarians	Tr	---	---
Rock fragment	---	20	15
Spicules	1	---	Tr
Zeolite	5	---	---



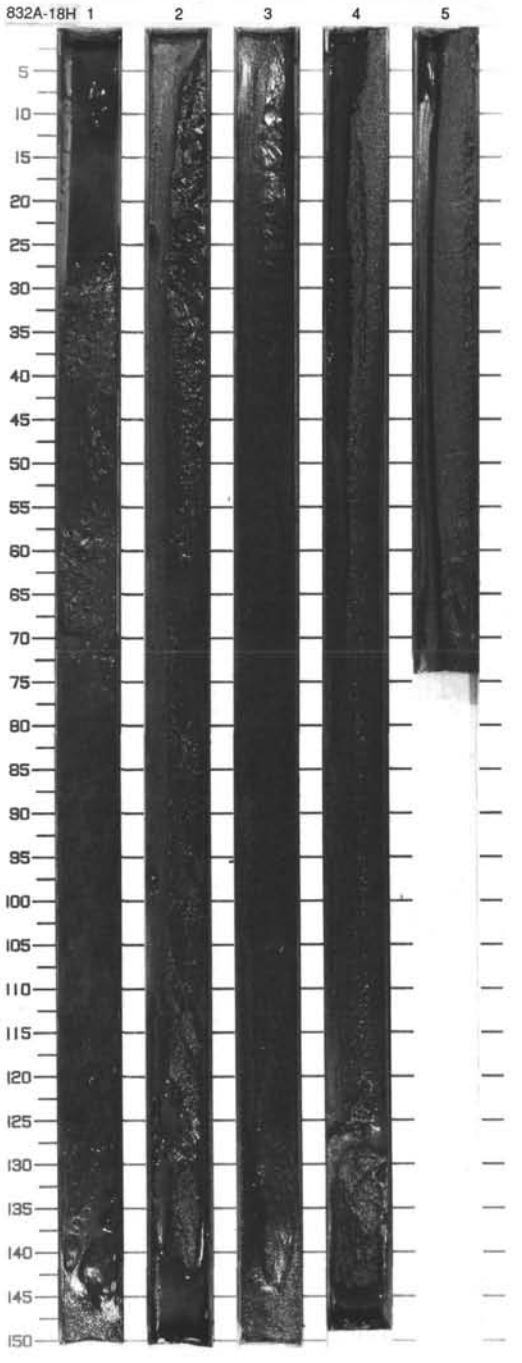
SITE 832 HOLE A CORE 17H CORED INTERVAL 125.5-131.5 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
PLEISTOCENE	A/G	N22	CN14	B	N	1643 ● 61.3 ● 1.79 ● 56.3 ● 1.89	● 8.7 0.3 ● 3.3 wt. %CaCO3 wt. %TOC	1 2 3 4	0.5 1.0				* OG *	FINE VITRIC VOLCANIC ASH Major lithology: The entire core consists of structureless, unlithified, dark gray (5Y 4/1) to very dark grayish brown (10YR 3/2) FINE VITRIC VOLCANIC ASH with plagioclase grains. SMEAR SLIDE SUMMARY (%): 1, 39 D — 2, 52 D TEXTURE: Sand — --- — 30 Silt — 70 — 50 Clay — 30 — 20 COMPOSITION: Calcite — 5 — 5 Chlorite — --- — 1 Clay — 30 — --- Diatoms — Tr — --- Feldspar — 5 — 12 Foraminifers — --- — 1 Glass — 40 — 70 Nannofossils — 5 — 7 Opaques — 10 — --- Radiolarians — Tr — --- Spicules — 1 — 1



SITE 832 HOLE A CORE 18H CORED INTERVAL 131.5-141.0 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
PLEISTOCENE	C/G N22	R/G CN14			?	ϕ; wt. %CaCO3; wt. %TOC; • 56.4, 1.85; • 3.1	• 66.5, 1.66; • 3.4, 0.0	1 2 3 4 5	0.5 1.0				*	COARSE VITRIC VOLCANIC ASH Major lithology: The entire core consists of unlithified, very dark gray (10YR 3/1) COARSE VITRIC VOLCANIC ASH with plagioclase grains. The coring process has made the sediment structureless and soupy. SMEAR SLIDE SUMMARY (%): 1, 36 D TEXTURE: Sand 60 Silt 30 Clay 10 COMPOSITION: Calcite 4 Chlorite 1 Feldspar 20 Foraminifers 4 Glass 45 Nannofossils 2 Opaques 15 Oxide 5



SITE 832 HOLE A CORE 19H CORED INTERVAL 141.0-145.0 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
PLEISTOCENE	R/G	R/G	B		N	● 55.3 1826 ● 1.92 ϕ Vp ● 6.1 ● 0.2 wt. %CaCO3 wt. %TOC		1 2 CC	0.5 1.0				TW

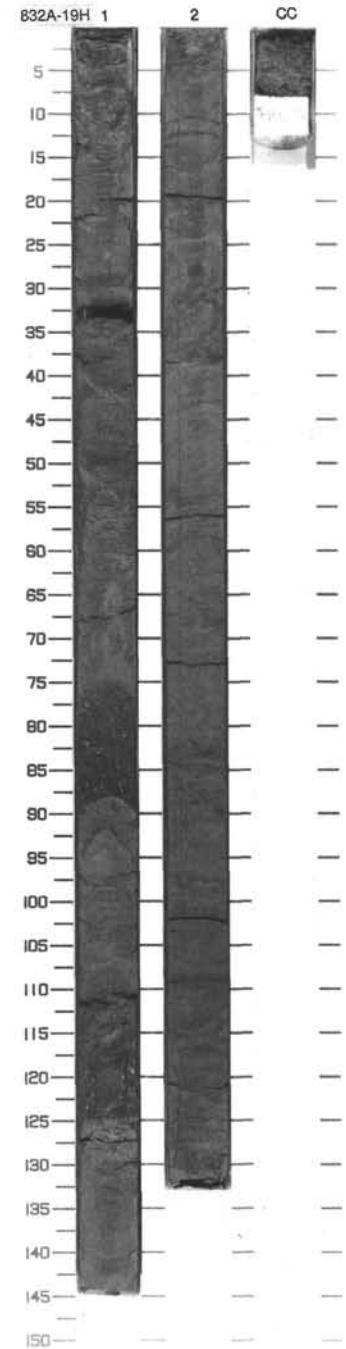
LITHOLOGIC DESCRIPTION

FINE PLAGIOCLASE VITRIC VOLCANIC ASH and FINE VITRIC VOLCANIC ASH

Major lithology:
a. All of Sections 2 and CC consist of structureless, unlithified dark gray (5Y 4/1) FINE PLAGIOCLASE VITRIC VOLCANIC ASH with nannofossils. In Section 1, this lithology is interbedded with the second major lithology.
b. About 25% of Section 1 consists of interbedded layers of very dark gray (5Y 3/1) FINE VITRIC VOLCANIC ASH.

SMEAR SLIDE SUMMARY (%):

	1, 88 M	2, 70 D
TEXTURE:		
Sand	20	5
Silt	80	65
Clay	0	30
COMPOSITION:		
Calcite	5	5
Chlorite	2	1
Clay	---	10
Clinopyroxene	5	---
Feldspar	20	30
Foraminifers	Tr	1
Glass	35	40
Nannofossils	---	10
Opaques	25	2
Oxide	5	—
Spicules	Tr	1



SITE 832 HOLE A CORE 20H CORED INTERVAL 145.0-151.3 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
PLEISTOCENE	R/G	N22	CN14	X	N	Φ	wt.%CaCO3 wt.%TOC	1 2 3 4 CC	0.5 1.0			Fl	* * *

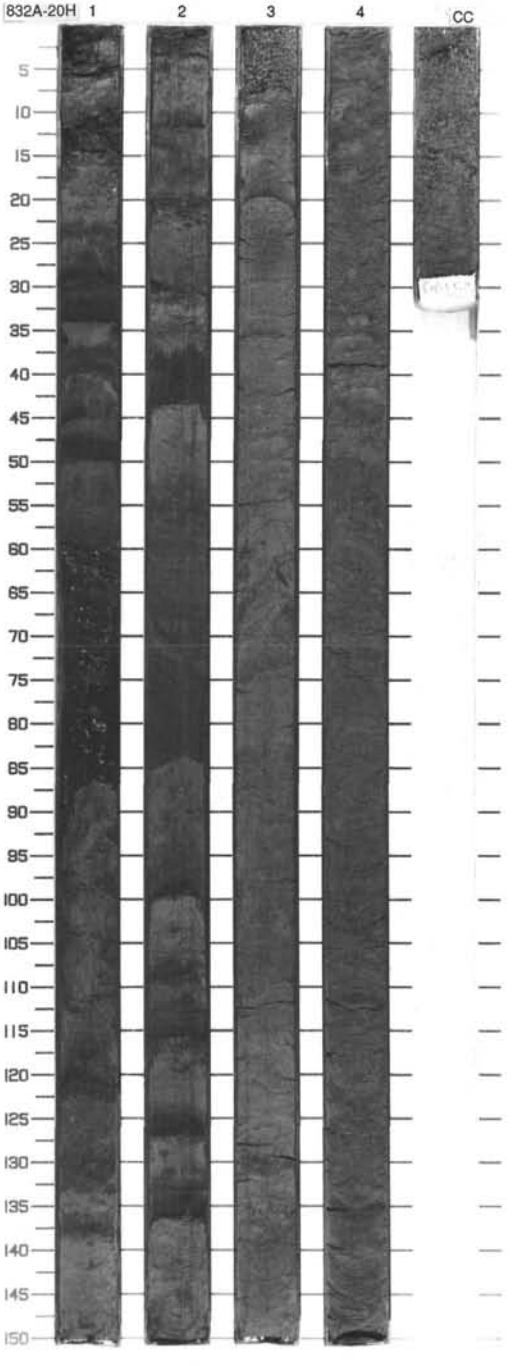
LITHOLOGIC DESCRIPTION

FINE VITRIC VOLCANIC ASH and COARSE VITRIC VOLCANIC ASH

Major lithology:
a. Most of the core consists of unlithified dark gray (5Y 4/1) FINE VITRIC VOLCANIC ASH with plagioclase grains and nannofossils. This lithology comprises 60% of Sections 1 and 2.
b. The remainder of the core is black (5Y 2.5/1) COARSE VITRIC VOLCANIC ASH with opaque minerals (20%), plagioclase grains (15%) and clinopyroxene grains (15%). This ash occurs as interbeds ranging from about 2 cm to 25 cm in thickness in Sections 1 and 2.

SMEAR SLIDE SUMMARY (%):

	1, 76 M	2, 126 M	3, 85 D
TEXTURE:			
Sand	100	80	5
Silt	---	20	75
Clay	---	---	20
COMPOSITION:			
Calcite	---	---	5
Chlorite	---	---	1
Clinopyroxene	12	15	---
Diatoms	---	---	Tr
Feldspar	---	15	15
Foraminifers	---	---	2
Glass	30	40	60
Nannofossils	---	---	10
Olivine	3	5	---
Opaques	---	20	2
Plagioclase	Tr	---	---
Rock fragment	55	---	---
Spicules	---	---	2



SITE 832 HOLE A CORE 21X CORED INTERVAL 151.3-158.6 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
PLEISTOCENE	C/G	R/G				●	●	CC	1				*	PLAGIOCLASE VOLCANIC SILT

Major lithology: The entire core consists of unlithified very dark grayish brown (10YR 3/2) layers interbedded with dark reddish brown (5YR 3/2) layers of PLAGIOCLASE VOLCANIC SILT.

SMEAR SLIDE SUMMARY (%):

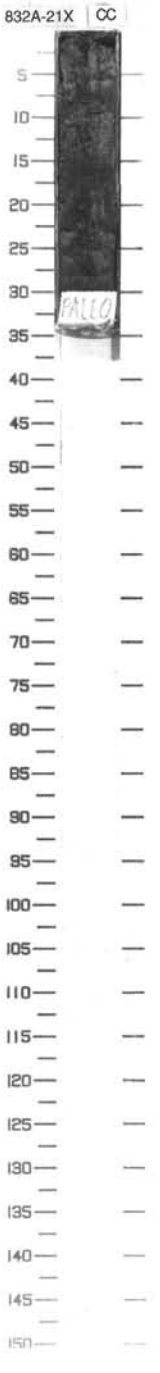
	CC, 4 D	CC, 12 D
TEXTURE:		
Sand	10	—
Silt	60	70
Clay	30	30
COMPOSITION:		
Clay	15	14
Clinopyrox	25	20
Diatoms	—	Tr
Feldspar	15	20
Glass	20	25
Hematite	5	15
Nannofossils	3	1
Rock fragment	7	—

Φ 57.1
β 1.92
wt. %CaCO3 6.2
wt. %TOC 0.1

SITE A HOLE A CORE 22X CORED INTERVAL 158.6-168.1 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
PLEISTOCENE	F/G	R/G	B											One cm of sediment was recovered in Section CC and sent to paleontology.

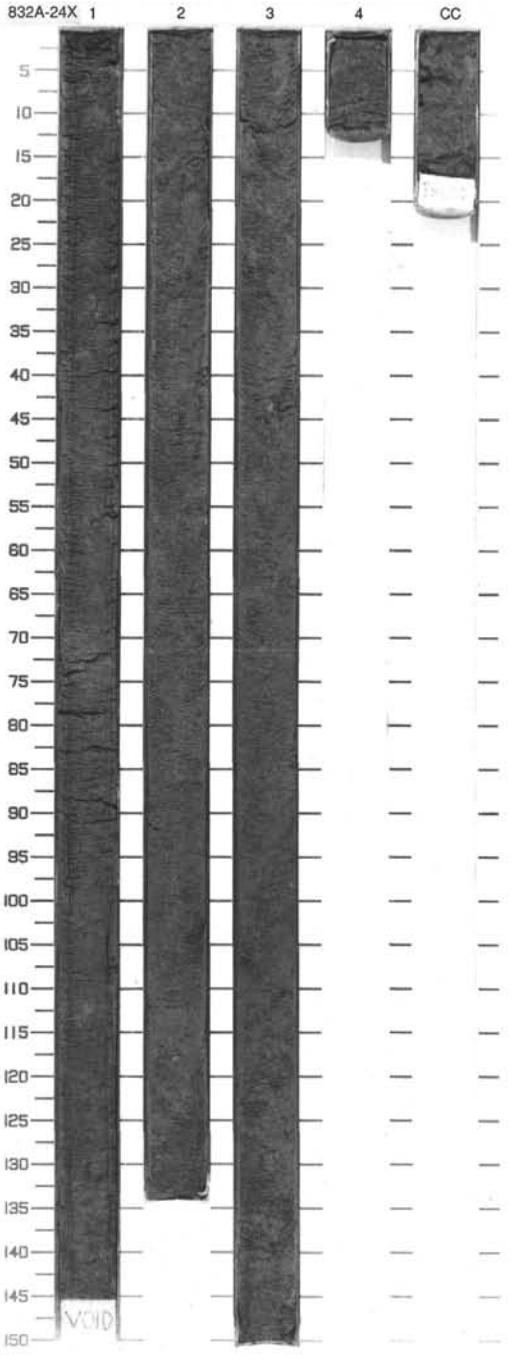
832A 23X NO RECOVERY



SITE 832 HOLE A CORE 24X CORED INTERVAL 177.7-187.0 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
PLEISTOCENE	?	CN14	R/G	B	N	ϕ Vp ρ wt. %CaCO3 wt. %TOC	● 54.4 1617 1.87 ● 4.1	1 2 3 4 CC	0.5 1.0				CED LW	FINE VITRIC VOLCANIC ASH Major lithology: The entire core consists of structureless, unlithified, very dark gray (5Y 3/1) FINE VITRIC VOLCANIC ASH with feldspar grains. SMEAR SLIDE SUMMARY (%): 2, 60 D TEXTURE: Silt 30 Clay 70 COMPOSITION: Calcite 4 Chlorite 1 Clay 59 Clinopyroxene 1 Feldspar 12 Foraminifers 1 Glass 20 Nannofossils Tr Spicules 2

832A 25X NO RECOVERY

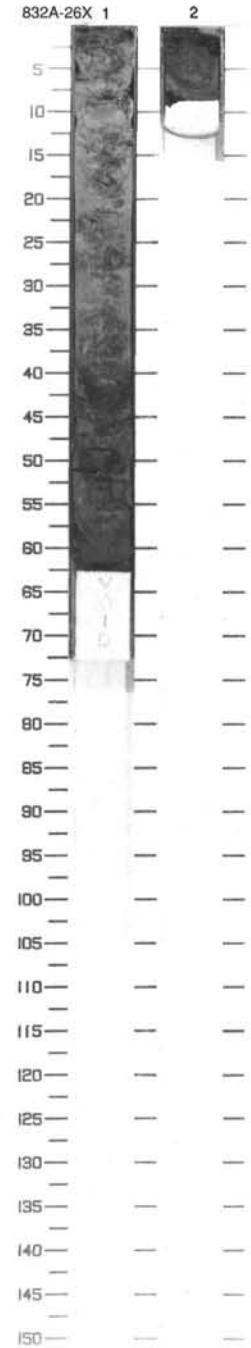


SITE 832 HOLE A CORE 26X CORED INTERVAL 196.7-206.2 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
PLEISTOCENE	F/G	R/G	B			64.3 ● 1.73	20.7 ● 0.2	1	0.5				*	SILTY CLAY and SILTY CLAYSTONE
	N22	CN14						CC						Major lithology: a. The core consists primarily of layers of unlithified mottled gray (5Y 5/1) SILTY CLAY with calcareous grains. The layers range from 6-37 cm in thickness in the small amount of material recovered. b. The secondary major lithology is partially lithified structureless very dark gray (5Y 3/1) SILTY CLAYSTONE. This sediment occurs interbedded with the dominant major lithology as layers ranging in thickness from 2-3 cm. SMEAR SLIDE SUMMARY (%): 1, 20 D TEXTURE: Silt 25 Clay 75 COMPOSITION: Calcite 3 Chlorite 1 Clay 71 Clinopyroxene 1 Feldspar 7 Foraminifers 8 Glass 4 Opaques 3 Spicules 2

φ wt. %CaCO3
wt. %TOC

832A 27X NO RECOVERY



SITE 832 HOLE B CORE 1R CORED INTERVAL 144.4-154.1 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
PLEISTOCENE	R/M	F/G	R/M			ρ 64.3 β 1.97 wt. %CaCO3 5.7 wt. %TOC 0.1	●	CC					*	CLAYEY VOLCANIC SILT and FINE VITRIC VOLCANIC ASH

CN14

Major lithology:
a. Most of Section CC consists of unlithified, dark gray (5Y 4/1) CLAYEY VOLCANIC SILT with nannofossils.
b. A 2–3 cm layer of dark gray (5Y 4/1) FINE VITRIC VOLCANIC ASH is interbedded with the dominant lithology above.

SMEAR SLIDE SUMMARY (%):

	CC, 7 D	CC, 10 M
TEXTURE:		
Sand	10	50
Silt	60	40
Clay	30	10
COMPOSITION:		
Clay	20	---
Clinopyroxene	15	2
Feldspar	---	5
Foraminifers	2	---
Glass	10	85
Nannofossils	10	---
Olivine	3	2
Opaques	---	2
Other	---	4
Oxide	10	---
Rock fragment	25	---
Spicules	Tr	---

SITE 832 HOLE B CORE 2R CORED INTERVAL 154.1-163.8 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
PLEISTOCENE	B	F/G	B			ρ 62.7 β 1.94 wt. %CaCO3 7.2 wt. %TOC 0.3	●	CC					*	CLAYEY VOLCANIC SILT

CN14

Major lithology: The entire core consists of unlithified dark gray (5Y 4/1) CLAYEY VOLCANIC SILT with nannofossils(15%) and calcareous grains (10%).

SMEAR SLIDE SUMMARY (%):

	CC, 15 D
TEXTURE:	
Silt	70
Clay	30
COMPOSITION:	
Bioclast	5
Calcite	10
Clay	20
Feldspar	20
Foraminifers	5
Glass	5
Nannofossils	15
Opaques	5
Rock fragment	5
Spicules	Tr
Zeolite	5

SITE 832 HOLE B CORE 3R CORED INTERVAL 163.8-173.7 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
PLEISTOCENE	A/G N22	F/G CN14	R/M		N	ϕ 70.0 ● 1.74	wt. %CaCO3 ● 22.2 0.0 wt. %TOC ● 22.9 0.2	1 CC	0.5 1.0				* * *

LITHOLOGIC DESCRIPTION

FORAMINIFERAL SANDY SILTY MIXED SEDIMENT, COARSE VITRIC VOLCANIC ASH, and FINE LITHIC VOLCANIC ASH

Major lithology:
a. The dominant sediment in this core is unlithified dark gray (5Y 4/1) FORAMINIFERAL SANDY SILTY MIXED SEDIMENT with nannofossils (20%).
b. Interbedded with the dominant lithology above in Section 1, 15–20 cm, is a layer of very dark gray (5Y 3/1) COARSE VITRIC VOLCANIC ASH with scoriaceous rock fragments.
c. There are also layers of unlithified very dark gray (5Y 3/1) FINE LITHIC VOLCANIC ASH with vitric grains (20%), clinopyroxene grains, and olivine grains interbedded with the dominant lithology. This occurs in Section 1, 0–15 cm, and in Section CC, 0–5 cm.

SMEAR SLIDE SUMMARY (%):

	1, 21 M	1, 60 D	CC, 3 M
TEXTURE:			
Sand	90	35	20
Silt	10	40	75
Clay	---	25	5
COMPOSITION:			
Calcite	---	1	---
Chlorite	---	Tr	---
Clay	---	10	---
Clinopyroxene	18	10	20
Feldspar	---	12	---
Foraminifers	---	25	---
Glass	30	12	20
Hornblende	---	Tr	---
Nannofossils	---	20	---
Olivine	18	Tr	10
Opaques	---	2	5
Other	4	---	3
Oxide	---	---	2
Rock fragment	30	5	40
Spicules	---	Tr	---

SITE 832 HOLE B CORE 4R CORED INTERVAL 173.7-183.3 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
PLEISTOCENE	B	CN14	F/G R/P			ϕ 67.0 ● 1.75	● 7.7 wt. %CaCO3 wt. %TOC	CC					*

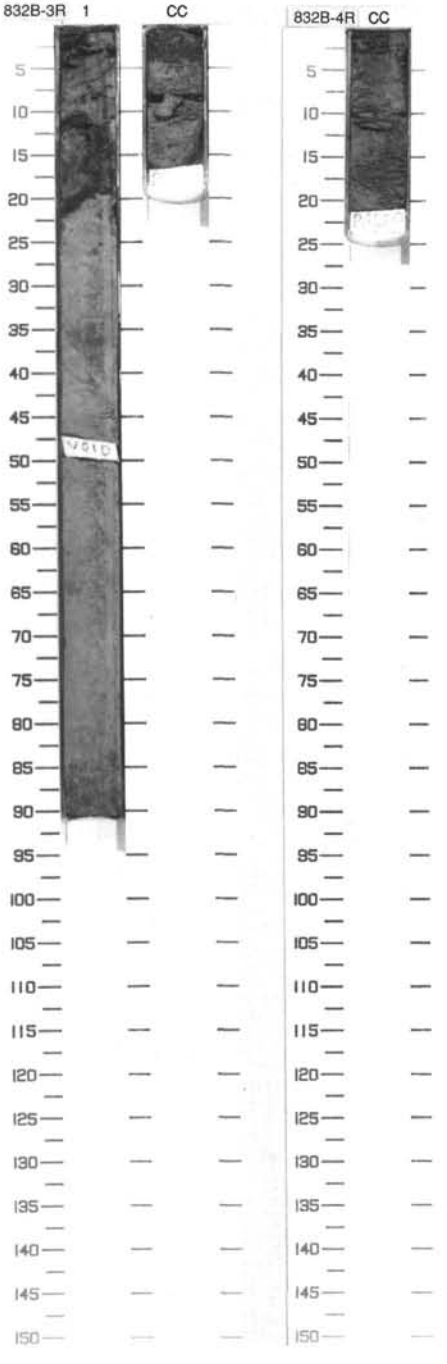
LITHOLOGIC DESCRIPTION

FINE VITRIC VOLCANIC ASH

Major lithology: The entire recovered part of Section CC consists of unlithified dark gray (5Y 4/1) FINE VITRIC VOLCANIC ASH.

SMEAR SLIDE SUMMARY (%):

	CC, 12 D
TEXTURE:	
Sand	1
Silt	80
Clay	19
COMPOSITION:	
Calcite	10
Chlorite	2
Clay	10
Feldspar	10
Glass	60
Nannofossils	5
Opaques	2
Spicules	Tr



832B 5R NO RECOVERY

832B 6R NO RECOVERY

SITE 832 HOLE B CORE 7R CORED INTERVAL 202.2-211.9 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
PLEISTOCENE	A/G N22	R/G CN14			N	ρ 59.8 ● 1.83	wt. %CaCO3 ● 8.0 wt. %TOC 0.1	1 CC	0.5				

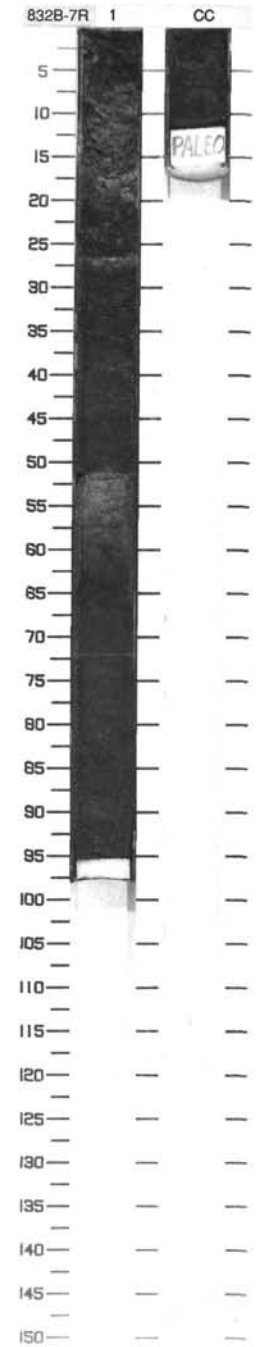
LITHOLOGIC DESCRIPTION

FINE VITRIC VOLCANIC ASH and SANDY CLAYEY SILT

Major lithology:
a. Most of the core (70%) consists of black (5Y 2.5/1) FINE VITRIC VOLCANIC ASH.
b. About 30% of the core consists of gray (5Y 5/1) SANDY CLAYEY SILT with foraminifers.

SMEAR SLIDE SUMMARY (%):

	1, 34 D	1, 53 M
TEXTURE:		
Sand	---	30
Silt	80	40
Clay	20	30
COMPOSITION:		
Calcite	10	15
Chlorite	10	---
Clay	15	10
Clinopyroxene	10	10
Feldspar	---	3
Foraminifers	---	20
Glass	30	25
Nannofossils	5	10
Olivine	---	Tr
Oxide	10	5
Rock fragment	10	---
Spicules	Tr	Tr



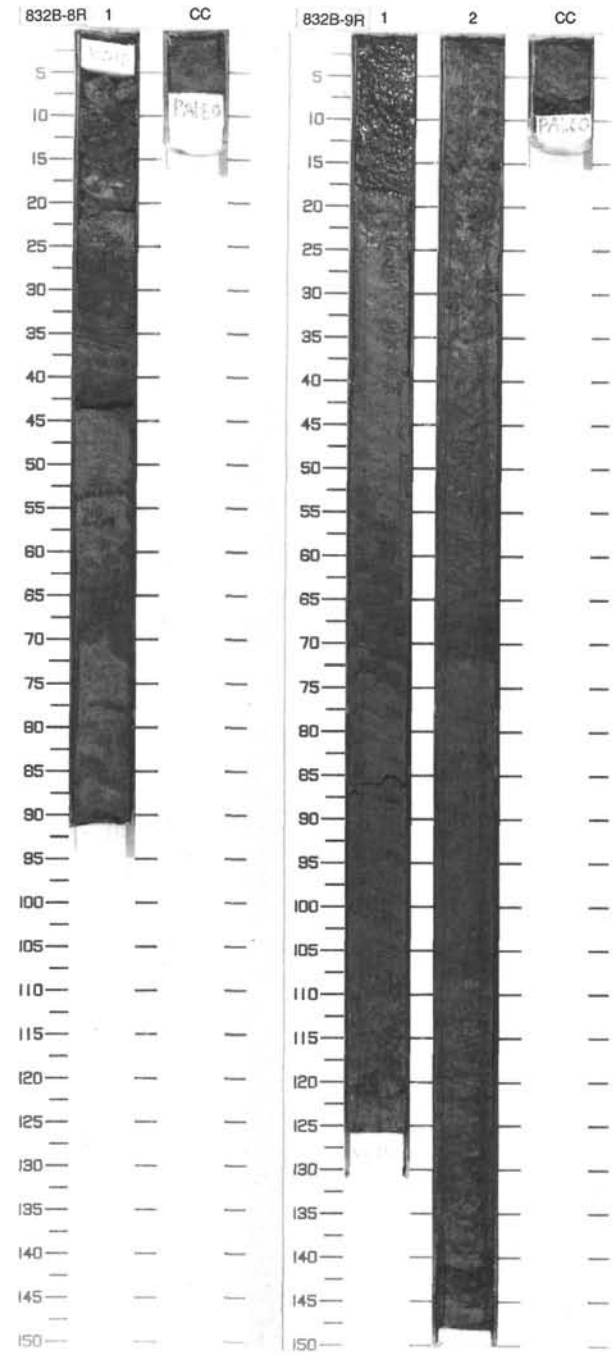
SITE 832 HOLE B CORE 8R CORED INTERVAL 211.9-221.4 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
PLEISTOCENE	C/G N22	F/G CN14			N			1 CC	0.5	VOID			*	CALCAREOUS VOLCANIC SILT Major lithology: The core consists almost entirely of very dark gray to gray (5Y 3/1 to 5Y 5/1) CALCAREOUS VOLCANIC SILT with nannofossils. Foraminifers are visible in some layers. Very thin-bedded black ash layers occur sporadically. SMEAR SLIDE SUMMARY (%): 1, 33 D TEXTURE: Sand 5 Silt 65 Clay 30 COMPOSITION: Calcite 5 Chlorite 2 Clay 10 Feldspar 15 Foraminifers 2 Glass 32 Nannofossils 20 Opaques 10 Oxide 4 Spicules Tr

SITE 832 HOLE B CORE 9R CORED INTERVAL 221.4-231.0 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
PLEISTOCENE	F/G N22	R/G CN14	B		N	● 1884 ● 1534 ● 1602 ● 1577 ● 1598 ● 5.7	● 3.7 ● 0.7	1 2 CC	0.5 1.0	VOID			LEC LW *	CLAYEY VOLCANIC SILT Major lithology: The entire core consists of very dark gray to dark gray (5Y 3/1 to 5Y 4/1) CLAYEY VOLCANIC SILT with nannofossils. SMEAR SLIDE SUMMARY (%): 2, 82 D TEXTURE: Sand 5 Silt 40 Clay 55 COMPOSITION: Calcite 10 Clay 10 Clinopyroxene Tr Feldspar 18 Foraminifers 2 Glass 26 Nannofossils 20 Opaques 4 Oxide 10

Φ Vp wt. %CaCO3 wt. %TOC



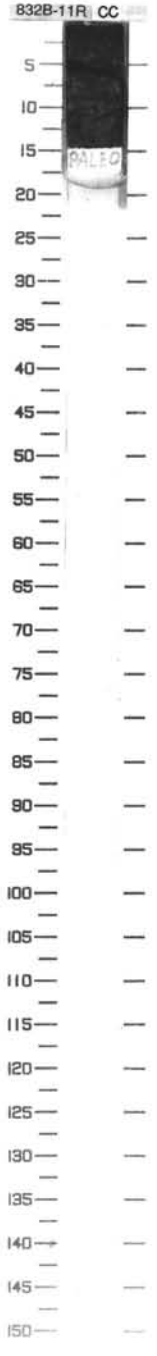
832B 10R NO RECOVERY

SITE 832 HOLE B CORE 11R CORED INTERVAL 240.7-250.4 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
PLEISTOCENE		CN14 C/G				● 51.8 2.02	● 3.2 0.1	CC					1	CLAYEY VOLCANIC SILT Major lithology: The core-catcher consists of gray to dark gray (5Y5/1 to 5Y 4/1) CLAYEY VOLCANIC SILT with nannofossils. A thin (<1 cm) sandy silt bed occurs at 10 cm.

Φ
ρ
wt. %CaCO3
wt. %TOC

832B 12R NO RECOVERY

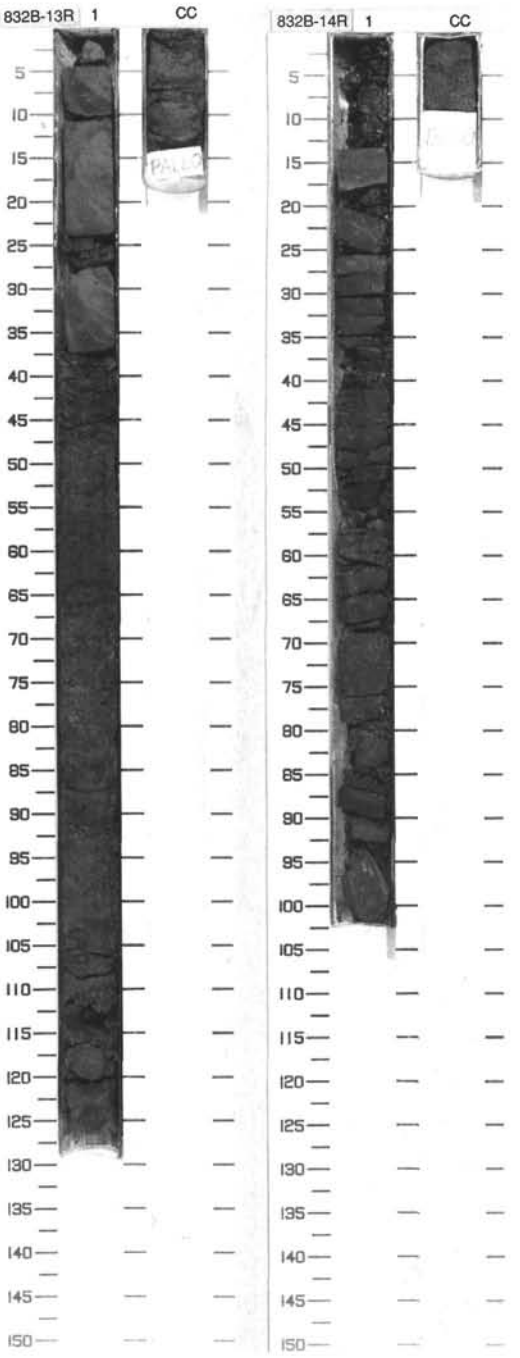


SITE 832 HOLE B CORE 13R CORED INTERVAL 260.0-269.7 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
PLEISTOCENE	F/M N22	R/G CN14			N	1649 ● 61.1 1.81 1612 52.6 1.98 ● 4.6 ● 8.0 0.1	wt. %CaCO3 wt. %TOC	1 CC	0.5 1.0					CLAYEY VOLCANIC SILT and VOLCANIC SILTSTONE Major lithology: The core consists of dark gray (5Y 4/1) CLAYEY VOLCANIC SILT and VOLCANIC SILTSTONE. In Section CC, calcareous grains occur in the silt.

SITE 832 HOLE B CORE 14R CORED INTERVAL 269.7-279.4 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
PLEISTOCENE	R/M N22	R/G CN14	B			● 50.9 1975 2.03 ● 2.8 0.1	wt. %CaCO3 wt. %TOC	1 CC	0.5 1.0				*	CLAYEY VOLCANIC SILTSTONE Major lithology: The core consists of very dark gray (5Y 3/1) CLAYEY VOLCANIC SILTSTONE, with intervals of very thin-bedded laminae and intervals where trace fossils (burrows and fecal pellets) are abundant. SMEAR SLIDE SUMMARY (%): 1, 70 D TEXTURE: Sand 8 Silt 60 Clay 32 COMPOSITION: Calcite 3 Celadonite Tr Chlorite Tr Clay 37 Clinopyroxene 3 Feldspar 25 Foraminifers 3 Glass 15 Olivine Tr Opaques 4 Rock fragment 10



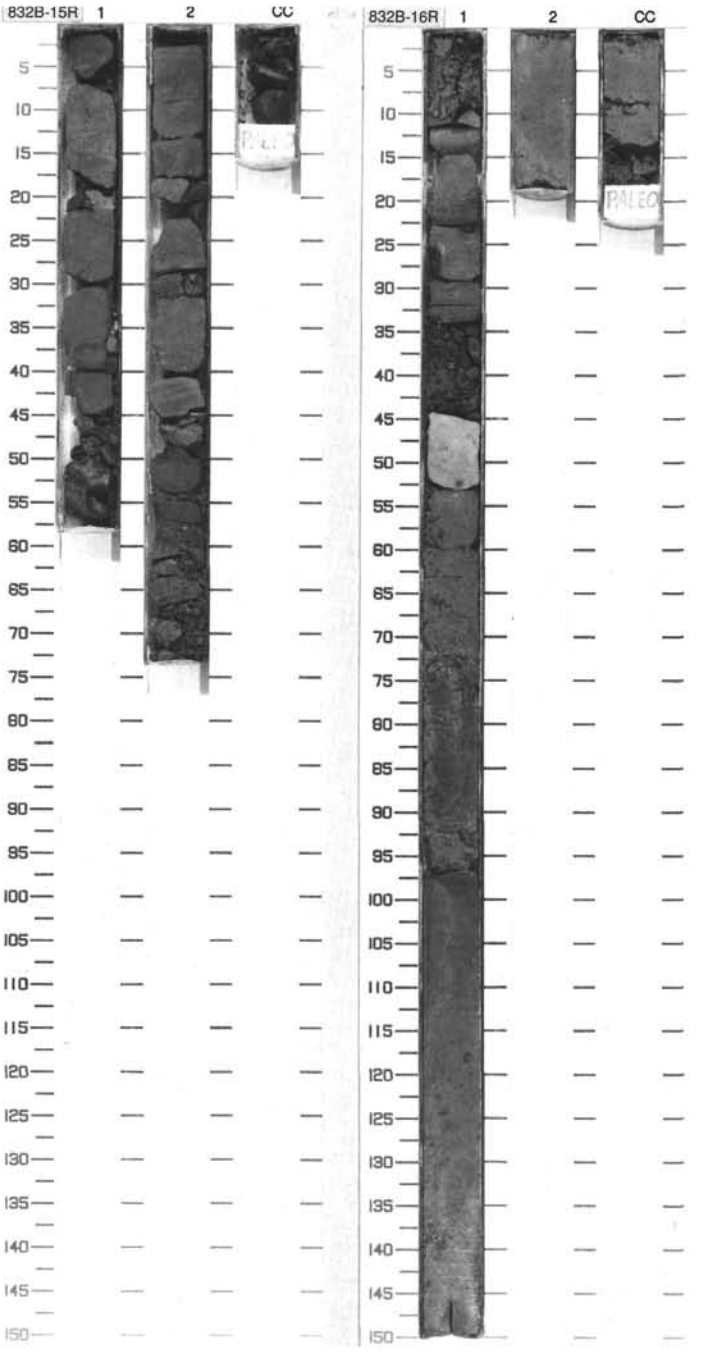
SITE 832 HOLE B CORE 15R CORED INTERVAL 279.4-289.0 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
PLEISTOCENE	F/M	R/G	B		N	ϕ Vp ρ wt. %CaCO3 wt. %TOC		1	0.5				IW	CLAYEY VOLCANIC SILTSTONE
	N22	CN14				● 54.7 ● 1.97 2001 ● 2.7 0.0			1.0	VOID				Major lithology: The core consists of very dark gray to gray (5Y 3/1 to 5Y 5/1)) CLAYEY VOLCANIC SILTSTONE with abundant trace fossils (burrows and *Zoophycos*).
								2						
								CC						

SITE 832 HOLE B CORE 16R CORED INTERVAL 289.0-298.7 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
PLEISTOCENE	F/M	R/G	B		N	ϕ Vp ρ wt. %CaCO3 wt. %TOC		1	0.5				*	CALCAREOUS SILTY VOLCANIC CLAY
	N22	CN14				1606 ● 66.2 ● 1.81 2375 ● 56.6 ● 1.87 ● 6.7 0.3 ● 42.8			1.0					Major lithology: Most of the core consists of structureless, partially lithified, dark gray (5Y 4/1) CALCAREOUS SILTY VOLCANIC CLAY.
								2						Minor lithology: Section 1, 46–55 cm, consists of light gray (5Y 6/1) foraminiferal chalk.
								CC						SMEAR SLIDE SUMMARY (%):

	1, 110 D
TEXTURE:	
Sand	10
Silt	40
Clay	50
COMPOSITION:	
Calcite	18
Clay	16
Clinopyroxene	1
Feldspar	10
Foraminifers	Tr
Glass	10
Nannofossils	30
Opaques	5
Oxide	5
Rock fragment	5



SITE 832 HOLE B CORE 17R CORED INTERVAL 298.7-308.4 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
PLEISTOCENE	C/M	N22	F/G	CN14	B	N	1932 65.1 1.76 10.1 49.5 2.03 1.6 0.0 Vp ϕ β wt. %CaCO3 wt. %TOC	1 2 3 CC	0.5 1.0	VOID VOID			IW

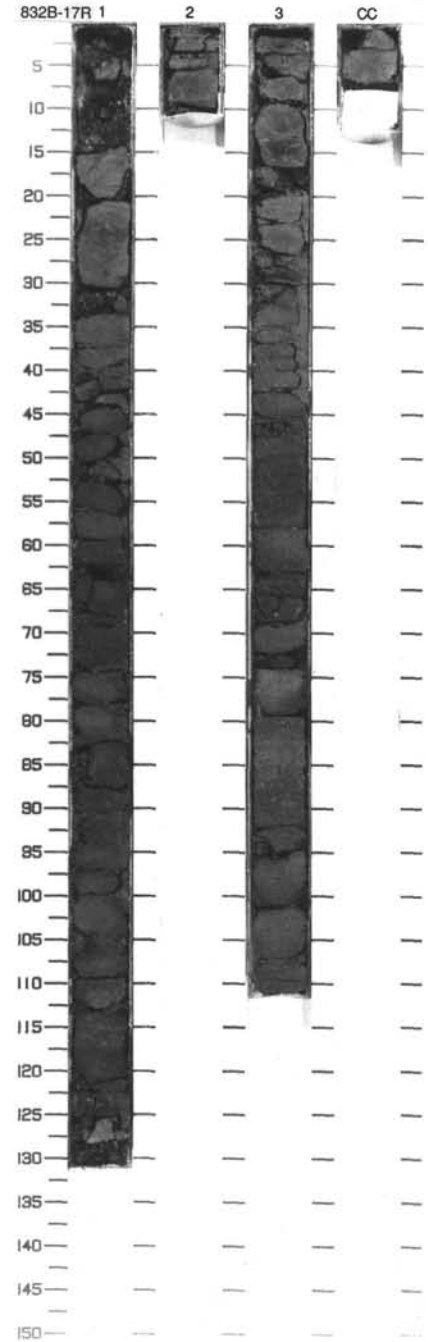
LITHOLOGIC DESCRIPTION

SILTY VOLCANIC CLAYSTONE

Major lithology: The core consists of very dark gray (5Y 3/1), bioturbated SILTY VOLCANIC CLAYSTONE with calcareous grains. Horizons that are 2–6 cm thick and rich in trace fossils are common. Numerous laminated sequences, up to 5 cm thick, occur in Section 1.

SMEAR SLIDE SUMMARY (%):

	1, 89 D
TEXTURE:	
Silt	40
Clay	60
COMPOSITION:	
Chlorite	1
Clay	53
Clinopyroxene	5
Feldspar	30
Foraminifers	Tr
Glass	3
Olivine	Tr
Opaques	8



SITE 832 HOLE B CORE 18R CORED INTERVAL 308.4-318.1 mbsf

TIME-ROCK UNIT: PLEISTOCENE

BIOSTRAT. ZONE/FOSSIL CHARACTER
- FORAMINIFERS: R/G; N22; R/G
- NANNOFOSSILS: CN14
- RADIOLARIANS
- DIATOMS

PALEOMAGNETICS: N

PHYS. PROPERTIES: ● 55.1 2262 2.13; ● 61.7 1783 1.86; ● 28.7 1.5 0.2

CHEMISTRY: Φ Vp; wt.% $CaCO_3$; wt.% TOC_{org}

SECTION: 1, 2, 3, CC

METERS: 0.5, 1.0

GRAPHIC LITHOLOGY

DRILLING DISTURB.

SED. STRUCTURES

SAMPLES: *

LITHOLOGIC DESCRIPTION

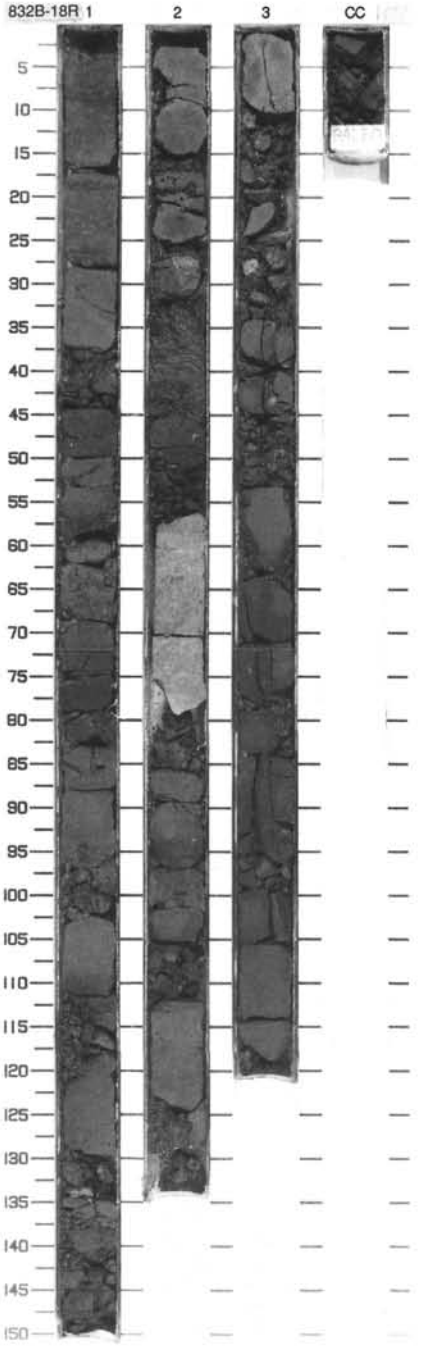
SILTY VOLCANIC CLAYSTONE

Major lithology: Most of the core consists of gray to very dark gray (5Y 5/1 to 5Y 3/1) SILTY VOLCANIC CLAYSTONE. Sections 1 and 2 are slightly to extremely bioturbated, with horizons up to 35 cm thick displaying abundant trace fossils. These 2 sections also have very finely laminated intervals up to 6 cm thick; in one place laminations are wedge planar. Section 1 has highly fractured intervals up to 7 cm thick, and a layer of poorly lithified sandy volcanic silt at 76 to 83 cm. Section 3, by contrast, is structureless, with no evidence of trace fossils, and many of the large fragments are fractured parallel to the length of the section.

Minor lithology: Section 2, 57–80 cm, consists of greenish gray (5GY 5/1) calcareous chalk.

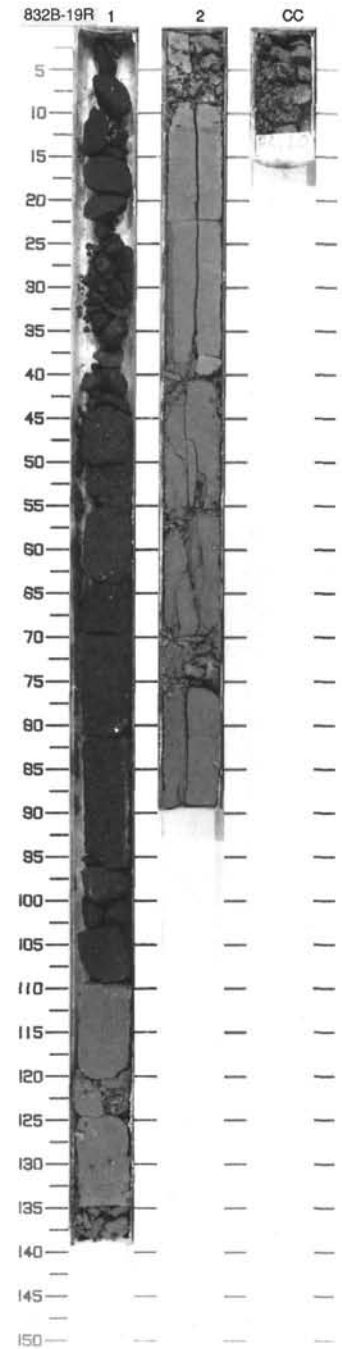
SMEAR SLIDE SUMMARY (%):

	2, 60 M
TEXTURE:	
Sand	15
Silt	70
Clay	15
COMPOSITION:	
Amphibole	2
Calcite	56
Clay	15
Clinopyroxene	2
Feldspar	6
Foraminifers	15
Nannofossils	1
Opaques	3



SITE 832 HOLE B CORE 19R CORED INTERVAL 318.1-327.7 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
PLEISTOCENE	R/M	CN14	F/G		N	1738 ● 3031 ● 2678 ● 40.1 31.0 2.22 2.50 ● 34.5 8.4 0.5	wt. %CaCO3 wt. %TOC	1	0.5 1.0				TW	CALCAREOUS CHALK and VOLCANIC SANDSTONE *Major lithology:* a. Below Section 1, 110 cm, the core consists of structureless, gray (5Y 5/1) CALCAREOUS CHALK. The chalk has parted along joints parallel to the length of the core. b. Section 1, 0–110 cm, contains black (5Y 2.5/1), lithified VOLCANIC SANDSTONE. The top 40 cm of the core consists of small fragments of well-sorted, fine-grained sandstone. The interval from 40–110 cm consists of cored sections of poorly sorted, coarse-grained sandstone. SMEAR SLIDE SUMMARY (%): 2, 35 D TEXTURE: Clay 100 COMPOSITION: Calcite 100 Spicules Tr
								2					*	
								CC						



SITE 832 HOLE B CORE 20R CORED INTERVAL 327.7-337.4 mbsf

TIME-ROCK UNIT: PLEISTOCENE

BIOSTRAT. ZONE/FOSSIL CHARACTER: FORAMINIFERS: B; F/G; NANNOFOSSILS: CN14; RADIOLARIANS; DIATOMS

PALEOMAGNETICS

PHYS. PROPERTIES: 1.95 65.9 1861 3113 2.76 38.5

CHEMISTRY: 0.1 3.7

SECTION: 1, 2, 3

METERS: 0.5, 1.0

GRAPHIC LITHOLOGY

DRILLING DISTURB.

SED. STRUCTURES

SAMPLES: OG

LITHOLOGIC DESCRIPTION

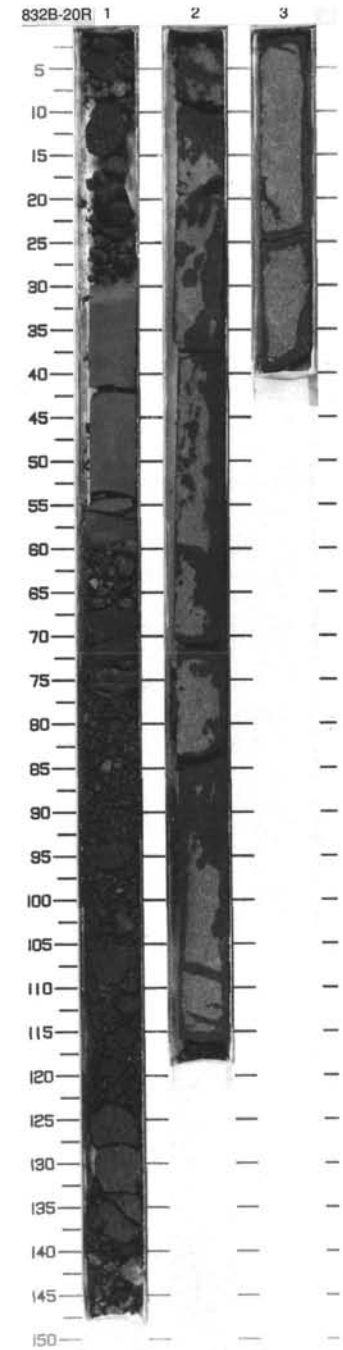
VOLCANIC SANDSTONE and CALCAREOUS CLAYEY SILTSTONE

Major lithology:
a. Most of the core consists of partially lithified, very dark gray (5Y 3/1) VOLCANIC SANDSTONE. This sediment is poorly sorted and contains some clasts up to 3–5 mm in diameter in Section 3, 0–40 cm.
b. Section 1, 31–124 cm, consists of partially lithified, dark gray (5Y 4/1) CALCAREOUS CLAYEY SILTSTONE with volcanic grains. Planar laminae occur in the interval of 70–80 cm.

Minor lithology: Section 1, 143–150 cm, consists of gray (5Y 5/1) foraminiferal chalk with volcanic grains.

SMEAR SLIDE SUMMARY (%):

	1, 20 D	1, 43 D	1, 145 M	2, 20 D
TEXTURE:				
Sand	80	---	60	70
Silt	20	70	20	20
Clay	---	30	20	10
COMPOSITION:				
Calcite	15	30	20	5
Chlorite	Tr	---	---	5
Clay	---	30	15	10
Clinopyroxene	25	5	5	25
Feldspar	20	20	15	5
Foraminifers	1	1	30	1
Glass	10	---	---	20
Nannofossils	Tr	5	10	Tr
Opaques	5	5	3	10
Oxide	5	---	---	5
Rock fragment	15	---	---	10



SITE 832 HOLE B CORE 21R CORED INTERVAL 337.4-346.9 mbsf

TIME-ROCK UNIT: PLEISTOCENE

BIOSTRAT. ZONE/FOSSIL CHARACTER
- FORAMINIFERS: N22 (C/G)
- NANNOFOSSILS: CN14 (R/G)
- RADIOLARIANS: B
- DIATOMS:

PALEOMAGNETICS: N

PHYS. PROPERTIES: ● 2347; ● 2373; Vp

CHEMISTRY: ● 3.7 0.4; ● 7.1 0.2; wt. %CaCO3; wt. %TOC

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

METERS: 0.5, 1.0

GRAPHIC LITHOLOGY

DRILLING DISTURB.

SED. STRUCTURES

SAMPLES: LW

LITHOLOGIC DESCRIPTION

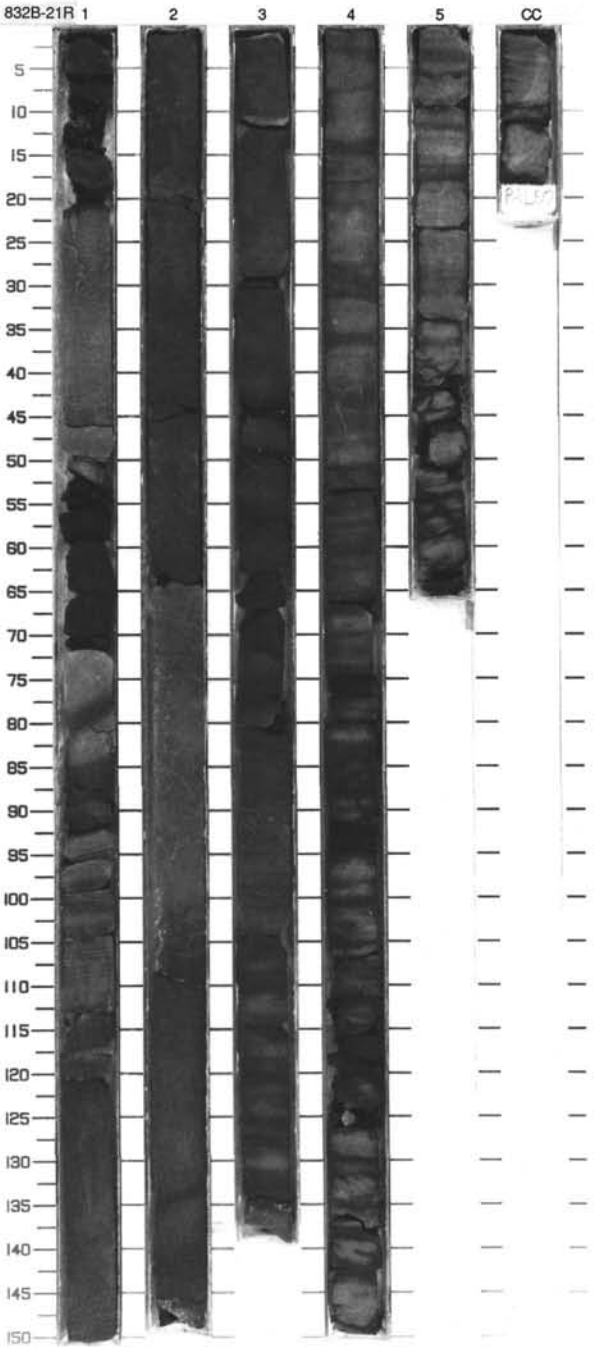
SILTY CLAYSTONE

Major lithology: The entire core consists of dark gray (5Y 4/1) to very dark gray (5Y 3/1) partially lithified SILTY CLAYSTONE with vitric ash, calcareous grains, and plagioclase grains. Sedimentary structures and post-depositional wet-sediment deformation features are abundant in much of the core. About 50% of Section 1, 60% of Section 2, 75% of Section 3, and 50% of Sections 5 and CC are thinly laminated sediments with laminae thicknesses ranging from 0.5 to 3 mm. At the base of Section 5, 60–67 cm, is an interval of low-angle cross bedding or flaser bedding. Internal slumps or convoluted beds occur in Section 1, 25–30, 43, and 75 cm. Several intervals of convoluted bedding occur in Section 3, 50–140 cm, in parts of upper, middle, and lower Section 4, and in the upper half of Section 5. These convoluted beds range from about 1 to 10 cm in thickness. Section 2, 50–145 cm, has two larger scale slumps, each about 50 cm thick. Clastic dikes 2-5 cm long and 2–3 mm thick are common in Section 4, from 22 to 50 cm. Load casts are common in the intervals containing convoluted bedding.

Minor lithology: Section 1, 0–21 cm, consists of fine vitric volcanic ash containing 70% glass grains.

SMEAR SLIDE SUMMARY (%):

	1, 19 M	2, 64 D
TEXTURE:		
Sand	20	---
Silt	60	40
Clay	20	60
COMPOSITION:		
Calcite	5	20
Chlorite	5	Tr
Clay	---	35
Clinopyroxene	5	5
Feldspar	10	10
Foraminifers	5	---
Glass	60	20
Nannofossils	Tr	5
Opaques	5	5
Oxide	1	---
Spicules	Tr	Tr



SITE 832 HOLE B CORE 22R CORED INTERVAL 346.9-356.6 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
PLEISTOCENE	B	F/G CN14			N	1984 ● 59.0 1.91 ● 16.7 0.4 Vp φ ρ wt. %CaCO3 wt. %TOC		1 CC	0.5 1.0				* * * *

LITHOLOGIC DESCRIPTION

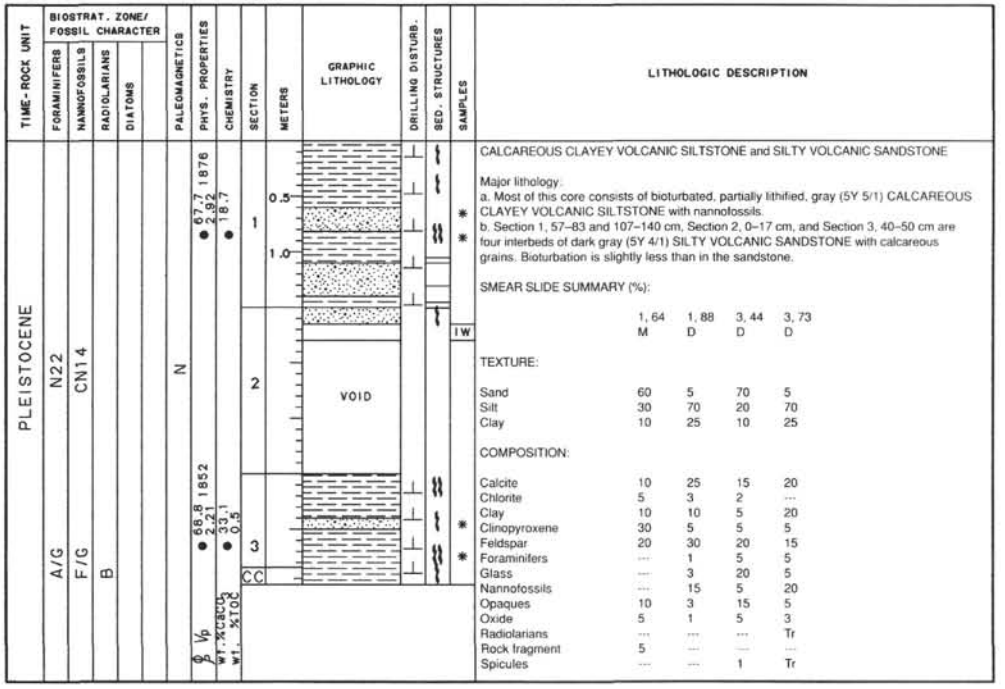
FINE VITRIC VOLCANIC ASH, CALCAREOUS VOLCANIC SILTSTONE, and CHALKY SILTY MIXED SEDIMENTARY ROCK

Major lithology:
a. Section 1, 0–50 cm, consists of partially lithified very dark gray (5Y 3/1) FINE VITRIC VOLCANIC ASH with volcanic silt grains. The glass is extensively devitrified. The lower part of this interval is thinly laminated. A burrow filling at Section 1, 50 cm, consists of silty clayey foraminiferal chalk with nannofossils.
b. Section 1, 52–87 cm, and Section CC, 0–13 cm, consists of partially lithified, dark gray (5Y 4/1) CALCAREOUS VOLCANIC SILTSTONE with nannofossils and volcanic glass.
c. Section 1, 87–112 cm, consists of partially lithified,gray (5Y 5/1) CHALKY SILTY MIXED SEDIMENTARY ROCK with foraminifers, nannofossils, clay, and calcareous grains.

SMEAR SLIDE SUMMARY (%):

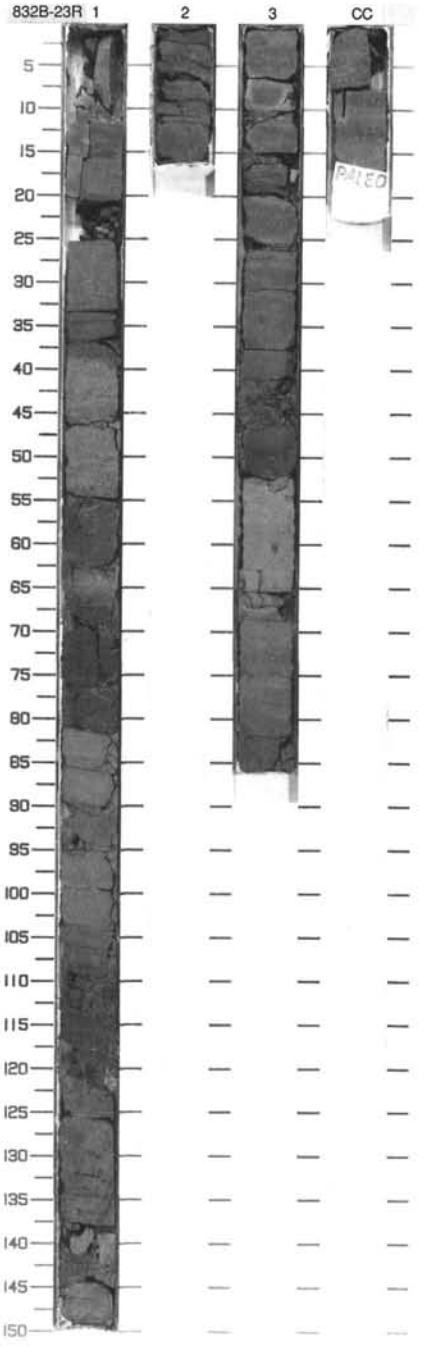
	1, 26 D	1, 50 M	1, 69 D	1, 109 D
TEXTURE:				
Sand	20	40	10	40
Silt	70	30	70	40
Clay	10	30	20	20
COMPOSITION:				
Calcite	5	20	25	15
Clay	---	10	20	20
Clinopyroxene	5	5	5	8
Feldspar	10	5	10	5
Foraminifers	1	30	Tr	20
Glass	65	5	10	5
Nannofossils	Tr	20	10	20
Opaques	8	3	10	5
Oxide	2	---	5	---
Spicules	---	Tr	Tr	Tr

SITE 832 HOLE B CORE 23R CORED INTERVAL 356.6-366.3 mbsf

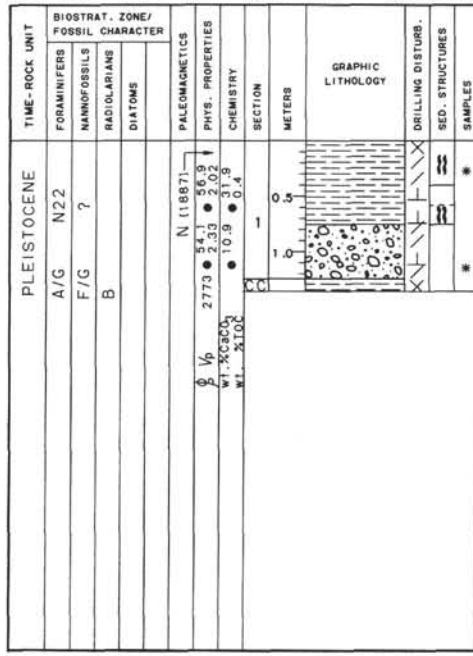


832B 24R NO RECOVERY

832B 25R NO RECOVERY



SITE 832 HOLE B CORE 26R CORED INTERVAL 385.6-395.3 mbsf



LITHOLOGIC DESCRIPTION

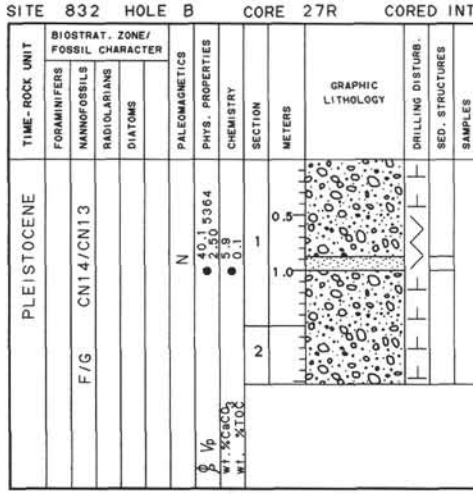
VOLCANIC SILTY CLAYSTONE and SED-IGNEOUS BRECCIA

Major lithology:
a. Most of the core consists of gray to light gray (5Y 5/1 to 5Y 6/1), bioturbated VOLCANIC SILTY CLAYSTONE. Trace fossils are abundant.
b. Section 1, 76–121 cm, consists of gray (5Y 5/1), lithified SED-IGNEOUS BRECCIA.

SMEAR SLIDE SUMMARY (%):

	1, 28 D	1, 114 D
TEXTURE:		
Sand	5	50
Silt	40	40
Clay	55	10
COMPOSITION:		
Amphibole	4	---
Calcite	3	---
Celadonite	Tr	---
Clay	61	10
Clionpyroxene	2	12
Feldspar	25	10
Foraminifers	4	2
Glass	1	---
Olivine	Tr	---
Opaques	---	10
Oxide	---	15
Rock fragment	---	41
Spicules	Tr	Tr

SITE 832 HOLE B CORE 27R CORED INTERVAL 395.3-404.9 mbsf

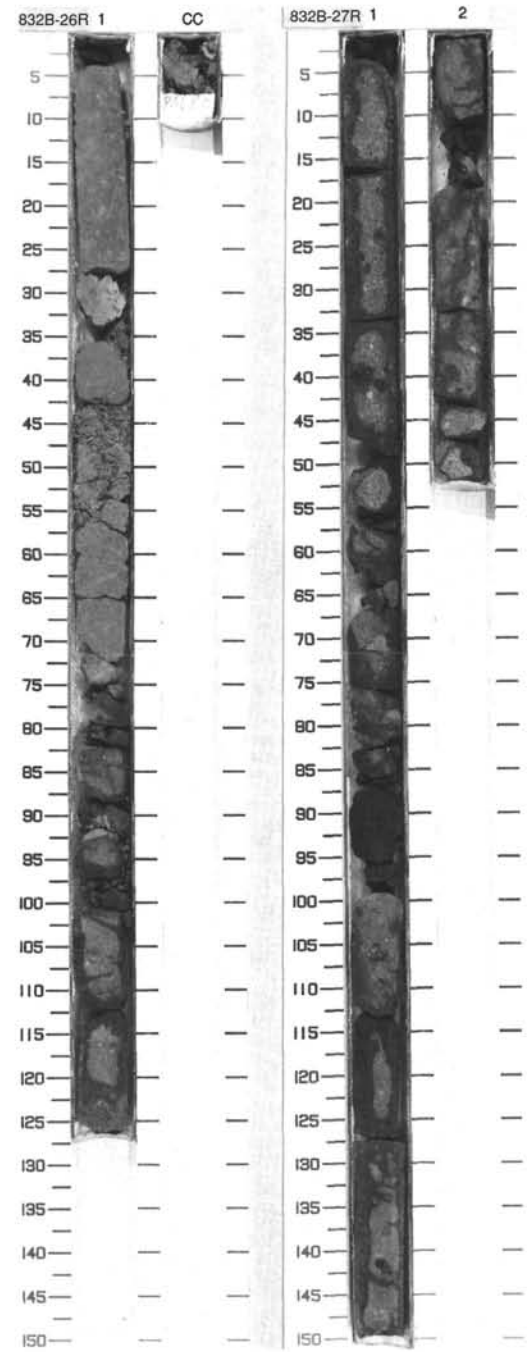


LITHOLOGIC DESCRIPTION

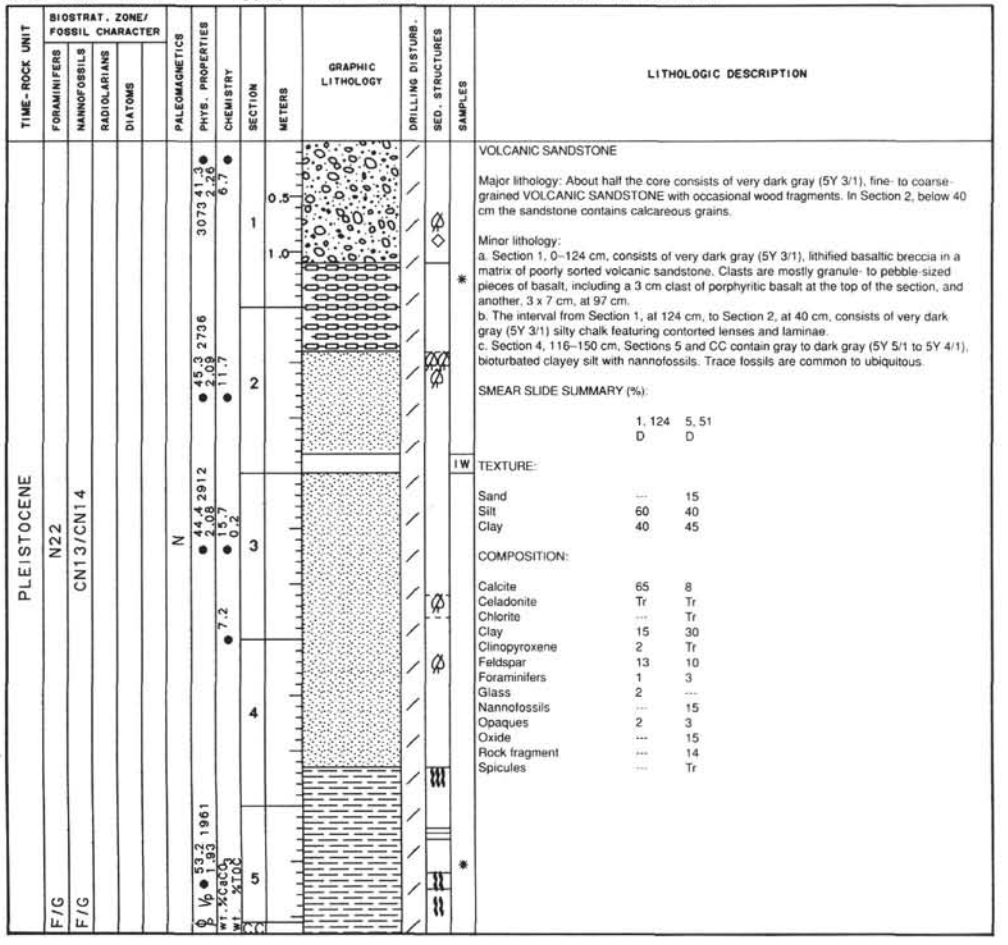
SED-IGNEOUS BRECCIA

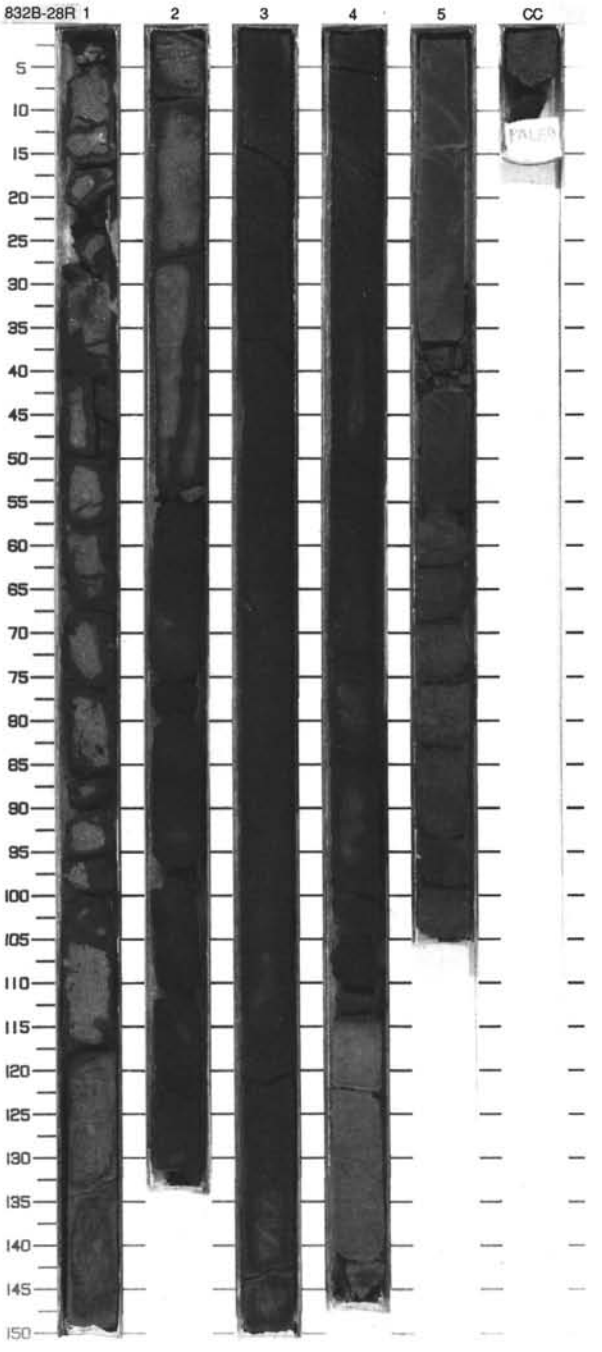
Major lithology: Most of the core consists of gray (5Y 5/1) SED-IGNEOUS BRECCIA.

Minor lithology: Section 1, 88–100 cm, consists of black (5Y 2.5/1) volcanic sandstone.



SITE 832 HOLE B CORE 28R CORED INTERVAL 404.9-414.2 mbsf





SITE 832 HOLE B CORE 29R CORED INTERVAL 414.2-423.6 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
PLEISTOCENE	N22	CN14/CN13			N	ρ Vp 2809 1915 WT. %CaCO3 WT. %TOC	51.6 2.01 2538 14.2 15.2 0.2 6.8	1 2 3 4 5 CC	0.5 1.0				* *

LITHOLOGIC DESCRIPTION

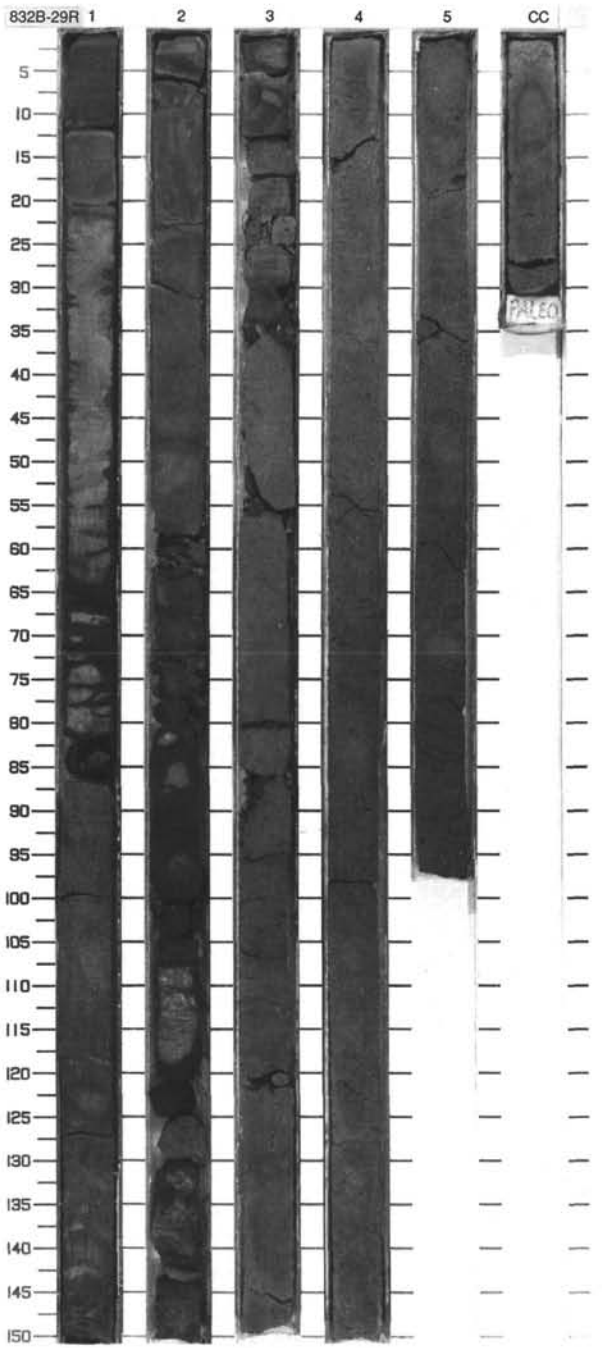
SILTY VOLCANIC CLAYSTONE and SILTY CALCAREOUS VOLCANIC SANDSTONE

Major lithology:
a. Sections 1, 2, and 3 (to 13 cm) consist of dark gray to very dark gray (5Y 4/1 to 5Y 3/1) SILTY VOLCANIC CLAYSTONE with horizons of sandy, horizontal laminae. Trace fossils are common at some locations. The calcareous component contains about 20% foraminifers and 20% nannofossils.
b. Sections 4, 5, and CC consist of very dark gray (5Y 3/1) SILTY CALCAREOUS VOLCANIC SANDSTONE with numerous sand-filled lenses or burrows.

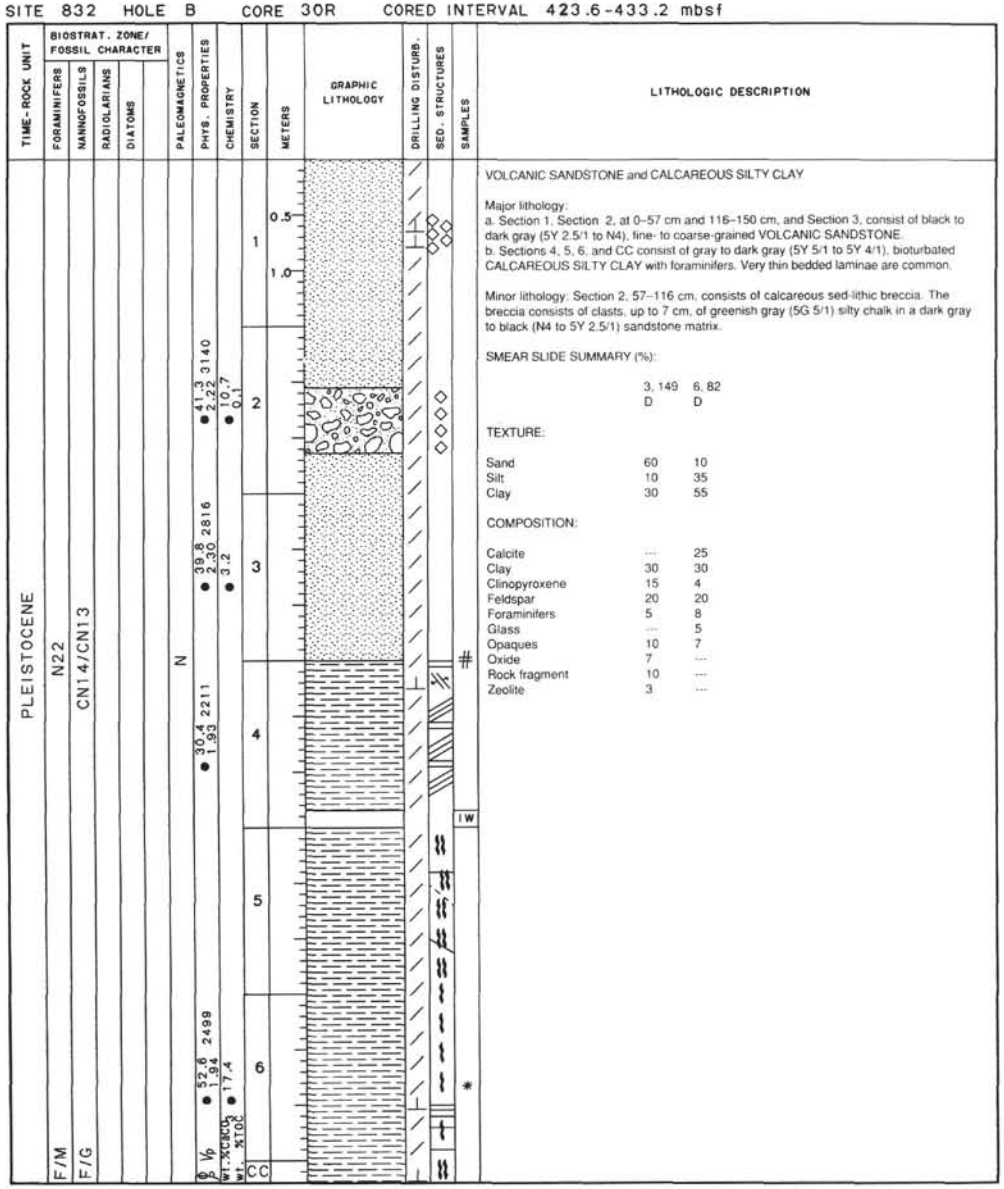
Minor lithology: The basal interval of Section 3 consists of dark gray (5Y 4/1) silty calcareous volcanic sandstone, fining upward over the length of the core (to Section 3, 13 cm) to calcareous volcanic siltstone with foraminifers and nannofossils.

SMEAR SLIDE SUMMARY (%):

	1, 103 D	4, 63 D
TEXTURE:		
Sand	5	20
Silt	35	45
Clay	60	35
COMPOSITION:		
Amphibole	1	---
Calcite	8	10
Chlorite	1	2
Clay	55	15
Clinopyroxene	2	3
Feldspar	20	15
Foraminifers	Tr	20
Glass	2	2
Nannofossils	1	20
Opaques	10	5
Oxide	---	6
Spicules	Tr	Tr



SITE 832 HOLE B CORE 30R CORED INTERVAL 423.6-433.2 mbsf



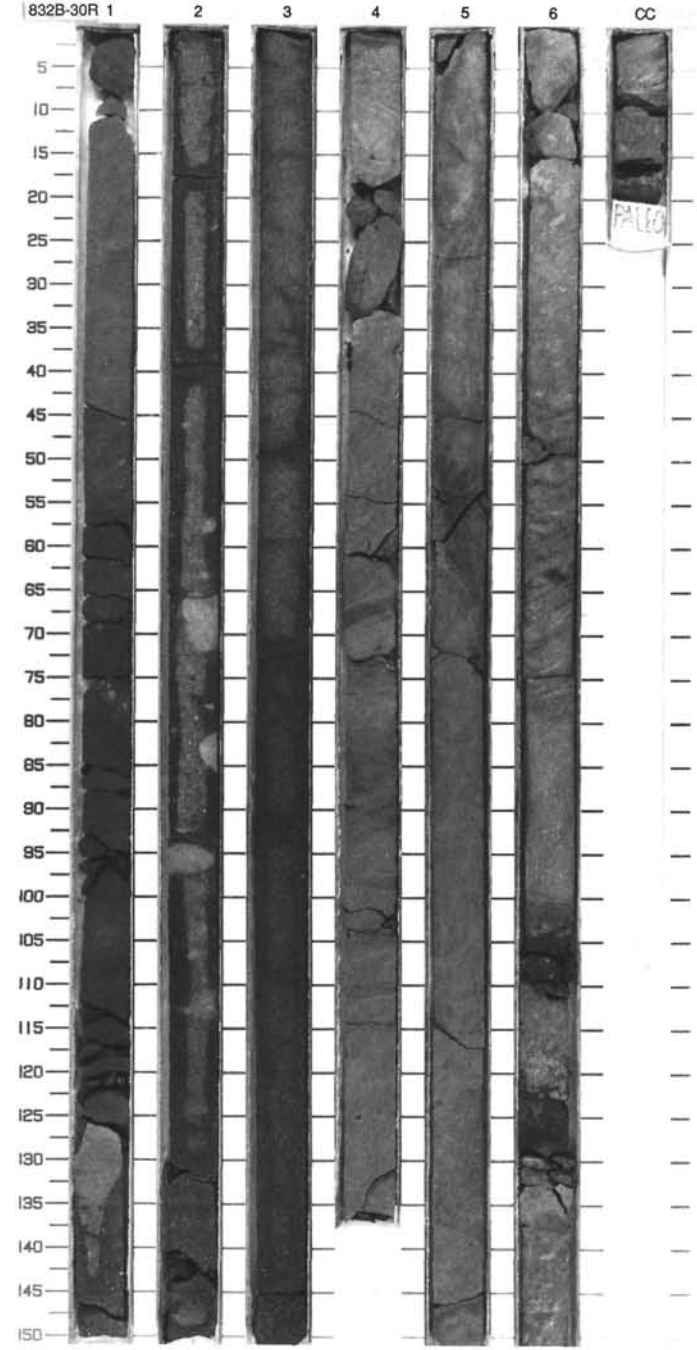
VOLCANIC SANDSTONE and CALCAREOUS SILTY CLAY

Major lithology:
a. Section 1, Section 2, at 0–57 cm and 116–150 cm, and Section 3, consist of black to dark gray (5Y 2.5/1 to N4), fine- to coarse-grained VOLCANIC SANDSTONE.
b. Sections 4, 5, 6, and CC consist of gray to dark gray (5Y 5/1 to 5Y 4/1), bioturbated CALCAREOUS SILTY CLAY with foraminifers. Very thin bedded laminae are common.

Minor lithology: Section 2, 57–116 cm, consists of calcareous sed-lithic breccia. The breccia consists of clasts, up to 7 cm, of greenish gray (5G 5/1) silty chalk in a dark gray to black (N4 to 5Y 2.5/1) sandstone matrix.

SMEAR SLIDE SUMMARY (%):

	3, 149 D	6, 82 D
TEXTURE:		
Sand	60	10
Silt	10	35
Clay	30	55
COMPOSITION:		
Calcite	---	25
Clay	30	30
Clinopyroxene	15	4
Feldspar	20	20
Foraminifers	5	8
Glass	---	5
Opaques	10	7
Oxide	7	---
Rock fragment	10	---
Zeolite	3	---



SITE 832 HOLE B CORE 31R CORED INTERVAL 433.2-442.9 mbsf

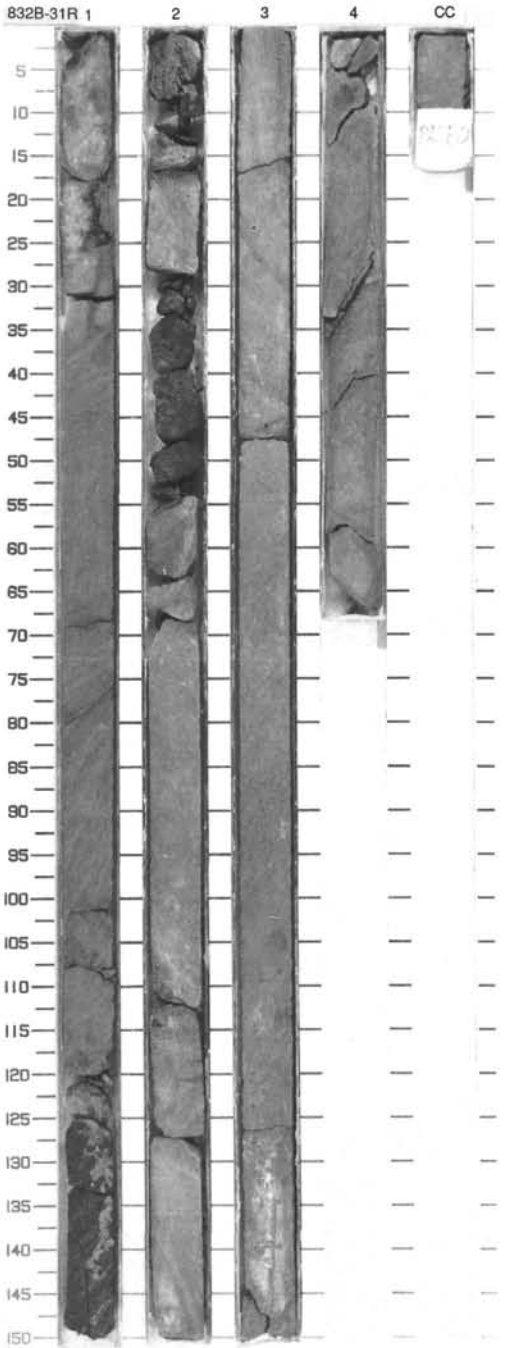
TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
PLEISTOCENE	N22	CN14/CN13			N	● 5082 ● 80.3 2215 2.1 ● 28.3 0.2	● 0.5 0.0 Ø Vp wt. %CaCO3 wt. %TOC	1 2 3 4 CC	0.5 1.0				

LITHOLOGIC DESCRIPTION

CALCAREOUS SILTY CLAYSTONE and CALCAREOUS CLAYEY SILTSTONE

Major lithology:
a. Approximately half of the core consists of gray (5Y 5/1) CALCAREOUS SILTY CLAYSTONE with foraminifers.
b. Alternating with the above lithology is gray (5Y 5/1) CALCAREOUS CLAYEY SILTSTONE with foraminifers. The two lithologies are different only in proportions of silt and clay. The basal 20 cm of Section 2 and the top 30 cm of Section 3 appear to be a large slump, with the fabric ranging from subhorizontal to subvertical.

Minor lithology:
a. Section 1, 126–150 cm, and Section 2, 0–9 cm, one large bomb (fragmented by drilling) of black (5Y 2.5/1) basalt with clinopyroxene phenocrysts.
b. Section 2, 29–55 cm, consists of black (5Y 2.5/1), poorly sorted, coarse-grained volcanic sandstone with gravel clasts.



SITE 832 HOLE B CORE 32R CORED INTERVAL 442.9-451.9 mbsf

TIME-ROCK UNIT: PLEISTOCENE

BIOSTRAT. ZONE/FOSSIL CHARACTER: FORAMINIFERS: N22; C/M; NANNOFOSSILS: CN14/CN13; F/G; RADIOLARIANS: B; DIATOMS

PALEOMAGNETICS: N

PHYS. PROPERTIES: Φ 57.4, Vp 1.85, ρ 2195

CHEMISTRY: wt. %CaCO3 55.1, wt. %TOC 1.93, C/C 42.8, 0.2

SECTION: 1, 2, 3, 4

METERS: 0.5, 1.0

GRAPHIC LITHOLOGY

DRILLING DISTURB.

SED. STRUCTURES

SAMPLES: OG, IW

LITHOLOGIC DESCRIPTION

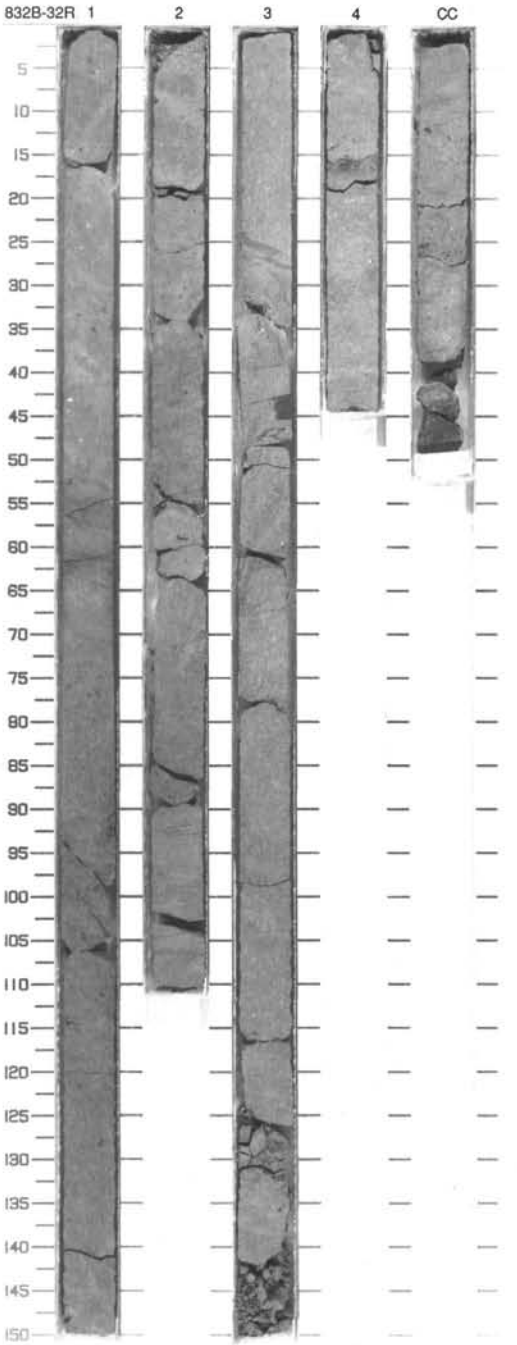
CALCAREOUS SANDY SILTSTONE

Major lithology: The core consists of gray (5Y 5/1), mottled, bioturbated CALCAREOUS SANDY SILTSTONE with foraminifers.

Minor lithology: The lower 5 cm of the core catcher contains a 5 cm diameter cobble of black ((5Y 2.5/1) basalt.

SMEAR SLIDE SUMMARY (%):

	1, 58 D
TEXTURE:	
Sand	25
Silt	60
Clay	15
COMPOSITION:	
Calcite	40
Clay	15
Clionpyroxene	2
Feldspar	15
Foraminifers	15
Glass	2
Nannofossils	2
Opaques	8
Spicules	Tr



SITE 832 HOLE B CORE 33R CORED INTERVAL 451.9-461.5 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
PLEISTOCENE	C/G	N22	R/G	CN14/CN13	N	● 41.2 2967 ● 2.27 ● 15.1 0.1 Vp ϕ wt. %CaCO3 wt. %TOC		1	0.5 1.0				
								CC					

BASALTIC BRECCIA

Major lithology: Most of the core consists of lithified BASALTIC BRECCIA in a matrix of greenish gray (5GY 5/1) calcareous sandy siltstone. The clasts are reddish black (10R 2.5/1) and black (5Y 2.5/1) pieces of basalt less than 4 cm in diameter.

Minor lithology: Section CC consists of greenish gray (5Y 5/1) sandy volcanic siltstone with calcareous grains.

SITE 832 HOLE B CORE 34R CORED INTERVAL 461.5-471.1 mbsf

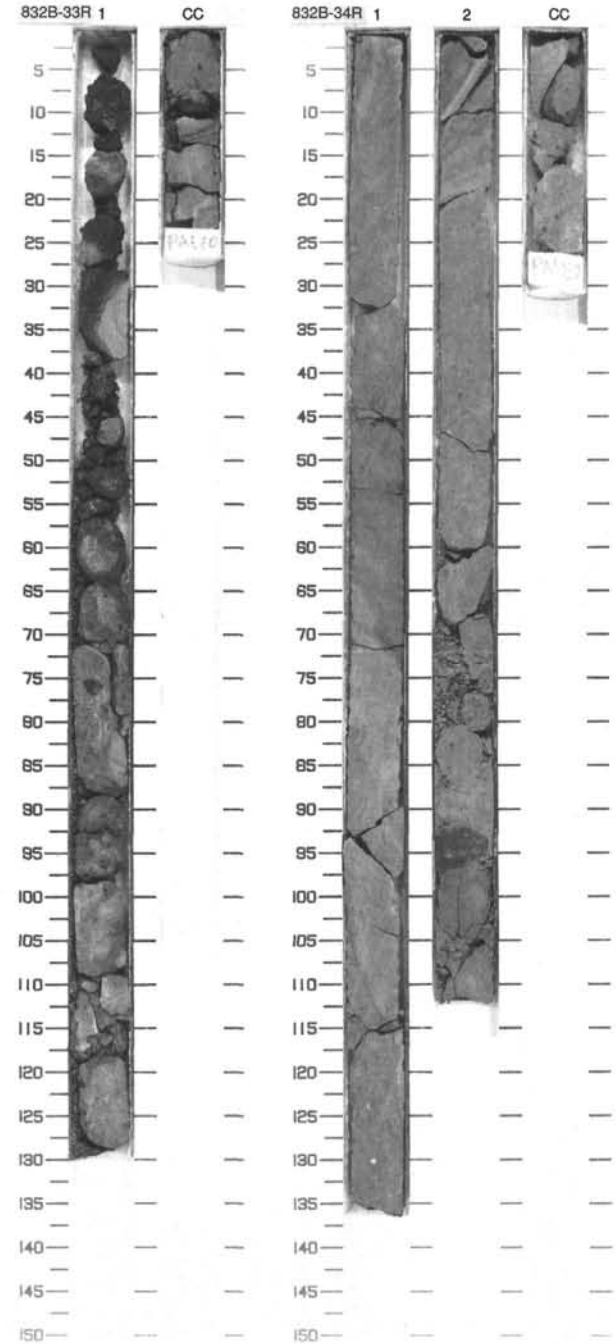
TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
PLEISTOCENE	C/G	N22	F/G	CN14/CN13	N	● 58.2 2025 ● 1.92 ● 28.1 0.2 Vp ϕ wt. %CaCO3 wt. %TOC		1	0.5 1.0			*	IW
			B					2					
								CC					

FORAMINIFERAL CHALK

Major lithology: The core consists of gray to olive gray (5Y 5/1 to 5Y 6/2) FORAMINIFERAL CHALK with clay. Numerous slump folds and isolated volcanic clasts are present.

SMEAR SLIDE SUMMARY (%):

	1, 61 D
TEXTURE:	
Sand	5
Silt	55
Clay	40
COMPOSITION:	
Calcite	40
Clay	21
Clinopyroxene	3
Feldspar	8
Foraminifers	20
Glass	2
Opaques	6
Spicules	Tr



SITE 832 HOLE B CORE 35R CORED INTERVAL 471.1-480.8 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
PLEISTOCENE	F/M	R/G	B		N	● 54.3 2395 2.00 ● 18.6 0.2	Vp φ wt. %CaCO3 wt. %TOC	1, 2, 3, CC	0.5, 1.0				*

LITHOLOGIC DESCRIPTION

FORAMINIFERAL CALCAREOUS SILTY MIXED SEDIMENTARY ROCK

Major lithology: Most of the core consists of partially lithified, gray (5Y 5/1) to dark gray (5Y 4/1) FORAMINIFERAL CALCAREOUS SILTY MIXED SEDIMENTARY ROCK. Pebbles of pumice and volcanic siltstone occur occasionally in Sections 1 and 2. In Section 1, 11–12 cm, is a layer of highly altered volcanic glass (90%). A similar layer, probably also glassy, occurs in Section 2, 120 cm. Bedding is steeply dipping due to slumping in Section 2, 110 cm.

SMEAR SLIDE SUMMARY (%):

	1, 11 M	1, 69 D	3, 22 D
TEXTURE:			
Sand	100	35	35
Silt	---	45	50
Clay	---	20	15
COMPOSITION:			
Calcite	---	25	20
Clay	---	10	15
Clinopyroxene	1	5	8
Feldspar	---	5	10
Foraminifers	---	25	25
Glass	90	5	---
Nannofossils	---	10	5
Opaques	5	8	8
Oxide	---	2	2
Zeolite	---	---	5

SITE 832 HOLE B CORE 36R CORED INTERVAL 480.8-490.4 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
PLEISTOCENE	C/M	F/G			N	● 53.9 2555 2.04 ● 26.7 0.2	Vp φ wt. %CaCO3 wt. %TOC	1, 2, CC	0.5, 1.0				*

LITHOLOGIC DESCRIPTION

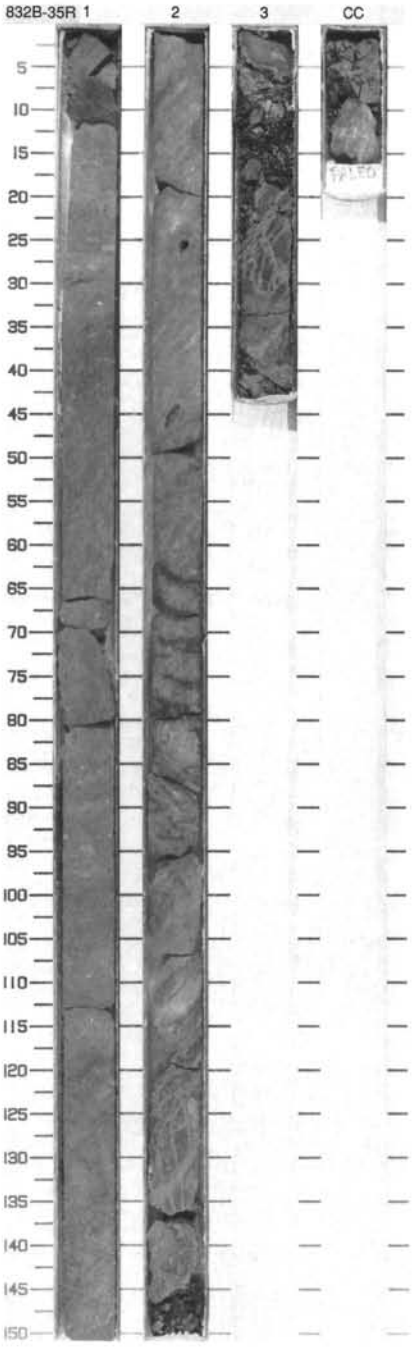
FORAMINIFERAL CALCAREOUS CHALK

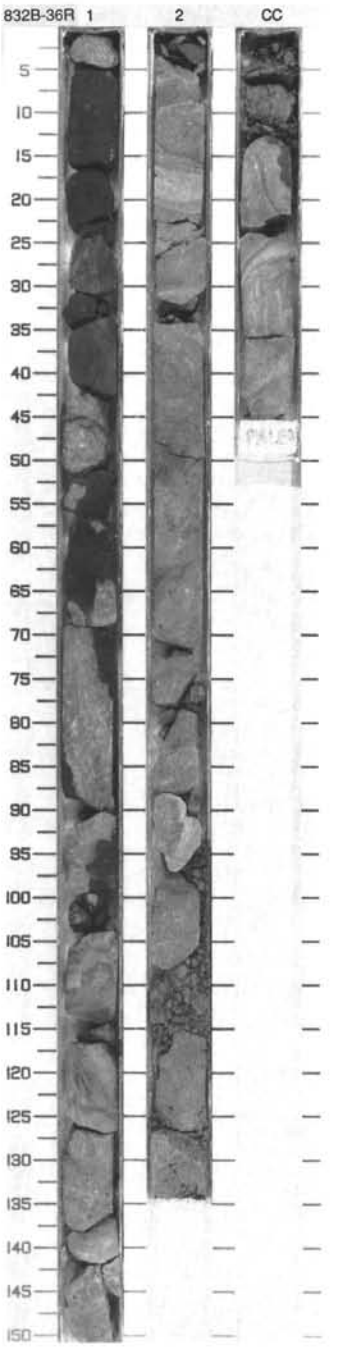
Major lithology: Most of the core consists of partially lithified, gray (5Y 5/1) FORAMINIFERAL CALCAREOUS CHALK with volcanic grains and clay. Slump folds are common in Section 2, 0–100 cm, and Section CC, 15–35 cm. Microfaults occur in Section 1 at 25–30, 35–40, and 105–110 cm. Minor slumps and a few small volcaniclasts 2–5 mm in diameter also occur throughout the core.

Minor lithology:
a. Section 1, 5–43 cm, consists of partially lithified, very dark gray (10YR 3/1), glassy, clayey volcanic siltstone.
b. Section 1, 55–72 cm, consists of partially lithified, black (5Y 2.5/1) coarse vitric volcanic ash.

SMEAR SLIDE SUMMARY (%):

	1, 36 M	1, 63 M	1, 128 D
TEXTURE:			
Sand	5	60	70
Silt	60	40	20
Clay	35	---	10
COMPOSITION:			
Calcite	10	---	35
Clay	25	---	10
Clinopyroxene	5	5	5
Feldspar	5	15	5
Foraminifers	---	---	30
Glass	30	70	---
Nannofossils	3	---	1
Opaques	5	10	10
Rock fragment	15	---	---





SITE 832 HOLE B CORE 37R CORED INTERVAL 490.4-500.1 mbsf

TIME-ROCK UNIT: PLEISTOCENE

BIOSTRAT. ZONE/FOSSIL CHARACTER:
- FORAMINIFERS: N22
- NANNOFOSSILS: CN14/CN13
- RADIOLARIANS
- DIATOMS
- PALEOMAGNETICS: N
- PHYS. PROPERTIES: ● 56.3 2653 / ● 2.09 / ● 30.2 / ● 0.2
- CHEMISTRY: C/M, R/G, Vp, wt. %CaCO3, wt. %TOC

SECTION: 1, 2, 3, 4, CC

METERS: 0.5, 1.0

GRAPHIC LITHOLOGY

DRILLING DISTURB.

SED. STRUCTURES

SAMPLES: IW

LITHOLOGIC DESCRIPTION

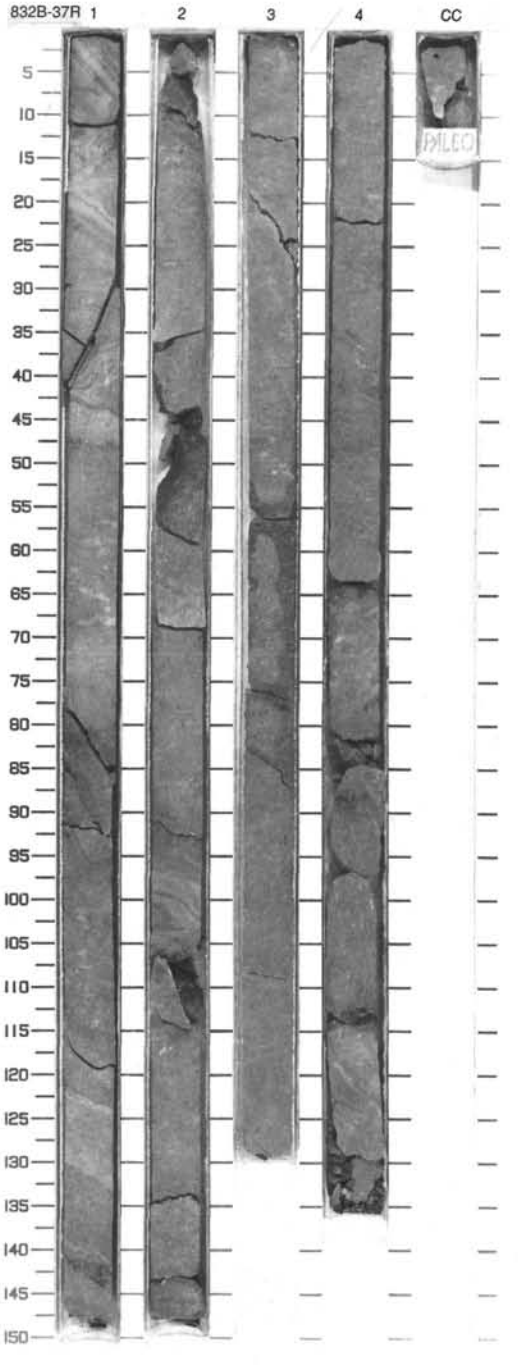
CALCAREOUS FORAMINIFERAL CHALK

Major lithology: Most of the core consists of light gray (5Y 6/1) to gray (5Y 5/1) CALCAREOUS FORAMINIFERAL CHALK with silt and clay. Intervals within this sediment, for example Section 1, 47–66 and 95–115 cm, are mottled by apparent burrowing. Slumps and fractures occur in Sections 1 and 2 and there is a microfault in Section 4, 87–89 cm.

Minor lithology: In Sections 1, 2, and 4 are 1–2 cm layers of partially lithified, very dark gray (5Y 3/1) lithic volcanic sand with glass and opaque mineral grains. Some layers (e.g., Section 4, 112–114 cm, contain black lithic clasts up to 2–5 mm in diameter.

SMEAR SLIDE SUMMARY (%):

	1, 52 M	1, 145 D	2, 52 M
TEXTURE:			
Sand	80	70	75
Silt	20	20	20
Clay	---	10	5
COMPOSITION:			
Calcite	---	20	---
Celadonite	---	8	---
Clay	---	10	---
Clinopyroxene	8	5	5
Feldspar	15	8	20
Foraminifers	---	40	---
Glass	8	---	10
Nannofossils	---	1	---
Olivine	---	1	---
Opaques	60	5	10
Oxide	5	2	---
Rock fragment	---	---	55



SITE 832 HOLE B CORE 38R CORED INTERVAL 500.1-509.8 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
PLEISTOCENE	C/M	N22	F/G	CN14/CN13		N	Vp 3016; ρb 49.7; wt. % CaCO3 19.4; wt. % TOC 0.2	1	0.5				*
									1.0	VOID			*
								2					*
								CC					

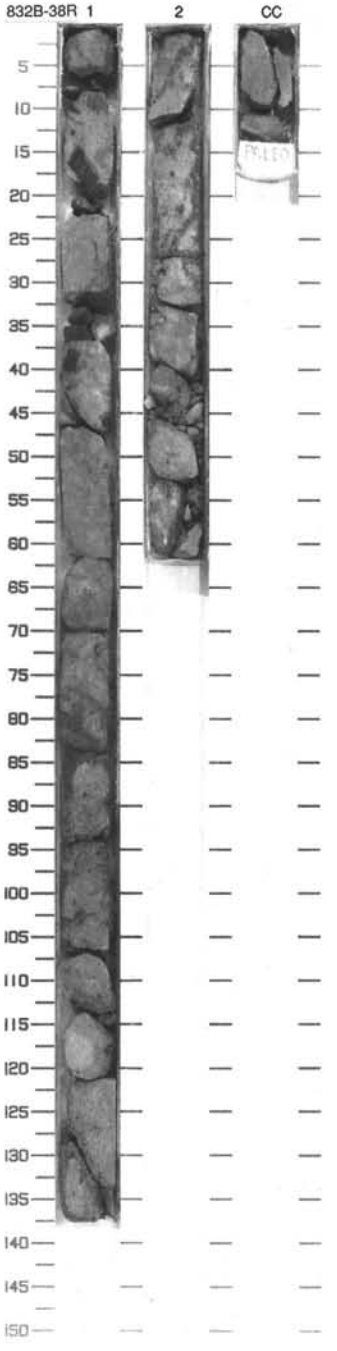
LITHOLOGIC DESCRIPTION

BASALTIC BRECCIA, SILTY VOLCANIC SANDSTONE, and FORAMINIFERAL SILTY SANDY MIXED SEDIMENTARY ROCK

Major lithology:
a. About 80% of the core consists of lithified, gray (5Y 5/1) to dark gray (5Y 4/1), matrix-supported BASALTIC BRECCIA with vesicular basaltic clasts, calcareous grains, and foraminifers. The basalt clasts comprise less than 25% of the breccia. The matrix of the breccia is as a foraminiferal volcanic sand with calcareous grains, silt, and clay (e.g., Section 1, 132–133 cm) ranging to volcanic silty sand with palagonite, calcareous grains, and clay. Most of the clasts are angular to very angular black (5Y 2.5/1) vesicular basaltic lava containing euhedral clinopyroxene crystals and ranging in size from 2 to 60 mm. About 10% of the clasts are subrounded light gray (5Y 6/1) foraminiferal silty volcanic sand mixed sedimentary rock similar to the matrix and to the sandstone.
b. Interbedded with the above dominant lithology in Section 1, 23–32 and 48–65 cm, are two intervals of lithified, dark greenish gray (5GY 4/1) SILTY VOLCANIC SANDSTONE.
c. Section CC, 0–17 cm, consists of lithified gray (5Y 5/1) FORAMINIFERAL SILTY SANDY MIXED SEDIMENTARY ROCK.

SMEAR SLIDE SUMMARY (%):

	1, 52 D	1, 119 M	1, 132 D
TEXTURE:			
Sand	60	60	70
Silt	30	30	20
Clay	10	10	10
COMPOSITION:			
Calcite	15	25	20
Celadonite	35	---	---
Clay	10	10	10
Clinopyroxene	10	5	8
Feldspar	10	10	10
Foraminifers	5	30	25
Glass	---	5	---
Nannofossils	Tr	Tr	5
Olivine	---	5	5
Opaques	3	5	3
Oxide	---	2	---
Zeolite	10	2	10



SITE 832 HOLE B CORE 39R CORED INTERVAL 509.8-519.5 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
PLEISTOCENE	N22	CN14/CN13			N	● 53.3 22.81 2.03 ● 23.4 0.2 ϕ Vp wt. %CaCO3 wt. %TOC		1 2 3 CC	0.5 1.0				* *

LITHOLOGIC DESCRIPTION

FORAMINIFERAL SANDY SILTY MIXED SEDIMENTARY ROCK and BASALTIC BRECCIA

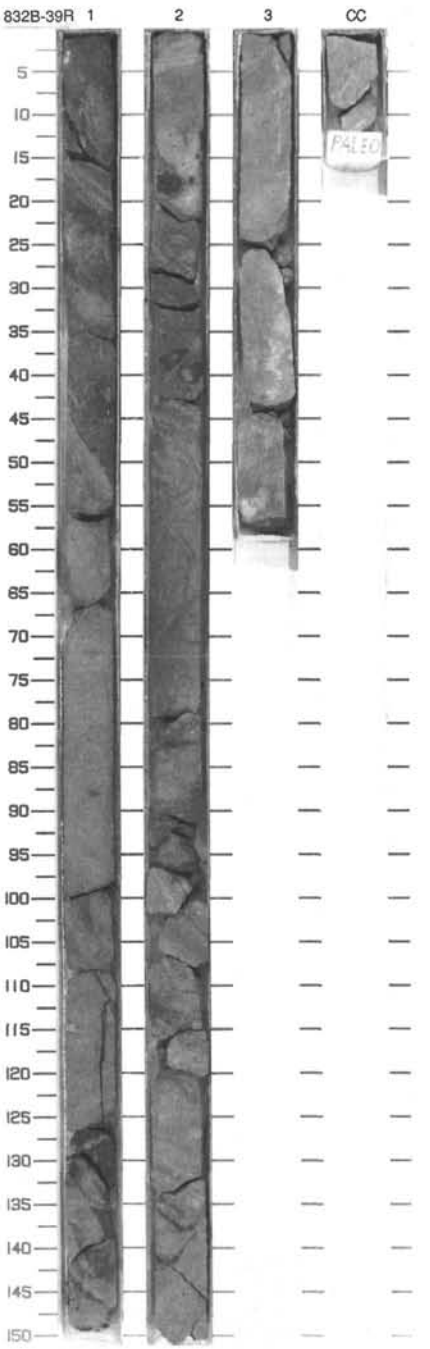
Major lithology:
a. The dominant lithology is lithified, gray (5Y 5/1) to dark gray (5Y 4/1) FORAMINIFERAL SANDY SILTY MIXED SEDIMENTARY ROCK with calcareous grains and clay.
b. In Section 2, 20–40 cm, is an interval of lithified gray (5Y 5/1) BASALTIC BRECCIA with some black (5Y 2.5/1) volcanic basalt clasts 1–30 mm in diameter a matrix of the mixed sedimentary rock.

Minor lithology: In Section 1, 129–132 and 135–145 cm are two intervals of black (5Y 2.5/1) silty volcanic sandstone.

Slumps and inclined bedding occur throughout the core.

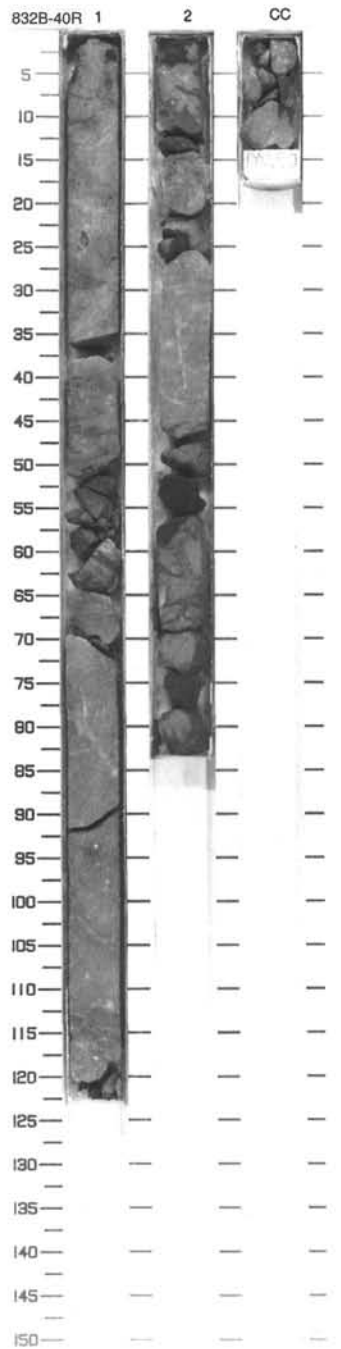
SMEAR SLIDE SUMMARY (%):

	1, 90 D	1, 128 M
TEXTURE:		
Sand	20	90
Silt	50	10
Clay	30	---
COMPOSITION:		
Calcite	20	—
Clay	20	—
Clinopyroxene	7	5
Feldspar	10	5
Foraminifers	30	—
Nannofossils	5	—
Olivine	4	5
Opaques	2	5
Oxide	1	—
Rock fragment	---	80



SITE 832 HOLE B CORE 40R CORED INTERVAL 519.5-529.2 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
UPPER PLIOCENE or LOWER PLEISTOCENE	A/G N21 or N22	R/G CN14/CN13			N	ρ 59.6 2464 Vp 2.06	wt. %CaCO3 27.7 wt. %TOC 0.2	1	0.5 1.0	VOID			IW	FORAMINIFERAL SANDY SILTY MIXED SEDIMENTARY ROCK Major lithology: The core consists of partially lithified, gray (5Y 5/1) FORAMINIFERAL SANDY SILTY MIXED SEDIMENTARY ROCK with some black (5Y 2.5/1) basalt clasts. In Section 2, 0–3 and 54–60 cm, are two thin beds of black (5Y 2.5/1) volcanic sandstone with magnetite grains.
								2						
								CC						



SITE 832 HOLE B CORE 41R CORED INTERVAL 529.2-538.9 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
UPPER PLIOCENE or LOWER PLEISTOCENE	A/G N21 or N22	R/G CN14/CN13			N	● 59.0 2449 2.06 ● 25.8 0.2 φ Vp wt. %CaCO3 wt. %TOC		1 2 CC	0.5 1.0				*

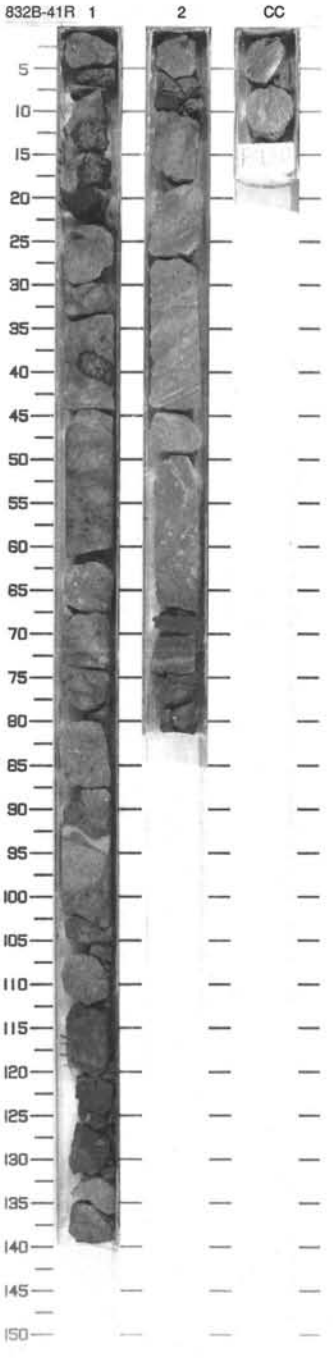
LITHOLOGIC DESCRIPTION

BASALTIC SED-LITHIC BRECCIA and CLAYEY CALCAREOUS MIXED SEDIMENTARY ROCK

Major lithology:
a. The core consists of 94 cm of gray (5Y 5/1), lithified BASALTIC SED-LITHIC BRECCIA in a matrix of clayey calcareous mixed sedimentary rock.
b. The remaining 131 cm of the core consists of dark gray (5Y 4/1) CLAYEY CALCAREOUS MIXED SEDIMENTARY ROCK, which has been thoroughly bioturbated. Foraminifer tests and basalt pebbles occur sporadically in this lithology.

SMEAR SLIDE SUMMARY (%):

	1, 46 D
TEXTURE:	
Sand	5
Silt	70
Clay	25
COMPOSITION:	
Calcite	30
Clay	28
Clinopyroxene	5
Feldspar	13
Foraminifers	15
Glass	2
Opaques	7
Spicules	Tr



SITE 832 HOLE B CORE 42R CORED INTERVAL 538.9-548.5 mbsf

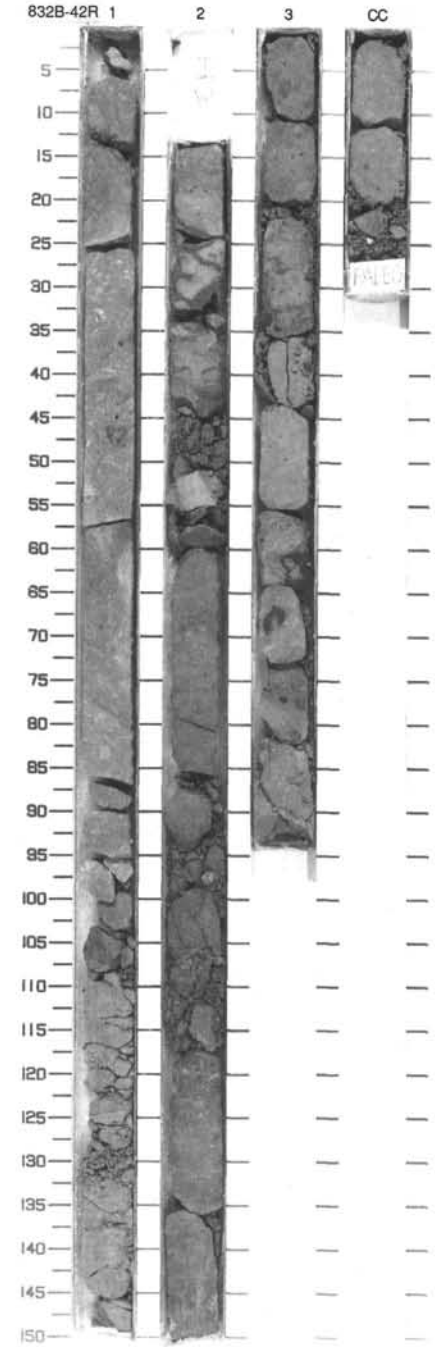
TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
UPPER PLIOCENE or LOWER PLEISTOCENE	A/G	N21 or N22			N	ρ Vp wt.% CaCO3 wt.% TOC		1 2 3 CC	0.5 1.0				IW	SILTY VOLCANIC SANDSTONE

Major lithology: Most of the core consists of gray (5Y 5/1) SILTY VOLCANIC SANDSTONE with foraminifers and nannofossils and horizons containing numerous basalt cobbles. Trace fossils are common.

Minor lithology:
a. Section 1, 0–110 cm, consists of dark gray (5Y 4/1) clayey calcareous mixed sedimentary rock with foraminifers, which has been thoroughly bioturbated. The unit appears slumped and jumbled.
b. Section 1, 110–150 cm, consists of gray (5Y 6/1) clayey chalk with foraminifers, featuring occasional sand lenses and laminations.

SMEAR SLIDE SUMMARY (%):

	2, 72 D
TEXTURE:	
Sand	50
Silt	30
Clay	20
COMPOSITION:	
Calcite	3
Celadonite	Tr
Chlorite	2
Clay	10
Clinopyroxene	2
Feldspar	12
Foraminifers	12
Nannofossils	10
Opaques	3
Oxide	15
Rock fragment	26
Spicules	Tr



SITE 832 HOLE B CORE 43R CORED INTERVAL 548.5-558.2 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
UPPER PLIOCENE or LOWER PLEISTOCENE	A/G	N21 or N22				N	2147 ● 46.4 2652 ● 15.8 ● 38.5 0.3	1 2 3 CC	0.5 1.0				

LITHOLOGIC DESCRIPTION

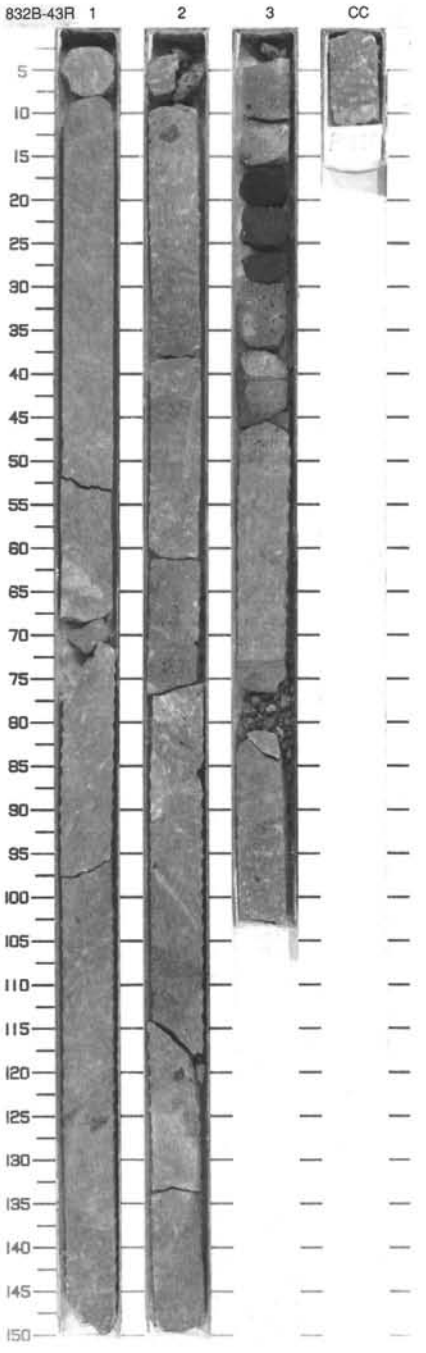
SANDY VOLCANIC SILTSTONE and SILTY VOLCANIC SANDSTONE

Major lithology:
a. Most of the core consists of greenish gray (5GY 5/1) SANDY VOLCANIC SILT STONE with foraminifers.
b. A variation on the major lithology above is greenish gray (5GY 5/1) SILTY VOLCANIC SANDSTONE with foraminifers and nannofossils.

Minor lithology: Sections 2 and 3 feature interbeds, 10–30 cm thick, of lithified, gray (5Y 5/1) volcanic conglomerate with a matrix of silty sandstone with foraminifers and nannofossils. Section 3, 15–25 cm, consists of a large clast of basalt with clinopyroxene phenocrysts.

SMEAR SLIDE SUMMARY (%):

	2, 97 D
TEXTURE:	
Sand	50
Silt	30
Clay	20
COMPOSITION:	
Calcite	5
Chlorite	1
Clay	5
Clinopyroxene	2
Feldspar	?
Foraminifers	20
Nannofossils	15
Opaques	3
Oxide	12
Rock fragment	30

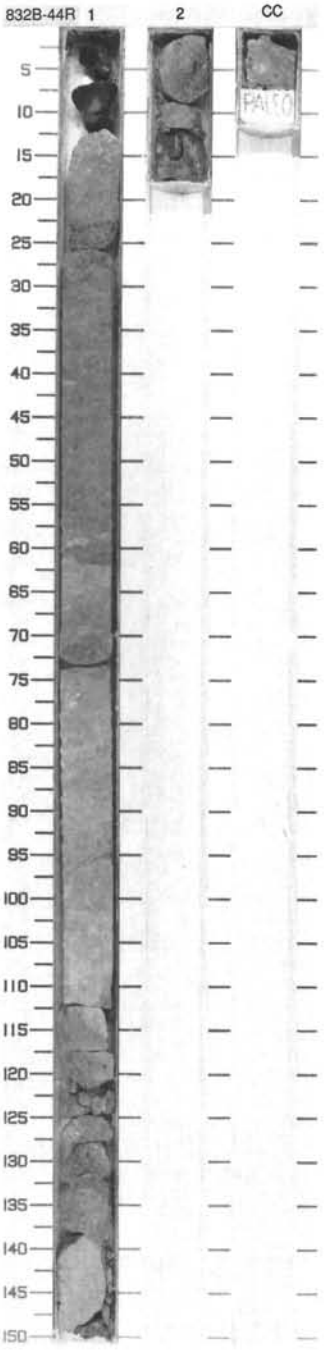


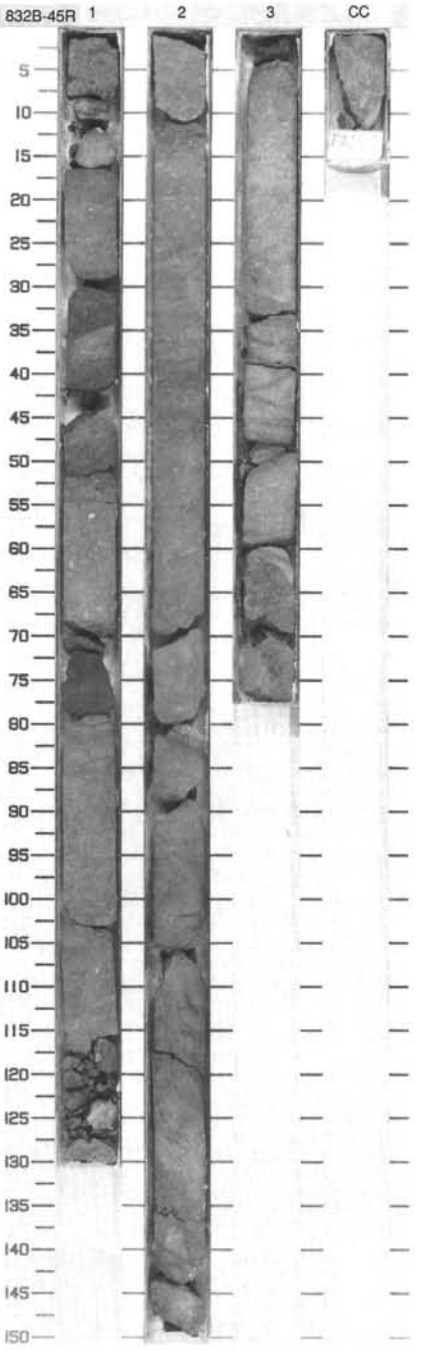
SITE 832 HOLE B CORE 44R CORED INTERVAL 558.2-567.7 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
UPPER PLIOCENE or LOWER PLEISTOCENE	A/G N21 or N22				N	● 44.2 2528 2.13	● 22.2 0.1	1 2 CC	0.5 1.0					SILTY VOLCANIC SANDSTONE, SANDY VOLCANIC SILTSTONE, and BASALTIC BRECCIA Major lithology: a. Section 1, 12–22 and 62–112 cm contains gray (5Y 5/1) SILTY VOLCANIC SANDSTONE with foraminifers and nannofossils. b.Section 1, 21–61 cm, and Section CC consist of dark gray to greenish gray (5Y 4/1 to 5GY 5/1) SANDY VOLCANIC SILTSTONE with foraminifers. c. Section 1, 22–26 and 112–140 cm and Section 2 contain gray (5Y 5/1) BASALTIC BRECCIA in a matrix of sandy siltstone with foraminifers. Minor lithology: Section 1, 140–150 cm.contains light gray (5Y 6/1), bioturbated foraminiferal silty chalk with abundant trace fossils.

SITE 832 HOLE B CORE 45R CORED INTERVAL 567.7-577.4 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
UPPER PLIOCENE or LOWER PLEISTOCENE	A/G N21 or N22	F/G CN13/CN14			N	● 55.4 34.4 1.96 ρ Vp ● 58.1 2255 1.88 wt.% CaCO3 ● 21.2 wt.% SiO2 0.1	● 34.4	1 2 3 CC	0.5 1.0				1W	SILTY LIMESTONE Major lithology: The core consists almost entirely of greenish gray (5GY 5/1), bioturbated, SILTY LIMESTONE. The unit features common trace fossils and volcanic pebbles, and occasional very fine-bedded laminations. The dip of the beds in Section 1 is about 27°. The beds appear slumped in places. Minor lithology: Section 1, 65–89 cm, consists of very dark gray (5Y 3/1) sandy volcanic silt. SMEAR SLIDE SUMMARY (%): 1, 84 D TEXTURE: Silt 25 Clay 75 COMPOSITION: Calcite 55 Clay 15 Clinopyroxene 3 Feldspar 7 Foraminifers 15 Glass 3 Opaques 2 Spicules Tr





SITE 832 HOLE B CORE 46R CORED INTERVAL 577.4-587.0 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
UPPER PLIOCENE or LOWER PLEISTOCENE	A/G	N21 or N22	R/G		N	2812 ● 51.0 2.12 ● 47.6 2.10 2218	● 21.6 ● 35.8 0.2	1 2 3 CC	0.5 1.0				

φ Vp WT. %CaCO3 wt. %TOC

BASALTIC BRECCIA and SILTY LIMESTONE

Major lithology:
a. About half the core consists of gray to greenish gray (5Y 5/1 to 5GY 5/1) BASALT BRECCIA, in beds 20–70 cm thick. The matrix is silty limestone.
b. The breccia is interbedded with greenish gray (5GY 5/1), bioturbated SILTY LIMESTONE with numerous slump structures, in beds about 30–50 cm thick.

SITE 832 HOLE B CORE 47R CORED INTERVAL 587.0-596.7 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
UPPER PLIOCEN or LOWER PLEISTOCENE	C/M	N21 or N22	F/G		N	2593 ● 43.3 2.16 ● 54.2 1.93 1983	● 13.4 ● 59.6 0.3	1 2 3 CC	0.5 1.0				IW *

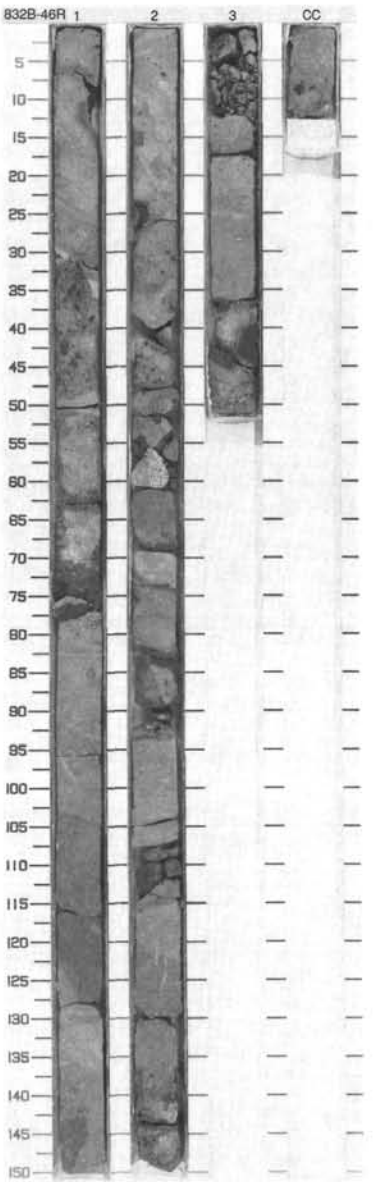
φ Vp WT. %CaCO3 wt. %TOC

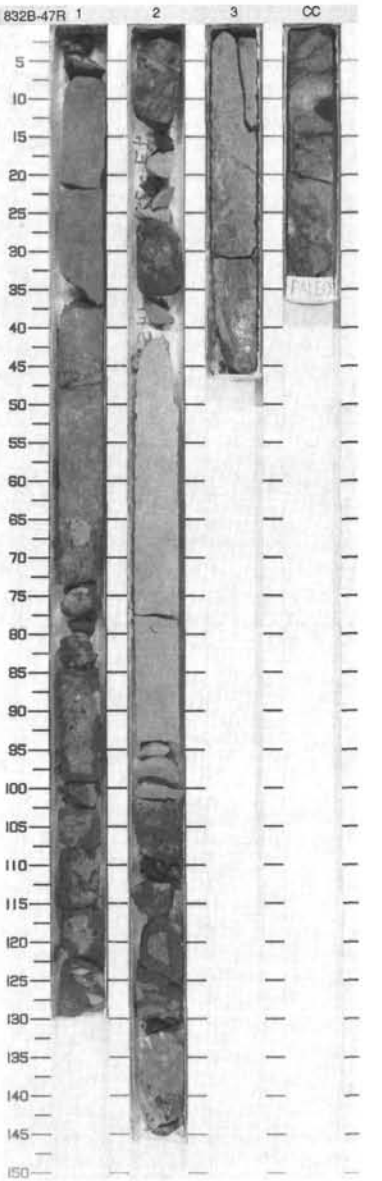
BASALTIC BRECCIA and SILTY LIMESTONE

Major lithology:
a. About half the core consists of gray to greenish gray (5Y 5/1 to 5GY 5/1) BASALTIC BRECCIA, in beds about 30–90 cm thick. The matrix is silty limestone.
b. The remainder consists of greenish gray (5GY 5/1), bioturbated SILTY LIMESTONE with numerous slump structures, in beds about 60 cm thick.

SMEAR SLIDE SUMMARY (%):

	2, 71 D
TEXTURE:	
Silt	25
Clay	75
COMPOSITION:	
Calcite	68
Feldspar	2
Foraminifers	15
Nannofossils	12
Opaques	3



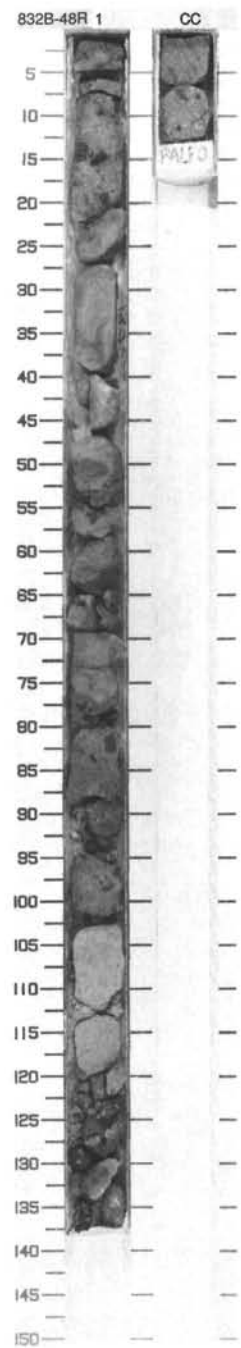


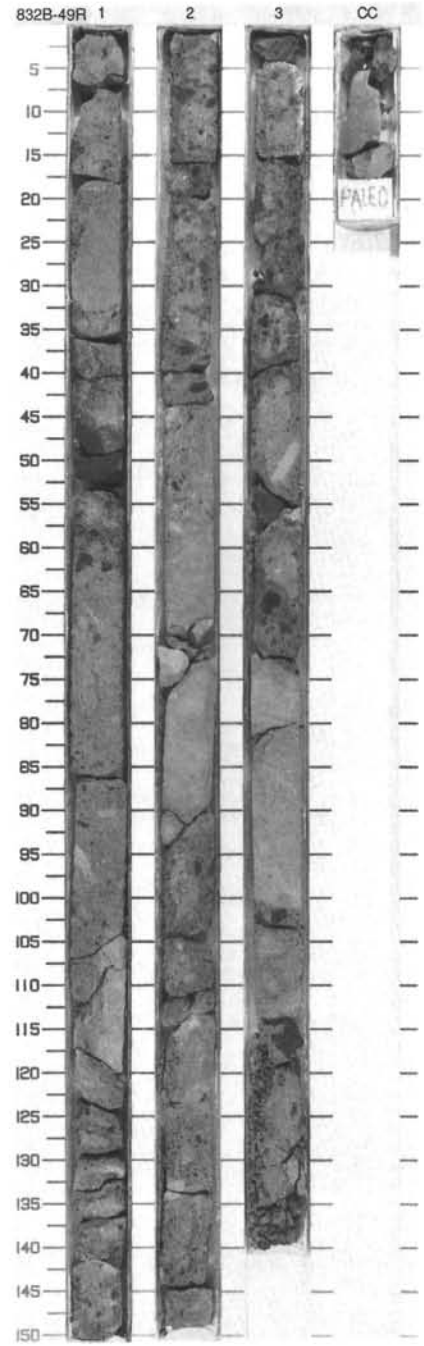
SITE 832 HOLE B CORE 48R CORED INTERVAL 596.7-606.4 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
UPPER PLIOCENE or LOWER PLEISTOCENE	C/M N21 or N22		R/G		N	ϕ 49.7 2427 ρb 2.05 Vp ● 15.3 wt. %CaCO3 0.3 wt. %TOC		1 CC	0.5 1.0					BASALTIC BRECCIA and SILTY LIMESTONE Major lithology: a. About half the core consists of gray to greenish gray (5Y 5/1 to 5GY 5/1) BASALTIC BRECCIA, in beds about 10–35 cm thick. The matrix is silty limestone. *b. About half the core consists of greenish gray (5GY 5/1), bioturbated* SILTY LIMESTONE with numerous slump structures, in beds about 10–20 cm thick.

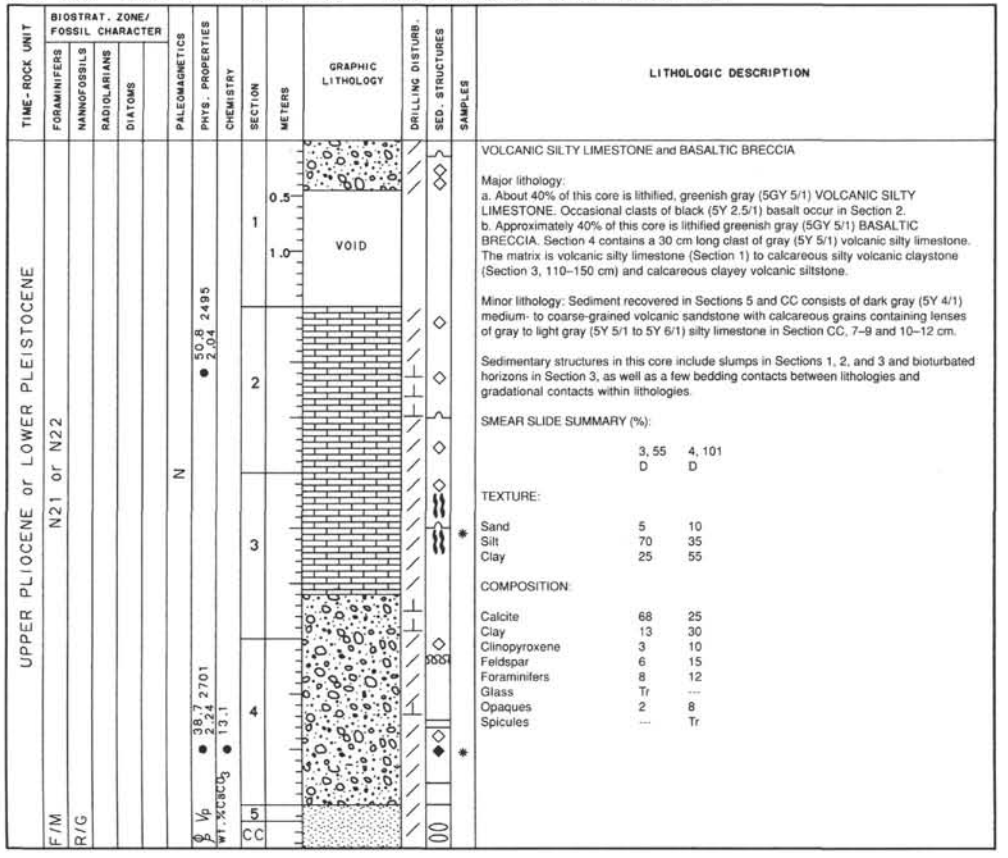
SITE 832 HOLE B CORE 49R CORED INTERVAL 606.4-616.1 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
UPPER PLIOCENE or LOWER PLEISTOCENE	R/M N21 or N22		F/G		N	ϕ 48.0 2515 ρb 2.13 Vp ● 22.7 wt. %CaCO3 0.2 wt. %TOC		1 2 3 CC	0.5 1.0					BASALTIC BRECCIA and SILTY CHALK Major lithology: a. Most of the core consists of gray to greenish gray (5Y 5/1 to 5GY 5/1) BASALTIC BRECCIA, with occasional clasts of chalk, in beds about 35–150 cm thick. The matrix is silty chalk. b. About 15% of the core consists of interbeds of greenish gray (5GY 5/1), bioturbated SILTY CHALK with numerous slump structures. The beds are about 25–40 cm thick. Minor lithology: Section 1, 37–49 cm, consists of gray (5Y 5/1), mottled, bioturbated, clayey volcanic siltstone, underlain by a 4 cm layer of fine volcanic sandstone with foraminifers.





SITE 832 HOLE B CORE 50R CORED INTERVAL 616.1-625.7 mbsf



LITHOLOGIC DESCRIPTION

VOLCANIC SILTY LIMESTONE and BASALTIC BRECCIA

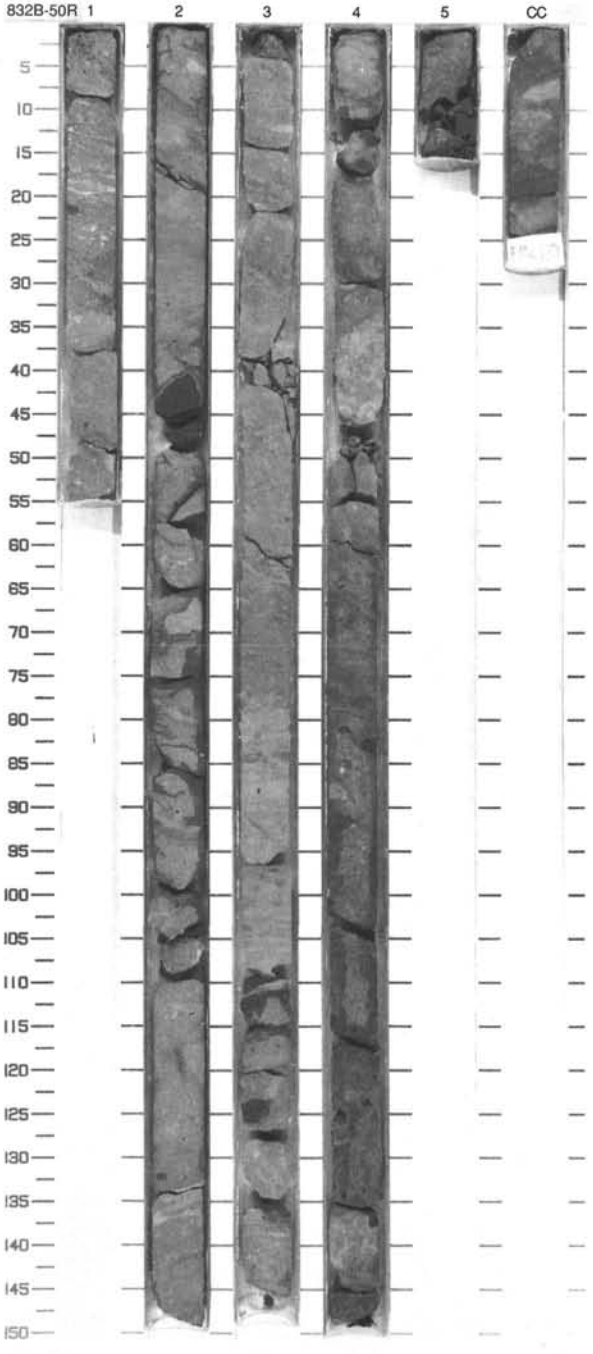
Major lithology:
a. About 40% of this core is lithified, greenish gray (5GY 5/1) VOLCANIC SILTY LIMESTONE. Occasional clasts of black (5Y 2.5/1) basalt occur in Section 2.
b. Approximately 40% of this core is lithified greenish gray (5GY 5/1) BASALTIC BRECCIA. Section 4 contains a 30 cm long clast of gray (5Y 5/1) volcanic silty limestone. The matrix is volcanic silty limestone (Section 1) to calcareous silty volcanic claystone (Section 3, 110–150 cm) and calcareous clayey volcanic siltstone.

Minor lithology: Sediment recovered in Sections 5 and CC consists of dark gray (5Y 4/1) medium- to coarse-grained volcanic sandstone with calcareous grains containing lenses of gray to light gray (5Y 5/1 to 5Y 6/1) silty limestone in Section CC, 7–9 and 10–12 cm.

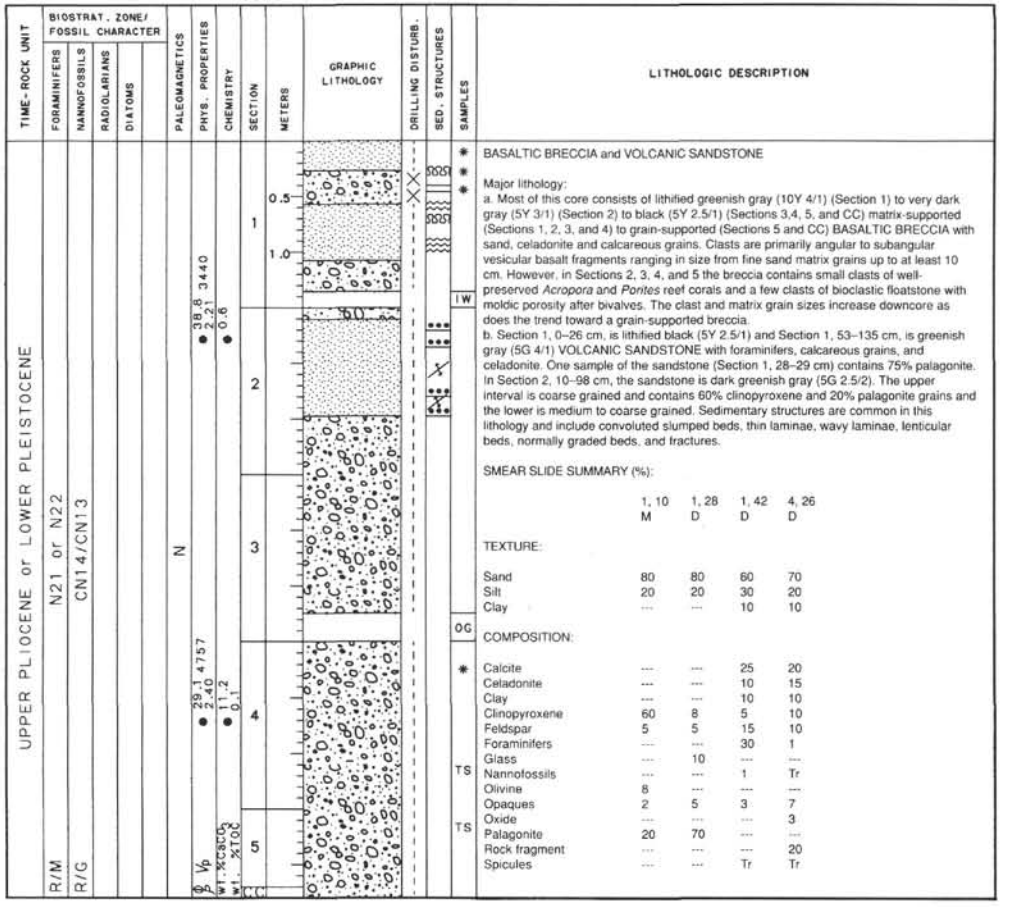
Sedimentary structures in this core include slumps in Sections 1, 2, and 3 and bioturbated horizons in Section 3, as well as a few bedding contacts between lithologies and gradational contacts within lithologies.

SMEAR SLIDE SUMMARY (%):

	3, 55 D	4, 101 D
TEXTURE:		
Sand	5	10
Silt	70	35
Clay	25	55
COMPOSITION:		
Calcite	68	25
Clay	13	30
Clinopyroxene	3	10
Feldspar	6	15
Foraminifers	8	12
Glass	Tr	---
Opaques	2	8
Spicules	---	Tr



SITE 832 HOLE B CORE 51R CORED INTERVAL 625.7-635.3 mbsf



BASALTIC BRECCIA and VOLCANIC SANDSTONE

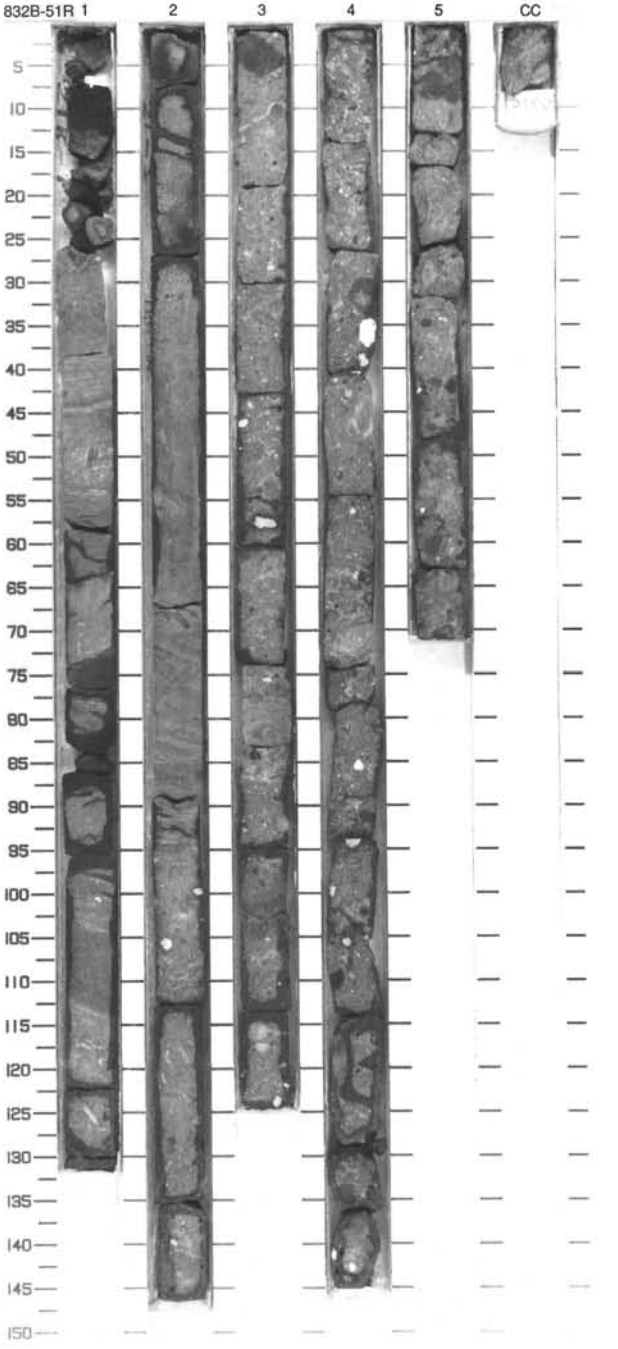
Major lithology:

a. Most of this core consists of lithified greenish gray (10Y 4/1) (Section 1) to very dark gray (5Y 3/1) (Section 2) to black (5Y 2.5/1) (Sections 3,4, 5, and CC) matrix-supported (Sections 1, 2, 3, and 4) to grain-supported (Sections 5 and CC) BASALTIC BRECCIA with sand, celadonite and calcareous grains. Clasts are primarily angular to subangular vesicular basalt fragments ranging in size from fine sand matrix grains up to at least 10 cm. However, in Sections 2, 3, 4, and 5 the breccia contains small clasts of well-preserved *Acropora* and *Porites* reef corals and a few clasts of bioclastic floatstone with moldic porosity after bivalves. The clast and matrix grain sizes increase downcore as does the trend toward a grain-supported breccia.

b. Section 1, 0–26 cm, is lithified black (5Y 2.5/1) and Section 1, 53–135 cm, is greenish gray (5G 4/1) VOLCANIC SANDSTONE with foraminifers, calcareous grains, and celadonite. One sample of the sandstone (Section 1, 28–29 cm) contains 75% palagonite. In Section 2, 10–98 cm, the sandstone is dark greenish gray (5G 2.5/2). The upper interval is coarse grained and contains 60% clinopyroxene and 20% palagonite grains and the lower is medium to coarse grained. Sedimentary structures are common in this lithology and include convoluted slumped beds, thin laminae, wavy laminae, lenticular beds, normally graded beds, and fractures.

SMEAR SLIDE SUMMARY (%):

	1, 10 M	1, 28 D	1, 42 D	4, 26 D
TEXTURE:				
Sand	80	80	60	70
Silt	20	20	30	20
Clay	---	---	10	10
COMPOSITION:				
Calcite	---	---	25	20
Celadonite	---	---	10	15
Clay	---	---	10	10
Clinopyroxene	60	8	5	10
Feldspar	5	5	15	10
Foraminifers	---	---	30	1
Glass	---	10	---	---
Nannofossils	---	---	1	Tr
Olivine	8	---	---	---
Opaques	2	5	3	7
Oxide	---	---	---	3
Palagonite	20	70	---	---
Rock fragment	---	---	---	20
Spicules	---	---	Tr	Tr



SITE 832 HOLE B CORE 52R CORED INTERVAL 635.3-645.0 mbsf

TIME-ROCK UNIT: UPPER PLIOCENE or LOWER PLEISTOCENE

BIOSTRAT. ZONE/FOSSIL CHARACTER: FORAMINIFERS: N21 or N22; R/M; NANNOFOSSILS: CN14/CN13; R/G; RADIOLARIANS; DIATOMS

PALEOMAGNETICS: N

PHYS. PROPERTIES: ● 31.4 2.57; ● 28.0 2.75; ● 4279; ● 26.0 3996 2.66; Φ Vp β

CHEMISTRY: ● 5.8 0.0; ● 0.5; ● 1.6; wt. %CaCO3; wt. %TOC

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

METERS: 0.5, 1.0

GRAPHIC LITHOLOGY: VOID; VOID

DRILLING DISTURB.

SED. STRUCTURES

SAMPLES

LITHOLOGIC DESCRIPTION

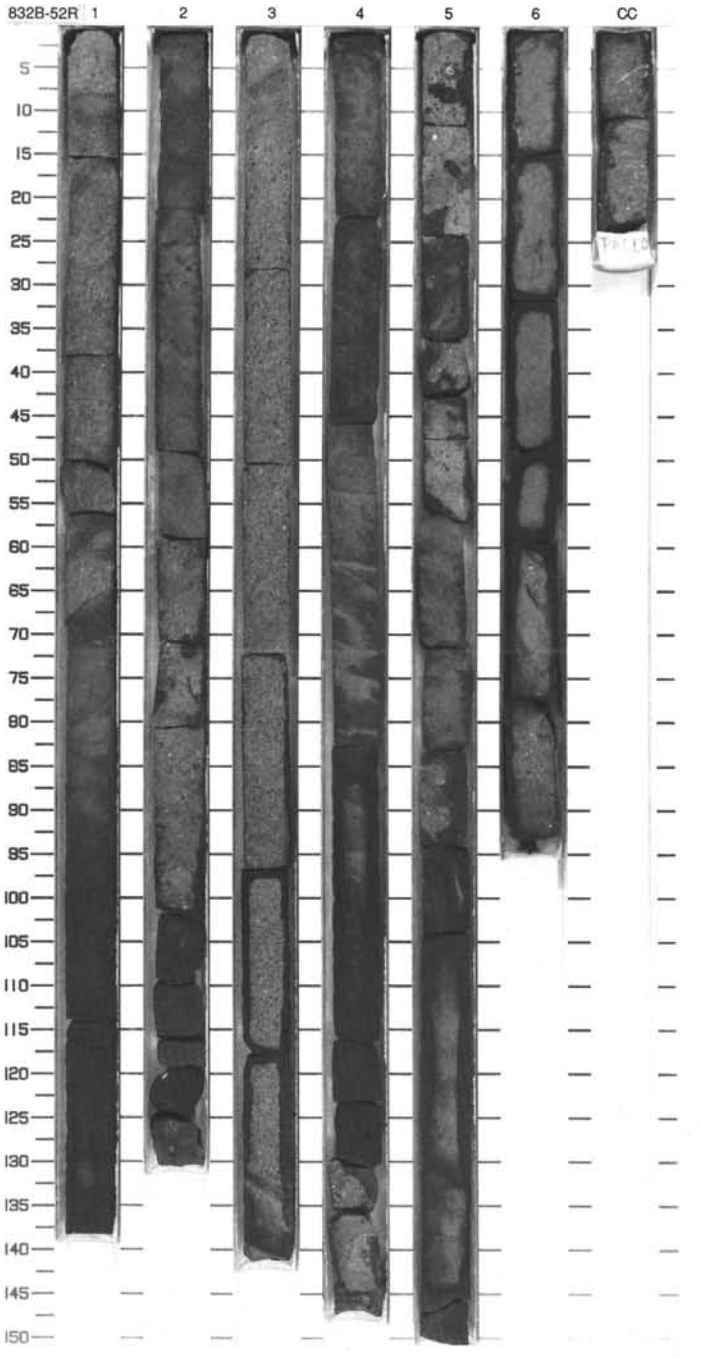
LITHIC VOLCANIC SANDSTONE and BASALTIC BRECCIA

Major lithology:
a. Most of the core (about 60%) consists of lithified, black (5Y 2.5/1) coarse-grained, LITHIC VOLCANIC SANDSTONE with clinopyroxene, palagonite, and opaque mineral grains. In Section 2 the sandstone contains a few black and reddish vesicular basaltic pebbles 0.5 to 3 cm in diameter.
b. About 40% of the core consists of lithified, black (5Y 2.5/1) matrix-supported BASALTIC BRECCIA. The matrix is a volcanic sandstone with some large foraminifers. Clasts range in diameter from 2 mm to 10 cm. Most clasts are angular to subangular vesicular basalt, but others are limestone up to 4 mm in diameter and light gray (5Y 6/1) silty foraminiferal chalk in Section 5.

Minor lithology: In Section 3, 132–134 cm, is a layer of dark greenish gray (5G 4/1) volcanic sandstone.

SMEAR SLIDE SUMMARY (%):

	1, 100 D	3, 73 D	5, 24 M
TEXTURE:			
Sand	95	85	20
Silt	5	15	50
Clay	---	---	30
COMPOSITION:			
Calcite	---	---	20
Clay	---	---	20
Clinopyroxene	30	25	3
Feldspar	15	10	15
Foraminifers	Tr	---	30
Nannofossils	---	---	10
Olivine	Tr	5	---
Opaques	10	8	2
Oxide	2	2	---
Palagonite	10	30	---
Rock fragment	25	15	---
Zeolite	5	---	---



SITE 832 HOLE B CORE 53R CORED INTERVAL 645.0-654.7 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
UPPER PLIOCENE or LOWER PLEISTOCENE	R/M N21 or N22	R/G CN14/CN13			N	● 64.5 3647 2.44 ● 0.5		1	0.5 1.0				
						● 33.1 3737 2.39 ● 0.7 0.0		2					
						● 74.6 4034 3.00 ● 0.5		3					*
								4					
								5					
								6					
								7					
								CC					

Φ Vp ρ wt. %CaCO3 wt. %TOC

LITHOLOGIC DESCRIPTION

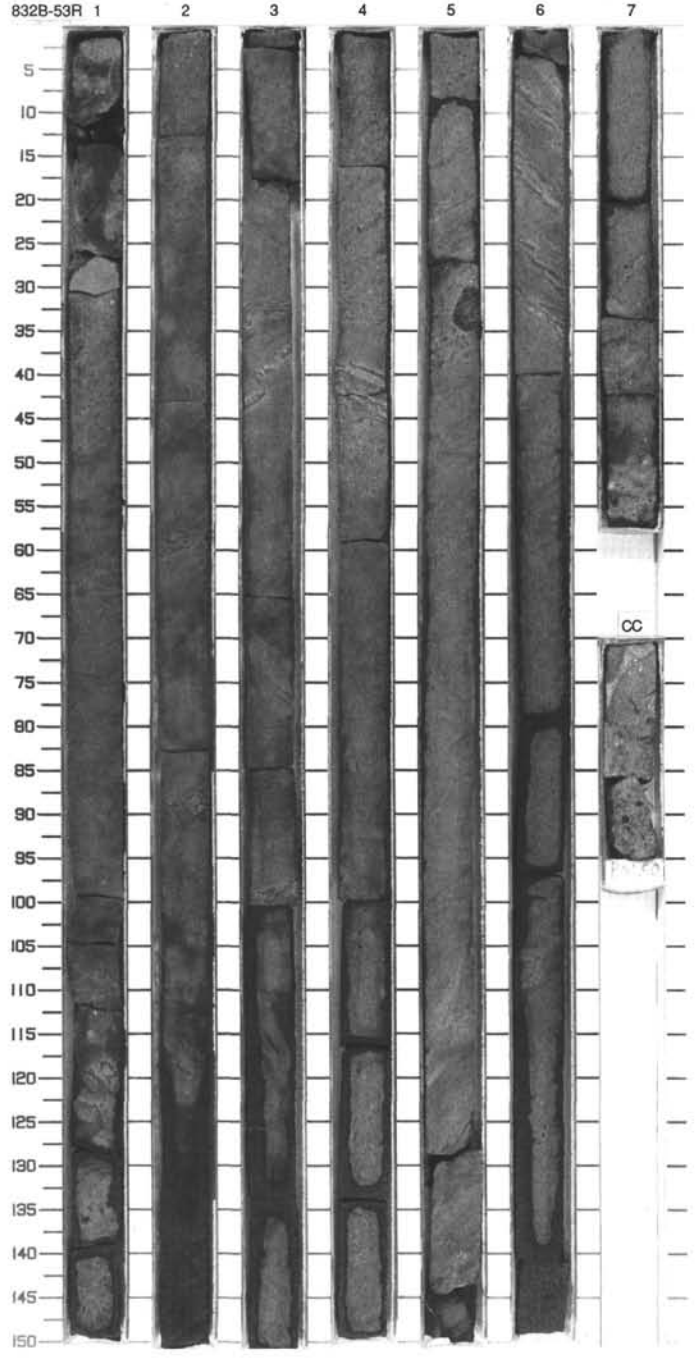
VOLCANIC SANDSTONE and VOLCANIC SILTSTONE

Major lithology:
a. The dominant lithology is lithified, black (5Y 2.5/1), coarse-grained VOLCANIC SANDSTONE. The sediment is mostly structureless, except for a few pebbles of basalt up to 5 cm in diameter in Section 1, 110 and 135 cm, and in Section 5, 35 cm.
b. Interbedded with the sandstone is lithified, very dark gray (5Y 3/1) VOLCANIC SILTSTONE. In the bottom of Section 5, 105 cm, to Section 6, 35 cm, are laminae 0.5 to 3 cm thick in the siltstone. Within the laminated interval are some convoluted beds and graded beds. This interval is also affected by conjugate normal faulting. The dip of the bedding is 45–50°.

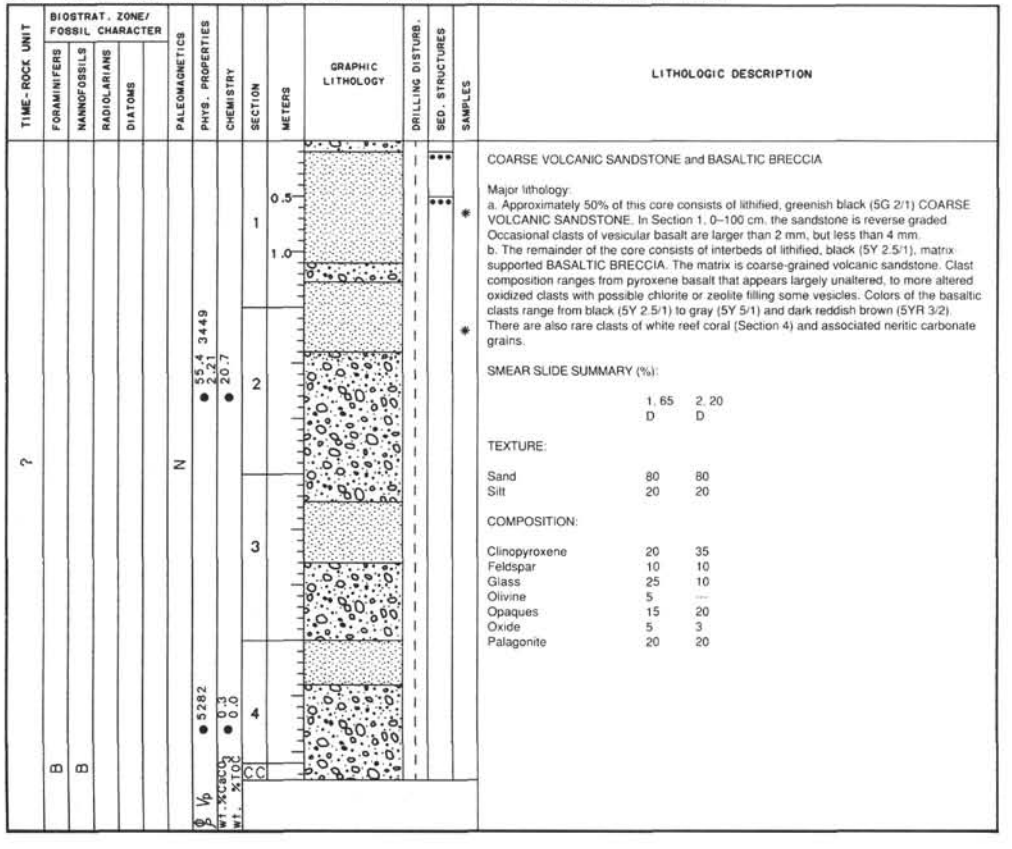
Minor lithology: In Section 1, 0–30 cm, Section 7, 45–56 cm, and Section CC, 0–28 cm, is lithified, black (5Y 2.5/1) basaltic breccia including clasts of vesicular basalt with pyroxene crystals. The clasts range in diameter from 2–15 cm.

SMEAR SLIDE SUMMARY (%):

	3, 76 D
TEXTURE:	
Sand	80
Silt	20
COMPOSITION:	
Clinopyroxene	30
Feldspar	15
Foraminifers	1
Olivine	2
Opaques	30
Oxide	2
Palagonite	15



SITE 832 HOLE B CORE 54R CORED INTERVAL 654.7-664.4 mbsf



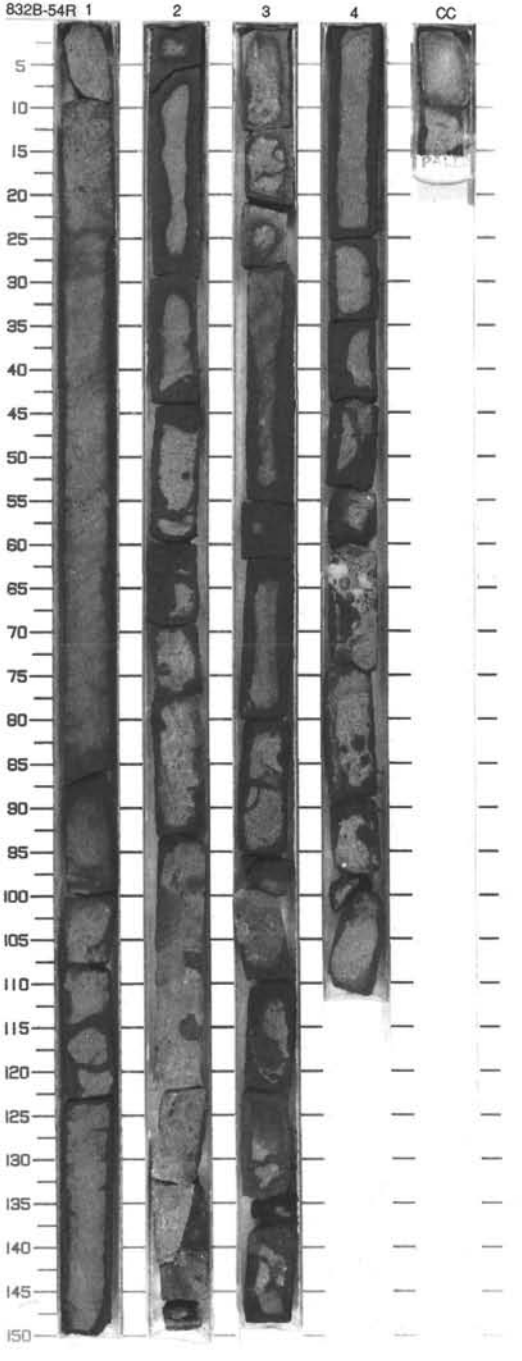
LITHOLOGIC DESCRIPTION

COARSE VOLCANIC SANDSTONE and BASALTIC BRECCIA

Major lithology:
a. Approximately 50% of this core consists of lithified, greenish black (5G 2/1) COARSE VOLCANIC SANDSTONE. In Section 1, 0–100 cm, the sandstone is reverse graded. Occasional clasts of vesicular basalt are larger than 2 mm, but less than 4 mm.
b. The remainder of the core consists of interbeds of lithified, black (5Y 2.5/1), matrix supported BASALTIC BRECCIA. The matrix is coarse-grained volcanic sandstone. Clast composition ranges from pyroxene basalt that appears largely unaltered, to more altered oxidized clasts with possible chlorite or zeolite filling some vesicles. Colors of the basaltic clasts range from black (5Y 2.5/1) to gray (5Y 5/1) and dark reddish brown (5YR 3/2). There are also rare clasts of white reef coral (Section 4) and associated neritic carbonate grains.

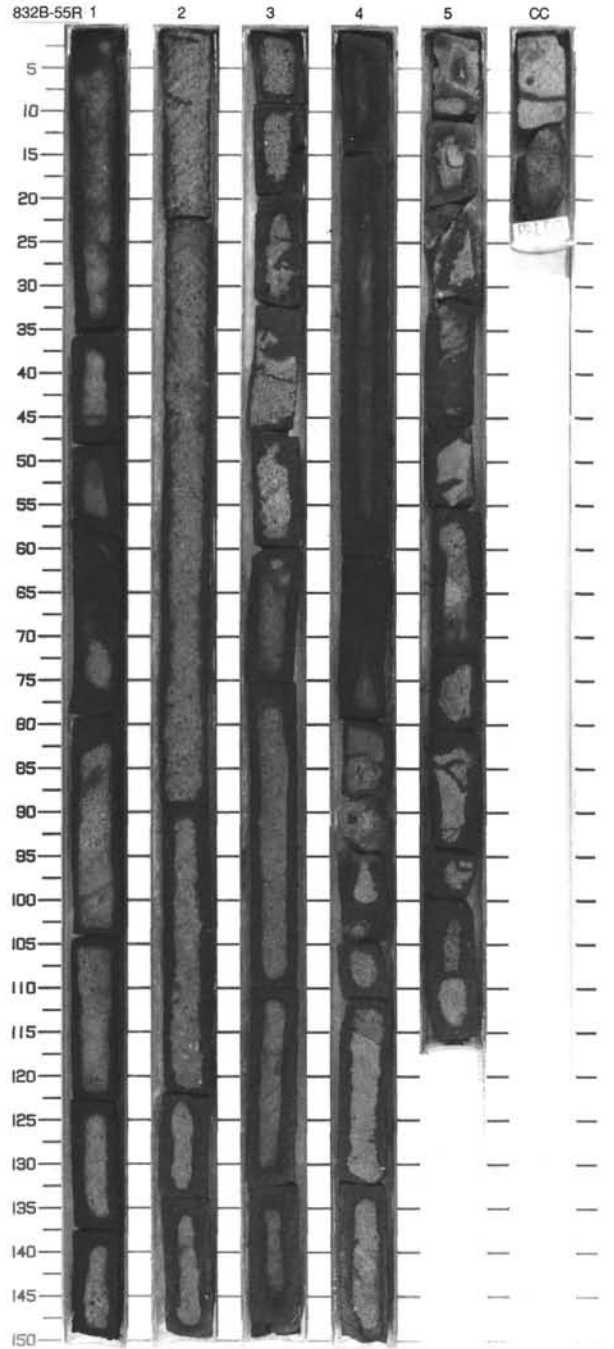
SMEAR SLIDE SUMMARY (%):

	1, 65 D	2, 20 D
TEXTURE:		
Sand	80	80
Silt	20	20
COMPOSITION:		
Clinopyroxene	20	35
Feldspar	10	10
Glass	25	10
Olivine	5	—
Opaques	15	20
Oxide	5	3
Palagonite	20	20



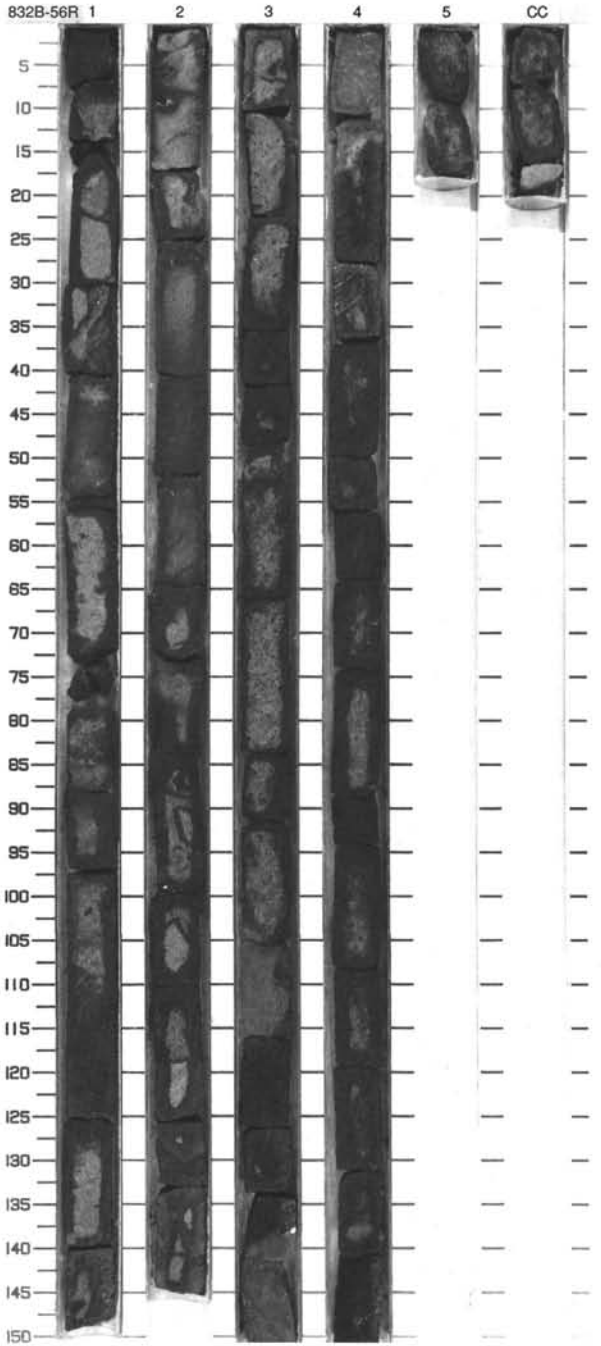
SITE 832 HOLE B CORE 55R CORED INTERVAL 664.4-673.0 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
UPPER PLIOCENE	N21	?			N	ρ Vp 24.0 4221 2.63	wt. %CaCO3 0.4	1	0.5 1.0					FINE-GRAINED BASALTIC BRECCIA and COARSE VOLCANIC SANDSTONE Major lithology: a. Most of the core consists of lithified, black (5Y 2.5/1) FINE-GRAINED BASALTIC BRECCIA. The majority of the basalt clasts are less than 10 mm in diameter, rounded to subrounded, and black (5Y 2.5/1), but a few are dark reddish brown (5YR 3/2), red (10R 4/6), or dark greenish gray (5G 4/1). Many of them contain clinopyroxene phenocrysts. However, in Section 3, 0–65 cm, are some clasts that range as large as 13 cm in diameter. The matrix, finer than 2 mm, is similar to the sandstone. *b. The remainder of the core consists of* lithified black (5Y 2.5/1) COARSE VOLCANIC SANDSTONE.
								2						
						ρ Vp 27.5 3740 2.45	wt. %CaCO3 5.3 wt. %TOC 0.0	3						
								4					TS	
	F/M							5						
								CC						



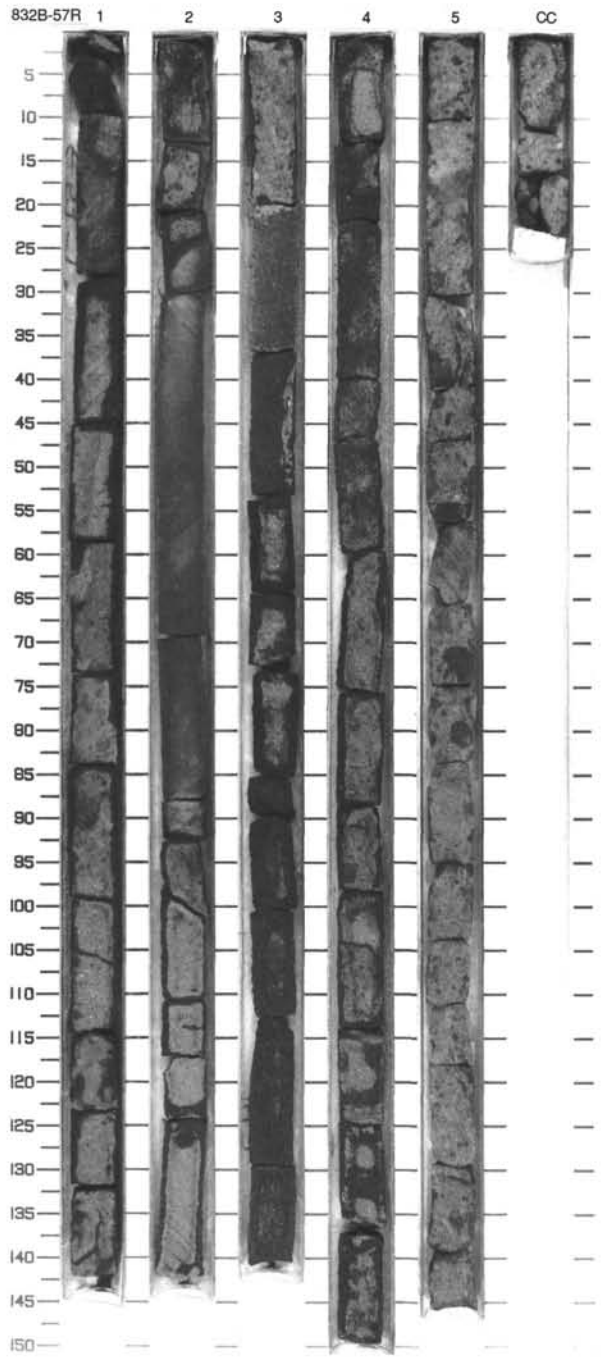
SITE 832 HOLE B CORE 56R CORED INTERVAL 673.0-682.7 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
UPPER PLIOCENE	R/P N21				N	ρ Vp ● 27.5 4205 2.50 ● 20.0 4366 3.31 wt. %CaCO3 ● 0.2 wt. %TOC ● 0.0 ● 3.5		1 2 3 4 5 CC	0.5 1.0				TS	BASALTIC BRECCIA Major lithology: The core consists of black (5Y 2.5/1), lithified BASALTIC BRECCIA in a matrix of volcanic sandstone. Occasionally, there are clasts of gray (5Y 5/1) silty chalk (up to 17 cm) and dusky red (5R 3/4) basalt. In Section 1, a single piece of very dusky red (10R 2/2) basalt fills 20 cm of the core, from 56 to 76 cm. In Section 2, 8–9 cm, euhedral calcite crystals line a void in the breccia.



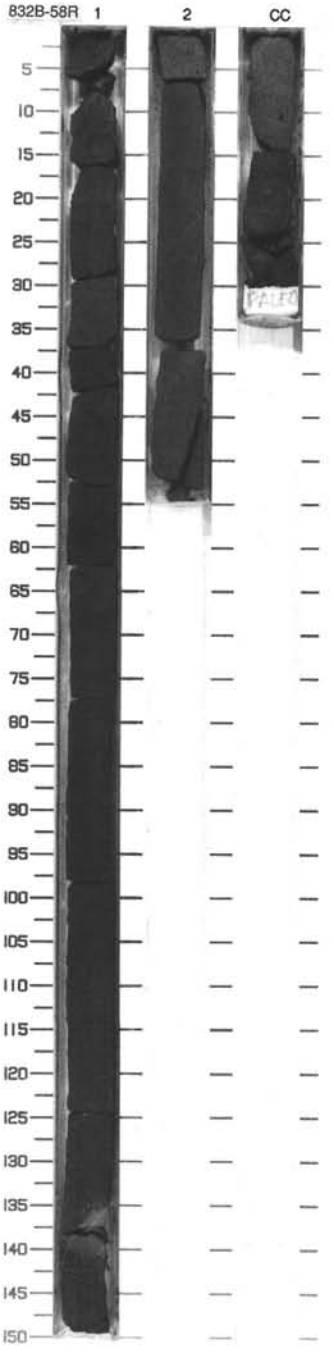
SITE 832 HOLE B CORE 57R CORED INTERVAL 682.7-692.3 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
UPPER PLIOCENE	N21				N	Vp: 4882; ρ: 2.78; Porosity: 9.2; Water content: 17.8; Density: 2.67; Void ratio: 0.4	wt. %CaCO3: 0.2; wt. %TOC: 0.0	1	0.5			◇		BASALTIC BRECCIA
									1.0			◇		Major lithology: The core consists of black (5Y 2.5/1), lithified BASALTIC BRECCIA in a matrix of fine- to coarse-grained volcanic sandstone. Clasts of dusky red (5R 3/4) and black (5Y 2.5/1) basalt up to 5–10 cm in diameter occur, and in Section 2, 29–96 and 105–150 cm single pieces of very dark gray (5Y 3/1) ankaramite (pyroxene-phyric basalt with minor olivine and plagioclase in a very fine matrix) fill the core.
								2						THIN SECTION SUMMARY (%): 4, 77 D
								3				◇		TEXTURE: Sand 100
								4				◇	#	COMPOSITION: Clinopyroxene 35; Glass 18; Olivine 3; Opaques 1; Plagioclase 25; Zeolite 18
	R/P							5						
								CC						



SITE 832 HOLE B CORE 58R CORED INTERVAL 692.3-702.0 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
UPPER PLIOCENE	R/P N21	B			N	Vp ● 3989 3444 ρb ● 2.37 wt. %CaCO3 ● 0.3 wt. %TOC ● 0.0		1	0.5 1.0			◇		VOLCANIC SANDSTONE Major lithology: Most of the core consists of black (5Y 2.5/1) VOLCANIC SANDSTONE, with black and dusky red basalt grains. Minor lithology: The top 15 cm of Section 1 contains 3 clasts of black lithified basaltic breccia in a volcanic sandstone matrix.
								2						
								CC						



SITE 832 HOLE B CORE 59R CORED INTERVAL 702.0-711.6 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
UPPER PLIOCENE	N21	CN12			N	● 52.8 1.94 2125	● 21.4	1	0.5			*	
									1.0				
								2					
								3					
						● 49.4 2.06 2080	● 29.1 0.1	4					IW
													OG
								5					
	C/G				R	● 49.4 2.02 2031	● 16.7	6					
	F/M							7					

Φ Vp
wt. %CaCO3
wt. %TOC

LITHOLOGIC DESCRIPTION

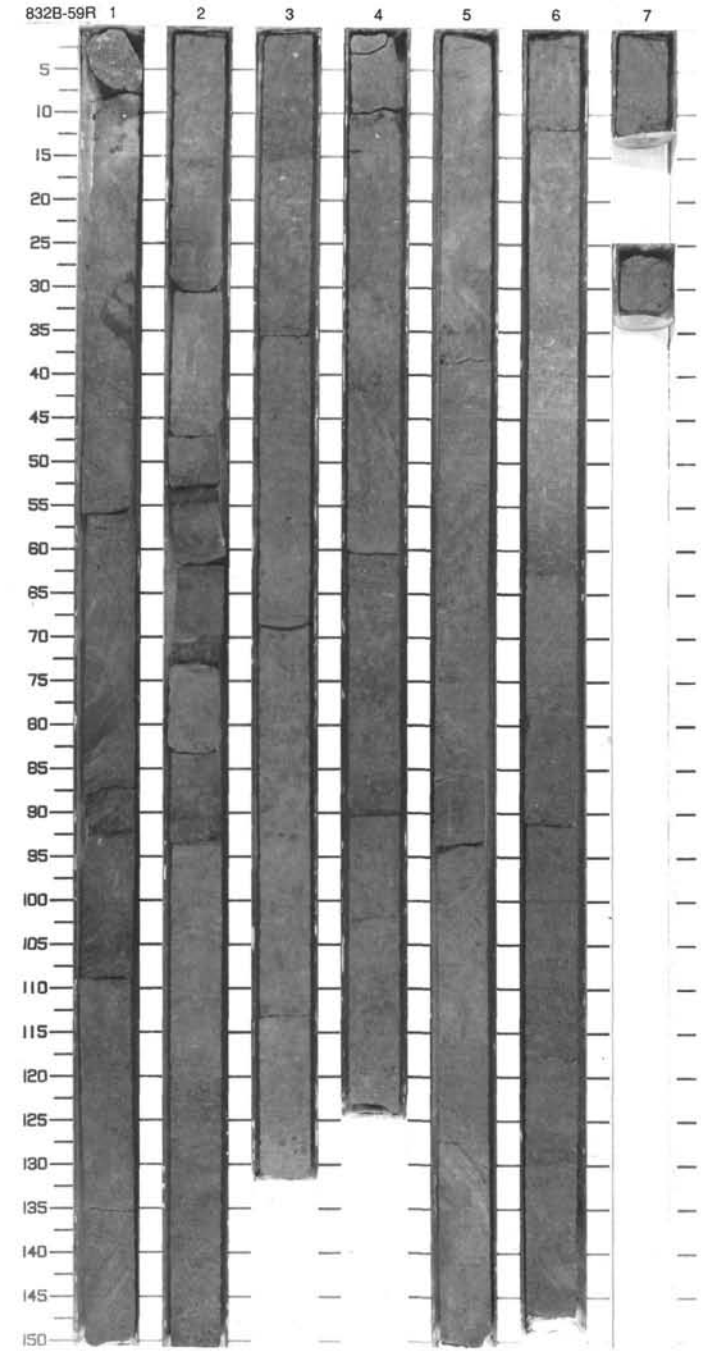
CALCAREOUS SILTY CLAYSTONE

Major lithology: Most of the core consists of heavily bioturbated and mottled, gray (5Y 5/1) CALCAREOUS SILTY CLAYSTONE. Trace fossils (burrows, pellets) are abundant.

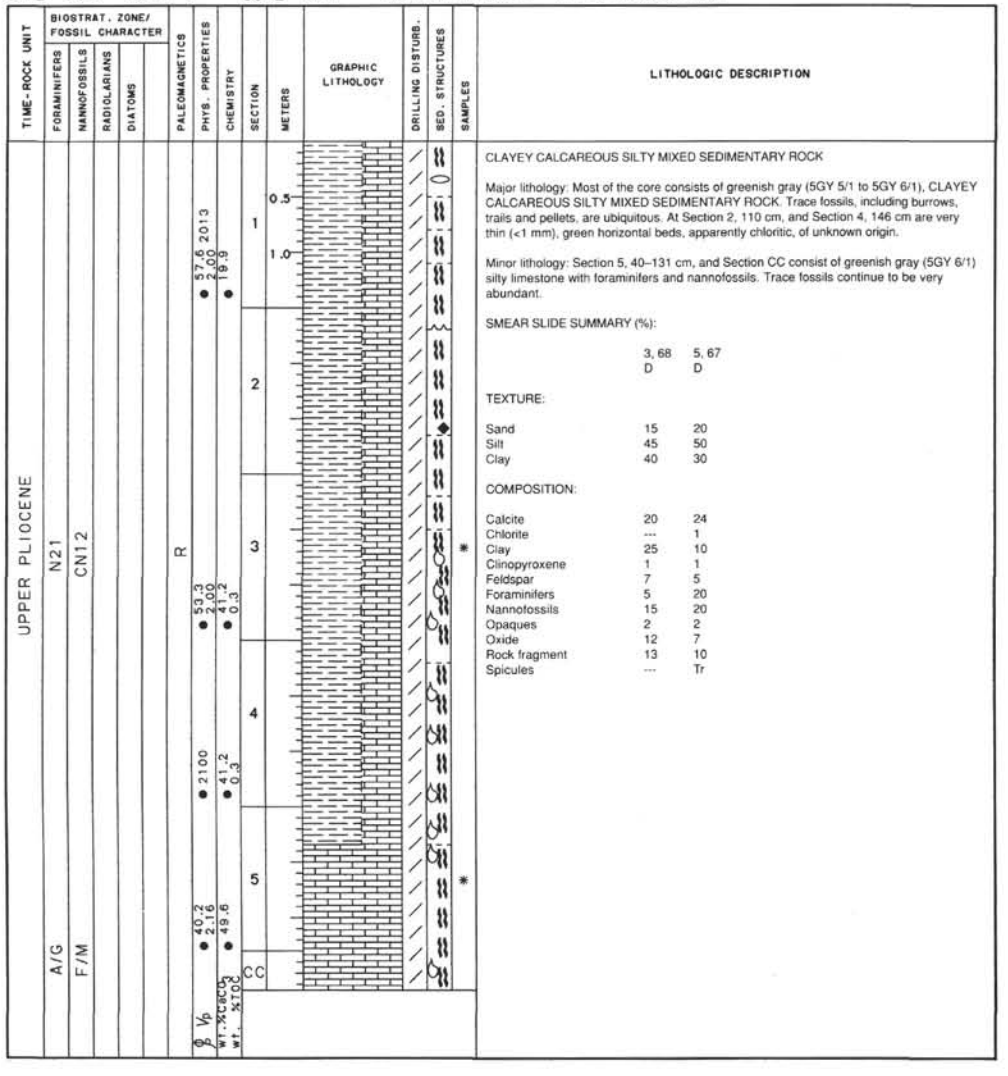
Minor lithology: The top 15 cm of Section 1 contains a clast of black lithified basaltic breccia in a volcanic sandstone matrix.

SMEAR SLIDE SUMMARY (%):

	1, 75 D
TEXTURE:	
Sand	3
Silt	47
Clay	50
COMPOSITION:	
Calcite	25
Clay	39
Clinopyroxene	8
Feldspar	12
Foraminifers	6
Glass	1
Opaques	9
Spicules	Tr



SITE 832 HOLE B CORE 60R CORED INTERVAL 711.6-720.8 mbsf



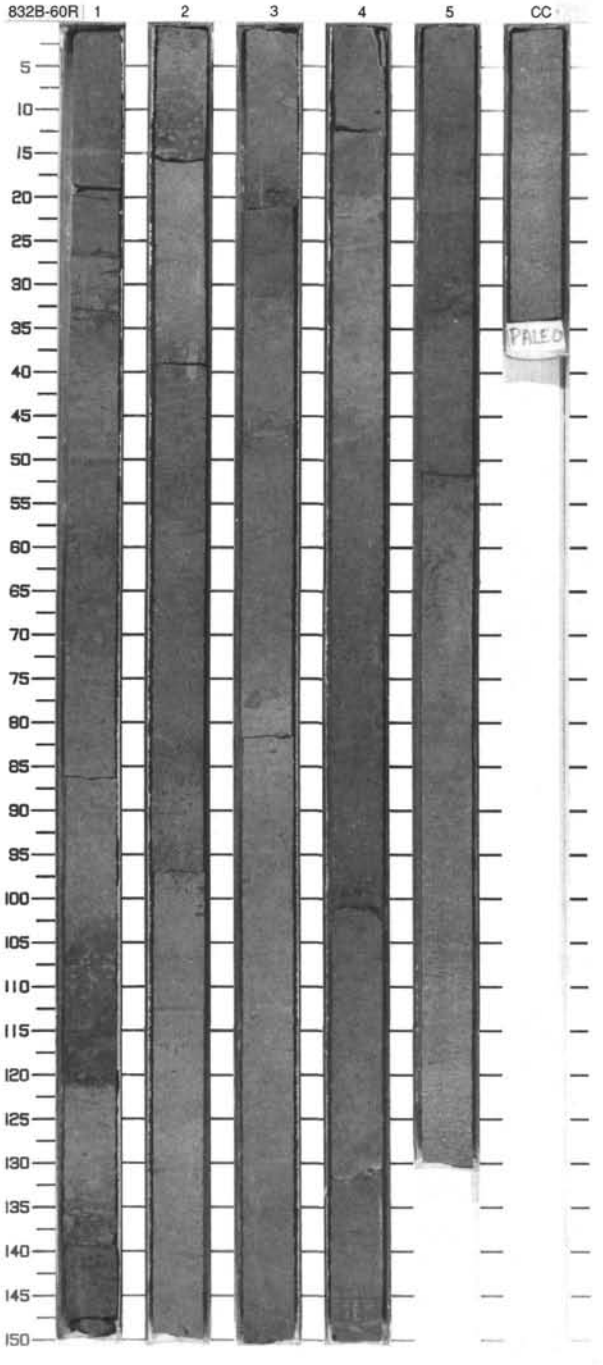
CLAYEY CALCAREOUS SILTY MIXED SEDIMENTARY ROCK

Major lithology: Most of the core consists of greenish gray (5GY 5/1 to 5GY 6/1), CLAYEY CALCAREOUS SILTY MIXED SEDIMENTARY ROCK. Trace fossils, including burrows, trails and pellets, are ubiquitous. At Section 2, 110 cm, and Section 4, 146 cm are very thin (<1 mm), green horizontal beds, apparently chloritic, of unknown origin.

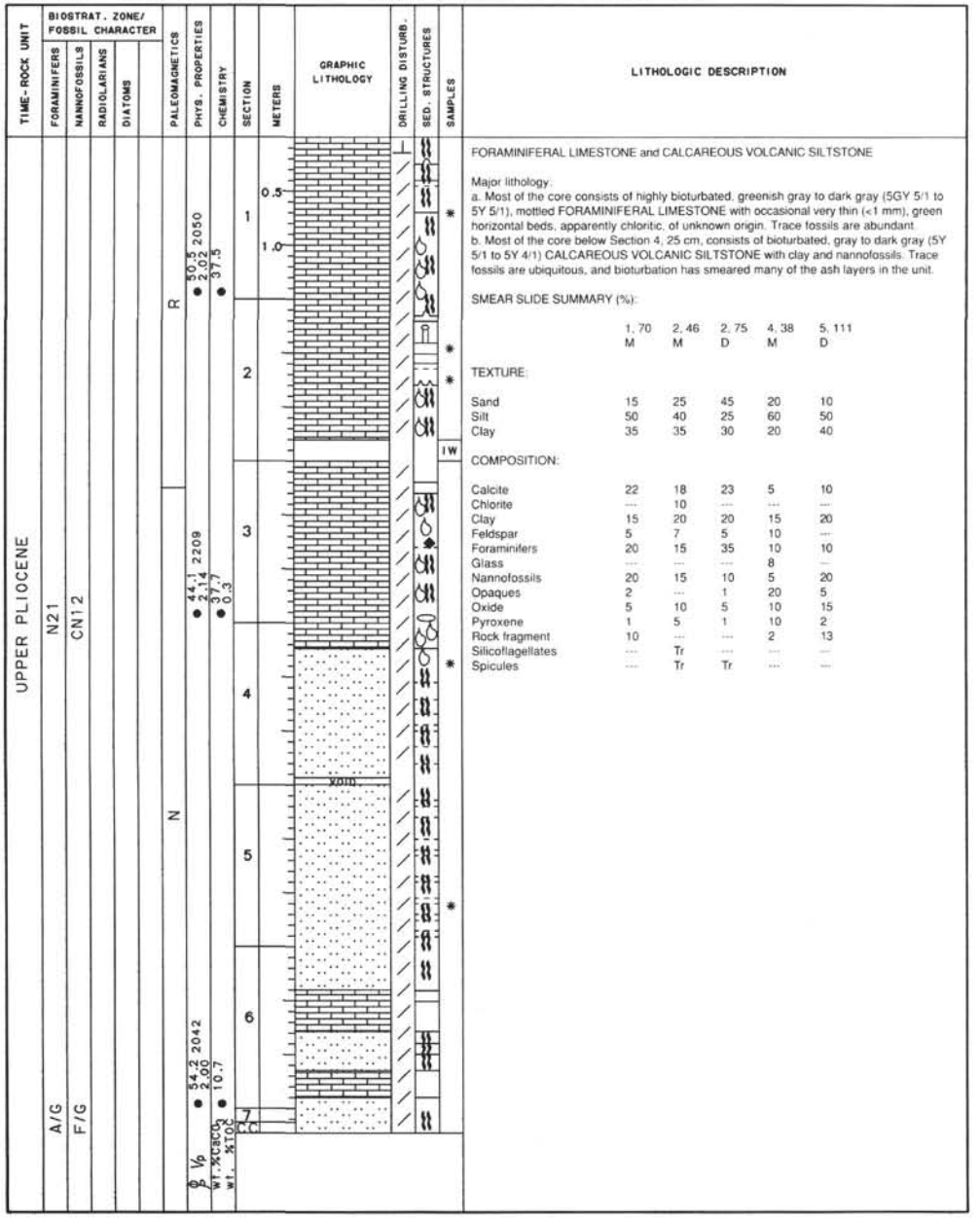
Minor lithology: Section 5, 40–131 cm, and Section CC consist of greenish gray (5GY 6/1) silty limestone with foraminifers and nannofossils. Trace fossils continue to be very abundant.

SMEAR SLIDE SUMMARY (%):

	3, 68 D	5, 67 D
TEXTURE:		
Sand	15	20
Silt	45	50
Clay	40	30
COMPOSITION:		
Calcite	20	24
Chlorite	---	1
Clay	25	10
Clinopyroxene	1	1
Feldspar	7	5
Foraminifers	5	20
Nannofossils	15	20
Opaques	2	2
Oxide	12	7
Rock fragment	13	10
Spicules	---	Tr



SITE 832 HOLE B CORE 61R CORED INTERVAL 720.8-730.5 mbsf

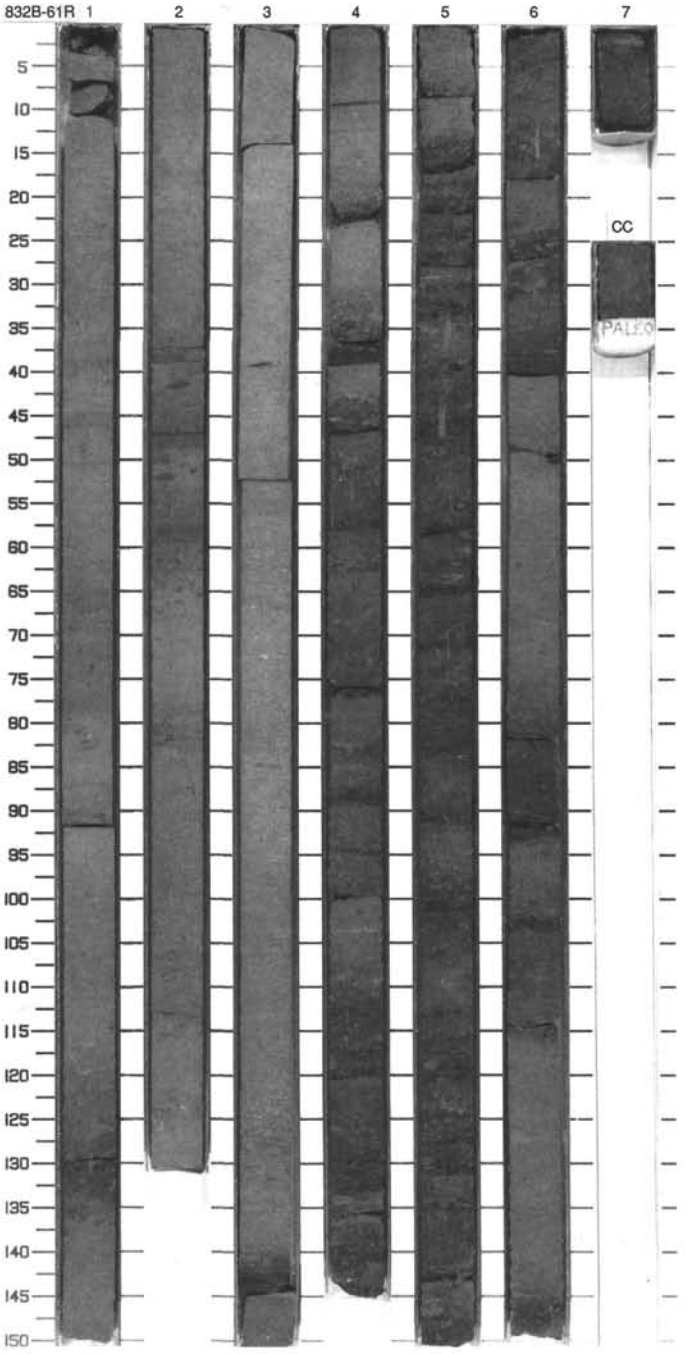


FORAMINIFERAL LIMESTONE and CALCAREOUS VOLCANIC SILTSTONE

Major lithology:
a. Most of the core consists of highly bioturbated, greenish gray to dark gray (5GY 5/1 to 5Y 5/1), mottled FORAMINIFERAL LIMESTONE with occasional very thin (<1 mm), green horizontal beds, apparently chloritic, of unknown origin. Trace fossils are abundant.
b. Most of the core below Section 4, 25 cm, consists of bioturbated, gray to dark gray (5Y 5/1 to 5Y 4/1) CALCAREOUS VOLCANIC SILTSTONE with clay and nannofossils. Trace fossils are ubiquitous, and bioturbation has smeared many of the ash layers in the unit.

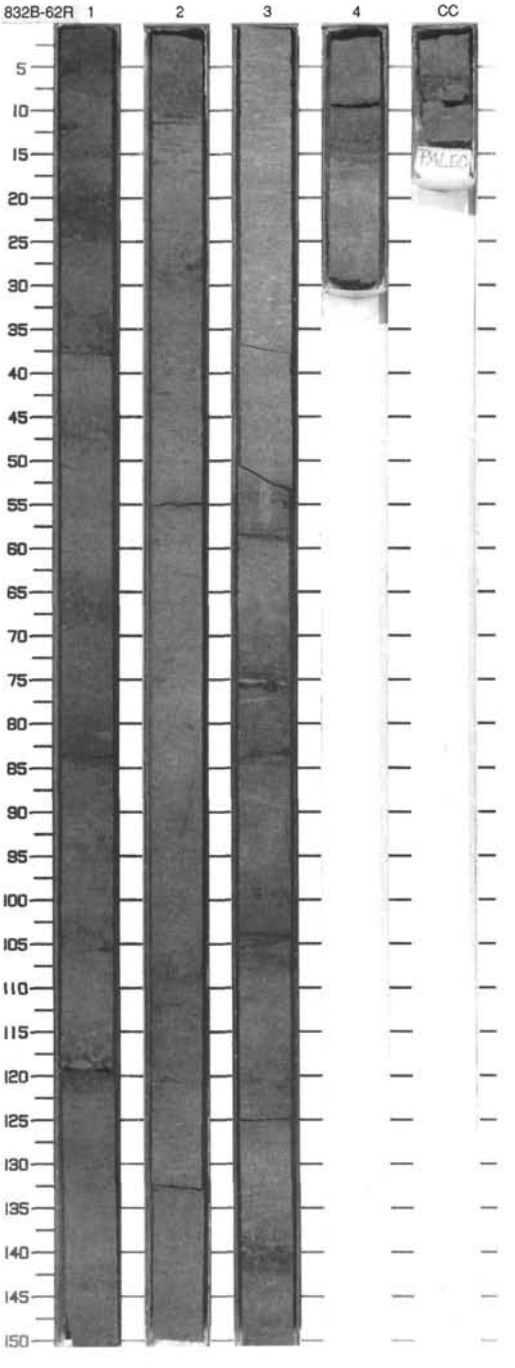
SMEAR SLIDE SUMMARY (%):

	1, 70 M	2, 46 M	2, 75 D	4, 38 M	5, 111 D
TEXTURE:					
Sand	15	25	45	20	10
Silt	50	40	25	60	50
Clay	35	35	30	20	40
COMPOSITION:					
Calcite	22	18	23	5	10
Chlorite	---	10	---	---	---
Clay	15	20	20	15	20
Feldspar	5	7	5	10	---
Foraminifers	20	15	35	10	10
Glass	---	---	---	8	---
Nannofossils	20	15	10	5	20
Opaques	2	---	1	20	5
Oxide	5	10	5	10	15
Pyroxene	1	5	1	10	2
Rock fragment	10	---	---	2	13
Silicoflagellates	---	Tr	---	---	---
Spicules	---	Tr	Tr	---	---



SITE 832 HOLE B CORE 62R CORED INTERVAL 730.5-739.8 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
UPPER PLIOCENE	A/G	N21	R/G	CN12	N	ϕ Vp 50.7 2075 2.04	wt.% CaCO3 27.3 wt.% Ti 0.2	1	0.5					SILTY LIMESTONE
									1.0					Major lithology: The core consists of gray to dark gray (5Y 5/1 to 5Y 4/1) SILTY LIMESTONE with clay. Section 3, 59–150 cm, is rich in foraminifers. Section 1 contains many ash layers which have been heavily bioturbated. Trace fossils are common. At Section 3, 102 cm, there is a thin chloritic layer crossing a burrow.
						ϕ Vp 44.2 2205 2.07	wt.% CaCO3 35.7	2						
								3						
								4						
								CC						



SITE 832 HOLE B CORE 63R CORED INTERVAL 739.8-749.5 mbsf

TIME-ROCK UNIT: LOWER PLIOCENE

BIOSTRAT. ZONE/FOSSIL CHARACTER: FORAMINIFERS A/G N19 - N20; NANNOFOSSILS F/M CN11; RADIOLARIANS; DIATOMS

PALEOMAGNETICS: N

PHYS. PROPERTIES: ● 44.6 2211 2.09; ● 39.7 2663 2.19; ● 33.7; ● 39.9 2270 2.19; ● 12.9 0.1; ● 62.0

CHEMISTRY: Vp; wt. % CaCO3; wt. % TOC

SECTION: 1, 2, 3, 4, 5, 6, 7, CC

METERS: 0.5, 1.0

GRAPHIC LITHOLOGY

DRILLING DISTURB.

SED. STRUCTURES

SAMPLES: *, IW, *

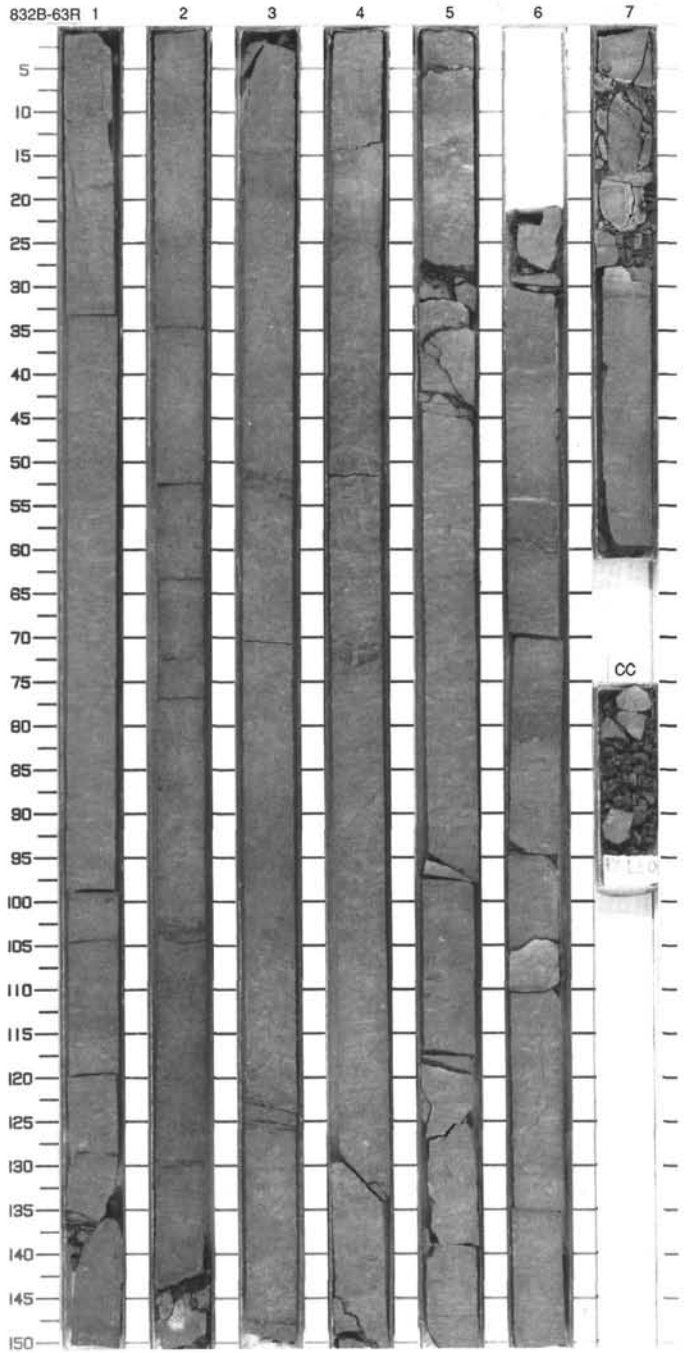
LITHOLOGIC DESCRIPTION

CALCAREOUS LIMESTONE

Major lithology: This entire core consists of greenish gray (5GY 5/1) CALCAREOUS LIMESTONE with foraminifers. The sediment is heavily bioturbated with numerous trace fossils. Bioturbation is less intense in Section 7. Numerous slickensides with very glossy, hard surfaces occur throughout the core, but fractures and slickensides are particularly common in Sections 5, 6, and CC.

SMEAR SLIDE SUMMARY (%):

	1, 69 D	7, 50 D
TEXTURE:		
Sand	8	...
Silt	25	60
Clay	67	40
COMPOSITION:		
Calcite	80	72
Feldspar	3	2
Foraminifers	5	15
Glass	...	Tr
Nannofossils	4	7
Opaques	5	4



SITE 832 HOLE B CORE 64R CORED INTERVAL 749.5-759.2 mbsf

TIME-ROCK UNIT: LOWER PLIOCENE

BIOSTRAT. ZONE/FOSSIL CHARACTER: FORAMINIFERS N19 A/G; NANNOFOSSILS CN11 F/M; RADIOLARIANS; DIATOMS

PALEOMAGNETICS: N R

PHYS. PROPERTIES: ρ ● 40.6 2.21 45.0 2.43 55.3 0.4 51.6; ϕ ▽ 2487 2389; wt. % CaCO3; wt. % TOC

CHEMISTRY

SECTION: 1 2 3 4 5 CC

METERS: 0.5 1.0

GRAPHIC LITHOLOGY

DRILLING DISTURB.

SED. STRUCTURES

SAMPLES

LITHOLOGIC DESCRIPTION

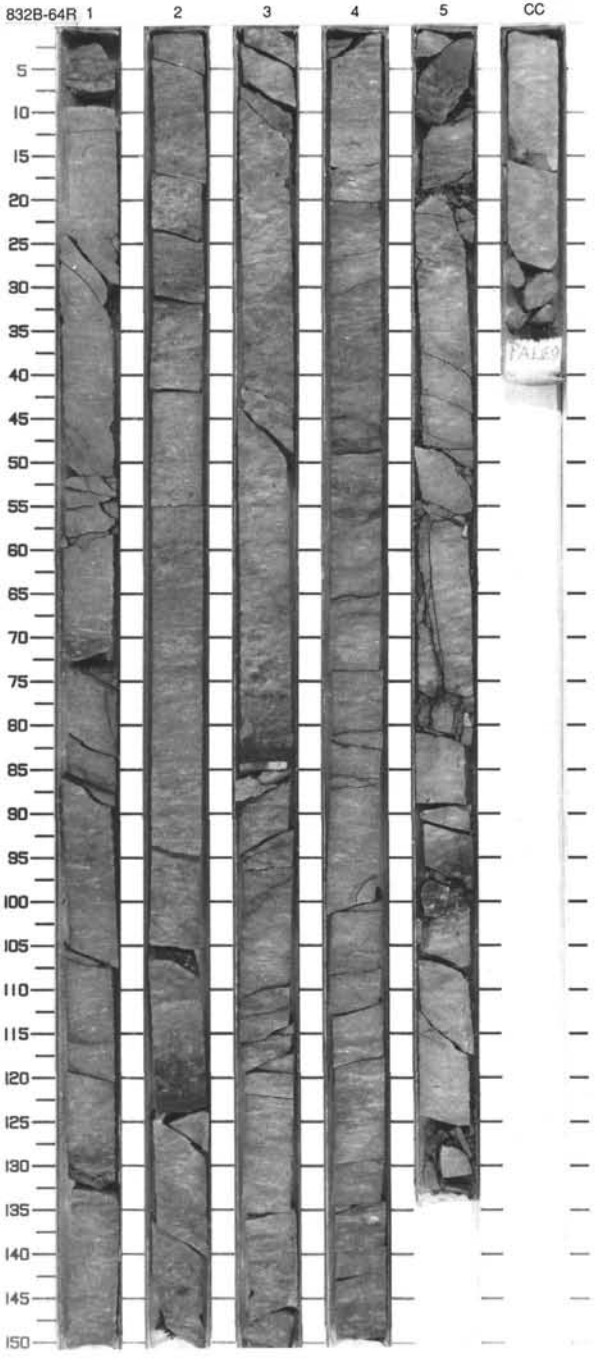
FORAMINIFERAL CLAYEY CALCAREOUS LIMESTONE

Major lithology: Most of this core is slightly fractured, mottled gray (5Y 5/1) FORAMINIFERAL CLAYEY CALCAREOUS LIMESTONE. The mottling is somewhat vague throughout the core. Hard glossy slickensides occur on most fractured surfaces. Bedding is horizontal to slightly inclined.

Minor lithology: A few layers of normally graded very dark gray (5Y 3/1) to black (5Y 2.5/1) coarse volcanic ash occur and range in thickness from 5 to 9 cm. Some of the ash contains minor proportions of calcareous grains and clay (Section 2, 124–125 cm) or glass (Section 3, 84–85 cm).

SMEAR SLIDE SUMMARY (%):

	2, 55 D	2, 124 M	3, 84 M
TEXTURE:			
Sand	30	60	70
Silt	30	30	30
Clay	40	10	0
COMPOSITION:			
Aggregates	---	25	---
Calcite	30	15	---
Clay	30	10	---
Feldspar	---	25	20
Foraminifers	25	1	---
Glass	---	0	10
Nannofossils	10	Tr	---
Opaques	---	15	35
Oxide	---	2	5
Palagonite	---	---	15
Pyroxene	---	5	15
Quartz	5	---	---



SITE 832 HOLE B CORE 65R CORED INTERVAL 759.2-768.8 mbsf

TIME-ROCK UNIT: LOWER PLIOCENE

BIOSTRAT. ZONE/FOSSIL CHARACTER: FORAMINIFERS C/G; NANNOFOSSILS N19; RADIOLARIANS CN11; DIATOMS F/M

PALEOMAGNETICS: R

PHYS. PROPERTIES: N; 43.6 2533; 2.69

CHEMISTRY: N; 59.3

SECTION: 1 2 3 4 5 6 7 CC

METERS: 0.5 1.0

GRAPHIC LITHOLOGY

DRILLING DISTURB.

SED. STRUCTURES

SAMPLES: *

LITHOLOGIC DESCRIPTION

FORAMINIFERAL NANNOFOSSIL LIMESTONE

Major lithology: This core is gray (5Y 5/1), mottled FORAMINIFERAL NANNOFOSSIL LIMESTONE with calcareous grains and clay. Mottling is somewhat vague throughout the core.

Minor lithology: Throughout the core are dark gray (5Y 3/1), to black (5Y 2.5/1) volcanic ash layers ranging from 2 to 14 cm in thickness. Some of the ash layers have normally graded bedding, but burrowing has disrupted many of them. The ash layers are horizontal to slightly inclined.

SMEAR SLIDE SUMMARY (%):

	2, 90 D
TEXTURE:	
Sand	30
Silt	30
Clay	40
COMPOSITION:	
Calcite	20
Clay	10
Feldspar	3
Foraminifers	30
Nannofossils	30
Opaques	5
Pyroxene	2

R; 40.5 2306; 2.25

R; 43.3 2515; 2.47

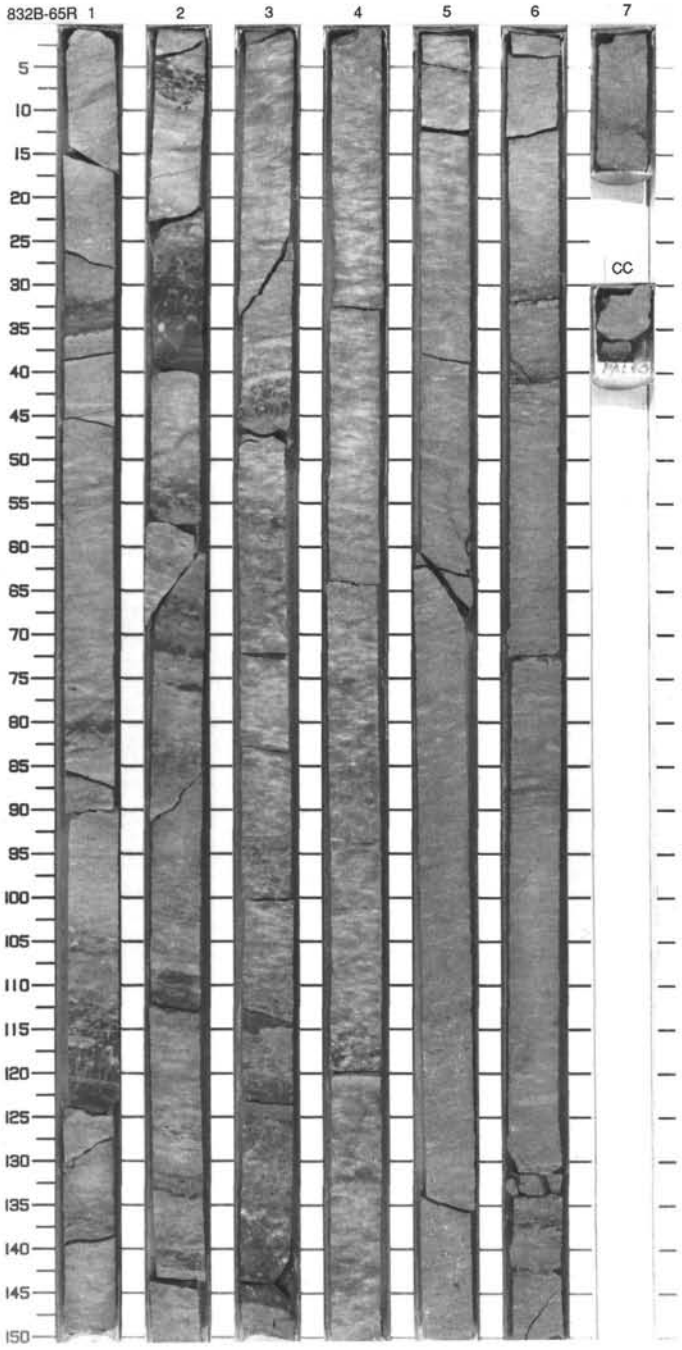
64.8; 0.5

64.4

Φ Vp β

wt.-%CaCO3

wt.-%TOC



SITE 832 HOLE B CORE 66R CORED INTERVAL 768.8-778.6 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
LOWER PLIOCENE	F/G	N18			R	● 28.8 2780 2.41 ● 81.4		1	0.5 1.0				
	F/G	CN9				● 46.6 1981 2.11 ● 19.3 0.4		2		VOID			*
								3		VOID		F C F C	* IW
								4					
								CC					

LITHOLOGIC DESCRIPTION

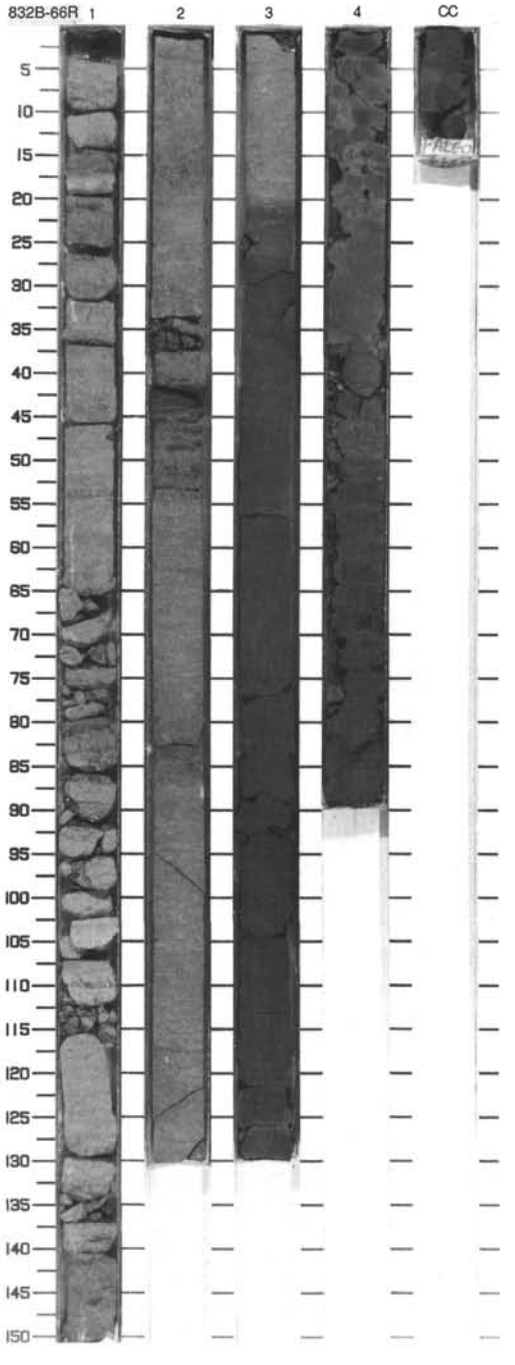
NANNOFOSSIL FORAMINIFERAL LIMESTONE and SANDY VOLCANIC SILTSTONE

Major lithology:
a. Most of this core consists of light gray (5Y 6/1) to gray (5Y 5/1), mottled, bioturbated NANNOFOSSIL FORAMINIFERAL LIMESTONE with clay.
b. From Section 3, 20 cm, to Section CC, 15 cm, the core consists of partially lithified, mottled, bioturbated, dark gray (5Y 4/1) SANDY VOLCANIC SILTSTONE with chlorite, clay, calcareous grains, and nannofossils. The siltstone is vaguely laminated, but bioturbation has obscured most primary sedimentary structures. In Section 3 laminae are planar to slightly wavy with beds 1–2 mm to 1 cm thick.

Minor lithology: Within the limestone are interbedded thin layers (≤1 cm thick) of dark greenish gray (5GY 4/1) foraminiferal silty volcanic sand with zeolites.

SMEAR SLIDE SUMMARY (%):

	2, 90 D
TEXTURE:	
Sand	30
Silt	30
Clay	40
COMPOSITION:	
Calcite	20
Clay	10
Feldspar	3
Foraminifers	30
Nannofossils	30
Opaques	5
Pyroxene	2



SITE 832 HOLE B CORE 67R CORED INTERVAL 778.6-788.2 mbsf

TIME-ROCK UNIT: LOWER PLIOCENE

BIOSTRAT. ZONE/FOSSIL CHARACTER: FORAMINIFERS A/M; NANNOFOSSILS N18; RADIOLARIANS C/G; DIATOMS CN9

PALEOMAGNETICS: ?

PHYS. PROPERTIES: ● 44.8 2.10 2102

CHEMISTRY: ● 25.9 0.3

SECTION: 1, 2, CC

METERS: 0.5, 1.0

GRAPHIC LITHOLOGY

DRILLING DISTURB.

SED. STRUCTURES

SAMPLES: * *

LITHOLOGIC DESCRIPTION

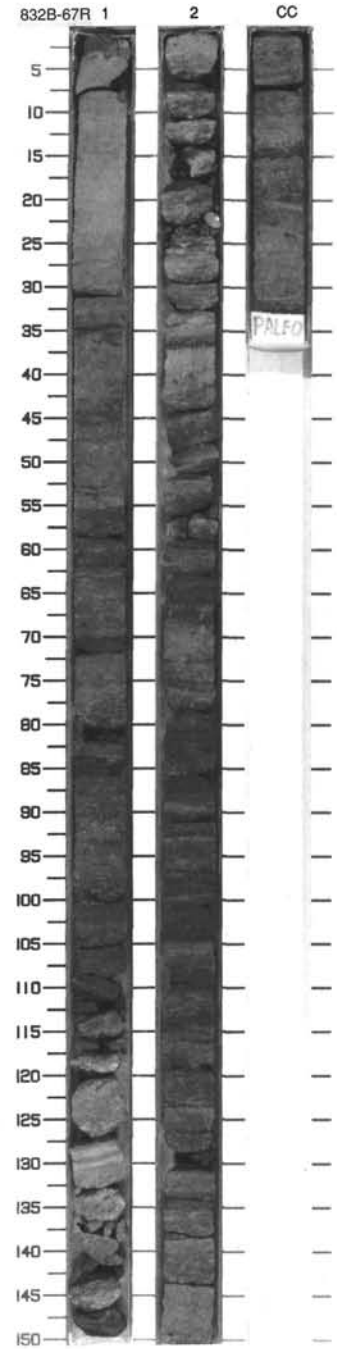
VOLCANIC SANDSTONE and FORAMINIFERAL LIMESTONE

Major lithology:
a. About 60% of the core consists of partially lithified, dark greenish gray (5GY 4/1) VOLCANIC SANDSTONE with silt and foraminifers.
b. About 40% of the core consists of light gray (5Y 6/1) to gray (5Y 5/1) FORAMINIFERAL LIMESTONE with nannofossils, clay, and volcanic mineral grains. This sediment occurs as interbedded layers 0.5–3 cm thick within the sandstone.

Moderate bioturbation has obscured the bedding in both lithologies. Small pieces of wood (10 x 1 mm) occur in Section 1, 83 and 110 cm, and in Section CC, 35 cm.

SMEAR SLIDE SUMMARY (%):

	2, 46 M	2, 70 D
TEXTURE:		
Sand	80	70
Silt	15	15
Clay	5	15
COMPOSITION:		
Calcite	---	5
Chlorite	10	10
Clay	---	10
Feldspar	15	10
Foraminifers	10	50
Glass	5	---
Hornblende	5	---
Nannofossils	---	15
Opaques	5	---
Pyroxene	5	---
Rock fragment	40	---
Zeolite	3	---



SITE 832 HOLE B CORE 68R CORED INTERVAL 788.2-797.8 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
LOWER PLIOCENE	C/P N18	R/M ?			?			CC					*

LITHOLOGIC DESCRIPTION

SILTY VOLCANIC SANDSTONE and FORAMINIFERAL LIMESTONE

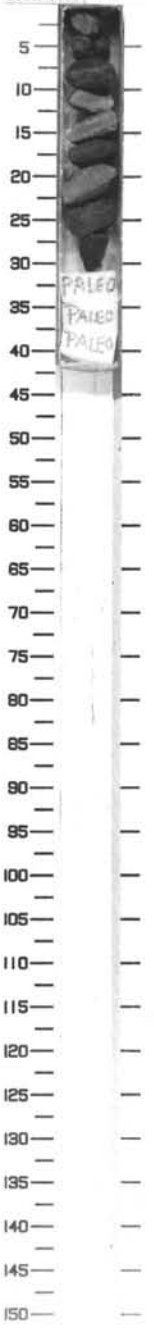
Major lithology:
a. About 60% of the core consists of partially lithified, dark greenish gray (5GY 4/1) SILTY VOLCANIC SANDSTONE with foraminifers.
b. About 40% of the core consists of light gray (5Y 6/1) to gray (5Y 5/1) FORAMINIFERAL LIMESTONE with nannofossils, clay, and volcanic mineral grains. This sediment occurs as interbedded layers 1–3 cm thick.

Moderate bioturbation occurs throughout. Small pieces of wood (5 x 1 mm) occur in Section CC, 22 cm.

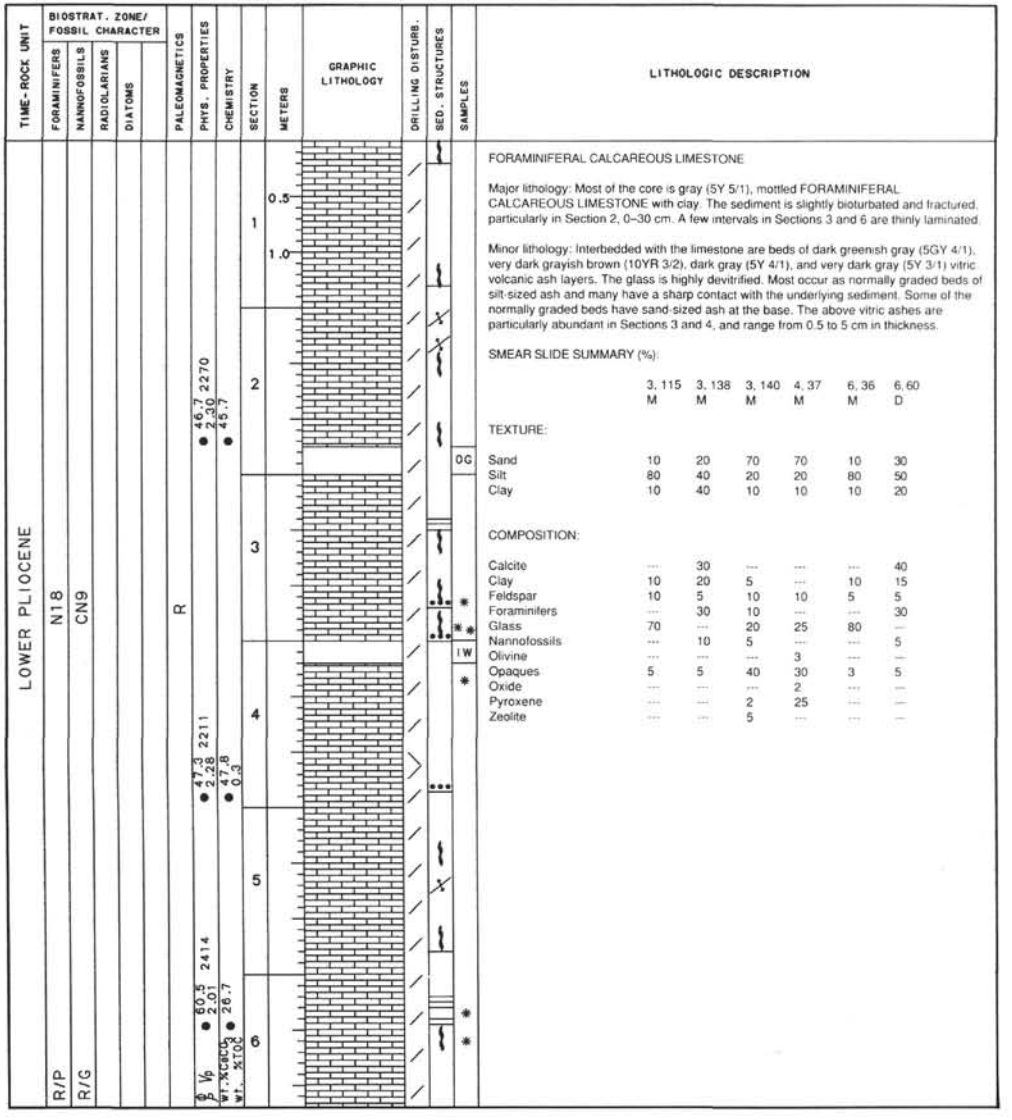
SMEAR SLIDE SUMMARY (%):

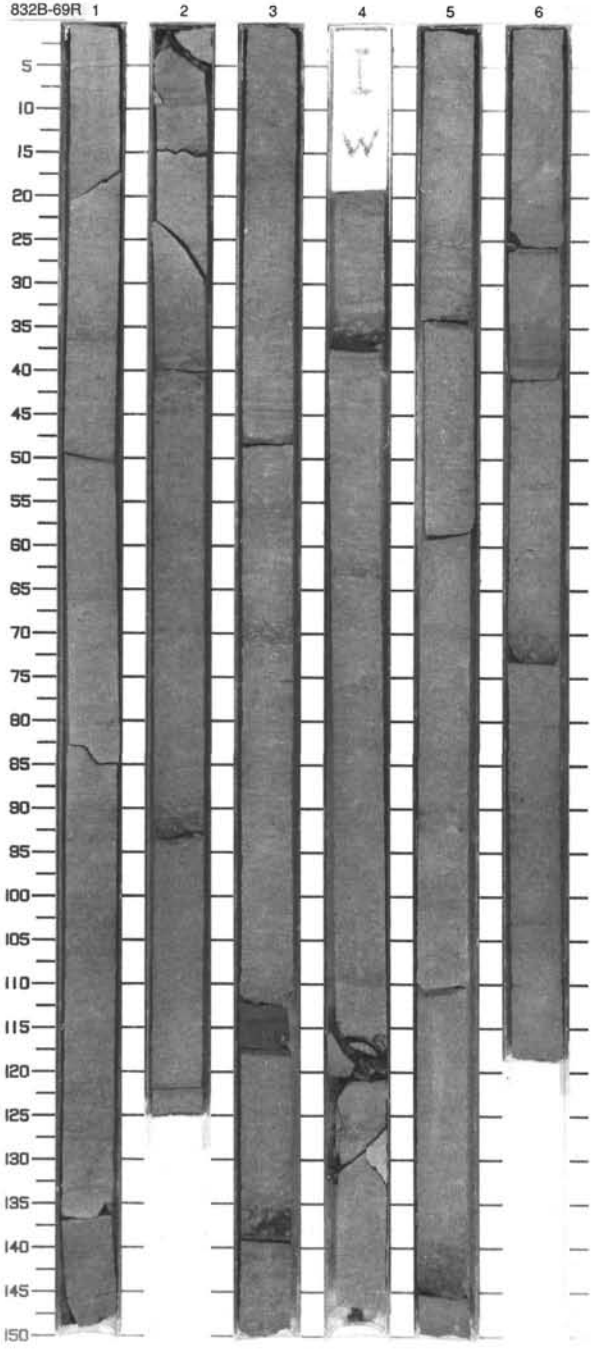
	CC, 21 D	CC, 24 D
TEXTURE:		
Sand	80	80
Silt	10	10
Clay	10	10
COMPOSITION:		
Calcite	20	—
Chlorite	—	30
Clay	10	10
Feldspar	5	10
Foraminifers	40	25
Glass	—	5
Nannofossils	5	Tr
Olivine	2	Tr
Opaques	5	10
Oxide	2	2
Pyroxene	—	5
Serpentine	10	—
Zeolite	—	2

832B-68R CC



SITE 832 HOLE B CORE 69R CORED INTERVAL 797.8-807.7 mbsf





SITE 832 HOLE B CORE 70R CORED INTERVAL 807.7-817.4 mbsf

TIME-ROCK UNIT: LOWER PLIOCENE

BIOSTRAT. ZONE/FOSSIL CHARACTER
- FORAMINIFERS: C/M; F/G
- NANNOFOSSILS: N18; CN9
- RADIOLARIANS
- DIATOMS
- PALEOMAGNETICS: N
- PHYS. PROPERTIES: ρ 2.43 2.12 2.39 2.24; Vp 2416 2192 2743 2654; wt. %CaCO3 54.0 47.9 62.3 0.5
- CHEMISTRY

SECTION: 1, 2, 3, 4, 5, 6, 7, CC

METERS: 0.5, 1.0

GRAPHIC LITHOLOGY

DRILLING DISTURB.

SED. STRUCTURES

SAMPLES

LITHOLOGIC DESCRIPTION

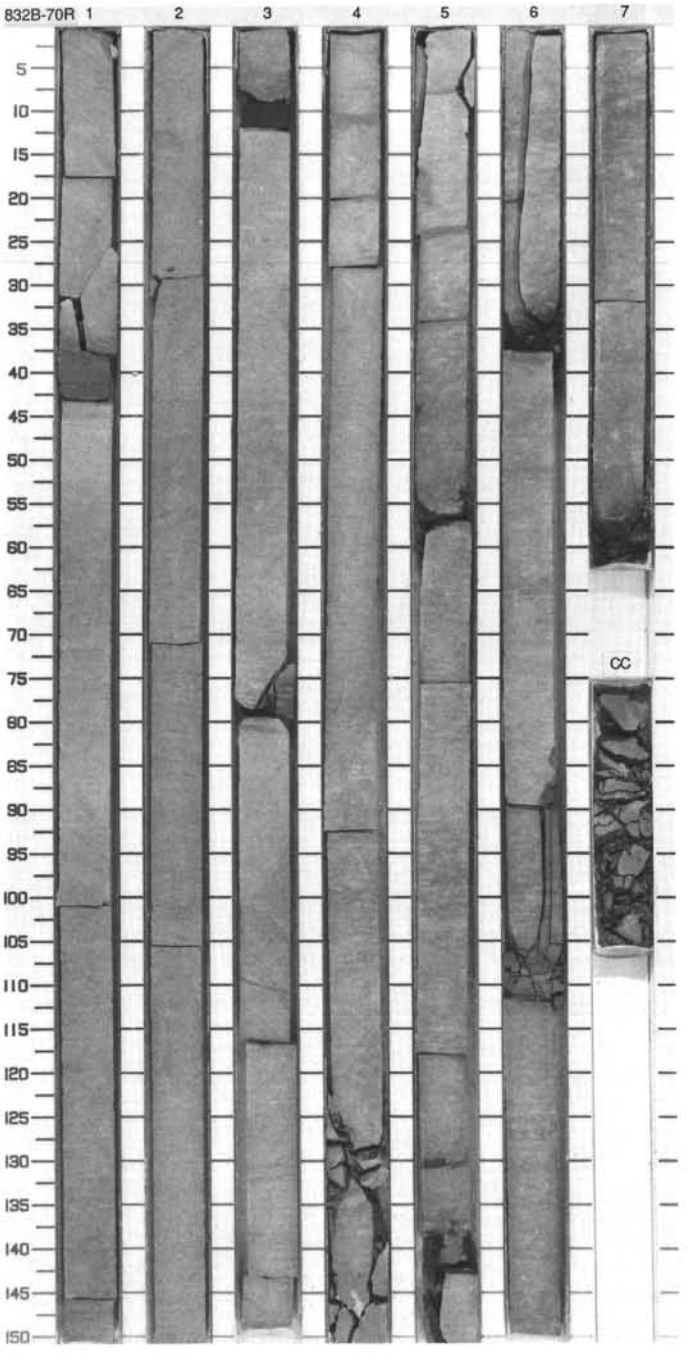
FORAMINIFERAL CALCAREOUS LIMESTONE

Major lithology: This core is gray (5Y 5/1), mottled FORAMINIFERAL CALCAREOUS LIMESTONE with clay.

Minor lithology: Dark gray (5Y 4/1) vitric volcanic ash layers occur sporadically. The ash layers range from about 1 to 12 cm in thickness. In Section 1, 35–42 cm, an ash layer is sparsely burrowed at its top, but its base is intact. There is a notable decrease of mottling and burrowing of the ash layers, some of which are very rich in glass (e.g., Section 3, 10–11 cm, contains 85% volcanic glass).

SMEAR SLIDE SUMMARY (%):

	1, 80 D	3, 10 M	6, 38 M
TEXTURE:			
Sand	50	70	70
Silt	30	25	20
Clay	20	5	10
COMPOSITION:			
Amphibole	---	1	---
Calcite	40	---	---
Clay	15	---	10
Feldspar	5	5	---
Foraminifers	30	---	---
Glass	---	85	25
Nannofossils	5	---	---
Opaques	5	5	50
Oxide	---	1	2
Pyroxene	---	---	10



SITE 832 HOLE B CORE 71R CORED INTERVAL 817.4-827.0 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
UPPER MIOCENE	N17	CN9	A/G	R/G	R	N	• 47.5 2206 • 2.02 • 42.6 2172 • 1.91 • 42.2 • 0.3	Φ Vp β wt.-%CaCO3 wt.-%TOC	1 2 3 4 5 CC	0.5 1.0			* *

LITHOLOGIC DESCRIPTION

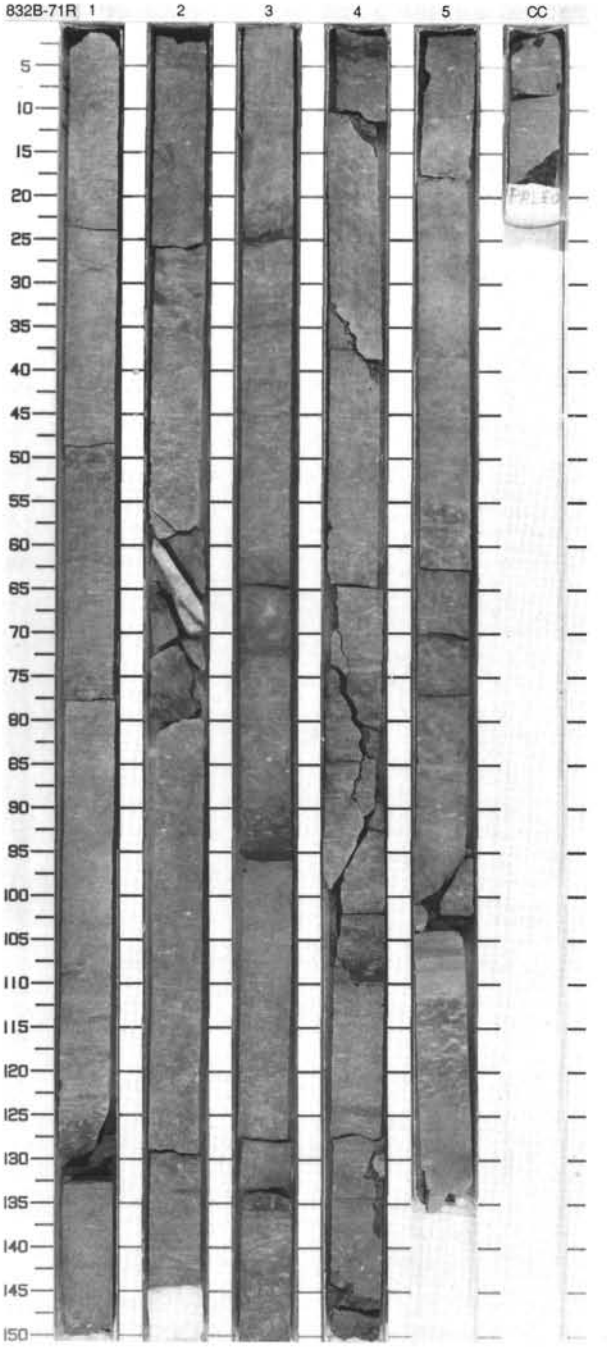
CALCAREOUS LIMESTONE

Major lithology: The core is dominantly mottled, bioturbated, greenish gray (10Y 5/1) CALCAREOUS LIMESTONE with foraminifers. Trace fossils are common. Fractures with slickensides occur in Sections 4, 5, and CC. Water escape structures are abundant in Section 5, 0–35 cm.

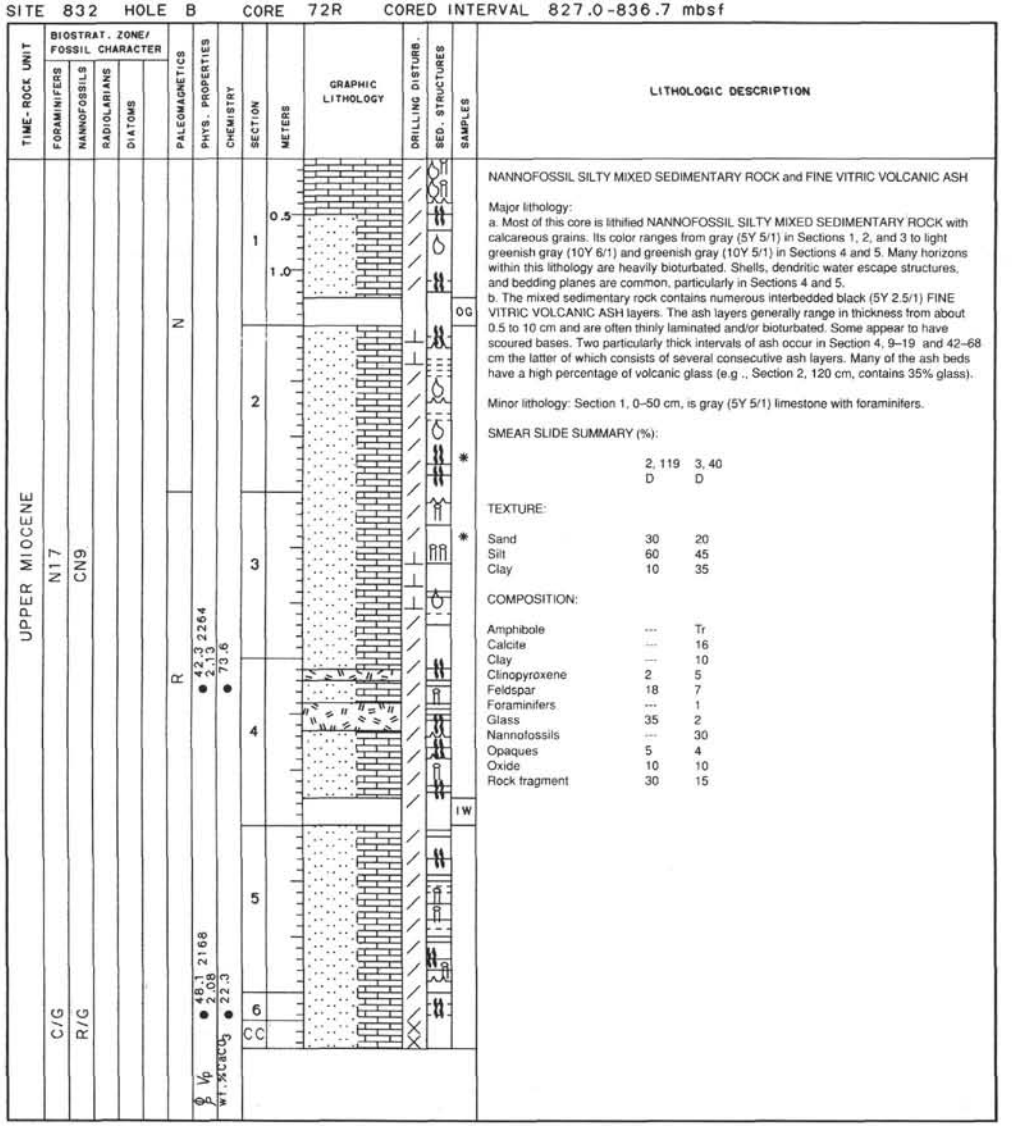
Minor lithology:
a. Volcanic ash layers are common as thinly laminated or normally graded interbeds 3–25 cm thick throughout the limestone. Many of the ash layers are mottled by burrowing.
b. Section 2, 60–70 cm, contains a white (10YR 8/1) to light gray (5Y 6/1) waxy vein of anhydrite or gypsum several cm thick. The vein fills a fracture that cuts the core at an angle of 55° to vertical. The limestone around the vein is darker and is fractured by possible dewatering structures. The fractured surfaces have slickensides.

SMEAR SLIDE SUMMARY (%):

	1, 128 M	3, 76 D
TEXTURE:		
Sand	---	---
Silt	65	30
Clay	35	70
COMPOSITION:		
Calcite	22	78
Chlorite	5	Tr
Clay	33	---
Clinopyroxene	2	3
Feldspar	10	1
Foraminifers	3	6
Glass	8	2
Nannofossils	1	7
Opaques	12	3
Oxide	4	---



SITE 832 HOLE B CORE 72R CORED INTERVAL 827.0-836.7 mbsf



LITHOLOGIC DESCRIPTION

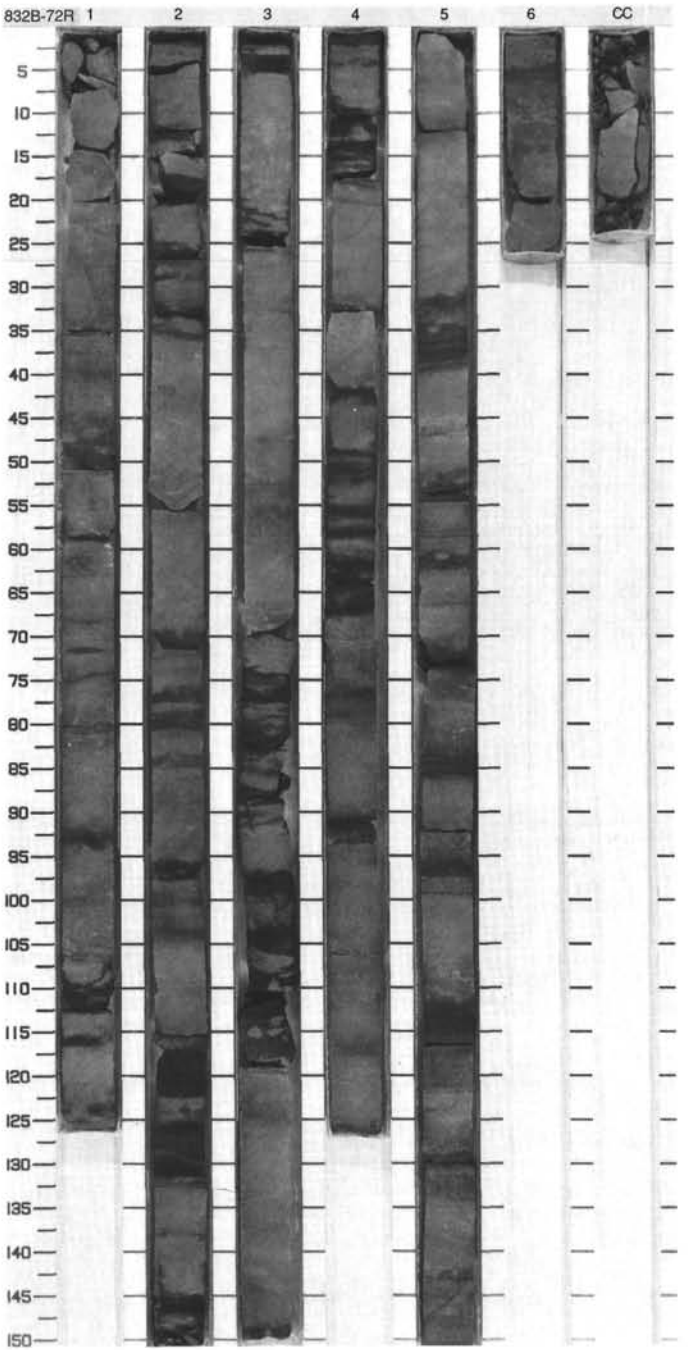
NANNOFOSSIL SILTY MIXED SEDIMENTARY ROCK and FINE VITRIC VOLCANIC ASH

Major lithology:
a. Most of this core is lithified NANNOFOSSIL SILTY MIXED SEDIMENTARY ROCK with calcareous grains. Its color ranges from gray (5Y 5/1) in Sections 1, 2, and 3 to light greenish gray (10Y 6/1) and greenish gray (10Y 5/1) in Sections 4 and 5. Many horizons within this lithology are heavily bioturbated. Shells, dendritic water escape structures, and bedding planes are common, particularly in Sections 4 and 5.
b. The mixed sedimentary rock contains numerous interbedded black (5Y 2.5/1) FINE VITRIC VOLCANIC ASH layers. The ash layers generally range in thickness from about 0.5 to 10 cm and are often thinly laminated and/or bioturbated. Some appear to have scoured bases. Two particularly thick intervals of ash occur in Section 4, 9–19 and 42–68 cm the latter of which consists of several consecutive ash layers. Many of the ash beds have a high percentage of volcanic glass (e.g ., Section 2, 120 cm, contains 35% glass).

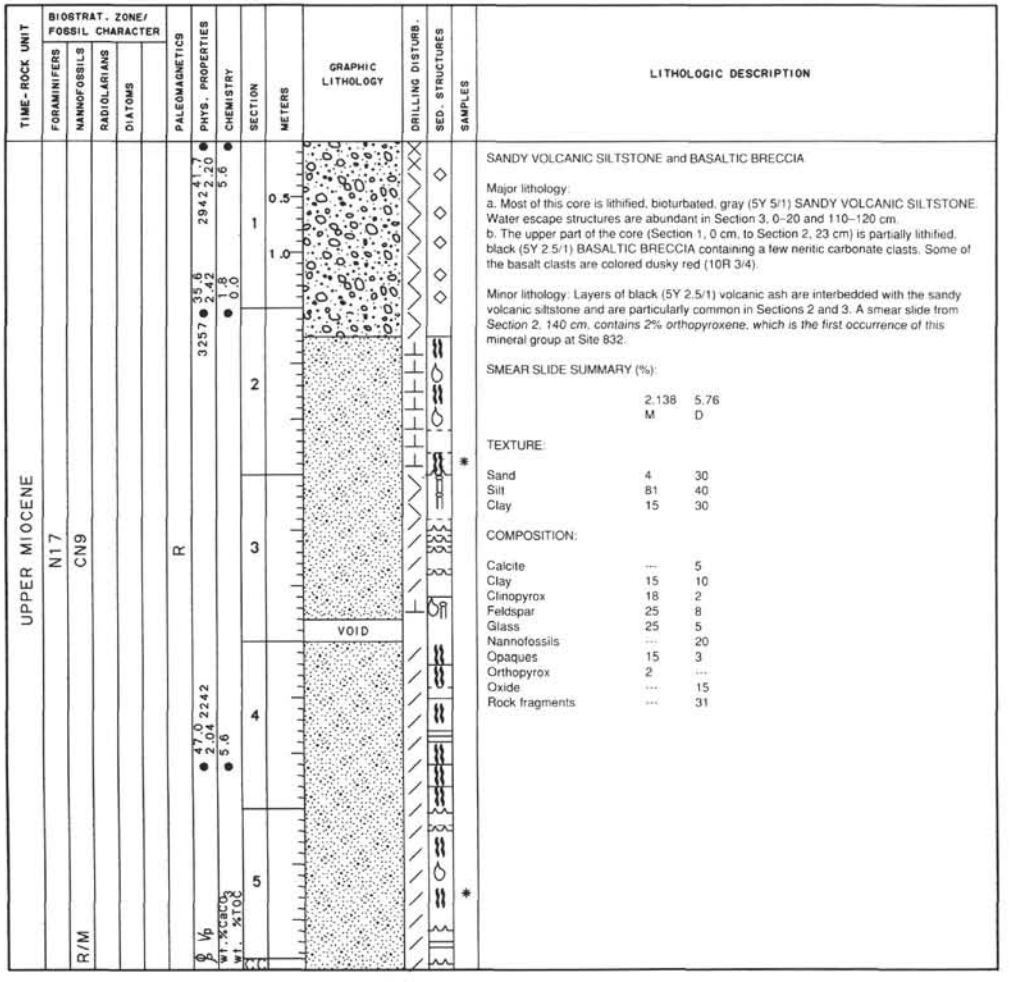
Minor lithology: Section 1, 0–50 cm, is gray (5Y 5/1) limestone with foraminifers.

SMEAR SLIDE SUMMARY (%):

	2, 119 D	3, 40 D
TEXTURE:		
Sand	30	20
Silt	60	45
Clay	10	35
COMPOSITION:		
Amphibole	---	Tr
Calcite	---	16
Clay	---	10
Clinopyroxene	2	5
Feldspar	18	7
Foraminifers	---	1
Glass	35	2
Nannofossils	---	30
Opaques	5	4
Oxide	10	10
Rock fragment	30	15



SITE 832 HOLE B CORE 73R CORED INTERVAL 836.7-846.4 mbsf



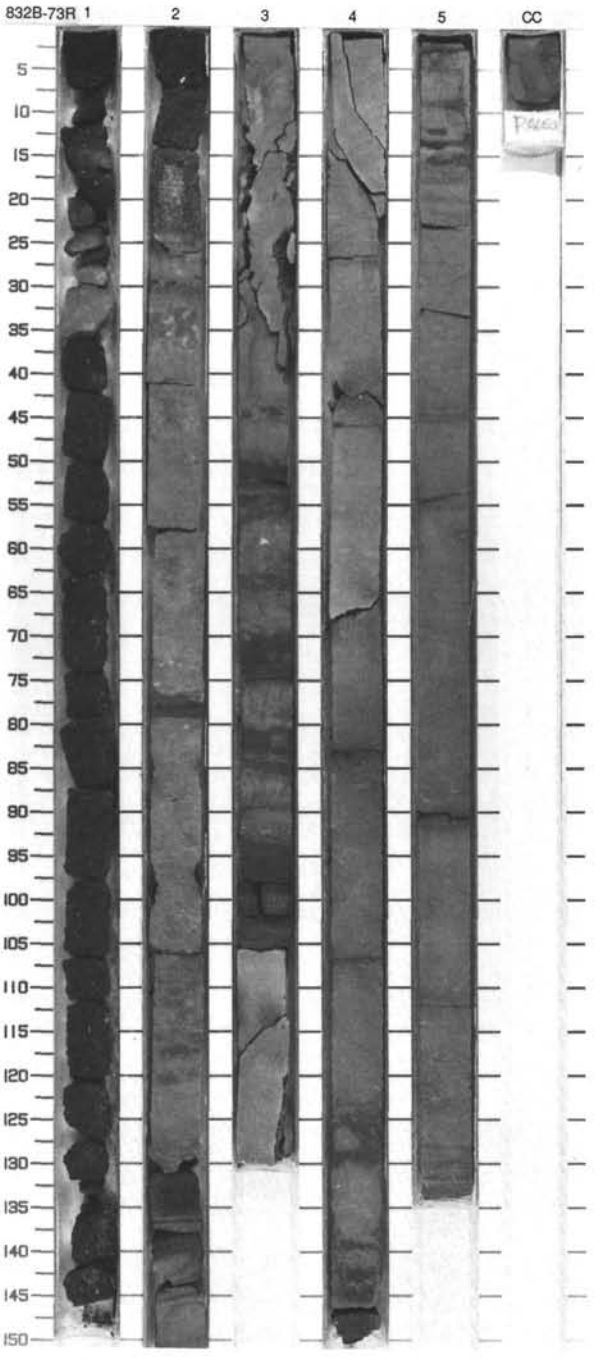
SANDY VOLCANIC SILTSTONE and BASALTIC BRECCIA

Major lithology:
a. Most of this core is lithified, bioturbated, gray (5Y 5/1) SANDY VOLCANIC SILTSTONE. Water escape structures are abundant in Section 3, 0–20 and 110–120 cm.
b. The upper part of the core (Section 1, 0 cm, to Section 2, 23 cm) is partially lithified, black (5Y 2.5/1) BASALTIC BRECCIA containing a few neritic carbonate clasts. Some of the basalt clasts are colored dusky red (10R 3/4).

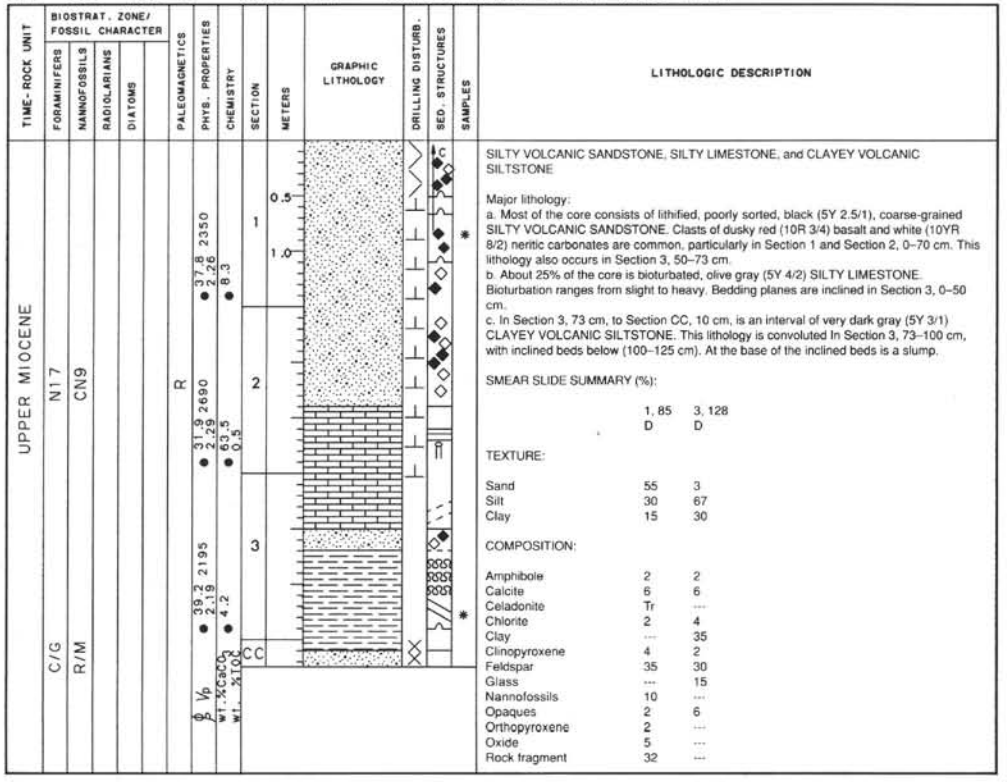
Minor lithology: Layers of black (5Y 2.5/1) volcanic ash are interbedded with the sandy volcanic siltstone and are particularly common in Sections 2 and 3. A smear slide from *Section 2, 140 cm, contains 2% orthopyroxene, which is the first occurrence of this* mineral group at Site 832.

SMEAR SLIDE SUMMARY (%):

	2,138 M	5,76 D
TEXTURE:		
Sand	4	30
Silt	81	40
Clay	15	30
COMPOSITION:		
Calcite	---	5
Clay	15	10
Clinopyrox	18	2
Feldspar	25	8
Glass	25	5
Nannofossils	---	20
Opaques	15	3
Orthopyrox	2	---
Oxide	---	15
Rock fragments	---	31



SITE 832 HOLE B CORE 74R CORED INTERVAL 846.4-856.1 mbsf



LITHOLOGIC DESCRIPTION

SILTY VOLCANIC SANDSTONE, SILTY LIMESTONE, and CLAYEY VOLCANIC SILTSTONE

Major lithology:

a. Most of the core consists of lithified, poorly sorted, black (5Y 2.5/1), coarse-grained SILTY VOLCANIC SANDSTONE. Clasts of dusky red (10R 3/4) basalt and white (10YR 8/2) neritic carbonates are common, particularly in Section 1 and Section 2, 0–70 cm. This lithology also occurs in Section 3, 50–73 cm.

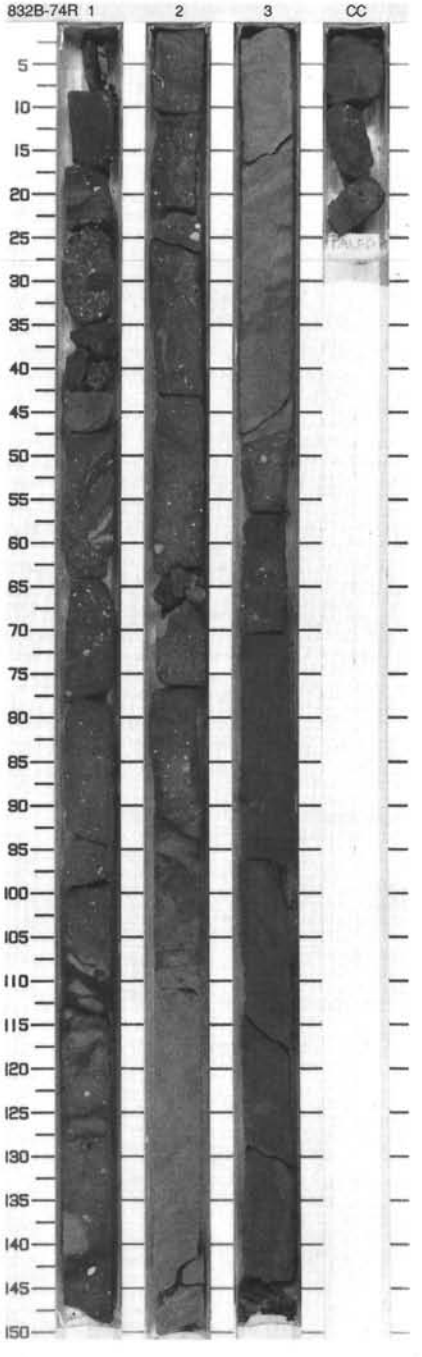
b. About 25% of the core is bioturbated, olive gray (5Y 4/2) SILTY LIMESTONE. Bioturbation ranges from slight to heavy. Bedding planes are inclined in Section 3, 0–50 cm.

c. In Section 3, 73 cm, to Section CC, 10 cm, is an interval of very dark gray (5Y 3/1) CLAYEY VOLCANIC SILTSTONE. This lithology is convoluted In Section 3, 73–100 cm, with inclined beds below (100–125 cm). At the base of the inclined beds is a slump.

SMEAR SLIDE SUMMARY (%):

	1, 85 D	3, 128 D
TEXTURE:		
Sand	55	3
Silt	30	67
Clay	15	30
COMPOSITION:		
Amphibole	2	2
Calcite	6	6
Celadonite	Tr	---
Chlorite	2	4
Clay	---	35
Clinopyroxene	4	2
Feldspar	35	30
Glass	---	15
Nannofossils	10	---
Opaques	2	6
Orthopyroxene	2	---
Oxide	5	---
Rock fragment	32	---

832B 75R NO RECOVERY

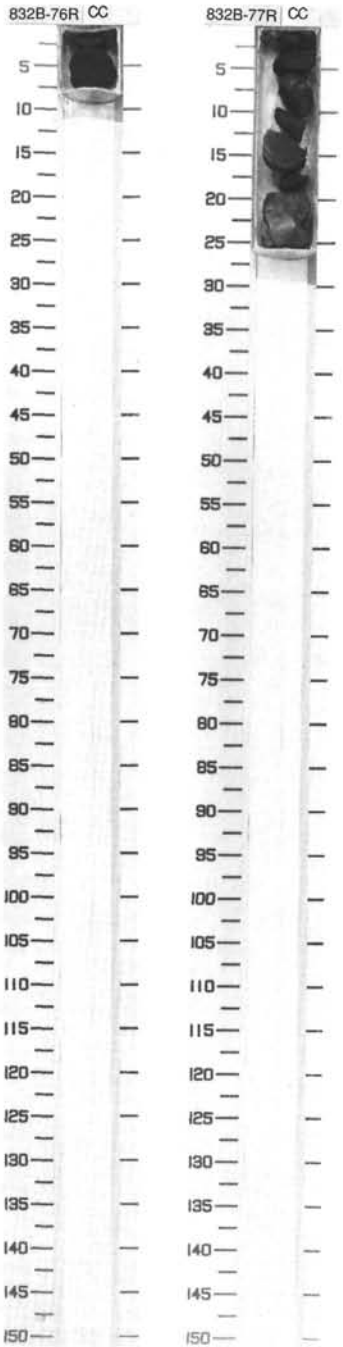


SITE 832 HOLE B CORE 76R CORED INTERVAL 865.7-875.3 mbsf

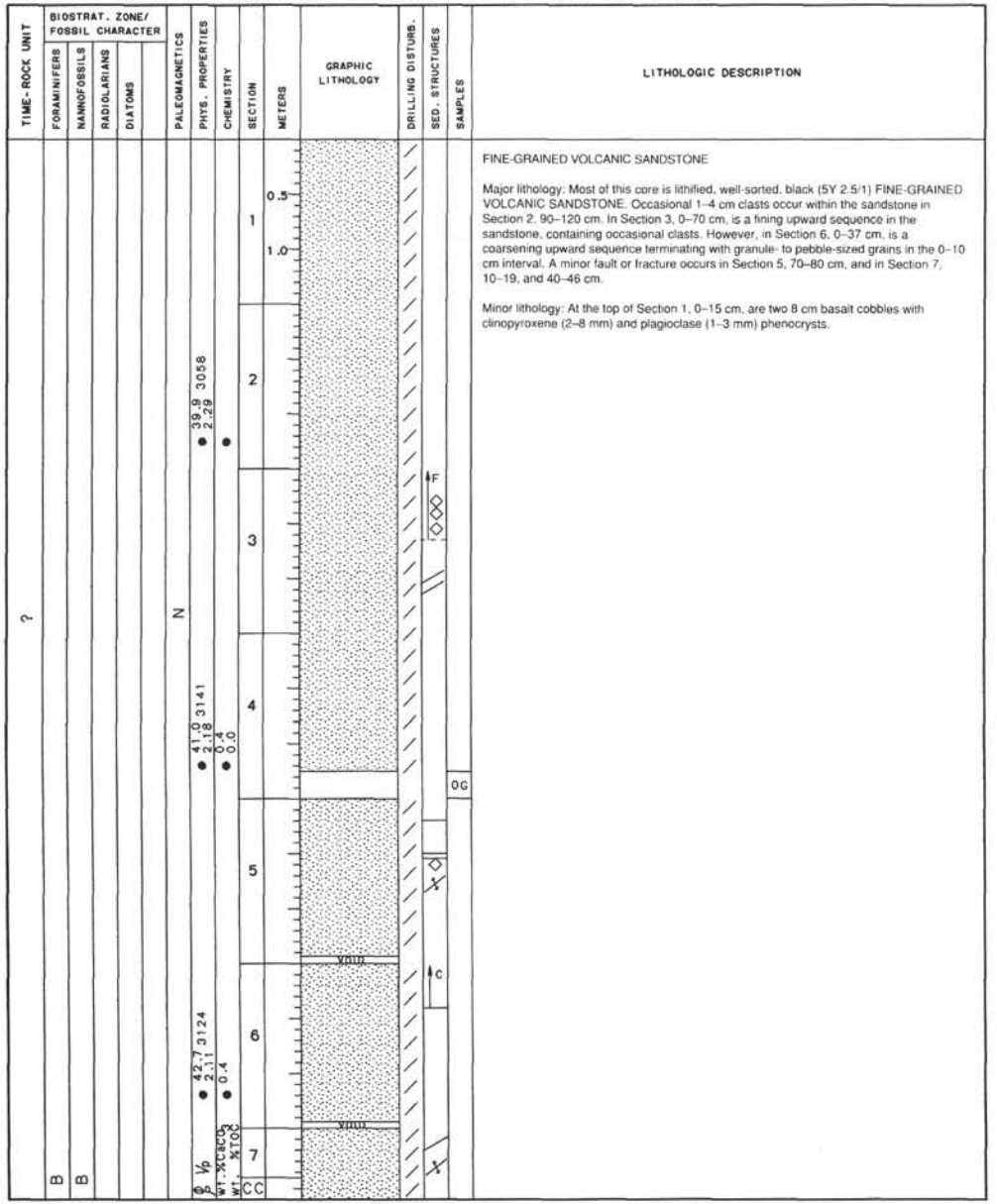
TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
?	?	R/P	?	R/G		ϕ ρ Vp 2618 38.8 2.26		CC			X			VOLCANIC SANDSTONE Major lithology: Section CC contains 2 cobbles of lithified black (5Y 2.5/1) VOLCANIC SANDSTONE.

SITE 832 HOLE B CORE 77R CORED INTERVAL 875.3-885.0 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
?	B	B				ϕ ρ Vp 3272 33.5 2.38	wt. %CaCO3 6.8 wt. %TOC 0.1	CC			X			VOLCANIC SANDSTONE Major lithology: The recovered material is 9 cobbles of lithified, structureless, black (5Y 2.5/1) VOLCANIC SANDSTONE.



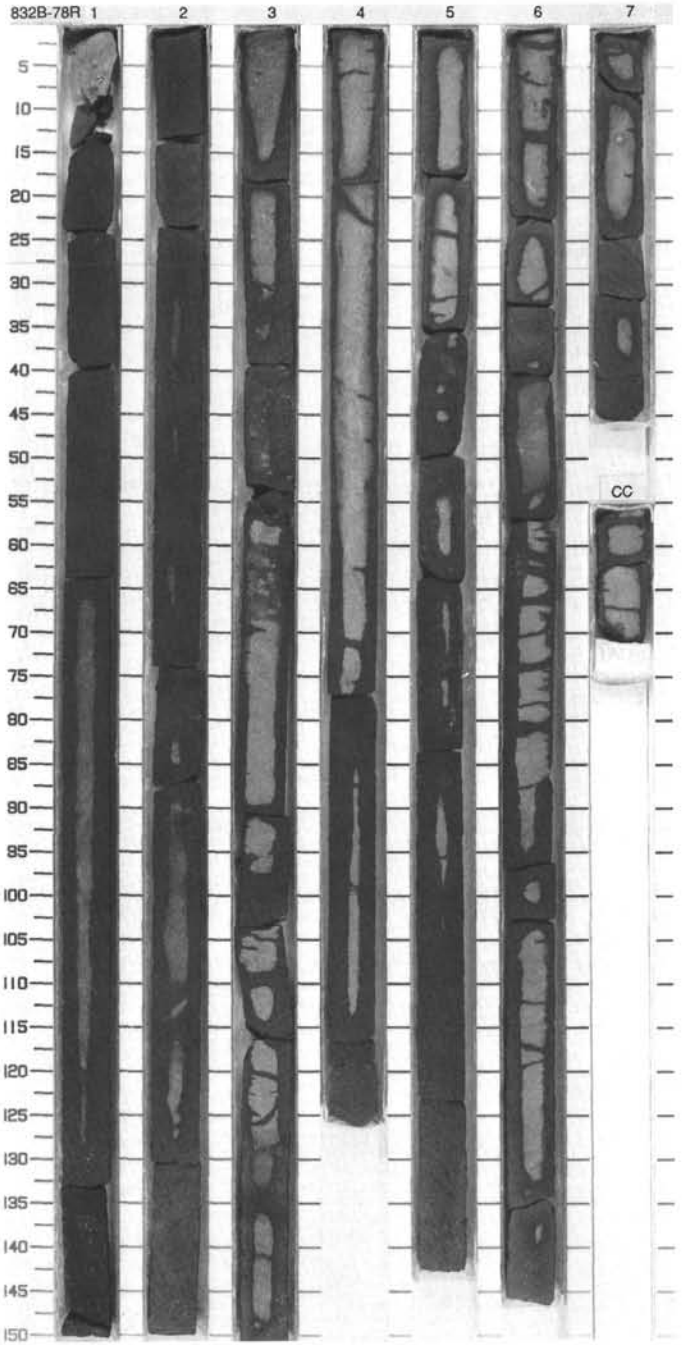
SITE 832 HOLE B CORE 78R CORED INTERVAL 885.0-894.7 mbsf



FINE-GRAINED VOLCANIC SANDSTONE

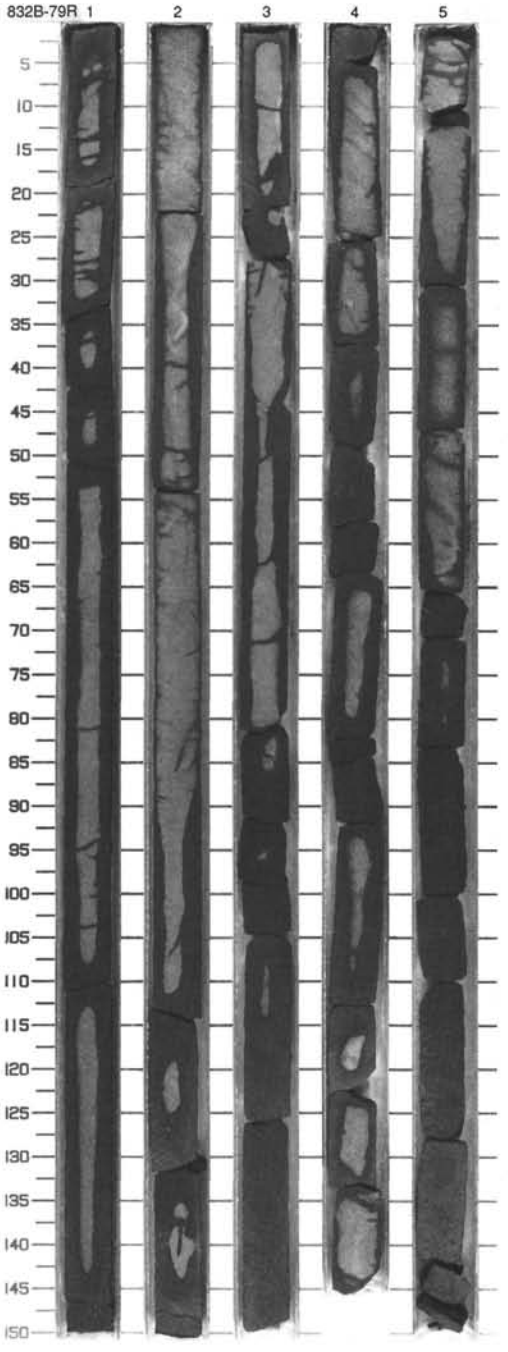
Major lithology: Most of this core is lithified, well-sorted, black (5Y 2.5/1) FINE-GRAINED VOLCANIC SANDSTONE. Occasional 1–4 cm clasts occur within the sandstone in Section 2, 90–120 cm. In Section 3, 0–70 cm, is a fining upward sequence in the sandstone, containing occasional clasts. However, in Section 6, 0–37 cm, is a coarsening upward sequence terminating with granule- to pebble-sized grains in the 0–10 cm interval. A minor fault or fracture occurs in Section 5, 70–80 cm, and in Section 7, 10–19, and 40–46 cm.

Minor lithology: At the top of Section 1, 0–15 cm, are two 8 cm basalt cobbles with clinopyroxene (2–8 mm) and plagioclase (1–3 mm) phenocrysts.



SITE 832 HOLE B CORE 79R CORED INTERVAL 894.7–904.4 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
?	B	B			N	● 44.9 2.05 2979 ● 42.0 2.20 3002 Ø Vp wt.%CaCO3	● 0.4 ● 0.2	1 2 3 4 5	0.5 1.0	VOID				FINE-GRAINED VOLCANIC SANDSTONE Major lithology: The entire core is lithified, well-sorted, black (5Y 2.5/1) FINE-GRAINED VOLCANIC SANDSTONE. Some bedding planes occur in Sections 1 and 2, and there is a scoured intra-lithological contact in Section 5, 5 cm. A few pebble-sized clasts occur in Section 5, 114–140 cm.



SITE 832 HOLE B CORE 80R CORED INTERVAL 904.4-914.0 mbsf

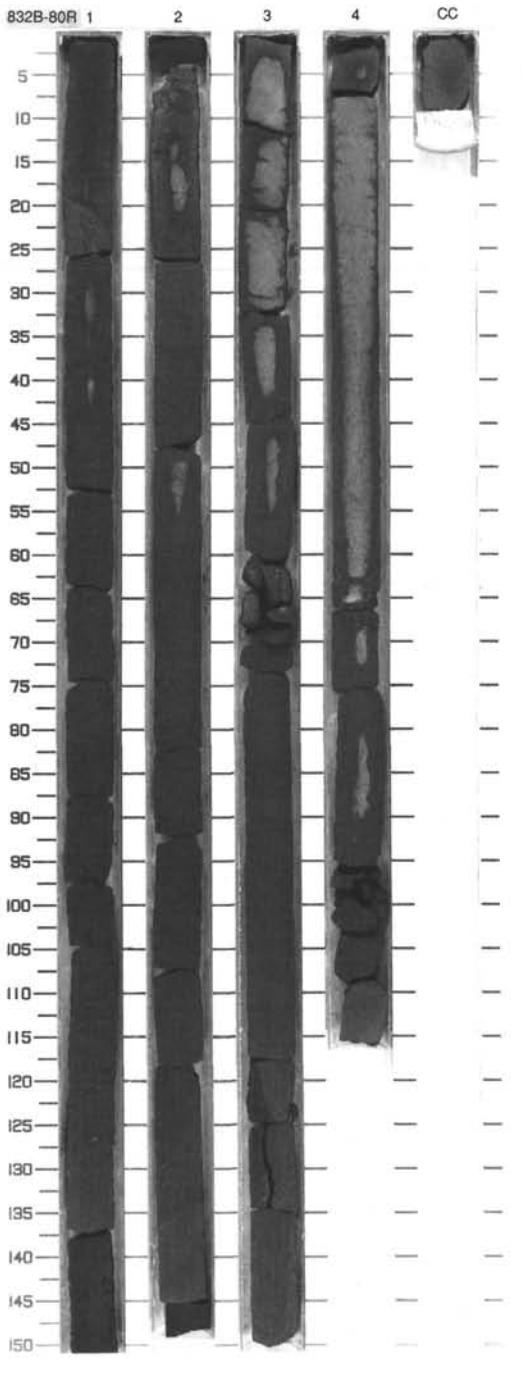
TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
?	B	B			N	Φ Vp ● 45.1 2921 ● 3.08 Wt. %CaCO3 ● 0.4 Wt. %TOC ● 0.0 ● 38.8 3017 ● 2.23 ● 0.3		1 2 3 4 CC	0.5 1.0				

LITHOLOGIC DESCRIPTION

VOLCANIC SANDSTONE

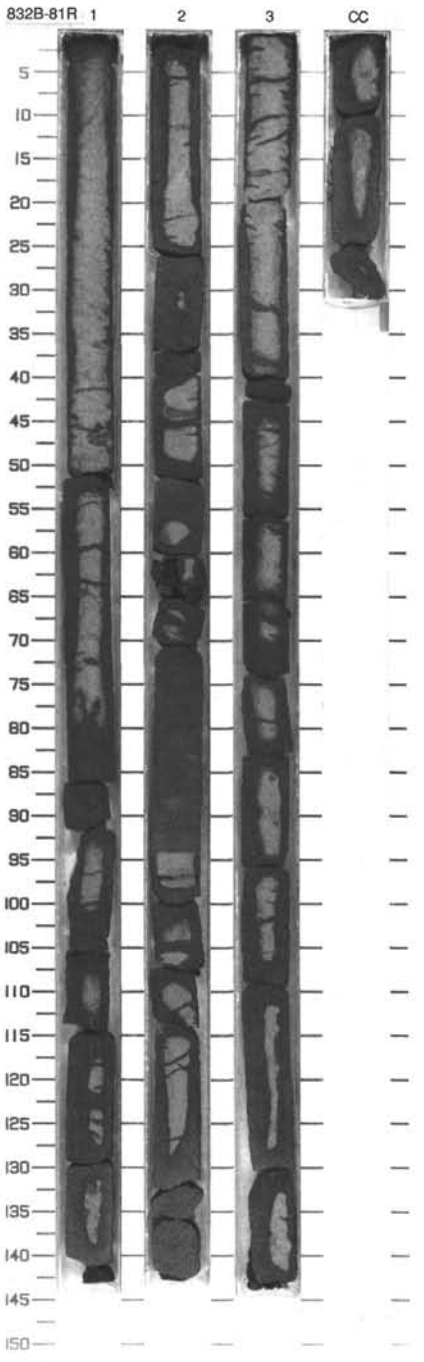
Major lithology: Most of this core is lithified, black (5Y 2.5/1), well-sorted, fine- to medium-grained VOLCANIC SANDSTONE containing occasional pebble-sized clasts. Section 2, 47–27 cm, is a fining upward sequence of laminated volcanic sandstone. Section 4, 0–70 cm is fine- to medium-grained volcanic sandstone and 70–116 cm is very fine-grained volcanic sandstone.

Minor lithology: Section 4, 65 cm, is a clayey lens with gravel-sized clasts.



SITE 832 HOLE B CORE 81R CORED INTERVAL 914.0-923.7 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
?	B	B			N	● 45.3 2992 ● 2.06 ϕ V ρ	● 0.4 0.0 wt.%CaCO3 wt.%TOC	1 2 3 CC	0.5 1.0	VOID VOID				VOLCANIC SANDSTONE Major lithology: Most of this core is lithified, black (5Y 2.5/1) fine- to medium-grained VOLCANIC SANDSTONE with occasional gravel-sized pumice and basaltic clasts. In Section 2, 36–49 cm, are several fractures. Two fractures form a tiny graben at the contact between the major and minor lithology below. Minor lithology: Section 2, 36–99 cm, is black (5Y 2.5/1), very fine-grained, very finely-laminated volcanic sandstone. Several interbeds or laminae of clay-rich silt or very fine sand 2 to 10 mm thick occur within this minor lithology.



SITE 832 HOLE B CORE 82R CORED INTERVAL 923.7-933.3 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
?	?				N	● 38.3 3063 ● 2.20 ● 43.7 ● 2.11 ● 2676 ● 6.7 ● 0.7 ● 0.0 Vp ρ wt. %CaCO3 wt. %TOC		1 2 3 4 5 6 CC	0.5 1.0				*
	R/P												
	B												

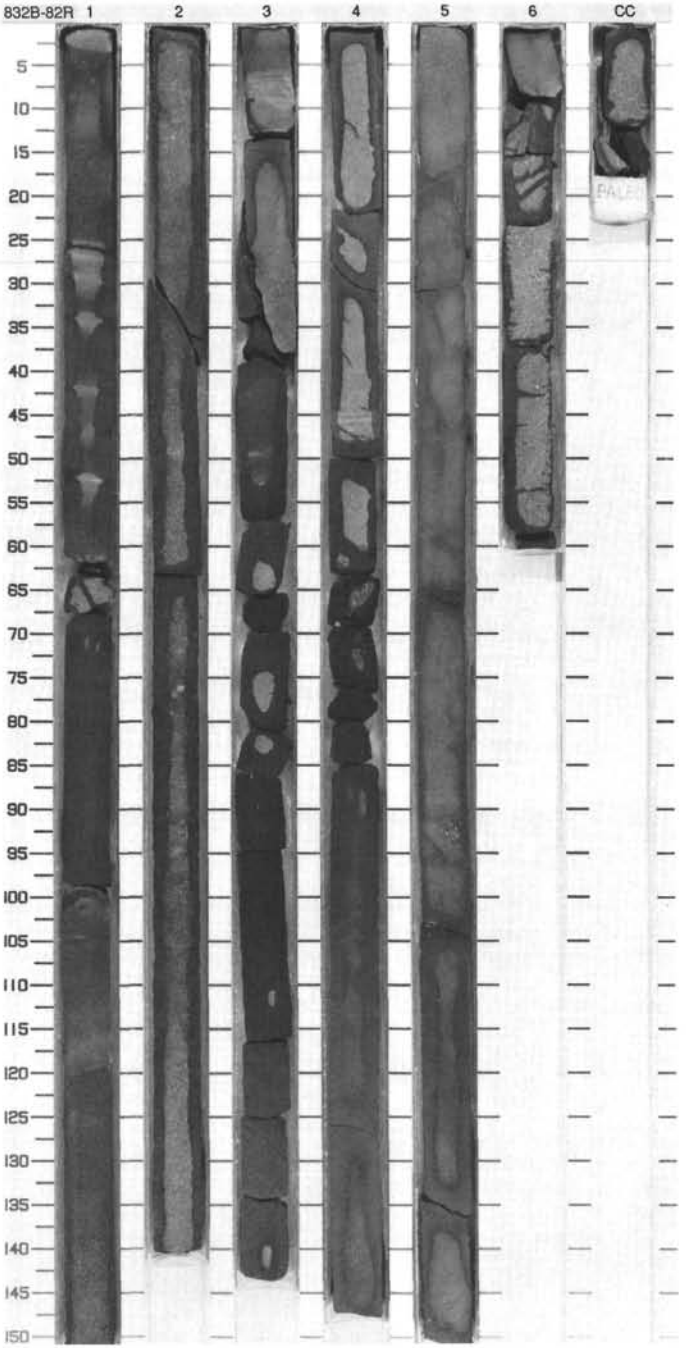
VOLCANIC SANDSTONE

Major lithology: Most of the core consists of lithified dark greenish gray (5GY 4/1) (Sections 1 and 2) and dark gray (5Y 4/1) (Sections 4 and 5) to very dark gray (5Y 3/1) (Sections 6 and CC) fine- to coarse-grained VOLCANIC SANDSTONE. The character and grain size of this sandstone are variable. Most is fine grained (e.g., Section 1, 110–150 cm, and Sections 3 and 5) to medium-grained (Section 2), but coarse intervals occur as in Section 5, 103–105 and 135–139 cm. These two coarse volcanic sandstone beds indicate dips of 15 to 30°. In Section 1, 0–110 cm, the volcanic sandstone is often thinly laminated and interbedded with the claystone layers. A few mud clasts occur and bioturbated horizons are common in the upper part of the section. Section 5 has several veins of calcite filling fractures.

Minor lithology:
a. In Section 1, 0–110 cm, are silty volcanic claystone layers, 1–3 cm thick interbedded with the sandstone.
b. In Section 4, 60–76 cm, is a very dark gray (5Y 3/1) basaltic breccia with neritic carbonate clasts.

SMEAR SLIDE SUMMARY (%):

	1, 51 M
TEXTURE:	
Sand	15
Silt	35
Clay	50
COMPOSITION:	
Calcite	2
Clay	45
Clinopyroxene	2
Feldspar	8
Glass	10
Nannofossils	5
Opaques	5
Oxide	15
Zeolite	8



SITE 832 HOLE B CORE 83R CORED INTERVAL 933.3-942.9 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
?	?				N	● 31.9 3529 2.26 ● 4.7 0.0		1	0.5 1.0				
	R/P	B				● 37.6 3294 2.24 ● 3.0	wt. %CaCO3 X100	2					*
								3					*
								4					
								CC					

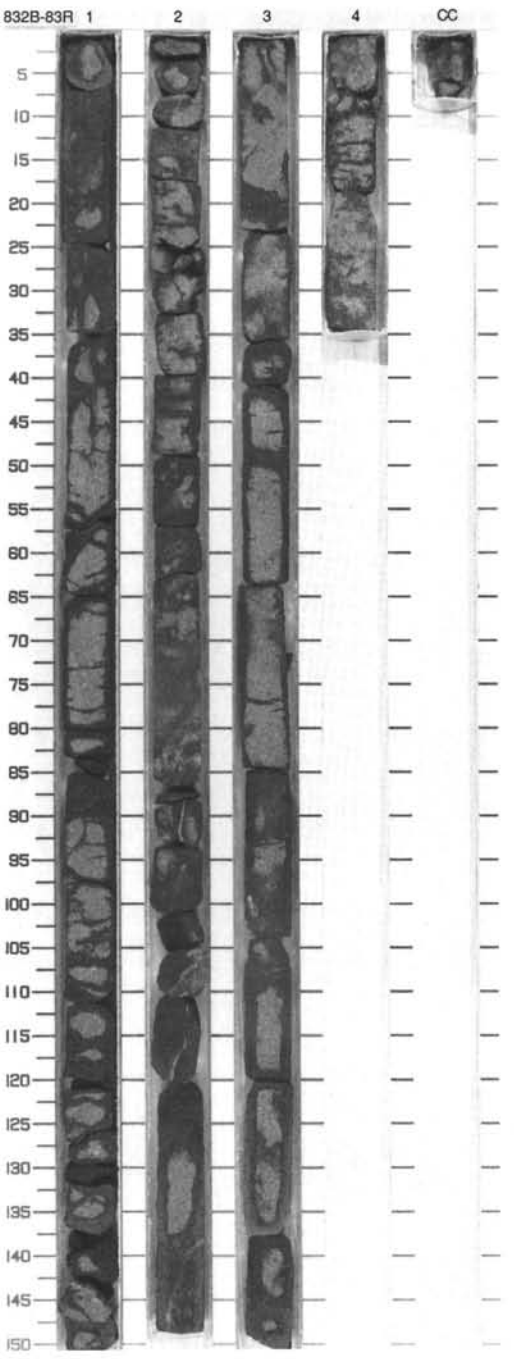
LITHOLOGIC DESCRIPTION

VOLCANIC SANDSTONE

Major lithology: The entire core consists of lithified, black (5Y 2.5/1), very coarse VOLCANIC SANDSTONE. Grains of palagonite and basalt, some of which is vesicular, dominate and there are numerous pebble-sized clasts of basalt as well. Pumice fragments are common, particularly in Sections 1 and 2. Neritic carbonate grains are ubiquitous and include neritic foraminifers. Calcite veins fill or partially fill vertical non-planar fractures in Section 1, 10–40 cm, Section 2, 88–150 cm, and Section 3, 0–5 and 100–105 cm.

SMEAR SLIDE SUMMARY (%):

	2, 25 D	2, 94 M
TEXTURE:		
Sand	80	100
Silt	15	---
Clay	5	---
COMPOSITION:		
Calcite	---	100
Clay	5	---
Clinopyroxene	8	---
Feldspar	20	---
Foraminifers	Tr	---
Glass	10	---
Opaques	5	---
Oxide	1	---
Palagonite	50	---



SITE 832 HOLE B CORE 84R CORED INTERVAL 942.9-952.6 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
MIDDLE MIOCENE(?)	B	R/G	CN4?		?	● 1905	● 0.5 0.2 wt.% CaCO3 wt.% TOC	1	0.5 1.0				* * *
								2					
								3					
								CC					

LITHOLOGIC DESCRIPTION

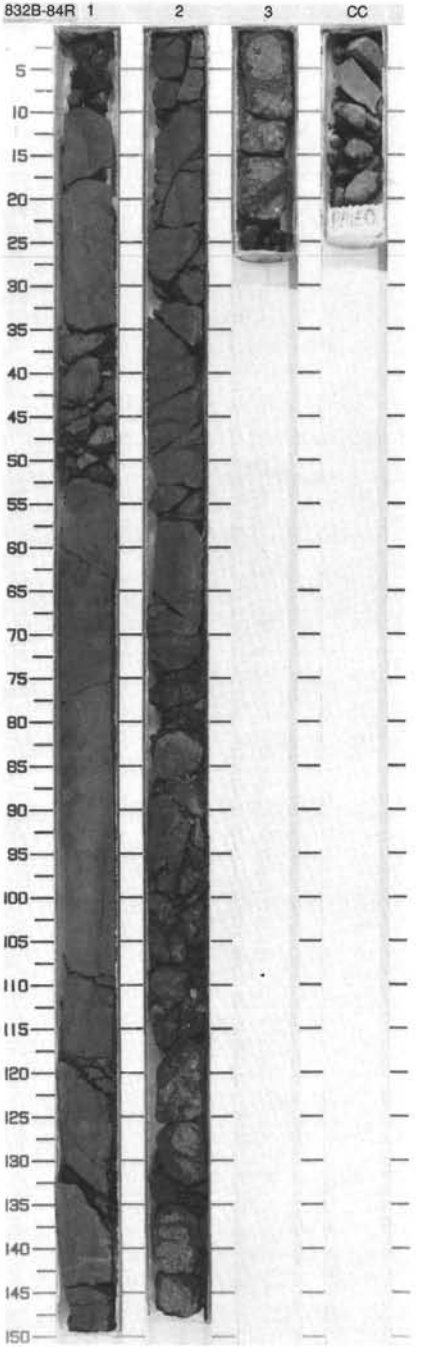
VOLCANIC SILTSTONE and IGNEOUS CONGLOMERATE

Major lithology:
a. Most of this core is partially lithified,dark gray (5Y 4/1) to dark greenish gray (5GY 4/1) VOLCANIC SILTSTONE. Pyrite occurs in Section 1, 56–66 and 113–116 cm. All of this lithology is slightly bioturbated and Section 1 may contain a large slump. Bedding is close to vertical throughout Section 1.
b. Section 2, 114 cm, to Section 3, 26 cm, consists of a lithified, black (5Y 2.5/1) fine-grained, grain-supported IGNEOUS CONGLOMERATE with clasts up to 1 cm in diameter. The matrix and clasts are primarily dense volcanic grains, vesicular basalt, and scoria, but include many large foraminifers and other neritic grains.

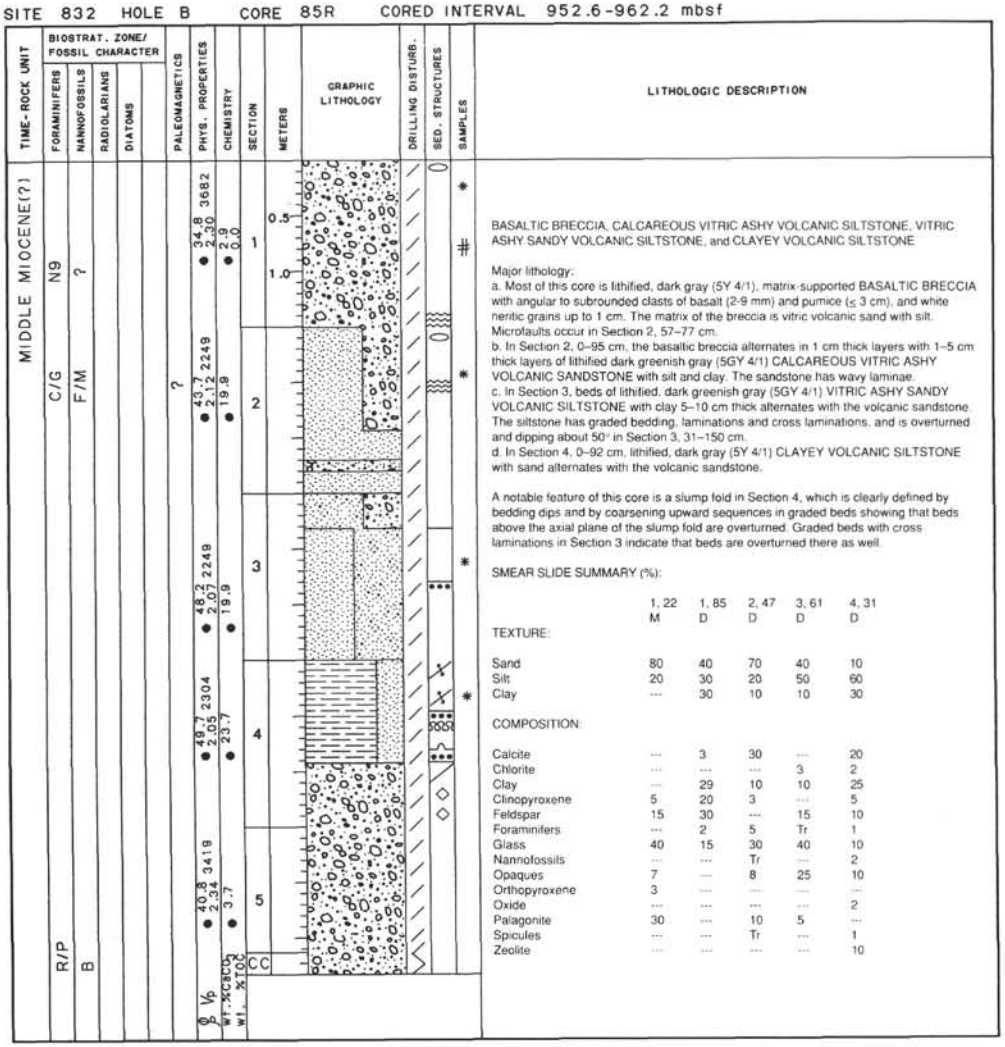
Minor lithology: Section CC, 0–21 cm, contains dark gray (5Y 4/1) sandy volcanic siltstone.

SMEAR SLIDE SUMMARY (%):

	1, 22 D	1, 41 M	1, 121 D
TEXTURE:			
Sand	20	15	20
Silt	60	80	60
Clay	20	5	20
COMPOSITION:			
Clay	20	---	10
Clinopyroxene	5	Tr	5
Feldspar	15	30	20
Glass	50	60	50
Opaques	10	8	10
Spicules	Tr	---	Tr



SITE 832 HOLE B CORE 85R CORED INTERVAL 952.6-962.2 mbsf



BASALTIC BRECCIA, CALCAREOUS VITRIC ASHY VOLCANIC SILTSTONE, VITRIC ASHY SANDY VOLCANIC SILTSTONE, and CLAYEY VOLCANIC SILTSTONE

Major lithology:

a. Most of this core is lithified, dark gray (5Y 4/1), matrix-supported BASALTIC BRECCIA with angular to subrounded clasts of basalt (2-9 mm) and pumice (≤ 3 cm), and white neritic grains up to 1 cm. The matrix of the breccia is vitric volcanic sand with silt. Microfaults occur in Section 2, 57–77 cm.

b. In Section 2, 0–95 cm, the basaltic breccia alternates in 1 cm thick layers with 1–5 cm thick layers of lithified dark greenish gray (5GY 4/1) CALCAREOUS VITRIC ASHY VOLCANIC SANDSTONE with silt and clay. The sandstone has wavy laminae.

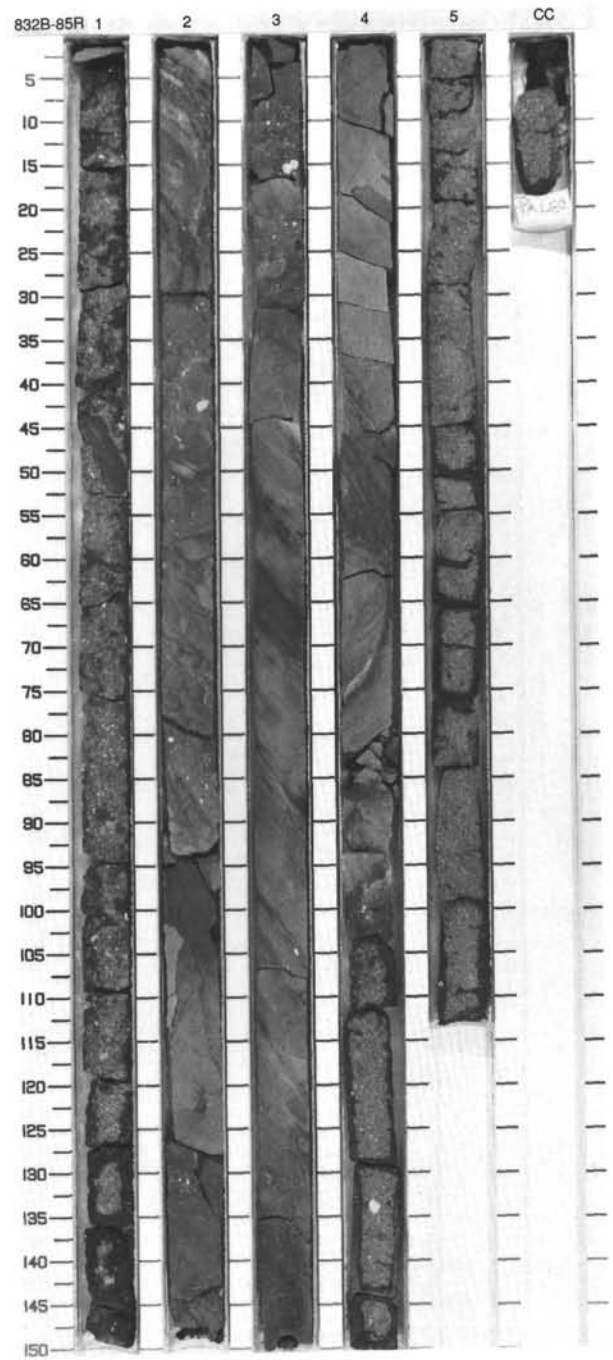
c. In Section 3, beds of lithified, dark greenish gray (5GY 4/1) VITRIC ASHY SANDY VOLCANIC SILTSTONE with clay 5–10 cm thick alternates with the volcanic sandstone. The siltstone has graded bedding, laminations and cross laminations, and is overturned and dipping about 50° in Section 3, 31–150 cm.

d. In Section 4, 0–92 cm, lithified, dark gray (5Y 4/1) CLAYEY VOLCANIC SILTSTONE with sand alternates with the volcanic sandstone.

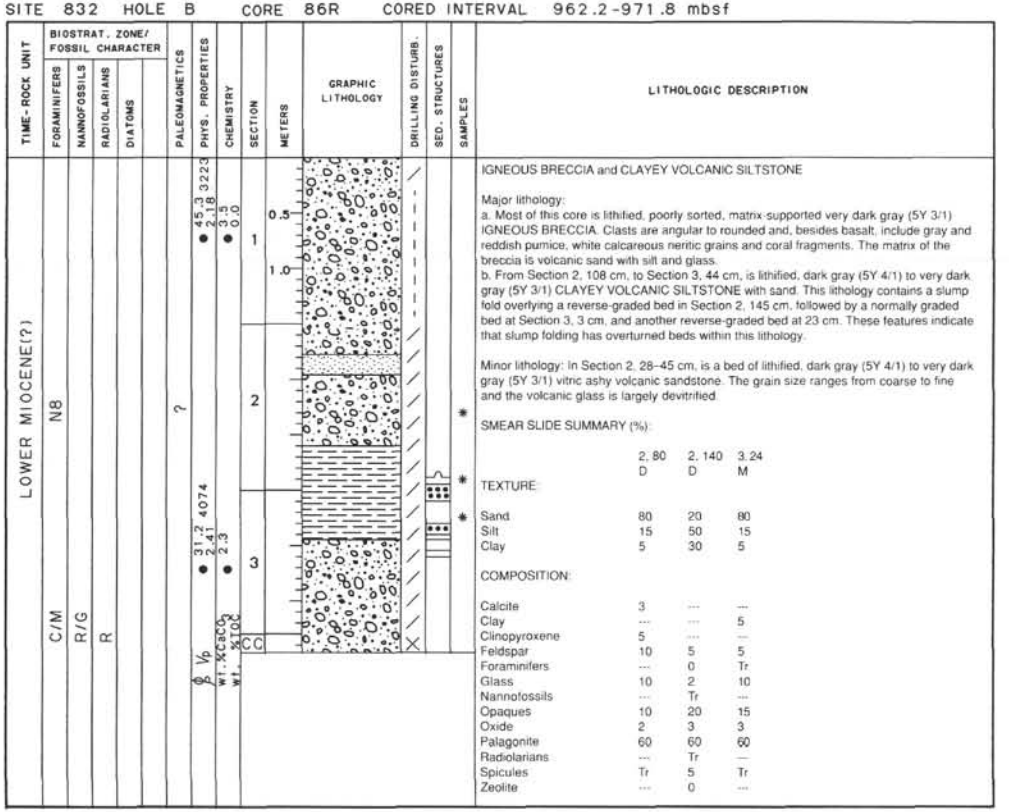
A notable feature of this core is a slump fold in Section 4, which is clearly defined by bedding dips and by coarsening upward sequences in graded beds showing that beds above the axial plane of the slump fold are overturned. Graded beds with cross laminations in Section 3 indicate that beds are overturned there as well.

SMEAR SLIDE SUMMARY (%):

	1, 22 M	1, 85 D	2, 47 D	3, 61 D	4, 31 D
TEXTURE:					
Sand	80	40	70	40	10
Silt	20	30	20	50	60
Clay	---	30	10	10	30
COMPOSITION:					
Calcite	---	3	30	---	20
Chlorite	---	---	---	3	2
Clay	---	29	10	10	25
Clinopyroxene	5	20	3	---	5
Feldspar	15	30	---	15	10
Foraminifers	---	2	5	Tr	1
Glass	40	15	30	40	10
Nannofossils	---	---	Tr	---	2
Opaques	7	---	8	25	10
Orthopyroxene	3	---	---	---	---
Oxide	---	---	---	---	2
Palagonite	30	---	10	5	---
Spicules	---	---	Tr	---	1
Zeolite	---	---	---	---	10



SITE 832 HOLE B CORE 86R CORED INTERVAL 962.2-971.8 mbsf



LITHOLOGIC DESCRIPTION

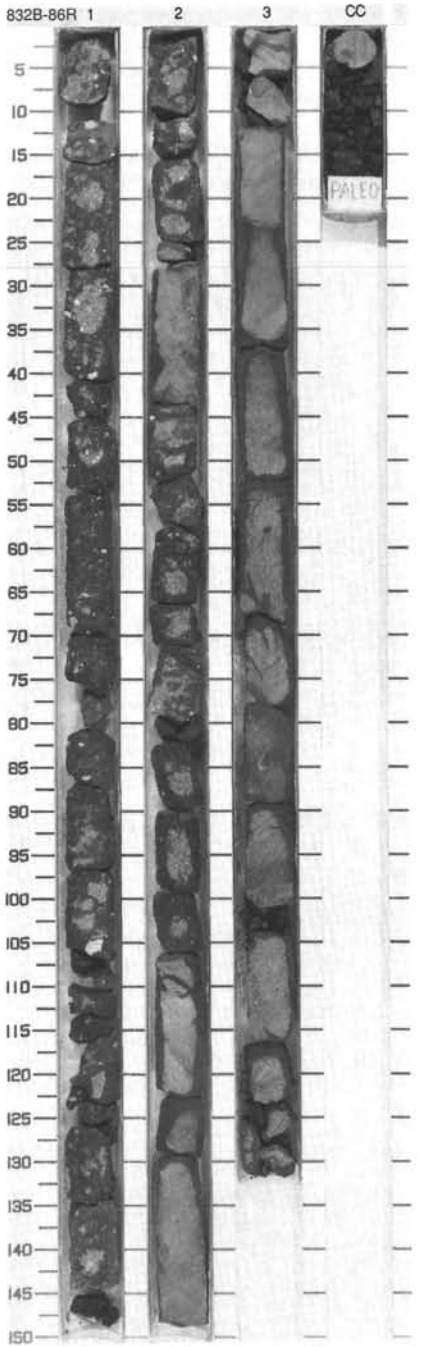
IGNEOUS BRECCIA and CLAYEY VOLCANIC SILTSTONE

Major lithology:
a. Most of this core is lithified, poorly sorted, matrix-supported very dark gray (5Y 3/1) IGNEOUS BRECCIA. Clasts are angular to rounded and, besides basalt, include gray and reddish pumice, white calcareous neritic grains and coral fragments. The matrix of the breccia is volcanic sand with silt and glass.
b. From Section 2, 108 cm, to Section 3, 44 cm, is lithified, dark gray (5Y 4/1) to very dark gray (5Y 3/1) CLAYEY VOLCANIC SILTSTONE with sand. This lithology contains a slump fold overlying a reverse-graded bed in Section 2, 145 cm, followed by a normally graded bed at Section 3, 3 cm, and another reverse-graded bed at 23 cm. These features indicate that slump folding has overturned beds within this lithology.

Minor lithology: In Section 2, 28–45 cm, is a bed of lithified, dark gray (5Y 4/1) to very dark gray (5Y 3/1) vitric ashy volcanic sandstone. The grain size ranges from coarse to fine and the volcanic glass is largely devitrified.

SMEAR SLIDE SUMMARY (%):

	2, 80 D	2, 140 D	3, 24 M
TEXTURE:			
Sand	80	20	80
Silt	15	50	15
Clay	5	30	5
COMPOSITION:			
Calcite	3	---	---
Clay	---	---	5
Clinopyroxene	5	---	---
Feldspar	10	5	5
Foraminifers	---	0	Tr
Glass	10	2	10
Nannofossils	---	Tr	---
Opaques	10	20	15
Oxide	2	3	3
Palagonite	60	60	60
Radiolarians	---	Tr	---
Spicules	Tr	5	Tr
Zeolite	---	0	---



SITE 832 HOLE B CORE 87R CORED INTERVAL 971.8-981.1 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
LOWER MIOCENE(?)	B	CN4	R/G		?	Vp 42.5 3229 2.14 wt. % CaCO3 39.7 3175 2.14 wt. % TOC 4.2	2.2 0.0	1 2 3 4 CC	0.5 1.0			◇	OG	

IGNEOUS CONGLOMERATE, IGNEOUS BRECCIA, and CLAYEY VITRIC ASHY VOLCANIC SILTSTONE

Major lithology:

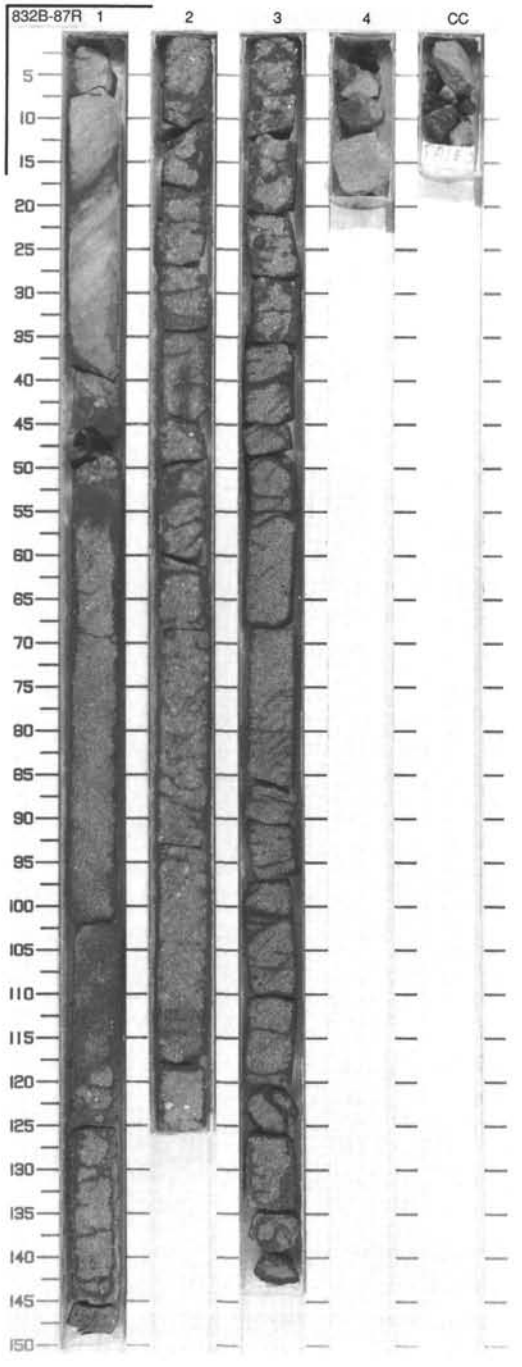
a. Most of this core is lithified very dark gray (5Y 3/1), fine-grained IGNEOUS CONGLOMERATE. Most of the clasts are about 2–4 mm in diameter, but some are as large as 3 cm. Most of the clasts are fragments of light grayish brown (10YR 4/2) to grayish brown (10YR 5/2) pumice and vesicular basalt with clinopyroxene phenocrysts that have a rim of pumice (volcanic bombs?). A few clasts are neritic carbonate grains, including large foraminifers, but these comprise no more than 5–7% of the sediment. Most of the clasts are rounded.

b. Section 3, 0–35 cm, and Section CC, 0–16 cm, contain lithified, very dark gray (5Y 3/1) IGNEOUS BRECCIA. The clasts are angular to subangular and up to 2 cm in diameter, but otherwise they are no different than the conglomerate.

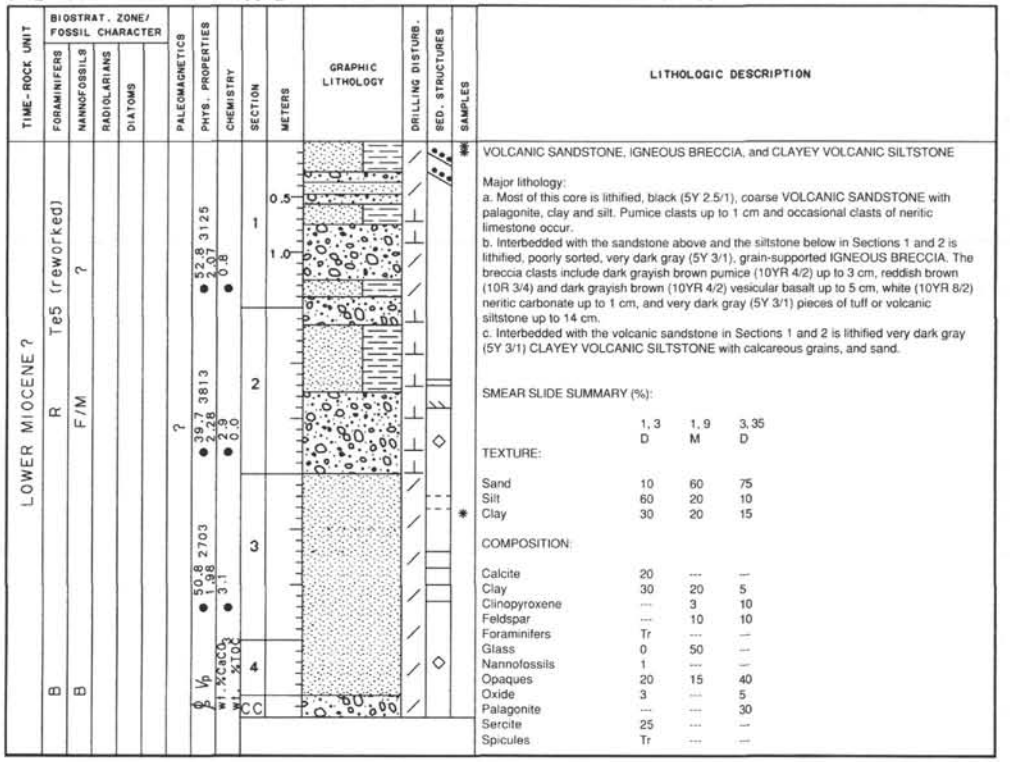
c. The upper part of Section 1, 0–43 cm, contains lithified, dark gray (5Y 4/1) to dark greenish gray (5GY 4/1) CLAYEY VITRIC ASHY VOLCANIC SILTSTONE. This sediment may be volcanic tuff. It contains graded beds and small normal faults. Bedding is steeply inclined.

SMEAR SLIDE SUMMARY (%):

	1, 7 M	1, 27 D
TEXTURE:		
Sand	10	10
Silt	60	70
Clay	30	20
COMPOSITION:		
Calcite	---	10
Clay	10	10
Clinopyroxene	2	---
Feldspar	15	---
Glass	50	25
Opaques	15	15
Orthopyroxene	8	2
Oxide	---	3
Palagonite	---	20
Rock fragment	---	10



SITE 832 HOLE B CORE 88R CORED INTERVAL 981.1-990.8 mbsf



LITHOLOGIC DESCRIPTION

VOLCANIC SANDSTONE, IGNEOUS BRECCIA, and CLAYEY VOLCANIC SILTSTONE

Major lithology:

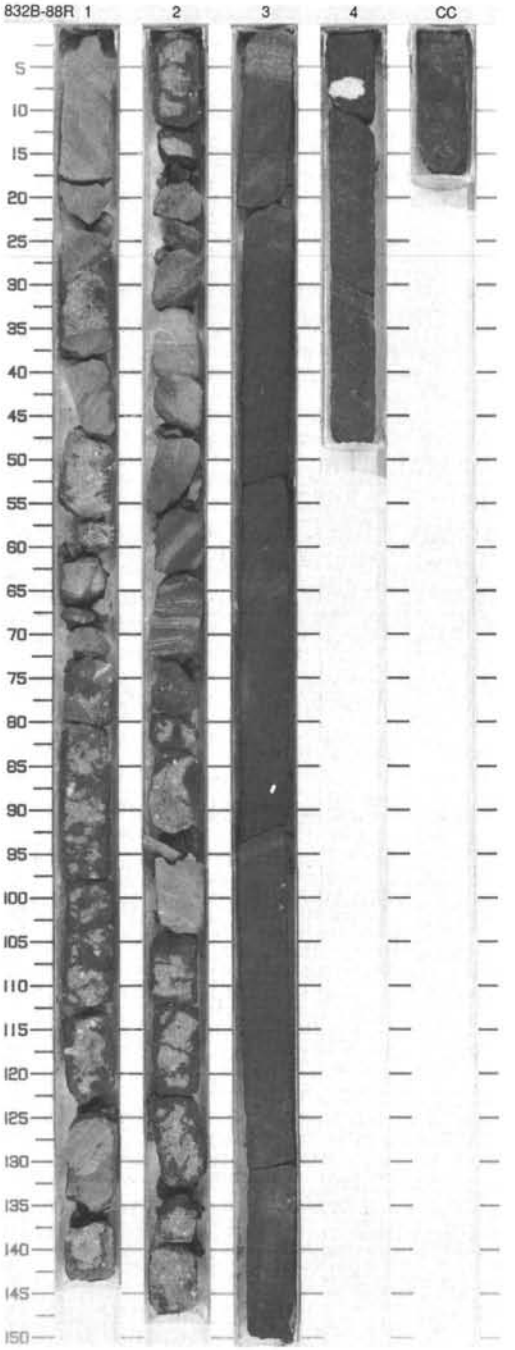
a. Most of this core is lithified, black (5Y 2.5/1), coarse VOLCANIC SANDSTONE with palagonite, clay and silt. Pumice clasts up to 1 cm and occasional clasts of neritic limestone occur.

b. Interbedded with the sandstone above and the siltstone below in Sections 1 and 2 is lithified, poorly sorted, very dark gray (5Y 3/1), grain-supported IGNEOUS BRECCIA. The breccia clasts include dark grayish brown pumice (10YR 4/2) up to 3 cm, reddish brown (10R 3/4) and dark grayish brown (10YR 4/2) vesicular basalt up to 5 cm, white (10YR 8/2) neritic carbonate up to 1 cm, and very dark gray (5Y 3/1) pieces of tuff or volcanic siltstone up to 14 cm.

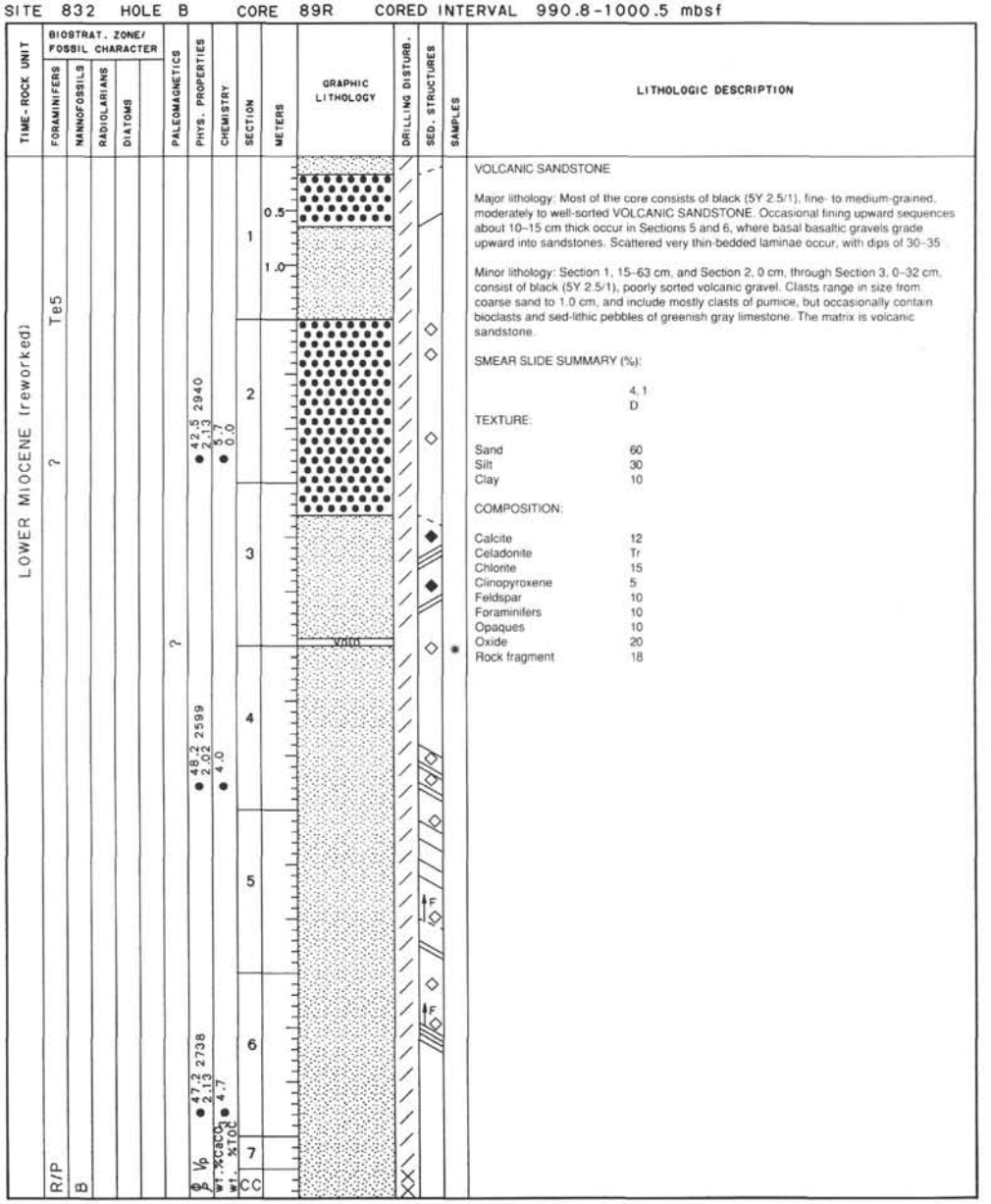
c. Interbedded with the volcanic sandstone in Sections 1 and 2 is lithified very dark gray (5Y 3/1) CLAYEY VOLCANIC SILTSTONE with calcareous grains, and sand.

SMEAR SLIDE SUMMARY (%):

	1, 3 D	1, 9 M	3, 35 D
TEXTURE:			
Sand	10	60	75
Silt	60	20	10
Clay	30	20	15
COMPOSITION:			
Calcite	20	---	---
Clay	30	20	5
Clinopyroxene	---	3	10
Feldspar	---	10	10
Foraminifers	Tr	---	---
Glass	0	50	---
Nannofossils	1	---	---
Opaques	20	15	40
Oxide	3	---	5
Palagonite	---	---	30
Sercite	25	---	---
Spicules	Tr	---	---



SITE 832 HOLE B CORE 89R CORED INTERVAL 990.8-1000.5 mbsf



LITHOLOGIC DESCRIPTION

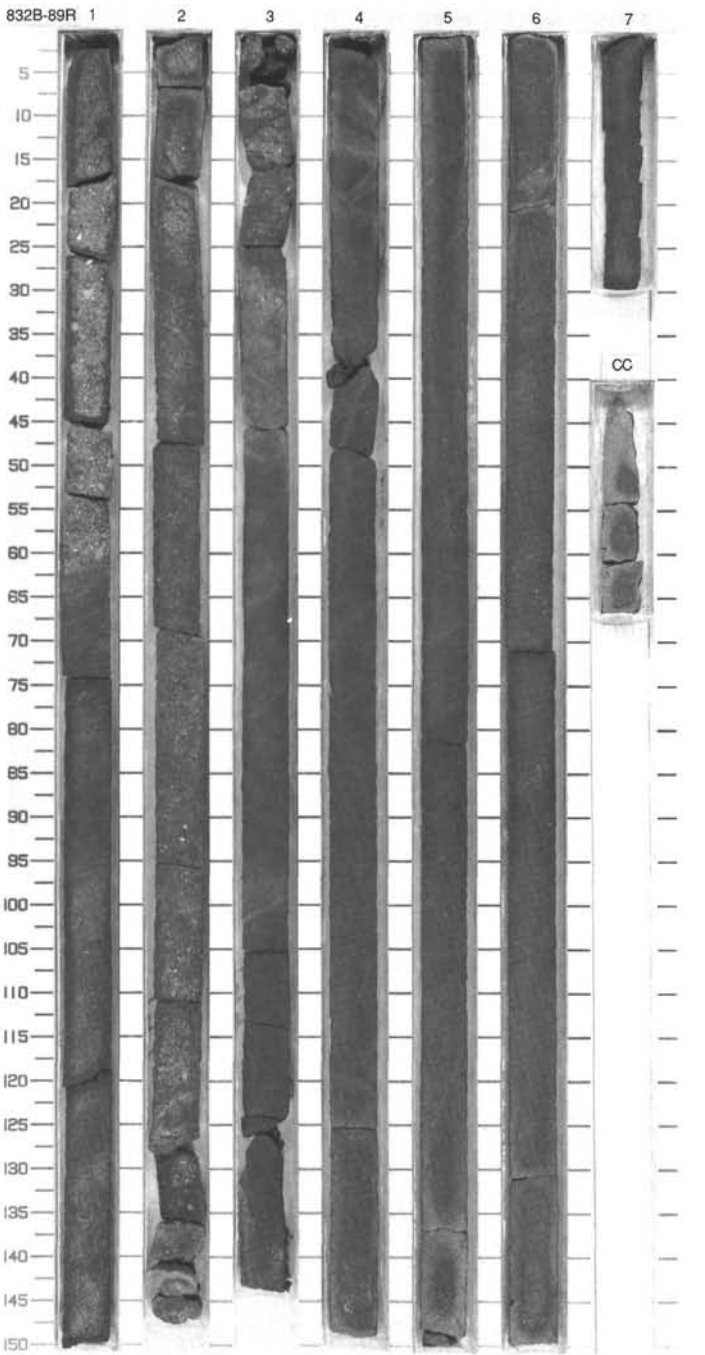
VOLCANIC SANDSTONE

Major lithology: Most of the core consists of black (5Y 2.5/1), fine- to medium-grained, moderately to well-sorted VOLCANIC SANDSTONE. Occasional fining upward sequences about 10–15 cm thick occur in Sections 5 and 6, where basal basaltic gravels grade upward into sandstones. Scattered very thin-bedded laminae occur, with dips of 30–35°.

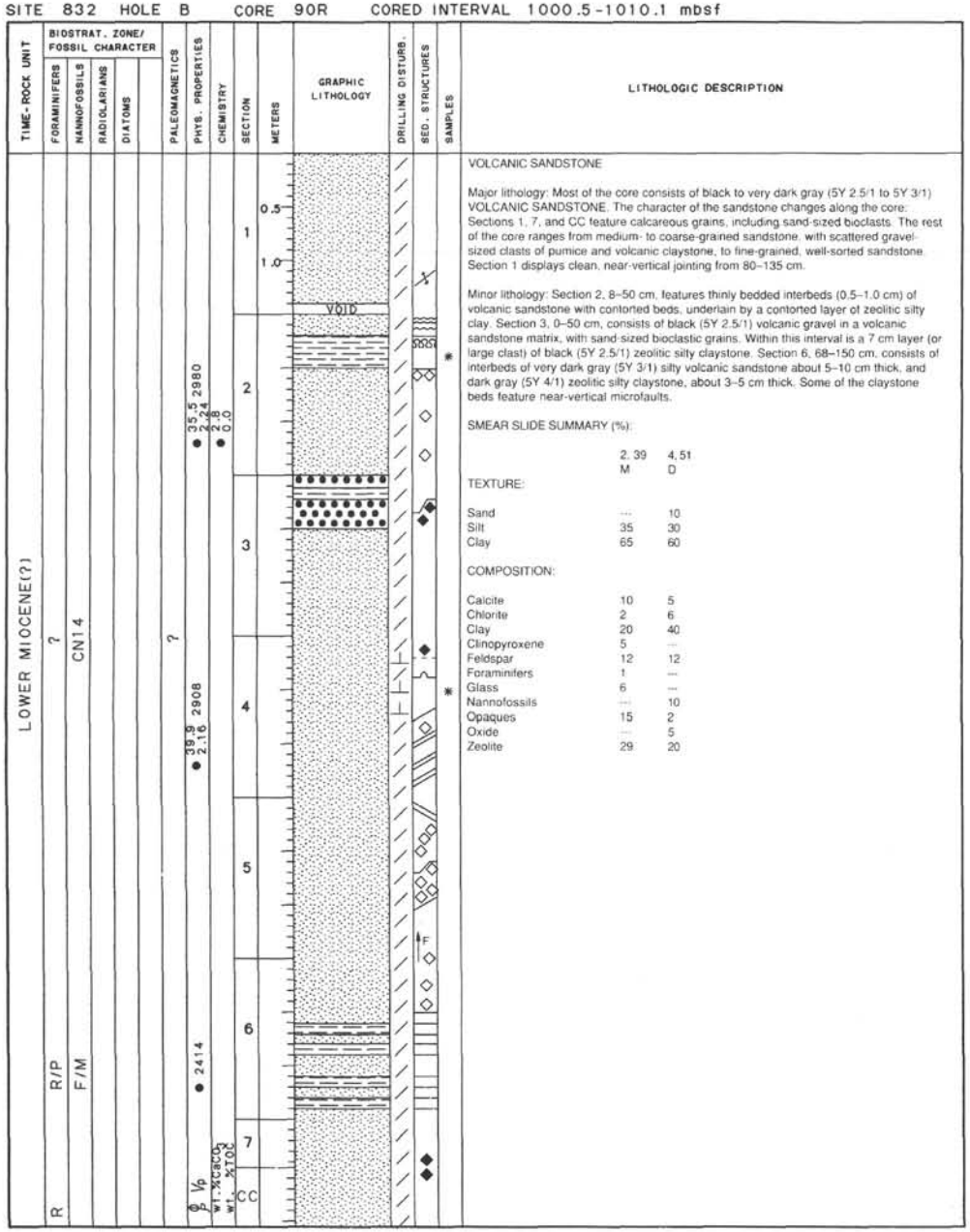
Minor lithology: Section 1, 15–63 cm, and Section 2, 0 cm, through Section 3, 0–32 cm, consist of black (5Y 2.5/1), poorly sorted volcanic gravel. Clasts range in size from coarse sand to 1.0 cm, and include mostly clasts of pumice, but occasionally contain bioclasts and sed-lithic pebbles of greenish gray limestone. The matrix is volcanic sandstone.

SMEAR SLIDE SUMMARY (%):

	4, 1 D
TEXTURE:	
Sand	60
Silt	30
Clay	10
COMPOSITION:	
Calcite	12
Celadonite	Tr
Chlorite	15
Clinopyroxene	5
Feldspar	10
Foraminifers	10
Opaques	10
Oxide	20
Rock fragment	18



SITE 832 HOLE B CORE 90R CORED INTERVAL 1000.5-1010.1 mbsf



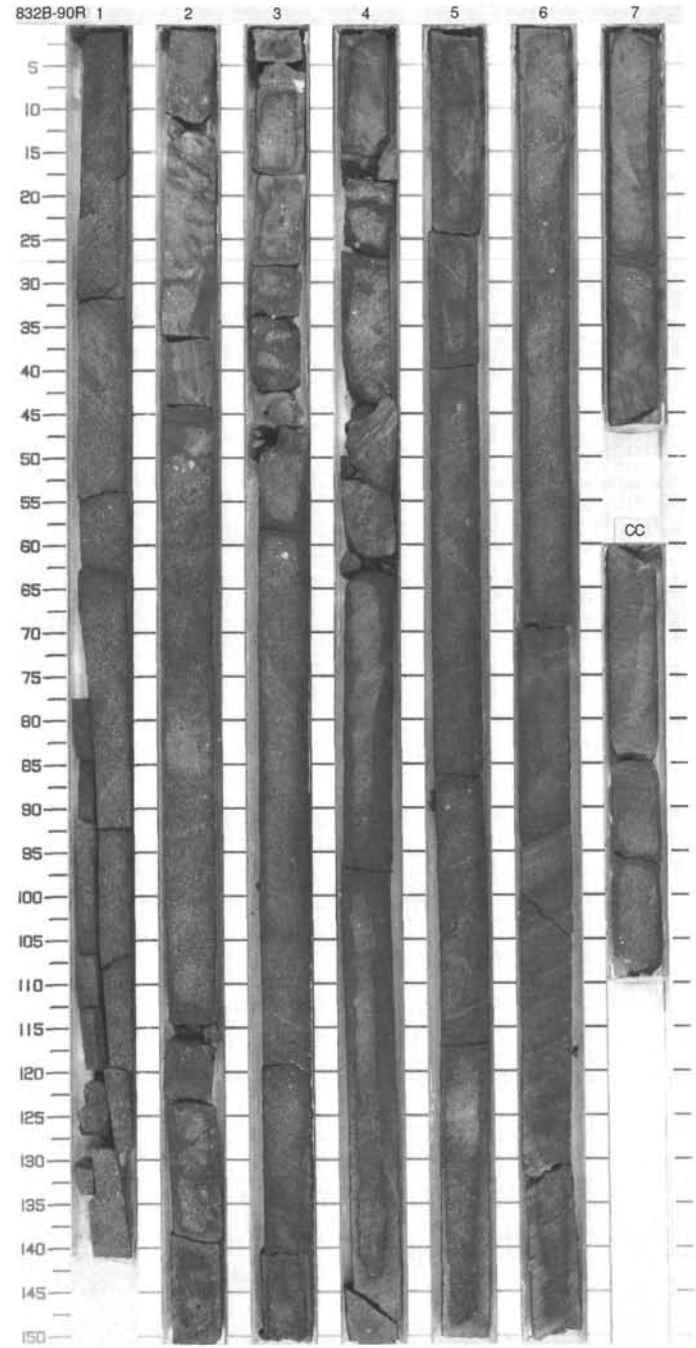
VOLCANIC SANDSTONE

Major lithology: Most of the core consists of black to very dark gray (5Y 2.5/1 to 5Y 3/1) VOLCANIC SANDSTONE. The character of the sandstone changes along the core: Sections 1, 7, and CC feature calcareous grains, including sand-sized bioclasts. The rest of the core ranges from medium- to coarse-grained sandstone, with scattered gravel-sized clasts of pumice and volcanic claystone, to fine-grained, well-sorted sandstone. Section 1 displays clean, near-vertical jointing from 80–135 cm.

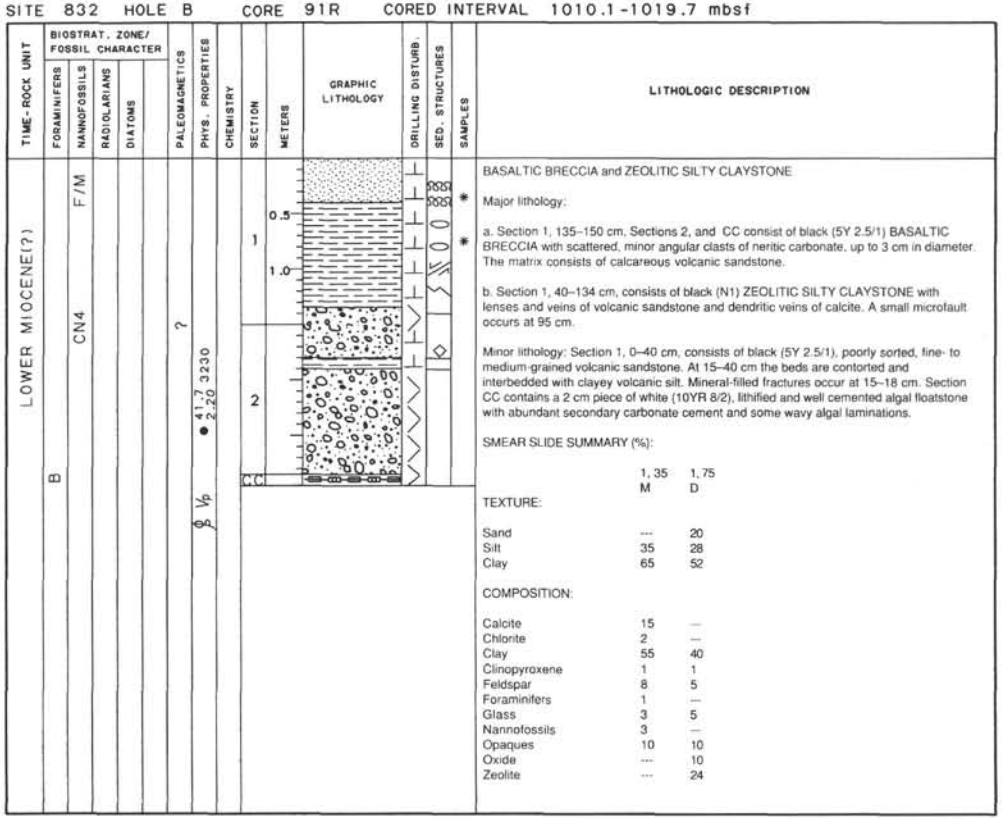
Minor lithology: Section 2, 8–50 cm, features thinly bedded interbeds (0.5–1.0 cm) of volcanic sandstone with contorted beds, underlain by a contorted layer of zeolitic silty clay. Section 3, 0–50 cm, consists of black (5Y 2.5/1) volcanic gravel in a volcanic sandstone matrix, with sand-sized bioclastic grains. Within this interval is a 7 cm layer (or large clast) of black (5Y 2.5/1) zeolitic silty claystone. Section 6, 68–150 cm, consists of interbeds of very dark gray (5Y 3/1) silty volcanic sandstone about 5–10 cm thick, and dark gray (5Y 4/1) zeolitic silty claystone, about 3–5 cm thick. Some of the claystone beds feature near-vertical microfaults.

SMEAR SLIDE SUMMARY (%):

	2, 39 M	4, 51 D
TEXTURE:		
Sand	---	10
Silt	35	30
Clay	65	60
COMPOSITION:		
Calcite	10	5
Chlorite	2	6
Clay	20	40
Clinopyroxene	5	---
Feldspar	12	12
Foraminifers	1	---
Glass	6	---
Nannofossils	---	10
Opaques	15	2
Oxide	---	5
Zeolite	29	20



SITE 832 HOLE B CORE 91R CORED INTERVAL 1010.1-1019.7 mbsf



LITHOLOGIC DESCRIPTION

BASALTIC BRECCIA and ZEOLITIC SILTY CLAYSTONE

Major lithology:

a. Section 1, 135–150 cm, Sections 2, and CC consist of black (5Y 2.5/1) BASALTIC BRECCIA with scattered, minor angular clasts of neritic carbonate, up to 3 cm in diameter. The matrix consists of calcareous volcanic sandstone.

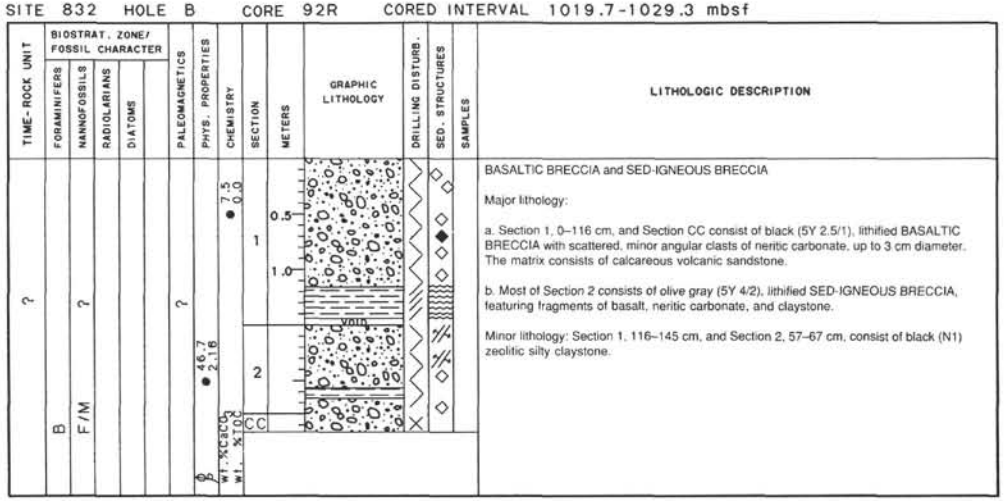
b. Section 1, 40–134 cm, consists of black (N1) ZEOLITIC SILTY CLAYSTONE with lenses and veins of volcanic sandstone and dendritic veins of calcite. A small microfault occurs at 95 cm.

Minor lithology: Section 1, 0–40 cm, consists of black (5Y 2.5/1), poorly sorted, fine- to medium-grained volcanic sandstone. At 15–40 cm the beds are contorted and interbedded with clayey volcanic silt. Mineral-filled fractures occur at 15–18 cm. Section CC contains a 2 cm piece of white (10YR 8/2), lithified and well cemented algal floatstone with abundant secondary carbonate cement and some wavy algal laminations.

SMEAR SLIDE SUMMARY (%):

	1, 35 M	1, 75 D
TEXTURE:		
Sand	---	20
Silt	35	28
Clay	65	52
COMPOSITION:		
Calcite	15	—
Chlorite	2	—
Clay	55	40
Clinopyroxene	1	1
Feldspar	8	5
Foraminifers	1	—
Glass	3	5
Nannofossils	3	—
Opaques	10	10
Oxide	---	10
Zeolite	---	24

SITE 832 HOLE B CORE 92R CORED INTERVAL 1019.7-1029.3 mbsf



LITHOLOGIC DESCRIPTION

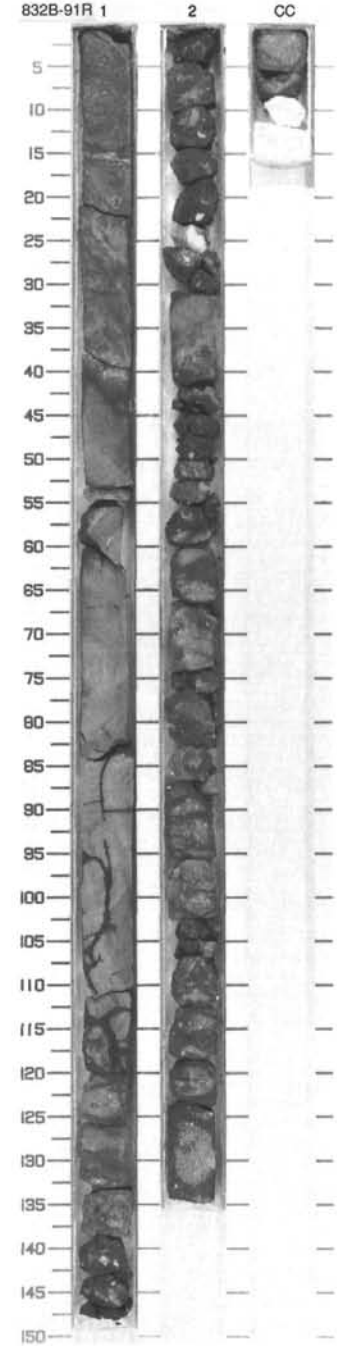
BASALTIC BRECCIA and SED-IGNEOUS BRECCIA

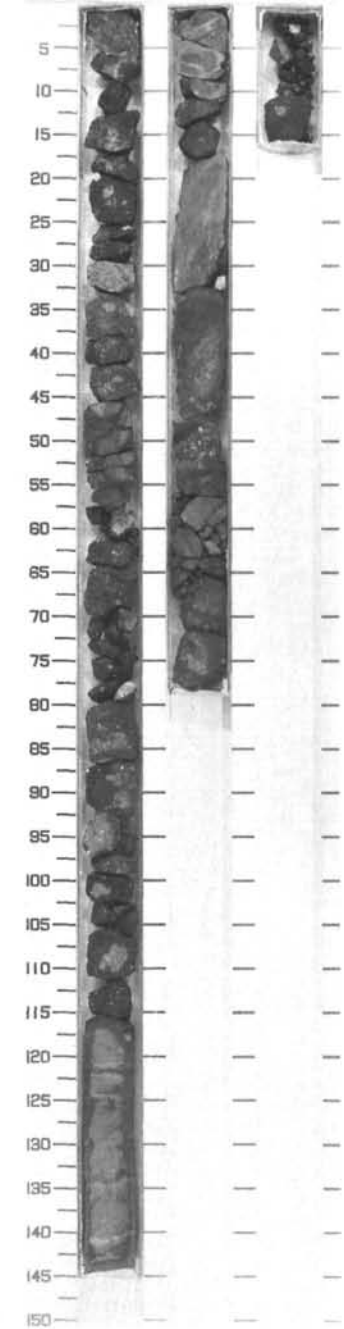
Major lithology:

a. Section 1, 0–116 cm, and Section CC consist of black (5Y 2.5/1), lithified BASALTIC BRECCIA with scattered, minor angular clasts of neritic carbonate, up to 3 cm diameter. The matrix consists of calcareous volcanic sandstone.

b. Most of Section 2 consists of olive gray (5Y 4/2), lithified SED-IGNEOUS BRECCIA, featuring fragments of basalt, neritic carbonate, and claystone.

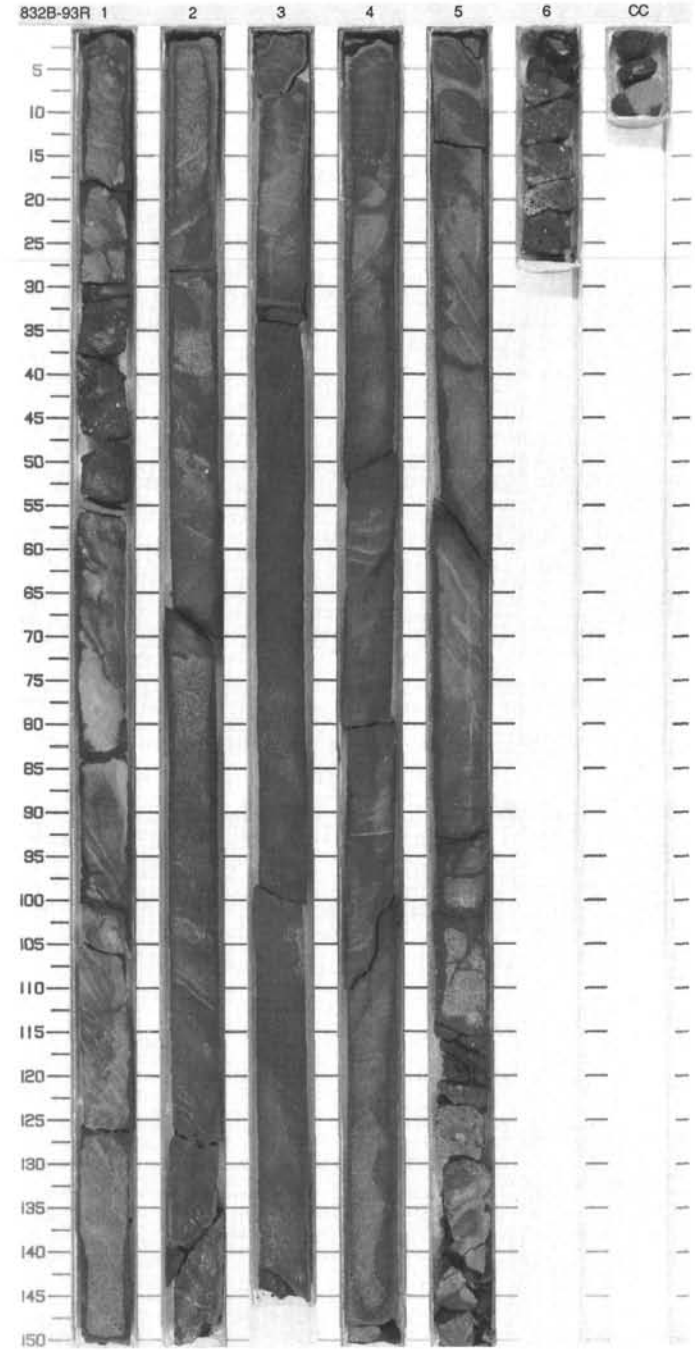
Minor lithology: Section 1, 116–145 cm, and Section 2, 57–67 cm, consist of black (N1) zeolitic silty claystone.





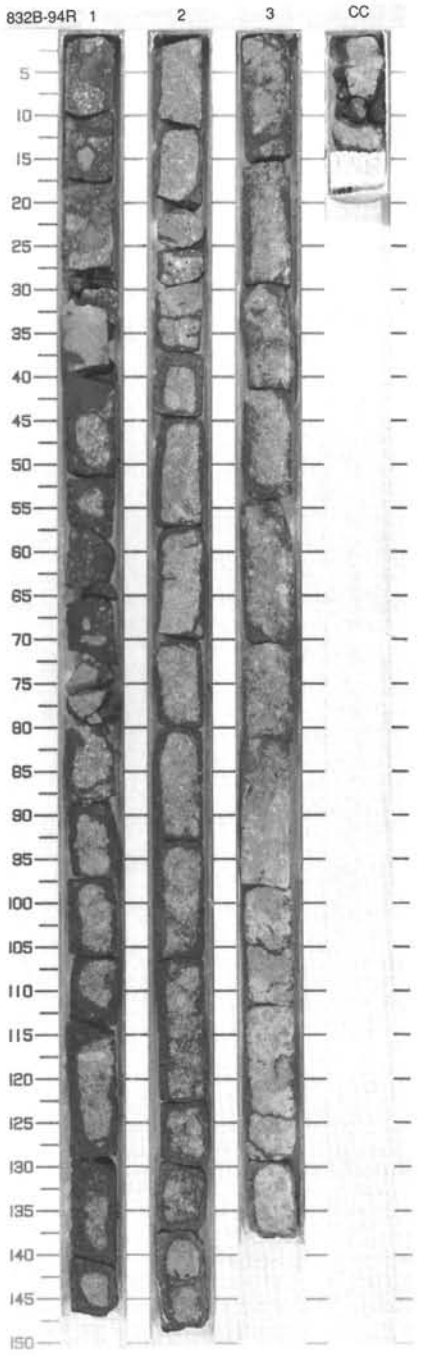
SITE 832 HOLE B CORE 93R CORED INTERVAL 1029.3-1039.0 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
?	B	B			?	● 38.1 3209 2.19 ● 43.1 2779 2.07	● 2.2 2.0 ● 2.9	1 2 3 4 5 6 CC	0.5 1.0					SILTY VOLCANIC SANDSTONE and ZEOLITIC SILTY CLAYSTONE Major lithology: Most of the core consists of interbeds, 30–90 cm thick, of black (5Y 2.5/1) SILTY VOLCANIC SANDSTONE and very dark gray (5Y 3/1) ZEOLITIC SILTY CLAYSTONE. The claystone is often contorted and slumped. Minor Lithology: Sections 1, 5, and 6 feature interbeds of black (5Y 2.5/1) basaltic breccia, 10 to 30 cm thick.



SITE 832 HOLE B CORE 94R CORED INTERVAL 1039.0-1048.6 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
?	B	B			?	● 35.3 3729 2.29 ● 0.7 0.0	wt. % $CaCO_3$	1 2 3 CC	0.5 1.0				TS	BASALTIC BRECCIA Major lithology: The core consists of dark greenish gray (5BG 4/1) and black (5Y 2.5/1), grain-supported BASALTIC BRECCIA with clasts ranging from granule size to ~15 cm; most are <5 cm diameter, however. Many clasts are vesicular, with some zeolite pore-filling. Matrix is volcanic sandstone.



SITE 832 HOLE B CORE 95R CORED INTERVAL 1048.6-1058.3 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
?	B	B			?	● 35.9 3774 ● 2.29 ● 0.0	g/cm³ Vp wt.% CaCO3 wt.% TOC	1 2 3 4 CC	0.5 1.0	Void Void			

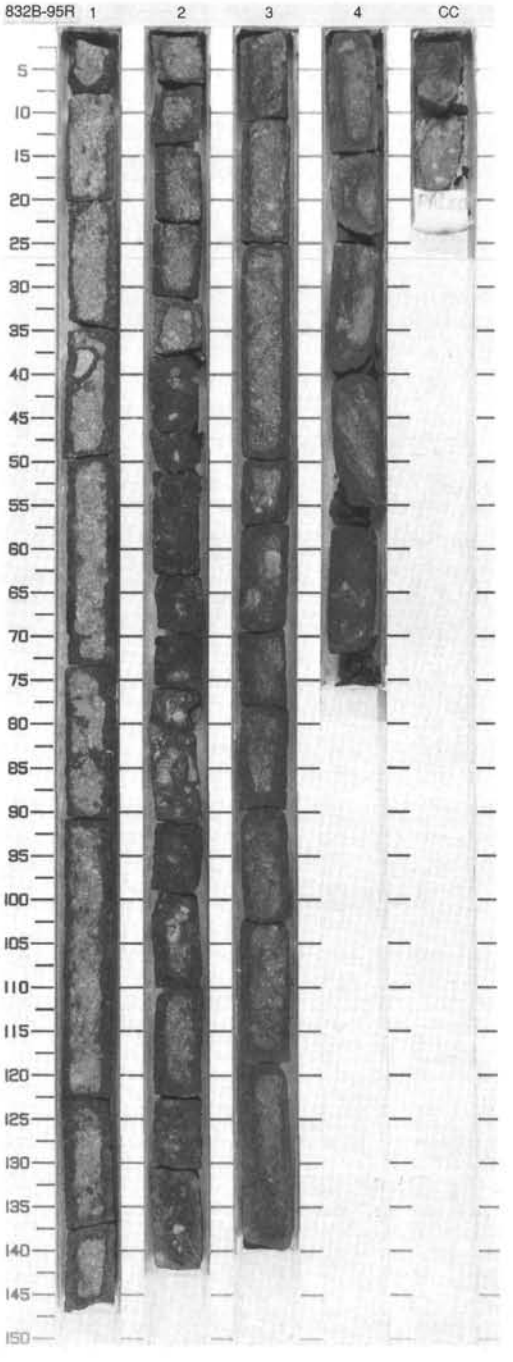
LITHOLOGIC DESCRIPTION

BASALTIC BRECCIA

Major lithology: The core consists of dark greenish gray (5BG 4/1) and black (5Y 2.5/1), grain-supported BASALTIC BRECCIA with clasts ranging from granule size to ~5 cm. Many clasts are vesicular, with some zeolite pore-filling. There are also scattered zeolite-filled veins. Matrix is volcanic sandstone.

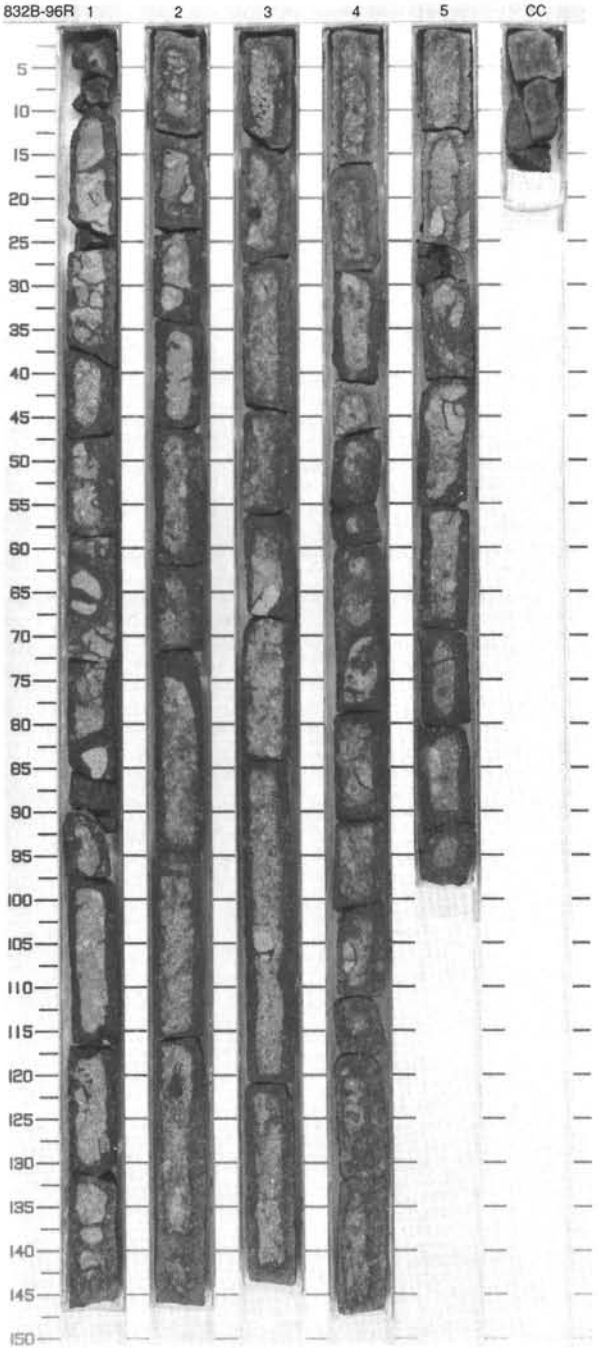
SMEAR SLIDE SUMMARY (%):

	2, 75 M
TEXTURE:	
Sand	100
COMPOSITION:	
Chlorite	5
Clinopyroxene	8
Glass	10
Olivine	2
Orthopyroxene	4
Palagonite	65
Plagioclase	6
Rock fragment	—



SITE 832 HOLE B CORE 96R CORED INTERVAL 1058.3-1068.0 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
?	B	B			?	ρ 1/ρ: ● 34.6 3900 2.26; ρ 1/ρ: ● 30.8 3642 2.27; WT. %CaCO3: ● 0.5; WT. %TOC: ● 0.5 0.1		1 2 3 4 5 CC	0.5 1.0					BASALTIC BRECCIA Major lithology: The core consists of dark greenish gray (5BG 4/1) and black (5Y 2.5/1), grain-supported BASALTIC BRECCIA with clasts ranging from granule size to ~10 cm. Many clasts are vesicular, with some zeolite pore filling. There are also scattered zeolite-filled veins. Matrix is volcanic sandstone.



SITE 832 HOLE B CORE 97R CORED INTERVAL 1068.0-1077.7 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
?	B	B			?	ρ Vp wt. %CaCO3 wt. %TOC		1 2 3 4 5 6 CC	0.5 1.0				*

● 42.8 3683 2.11
● 0.6 0.0
● 43.4 3069 2.07
● 0.7
● 37.7 3350 2.20
● 0.5

F

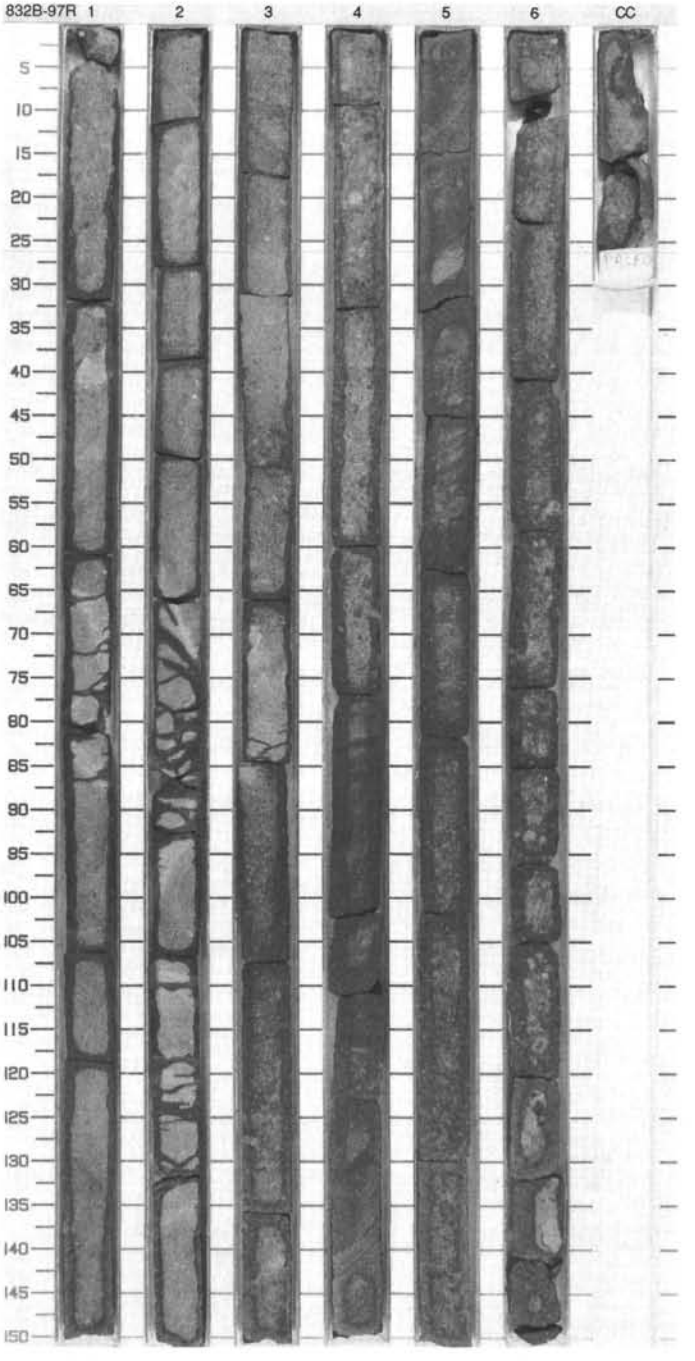
LITHOLOGIC DESCRIPTION

BASALTIC BRECCIA and BASALTIC SANDSTONE

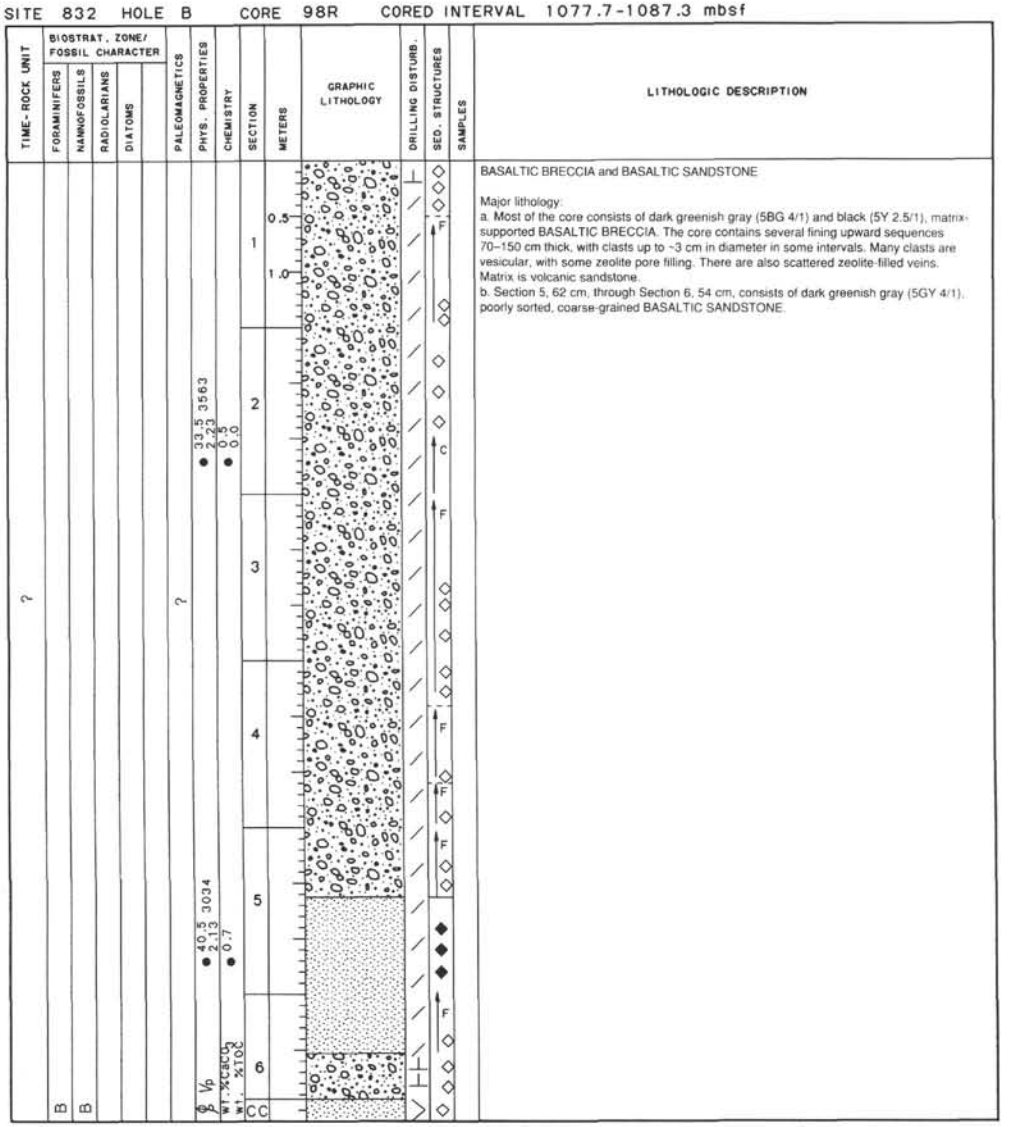
Major lithology:
a. Most of the core consists of dark greenish gray (5BG 4/1) and black (5Y 2.5/1), matrix-supported BASALTIC BRECCIA with clasts ranging from granule size to ~2 cm in diameter. Many clasts are vesicular, with some zeolite pore-filling. There are also scattered zeolite-filled veins. Matrix is volcanic sandstone. Slump structures are present in Sections 1 and 2. Clast size decreases over the length of the core; below Section 5, 38 cm, clasts are <0.8 cm.
b. Section 4, 78 cm, through Section 5, 38 cm, consists of dark greenish gray (5BG 4/1), poorly sorted, fine- to medium-grained BASALTIC SANDSTONE.

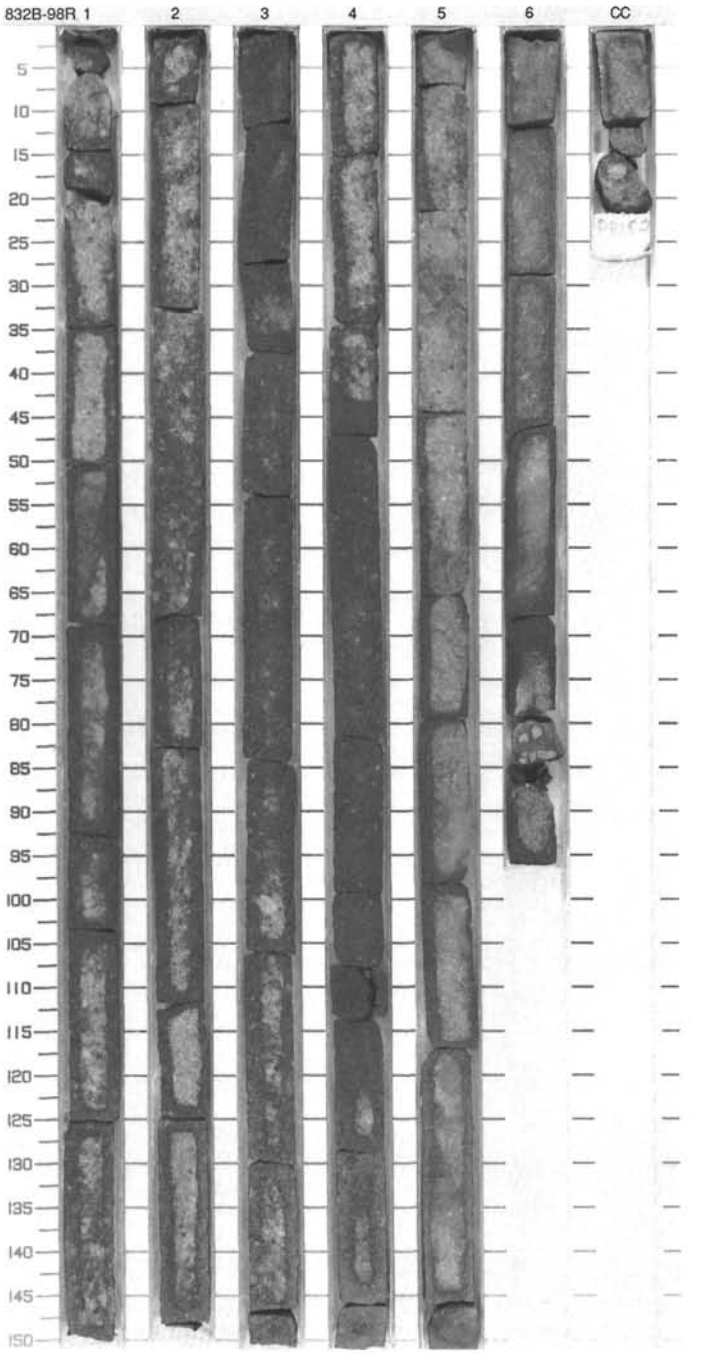
SMEAR SLIDE SUMMARY (%):

	1, 53 D
TEXTURE:	
Sand	65
Silt	30
Clay	5
COMPOSITION:	
Chlorite	10
Clay	5
Clinopyroxene	10
Feldspar	15
Glass	15
Olivine	2
Opaques	3
Oxide	5
Rock fragment	12
Spicules	Tr
Zeolite	23

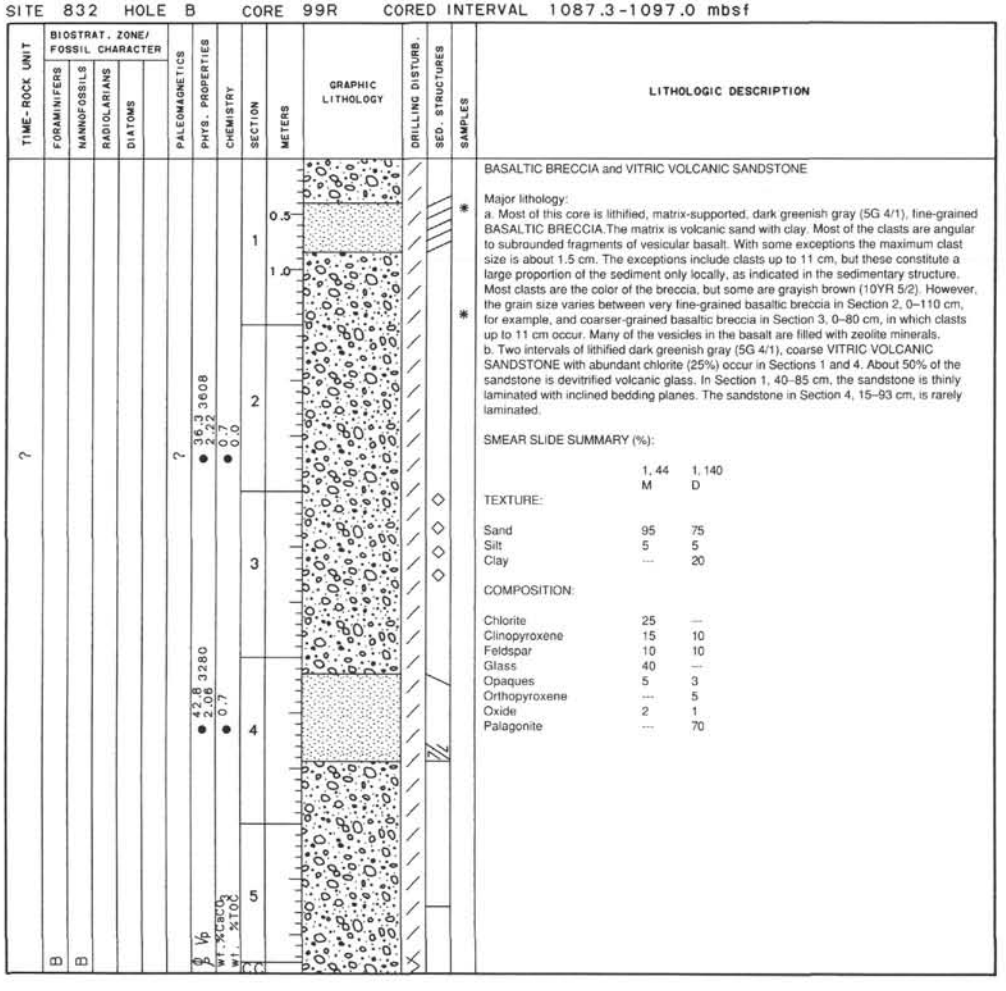


SITE 832 HOLE B CORE 98R CORED INTERVAL 1077.7-1087.3 mbsf





SITE 832 HOLE B CORE 99R CORED INTERVAL 1087.3-1097.0 mbsf



BASALTIC BRECCIA and VITRIC VOLCANIC SANDSTONE

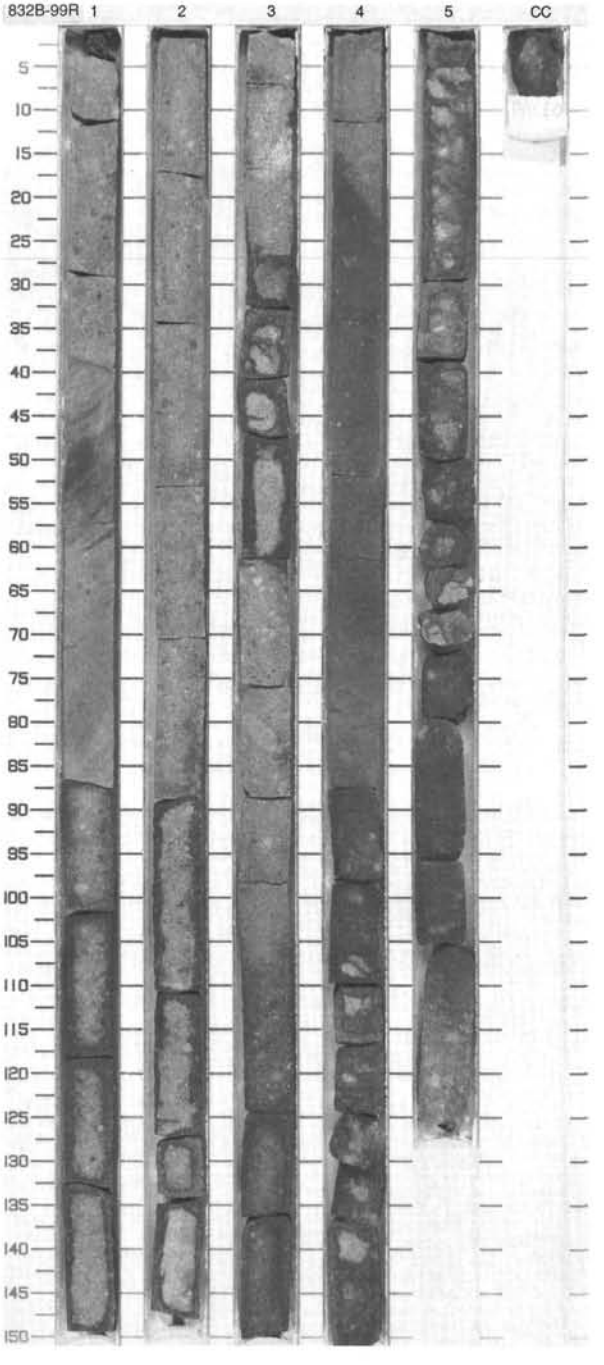
Major lithology:

a. Most of this core is lithified, matrix-supported, dark greenish gray (5G 4/1), fine-grained BASALTIC BRECCIA.The matrix is volcanic sand with clay. Most of the clasts are angular to subrounded fragments of vesicular basalt. With some exceptions the maximum clast size is about 1.5 cm. The exceptions include clasts up to 11 cm, but these constitute a large proportion of the sediment only locally, as indicated in the sedimentary structure. Most clasts are the color of the breccia, but some are grayish brown (10YR 5/2). However, the grain size varies between very fine-grained basaltic breccia in Section 2, 0–110 cm, for example, and coarser-grained basaltic breccia in Section 3, 0–80 cm, in which clasts up to 11 cm occur. Many of the vesicles in the basalt are filled with zeolite minerals.

b. Two intervals of lithified dark greenish gray (5G 4/1), coarse VITRIC VOLCANIC SANDSTONE with abundant chlorite (25%) occur in Sections 1 and 4. About 50% of the sandstone is devitrified volcanic glass. In Section 1, 40–85 cm, the sandstone is thinly laminated with inclined bedding planes. The sandstone in Section 4, 15–93 cm, is rarely laminated.

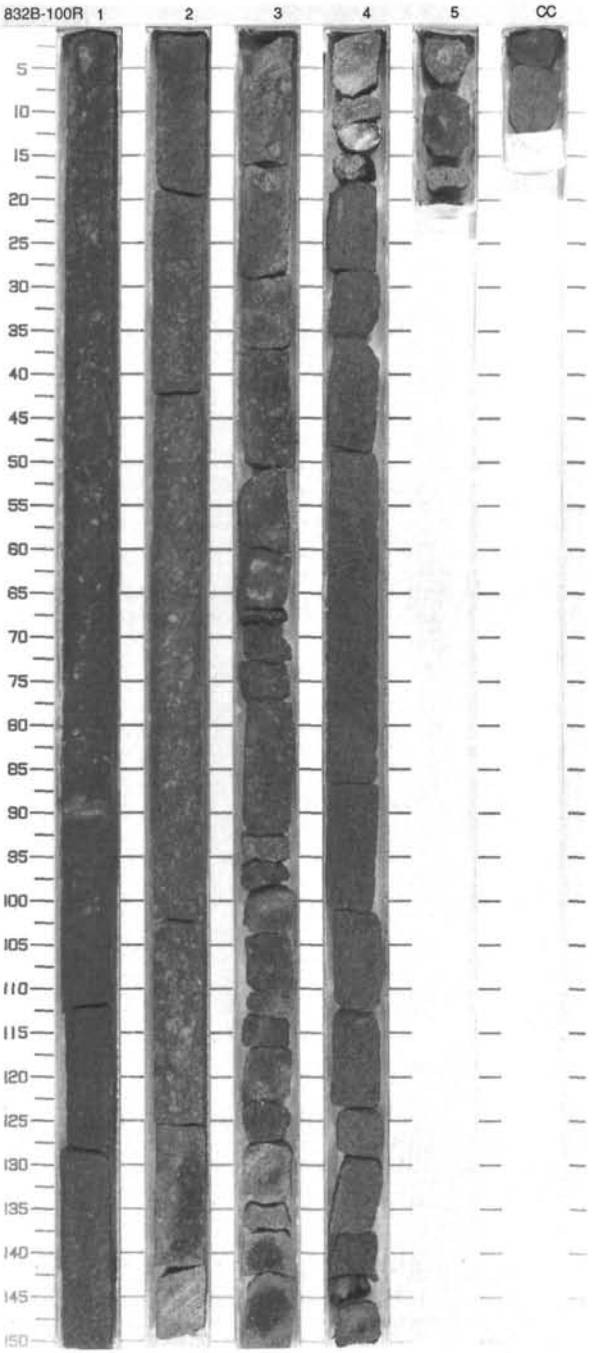
SMEAR SLIDE SUMMARY (%):

	1, 44 M	1, 140 D
TEXTURE:		
Sand	95	75
Silt	5	5
Clay	---	20
COMPOSITION:		
Chlorite	25	---
Clinopyroxene	15	10
Feldspar	10	10
Glass	40	---
Opaques	5	3
Orthopyroxene	---	5
Oxide	2	1
Palagonite	---	70



SITE 832 HOLE B CORE 100R CORED INTERVAL 1097.0-1106.7 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
?	B	B			?	Φ Vp β 38.0 3332 2.26 wt. %CaCO3 0.7 wt. %TOC	0.3 0.1	1 2 3 4 5 CC	0.5 1.0					BASALTIC BRECCIA and VOLCANIC SANDSTONE Major lithology: a. Most of this core is lithified, matrix-supported, dark greenish gray ((5G 4/1) to greenish black (5GY 2/1), fine-grained BASALTIC BRECCIA.The matrix is volcanic sand. Clasts are subangular to rounded with a maximum diameter of 1 cm with few exceptions. In Section 3 are clasts up to 7 cm long and in Section 4, 0–18 cm, are clasts of black (5Y 2.5/1) basalt up to 5 cm with clinopyroxene phenocrysts. Most clasts are vesicular basalt the color of the breccia, but a few are greenish gray (5G 5/1) or very dark grayish brown (10YR 3/2). b. Section 1, 105–150 cm, and Section CC are, respectively, lithified dark greenish gray (5G 4/1) and greenish black (5GY 2/1) coarse VOLCANIC SANDSTONE.



134-832B-27R-01 (Piece 1, 54-56 cm) OBSERVER: HAS WHERE SAMPLED:

ROCK NAME: Clinoyroxene phyric basalt.

GRAIN SIZE: Fine-grained.

TEXTURE: Porphyritic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPO-SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	15	15	0.2-2.0		Euhedral to subhedral.	
Clinopyroxene	35	35	1.0-4.0		Euhedral to subhedral.	
Opaque minerals	5	5	0.1-0.6		Rounded.	Discrete grains and inclusions in clinopyroxene.
GROUNDMASS						
Plagioclase	10	10	0.03-0.1		Laths.	
Clinopyroxene	7	7	0.03-0.1		Grains.	
Opaque minerals	3	3	0.03-0.1		Grains.	
Glass	7	15	N/A.		N/A.	

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Palagonite	8	Glass.	

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE
Vesicles	10		1.0-1.55	None.	Irregular.

134-832B-28R-01 (Piece 1, 1-3 cm) OBSERVER: BAK WHERE SAMPLED:

ROCK NAME: Clinoyroxene phyric basalt.

GRAIN SIZE: Fine-grained.

TEXTURE: Porphyritic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPO-SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	10	10	0.2-0.8		Subhedral.	
Clinopyroxene	30	30	0.2-5.0		Subhedral.	
Opaque minerals	1	1	0.1-0.2		Anhedral.	
GROUNDMASS						
Plagioclase	13	13	<0.1		Laths.	
Clinopyroxene	15	15	< 0.2		Anhedral.	
Opaque minerals	9	9	< 0.05		Anhedral.	

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Zeolites	8		Partially filling some vesicles.

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	22		0.2-1.2	Zeolites.	Irregular.	Some of vesicles partially filled with zeolites.

COMMENTS: This refers to more crystalline portion of basalt. Adjacent to it is finer grained, more scoriaceous basalt with similar phenocrysts assemblage.

134-832B-31R-02 (Piece 1, 9-11 cm) OBSERVER: COL WHERE SAMPLED:

ROCK NAME: Clinoyroxene phyric basalt.

GRAIN SIZE: Fine-grained.

TEXTURE: Porphyritic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	17	17	0.3-0.8		Euhedral.	
Clinopyroxene	13	13	1.0-4.0		Euhedral to subhedral.	Some crystals with glass inclusions.
Opaque minerals	3	3	0.1-1.0		Subhedral to anhedral.	
GROUNDMASS						
Plagioclase	26	26	0.01-0.03		Laths.	
Opaque	22	22	0.01-0.03		Grains.	
Clinopyroxene	7	7	0.01-0.03		Grains.	

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Chlorite	4		Partially filled some cavities.

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	12		1.0		Subrounded to irregular.	Partially filled with chlorite.

134-832B-38R-01 (Piece 1, 18-19 cm) OBSERVER: COL WHERE SAMPLED:

ROCK NAME: Clinoyroxene phyric basalt.

GRAIN SIZE: Fine-grained.

TEXTURE: Porphyritic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Clinopyroxene	10	10	1.0-6.0		Euhedral.	
Opaque minerals	2	2	0.3-1.0		Anhedral.	
GROUNDMASS						
Plagioclase	26	26	0.1-0.5		Laths.	Slightly oriented.
Clinopyroxene	15	15	0.2-0.7		Subhedral.	
Opaque minerals	10	10	0.05-0.1		Grains.	
Glass	4	7	N/A.		N/A.	Brownish. Turbid.

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Clay minerals	3	Glass.	

VESICLES CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE
Vesicles	30		1.0-4.0	None.	Rounded to subrounded.

134-832B-41R-01 (Piece 1, 22-23 cm) OBSERVER: COL WHERE SAMPLED:

ROCK NAME: Basalt.

GRAIN SIZE: Fine-grained.

TEXTURE: Porphyritic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Clinopyroxene	25	25	1.0-6.0		Euhedral.	Zoned. Glass and opaque mineral inclusions.
Opaque minerals	3	3	0.1-0.5		Anhedral.	Mostly included in clinopyroxene.
GROUNDMASS						
Plagioclase	20	20	0.05-0.2		Laths.	
Clinopyroxene	15	15	0.05-0.1		Grains.	
Opaque minerals	7	7	0.05-0.1		Grains.	
Glass	—	15	N/A.		N/A.	Altered to clay minerals.

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Clay minerals	15	Glass.	

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE
Vesicles	15		1.0-2.0	None.	Subrounded to elongate.

134-832B-43R-03 (Piece 1, 23-26 cm) OBSERVER: COL WHERE SAMPLED:

ROCK NAME: Andesite.

GRAIN SIZE: Fine-grained.

TEXTURE: Porphyritic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	25	25	0.5-2.0	An_{40}	Euhedral.	Tiny glass inclusions. Strongly zoned.
Clinopyroxene	10	10	0.5-2.0		Euhedral to subhedral.	
Amphibole	6	8	0.5-1.5		Euhedral to subhedral.	Disequilibrium rims composed of opaque minerals and plagioclase.
Opaque minerals	6	6	0.1-0.5		Subhedral to anhedral.	
GROUNDMASS						
Plagioclase	10	10	0.02-0.05		Euhedral.	
Orthopyroxene	6	6	0.03-0.08		Euhedral.	Quenched forms.
Clinopyroxene	2	2	0.03-0.08		Euhedral to subhedral.	
Opaque minerals	2	2	0.01-0.03		Grains.	
Glass	24	24	N/A.		N/A.	Brownish color.

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE
Vesicles	7		1.0	None.	Irregular.

134-832B-50R-02 (Piece 1, 46-48 cm) OBSERVER: COL WHERE SAMPLED:

ROCK NAME: Basalt.

GRAIN SIZE: Fine-grained.

TEXTURE: Porphyritic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPO-SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Clinopyroxene	15	15	2.0-7.0		Euhedral to subhedral.	
Plagioclase	7	7	0.8-1.5		Euhedral.	
Opaque minerals	3	3	0.5-1.5		Anhedral.	Included in clinopyroxene.
GROUNDMASS						
Plagioclase	30	30	0.01-0.05		Laths.	
Clinopyroxene	20	20	0.01-0.03		Grains.	
Opaque mineral	12	12	0.01-0.03		Grains.	
Glass	8	8	N/A.		N/A.	

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE
Vesicles	5		1.0-2.0	None.	Elongated to irregular.

134-832B-51R-03 (Piece 1, 4-5 cm) OBSERVER: COL WHERE SAMPLED:

ROCK NAME: Basaltic breccia.

GRAIN SIZE: Medium coarse grained.

TEXTURE: Porphyritic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPO-SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Clinopyroxene	20	20	1.0-5.0		Euhedral to subhedral.	Concentrical zoned.
Opaque minerals	10	10	0.1-1.0		Anhedral.	
GROUNDMASS						
Plagioclase	15	30	0.5-1.5		Euhedral.	Altered to clay minerals.
Opaque minerals	5	5	0.01- 0.1		Grains.	
Clinopyroxene	10	10	0.1-0.8		Grains.	

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Clay minerals	15	Plagioclase.	
Zeolites	25	Vesicles.	

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE
Vesicles	25		0.5-3.0	Zeolites.	Subrounded to irregular.

COMMENTS: Description applies only to the clasts in the matrix. Their diameters can be up to 3 cm.

134-832B-51R-05 (Piece1, 7-8 cm) OBSERVER: COL WHERE SAMPLED:

ROCK NAME: Basalt.

GRAINSIZE: Fine-grained to glassy.

TEXTURE: Porphyritic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPO-SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	8	8	0.5-2.0		Euhedral to subhedral.	
Plagioclase	20	20	1.0-2.5		Euhedral to subhedral	Abundant glassy inclusions.
Clinopyroxene	15	15	2.0-5.0		Euhedral to subhedral.	Inclusions of abundant glassy blebs and olivine crystals .
Opaque minerals	1	1	0.5-1.0		Anhedral.	
GROUNDMASS						
Plagioclase	7	7	0.02-0.04		Euhedral.	
Clinopyroxene	5	5	0.02-0.04		Euhedral to subhedral.	
Olivine	4	4	0.01-0.04		Euhedral to subhedral.	
Opaque minerals	3	3	0.01-0.03		Grains.	
Glass	37	37	N/A.		N/A.	

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE
Vesicles	None.				

COMMENTS: The description applies to one clast (2.5 cm) with well developed, fine-grained rims. The inner rim (2 mm) is mainly composed of plagioclase plus clinopyroxene and olivine crystals in a dark oxidized glassy groundmass. The outer rim (2 mm) is richer in clinopyroxene and opaque minerals. It has few percent of foraminifers. The glassy matrix is completely altered to clay minerals.

134-832B-55R-04 (Piece 1, 125-126 cm) OBSERVER: COL WHERE SAMPLED:

ROCK NAME: Basalt.

GRAIN SIZE: Fine-grained.

TEXTURE: Porphyritic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPO-SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	4	4	0.5-1.0		Euhedral.	
Clinopyroxene	20	20	1.0-6.0		Euhedral to subhedral.	Sometimes glomeroporphyritic.
Opaque minerals	1	1	0.5		Anhedral.	
GROUNDMASS						
Plagioclase	25	25	0.01-0.03		Laths.	
Clinopyroxene	12	12	0.01-0.05		Grains.	
Opaque minerals	7	7	0.01-0.02		Grains.	
Glass	8	21	N/A.		N/A.	Partially altered to clay minerals.

SECONDARY MINERALOGY	REPLACING/ PERCENT	FILLING	COMMENTS
Clay minerals	13	Glass.	
Zeolites	4	Vesicles.	

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE
Vesicles	10		1-2	Partially with zeolites.	Rounded to elongate.

134-832B-55R-04 (Piece 1, 127-128 cm) OBSERVER: COL WHERE SAMPLED:

ROCK NAME: Basalt.

GRAIN SIZE: Fine-grained.

TEXTURE: Porphyritic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPO-SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	2	5	1.0-2.0		Anhedral.	Altered to iddingsite.
Plagioclase	18	18	1.0-2.0		Euhedral.	Sometimes glomeroporphyritic with clinopyroxene and opaque minerals.
Clinopyroxene	13	13	1.0-3.0		Euhedral to subhedral.	
Opaque minerals	5	5	0.1-0.5		Anhedral.	
GROUNDMASS						
Plagioclase	7	7	0.01-0.02		Laths.	
Clinopyroxene	5	5	0.01-0.02		Grains.	
Opaque minerals	4	4	0.01-0.02		Grains.	
Glass	11	35	N/A.		N/A.	Altered to clay minerals.

SECONDARY MINERALOGY	REPLACING/ PERCENT	FILLING	COMMENTS
Clay minerals	24	Glass.	
Zeolites	8	Vesicles.	
Iddingsite	3	Olivine.	

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE
Vesicles	8		1.0-3.0	Zeolites.	Subrounded to irregular.

134-832B-56R-02 (55-56 cm) OBSERVER: HAS WHERE SAMPLED:

ROCK NAME: Basalt.

GRAIN SIZE: Fine-grained.

TEXTURE: Porphyritic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPO-SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	3	3	0.25-1.1		Subhedral.	
Plagioclase	9	10	0.2-1.2		Subhedral.	Dusty, having cracks.
Clinopyroxene	20	20	0.1-3.0		Subhedral.	Two size distributions: phenocryst and microphenocryst.
GROUNDMASS						
Plagioclase	10	10	0.02-0.05		Laths.	
Clinopyroxene	2	2	0.01-0.03		Grains.	
Opaque minerals	7	7	0.01-0.2		Grains.	Two size distributions: microphenocryst and groundmass.
Olivine	<1	<1	0.05-0.1		Grains.	
Glass	13	13	N/A.		N/A.	

SECONDARY MINERALOGY	REPLACING/ PERCENT	FILLING	COMMENTS
Zeolites	36	Vesicles and cracks of plagioclase.	

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE
Vesicles	35	Groundmass.	0.15-3.0	Zeolites.	Subrounded to irregular.

134-832B-57R-02 (124-125 cm) OBSERVER: HAS WHERE SAMPLED:

ROCK NAME: Basalt.

GRAIN SIZE: Fine-grained.

TEXTURE: Porphyritic and intergranular.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPO-SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	3	4	0.3-1.3		Subhedral.	
Plagioclase	35	35	0.1-1.5		Euhedral.	Contain inclusions of glass.
Clinopyroxene	25	25	1.0-5.0		Euhedral to subhedral.	Show zoning and contain inclusions of opaque minerals.
GROUNDMASS						
Plagioclase	12	12	0.03-0.2		Laths.	
Clinopyroxene	8	8	0.02-0.1		Grains.	
Opaque minerals	7	7	0.03-0.2		Grains.	
Olivine	—	1	0.05-0.2		Grains.	
Glass	—	8	N/A.		N/A.	

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Palagonite	8	Glass.	
Iddingsite	2	Olivine.	

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE
Vesicles	None.				

134-832B-88R-02 (Piece 1, 105-109 cm) OBSERVER: COL WHERE SAMPLED:

ROCK NAME: Andesitic breccia.

GRAIN SIZE: Fine-grained.

TEXTURE: Porphyritic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPO-SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	—	2	1.5		Subhedral.	Pseudomorphs of iddingsite.
Plagioclase	20	20	0.2-1.0		Euhedral.	
Clinopyroxene	7	7	0.5-1.0		Subhedral.	Sometimes glomeroporphyritic with orthopyroxene
Orthopyroxene	4	4	0.5-1.0		Subhedral.	
GROUNDMASS						
Plagioclase	7	7	0.01-0.03		Laths.	
Pyroxenes	5	5	0.01-0.03		Grains.	
Glass	—	15	N/A.		N/A.	Altered to clay minerals.

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Clay minerals	15	Glass.	
Iddingsite	2	Olivine.	

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE
Vesicles	40		1-4	None.	Rounded to elongate.

COMMENTS: The description applies to the larger clast (2 cm). The matrix is composed of smaller basaltic and andesitic fragments plus plagioclase and pyroxene crystals in a clay material. No rim is present between the clasts and the matrix.

134-832B-94R-02 (Piece 1, 107-109 cm) OBSERVER: COL WHERE SAMPLED:

ROCK NAME: Basalt.

GRAIN SIZE: Fine-grained.

TEXTURE: Porphyritic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPO-SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	2	6	0.6-1.0		Subhedral.	Partially replaced by serpentine and iddingsite.
Plagioclase	16	16	0.5-1.5		Euhedral.	
Clinopyroxene	12	12	0.2-5.0		Euhedral to subhedral.	
Orthopyroxene	3	3	0.5-1.0		Subhedral.	
GROUNDMASS						
Plagioclase	10	10	0.02-0.04		Laths.	
Glass	12	36	N/A.		N/A.	Partially altered to clay minerals.

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Clay minerals	24	Glass.	
Zeolites	12	Vesicles.	
Chlorite	5	Vesicles.	
Serpentine	3	Olivine.	
Iddingsite	1	Olivine.	

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE
Vesicles	17		1-3	Chlorite and zeolites.	Rounded to elongate.

134-832B-100R-03 (146-147 cm) OBSERVER: HAS WHERE SAMPLED:

ROCK NAME: Olivine basalt.

GRAIN SIZE: Fine-grained.

TEXTURE: Porphyritic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	—	17	0.2-1.7		Subhedral.	
Clinopyroxene	10	10	0.2-1.3		Subhedral.	
Orthopyroxene	3	3	0.2-1.8		Euhedral to subhedral.	
GROUNDMASS						
Plagioclase	25	25	0.05-0.5		Laths.	Microphenocryst size.
Orthopyroxene	8	8	0.05-0.2		Tabular.	
Clinopyroxene	4	4	0.04-0.1		Grains.	
Glass	15	30	N/A.		N/A.	

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Palagonite	12	Glass.	
Iddingsite	10	Olivine.	
Calcite	7	Olivine.	
Oxides	3	Glass.	

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	3		0.2-2.2	Clay minerals.	Rounded.	The filling is only on the rim.

134-832B-100R-04 (7-8 cm) OBSERVER: HAS WHERE SAMPLED:

ROCK NAME: Two pyroxene andesite.

GRAIN SIZE: Fine-grained.

TEXTURE: Porphyritic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	18	18	0.15-2.3		Euhedral to subhedral.	
Clinopyroxene	5	5	0.2-2.2		Subhedral.	
Orthopyroxene	7	7	0.2-2.5		Euhderal to subhedral.	
GROUNDMASS						
Plagioclase	12	12	0.01-0.05		Laths.	
Orthopyroxene	7	7	0.01-0.03		Laths.	
Clinopyroxene	4	4	0.01-0.03		Grains.	
Opaque minerals	2	2	0.003-0.02		Grains.	
Glass	45	45	N/A.		N/A.	

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE
Vesicles	None.				