SITE 766 HOLE A CORE 1R CORED INTERVAL 0-7.7- mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALYNOMORPHS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
LOWER PLEISTOCENE (>1 ma)	A/G	N22	C/V-G					$CaCO_3$=80.4% TOC=0.0%	1	0.5				
	A/G	*C. macintyrei*	C/V-G	C/V-G	TOC=0.15%)	($CaCO_3$=80.6% TOC=0.03%)				1.0	VOID			
	C/V-G C/V-G	*A. angulare*	C/V-G		($CaCO_3$=71.6%				2					*
														*
						Indeterminate								*
						($CaCO_3$=67.6%)			3					
							V=1529 V=1521	$CaCO_3$=74.0%						IW
									4		VOID			
									5					
									CC					

LITHOLOGIC DESCRIPTION

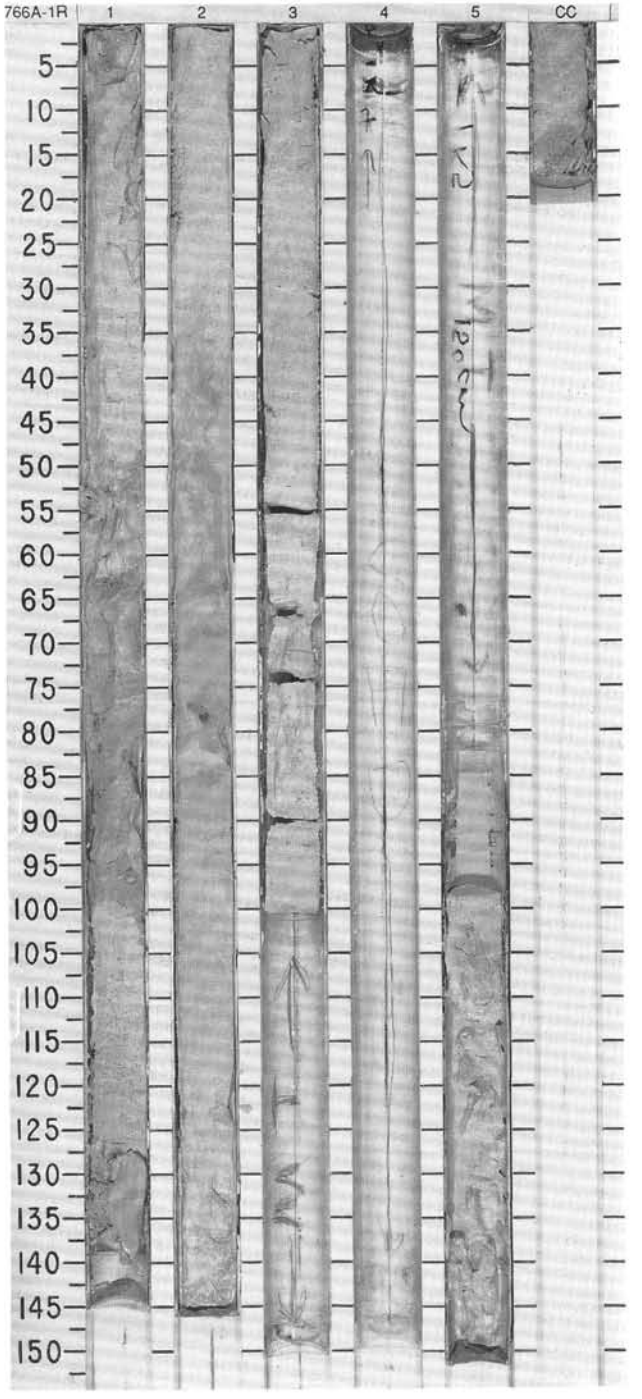
NANNOFOSSIL OOZE

Core largely highly disturbed to soupy.

Major lithology: NANNOFOSSIL OOZE, dominantly pink (5YR 7/4, 8/2, 8/3) with local mottles of reddish yellow (5YR 6/6) and gray to dark gray to light brownish gray (5Y 4/1, 5/1, 10YR 6/2). No visible sedimentary structures. Largely clay-sized with 30-40% floating silt- and sand- sized grains (foraminifers, siliceous fragments, and radiolarians).

SMEAR SLIDE SUMMARY (%):

	2, 21 M	2, 64 M	2, 90 D
TEXTURE:			
Sand	15	5	8
Silt	18	25	22
Clay	67	70	70
COMPOSITION:			
Calcareous fragments	5	4	1
Calcite	—	—	Tr
Diatoms	1	4	1
Foraminifers	10	1	10
Glass	Tr	—	Tr
Nannofossils	67	70	70
Opaques	Tr	Tr	—
Organic matter	2	2	1
Quartz	Tr	Tr	Tr
Radiolarians	7	5	12
Silicious fragments	4	10	—
Silicoflagellates	Tr	Tr	Tr
Spicules	4	4	2



SITE 766 HOLE A CORE 2R CORED INTERVAL 7.7-17.3 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALYNOMORPHS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
UPPERMOST LOWER PLIOCENE / LOWER PLEISTOCENE	N19	CN10d	G/V-R●	A. angulare		Indeterminate	ϕ=73.2 ρ=2.183 V=1503	CaCO3=74.0%●	1	0.5 / 1.0				*
	A/M		B● ●B	G/V-R		B	ϕ=71.7 ρ=2.158 V=1471	CaCO3=70.9%● TOC=0.02%	2		VOID			*
								CaCO3=64.9%● CaCO3=62.6%	3					
									4		VOID			
									5					
								●CaCO3=65.0%	6					*
								●CaCO3=65.9%	7					
									CC					

LITHOLOGIC DESCRIPTION

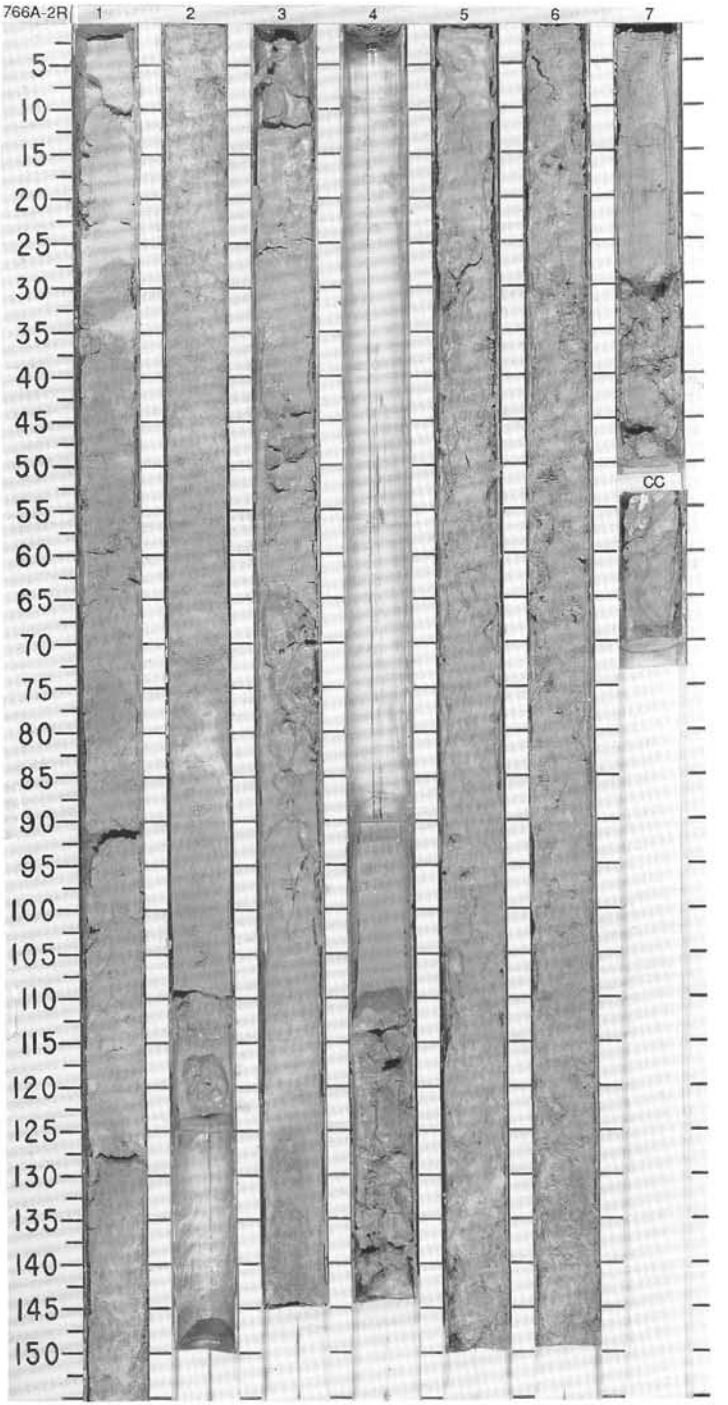
NANNOFOSSIL OOZE

Entire core is highly disturbed to locally soupy.

Major lithology: NANNOFOSSIL OOZE, very pale brown (10YR 7/4), generally featureless, but contains (Sections 1-3, 5) disseminated dark gray flecks of unknown metallic mineral. Foraminifers and siliceous fragments are most abundant minor constituents (as much as 5% each).

SMEAR SLIDE SUMMARY (%):

	1, 20 D	1, 77 D	2, 49 D	6, 83 D
TEXTURE:				
Sand	3	1	2	—
Silt	12	24	—	77
Clay	85	75	98	23
COMPOSITION:				
Accessory minerals	—	Tr	—	—
Calcareous fragments	1	3	—	5
Diatoms	1	—	—	—
Foraminifers	5	Tr	2	—
Glass	—	Tr	—	—
Muscovite	—	—	—	2
Nannofossils	85	94	98	89
Opaques	Tr	1	—	1
Organic matter	1	1	—	2
Plant	—	Tr	—	—
Quartz	Tr	1	—	1
Radiolarians	1	—	—	—
Silicious fragments	3	—	—	—
Silicoflagellates	1	—	—	—
Spicules	2	—	—	Tr



SITE 766 HOLE A CORE 3R CORED INTERVAL 17.3-27.0 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALYNOMORPHS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
LOWER EOCENE	A/G	A/G	B ●B		B	Indeterminate	●-58.2 P-1.89 V-1568 ICaCO3=92.2% TOC=0.00%● ●-70.0%●	●CaCO3=94.0% TOC=0.00%	1 2 3 4 5 6 CC	0.5 1.0				* * *

LITHOLOGIC DESCRIPTION

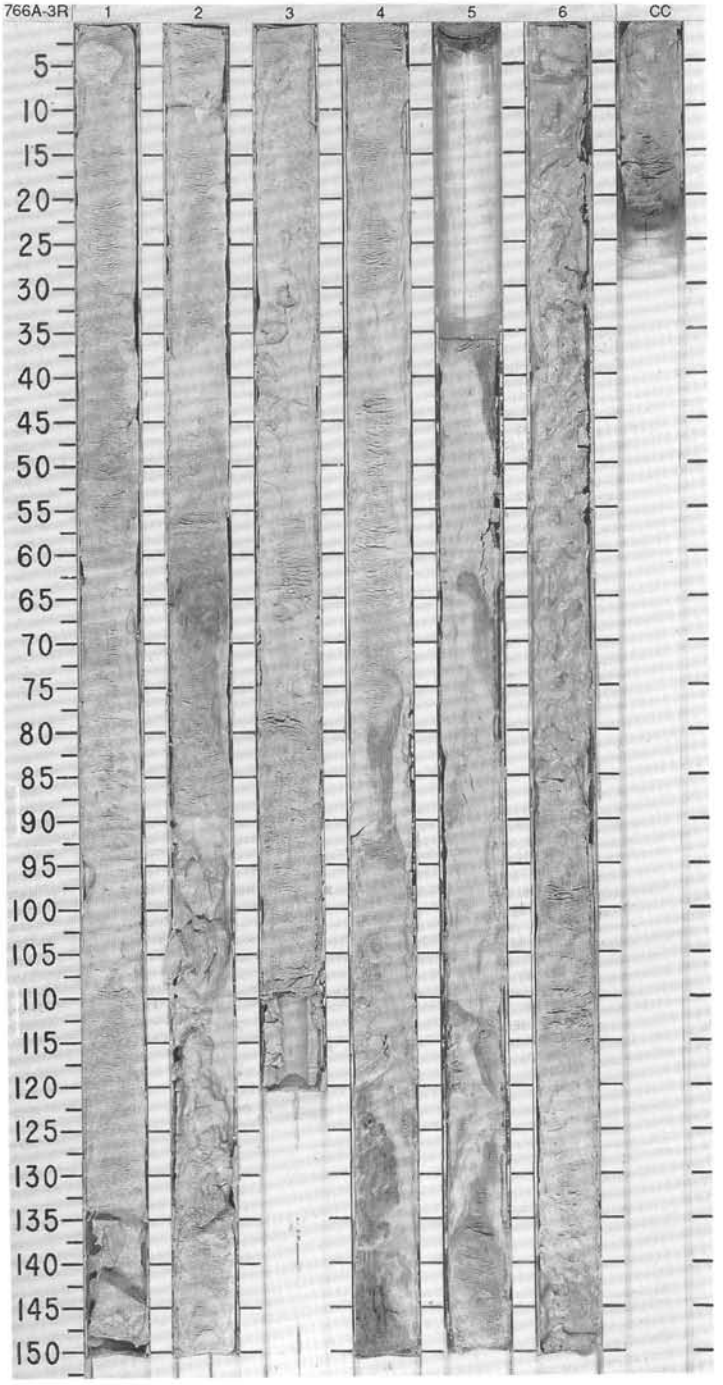
NANNOFOSSIL OOZE

Core highly to moderately disturbed; locally soupy.

Major lithology: NANNOFOSSIL OOZE, dominantly very pale brown (10YR 7/3, 7/4, 8/3, 8/4) with local mottles (especially in sections 2 & 4) of white, yellowish brown, and brownish yellow (10YR 4/6, 5/8, 6/4, 6/6). Largely silt-sized; minor spicules(?) and foraminifers. Section 3 (5-10 cm) contains scattered coarse-sand-sized grains of gray sedimentary rock(?). No visible sedimentary structures.

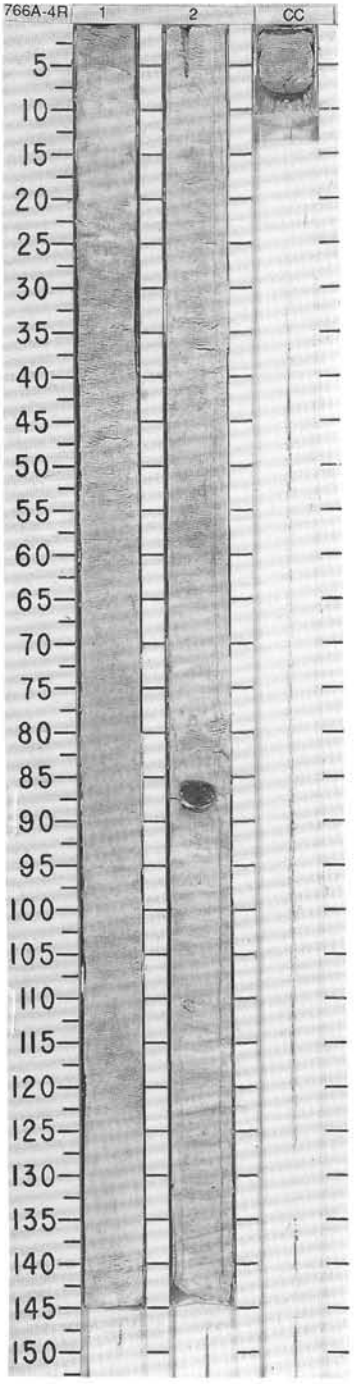
SMEAR SLIDE SUMMARY (%):

	1, 76 D	2, 62 D	4, 144 D	5, 103 D
TEXTURE:				
Silt	91	92	95	98
Clay	9	8	5	2
COMPOSITION:				
Calcareous fragments	—	—	Tr	Tr
Foraminifers	1	—	—	—
Muscovite	Tr	Tr	1	4
Nannofossils	98	85	78	93
Opaques	—	Tr	Tr	—
Organic matter	—	—	Tr	—
Plant	—	Tr	—	—
Quartz	—	—	—	Tr
Spicules	—	15	20	3



SITE 766 HOLE A CORE 4R CORED INTERVAL 27.0-36.7 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALYNOMORPHS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
LOWER EOCENE	A/G P6b	A/G CP9	R/G	($CaCO_3$=93.8% TOC=0.00%)	B ($CaCO_3$=95.8%)	($CaCO_3$=93.4%)	ρ=61.9 V=1515 ρ=1.77 ρ=60.3 V=1455 ρ=1.69		1	0.5 1.0					NANNOFOSSIL OOZE Entire core moderately disturbed. Major lithology: NANNOFOSSIL OOZE, very pale brown (10YR 8/3) commonly homogeneous. Very scare yellowish brown (10YR 5/4) diffuse mottles in Section 1 at 60-110 and cm subordinate mm- to one cm-thick intervally yellowish brown (10YR 5/4) in Section 2 at 115-145 cm. Minor lothology: Sandstone, three cm-sized rounded pebbles, dark yellowish brown (10YR 4/4), very coarse- to coarse-grained with calcareous fragments (pelecypods?). SMEAR SLIDE SUMMARY (%): 2, 100 D TEXTURE: Sand 1 Silt 82 Clay 17 COMPOSITION: Calcareous fragments 2 Foraminifers 3 Nannofossils 93 Spicules 1
									2					*	



SITE 766 HOLE A CORE 5R CORED INTERVAL 36.7-46.3 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALYNOMORPHS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
LOWER EOCENE	P6b	CP9	A/G	B	B	Indeterminate	Indeterminate	ϕ=62.3 %, 1.84 V=1525	$CaCO_3$=77.1%	1	0.5, 1.0				
										2	VOID				
								ϕ=58.2 %, 1.74 V=1544	$CaCO_3$=93.6%	3					
									$CaCO_3$=89.8%	4					
										5					
								TOC=0.00%		6					
								$CaCO_3$=91.3%		CC					

LITHOLOGIC DESCRIPTION

NANNOFOSSIL OOZE

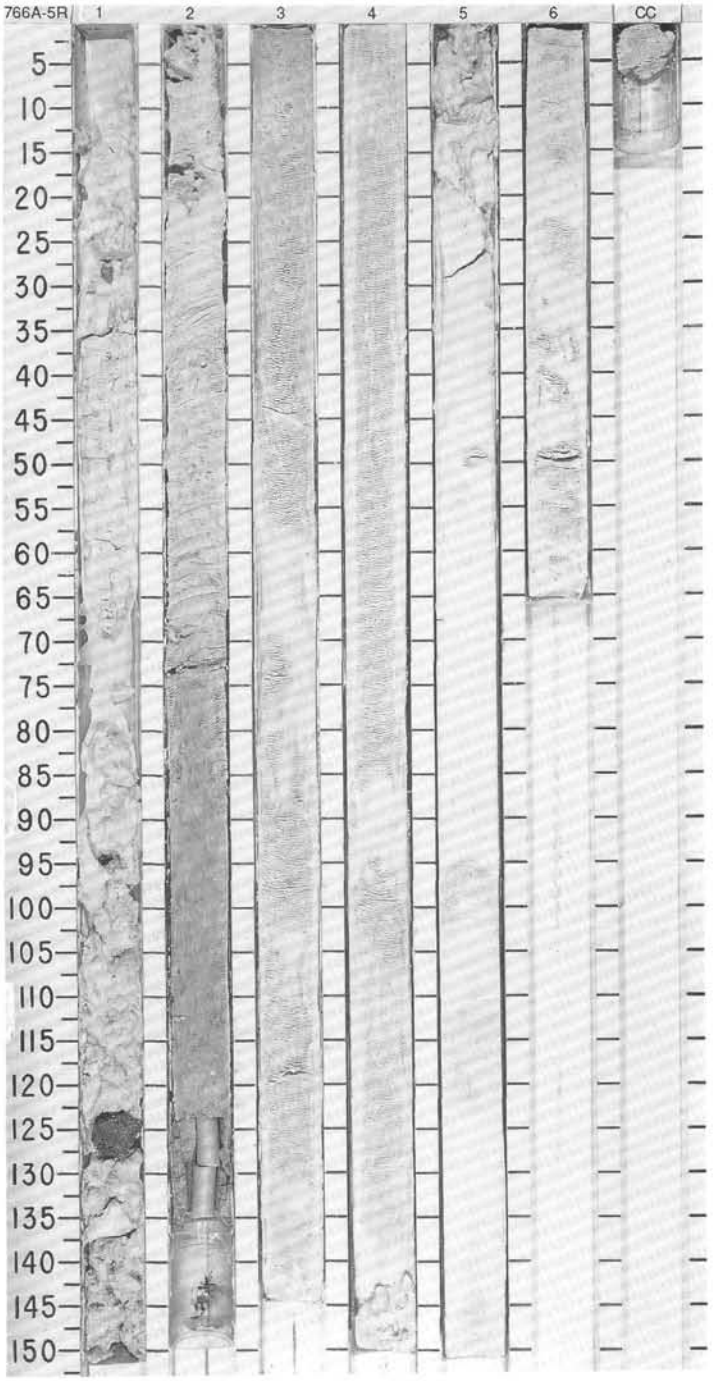
Core highly to moderately disturbed; locally soupy.

Major lithology: NANNOFOSSIL OOZE, dominantly very pale brown (10YR 8/4) and homogeneous, but with local paler (but still 10YR 8/4) mottles - rounded to streaky -in Sections 3, 60-84 cm, Section 4, 0-15, 30 50 cm, Section 5, 45-100 cm, and Section 6, 10, 25, 60 cm. Brownish yellow interval occurs (10YR 6/6) in Section 2,. Largely silt-sized; trace calcareous fragments, foraminifers, calcareous spicules. Smear slide from Section 5 contains 2% authigenic euhedral dolomite.

Minor lithology: Six 2- to 4-cm dark yellowish brown (10YR 4/4) pebbles scattered through Section 1. One is a rhyolite; the others are poorly sorted, medium- to very coarse-grained sandstone with bivalve fragments as much as 7 mm long.

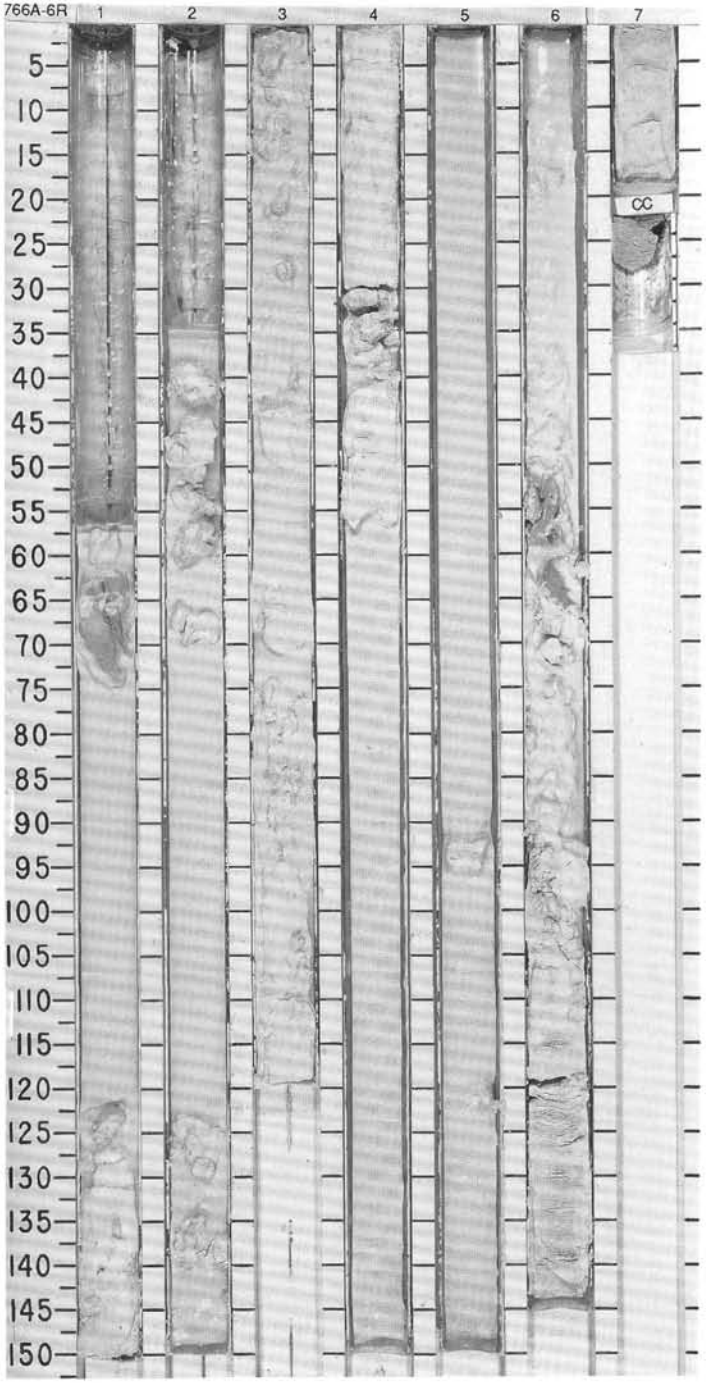
SMEAR SLIDE SUMMARY (%):

	1, 53 D	1, 135 M	2, 88 M	5, 30 M	5, 68 D
TEXTURE:					
Sand	—	—	—	40	—
Silt	99	—	—	30	85
Clay	1	—	—	30	15
COMPOSITION:					
Algae	—	Tr	—	—	—
Bioclast	—	73	50	—	—
Calcareous fragments	2	—	—	—	—
Cement	—	—	7	—	—
Chlorite	—	—	25	—	—
Clay	—	—	—	20	—
Dolomite	—	—	—	—	2
Foraminifers	1	—	—	—	Tr
Matrix	—	—	—	28	—
Muscovite	Tr	—	—	—	Tr
Nannofossils	96	—	—	—	97
Oolite	—	Tr	—	—	—
Opaques	—	—	—	2	—
Other	—	10	—	—	—
Quartz	—	Tr	3	50	—
Rock fragment	—	17	15	—	—
Spicules	1	—	—	—	—



SITE 765 HOLE A CORE 6R CORED INTERVAL 46.3-56.0 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALYNOMORPHS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
UPPER PALEOCENE	A/G	P6a						●$CaCO_3$=87.9%	1	0.5	VOID			*	NANNOFOSSIL OOZE Entire core soupy to highly disturbed. Major lithology: NANNOFOSSIL OOZE, commonly white (10YR 8/2) and in Section 7 very pale brown (10YR 8/3). Homogeneous and featureless. SMEAR SLIDE SUMMARY (%): 1, 67 D TEXTURE: Silt 89 Clay 11 COMPOSITION: Calcareous fragments 4 Nannofossils 94 Opaques Tr Organic matter Tr Quartz Tr Spicules 1
	A/G	CP8b						●$CaCO_3$=92.8% TOC=0.00%	2	1.0	VOID				
	B				B				3		VOID				
									4						
									5						
									6						
									7						



SITE 766 HOLE A CORE 7R CORED INTERVAL 56.0-65.7 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALYNOMORPHS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
UPPER PALEOCENE	R/M	P4 - P5							1	0.5				
	A/G	CP8a								1.0				
	B								2					
	B													
									3					
									4					
									5					
									6					
									7					
									CC					

●CaCO$_3$=92.6%

●CaCO$_3$=95.3%

●Φ=60.9 ρ=1.79 V=1526

●Φ=59.8 ρ=1.79 V=1528

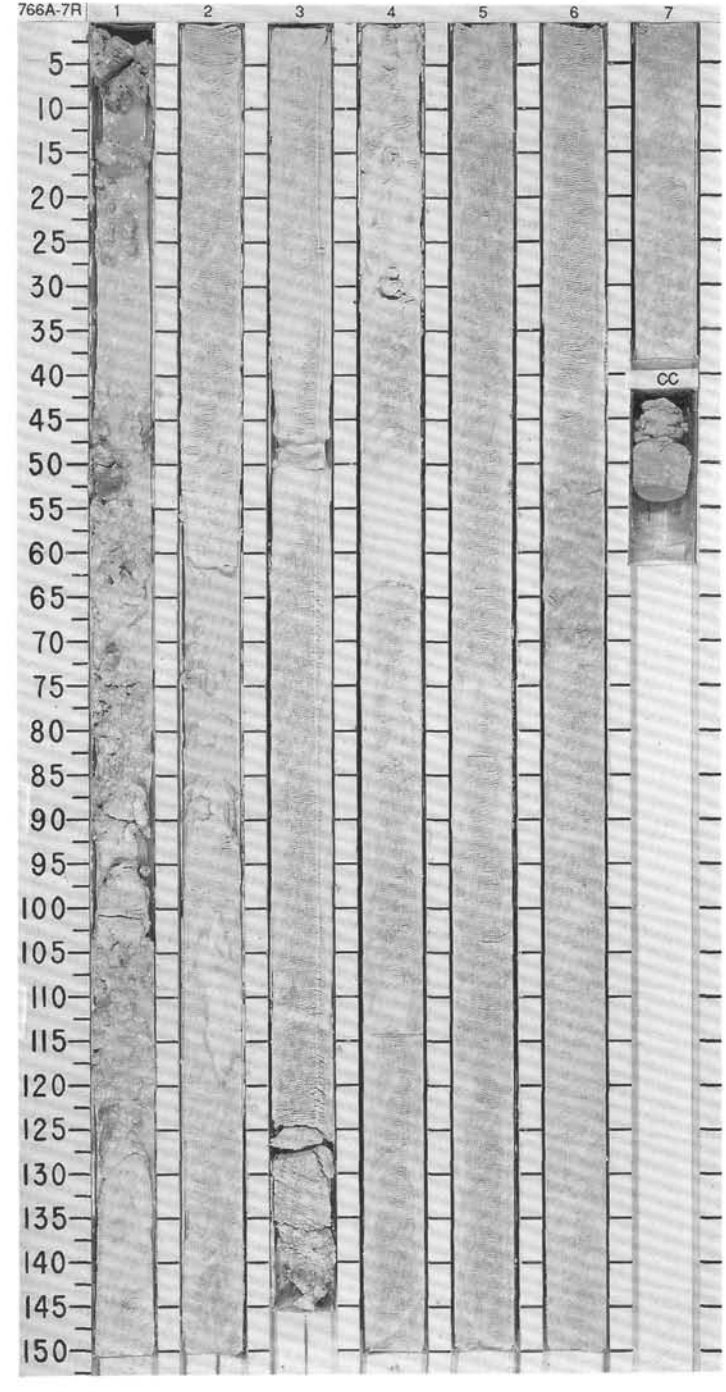
NANNOFOSSIL OOZE

Core is moderately to highly disturbed: upper half locally soupy.

Major lithology: NANNOFOSSIL OOZE, dominantly silt-sized and very pale brown (10YR 8/4). Largely homogeneous and featureless - local oblong to streaky mottles of white or very pale brown (5Y 5/1, 10YR 8/4) some of which have gray (5Y 5/1) rims. Section 1 contains reddish-yellow (7.5YR 6/6) patches a few cm long that could be clasts or disrupted layers. Contains trace muscovite, quartz silt, calcareous spicules, glass, foraminifers, and opaques.

SMEAR SLIDE SUMMARY (%):

	2, 113 D	2, 116 D	4, 114 D
TEXTURE:			
Silt	96	97	98
Clay	4	3	2
COMPOSITION:			
Foraminifers	—	Tr	—
Glass	Tr	—	—
Muscovite	4	Tr	1
Nannofossils	95	98	98
Opaques	—	1	—
Quartz	—	—	Tr
Spicules	—	—	Tr
Unspecified minerals	—	Tr	—



SITE 766 HOLE A CORE 8R CORED INTERVAL 65.7-75.3 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALYNOMORPHS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
UPPER PALEOCENE	R/P P4 - P5	A/G CP6	B		B	Indeterminate	ϕ=58.6 V=1510 ρ=1.75	$CaCO_3$=94.9% $CaCO_3$=92.7%	1 2 CC	0.5 1.0		X		* *

LITHOLOGIC DESCRIPTION

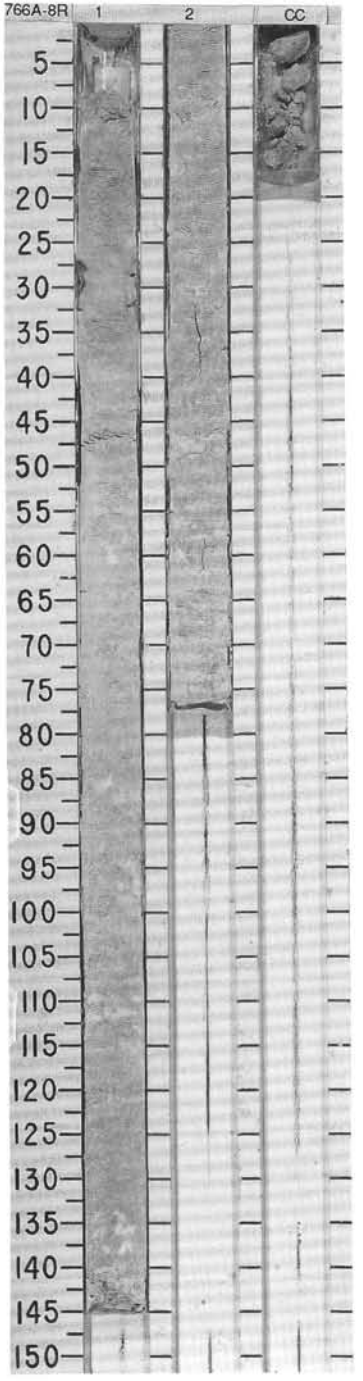
NANNOFOSSIL OOZE

Core homogeneous and featureless; highly disturbed.

Major lithology: NANNOFOSSIL OOZE, very pale brown (10YR 7/4, 8/4) with mottles of white (10YR 8/2 and whiter) and gray (10YR 6/1). Particles dominantly silt-sized, as much as 16% clay-sized.Nannofossils overwhelmingly dominate.

SMEAR SLIDE SUMMARY (%):

	1, 63 D	2, 36 D
TEXTURE:		
Silt	84	97
Clay	16	3
COMPOSITION:		
Foraminifers	Tr	—
Muscovite	—	Tr
Nannofossils	99	99
Spicules	—	Tr



SITE 766 HOLE A CORE 9R CORED INTERVAL 75.3-85.0 mbsf

TIME-ROCK UNIT: LOWER PALEOCENE

BIOSTRAT. ZONE/FOSSIL CHARACTER:
- FORAMINIFERS: P1b (R/M)
- NANNOFOSSILS: CP1b (C/M)
- RADIOLARIANS: (B)
- DIATOMS:
- PALYNOMORPHS: (B)

PALEOMAGNETICS: Indeterminate

PHYS. PROPERTIES: ρ=1.80 g/cm³ V=1492 m/s; ρ=1.87 g/cm³ V=1587 m/s; ρ=2.17 g/cm³

CHEMISTRY: $CaCO_3$=86.4%; $CaCO_3$=94.1% TOC=0.08%

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

METERS: 0.5, 1.0

GRAPHIC LITHOLOGY

DRILLING DISTURB.

SED. STRUCTURES

SAMPLES: OG, IW

LITHOLOGIC DESCRIPTION

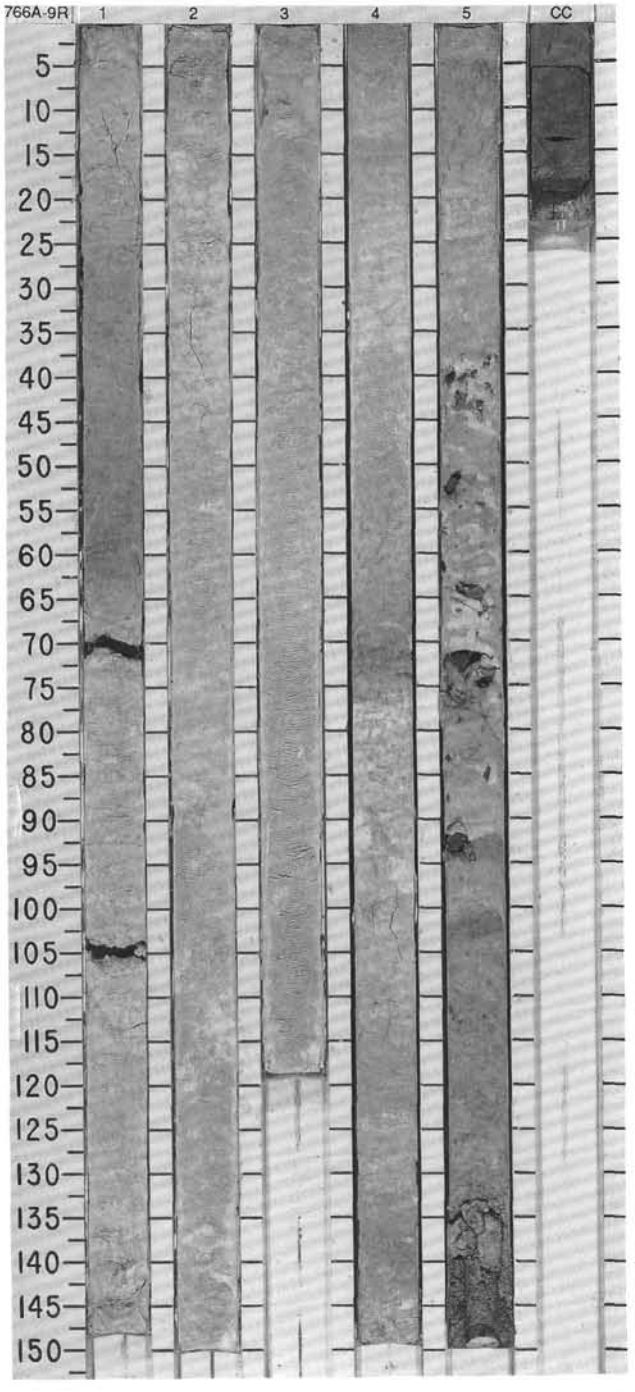
NANNOFOSSIL OOZE

Major lithology: NANNOFOSSIL OOZE, predominantly white(10YR 8/2) to very pale brown (10YR 8/3, 7/3), with lesser bands and splotches of gray (10YR 5/1), yellowish brown (10YR 5/6), and light brownish gray (10YR 6/2) to pale brown (10YR 6/3) towards the bottom. Color change towards the base possibly coinciding with increase in clay content. Pebbly interval in Section 5, 38-94 cm, consisting predominantly of fine-grained igneous pebbles, including rhyolite at 51-52 and 64-65 cm, fine-grained granite at 71-72 cm, and possibly trachyte, dacite, or andesite at 92-94 cm. Pebbly interval predominantly pale brown (10YR 6/3), but pebbles surrounded by patches of very pale brown (10YR 8/2), possibly representing a diagenetic phenomenon.

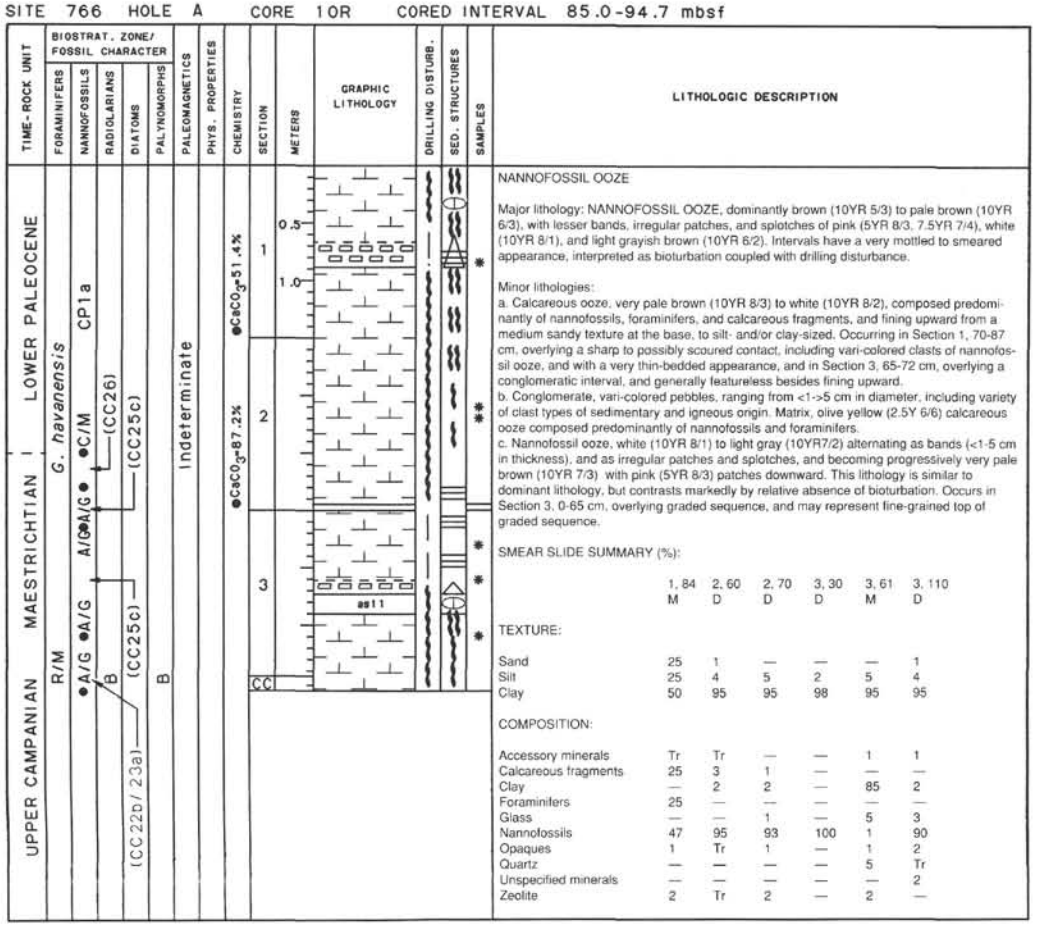
Minor lithologies:
a. Nannofossil ooze with zeolites and clay, white (10YR 8/2) observed in Section 1, 112-113 cm (smear slide), but not visibly different from adjacent intervals of nannofossil ooze.
b. Pebbly nannofossil ooze with clay, dominantly pale brown (10YR 8/3) surrounding pebbles. Pebbles, brownish yellow (10YR 6/8) to dark gray (10YR 4/1), ranging from 0.2-3 cm in diameter, and of fine-grained igneous origin.
c. Nannofossil ooze with clay, light brownish gray (10YR 6/3), with irregular streaks and splotches of brown (10YR 5/3), and mottled in appearance, in Section 5, 94-Section CC, 22 cm. Color becoming progressively darker downcore.

SMEAR SLIDE SUMMARY (%):

	1, 58 D	1, 112 M	3, 70 D	5, 47 D	5, 67 M	CC, 10 M
TEXTURE:						
Sand	—	—	—	—	1	—
Silt	25	10	10	5	5	5
Clay	75	90	90	95	94	95
COMPOSITION:						
Accessory minerals	Tr	—	—	Tr	Tr	Tr
Calcareous fragments	5	10	9	4	5	—
Calcispheres	—	—	—	—	Tr	—
Clay	20	—	—	5	10	15
Foraminifers	—	—	—	—	1	—
Glass	Tr	Tr	—	—	—	Tr
Muscovite	Tr	—	—	—	—	—
Nannofossils	65	90	90	90	84	83
Opaques	Tr	Tr	—	—	—	—
Spicules	Tr	—	—	—	—	—
Zeolite	10	Tr	1	1	—	Tr



SITE 766 HOLE A CORE 10R CORED INTERVAL 85.0-94.7 mbsf



LITHOLOGIC DESCRIPTION

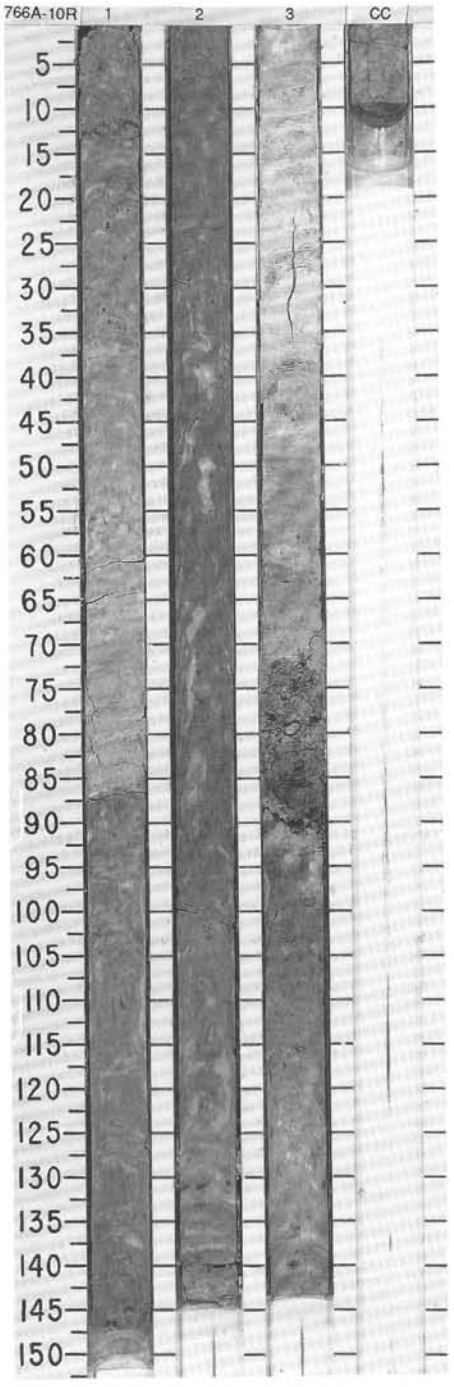
NANNOFOSSIL OOZE

Major lithology: NANNOFOSSIL OOZE, dominantly brown (10YR 5/3) to pale brown (10YR 6/3), with lesser bands, irregular patches, and splotches of pink (5YR 8/3, 7.5YR 7/4), white (10YR 8/1), and light grayish brown (10YR 6/2). Intervals have a very mottled to smeared appearance, interpreted as bioturbation coupled with drilling disturbance.

Minor lithologies:
a. Calcareous ooze, very pale brown (10YR 8/3) to white (10YR 8/2), composed predominantly of nannofossils, foraminifers, and calcareous fragments, and fining upward from a medium sandy texture at the base, to silt- and/or clay-sized. Occurring in Section 1, 70-87 cm, overlying a sharp to possibly scoured contact, including vari-colored clasts of nannofossil ooze, and with a very thin-bedded appearance, and in Section 3, 65-72 cm, overlying a conglomeratic interval, and generally featureless besides fining upward.
b. Conglomerate, vari-colored pebbles, ranging from <1->5 cm in diameter, including variety of clast types of sedimentary and igneous origin. Matrix, olive yellow (2.5Y 6/6) calcareous ooze composed predominantly of nannofossils and foraminifers.
c. Nannofossil ooze, white (10YR 8/1) to light gray (10YR7/2) alternating as bands (<1-5 cm in thickness), and as irregular patches and splotches, and becoming progressively very pale brown (10YR 7/3) with pink (5YR 8/3) patches downward. This lithology is similar to dominant lithology, but contrasts markedly by relative absence of bioturbation. Occurs in Section 3, 0-65 cm, overlying graded sequence, and may represent fine-grained top of graded sequence.

SMEAR SLIDE SUMMARY (%):

	1, 84 M	2, 60 D	2, 70 D	3, 30 D	3, 61 M	3, 110 D
TEXTURE:						
Sand	25	1	—	—	—	1
Silt	25	4	5	2	5	4
Clay	50	95	95	98	95	95
COMPOSITION:						
Accessory minerals	Tr	Tr	—	—	1	1
Calcareous fragments	25	3	1	—	—	—
Clay	—	2	2	—	85	2
Foraminifers	25	—	—	—	—	—
Glass	—	—	1	—	5	3
Nannofossils	47	95	93	100	1	90
Opaques	1	Tr	1	—	1	2
Quartz	—	—	—	—	5	Tr
Unspecified minerals	—	—	—	—	—	2
Zeolite	2	Tr	2	—	2	—



SITE 766 HOLE A CORE 11R CORED INTERVAL 94.7-104.3 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALYNOMORPHS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
UPPER CAMPANIAN	R/M	G. hauaneusis / H. pseudotessera / G. linneiana												
	A/G	CC22b / 23a												
	V-R/V-P													
					B	N ?	●ρ=1.93 Vₚ=1637 ●ρ=1.93 Vₚ=1634	●CaCO₃=87.7% ●CaCO₃=83.7%						

LITHOLOGIC DESCRIPTION

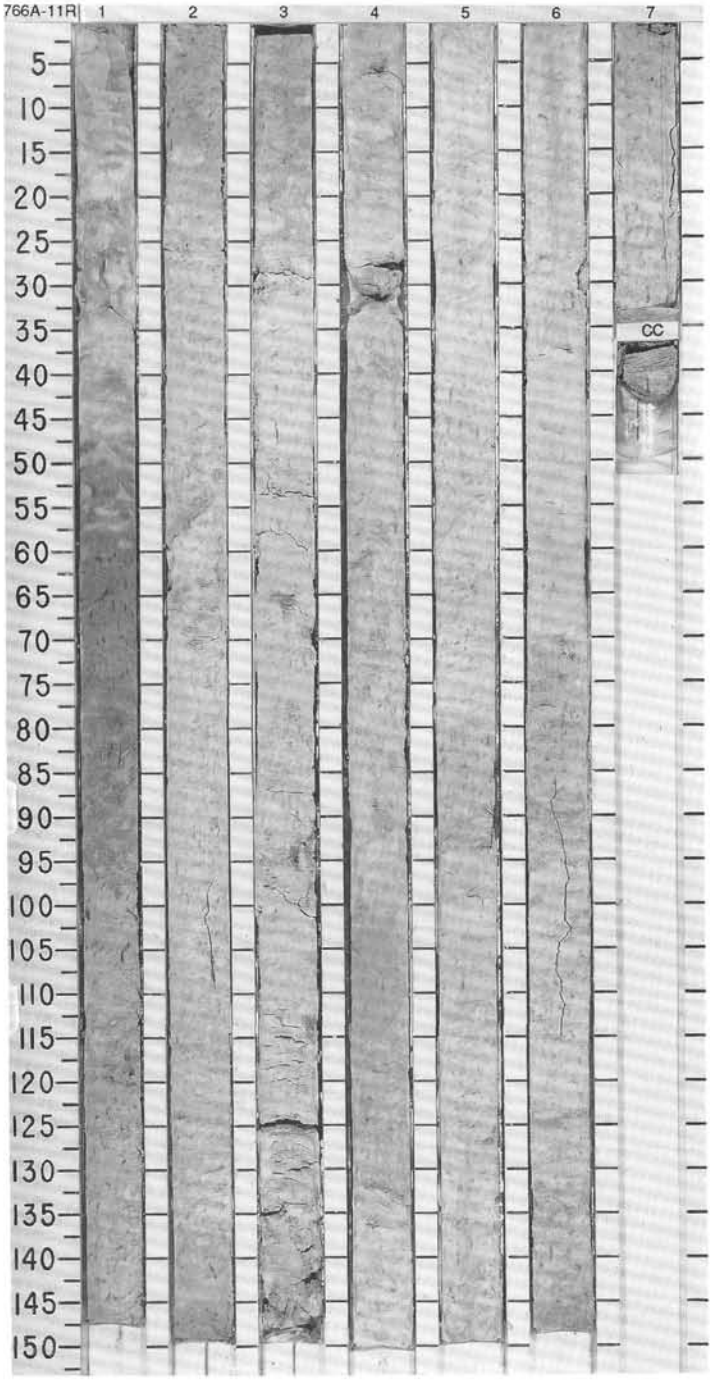
NANNOFOSSIL OOZE

Major lithology: NANNOFOSSIL OOZE, predominantly white (10YR 8/2), very pale brown (10YR 8/3, 8/4), light gray (10YR 7/2), and pinkish white (7.5YR 8/2), alternating as bands and irregular patches, with variable amounts of brown (10YR 5/3) to dark brown (10YR 4/3) streaks (locally absent) interpreted as representing bioturbation. Color bands ranging from 5-50 cm in thickness, and often accompanied by apparent textural variation (clayey to silty clayey textured appearance), although differences are not apparent in smear slides. Scattered occurrence of coarser material, including calcareous shell fragment, in Section 1, 9 cm, a lenticular interval with assorted fragments, in Section 1, 118-119 cm, and a graded interval in Section 5, 90-94 cm.

Minor lithologies:
a. Nannofossil ooze, predominantly reddish yellow (7.5YR 1/6) with splotches of dark brown (10YR 4/3), in Section 1, 58-90 cm, which contrasts markedly in color and degree of bioturbation with adjacent interval of nannofossil ooze.
b. Nannofossil ooze with assorted fragments. Clasts are vari-colored, and are up to 0.5 cm in diameter, including intraformational pebbles, and angular white to translucent fragments with a cherty appearance (no reaction with HCL), in Section 1, 118-119 cm.
c. Nannofossil ooze with foraminifers, light brownish gray (10YR 6/2), occurring as thin graded sequence, in Section 5, 90-94 cm. Interval is disturbed, but appears to include intraformational clasts of nannofossil ooze, ranging from <1 to 3 cm in diameter,and floating in matrix with a silty textured appearance.

SMEAR SLIDE SUMMARY (%):

	2, 70 D	4, 48 D	5, 47 M	5, 47 M	5, 56 D	5, 93 M
TEXTURE:						
Sand	—	2	—	—	—	8
Silt	5	5	—	—	—	7
Clay	95	93	100	100	100	85
COMPOSITION:						
Accessory minerals	Tr	—	—	—	—	—
Apatite	—	Tr	—	—	—	—
Calcareous fragments	1	—	15	15	15	4
Clay	—	—	10	10	10	—
Dolomite	Tr	—	—	—	—	—
Foraminifers	—	2	—	—	—	8
Glass	1	1	—	—	—	1
Nannofossils	97	95	75	75	75	85
Opaques	1	1	—	—	—	2
Unspecified minerals	—	1	—	—	—	—



SITE 766 HOLE A CORE 12R CORED INTERVAL 104.3-113.9 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALYNOMORPHS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
UPPER CAMPANIAN	C/M	CC22b / 23a	B	(G. orientalis / G. linneiana)	B	($CaCO_3$=85.6%)	ρ=1611 ρ=2393 ρ=2134	$CaCO_3$=90.8% TOC=0.86%	1, 2, CC	0.5, 1.0				*

LITHOLOGIC DESCRIPTION

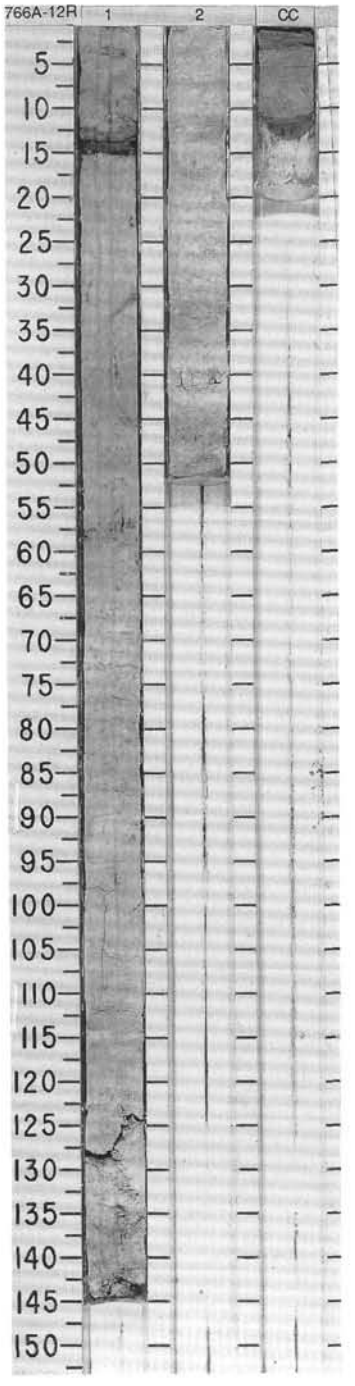
NANNOFOSSIL OOZE

Major lithology: NANNOFOSSIL OOZE, very pale brown (10YR 7/3) to light yellowish brown (10YR 6/4) and white (10YR 8/2) alternating as distinct bands and diffuse patches, and locally including dark brown (10YR 4/3) to grayish brown (10YR 5/2) splotches or mottles (possibly smeared by drilling), interpreted as bioturbation. Mottling is more distinct in darker intervals, particularly light yellowish brown. Otherwise homogeneous in appearance with the exception of graded interval occurring in Section 1, 11-15 cm.

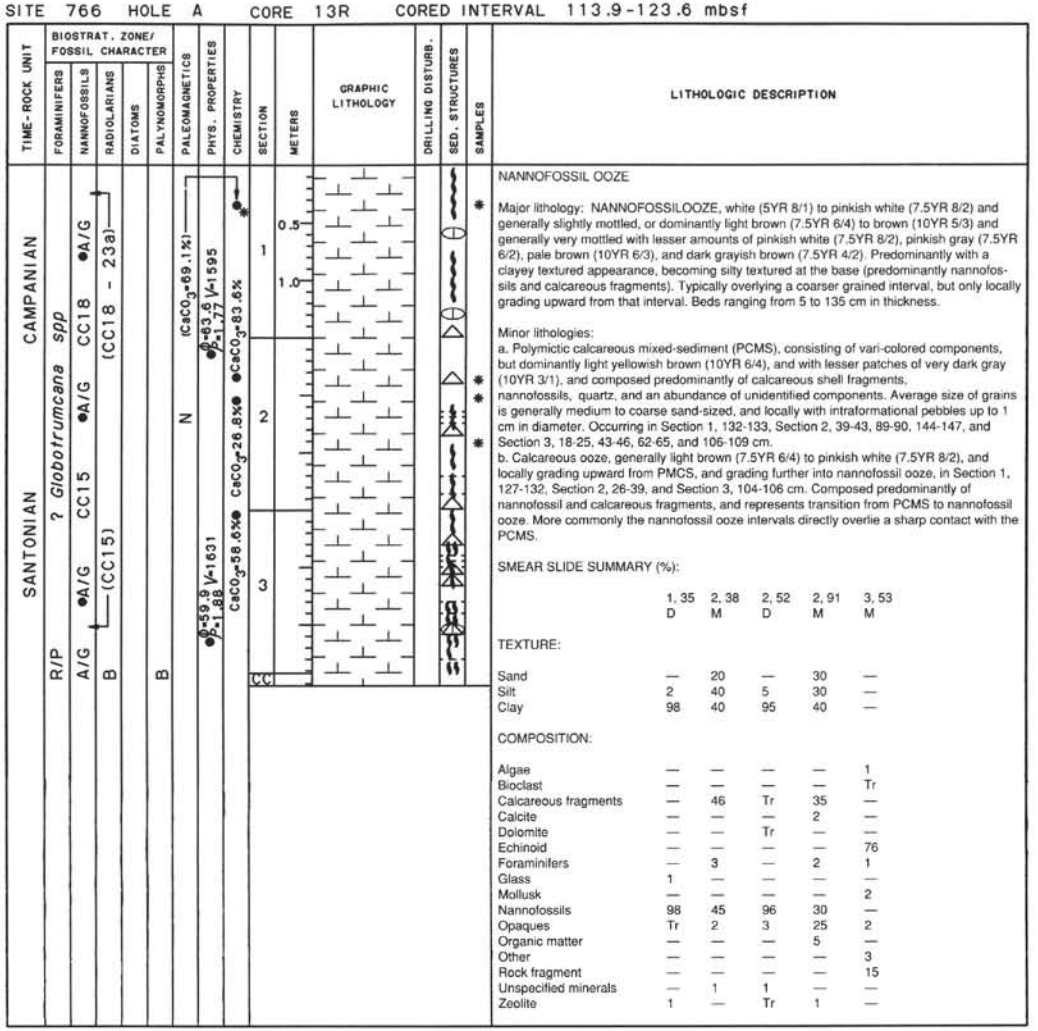
Minor lithology: Calcareous ooze, dark grayish brown (10YR 4/2), in Section1, 11-15 cm. Fining upward interval (possibly graded) overlying sharp contact with nannofossil ooze, and grading upward into nannofossil ooze. Consists predominantly of nannofossils and calcareous fragments. Dark coloration due to content of opaque material (possibly pyrite). Fine sand-sized at the base, to silt/clay-sized upward.

SMEAR SLIDE SUMMARY (%):

	1, 15 M
TEXTURE:	
Sand	25
Silt	35
Clay	40
COMPOSITION:	
Calcareous fragments	48
Clay	8
Foraminifers	2
Nannofossils	35
Opaques	5
Radiolarians	2
Spicules	Tr



SITE 766 HOLE A CORE 13R CORED INTERVAL 113.9-123.6 mbsf



LITHOLOGIC DESCRIPTION

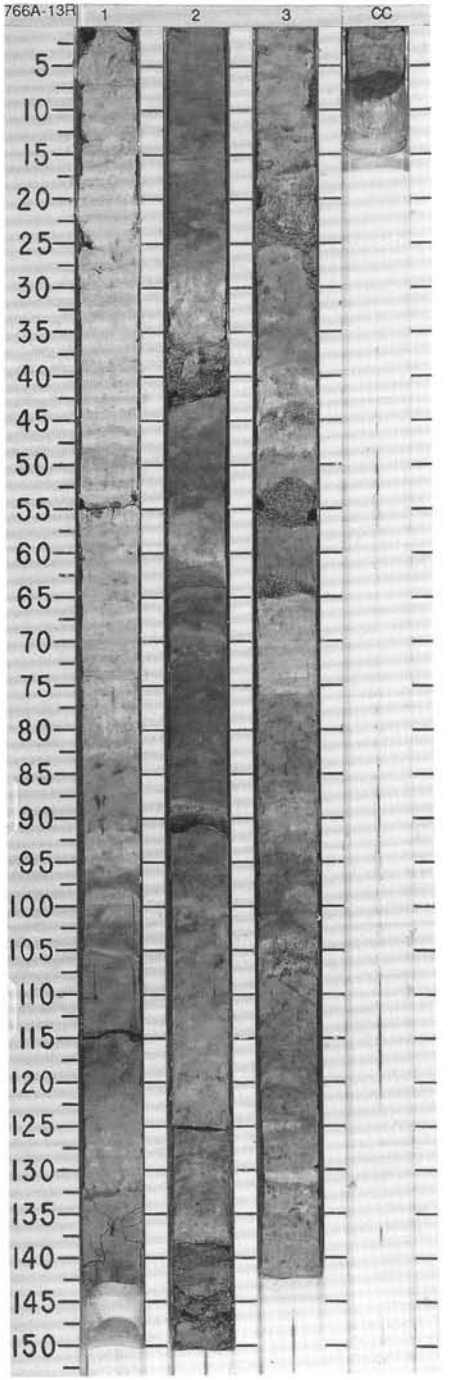
NANNOFOSSIL OOZE

Major lithology: NANNOFOSSILOOZE, white (5YR 8/1) to pinkish white (7.5YR 8/2) and generally slightly mottled, or dominantly light brown (7.5YR 6/4) to brown (10YR 5/3) and generally very mottled with lesser amounts of pinkish white (7.5YR 8/2), pinkish gray (7.5YR 6/2), pale brown (10YR 6/3), and dark grayish brown (7.5YR 4/2). Predominantly with a clayey textured appearance, becoming silty textured at the base (predominantly nannofossils and calcareous fragments). Typically overlying a coarser grained interval, but only locally grading upward from that interval. Beds ranging from 5 to 135 cm in thickness.

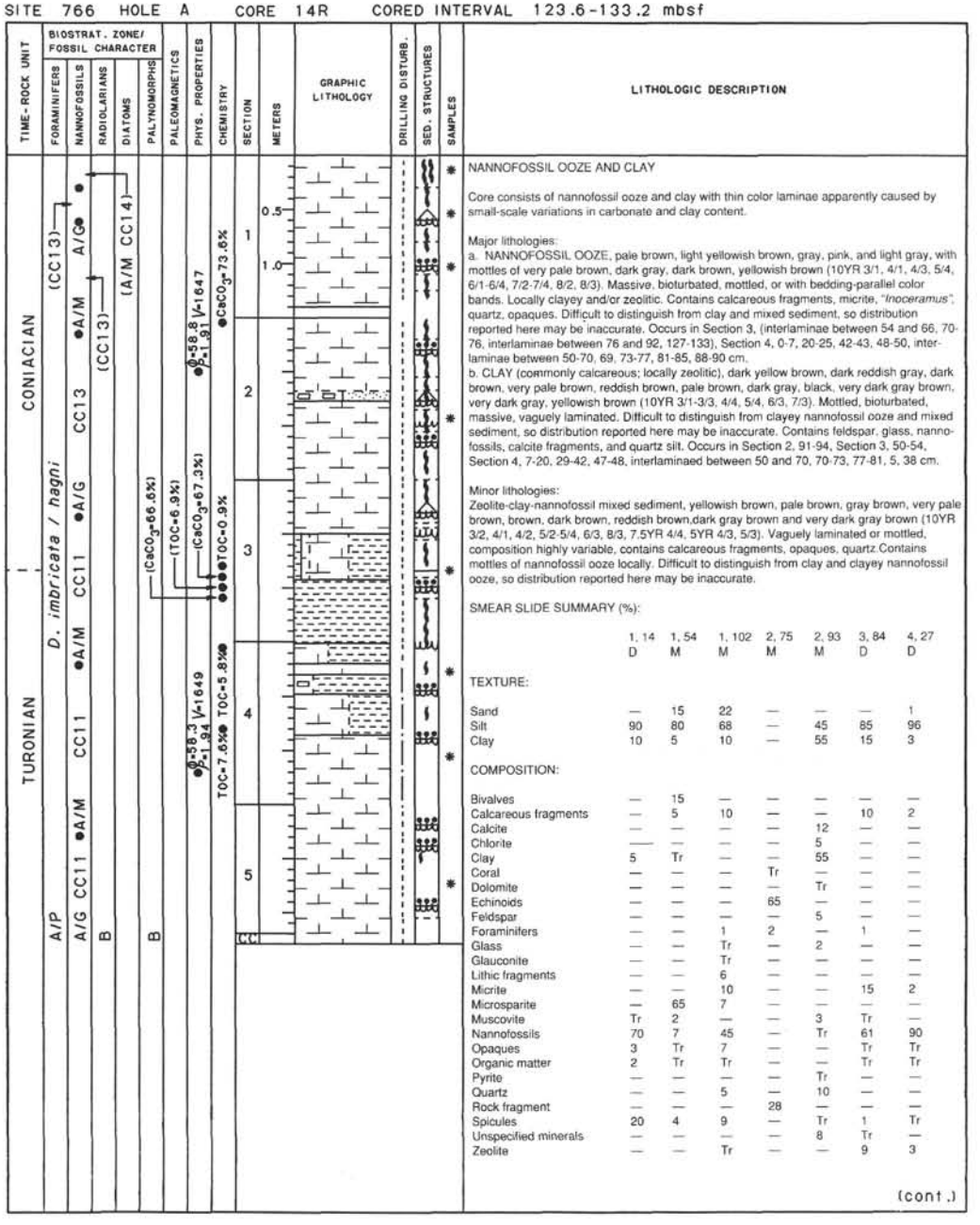
Minor lithologies:
a. Polymictic calcareous mixed-sediment (PCMS), consisting of vari-colored components, but dominantly light yellowish brown (10YR 6/4), and with lesser patches of very dark gray (10YR 3/1), and composed predominantly of calcareous shell fragments, nannofossils, quartz, and an abundance of unidentified components. Average size of grains is generally medium to coarse sand-sized, and locally with intraformational pebbles up to 1 cm in diameter. Occurring in Section 1, 132-133, Section 2, 39-43, 89-90, 144-147, and Section 3, 18-25, 43-46, 62-65, and 106-109 cm.
b. Calcareous ooze, generally light brown (7.5YR 6/4) to pinkish white (7.5YR 8/2), and locally grading upward from PMCS, and grading further into nannofossil ooze, in Section 1, 127-132, Section 2, 26-39, and Section 3, 104-106 cm. Composed predominantly of nannofossil and calcareous fragments, and represents transition from PCMS to nannofossil ooze. More commonly the nannofossil ooze intervals directly overlie a sharp contact with the PCMS.

SMEAR SLIDE SUMMARY (%):

	1, 35 D	2, 38 M	2, 52 D	2, 91 M	3, 53 M
TEXTURE:					
Sand	—	20	—	30	—
Silt	2	40	5	30	—
Clay	98	40	95	40	—
COMPOSITION:					
Algae	—	—	—	—	1
Bioclast	—	—	—	—	Tr
Calcareous fragments	—	46	Tr	35	—
Calcite	—	—	—	2	—
Dolomite	—	—	Tr	—	—
Echinoid	—	—	—	—	76
Foraminifers	—	3	—	2	1
Glass	1	—	—	—	—
Mollusk	—	—	—	—	2
Nannofossils	98	45	96	30	—
Opaques	Tr	2	3	25	2
Organic matter	—	—	—	5	—
Other	—	—	—	—	3
Rock fragment	—	—	—	—	15
Unspecified minerals	—	1	1	—	—
Zeolite	1	—	Tr	1	—



SITE 766 HOLE A CORE 14R CORED INTERVAL 123.6-133.2 mbsf



LITHOLOGIC DESCRIPTION

NANNOFOSSIL OOZE AND CLAY

Core consists of nannofossil ooze and clay with thin color laminae apparently caused by small-scale variations in carbonate and clay content.

Major lithologies:

a. NANNOFOSSIL OOZE, pale brown, light yellowish brown, gray, pink, and light gray, with mottles of very pale brown, dark gray, dark brown, yellowish brown (10YR 3/1, 4/1, 4/3, 5/4, 6/1-6/4, 7/2-7/4, 8/2, 8/3). Massive, bioturbated, mottled, or with bedding-parallel color bands. Locally clayey and/or zeolitic. Contains calcareous fragments, micrite, "*Inoceramus*", quartz, opaques. Difficult to distinguish from clay and mixed sediment, so distribution reported here may be inaccurate. Occurs in Section 3, (interlaminae between 54 and 66, 70-76, interlaminae between 76 and 92, 127-133), Section 4, 0-7, 20-25, 42-43, 48-50, interlaminae between 50-70, 69, 73-77, 81-85, 88-90 cm.

b. CLAY (commonly calcareous; locally zeolitic), dark yellow brown, dark reddish gray, dark brown, very pale brown, reddish brown, pale brown, dark gray, black, very dark gray brown, very dark gray, yellowish brown (10YR 3/1-3/3, 4/4, 5/4, 6/3, 7/3). Mottled, bioturbated, massive, vaguely laminated. Difficult to distinguish from clayey nannofossil ooze and mixed sediment, so distribution reported here may be inaccurate. Contains feldspar, glass, nannofossils, calcite fragments, and quartz silt. Occurs in Section 2, 91-94, Section 3, 50-54, Section 4, 7-20, 29-42, 47-48, interlaminaed between 50 and 70, 70-73, 77-81, 5, 38 cm.

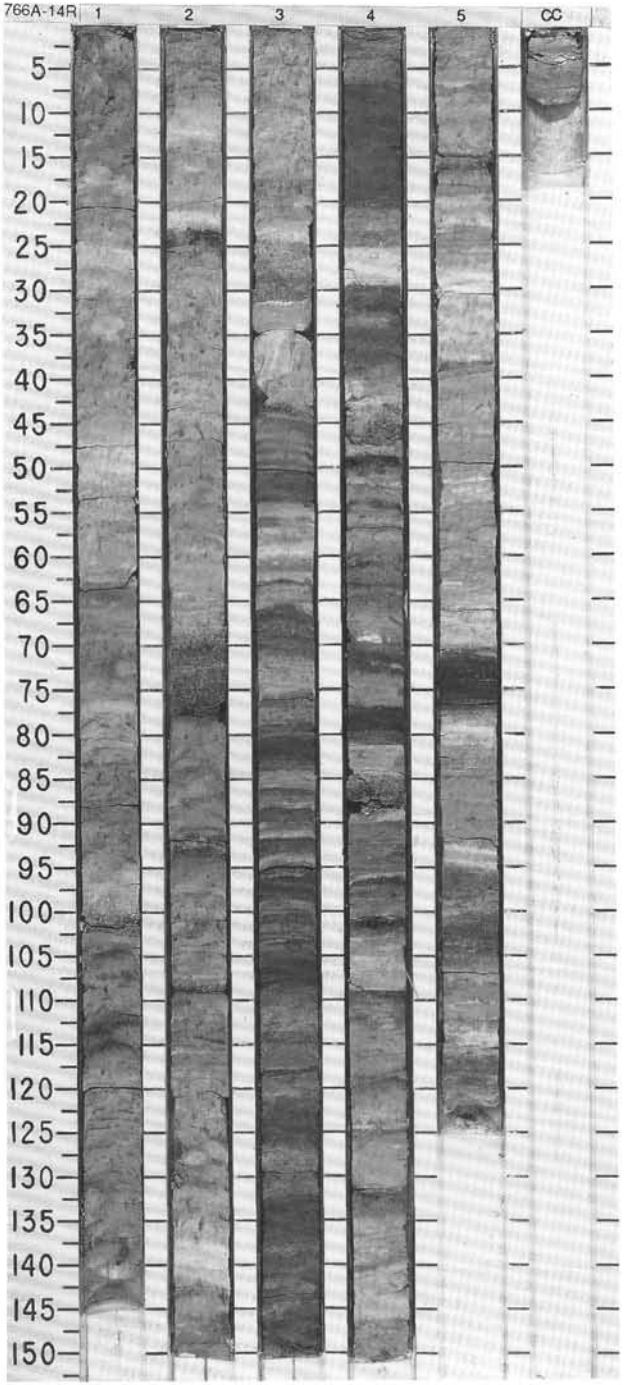
Minor lithologies:

Zeolite-clay-nannofossil mixed sediment, yellowish brown, pale brown, gray brown, very pale brown, brown, dark brown, reddish brown,dark gray brown and very dark gray brown (10YR 3/2, 4/1, 4/2, 5/2-5/4, 6/3, 8/3, 7.5YR 4/4, 5YR 4/3, 5/3). Vaguely laminated or mottled, composition highly variable, contains calcareous fragments, opaques, quartz.Contains mottles of nannofossil ooze locally. Difficult to distinguish from clay and clayey nannofossil ooze, so distribution reported here may be inaccurate.

SMEAR SLIDE SUMMARY (%):

	1, 14 D	1, 54 M	1, 102 M	2, 75 M	2, 93 M	3, 84 D	4, 27 D
TEXTURE:							
Sand	—	15	22	—	—	—	1
Silt	90	80	68	—	45	85	96
Clay	10	5	10	—	55	15	3
COMPOSITION:							
Bivalves	—	15	—	—	—	—	—
Calcareous fragments	—	5	10	—	—	10	2
Calcite	—	—	—	—	12	—	—
Chlorite	—	—	—	—	5	—	—
Clay	5	Tr	—	—	55	—	—
Coral	—	—	—	Tr	—	—	—
Dolomite	—	—	—	—	Tr	—	—
Echinoids	—	—	—	65	—	—	—
Feldspar	—	—	—	—	5	—	—
Foraminifers	—	—	1	2	—	1	—
Glass	—	—	Tr	—	2	—	—
Glauconite	—	—	Tr	—	—	—	—
Lithic fragments	—	—	6	—	—	—	—
Micrite	—	—	10	—	—	15	2
Microsparite	—	65	7	—	—	—	—
Muscovite	Tr	2	—	—	3	Tr	—
Nannofossils	70	7	45	—	Tr	61	90
Opaques	3	Tr	7	—	—	Tr	Tr
Organic matter	2	Tr	Tr	—	—	Tr	Tr
Pyrite	—	—	—	—	Tr	—	—
Quartz	—	—	5	—	10	—	—
Rock fragment	—	—	—	28	—	—	—
Spicules	20	4	9	—	Tr	1	Tr
Unspecified minerals	—	—	—	—	8	Tr	—
Zeolite	—	—	Tr	—	—	9	3

(cont.)



SITE 766 HOLE A CORE 14R CORED INTERVAL 123.6-133.2 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
									1	0.5 1.0					(cont.) SMEAR SLIDE SUMMARY (%):
									2						
									3						

	4, 107 D	5, 73 M
TEXTURE:		
Sand	1	—
Silt	93	75
Clay	6	25
COMPOSITION:		
Calcareous fragments	1	2
Calcite	Tr	—
Clay	3	23
Foraminifers	Tr	—
Glass	—	Tr
Micrite	2	—
Nannofossils	88	42
Opaques	Tr	3
Organic matter	Tr	—
Quartz	—	1
Zeolite	4	29

SITE 766 HOLE A CORE 15R CORED INTERVAL 133.2-142.9 mbsf

TIME-ROCK UNIT: I CENOMANIAN / TURONIAN

BIOSTRAT. ZONE/FOSSIL CHARACTER: *R. cushmani*; FORAMINIFERS C/M; NANNOFOSSILS A/G CC10 / ● A/M CC10 / ● A/M CC11; RADIOLARIANS P/V-R; DIATOMS; PALYNOMORPHS B; PALEOMAGNETICS N; PHYS. PROPERTIES ●62.0 V-1230 ? 2.1.74; CHEMISTRY $CaCO_3$=60.6% TOC=0.14% ● TOC=0.3%; SECTION 1-6; METERS 0.5, 1.0; GRAPHIC LITHOLOGY; DRILLING DISTURB.; SED. STRUCTURES; SAMPLES

LITHOLOGIC DESCRIPTION

NANNOFOSSIL CHALK AND ZEOLITIC CLAYSTONE

The entire core is slightly disturbed.

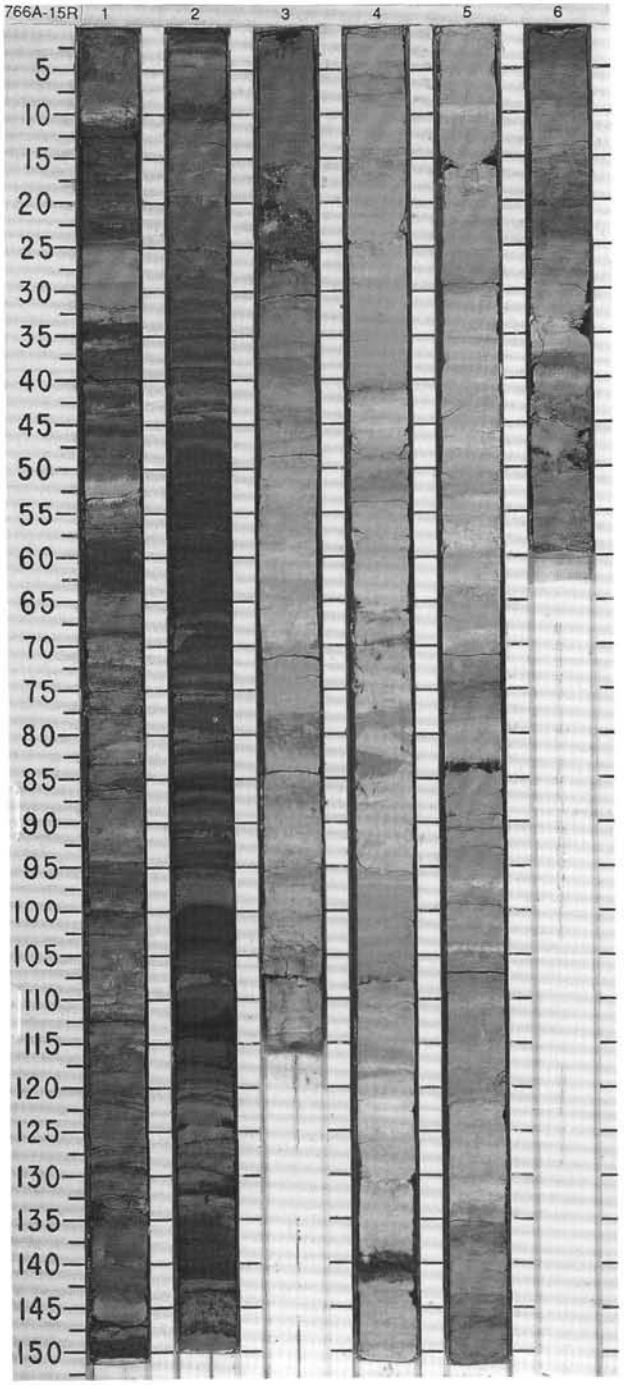
Major lithologies:
a. NANNOFOSSIL CHALK, dominately light gray (10YR 7/2), pale brown (10YR 6/3), brown (10YR 5/3, 3/3, and 4/3), very dark grayish brown (10YR 3/2) and white (10YR 8/3); commonly homogeneous, with minor to moderate bioturbation (largely modified by drilling); scarce wavy and/or parallel laminae.
b. ZEOLITIC CLAYSTONE, black (10YR 3/1), grayish yellow green and moderate yellow green (5GY 7/2, 7/4); color alternating gradationally at a cm scale. Dominant lithology between Section 1 at 147 cm and Section at 15 cm contains abundant zeolites and traces of opaques.

Minor lithologies:
a. Glauconitic sand, moderate yellow green (5GY 7/4), silty, medium-to coarse-sand-sized; sharp basal contact; forms mm to 3-4 cm thick distinct interval. Smear slides silt-sized quartz, "*Inoceramus*", and calcite.
b. Mixed breccia, distinct heterogeneous interval (Section 3, 23-15 cm), clasts consisting of glauconitic sand, green zeolitic claystone, dark grayish brown claystone (all probably intraformational) and several-mm-diameter subangular exotic fragments of acidic volcanic rock (rhyolite or trachyte?) with quartz. This breccia can be interpreted as a debris flow deposit, disturbed by drilling

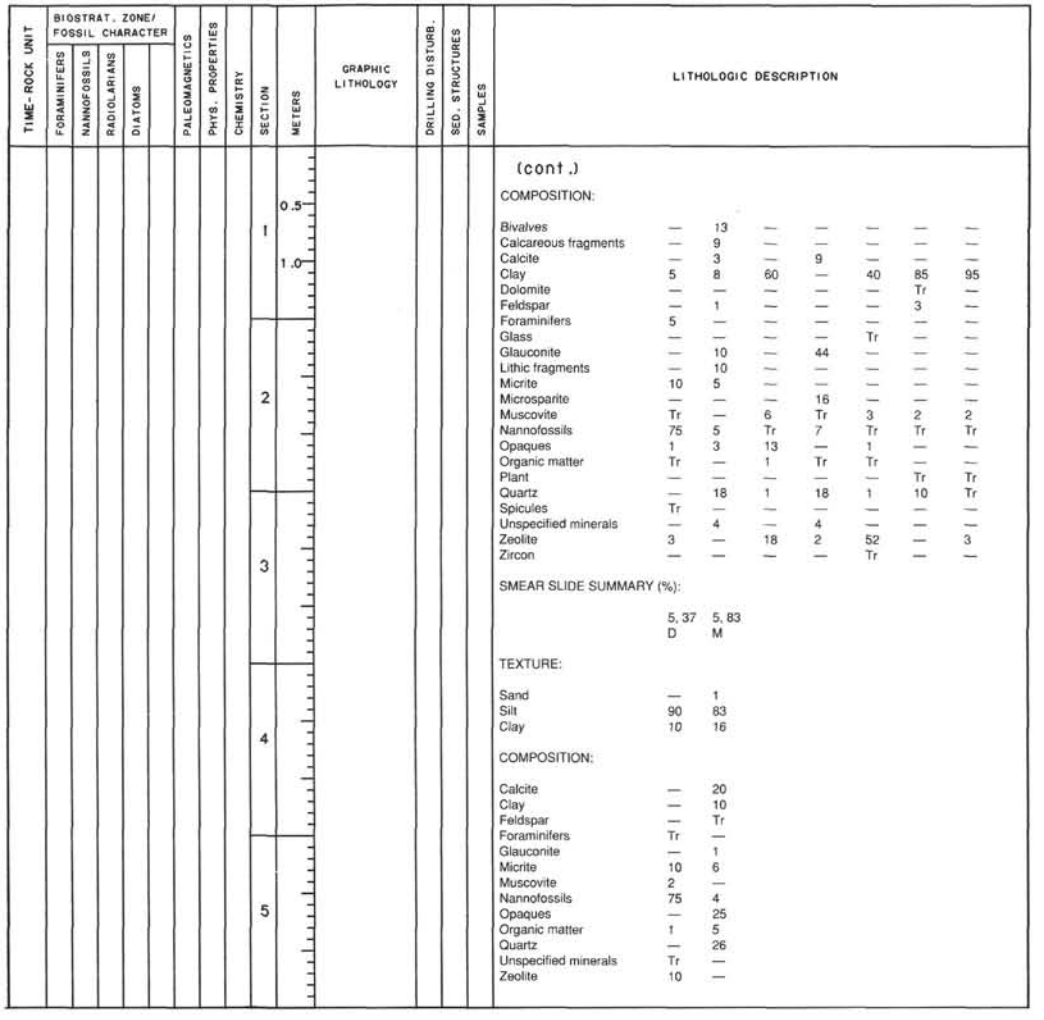
SMEAR SLIDE SUMMARY (%):

	1, 7 D	1, 76 M	1, 149 M	2, 43 M	3, 11 M	3, 20 M	3, 22 M
TEXTURE:							
Sand	—	75	—	27	—	—	—
Silt	85	12	40	72	60	15	5
Clay	15	13	60	1	40	85	95

(cont.)



SITE 766 HOLE A CORE 15R CORED INTERVAL 133.2-142.9 mbsf



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COMPOSITION:

Bivalves	—	13	—	—	—	—	—
Calcareous fragments	—	9	—	—	—	—	—
Calcite	—	3	—	9	—	—	—
Clay	5	8	60	—	40	85	95
Dolomite	—	—	—	—	—	Tr	—
Feldspar	—	1	—	—	—	3	—
Foraminifers	5	—	—	—	—	—	—
Glass	—	—	—	—	Tr	—	—
Glauconite	—	10	—	44	—	—	—
Lithic fragments	—	10	—	—	—	—	—
Micrite	10	5	—	—	—	—	—
Microsparite	—	—	—	16	—	—	—
Muscovite	Tr	—	6	Tr	3	2	2
Nannofossils	75	5	Tr	7	Tr	Tr	Tr
Opaques	1	3	13	—	1	—	—
Organic matter	Tr	—	1	Tr	Tr	—	—
Plant	—	—	—	—	—	Tr	Tr
Quartz	—	18	1	18	1	10	Tr
Spicules	Tr	—	—	—	—	—	—
Unspecified minerals	—	4	—	4	—	—	—
Zeolite	3	—	18	2	52	—	3
Zircon	—	—	—	—	Tr	—	—

SMEAR SLIDE SUMMARY (%):

	5, 37 D	5, 83 M
TEXTURE:		
Sand	—	1
Silt	90	83
Clay	10	16
COMPOSITION:		
Calcite	—	20
Clay	—	10
Feldspar	—	Tr
Foraminifers	Tr	—
Glauconite	—	1
Micrite	10	6
Muscovite	2	—
Nannofossils	75	4
Opaques	—	25
Organic matter	1	5
Quartz	—	26
Unspecified minerals	Tr	—
Zeolite	10	—

SITE 766 HOLE A CORE 16R CORED INTERVAL 142.9-152.5 mbsf

TIME-ROCK UNIT: CENOMANIAN

BIOSTRAT. ZONE/FOSSIL CHARACTER: FORAMINIFERS: C/P, *P. buxtorfi*; NANNOFOSSILS: A/G, CC9; RADIOLARIANS: P/V-P; DIATOMS: —; PALEONOMORPHS: B

PALEOMAGNETICS: N

PHYS. PROPERTIES: ●54.3 V=1601 P=1.95; ●56.5 V=1539 P=1.96; ●59.2 V=1592 P=1.83; ●61.4

CHEMISTRY: ●$CaCO_3$=23.2%; ●$CaCO_3$=45.0%; TOC=2.3%

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

METERS: 0.5, 1.0

GRAPHIC LITHOLOGY

DRILLING DISTURB.

SED. STRUCTURES

SAMPLES

LITHOLOGIC DESCRIPTION

NANNOFOSSIL OOZE

Major lithology: NANNOFOSSIL OOZE, pale brown, very pale brown, light brown, brown, dark yellowish brown, yellowish brown, light yellowish brown reddish brown, dark grayish brown, grayish yellow green (7.5YR 5/4-8/4, 10YR 4/2, 5/4, 6/3, 6/4, 7/3). Dominantly massive, less commonly bioturbated or vaguely laminated.Locally contains floating reddish brown to yellowish brown soft pebbles of silty clay, brown chert, and calcareous sand with quartz. Also contains floating fine-sand-sized particles (foraminifers, calcareous fragments, quartz sand).In Section 2, 51-55 and 82-87 cm, floating fine-sand-sized particles appear subtly graded. Also contains as much as 21% zeolites. Lesser constituents include opaques, muscovite, and organic debris.

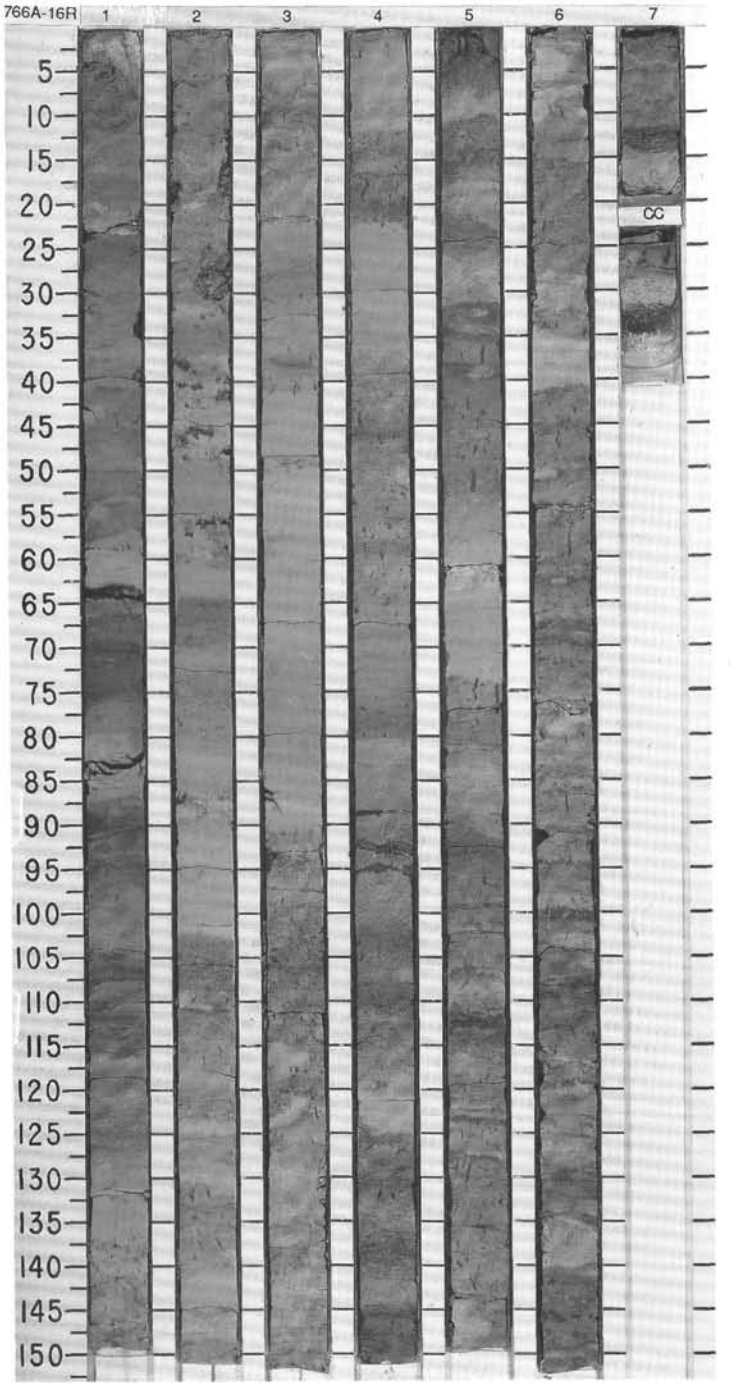
Minor lithologies:
a. Zeolitic clay, brown, reddish brown, light reddish brown, yellowish brown (5YR 4/4, 5/3, 6/4, 10YR 5/3, 5/4). Contains micrite,muscovite, nannofossils, opaques. Locally actually is zeolite with clay. Sections 1 (105-128 cm) and 2 (38-40 cm).
b. Clay with black fibers, olive (5Y 5/4). Section 4 (92-95 cm). 15% unknown black fibers (zeolite?).

SMEAR SLIDE SUMMARY (%):

	1, 73 D	2, 13 D	2, 37 D	2, 43 D	2, 85 D	2, 99 D	4, 72 D
TEXTURE:							
Sand	—	2	1	1	5	—	—
Silt	80	98	9	98	93	100	97
Clay	20	—	90	1	2	—	3
COMPOSITION:							
Calcareous fragments	—	—	—	Tr	10	—	—
Calcite	—	—	—	—	—	—	Tr
Clay	19	—	90	—	—	—	3
Feldspar	—	—	Tr	—	—	—	—
Foraminifers	—	5	—	7	2	—	—
Glauconite	—	—	—	—	1	—	—
Micrite	2	—	—	—	—	—	—
Muscovite	6	—	3	3	1	Tr	Tr
Nannofossils	2	76	—	66	70	88	89
Opaques	3	—	—	2	2	2	1
Organic matter	Tr	—	Tr	Tr	3	Tr	1
Plant	—	—	1	—	Tr	—	—
Quartz	—	2	2	1	Tr	—	—
Zeolite	68	17	Tr	21	10	10	6

SMEAR SLIDE SUMMARY (%):

	4, 92 D
TEXTURE:	
Silt	30
Clay	70
COMPOSITION:	
Clay	74
Muscovite	2
Nannofossils	1
Opaques	5
Organic matter	Tr
Unknown	15



SITE 766 HOLE A CORE 17R CORED INTERVAL 152.5-162.1 mbsf

TIME-ROCK UNIT: ALBIAN

BIOSTRAT. ZONE/FOSSIL CHARACTER:
- FORAMINIFERS: *H. punctata / H. cf. T. primula / H. simplex*
- NANNOFOSSILS: CC8
- RADIOLARIANS: A/G
- DIATOMS: P/V-R
- PALYNOMORPHS: B

PALEOMAGNETICS: N; R ?; N

PHYS. PROPERTIES: ρ=1.87 V=1633; ρ=1.91 V=1647

CHEMISTRY: $CaCO_3$=48.6%; $CaCO_3$=42.6%

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

METERS: 0.5, 1.0

GRAPHIC LITHOLOGY

DRILLING DISTURB.

SED. STRUCTURES

SAMPLES

LITHOLOGIC DESCRIPTION

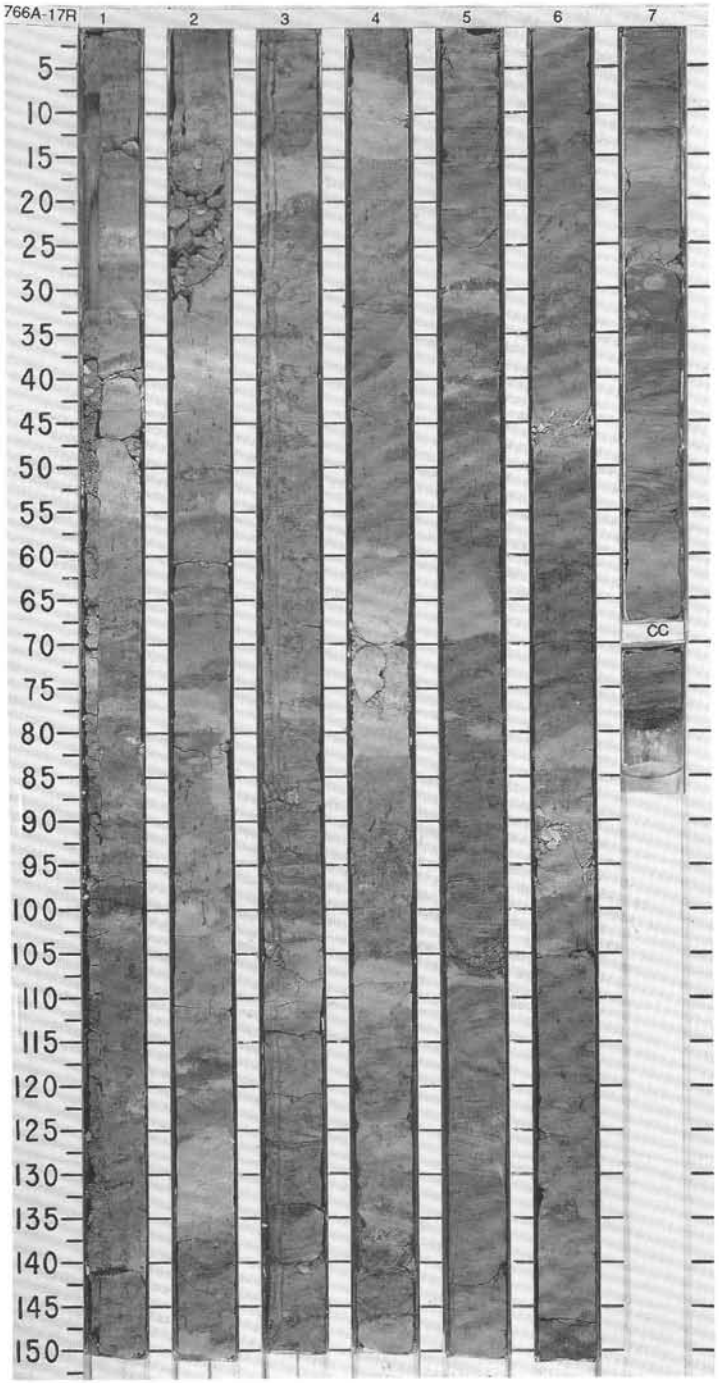
ZEOLITIC NANNOFOSSIL OOZE WITH CLAY AND CALCAREOUS CHALK

Major lithology: Predominantly ZEOLITIC NANNOFOSSIL CHALK WITH CLAY alternating regularly with CALCAREOUS CHALK, and locally with clayey nannofossil chalk with zeolite (minor lithology). Zeolitic nannofossil chalk with clay (ZNCC) is variable in color, ranging from pinkish gray (7.5YR 6/2,7/2) to grayish brown (10YR 5/2). Darker shades apparently due to higher proportions of clay. Internally mottled, with disrupted laminae, and a clayey appearance. Mottled appearance includes pink (5YR 8/3) to dark grayish brown (10YR 4/2) splotches and discontinuous laminae Intervals are generally 10 to 50 cm in thickness. Calcareous chalk (CC) is predominantly pink (5YR 8/3), and internally massive, with a silty clayey appearance. Contacts with adjacent intervals of ZNCC tend to be sharp at the base, and gradational at the top. Intervals of CC possibly represent subtle graded sequences, although fining upward is not observed.

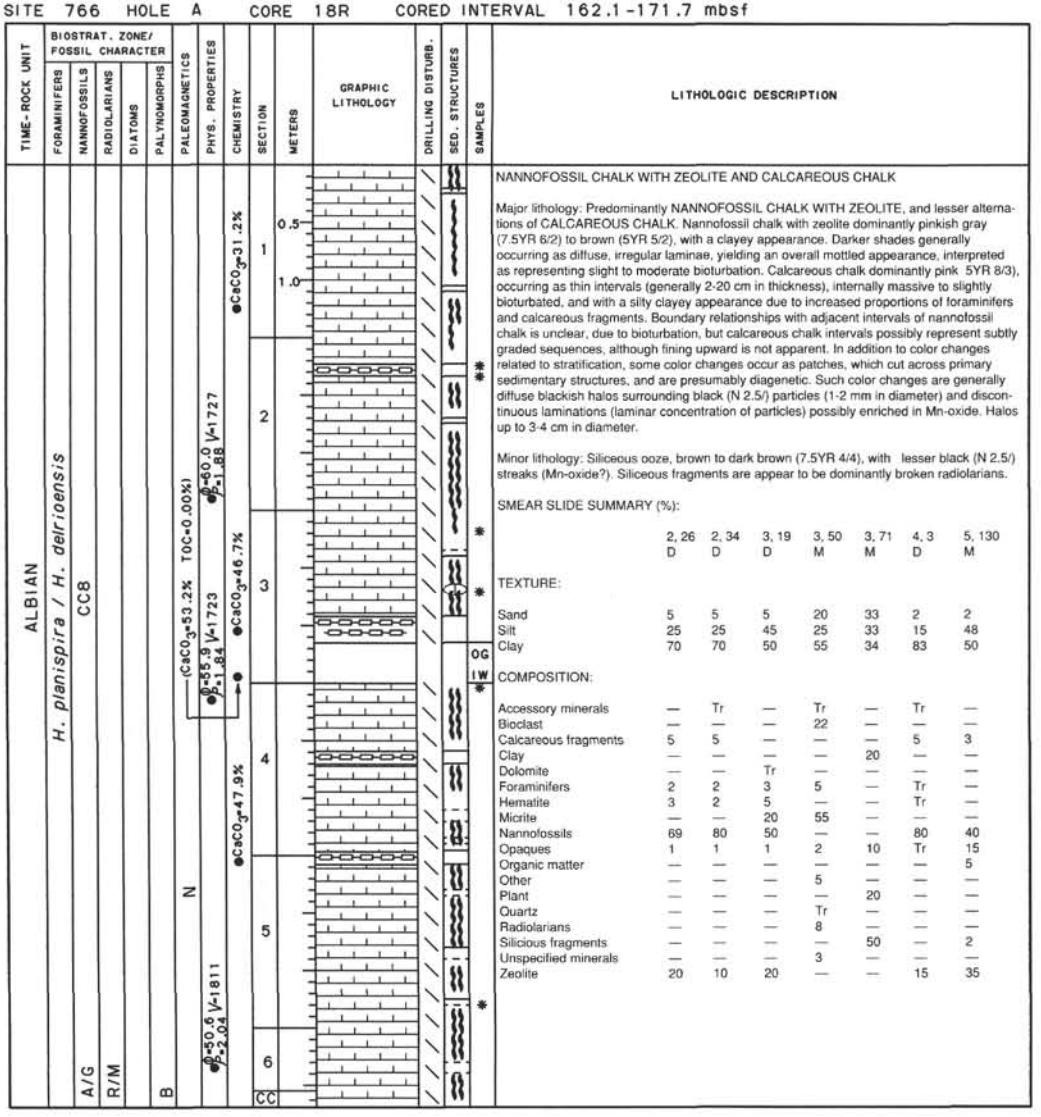
Minor lithologies:
a. Clayey nannofossil chalk with clay, dark brown (10YR 4/3) to gray (5YR 6/1), and internally massive, with a clayey appearance, in Section 1, 97-100, Section 2, 117-120, Section 3, 20-25, Section 4, 32-35, 40-46, Section 6, 148-150, and Section 7, 27-35 cm.
b. Foraminifer radiolarian ooze, pinkish gray (5YR 7/2), in Section 1, 43-46 cm, over a sharp contact, and laminated with a silty appearance, and fining upward into CC.
c. Nannofossil siliceous ooze with clay, dark brown (7.5YR 4/4), lenticular lamina, internally massive with a silty appearance, and with scattered black splotches. Siliceous fragments apparently broken radiolarians (possibly pyritized).

SMEAR SLIDE SUMMARY (%):

	1, 44 M	1, 141 M	3, 20 M	4, 73 D	6, 20 D
TEXTURE:					
Sand	—	5	—	—	—
Silt	40	55	15	15	30
Clay	60	40	85	85	70
COMPOSITION:					
Accessory minerals	—	Tr	—	—	—
Calcareous fragments	10	10	Tr	20	5
Clay	10	15	25	15	18
Foraminifers	25	—	Tr	Tr	—
Glass	—	—	—	Tr	—
Hematite	—	—	2	—	—
Mica	—	—	—	Tr	—
Micrite	—	—	8	40	20
Nannofossils	15	30	53	25	30
Opaques	—	10	—	—	—
Radiolarians	30	—	—	—	—
Silicious fragments	—	35	—	—	2
Spicules	10	—	—	—	—
Zeolite	—	—	12	—	25



SITE 766 HOLE A CORE 18R CORED INTERVAL 162.1-171.7 mbsf



LITHOLOGIC DESCRIPTION

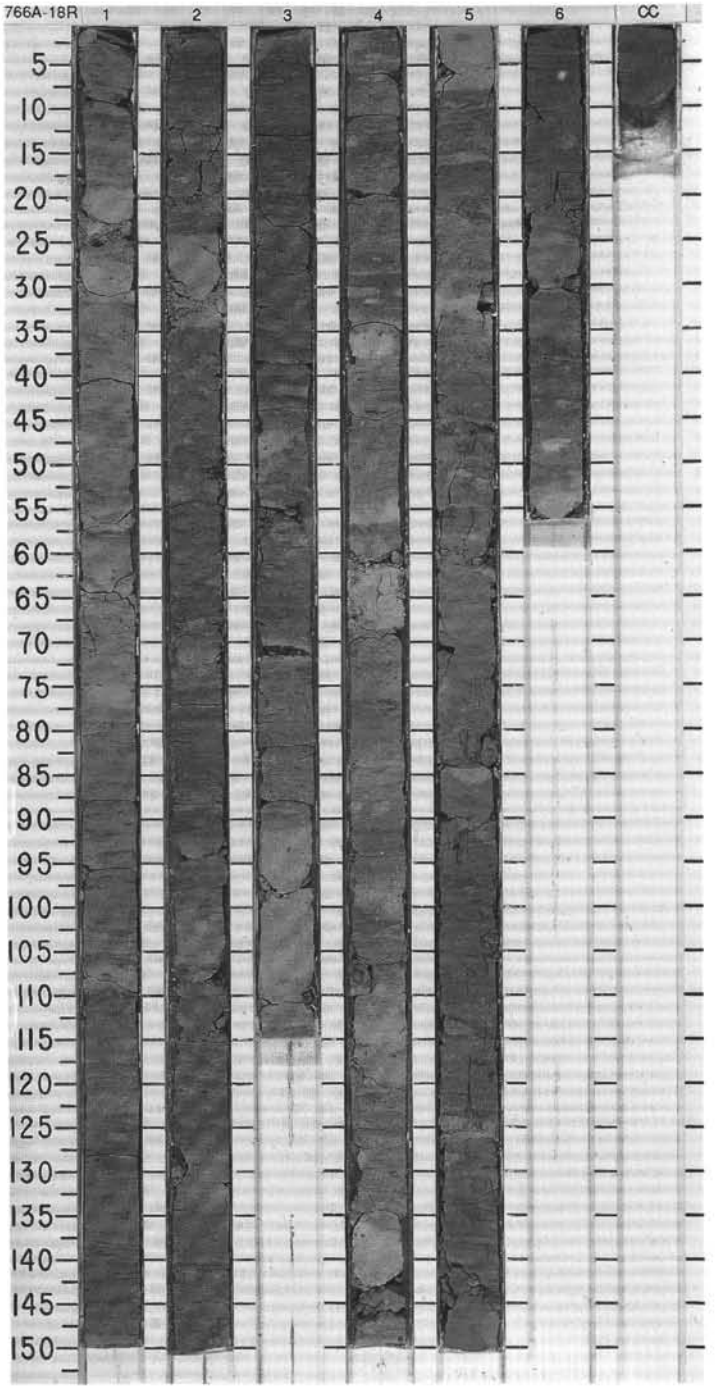
NANNOFOSSIL CHALK WITH ZEOLITE AND CALCAREOUS CHALK

Major lithology: Predominantly NANNOFOSSIL CHALK WITH ZEOLITE, and lesser alternations of CALCAREOUS CHALK. Nannofossil chalk with zeolite dominantly pinkish gray (7.5YR 6/2) to brown (5YR 5/2), with a clayey appearance. Darker shades generally occurring as diffuse, irregular laminae, yielding an overall mottled appearance, interpreted as representing slight to moderate bioturbation. Calcareous chalk dominantly pink 5YR 8/3), occurring as thin intervals (generally 2-20 cm in thickness), internally massive to slightly bioturbated, and with a silty clayey appearance due to increased proportions of foraminifers and calcareous fragments. Boundary relationships with adjacent intervals of nannofossil chalk is unclear, due to bioturbation, but calcareous chalk intervals possibly represent subtly graded sequences, although fining upward is not apparent. In addition to color changes related to stratification, some color changes occur as patches, which cut across primary sedimentary structures, and are presumably diagenetic. Such color changes are generally diffuse blackish halos surrounding black (N 2.5/) particles (1-2 mm in diameter) and discontinuous laminations (laminar concentration of particles) possibly enriched in Mn-oxide. Halos up to 3-4 cm in diameter.

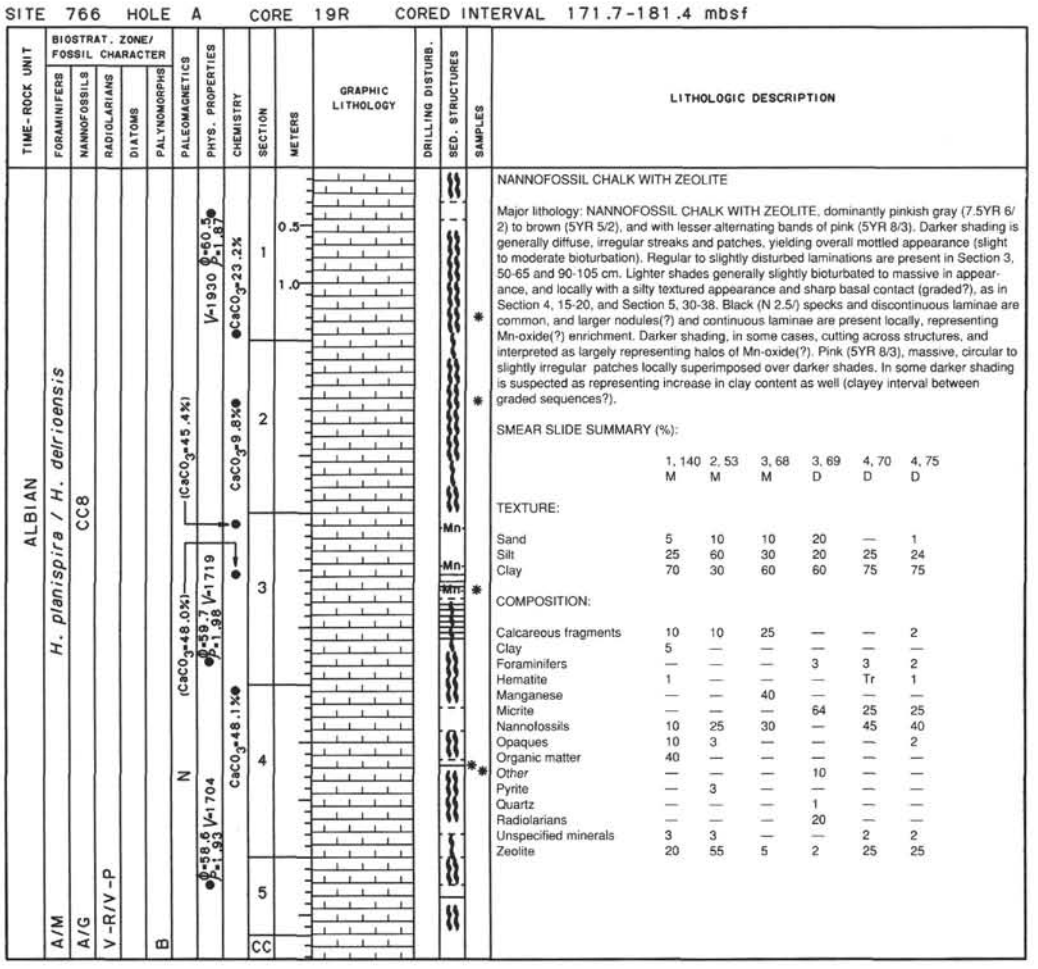
Minor lithology: Siliceous ooze, brown to dark brown (7.5YR 4/4), with lesser black (N 2.5/) streaks (Mn-oxide?). Siliceous fragments are appear to be dominantly broken radiolarians.

SMEAR SLIDE SUMMARY (%):

	2, 26 D	2, 34 D	3, 19 D	3, 50 M	3, 71 M	4, 3 D	5, 130 M
TEXTURE:							
Sand	5	5	5	20	33	2	2
Silt	25	25	45	25	33	15	48
Clay	70	70	50	55	34	83	50
COMPOSITION:							
Accessory minerals	—	Tr	—	Tr	—	Tr	—
Bioclast	—	—	—	22	—	—	—
Calcareous fragments	5	5	—	—	—	5	3
Clay	—	—	—	—	20	—	—
Dolomite	—	—	Tr	—	—	—	—
Foraminifers	2	2	3	5	—	Tr	—
Hematite	3	2	5	—	—	Tr	—
Micrite	—	—	20	55	—	—	—
Nannofossils	69	80	50	—	—	80	40
Opaques	1	1	1	2	10	Tr	15
Organic matter	—	—	—	—	—	—	5
Other	—	—	—	5	—	—	—
Plant	—	—	—	—	20	—	—
Quartz	—	—	—	Tr	—	—	—
Radiolarians	—	—	—	8	—	—	—
Silicious fragments	—	—	—	—	50	—	2
Unspecified minerals	—	—	—	3	—	—	—
Zeolite	20	10	20	—	—	15	35



SITE 766 HOLE A CORE 19R CORED INTERVAL 171.7-181.4 mbsf



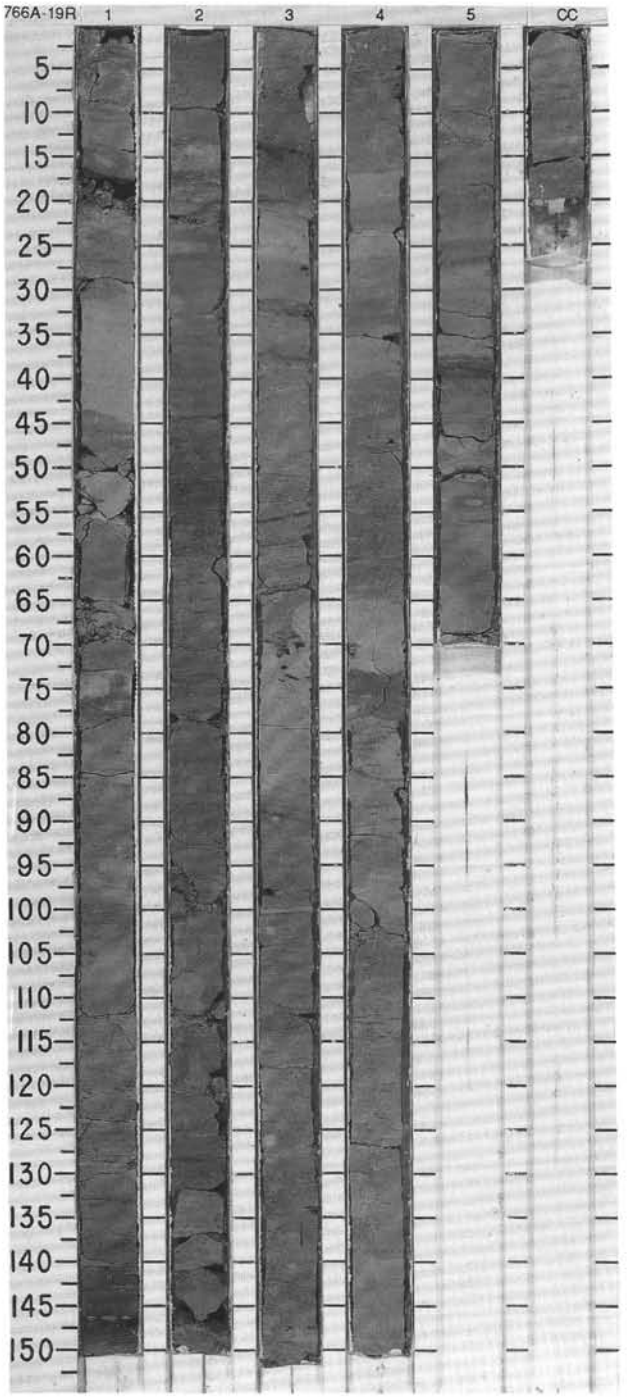
LITHOLOGIC DESCRIPTION

NANNOFOSSIL CHALK WITH ZEOLITE

Major lithology: NANNOFOSSIL CHALK WITH ZEOLITE, dominantly pinkish gray (7.5YR 6/2) to brown (5YR 5/2), and with lesser alternating bands of pink (5YR 8/3). Darker shading is generally diffuse, irregular streaks and patches, yielding overall mottled appearance (slight to moderate bioturbation). Regular to slightly disturbed laminations are present in Section 3, 50-65 and 90-105 cm. Lighter shades generally slightly bioturbated to massive in appearance, and locally with a silty textured appearance and sharp basal contact (graded?), as in Section 4, 15-20, and Section 5, 30-38. Black (N 2.5/) specks and discontinuous laminae are common, and larger nodules(?) and continuous laminae are present locally, representing Mn-oxide(?) enrichment. Darker shading, in some cases, cutting across structures, and interpreted as largely representing halos of Mn-oxide(?). Pink (5YR 8/3), massive, circular to slightly irregular patches locally superimposed over darker shades. In some darker shading is suspected as representing increase in clay content as well (clayey interval between graded sequences?).

SMEAR SLIDE SUMMARY (%):

	1, 140 M	2, 53 M	3, 68 M	3, 69 D	4, 70 D	4, 75 D
TEXTURE:						
Sand	5	10	10	20	—	1
Silt	25	60	30	20	25	24
Clay	70	30	60	60	75	75
COMPOSITION:						
Calcareous fragments	10	10	25	—	—	2
Clay	5	—	—	—	—	—
Foraminifers	—	—	—	3	3	2
Hematite	1	—	—	—	Tr	1
Manganese	—	—	40	—	—	—
Micrite	—	—	—	64	25	25
Nannofossils	10	25	30	—	45	40
Opaques	10	3	—	—	—	2
Organic matter	40	—	—	—	—	—
Other	—	—	—	10	—	—
Pyrite	—	3	—	—	—	—
Quartz	—	—	—	1	—	—
Radiolarians	—	—	—	20	—	—
Unspecified minerals	3	3	—	—	2	2
Zeolite	20	55	5	2	25	25



SITE 766 HOLE A CORE 20R CORED INTERVAL 181.4-191.0 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALYNOMORPHS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
ALBIAN	A/M *H. planispira / H. delrioensis*	A/G CC8	R/M		B	N	●31.8 ▽1834 ●2.31	●$CaCO_3$=68.6%	1 2 3 4 CC	0.5 1.0				

LITHOLOGIC DESCRIPTION

NANNOFOSSIL CHALK WITH ZEOLITE

Major lithology: Core consists largely of NANNOFOSSIL CHALK WITH ZEOLITES, which represents the main body of repetitive sequences (in some cases graded), with varying amounts of clay, calcareous fragments (mostly foraminifers) and siliceous fragments (mostly radiolarians). The repetitive sequences consists nannofossil chalk with zeolites overlying nannofossil chalk with calcareous and siliceous fragments overlying cherty limestone, and locally overlying calcareous fragment chalk with siliceous fragments. Nannofossil chalk with zeolites is generally pinkish white (5YR 8/2,7/2) to pinkish gray (7.5YR 6/2), with brown (7.5YR 5/2) mottles and laminations, and clayey to silty textured appearance. Mn-oxide halos and concentrations occurring locally, including black (N 2.5/) with reddish yellow (5YR 7/8) flecks fracture filling, in Section 1, 0-6 cm.

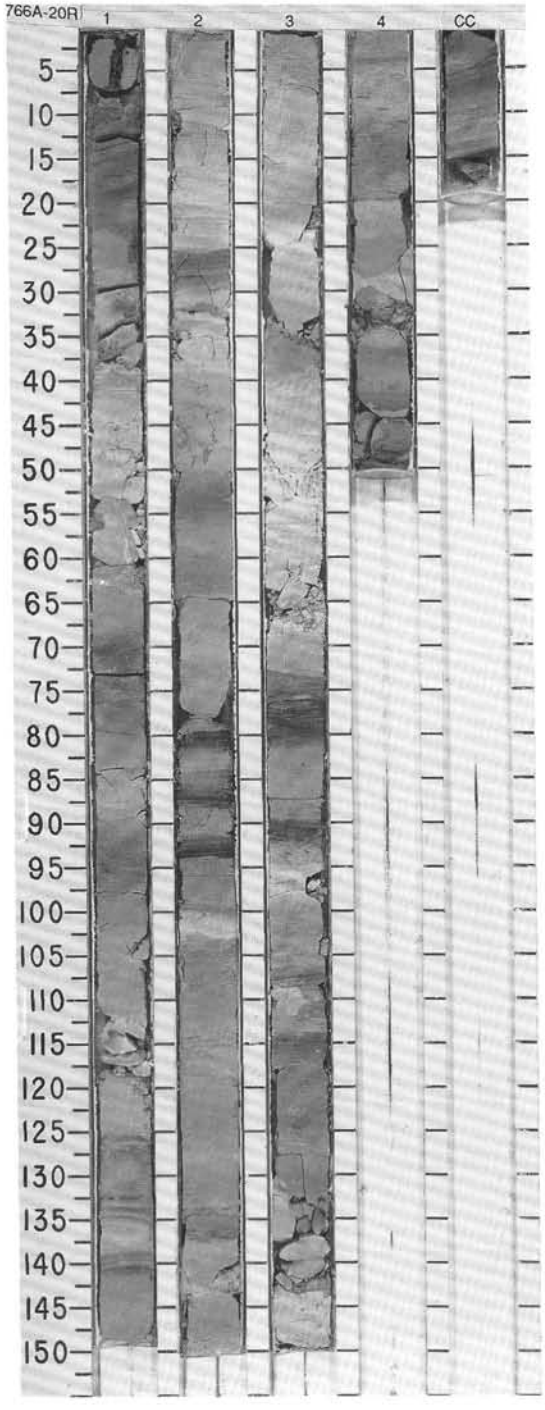
Minor lithologies.

a. Calcareous fragment chalk with siliceous fragments, very pale brown (10YR 8/4) alternating with dark grayish brown (10YR 4/2), multiply very thin-bedded graded units, with very coarse to very fine sand-sized components. Textural variations not coincident with color alternations. Fining upward into nannofossil chalk with calcareous and siliceous fragments, in Section 1, 60-61, and Section 2, 78-96 cm.

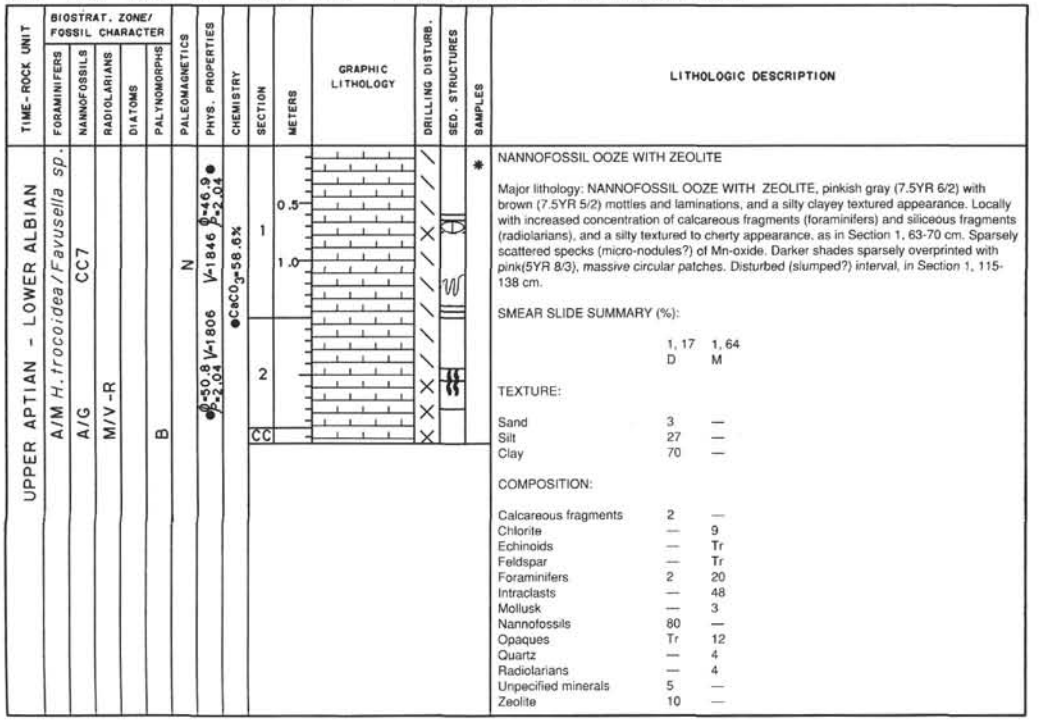
b. Cherty limestone, pink (5YR 7/3) to translucent, fractured to nodular, and massive in appearance, in Section 1, 34-38, 53-60, 112-118, Section 3, 62-68, and 134-143 cm.

SMEAR SLIDE SUMMARY (%):

	2, 66 D	2, 73 M	2, 76 M	2, 83 M	2, 91 M	4, 45 M
TEXTURE:						
Sand	Tr	—	10	70	60	—
Silt	20	—	80	28	20	—
Clay	80	—	10	2	20	—
COMPOSITION:						
Altered grains	—	—	—	—	—	9
Barite	—	—	—	—	2	—
Calcareous fragments	10	—	50	53	—	—
Calcite	—	Tr	—	—	—	—
Carbonate	—	—	—	—	10	—
Cement	—	6	—	—	—	6
Chlorite	—	1	—	—	—	4
Clay	5	—	5	—	—	46
Feldspar	—	—	—	—	—	Tr
Foraminifers	—	25	—	30	30	25
Glauconite	—	—	—	—	15	—
Matrix	—	43	—	—	—	—
Mica	—	Tr	7	—	—	Tr
Micrite	30	—	—	—	30	—
Nannofossils	43	1	8	2	—	—
Opaques	—	—	—	—	8	2
Quartz	—	1	—	Tr	5	3
Radiolarians	—	23	—	—	—	5
Silicious fragments	—	—	30	15	—	—
Zeolite	12	—	—	—	—	—



SITE 766 HOLE A CORE 21R CORED INTERVAL 191.0-200.6 mbsf



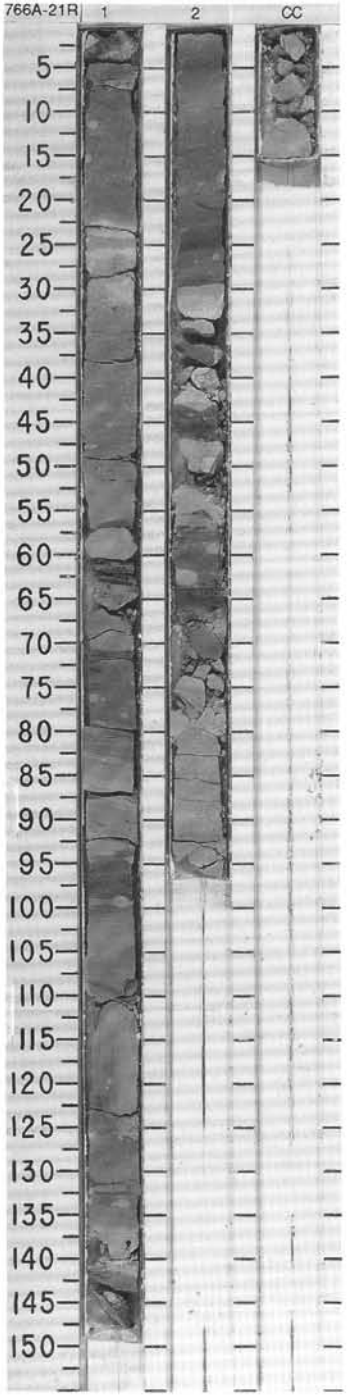
LITHOLOGIC DESCRIPTION

NANNOFOSSIL OOZE WITH ZEOLITE

Major lithology: NANNOFOSSIL OOZE WITH ZEOLITE, pinkish gray (7.5YR 6/2) with brown (7.5YR 5/2) mottles and laminations, and a silty clayey textured appearance. Locally with increased concentration of calcareous fragments (foraminifers) and siliceous fragments (radiolarians), and a silty textured to cherty appearance, as in Section 1, 63-70 cm. Sparsely scattered specks (micro-nodules?) of Mn-oxide. Darker shades sparsely overprinted with pink(5YR 8/3), *massive circular patches. Disturbed (slumped?) interval, in* Section 1, 115-138 cm.

SMEAR SLIDE SUMMARY (%):

	1, 17 D	1, 64 M
TEXTURE:		
Sand	3	—
Silt	27	—
Clay	70	—
COMPOSITION:		
Calcareous fragments	2	—
Chlorite	—	9
Echinoids	—	Tr
Feldspar	—	Tr
Foraminifers	2	20
Intraclasts	—	48
Mollusk	—	3
Nannofossils	80	—
Opaques	Tr	12
Quartz	—	4
Radiolarians	—	4
Unpecified minerals	5	—
Zeolite	10	—



SITE 766 HOLE A CORE 22R CORED INTERVAL 200.6-210.3 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALYNOMORPHS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
UPPER APTIAN - LOWER ALBIAN		CC7 A/G	S. euganea C/G ● A/G		C/M	Indeterminate	V-2604 Φ-33.5 ● β-2.13		1			X X		*

LITHOLOGIC DESCRIPTION

NANNOFOSSIL CHALK

Major lithology: NANNOFOSSIL CHALK, light olive gray (5Y 6/2), with scattered dots (possibly glauconite), and locally cherty, slightly mottled in appearance throughout.

SMEAR SLIDE SUMMARY (%):

	1, 18 D
TEXTURE:	
Sand	1
Silt	9
Clay	90
COMPOSITION:	
Calcareous fragments	8
Mica	1
Nannofossils	88
Opaques	1
Zeolite	2

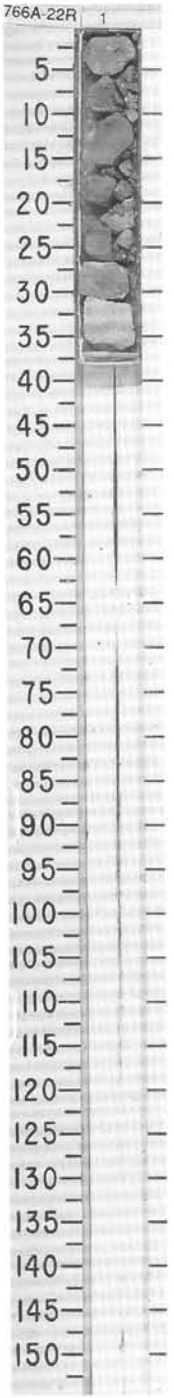
SITE 766 HOLE A CORE 23R CORED INTERVAL 210.3-219.9 mbsf

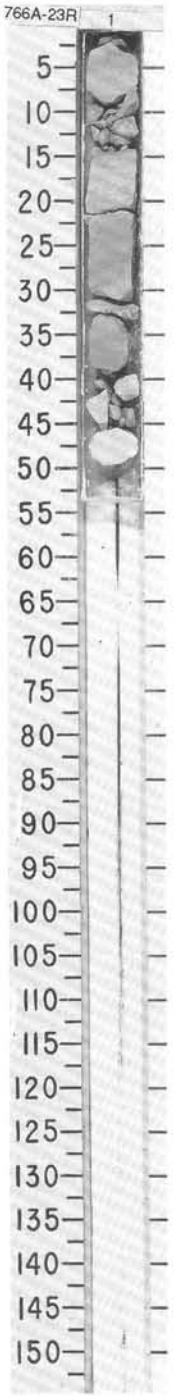
TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALYNOMORPHS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
?	?	C/P	S. euganea A/M F/M ●		B	N	V-1937 Φ-48.7 ● β-2.08		1			X X		
									CC					

LITHOLOGIC DESCRIPTION

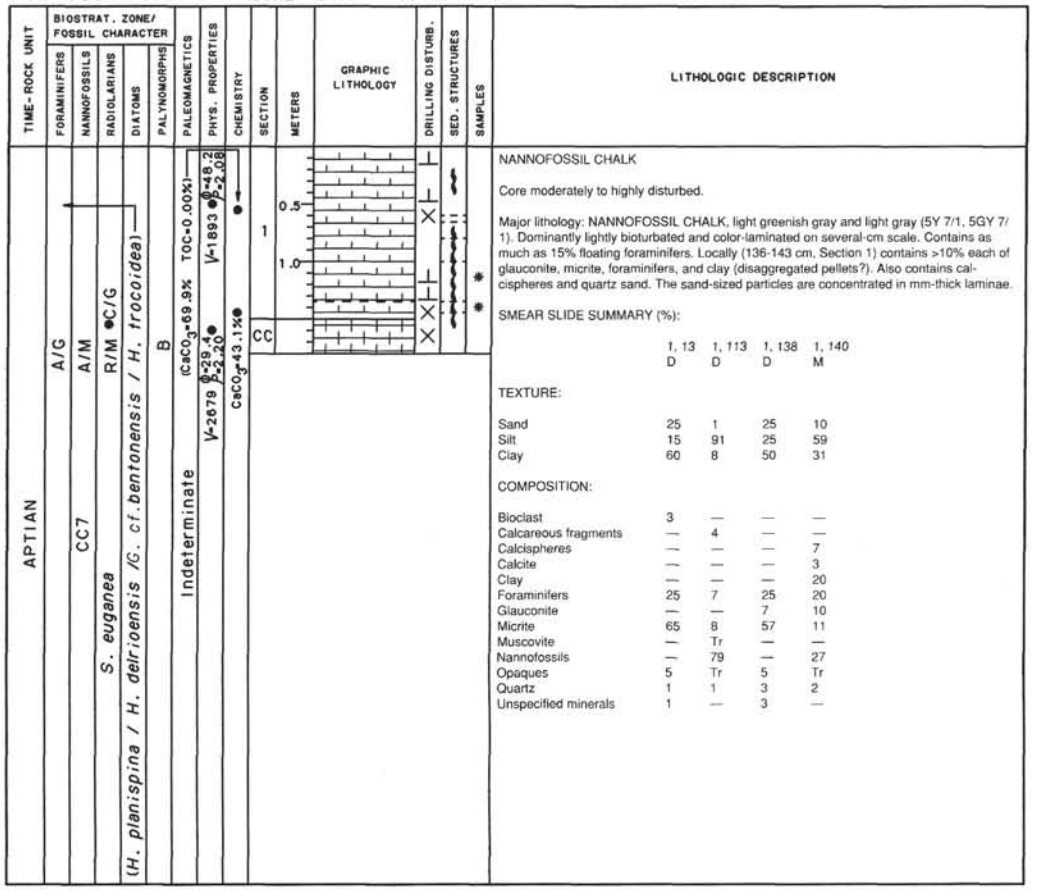
NANNOFOSSIL CHALK

Major lithology: NANNOFOSSIL CHALK light gray (5Y 7/1) with slight greenish to pinkish shades. Slightly mottled appearance. Cherty, in Section 1, 0-15 and 32-50 cm.





SITE 766 HOLE A CORE 24R CORED INTERVAL 219.9-229.6 mbsf



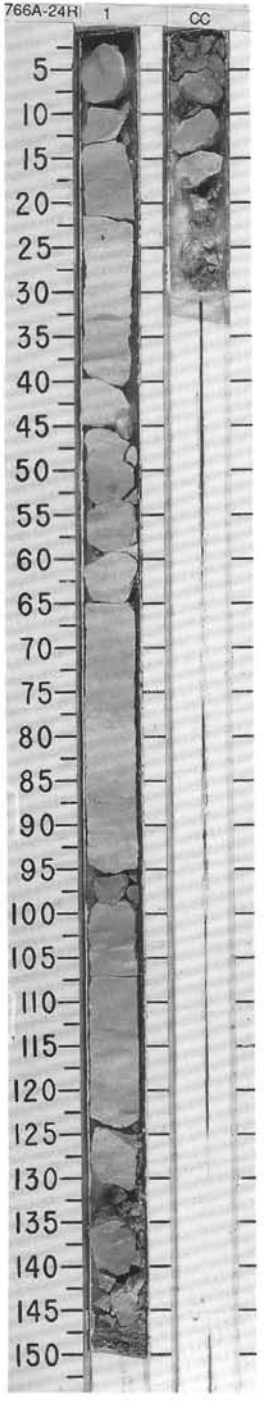
NANNOFOSSIL CHALK

Core moderately to highly disturbed.

Major lithology: NANNOFOSSIL CHALK, light greenish gray and light gray (5Y 7/1, 5GY 7/1). Dominantly lightly bioturbated and color-laminated on several-cm scale. Contains as much as 15% floating foraminifers. Locally (136-143 cm, Section 1) contains >10% each of glauconite, micrite, foraminifers, and clay (disaggregated pellets?). Also contains calcispheres and quartz sand. The sand-sized particles are concentrated in mm-thick laminae.

SMEAR SLIDE SUMMARY (%):

	1, 13 D	1, 113 D	1, 138 D	1, 140 M
TEXTURE:				
Sand	25	1	25	10
Silt	15	91	25	59
Clay	60	8	50	31
COMPOSITION:				
Bioclast	3	—	—	—
Calcareous fragments	—	4	—	—
Calcispheres	—	—	—	7
Calcite	—	—	—	3
Clay	—	—	—	20
Foraminifers	25	7	25	20
Glauconite	—	—	7	10
Micrite	65	8	57	11
Muscovite	—	Tr	—	—
Nannofossils	—	79	—	27
Opaques	5	Tr	5	Tr
Quartz	1	1	3	2
Unspecified minerals	1	—	3	—



SITE 766 HOLE A CORE 25R CORED INTERVAL 229.6-239.3 mbsf

TIME-ROCK UNIT	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALYNOMORPHS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
APTIAN	*H. delrioensis / H. gorbachikoe /G. cf. bentonensis* A/M	CC7a A/G	*C. pythiae* C/G		B	N ?	V-2332 ●φ-39.1 ●γ-2.11		1, CC					*

LITHOLOGIC DESCRIPTION

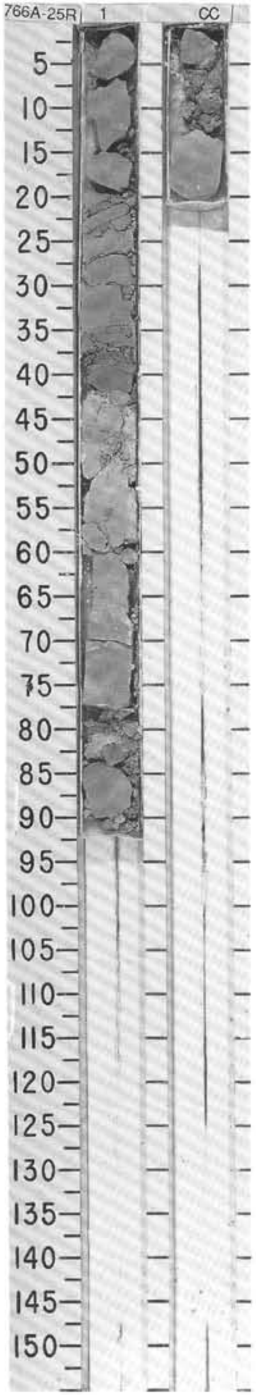
NANNOFOSSIL CHALK

Core slightly to heavily disturbed by drilling.

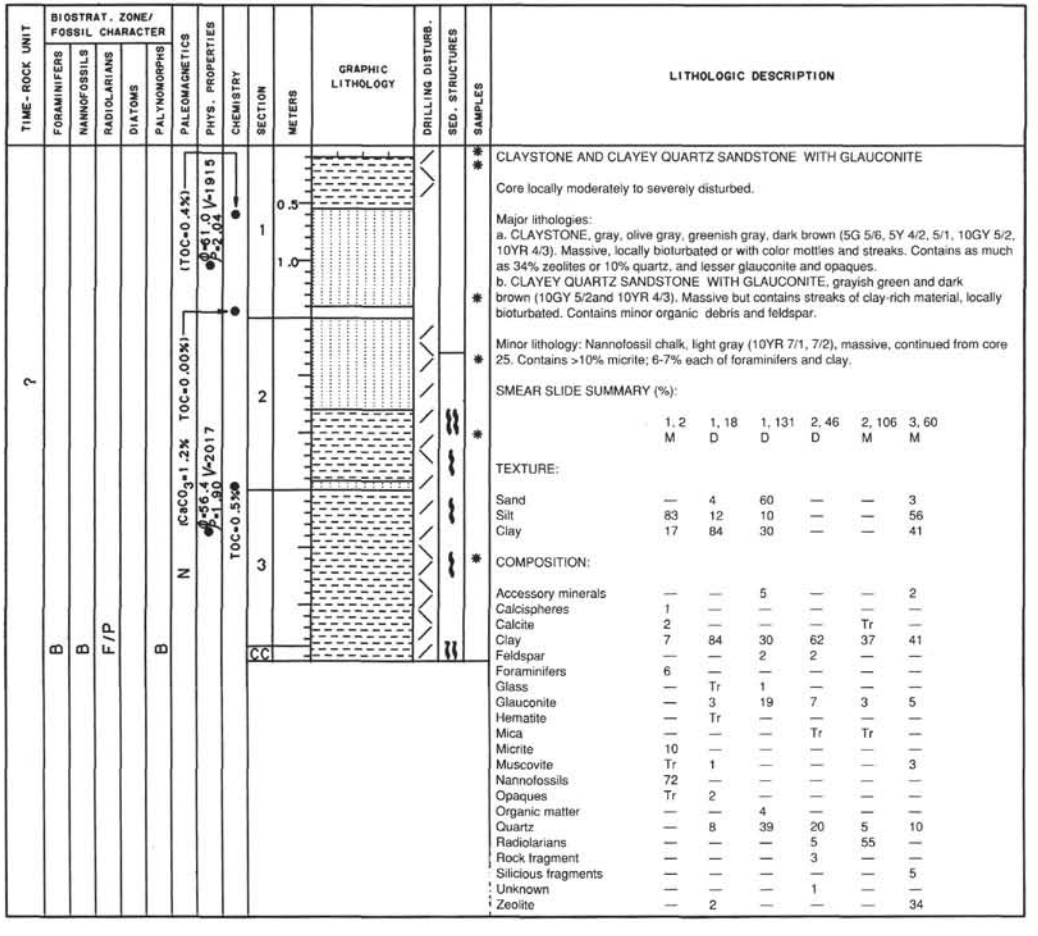
Major lithology: NANNOFOSSIL CHALK, light gray to greenish gray (5Y 6/1, 7/1, 5G 6/1, 7/1, 5GY 6/1, 7/1). Massive or slightly bioturbated as much as 10% floating silt-sized foraminifers.

SMEAR SLIDE SUMMARY (%):

	1, 33
	M
TEXTURE:	
Silt	72
Clay	28
COMPOSITION:	
Calcite	2
Clay	14
Foraminifers	5
Micrite	12
Muscovite	1
Nannofossils	65
Opaques	Tr
Quartz	Tr
Zeolite	1



SITE 766 HOLE A CORE 26R CORED INTERVAL 239.3-248.9 mbsf



CLAYSTONE AND CLAYEY QUARTZ SANDSTONE WITH GLAUCONITE

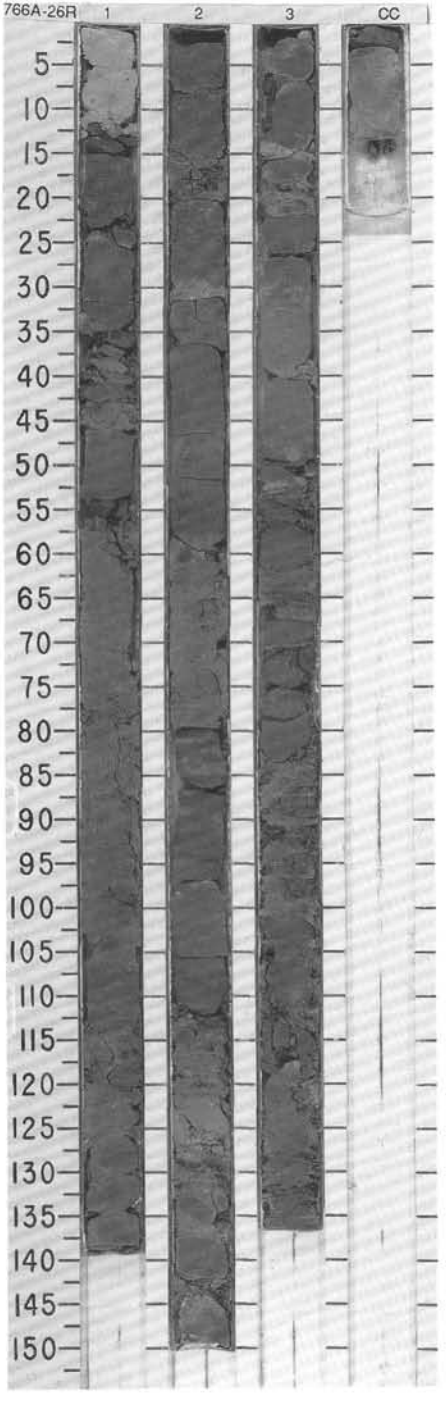
Core locally moderately to severely disturbed.

Major lithologies:
a. CLAYSTONE, gray, olive gray, greenish gray, dark brown (5G 5/6, 5Y 4/2, 5/1, 10GY 5/2, 10YR 4/3). Massive, locally bioturbated or with color mottles and streaks. Contains as much as 34% zeolites or 10% quartz, and lesser glauconite and opaques.
b. CLAYEY QUARTZ SANDSTONE WITH GLAUCONITE, grayish green and dark brown (10GY 5/2and 10YR 4/3). Massive but contains streaks of clay-rich material, locally bioturbated. Contains minor organic debris and feldspar.

Minor lithology: Nannofossil chalk, light gray (10YR 7/1, 7/2), massive, continued from core 25. Contains >10% micrite; 6-7% each of foraminifers and clay.

SMEAR SLIDE SUMMARY (%):

	1, 2 M	1, 18 D	1, 131 D	2, 46 D	2, 106 M	3, 60 M
TEXTURE:						
Sand	—	4	60	—	—	3
Silt	83	12	10	—	—	56
Clay	17	84	30	—	—	41
COMPOSITION:						
Accessory minerals	—	—	5	—	—	2
Calcispheres	1	—	—	—	—	—
Calcite	2	—	—	—	Tr	—
Clay	7	84	30	62	37	41
Feldspar	—	—	2	2	—	—
Foraminifers	6	—	—	—	—	—
Glass	—	Tr	1	—	—	—
Glauconite	—	3	19	7	3	5
Hematite	—	Tr	—	—	—	—
Mica	—	—	—	Tr	Tr	—
Micrite	10	—	—	—	—	—
Muscovite	Tr	1	—	—	—	3
Nannofossils	72	—	—	—	—	—
Opaques	Tr	2	—	—	—	—
Organic matter	—	—	4	—	—	—
Quartz	—	8	39	20	5	10
Radiolarians	—	—	—	5	55	—
Rock fragment	—	—	—	3	—	—
Silicious fragments	—	—	—	—	—	5
Unknown	—	—	—	1	—	—
Zeolite	—	2	—	—	—	34



SITE 766 HOLE A CORE 27R CORED INTERVAL 248.9-258.6 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALYNOMORPHS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
BARREMIAN	B	C/G	V-R/P		B	N / R	V-2028	$CaCO_3$=8.0% / $CaCO_3$=10.7% / $CaCO_3$=6.4%	1, 2, 3, CC	0.5, 1.0				

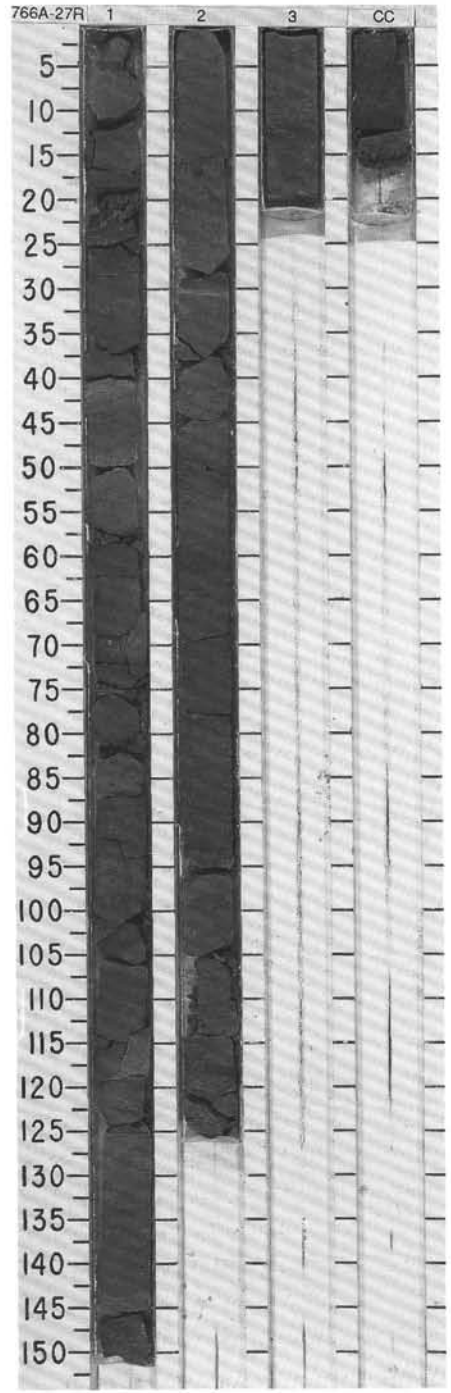
LITHOLOGIC DESCRIPTION

CLAYSTONE WITH NANNOFOSSILS AND RADIOLARIANS

Major lithology: CLAYSTONE WITH NANNOFOSSILS and RADIOLARIANS, greenish gray and dark greenish gray (5G 4/1, 5/1), bioturbated (burrows mostly horizontal), locally mottled or with dark lenses. Contains 0-12% nannofossils, 0-20% radiolarians. Radiolarians preserved as silica or as molds in subequal numbers. Also contains minor muscovite, glauconite (sand), and zeolites.

SMEAR SLIDE SUMMARY (%):

	1, 47 D	1, 80 M	1, 129 M	2, 68 D
TEXTURE:				
Sand	—	—	—	1
Silt	8	—	10	13
Clay	92	—	90	85
COMPOSITION:				
Bioclast	—	Tr	—	—
Calcite	—	—	1	1
Clay	92	55	90	85
Glass	—	—	—	1
Glauconite	—	Tr	Tr	—
Hematite	—	1	—	—
Mica	—	Tr	—	—
Muscovite	6	—	1	—
Nannofossils	—	2	3	10
Opaques	Tr	1	—	Tr
Organic matter	—	—	Tr	—
Plant	—	—	Tr	—
Quartz	2	Tr	1	—
Radiolarians	—	40	—	1
Zeolite	Tr	—	2	2



SITE 766 HOLE A CORE 28R CORED INTERVAL 258.6-268.3 mbsf

TIME-ROCK UNIT: BARREMIAN

BIOSTRAT. ZONE/FOSSIL CHARACTER:
- FORAMINIFERS: B
- NANNOFOSSILS: C/M — CC6
- RADIOLARIANS: F/M — *E. columbaria*
- DIATOMS
- PALYNOMORPHS: A/G — upper *M. australis*

PALEOMAGNETICS: R

PHYS. PROPERTIES: R
- ρ=60.1 V=1793 P=1.72
- ρ=60.8 V=1711 P=1.80
- ρ=53.0 V=1901 P=1.85

CHEMISTRY:
- ($CaCO_3$=8.3%)
- $CaCO_3$=12.3%
- $CaCO_3$=10.4%
- $CaCO_3$=9.9%
- $CaCO_3$=9.1%

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

METERS: 0.5, 1.0

GRAPHIC LITHOLOGY

DRILLING DISTURB.

SED. STRUCTURES

SAMPLES

LITHOLOGIC DESCRIPTION

CLAYSTONE WITH NANNOFOSSILS

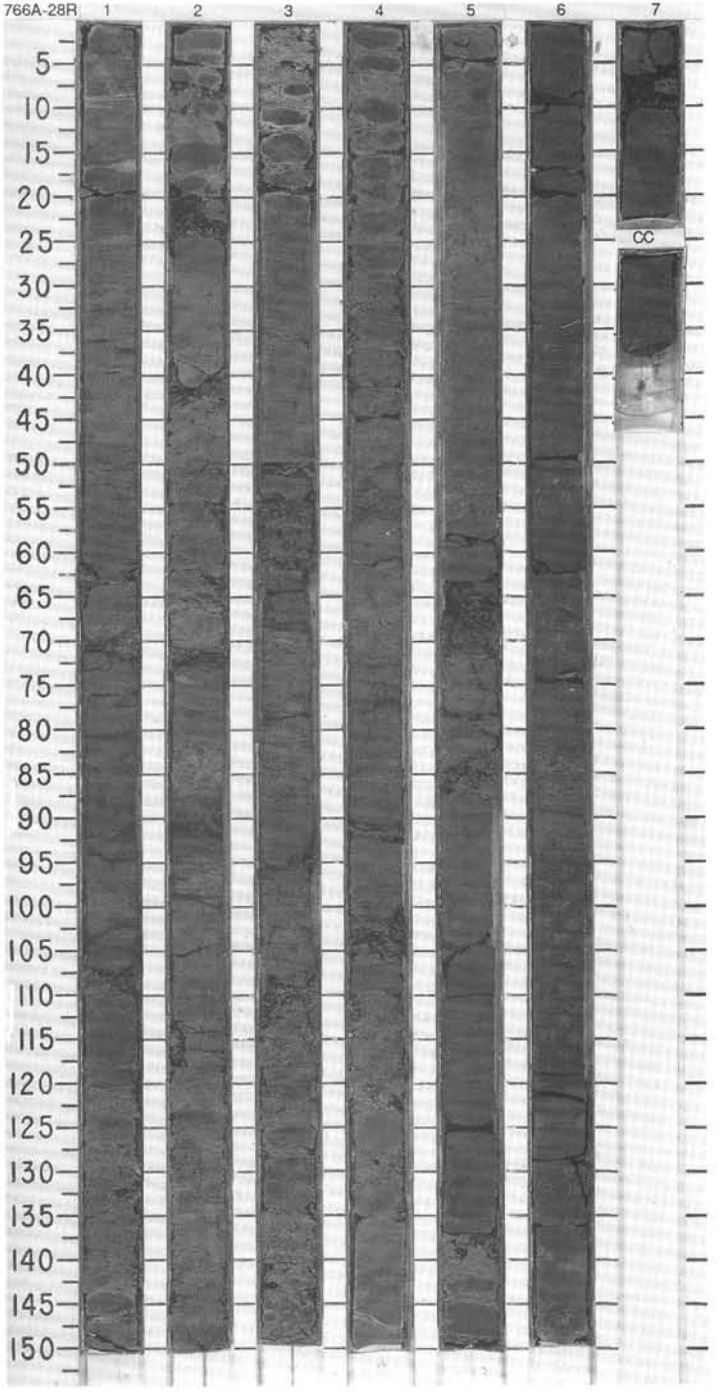
Entire core bioturbated with two generations of bioturbation.

Major lithology: CLAYSTONE with NANNOFOSSILS, grayish green, greenish gray, and dark gray (5G 4/2, 5/1, N 4/) with mottles and streaks of dark greenish gray, dark gray, and very dark gray (5GY 4/1, N 4/, 10YR 3/1). First generation of bioturbation mostly horizontal, later, cross-cutting, generation vertical to high-angle oblique.

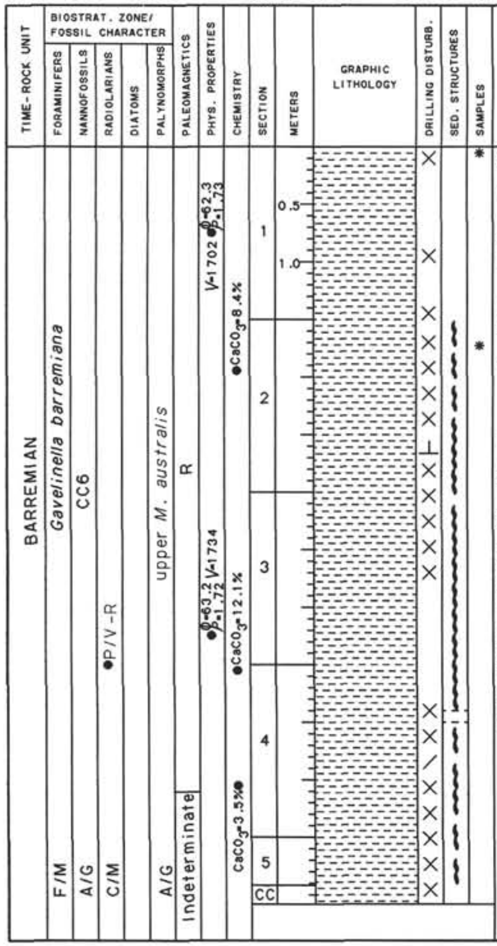
Minor lithologies:
a. Clay with radiolarians, grayish green and greenish gray (5G 4/2, 5GY 4/1) with white flecks (radiolarians). Radiolarians floating in clay; 0-20%. Sections 3 (68-73, 78), 5 (116-121), 6 (68-74 cm).
b. Silty clay, greenish gray or grayish green (5G 4/2, 5GY 4/1) with white quartz silt grains. Lens(?) embedded in claystone. Section 2, 72- 75 cm.

SMEAR SLIDE SUMMARY (%):

	1, 41 D	2, 34 D
TEXTURE:		
Sand	—	33
Silt	18	17
Clay	82	50
COMPOSITION:		
Bioclast	—	3
Calcite	3	—
Clay	82	—
Fish	—	1
Glauconite	—	2
Mica	—	Tr
Micrite	1	57
Muscovite	1	—
Nannofossils	11	—
Opaques	2	3
Organic matter	Tr	1
Quartz	Tr	3
Radiolarians	—	30



SITE 766 HOLE A CORE 29R CORED INTERVAL 268.3-277.9 mbsf



LITHOLOGIC DESCRIPTION

CLAYSTONE

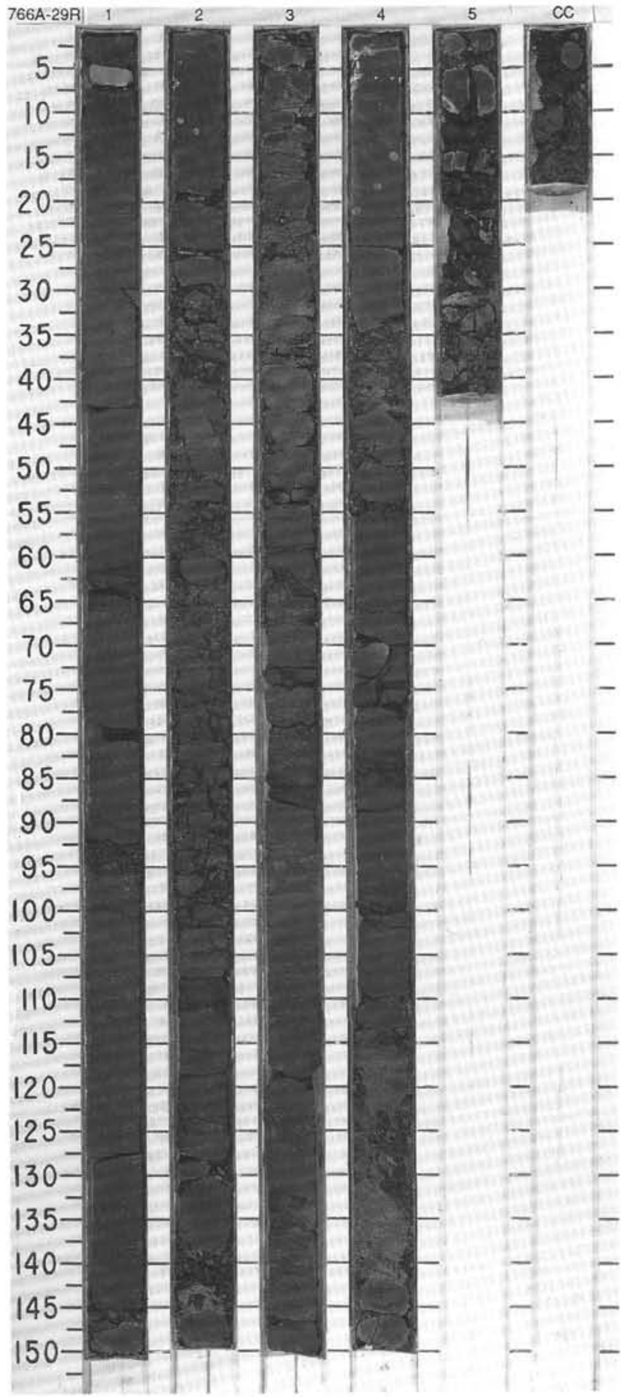
Much of core highly disturbed.

Major lithology: CLAYSTONE, very dark greenish gray (10Y 3/1), massive or bioturbated; dark lenses may also be bioturbation structures. Locally vaguely laminated. Contains nannofossils, glauconite, opaques, muscovite, calcareous fragments, siliceous fragments, and radiolarians.

Minor lithology: Clay (bentonite?), greenish gray (5G 5/1), non-calcareous, nearly pure clay with elongate clear to dark crystals as much as 1 mm long, and grayish smudges. Section 1, 5-8 cm.

SMEAR SLIDE SUMMARY (%):

	1, 6 M	2, 23 D
TEXTURE:		
Silt	2	21
Clay	98	79
COMPOSITION:		
Calcareous fragments	—	2
Clay	98	79
Glass	—	Tr
Glauconite	—	4
Micrite	Tr	—
Muscovite	—	3
Nannofossils	Tr	5
Opaques	1	3
Plant	—	Tr
Quartz	Tr	1
Radiolarians	—	1
Silicious fragments	—	2



SITE 766 HOLE A CORE 30R CORED INTERVAL 277.9-287.5 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALYNOMORPHS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
BARREMIAN	F/M *Gavelinella barremiana*	C/G CC6	R/P	A/G upper *M. australis*	Indeterminate or N ?	R	ρ=63.2 ρ=1.80 V=1656	$CaCO_3$=5.5% $CaCO_3$=4.7%						
					Indeterminate	N?	Indeterminate	V=1737 ρ=63.4 ρ=1.82 $CaCO_3$=4.1% TOC=0.63%	1 2 3 4 5 CC	0.5 1.0				

LITHOLOGIC DESCRIPTION

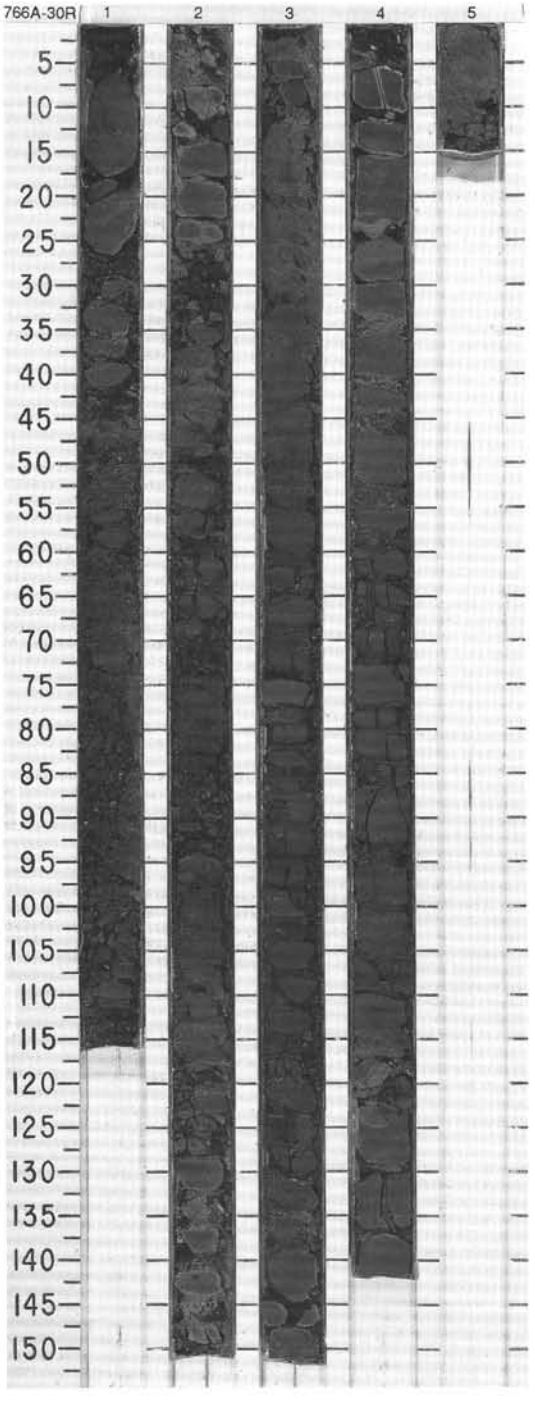
CLAYSTONE

Entire core is drilling breccia.

Major lithology: CLAYSTONE, very dark greenish gray (10Y 3/1), massive,slightly bioturbated, or vaguely laminated. As much as 20% disseminated silt- to sand-sized particles, dominantly radiolarians and radiolarian molds; lesser glauconite, in Section 1; coarse particles less abundant in remainder of core. Also contains zeolites, nannofossils, calcite muscovite, pyrite, quartz, and glass.

SMEAR SLIDE SUMMARY (%):

	4, 18 D
TEXTURE:	
Sand	2
Silt	24
Clay	74
COMPOSITION:	
Calcareous fragments	1
Calcite	3
Clay	74
Glass	1
Glauconite	1
Muscovite	2
Nannofossils	5
Pyrite	2
Quartz	1
Zeolite	8



SITE 766 HOLE A CORE 31R CORED INTERVAL 287.5-297.2 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALYNOMORPHS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
BARREMIAN	*Gavelinella barremiana*	CC6			upper *M. australis*	R	V=1708 @ 2-42.0 @ 2-2.07	●$CaCO_3$=6.8%	CC	0.5 1.0		X		*
	F/M	C/G	B		A/G	N		●$CaCO_3$=4.2%●	1 2 3			X		*

LITHOLOGIC DESCRIPTION

CLAYSTONE

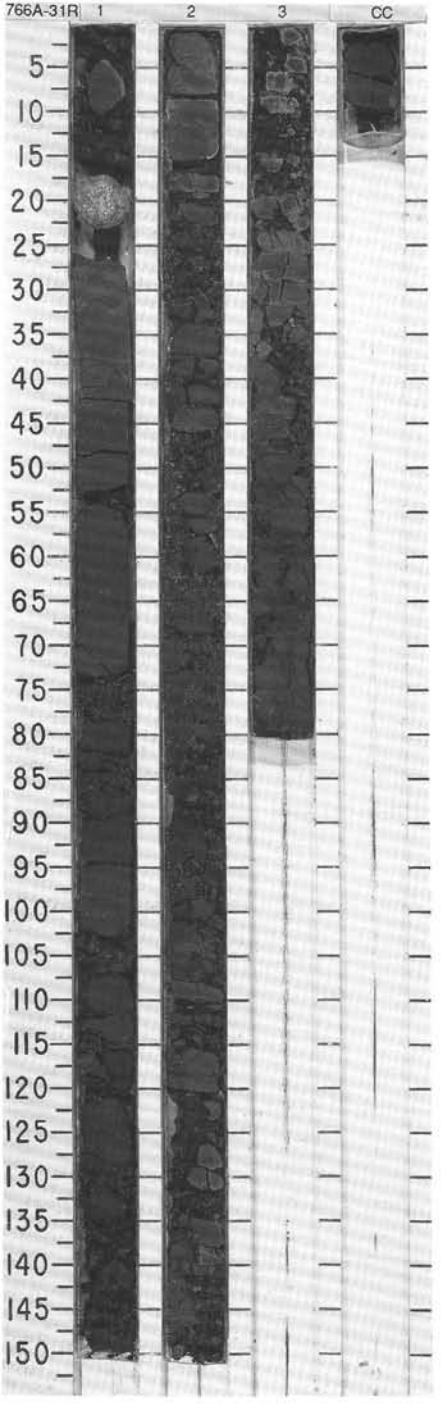
Most of core heavily disturbed by drilling.

Major lithology: CLAYSTONE, very dark greenish gray (10Y 3/1), slightly bioturbated, vaguely laminated, or massive. Contains disseminate radiolarians and radiolarian-molds,quartz, pyrite, glass, and calcite.Locally contains >10% each of nannofossils and zeolites.

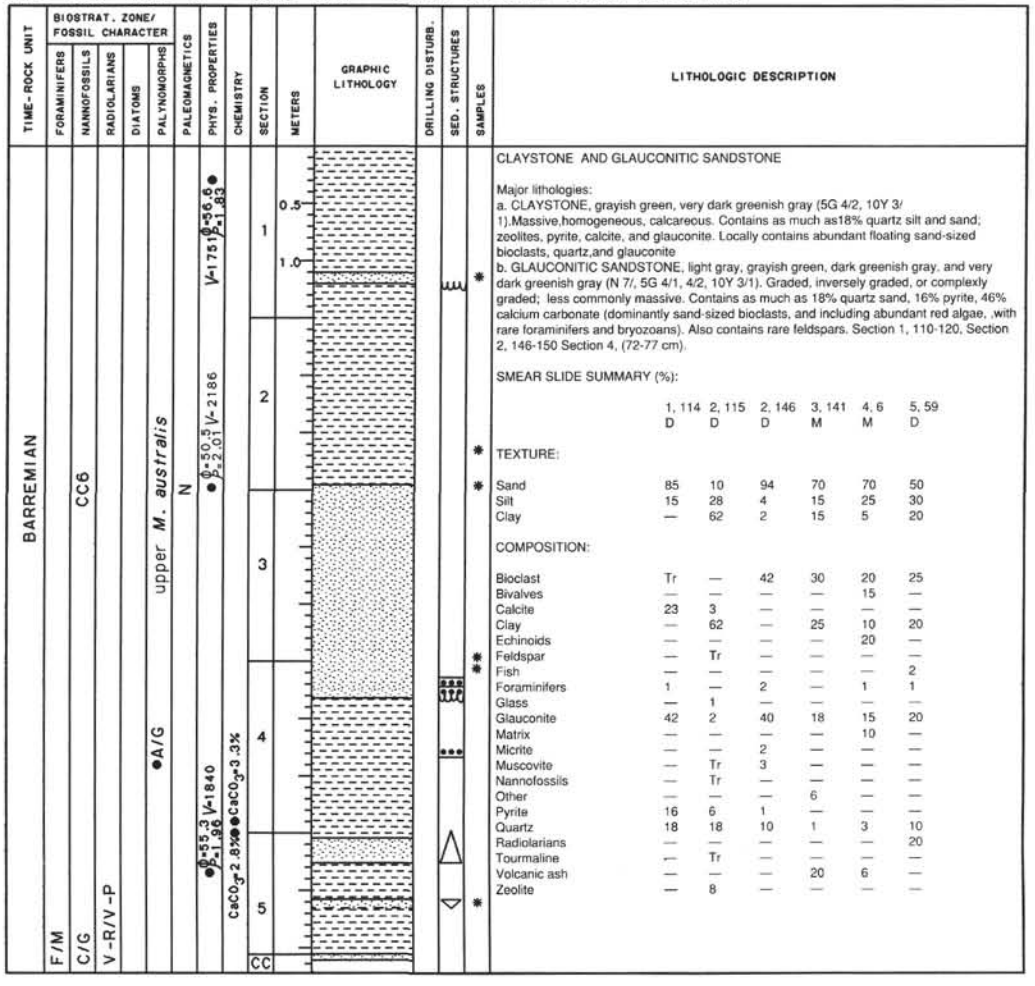
Minor lithologies:
a. Glauconite sand with pyrite and quartz, dark greenish gray (5GY 4/1). Graded, contains clay clasts near base,also contains calcite (including red algal fragments), feldspar, various mineral grains. Carbonate bioclast locally >25% of sediment. Particles medium-sand-sized. Lower contact sharp, upper contact gradational. Section 2, 101-108 cm.
b. Sandy claystone, very dark greenish gray (10Y 3/1), rounded fine-mediums and grains float in clay matrix; sand includes glauconite, white calcite bioclasts. Section 3, 68-80 cm.

SMEAR SLIDE SUMMARY (%):

	1, 98 D	2, 104 D	3, 73 D
TEXTURE:			
Sand	2	80	5
Silt	40	20	41
Clay	58	—	54
COMPOSITION:			
Bioclast	—	1	—
Calcispheres	—	—	Tr
Calcite	3	8	10
Clay	58	—	54
Feldspar	—	3	—
Foraminifers	—	1	—
Glass	5	—	—
Glauconite	1	50	6
Hematite	—	Tr	—
Muscovite	1	—	1
Nannofossils	10	Tr	2
Organic matter	2	—	3
Pyrite	3	10	7
Quartz	4	17	2
Unspecified minerals	—	10	—
Zeolite	12	—	12



SITE 766 HOLE A CORE 32R CORED INTERVAL 297.2-306.8 mbsf



CLAYSTONE AND GLAUCONITIC SANDSTONE

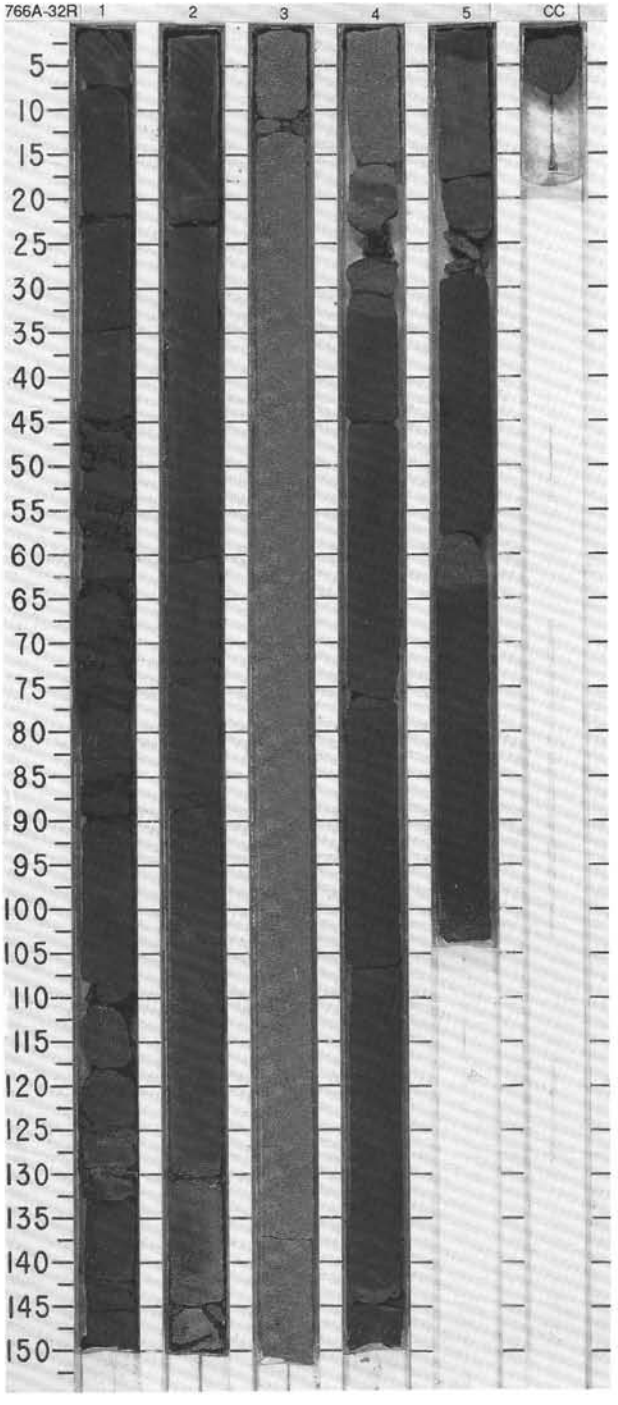
Major lithologies:

a. CLAYSTONE, grayish green, very dark greenish gray (5G 4/2, 10Y 3/1).Massive,homogeneous, calcareous. Contains as much as18% quartz silt and sand; zeolites, pyrite, calcite, and glauconite. Locally contains abundant floating sand-sized bioclasts, quartz,and glauconite

b. GLAUCONITIC SANDSTONE, light gray, grayish green, dark greenish gray, and very dark greenish gray (N 7/, 5G 4/1, 4/2, 10Y 3/1). Graded, inversely graded, or complexly graded; less commonly massive. Contains as much as 18% quartz sand, 16% pyrite, 46% calcium carbonate (dominantly sand-sized bioclasts, and including abundant red algae, .with rare foraminifers and bryozoans). Also contains rare feldspars. Section 1, 110-120, Section 2, 146-150 Section 4, (72-77 cm).

SMEAR SLIDE SUMMARY (%):

	1, 114 D	2, 115 D	2, 146 D	3, 141 M	4, 6 M	5, 59 D
TEXTURE:						
Sand	85	10	94	70	70	50
Silt	15	28	4	15	25	30
Clay	—	62	2	15	5	20
COMPOSITION:						
Bioclast	Tr	—	42	30	20	25
Bivalves	—	—	—	—	15	—
Calcite	23	3	—	—	—	—
Clay	—	62	—	25	10	20
Echinoids	—	—	—	—	20	—
Feldspar	—	Tr	—	—	—	—
Fish	—	—	—	—	—	2
Foraminifers	1	—	2	—	1	1
Glass	—	1	—	—	—	—
Glauconite	42	2	40	18	15	20
Matrix	—	—	—	—	10	—
Micrite	—	—	2	—	—	—
Muscovite	—	Tr	3	—	—	—
Nannofossils	—	Tr	—	—	—	—
Other	—	—	—	6	—	—
Pyrite	16	6	1	—	—	—
Quartz	18	18	10	1	3	10
Radiolarians	—	—	—	—	—	20
Tourmaline	1	Tr	—	—	—	—
Volcanic ash	—	—	—	20	6	—
Zeolite	—	8	—	—	—	—



SITE 766 HOLE A CORE 33R CORED INTERVAL 306.8-316.5 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALYNOMORPHS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
HAUTERIVIAN	F/M	C/G	V-R/V-P		A/G	lower *M. australis*	N	ϕ=40.9 V-1844 ρ=2.14	●$CaCO_3$=4.4%	●$CaCO_3$=1.0%	1 2 3 CC	0.5 1.0				

ϕ=50.6 V-1964 ρ=2.00

LITHOLOGIC DESCRIPTION

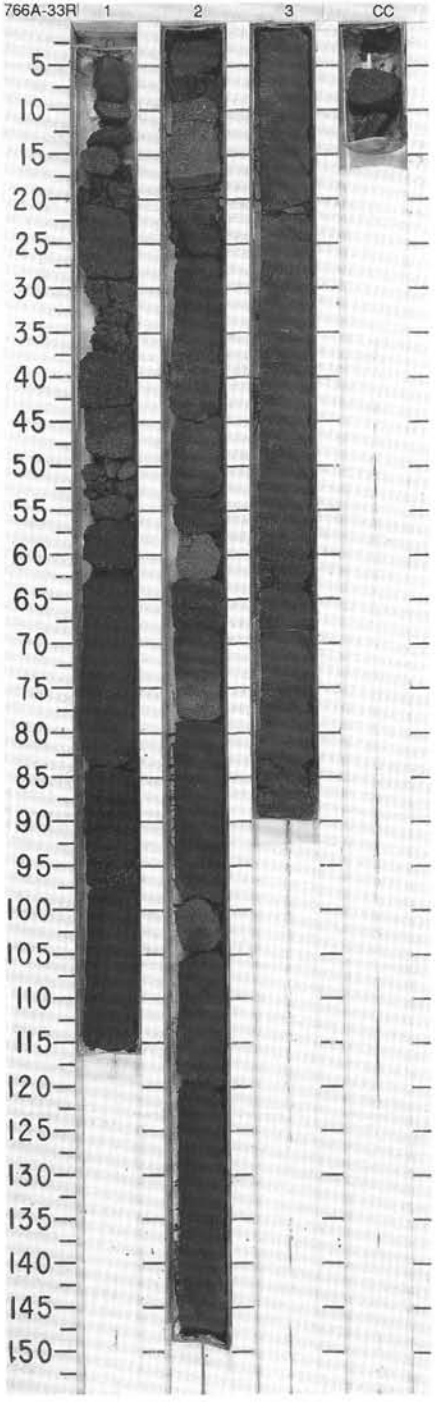
GLAUCONITIC BIOCLASTIC SANDSTONE AND GLAUCONITIC QUARTZOSE SANDSTONE

Major lithologies:
GLAUCONITIC BIOCLASTIC SANDSTONE AND QUARTZOSE SANDSTONE, dark and very dark greenish gray (5GY 4/1, 10Y 3/1). Massive, graded or inversely graded, locally bioturbated. Two modal kinds of sandstone which are distinct but similar. Minor constituents of both include, in decreasing order of abundance, clay, zeolites, pyrite, unknown minerals, and feldspar. Particles generally rounded and well sorted, very coarse- to fine-sand-sized. Calcareous sandstones coarser than quartzose sandstones, and, where both bioclasts and quartz grains are present, bioclasts are coarser.

Minor lithology: Calcareous claystone, very dark greenish gray (10Y 3/1).Massive, contains rare disseminatedsilt- to sand-sized radiolarian molds, radiolarians, and glauconite. Probably cavings. Section 1, 0-5 cm.

SMEAR SLIDE SUMMARY (%):

	1, 103 D	2, 18 D
TEXTURE:		
Sand	95	43
Silt	5	27
Clay	—	30
COMPOSITION:		
Accessory minerals	—	2
Clay	—	30
Feldspar	1	1
Glass	—	1
Glauconite	38	42
Muscovite	—	Tr
Pyrite	2	4
Quartz	59	10
Zeolite	—	10



SITE 766 HOLE A CORE 34R CORED INTERVAL 316.5-326.1 mbsf

TIME-ROCK UNIT	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALYNOMORPHS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
HAUTERIVIAN	F/M	R/G CC1 - 4 ?		B	F/G lower *M. australis*	N	V-1807 Φ-57.1 ρ-1.89; V-1867 Φ-51.6 ρ-1.91	$CaCO_3$-3.3%; ($CaCO_3$-7.8%)	1, 2, CC	0.5, 1.0				*

LITHOLOGIC DESCRIPTION

GLAUCONITIC QUARTZ SANDSTONE

Major lithology: GLAUCONITIC QUARTZ SANDSTONE, dark to very dark greenish gray (10Y 3/1, 5G 4/1, 4/2). Massive,locally graded or bioturbated; contains 2 coal granules in Section 1, 40 cm. Composition varies, but glauconite of quartz dominate, and significant minor components are calcitic bioclasts,calcareous fragments, black opaques:rare constituents include foraminifers and feldspar.

SMEAR SLIDE SUMMARY (%):

	1, 80 D	2, 91 D
TEXTURE:		
Sand	81	95
Silt	19	5
COMPOSITION:		
Bioclast	11	—
Calcite	6	—
Feldspar	—	1
Foraminifers	1	—
Hematite	—	1
Opaques	6	5
Organic matter	2	—
Quartz	25	58

SITE 766 HOLE A CORE 35R CORED INTERVAL 326.1-335.8 mbsf

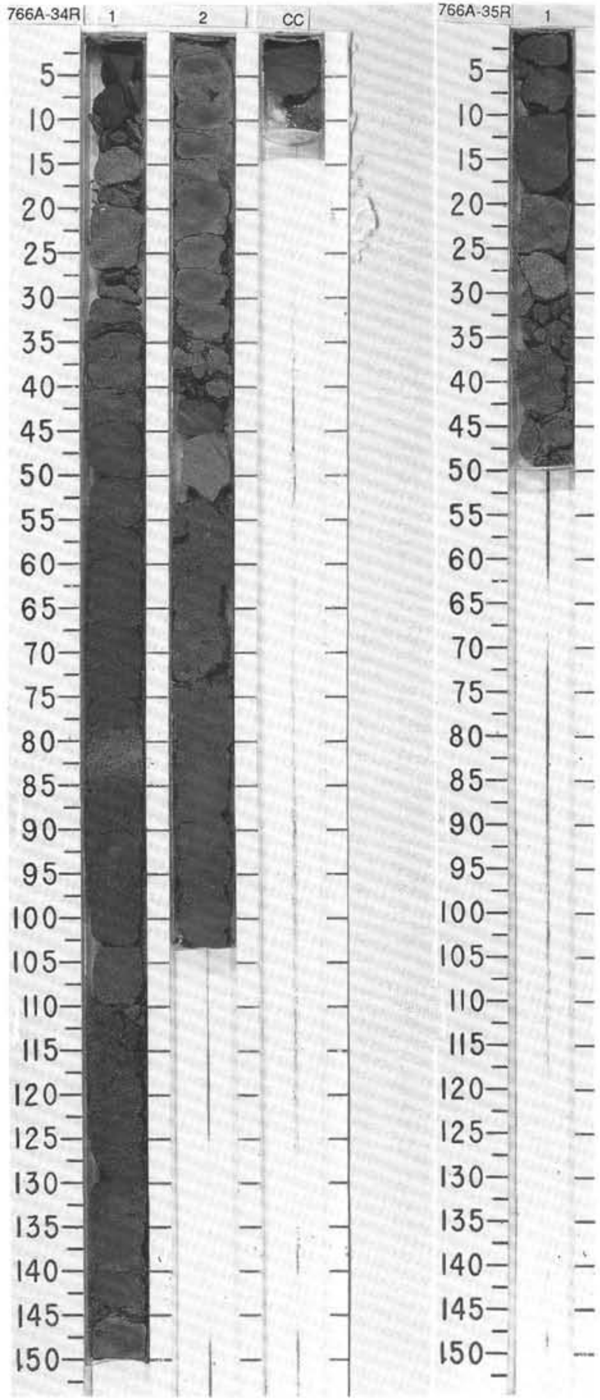
TIME-ROCK UNIT	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALYNOMORPHS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
HAUTERIVIAN	R/M	R/M CC1 - 4 ?	B		F/G lower *M. australis*	N		$CaCO_3$-46.8%	1, CC					

LITHOLOGIC DESCRIPTION

GLAUCONITIC QUARTZOSE SANDSTONE AND GLAUCONITIC BIOCLASTIC SANDSTONE

Most of core strongly disturbed by drilling.

Major lithologies:
GLAUCONITIC QUARTZOSE SANDSTONE and GLAUCONITIC BIOCLASTIC SANDSTONE, very dark and dark greenish gray (10Y 3/1, 5GY 4/1). Massive.
a. Glauconitic quartzose sandstone is fine- to medium-sand-sized, with moderate sorting, contains some bioclasts. A pyritized burrow 4 cm long & 1 cm wide occurs in Section 1, 5 cm.This lithology occurs in Section 1, 0-26 cm.
b. Glauconitic bioclastic sandstone is coarse to medium-sand-sized, poorly sorted.Section 1, 26-40 cm.



SITE 766 HOLE A CORE 36R CORED INTERVAL 335.8-345.5 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALYNOMORPHS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
HAUTERIVIAN	R/M	R/M CC1 - 4	B		●A/G *M. testudinaria* A/G	R	ν=1760 ρ=2.1 ρ=1.85	$CaCO_3$=4.8% ●$CaCO_3$=3.8%	1, 2	0.5, 1.0				*

LITHOLOGIC DESCRIPTION

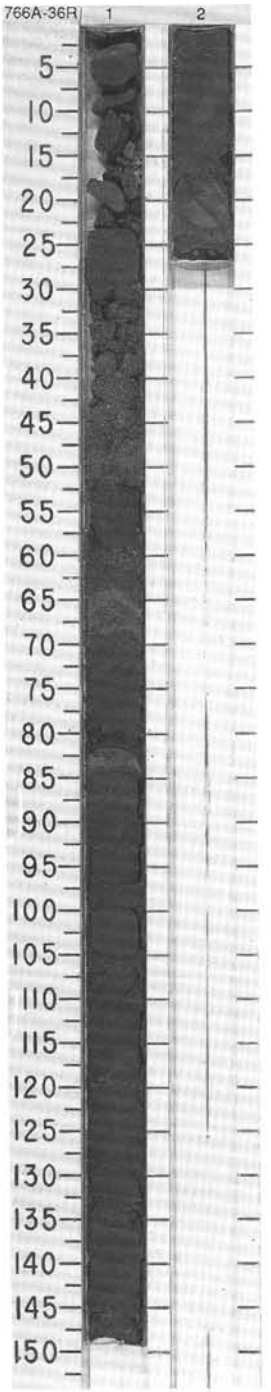
GLAUCONITIC QUARTZOSE SANDSTONE

Major lithology: GLAUCONITIC QUARTZOSE SANDSTONE, very dark greenish gray (10Y 3/1), very fine-grained, fairly well sorted, and slightly mottled in appearance. Locally contains larger, moderately well rounded grains of glauconite, carbonate (bioclasts), and quartz, as in Section 1, 59-62 cm, which are fairly concentrated to floating loosely.

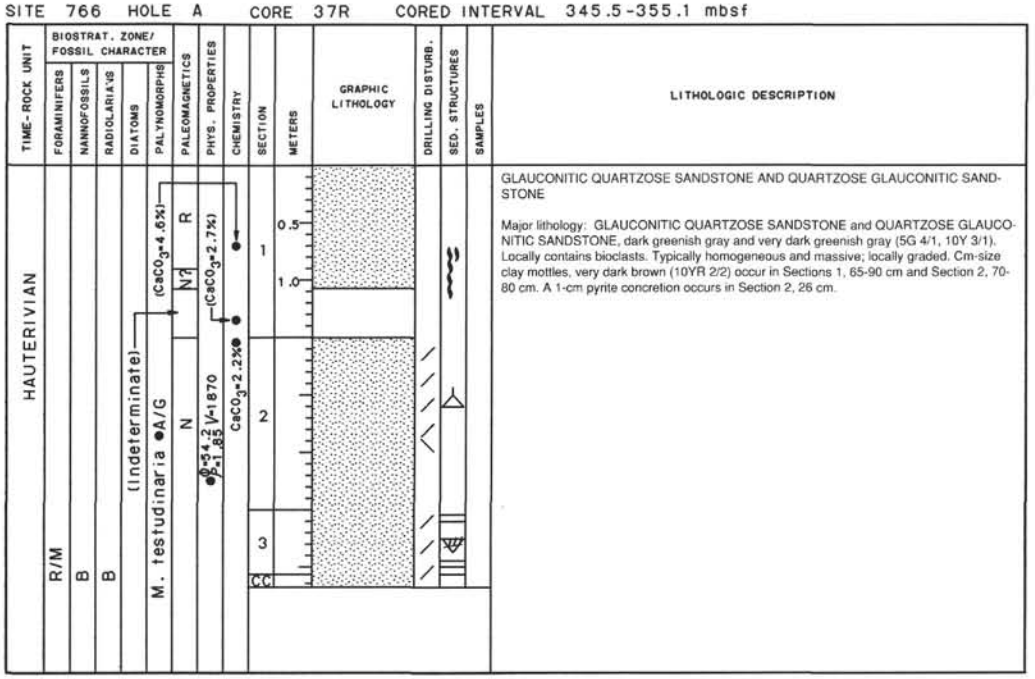
Minor lithologies:
a. Bioclastic glauconitic silty sandstone to sandy siltstone, overall dark greenish gray (5GY 4/1) with a speckled appearance due to floating bioclasts. Intervals tend to be poorly sorted, with carbonate glauconite, and quartz grains supporting a silt- to clay-sized matrix of calcite fragments. Tabular bioclasts oriented parallel to bedding, otherwise massive. Intervals generally coarsening upward (possibly reversely graded). Occurring in Section 1, 0-20, 52-72, 64-68, and 82-89 cm.
b. Claystone, black (N 2.5/), in Section 1, 115 cm. Consists of highly altered grains (possibly of volcanic origin).

SMEAR SLIDE SUMMARY (%):

	1, 10 M	1, 50 M	1, 116 M	2, 17 D
TEXTURE:				
Sand	60	40	—	80
Silt	35	50	—	20
Clay	5	10	100	—
COMPOSITION:				
Accessory minerals	—	—	—	Tr
Bioclast	40	20	—	5
Calcite	—	30	—	10
Clay	15	10	100	—
Glauconite	20	30	—	25
Hematite	—	—	—	2
Opaques	—	—	—	3
Quartz	23	10	—	50
Unspecified minerals	2	—	—	—
Zeolite	—	—	—	5

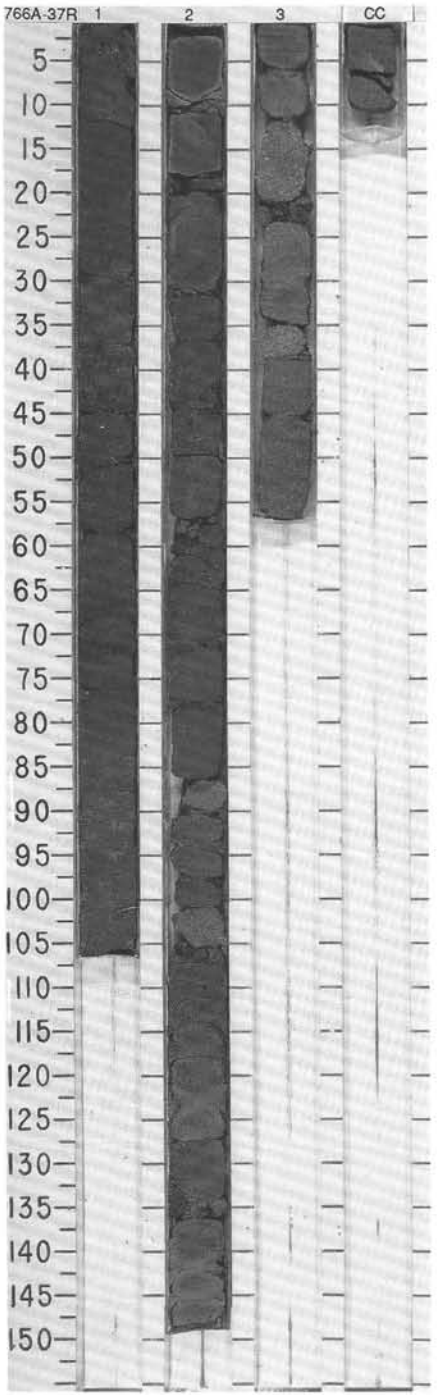


SITE 766 HOLE A CORE 37R CORED INTERVAL 345.5-355.1 mbsf

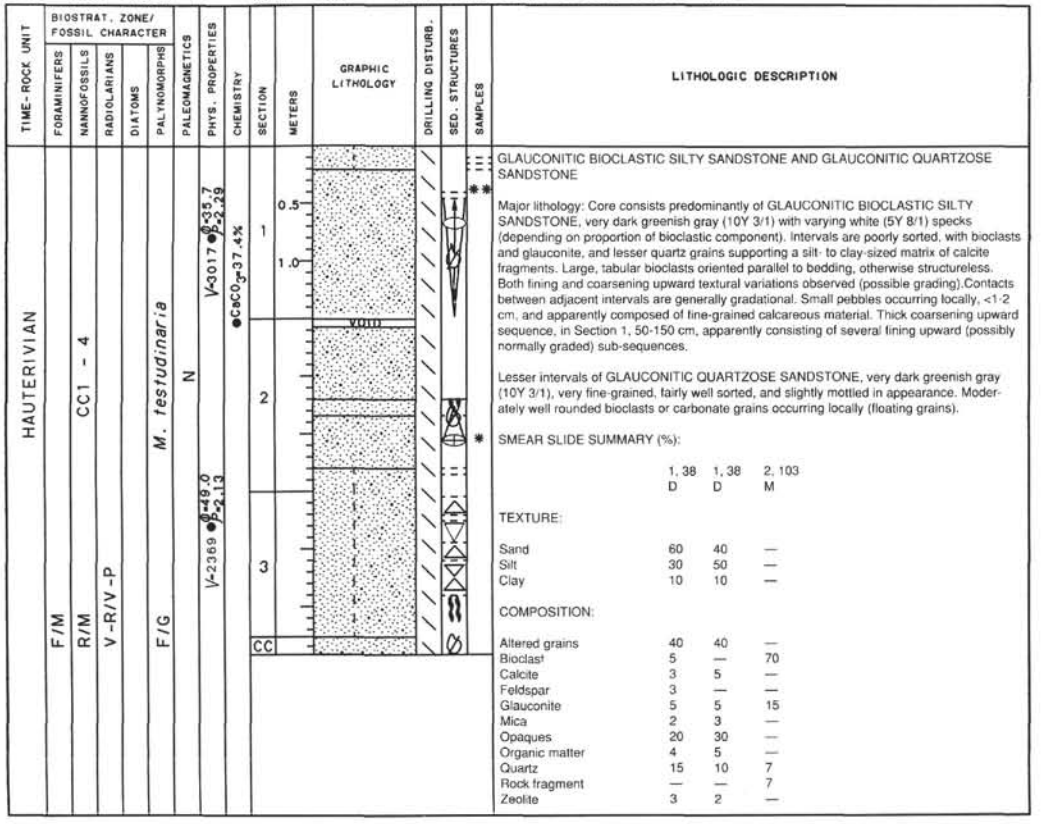


GLAUCONITIC QUARTZOSE SANDSTONE AND QUARTZOSE GLAUCONITIC SANDSTONE

Major lithology: GLAUCONITIC QUARTZOSE SANDSTONE and QUARTZOSE GLAUCONITIC SANDSTONE, dark greenish gray and very dark greenish gray (5G 4/1, 10Y 3/1). Locally contains bioclasts. Typically homogeneous and massive; locally graded. Cm-size clay mottles, very dark brown (10YR 2/2) occur in Sections 1, 65-90 cm and Section 2, 70-80 cm. A 1-cm pyrite concretion occurs in Section 2, 26 cm.



SITE 766 HOLE A CORE 38R CORED INTERVAL 355.1-364.8 mbsf



LITHOLOGIC DESCRIPTION

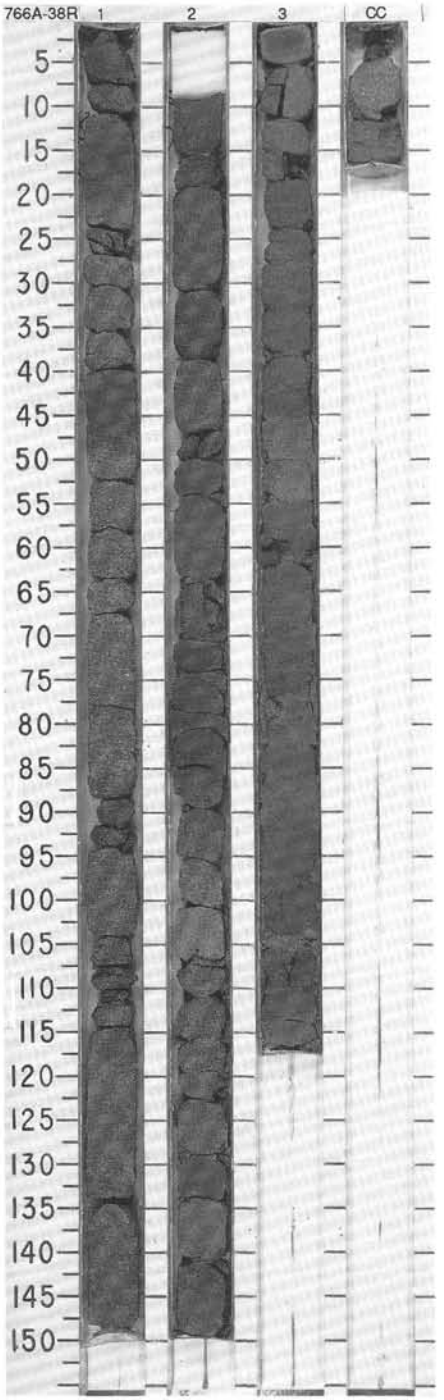
GLAUCONITIC BIOCLASTIC SILTY SANDSTONE AND GLAUCONITIC QUARTZOSE SANDSTONE

Major lithology: Core consists predominantly of GLAUCONITIC BIOCLASTIC SILTY SANDSTONE, very dark greenish gray (10Y 3/1) with varying white (5Y 8/1) specks (depending on proportion of bioclastic component). Intervals are poorly sorted, with bioclasts and glauconite, and lesser quartz grains supporting a silt- to clay-sized matrix of calcite fragments. Large, tabular bioclasts oriented parallel to bedding, otherwise structureless. Both fining and coarsening upward textural variations observed (possible grading).Contacts between adjacent intervals are generally gradational. Small pebbles occurring locally, <1-2 cm, and apparently composed of fine-grained calcareous material. Thick coarsening upward sequence, in Section 1, 50-150 cm, apparently consisting of several fining upward (possibly normally graded) sub-sequences.

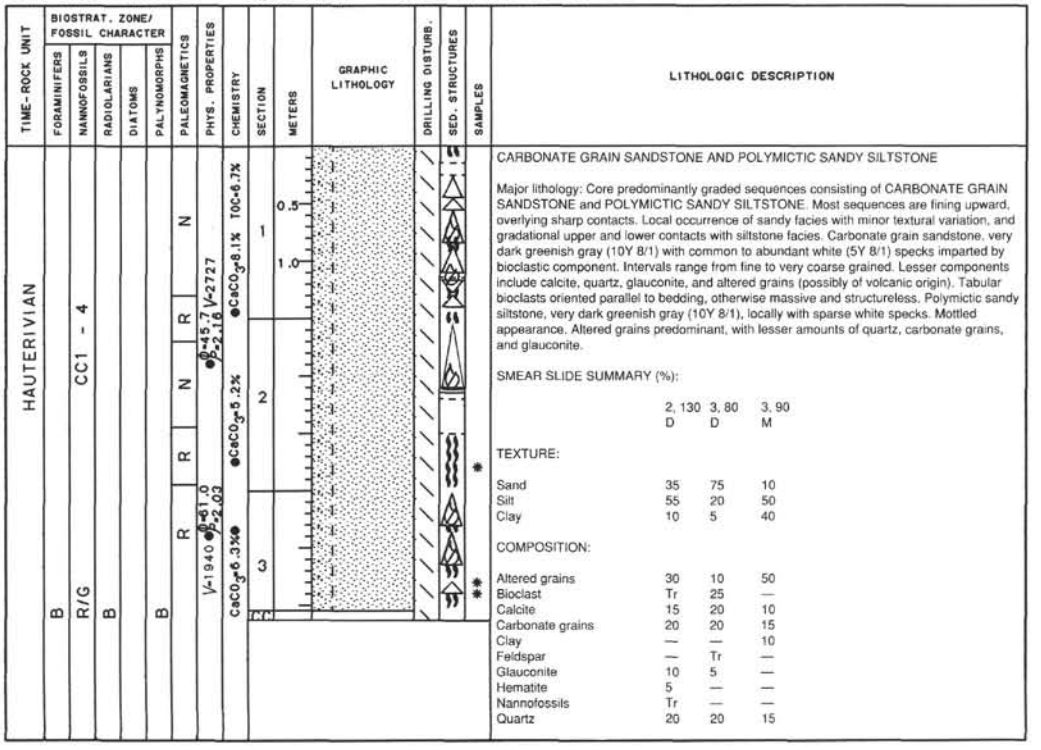
Lesser intervals of GLAUCONITIC QUARTZOSE SANDSTONE, very dark greenish gray (10Y 3/1), very fine-grained, fairly well sorted, and slightly mottled in appearance. Moderately well rounded bioclasts or carbonate grains occurring locally (floating grains).

SMEAR SLIDE SUMMARY (%):

	1, 38 D	1, 38 D	2, 103 M
TEXTURE:			
Sand	60	40	—
Silt	30	50	—
Clay	10	10	—
COMPOSITION:			
Altered grains	40	40	—
Bioclast	5	—	70
Calcite	3	5	—
Feldspar	3	—	—
Glauconite	5	5	15
Mica	2	3	—
Opaques	20	30	—
Organic matter	4	5	—
Quartz	15	10	7
Rock fragment	—	—	7
Zeolite	3	2	—



SITE 766 HOLE A CORE 39R CORED INTERVAL 364.8-374.5 mbsf



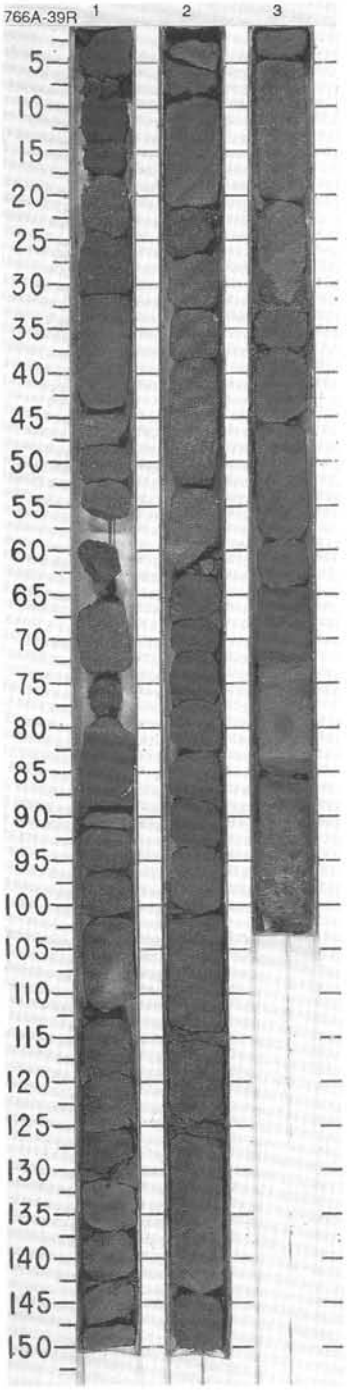
LITHOLOGIC DESCRIPTION

CARBONATE GRAIN SANDSTONE AND POLYMICTIC SANDY SILTSTONE

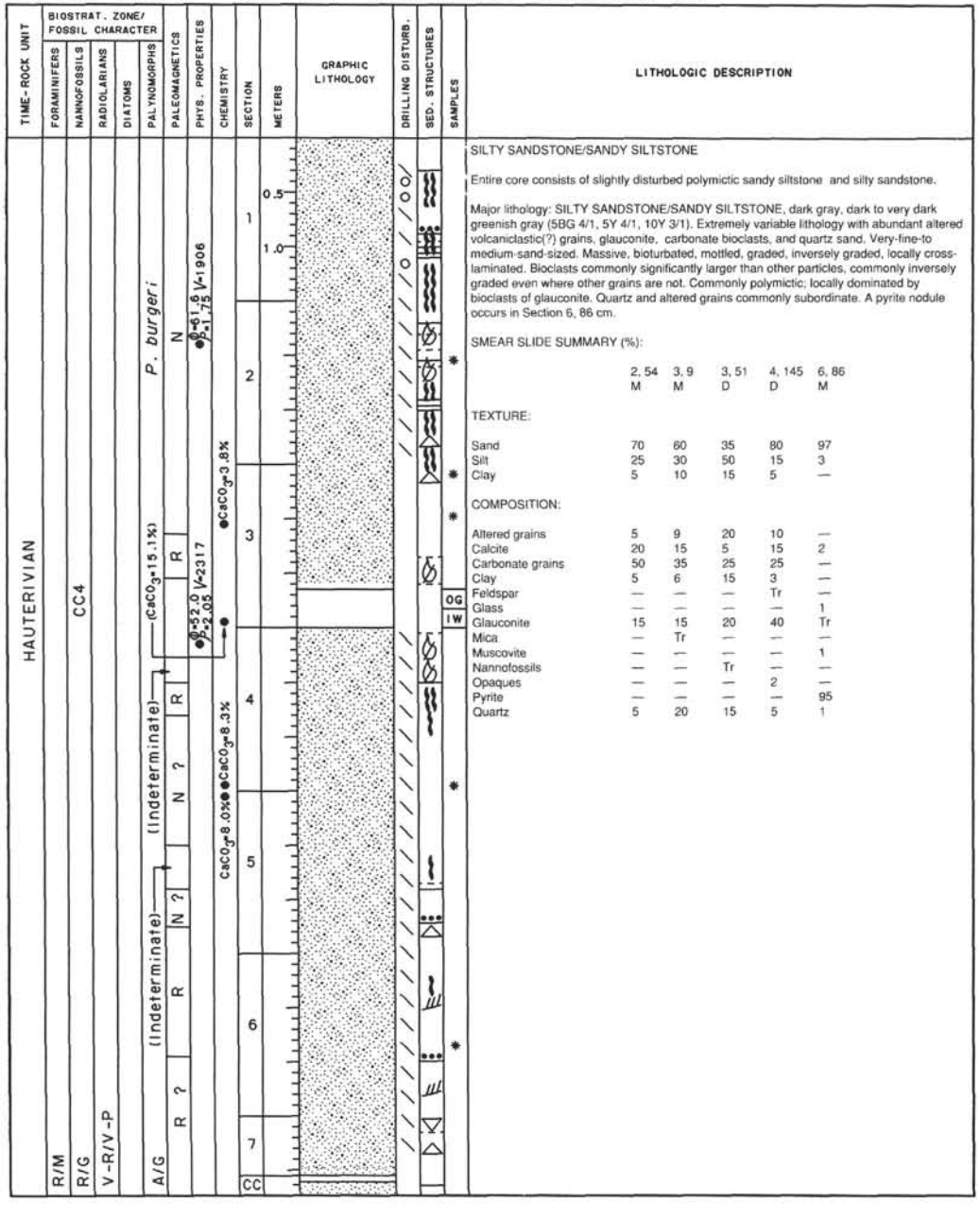
Major lithology: Core predominantly graded sequences consisting of CARBONATE GRAIN SANDSTONE and POLYMICTIC SANDY SILTSTONE. Most sequences are fining upward, overlying sharp contacts. Local occurrence of sandy facies with minor textural variation, and gradational upper and lower contacts with siltstone facies. Carbonate grain sandstone, very dark greenish gray (10Y 8/1) with common to abundant white (5Y 8/1) specks imparted by bioclastic component. Intervals range from fine to very coarse grained. Lesser components include calcite, quartz, glauconite, and altered grains (possibly of volcanic origin). Tabular bioclasts oriented parallel to bedding, otherwise massive and structureless. Polymictic sandy siltstone, very dark greenish gray (10Y 8/1), locally with sparse white specks. Mottled appearance. Altered grains predominant, with lesser amounts of quartz, carbonate grains, and glauconite.

SMEAR SLIDE SUMMARY (%):

	2, 130 D	3, 80 D	3, 90 M
TEXTURE:			
Sand	35	75	10
Silt	55	20	50
Clay	10	5	40
COMPOSITION:			
Altered grains	30	10	50
Bioclast	Tr	25	—
Calcite	15	20	10
Carbonate grains	20	20	15
Clay	—	—	10
Feldspar	—	Tr	—
Glauconite	10	5	—
Hematite	5	—	—
Nannofossils	Tr	—	—
Quartz	20	20	15



SITE 766 HOLE A CORE 40R CORED INTERVAL 374.5-384.2 mbsf



LITHOLOGIC DESCRIPTION

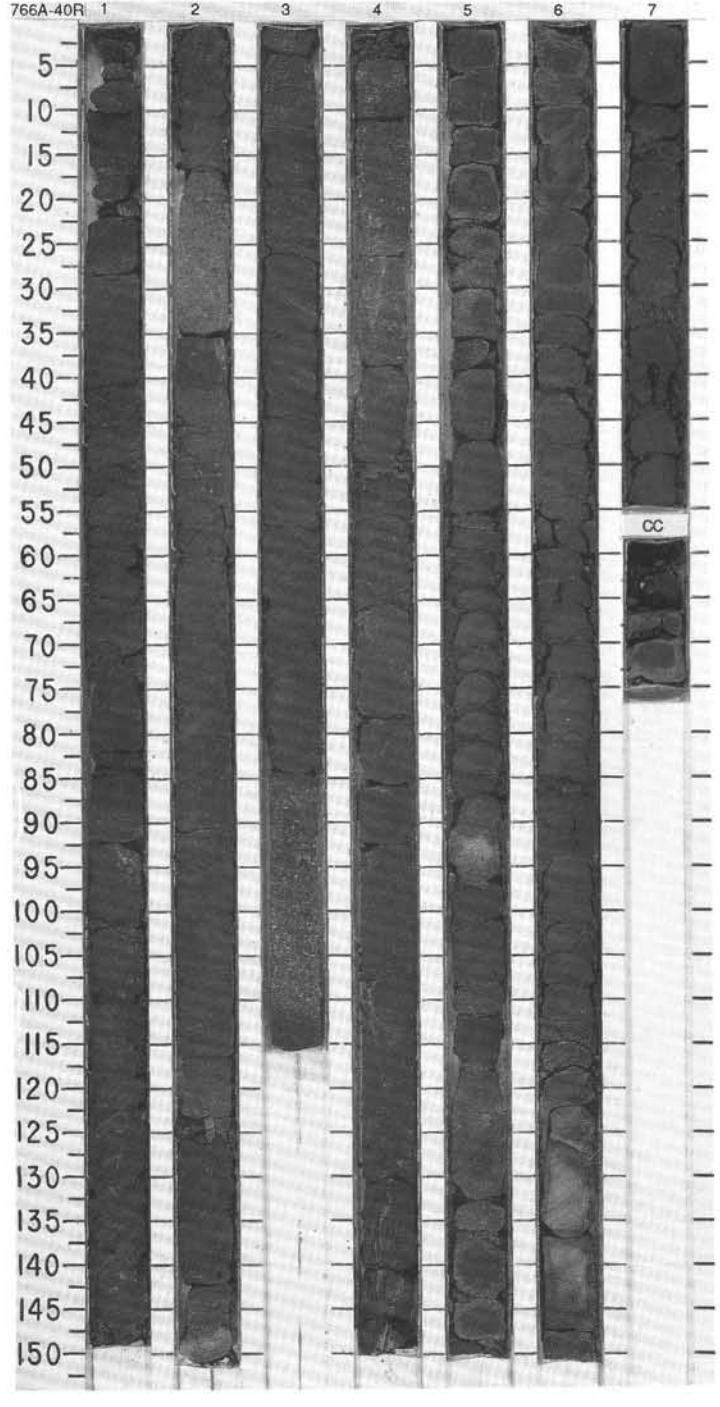
SILTY SANDSTONE/SANDY SILTSTONE

Entire core consists of slightly disturbed polymictic sandy siltstone and silty sandstone.

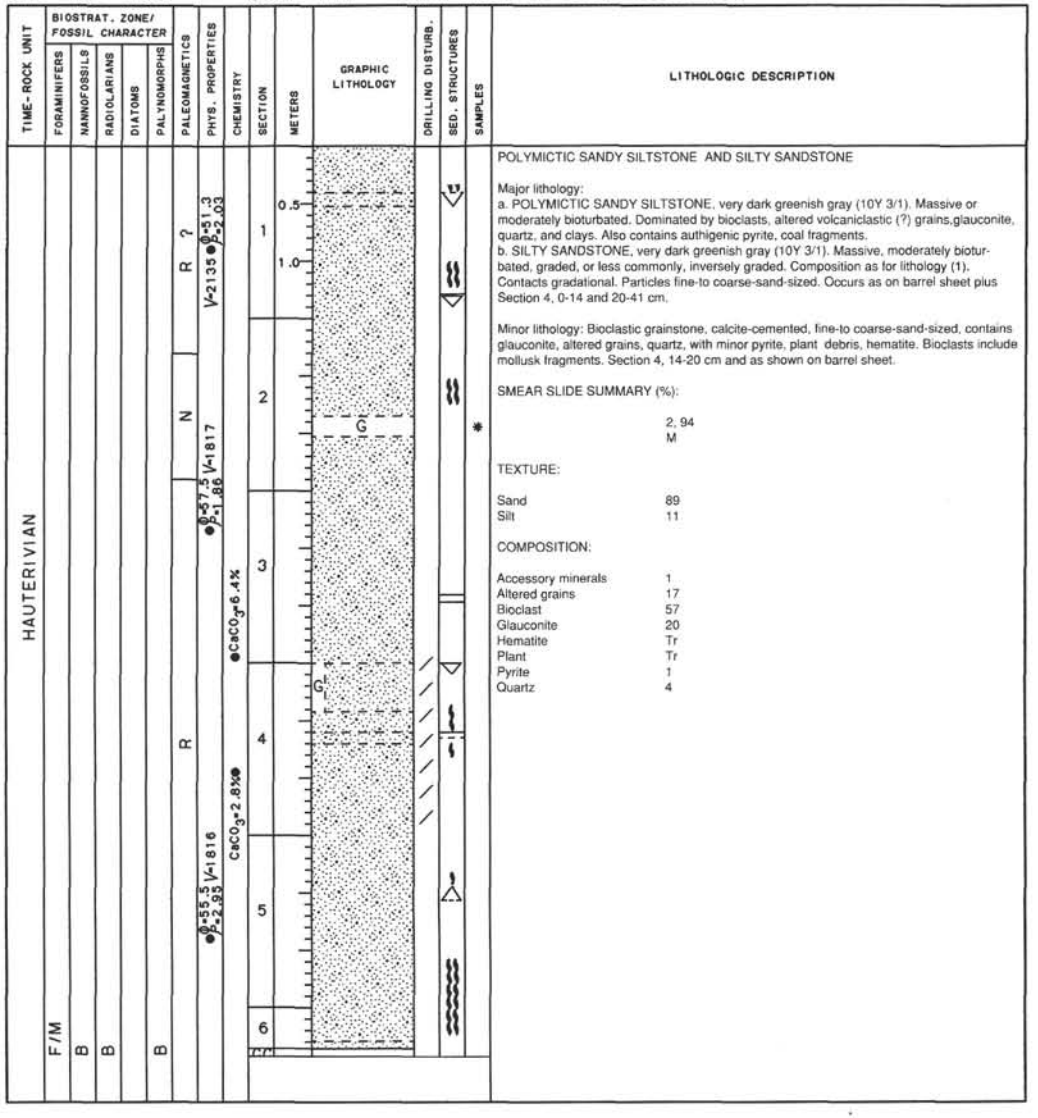
Major lithology: SILTY SANDSTONE/SANDY SILTSTONE, dark gray, dark to very dark greenish gray (5BG 4/1, 5Y 4/1, 10Y 3/1). Extremely variable lithology with abundant altered volcaniclastic(?) grains, glauconite, carbonate bioclasts, and quartz sand. Very-fine-to medium-sand-sized. Massive, bioturbated, mottled, graded, inversely graded, locally cross-laminated. Bioclasts commonly significantly larger than other particles, commonly inversely graded even where other grains are not. Commonly polymictic; locally dominated by bioclasts of glauconite. Quartz and altered grains commonly subordinate. A pyrite nodule occurs in Section 6, 86 cm.

SMEAR SLIDE SUMMARY (%):

	2, 54 M	3, 9 M	3, 51 D	4, 145 D	6, 86 M
TEXTURE:					
Sand	70	60	35	80	97
Silt	25	30	50	15	3
Clay	5	10	15	5	—
COMPOSITION:					
Altered grains	5	9	20	10	—
Calcite	20	15	5	15	2
Carbonate grains	50	35	25	25	—
Clay	5	6	15	3	—
Feldspar	—	—	—	Tr	—
Glass	—	—	—	—	1
Glauconite	15	15	20	40	Tr
Mica	—	Tr	—	—	—
Muscovite	—	—	—	—	1
Nannofossils	—	—	Tr	—	—
Opaques	—	—	—	2	—
Pyrite	—	—	—	—	95
Quartz	5	20	15	5	1



SITE 766 HOLE A CORE 41R CORED INTERVAL 384.2-393.8 mbsf



LITHOLOGIC DESCRIPTION

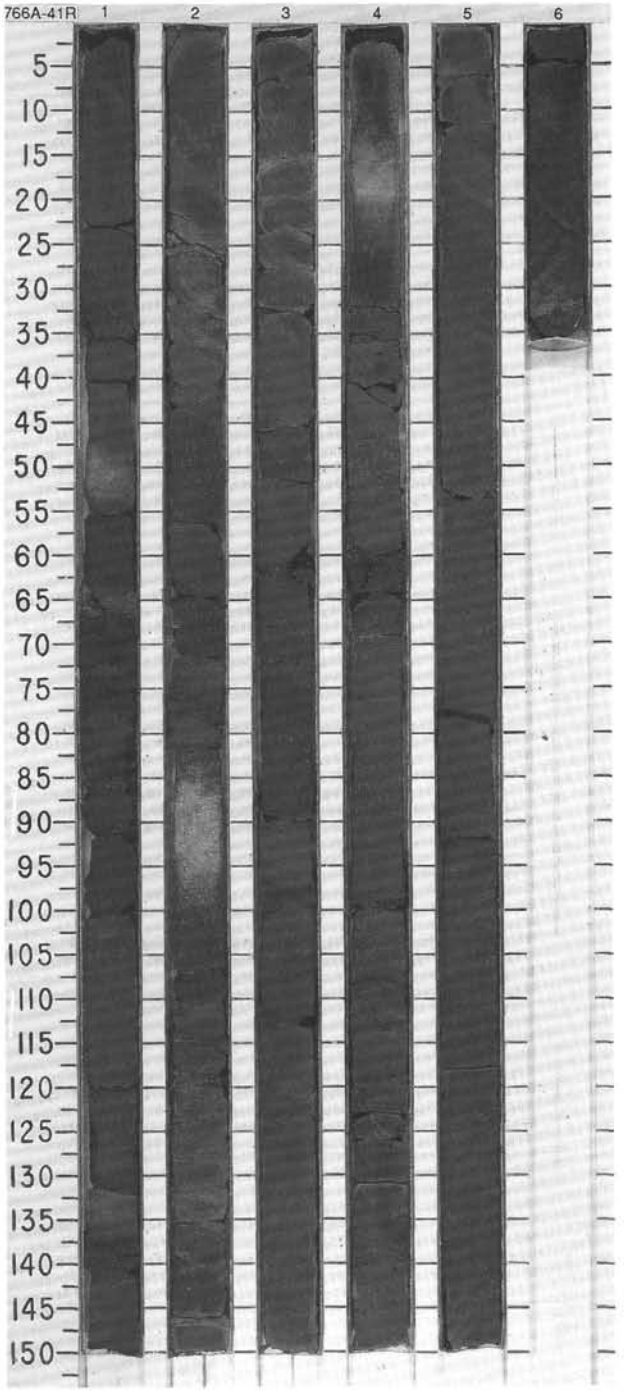
POLYMICTIC SANDY SILTSTONE AND SILTY SANDSTONE

Major lithology:
a. POLYMICTIC SANDY SILTSTONE, very dark greenish gray (10Y 3/1). Massive or moderately bioturbated. Dominated by bioclasts, altered volcaniclastic (?) grains,glauconite, quartz, and clays. Also contains authigenic pyrite, coal fragments.
b. SILTY SANDSTONE, very dark greenish gray (10Y 3/1). Massive, moderately bioturbated, graded, or less commonly, inversely graded. Composition as for lithology (1). Contacts gradational. Particles fine-to coarse-sand-sized. Occurs as on barrel sheet plus Section 4, 0-14 and 20-41 cm.

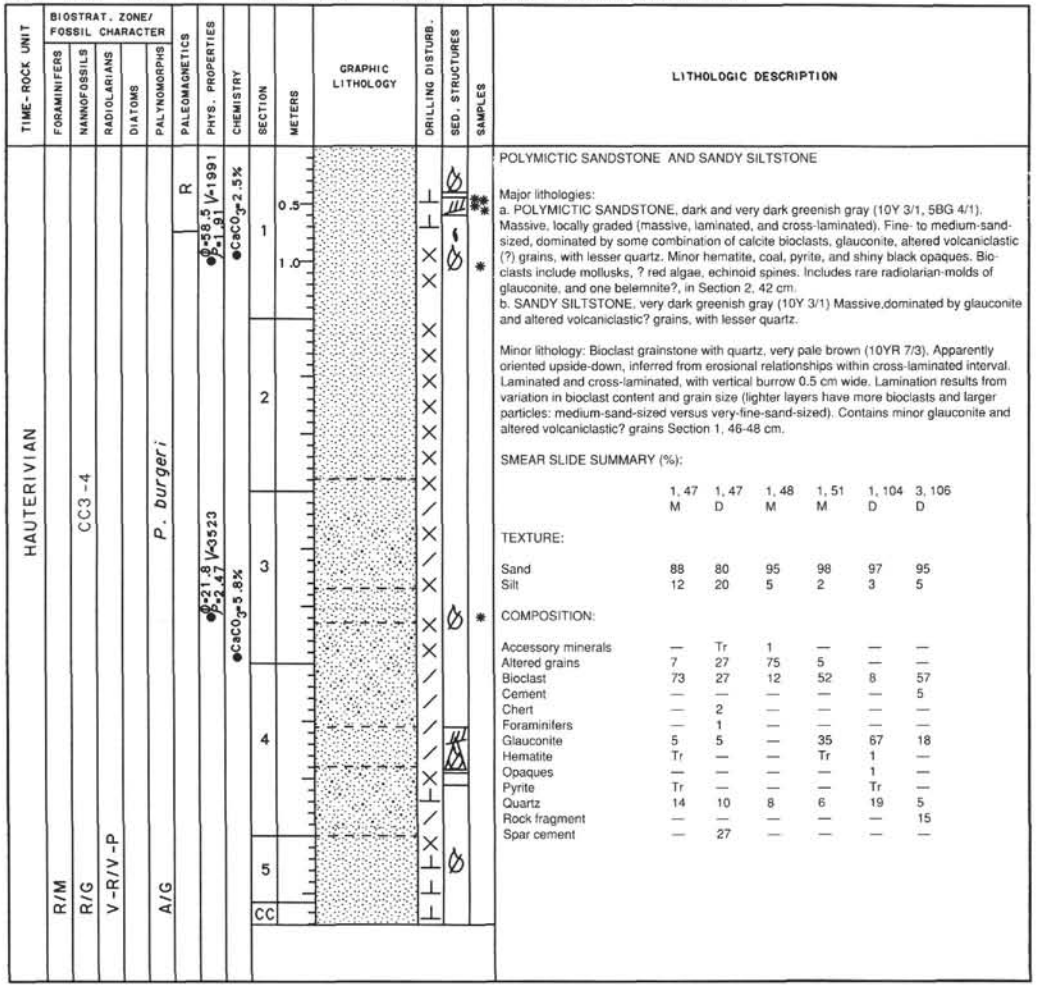
Minor lithology: Bioclastic grainstone, calcite-cemented, fine-to coarse-sand-sized, contains glauconite, altered grains, quartz, with minor pyrite, plant debris, hematite. Bioclasts include mollusk fragments. Section 4, 14-20 cm and as shown on barrel sheet.

SMEAR SLIDE SUMMARY (%):

	2, 94 M
TEXTURE:	
Sand	89
Silt	11
COMPOSITION:	
Accessory minerals	1
Altered grains	17
Bioclast	57
Glauconite	20
Hematite	Tr
Plant	Tr
Pyrite	1
Quartz	4



SITE 766 HOLE A CORE 42R CORED INTERVAL 393.8-403.5 mbsf



LITHOLOGIC DESCRIPTION

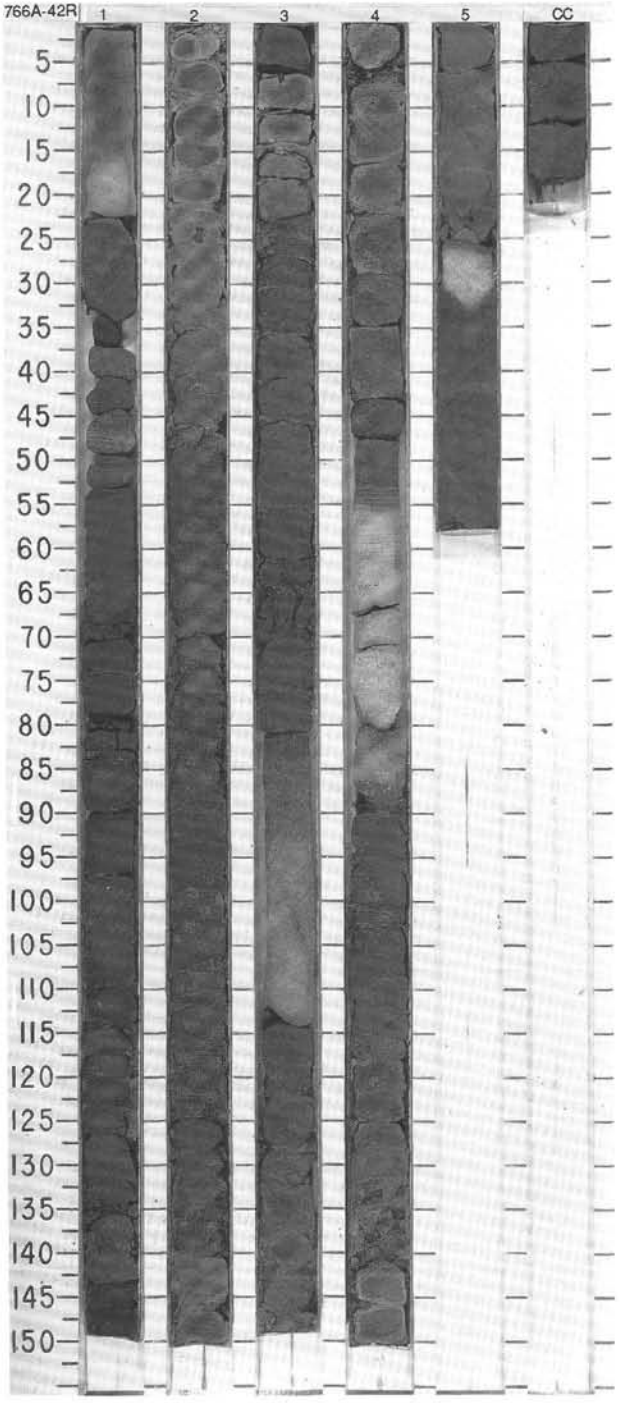
POLYMICTIC SANDSTONE AND SANDY SILTSTONE

Major lithologies:
a. POLYMICTIC SANDSTONE, dark and very dark greenish gray (10Y 3/1, 5BG 4/1). Massive, locally graded (massive, laminated, and cross-laminated). Fine- to medium-sand-sized, dominated by some combination of calcite bioclasts, glauconite, altered volcaniclastic (?) grains, with lesser quartz. Minor hematite, coal, pyrite, and shiny black opaques. Bioclasts include mollusks, ? red algae, echinoid spines. Includes rare radiolarian-molds of glauconite, and one belemnite?, in Section 2, 42 cm.
b. SANDY SILTSTONE, very dark greenish gray (10Y 3/1) Massive,dominated by glauconite and altered volcaniclastic? grains, with lesser quartz.

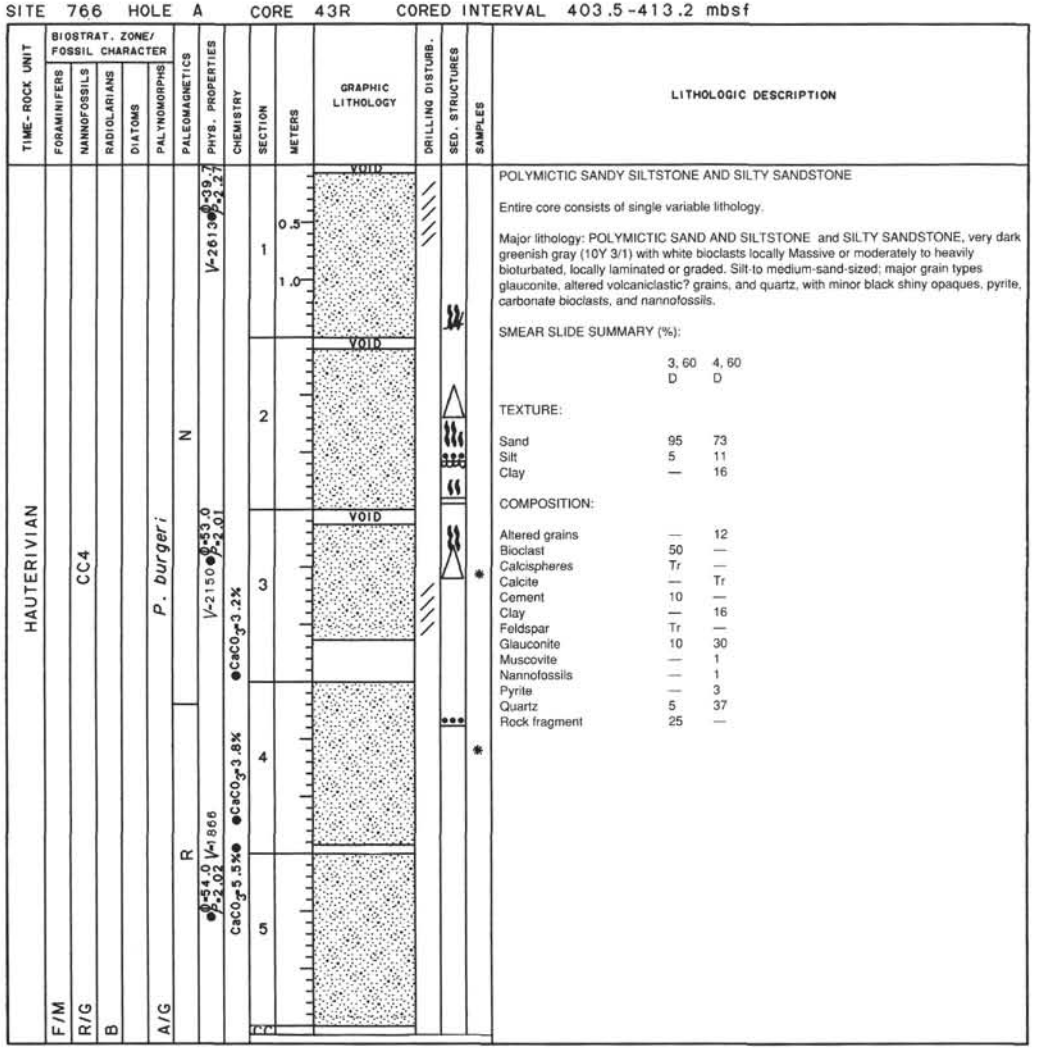
Minor lithology: Bioclast grainstone with quartz, very pale brown (10YR 7/3). Apparently oriented upside-down, inferred from erosional relationships within cross-laminated interval. Laminated and cross-laminated, with vertical burrow 0.5 cm wide. Lamination results from variation in bioclast content and grain size (lighter layers have more bioclasts and larger particles: medium-sand-sized versus very-fine-sand-sized). Contains minor glauconite and altered volcaniclastic? grains Section 1, 46-48 cm.

SMEAR SLIDE SUMMARY (%):

	1, 47 M	1, 47 D	1, 48 M	1, 51 M	1, 104 D	3, 106 D
TEXTURE:						
Sand	88	80	95	98	97	95
Silt	12	20	5	2	3	5
COMPOSITION:						
Accessory minerals	—	Tr	1	—	—	—
Altered grains	7	27	75	5	—	—
Bioclast	73	27	12	52	8	57
Cement	—	—	—	—	—	5
Chert	—	2	—	—	—	—
Foraminifers	—	1	—	—	—	—
Glauconite	5	5	—	35	67	18
Hematite	Tr	—	—	Tr	1	—
Opaques	—	—	—	—	1	—
Pyrite	Tr	—	—	—	Tr	—
Quartz	14	10	8	6	19	5
Rock fragment	—	—	—	—	—	15
Spar cement	—	27	—	—	—	—



SITE 766 HOLE A CORE 43R CORED INTERVAL 403.5-413.2 mbsf



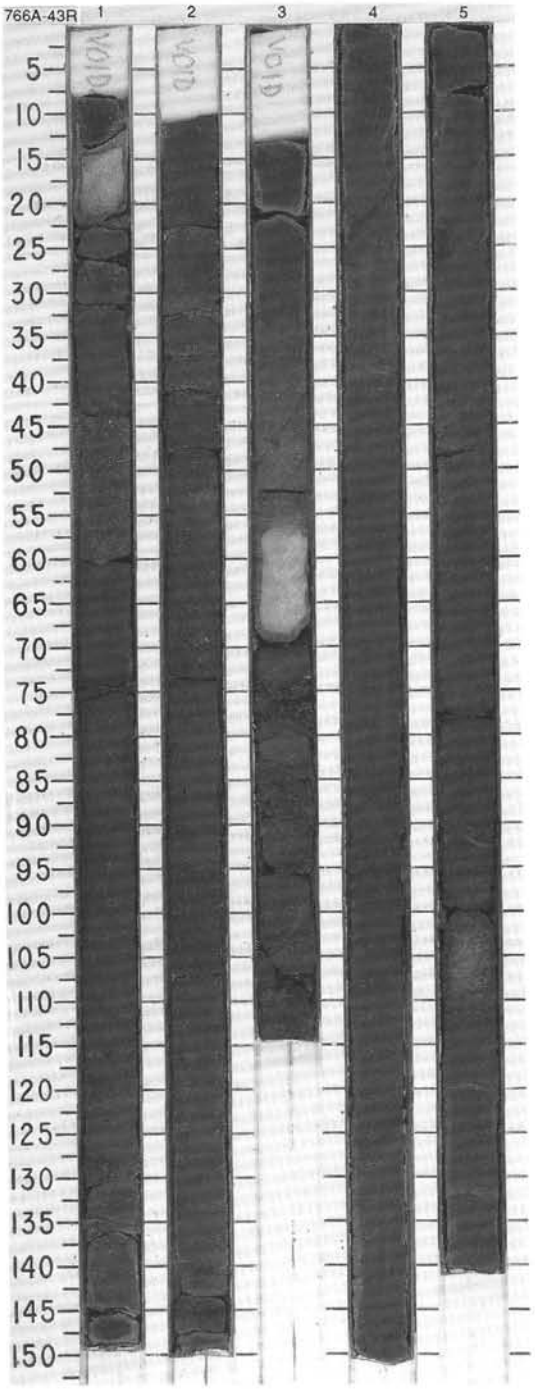
POLYMICTIC SANDY SILTSTONE AND SILTY SANDSTONE

Entire core consists of single variable lithology.

Major lithology: POLYMICTIC SAND AND SILTSTONE and SILTY SANDSTONE, very dark greenish gray (10Y 3/1) with white bioclasts locally Massive or moderately to heavily bioturbated, locally laminated or graded. Silt-to medium-sand-sized; major grain types glauconite, altered volcaniclastic? grains, and quartz, with minor black shiny opaques, pyrite, carbonate bioclasts, and nannofossils.

SMEAR SLIDE SUMMARY (%):

	3, 60 D	4, 60 D
TEXTURE:		
Sand	95	73
Silt	5	11
Clay	—	16
COMPOSITION:		
Altered grains	—	12
Bioclast	50	—
Calcispheres	Tr	—
Calcite	—	Tr
Cement	10	—
Clay	—	16
Feldspar	Tr	—
Glauconite	10	30
Muscovite	—	1
Nannofossils	—	1
Pyrite	—	3
Quartz	5	37
Rock fragment	25	—



SITE 766 HOLE A CORE 44R CORED INTERVAL 413.2-422.8 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALYNOMORPHS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
HAUTERIVIAN	F/M	CC4	R/G	V/P-R	P. burgeri	A/G	R	●D=55.7 ρ=2.01 V=1707 ●D=53.0 ρ=2.00 V=1773 V=1728 ●D=56.9 ρ=1.83	●$CaCO_3$=5.1% ●$CaCO_3$=4.3%	1 2 3 4 5 6 CC	0.5 1.0				*

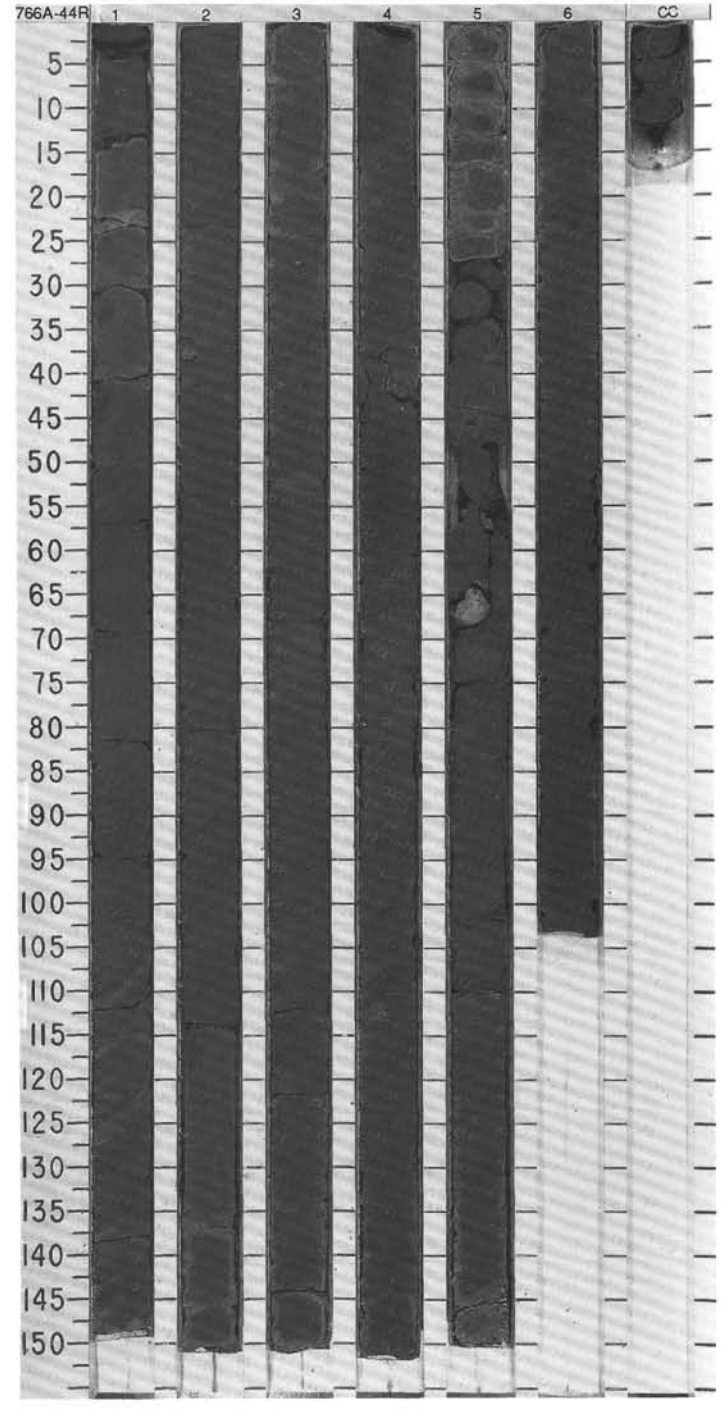
LITHOLOGIC DESCRIPTION

SANDY SILTSTONE

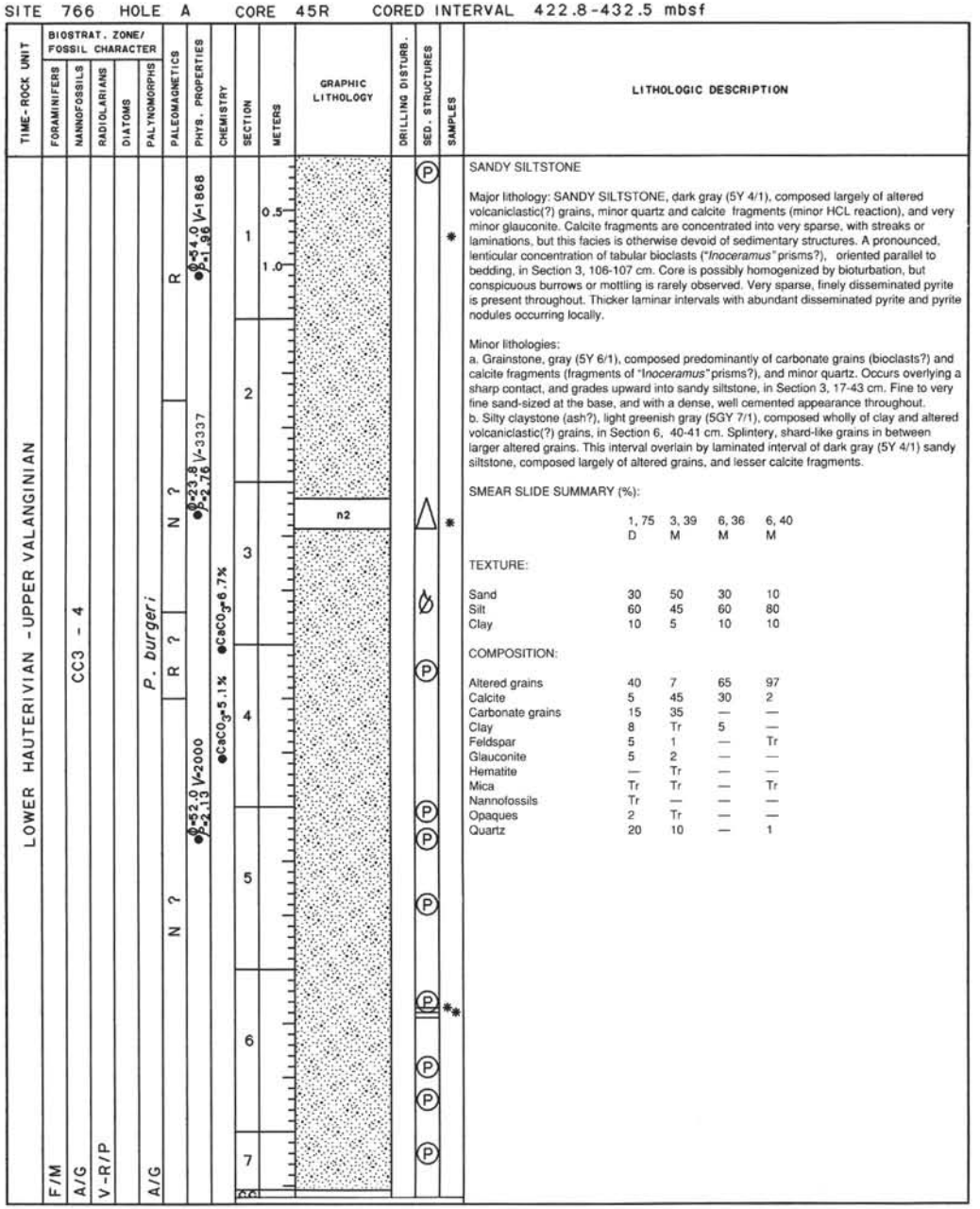
Major lithology: SANDY SILTSTONE, very dark greenish gray (10Y 3/1). Massive, locally with wispy laminae or minor bioturbation. Pyrite nodules scattered throughout core, as much as 4 cm across but commonly <1 cm; disseminated pyrite constitutes as much as 4% of rock. Major constituents, in order of decreasing abundance, are altered volcaniclastic? grains, quartz, and glauconite; relative proportions vary. Silt- to fine-sand-sized; typically sand-sized grains ardispersed in silty matrix. Minor constituents are calcite bioclasts (including "*Inoceramus*"?), shiny black opaques, nannofossils, muscovite, hematite, and feldspar. Local strong reaction with HCl suggests that calcium carbonate may be locally greater than the 8% observed in smear slides. Contains elongate, diffuse white mottles as much as 1 cm long in Section 2, 116-135 cm Some at least appear to consist of concentrations of small shell fragments. At 132 cm in the same Section, clayey avoids as much as 3/4 cm long may be burrows.

SMEAR SLIDE SUMMARY (%):

	1, 19 D	3, 4 M
TEXTURE:		
Sand	78	40
Silt	22	60
COMPOSITION:		
Altered grains	56	69
Calcite	2	7
Feldspar	—	Tr
Glauconite	13	8
Hematite	—	Tr
Muscovite	1	Tr
Nannofossils	1	1
Opaques	3	3
Organic matter	—	Tr
Pyrite	4	1
Quartz	19	11



SITE 766 HOLE A CORE 45R CORED INTERVAL 422.8-432.5 mbsf



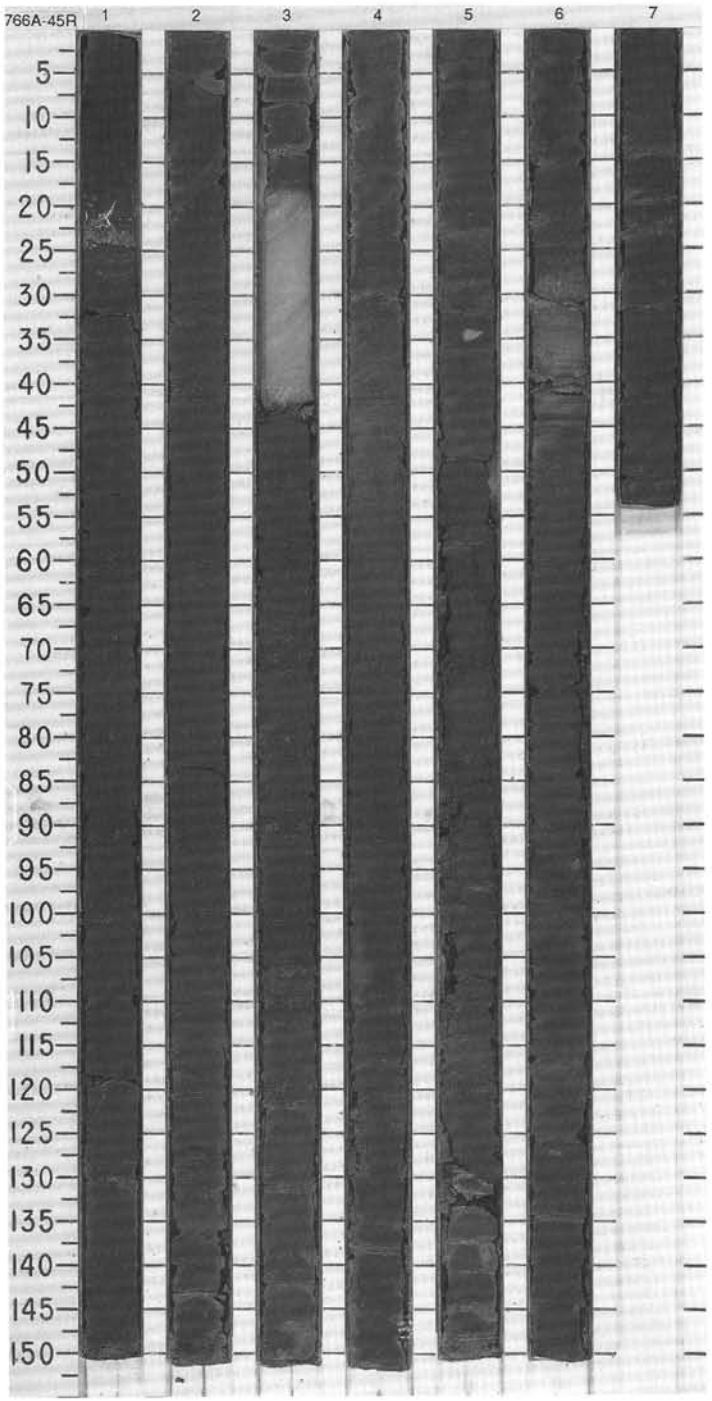
SANDY SILTSTONE

Major lithology: SANDY SILTSTONE, dark gray (5Y 4/1), composed largely of altered volcaniclastic(?) grains, minor quartz and calcite fragments (minor HCL reaction), and very minor glauconite. Calcite fragments are concentrated into very sparse, with streaks or laminations, but this facies is otherwise devoid of sedimentary structures. A pronounced, lenticular concentration of tabular bioclasts (*"Inoceramus"* prisms?), oriented parallel to bedding, in Section 3, 106-107 cm. Core is possibly homogenized by bioturbation, but conspicuous burrows or mottling is rarely observed. Very sparse, finely disseminated pyrite is present throughout. Thicker laminar intervals with abundant disseminated pyrite and pyrite nodules occurring locally.

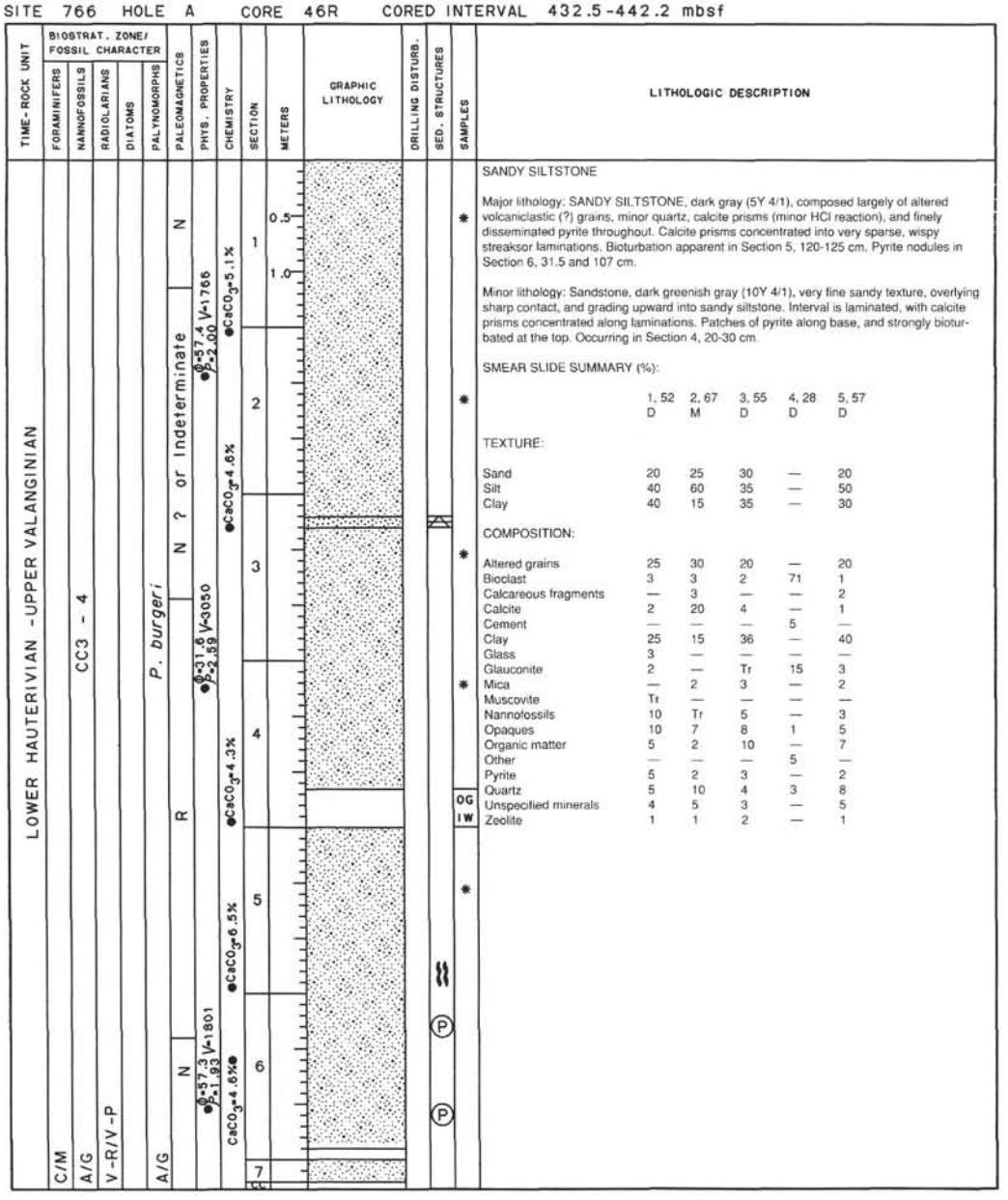
Minor lithologies:
a. Grainstone, gray (5Y 6/1), composed predominantly of carbonate grains (bioclasts?) and calcite fragments (fragments of *"Inoceramus"* prisms?), and minor quartz. Occurs overlying a sharp contact, and grades upward into sandy siltstone, in Section 3, 17-43 cm. Fine to very fine sand-sized at the base, and with a dense, well cemented appearance throughout.
b. Silty claystone (ash?), light greenish gray (5GY 7/1), composed wholly of clay and altered volcaniclastic(?) grains, in Section 6, 40-41 cm. Splintery, shard-like grains in between larger altered grains. This interval overlain by laminated interval of dark gray (5Y 4/1) sandy siltstone, composed largely of altered grains, and lesser calcite fragments.

SMEAR SLIDE SUMMARY (%):

	1, 75 D	3, 39 M	6, 36 M	6, 40 M
TEXTURE:				
Sand	30	50	30	10
Silt	60	45	60	80
Clay	10	5	10	10
COMPOSITION:				
Altered grains	40	7	65	97
Calcite	5	45	30	2
Carbonate grains	15	35	—	—
Clay	8	Tr	5	—
Feldspar	5	1	—	Tr
Glauconite	5	2	—	—
Hematite	—	Tr	—	—
Mica	Tr	Tr	—	Tr
Nannofossils	Tr	—	—	—
Opaques	2	Tr	—	—
Quartz	20	10	—	1



SITE 766 HOLE A CORE 46R CORED INTERVAL 432.5-442.2 mbsf



LITHOLOGIC DESCRIPTION

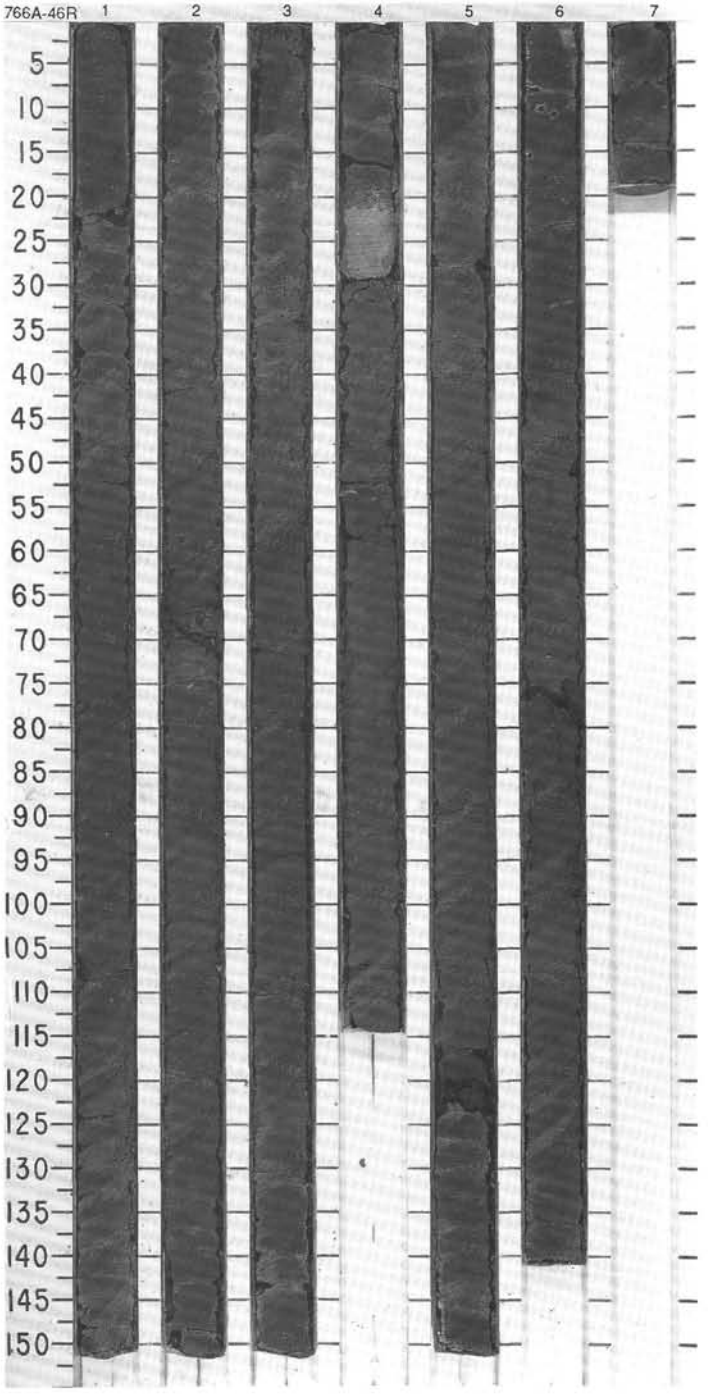
SANDY SILTSTONE

Major lithology: SANDY SILTSTONE, dark gray (5Y 4/1), composed largely of altered volcaniclastic (?) grains, minor quartz, calcite prisms (minor HCl reaction), and finely disseminated pyrite throughout. Calcite prisms concentrated into very sparse, wispy streaksor laminations. Bioturbation apparent in Section 5, 120-125 cm. Pyrite nodules in Section 6, 31.5 and 107 cm.

Minor lithology: Sandstone, dark greenish gray (10Y 4/1), very fine sandy texture, overlying sharp contact, and grading upward into sandy siltstone. Interval is laminated, with calcite prisms concentrated along laminations. Patches of pyrite along base, and strongly bioturbated at the top. Occurring in Section 4, 20-30 cm.

SMEAR SLIDE SUMMARY (%):

	1, 52 D	2, 67 M	3, 55 D	4, 28 D	5, 57 D
TEXTURE:					
Sand	20	25	30	—	20
Silt	40	60	35	—	50
Clay	40	15	35	—	30
COMPOSITION:					
Altered grains	25	30	20	—	20
Bioclast	3	3	2	71	1
Calcareous fragments	—	3	—	—	2
Calcite	2	20	4	—	1
Cement	—	—	—	5	—
Clay	25	15	36	—	40
Glass	3	—	—	—	—
Glauconite	2	—	Tr	15	3
Mica	—	2	3	—	2
Muscovite	Tr	—	—	—	—
Nannofossils	10	Tr	5	—	3
Opaques	10	7	8	1	5
Organic matter	5	2	10	—	7
Other	—	—	—	5	—
Pyrite	5	2	3	—	2
Quartz	5	10	4	3	8
Unspecified minerals	4	5	3	—	5
Zeolite	1	1	2	—	1



SITE 766 HOLE A CORE 47R CORED INTERVAL 442.2-451.8 mbsf

TIME-ROCK UNIT: LOWER HAUTERIVIAN - UPPER VALANGINIAN

BIOSTRAT. ZONE/FOSSIL CHARACTER:
- FORAMINIFERS: R/M
- NANNOFOSSILS: C/G — CC3 - 4
- RADIOLARIANS: R/V-P
- DIATOMS
- PALYNOMORPHS: A/G — *P. burgeri*

PALEOMAGNETICS: N

PHYS. PROPERTIES: ●0-54.6 V-1840 / ●56.2 V-1809 / ●-2.07 / ●-1.99

CHEMISTRY: $CaCO_3$=3.8%● $CaCO_3$=4.9%● ●$CaCO_3$=5.4%

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

METERS: 0.5, 1.0

GRAPHIC LITHOLOGY

DRILLING DISTURB.

SED. STRUCTURES

SAMPLES

LITHOLOGIC DESCRIPTION

SANDY SILTSTONE

Major lithology: SANDY SILTSTONE, dark gray (5Y 4/1), composed largely of altered volcaniclastic(?) grains, minor quartz and calcite fragments (mild HCL reaction), and very minor glauconite. Calcite fragments are concentrated into very sparse, wispy streaks or laminations, but this facies isotherwise devoid of sedimentary structures. Finely disseminated pyrite very sparsely scattered throughout.

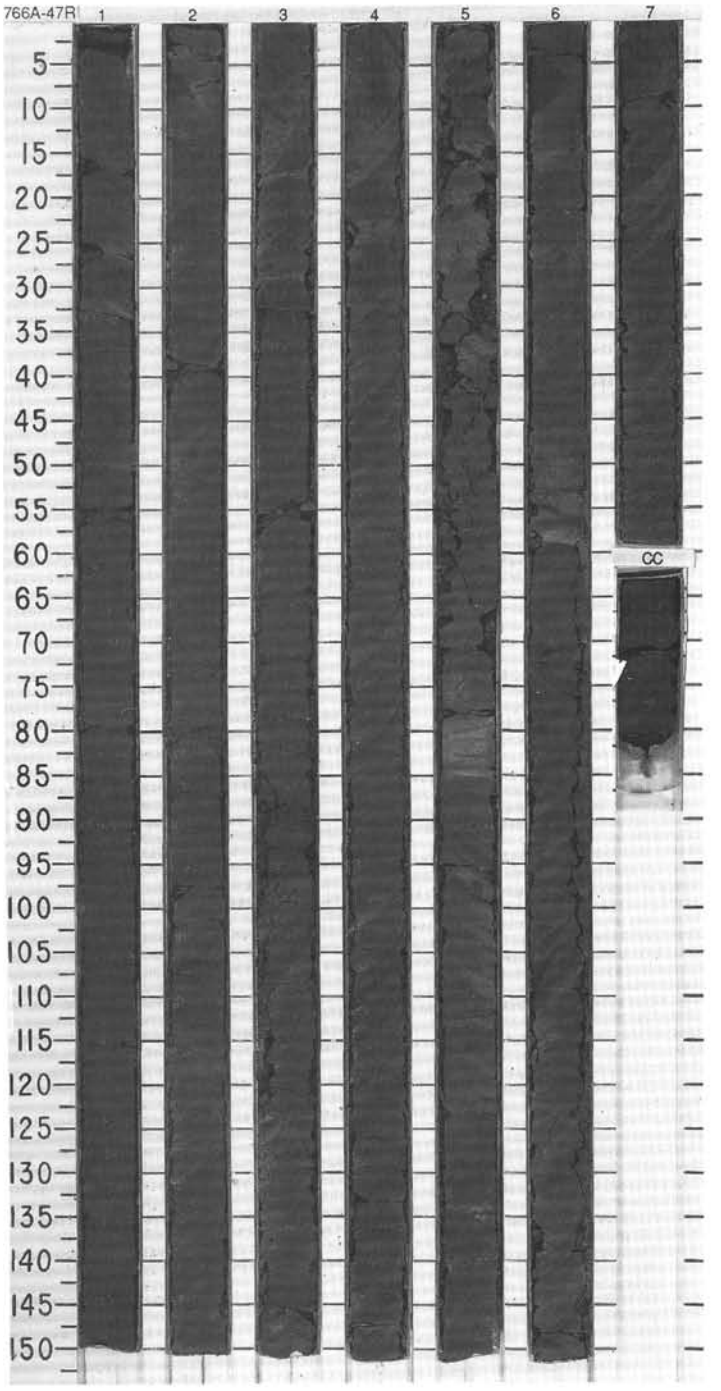
Minor lithologies:

a. Sandy ,siltstone, composed almost entirely of altered volcaniclastic (?) grains. Dark gray (5Y 4/1) with a slightly waxy appearance, and disseminated pyrite along very faint laminations, in Section 3, 33-37 cm. Black to very dark greenish gray (10Y 3/1), distinctly mottled in appearance, and overlying ,a fairly sharp contact, in Section 3, 90-97 cm. Black coloration associated with organic debris(?) component. Gray (N 5/) grading upward into dark gray (5Y 4/1), and distinctly waxy in appearance, in Section 5, 70 to 85 cm, and including light greenish gray (5GY 7/1) lamina (possible ash) at 84.5 cm. Overlying a sharp base, and without obvious textural variation, but sediments do not react with HCL at the base, and grade upward into a mild HCL reaction. Gray (N 5/) grading upward into dark gray (5Y 4/1), in Section 6, 47-54 cm.

b. Sandy siltstone composed of altered volcaniclastic (?) grains and calcite fragments, very pale brown (10YR 8/3) overlying a sharp base, and grading upward into dark gray (5Y 4/1), but without obvious textural variation, in Section 6, 57-58 cm. Very minor components include quartz, glauconite, and zircon(?). Also occurring in lenticular interval, in Section 6, 134-136 cm.

SMEAR SLIDE SUMMARY (%):

	2, 58 D	3, 96 M	5, 84 M	5, 85 M	6, 57 M
TEXTURE:					
Sand	25	35	10	25	30
Silt	70	50	80	70	50
Clay	5	15	10	5	20
COMPOSITION:					
Altered grains	55	65	90	95	48
Calcite	12	2	Tr	—	30
Carbonate grains	5	Tr	—	—	Tr
Clay	3	13	8	Tr	5
Feldspar	Tr	2	Tr	Tr	2
Glauconite	5	—	—	—	5
Hematite	Tr	—	—	—	—
Mica	Tr	3	Tr	Tr	Tr
Nannofossils	Tr	—	—	—	Tr
Organic matter	—	10	—	—	—
Quartz	20	5	2	Tr	5
Unknown	—	—	—	—	5



SITE 766 HOLE A CORE 48R CORED INTERVAL 451.8-461.5 mbsf

TIME-ROCK UNIT: LOWER HAUTERIVIAN - UPPER VALANGINIAN

BIOSTRAT. ZONE/FOSSIL CHARACTER
- FORAMINIFERS: R/P
- NANNOFOSSILS: R/G; CC3 - 4
- RADIOLARIANS
- DIATOMS: •V-R/V-P
- PALYNOMORPHS: •A/G; *S. tabulata*
- PALEOMAGNETICS: N; R
- PHYS. PROPERTIES: ●0.53 ρ=1.96 V=1901; ●0.56 ρ=1.94 V=1890; ●0.13 ρ=2.45 V=4161; ●0.51 ρ=2.08 V=1921
- CHEMISTRY: ●$CaCO_3$=3.6%; ●$CaCO_3$=3.3%; ●$CaCO_3$=3.4%

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

LITHOLOGIC DESCRIPTION

SANDY SILTSTONE

Major lithology: SANDY SILTSTONE, very dark gray (5Y 3/1), composed largely of altered volcaniclastic(?) grains. Larger grains visible as very dark gray to black (n 2.5/) grains on core surface. Minor disseminated pyrite throughout. Local concentrations of nannofossils and organic debris, as seen in smear slides, not apparent from core surface. Facies is predominantly devoid of recognizable sedimentary structures. Belemnite in Section 1, 82.5 cm. Pyrite nodule in Section 3, 80 cm.

Minor lithology: Claystone, dark bluish gray (5B4/1), with sharp base and gradational top, but otherwise featureless, and interpreted as possibly representing bentonite(?).

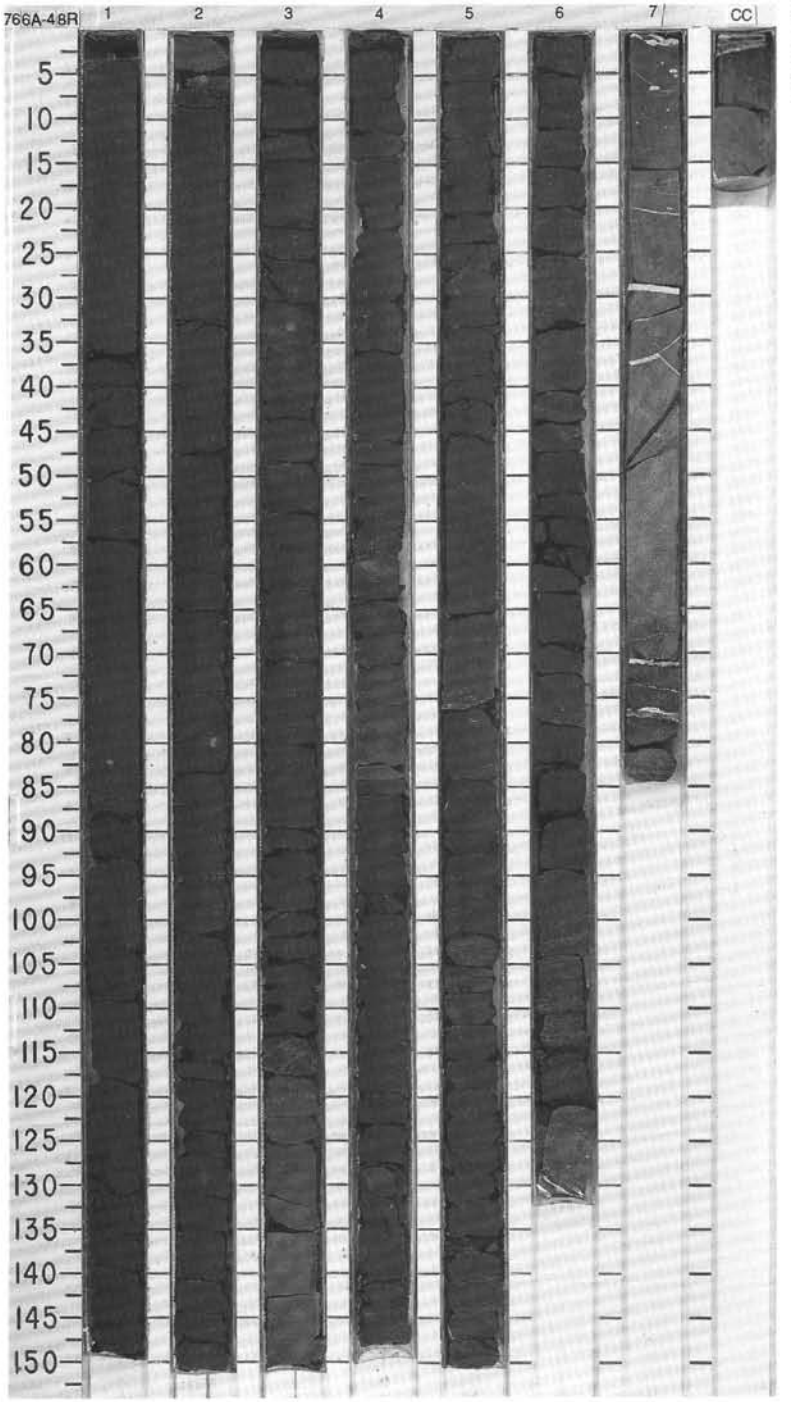
Sediment/basalt contact in Section 6, 128 cm.

SMEAR SLIDE SUMMARY (%)

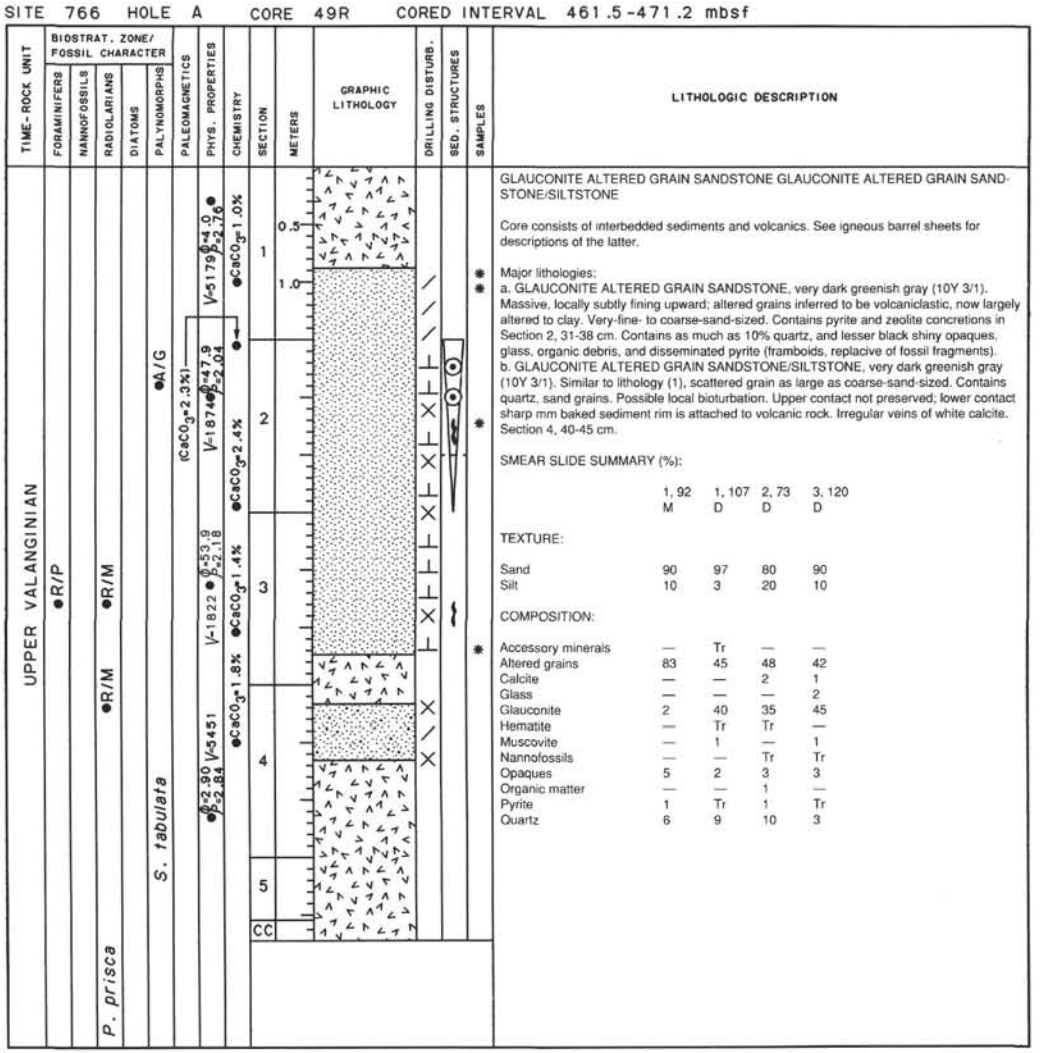
	1, 73 D	2, 70 D	2, 109 M	2, 111 M	2, 135 D	3, 8 D	4, 84 M
TEXTURE:							
Sand	35	50	—	45	1	33	1
Silt	45	25	25	45	1	34	1
Clay	20	25	75	10	98	33	98
COMPOSITION:							
Accessory minerals	—	1	Tr	Tr	—	5	—
Altered grains	30	39	70	50	—	25	—
Apatite	—	—	—	—	—	—	Tr
Bioclast	—	—		—	—	—	—
Calcareous fragments	—	—	2	—	—	—	—
Calcite	3	—	—	3	—	—	—
Clay	—	20	—	—	98	—	—
Feldspar	3	—	—	—	—	—	—
Foraminifers	Tr	—	—	—	—	—	—
Glauconite	4	8	—	3	—	3	—
Mica	2	2	2	5	—	2	1
Micrite	—	5	—	—	—	—	—
Nannofossils	20	—	4	3	—	2	—
Opaques	25	10	—	20	—	25	1
Organic matter	5	—	5	5	—	20	—
Quartz	8	15	7	10	—	10	1
Unspecified minerals	—	—	10	—	2	—	2
Zeolite	—	—	—	—	—	3	—

SMEAR SLIDE SUMMARY (%):

	5, 97 D	6, 114 D	6, 121 D
TEXTURE:			
Sand	50	45	90
Silt	35	40	10
Clay	15	15	—
COMPOSITION:			
Accessory minerals	—	Tr	—
Altered grains	50	60	40
Bioclast	—	5	—
Calcite	3	—	—
Glauconite	5	3	10
Mica	—	2	1
Nannofossils	10	5	—
Opaques	10	5	—
Organic matter	3	3	—
Quartz	3	5	10
Spar cement	—	—	38
Unspecified minerals	15	12	1



SITE 766 HOLE A CORE 49R CORED INTERVAL 461.5-471.2 mbsf



LITHOLOGIC DESCRIPTION

GLAUCONITE ALTERED GRAIN SANDSTONE GLAUCONITE ALTERED GRAIN SANDSTONE/SILTSTONE

Core consists of interbedded sediments and volcanics. See igneous barrel sheets for descriptions of the latter.

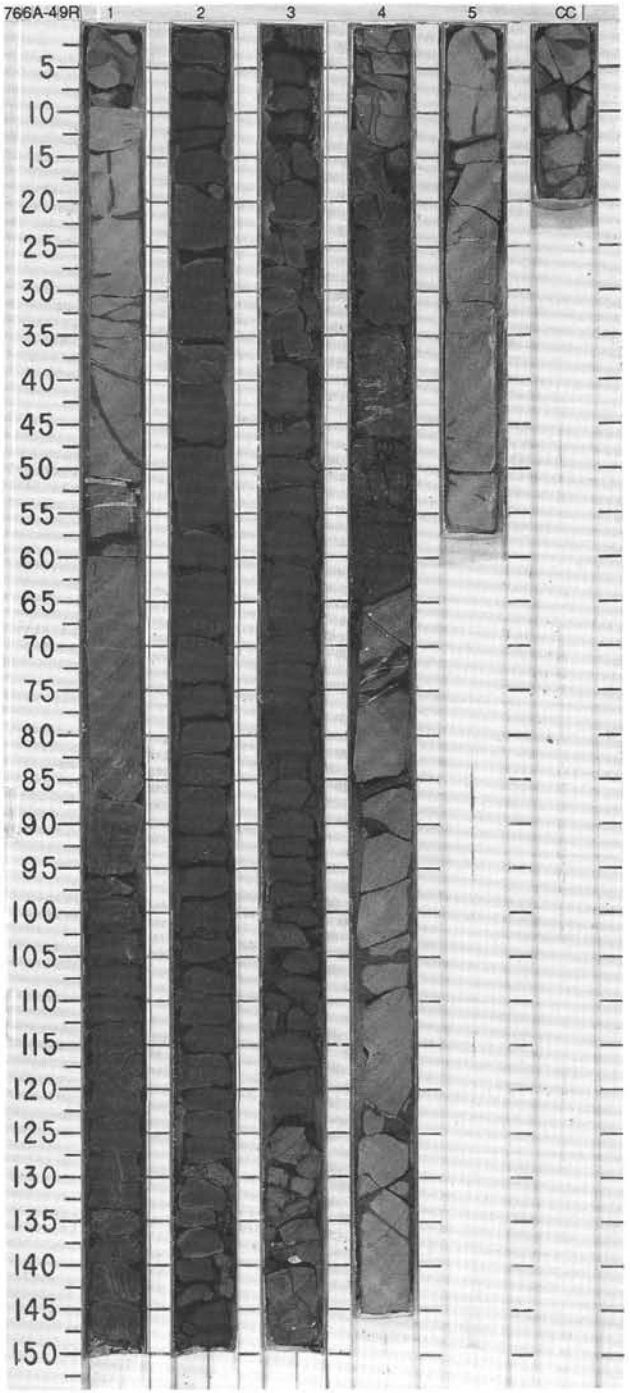
Major lithologies:

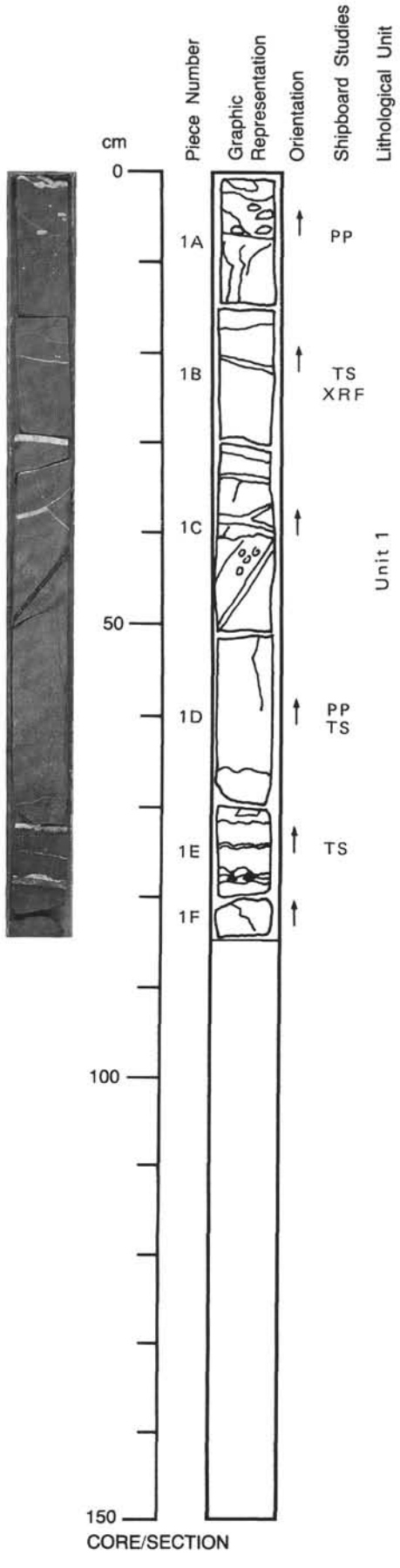
a. GLAUCONITE ALTERED GRAIN SANDSTONE, very dark greenish gray (10Y 3/1). Massive, locally subtly fining upward; altered grains inferred to be volcaniclastic, now largely altered to clay. Very-fine- to coarse-sand-sized. Contains pyrite and zeolite concretions in Section 2, 31-38 cm. Contains as much as 10% quartz, and lesser black shiny opaques, glass, organic debris, and disseminated pyrite (framboids, replacive of fossil fragments).

b. GLAUCONITE ALTERED GRAIN SANDSTONE/SILTSTONE, very dark greenish gray (10Y 3/1). Similar to lithology (1), scattered grain as large as coarse-sand-sized. Contains quartz, sand grains. Possible local bioturbation. Upper contact not preserved; lower contact sharp mm baked sediment rim is attached to volcanic rock. Irregular veins of white calcite. Section 4, 40-45 cm.

SMEAR SLIDE SUMMARY (%):

	1, 92 M	1, 107 D	2, 73 D	3, 120 D
TEXTURE:				
Sand	90	97	80	90
Silt	10	3	20	10
COMPOSITION:				
Accessory minerals	—	Tr	—	—
Altered grains	83	45	48	42
Calcite	—	—	2	1
Glass	—	—	—	2
Glauconite	2	40	35	45
Hematite	—	Tr	Tr	—
Muscovite	—	1	—	1
Nannofossils	—	—	Tr	Tr
Opaques	5	2	3	3
Organic matter	—	—	1	—
Pyrite	1	Tr	1	Tr
Quartz	6	9	10	3





123-766A-48R-7

UNIT 1: SPARSELY PLAGIOCLASE-CLINOPYROXENE PHYRIC SILLS

Pieces 48R-7, 1A-1F (Flows 1 and 2)

CONTACTS: Upper contact of Flow 1 is at the base of Section 48R-6. Piece 48R-7, 1A is close to the contact. Very fine-grained, chilled. Lower contact is in Piece 48R-7, 1E. Flow 2 upper contact is in Piece 48R-7, 1E (78 cm); lower contact is in Piece 48R-7, 1F (85 cm). Possibly Flow 1 and Flow 2 are the same flow.

PHENOCRYSTS: Irregular distribution. Pieces 1A and 1B are sparsely clinopyroxene phyric. Piece 1C contains two plagioclase crystal clots/xenocrysts (3 mm). Piece 1D is moderately plagioclase phyric. Pieces 1E and 1F contain occasional plagioclase clots and numerous plagioclase microphenocrysts.

Plagioclase - 3-6 mm (Piece 1E) as clots/xenocrysts, partly or completely replaced by calcite.

Clinopyroxene - 3 mm as phenocrysts; 4 mm as clots (Piece 1A and 1B).

GROUNDMASS: Very fine-grained in Pieces 1A and 1F; fine-grained in between.

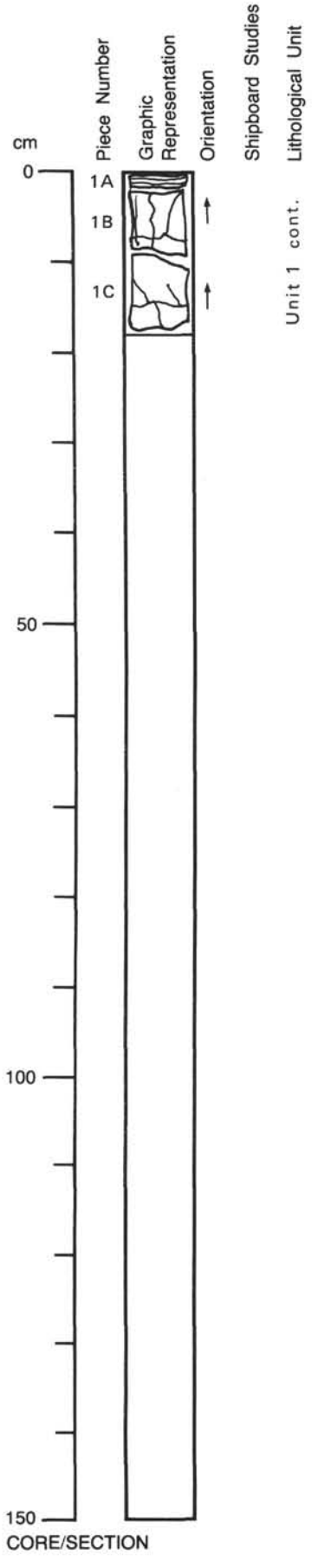
VESICLES: Sparse in Piece A to moderately abundant in Pieces 1C through 1E, 1-2 mm, spherical, filled with black material in Pieces 1C and 1E; calcite filled in Piece 1D. Some are still open in Pieces 1E and 1F. Weird ellipsoid holes filled with calcite and dark green mineral, up to 1 cm, are at the top of Piece 1A. These holes are flattened along vertical axis. Some are rimmed with pyrite. Some vesicles in Piece 1E are filled with pyrite.

COLOR: Piece 1A: Gray in fine-grained area. Piece 1E: Dark gray around vein. Light gray to very light gray in middle of flow.

STRUCTURE: Massive sills

ALTERATION: Vesicles are filled with black material, dark green mineral, calcite and pyrite. Plagioclase altered to calcite.

VEINS/FRACTURES: <1 mm to 8 mm, mostly calcite filled with pyrite rims. Weird, splotchy calcite veins in Pieces 1E and 1F. The thick, partially brecciated vein in Piece 1E may represent material between two flows, since it is chilled on both sides.



123-766A-48R-CC

UNIT 1: SPARSELY PLAGIOCLASE-CLINOPYROXENE PHYRIC SILLS

Pieces 48R-CC, 1 through 49R-1, 1-3F (Flows 3 and 4)

CONTACTS: Upper contact of Flow 3 formed by intrusive margin in Piece 48R-CC, 1B at the bottom of Section 48R-6. Bottom margin in Piece 49R-1, 2 (9 cm) unit thickness is >26 cm. Upper contact of Flow 4 is marked by microcrystalline zone in Piece 49R-1, 3A. Bottom margin in Piece 49R-1, 3F (bottom). Unit thickness is >78 cm. Flow contacts not seen; only judged by grain size variation. The top 10 cm section of the underlying sediments may be baked.

PHENOCRYSTS: Large phenocrysts are concentrated in the lower part of Flow 4 between 55 cm and 70 cm. Xenocrysts - fine-grained clinopyroxene-plagioclase clots, up to 5 mm in diameter are present in Pieces 49R-1, 3A and 3B (10-19 cm)
Clinopyroxene - 1%; 1-5 mm; Subhedral - anhedral, black, fresh.
Plagioclase - Rare; 1-3 mm; (Pieces 48R-CC, 1B and 1C).

GROUNDMASS: Microcrystalline at flow margins i.e., Pieces 49R-1, 1 (bottom), 2, 3A (top), and 3F (bottom). Pieces 48R-CC, 1B is chilled. Pieces 3C (flow center) shows good crystallinity with grain size about 0.5 mm.

VESICLES: Rare; <1 mm; spherical; Filled by calcite in the lower part of 49R-1, Piece 3F, but filled by black clay minerals elsewhere (chlorite?)

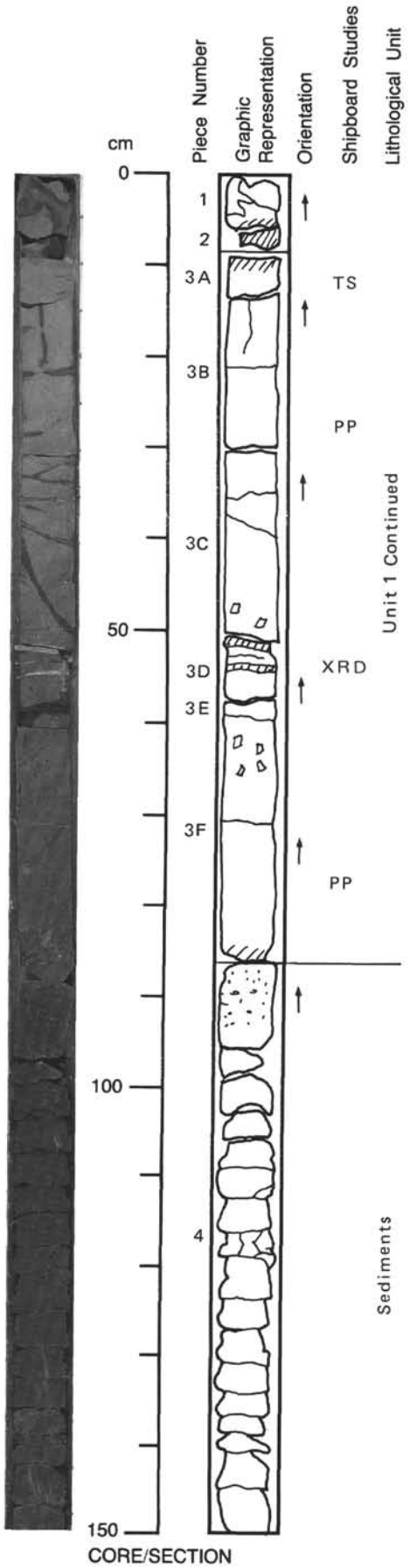
COLOR: Dark gray in coarser-grained parts, and medium gray in finer-grained parts.

STRUCTURE: Massive flows or sills.

ALTERATION: Very slightly altered. No alteration halos along veins or fractures.

VEINS/FRACTURES: 1 mm to 7 mm thick; Subhorizontal calcite veins are developed in the upper half of Piece 3D (4 veins). Calcite crystals show marked parallel growth with their C axes perpendicular to the walls. Subhorizontal fractures are dominant.

ADDITIONAL COMMENTS: Piece 48R-CC, 1A is banded (breccia) comprising alternating calcite and altered black basalt fragments. Section 49R-2 is totally composed of sediments (black medium sandstone).
SEE VISUAL CORE DESCRIPTION OF SEDIMENTS.



123-766A-49R-1

UNIT 1: SPARSELY PLAGIOCLASE-CLINOPYROXENE PHYRIC SILLS

Pieces 48R-CC, 1 through 49R-1, 1-3F (Flows 3 and 4)

CONTACTS: Upper contact of Flow 3 formed by intrusive margin in Piece 48R-CC, 1B at the bottom of Section 48R-6. Bottom margin in Piece 49R-1, 2 (9 cm) unit thickness is >26 cm. Upper contact of Flow 4 is marked by microcrystalline zone in Piece 49R-1, 3A. Bottom margin in Piece 49R-1, 3F (bottom). Unit thickness is >78 cm. Flow contacts not seen; only judged by grain size variation. The top 10 cm section of the underlying sediments may be baked.

PHENOCRYSTS: Large phenocrysts are concentrated in the lower part of Flow 4 between 55 cm and 70 cm. Xenocrysts - fine-grained clinopyroxene-plagioclase clots, up to 5 mm in diameter are present in Pieces 49R-1, 3A and 3B (10-19 cm)
Clinopyroxene - 1%; 1-5 mm; Subhedral - anhedral, black, fresh.
Plagioclase - Rare; 1-3 mm; (Pieces 48R-CC, 1B and 1C).

GROUNDMASS: Microcrystalline at flow margins i.e., Pieces 49R-1, 1 (bottom), 2, 3A (top), and 3F (bottom). Pieces 48R-CC, 1B is chilled. Pieces 3C (flow center) shows good crystallinity with grain size about 0.5 mm.

VESICLES: Rare; <1 mm; spherical; Filled by calcite in the lower part of 49R-1, Piece 3F, but filled by black clay minerals elsewhere (chlorite?)

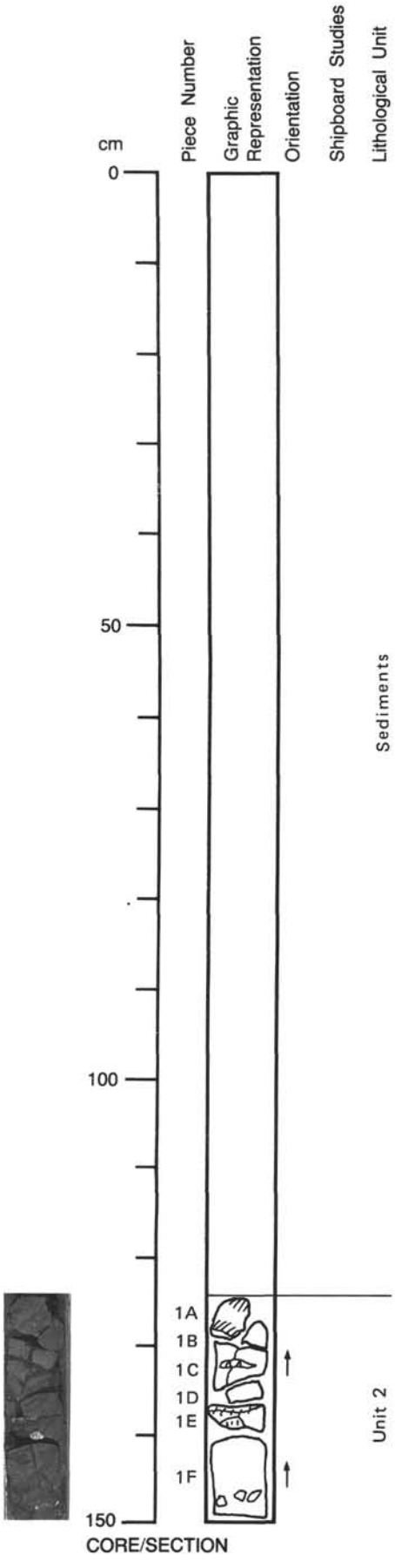
COLOR: Dark gray in coarser-grained parts, and medium gray in finer-grained parts.

STRUCTURE: Massive flows or sills.

ALTERATION: Very slightly altered. No alteration halos along veins or fractures.

VEINS/FRACTURES: 1 mm to 7 mm thick; Subhorizontal calcite veins are developed in the upper half of Piece 3D (4 veins). Calcite crystals show marked parallel growth with their C axes perpendicular to the walls. Subhorizontal fractures are dominant.

ADDITIONAL COMMENTS: Piece 48R-CC, 1A is banded (breccia) comprising alternating calcite and altered black basalt fragments. Section 49R-2 is totally composed of sediments (black medium sandstone).
SEE VISUAL CORE DESCRIPTION OF SEDIMENTS.



123-766A-49R-3

UNIT 2: APHYRIC BASALT SILL

Pieces 49R-3, 1A-1F and 49R-4, 1

CONTACTS: Sediment-basalt contact present in Piece 49R-3, 1A (124-128 cm); Basalt is chilled against sediments. The contact is sinuous and very irregular. It is likely that the basalt flowed into unsolidified sediments (black siltstone), and was intermingled with them. A small body of black sandstone is also present in Piece 49R-3, 1E (137-138 cm), with a miarole filled by calcite and clays (3 x 0.5 cm in size). Lower contact not seen. Not chilled against the underlying sediments. Very fine-grained through Piece 49R-4, 1.

PHENOCRYSTS: Aphyric with rare, <1 mm, subhedral tabular plagioclase phenocrysts, and rare, <1 mm, anhedral clinopyroxene phenocrysts. Single fine-grained clinopyroxene-plagioclase clot, up to 3 mm present.

GROUNDMASS: Microcrystalline in Pieces 49R-3, 1A to 1E, and very fine grained in Pieces 49R-3, 1F and 49R-4, 1. No glass even at contacts.

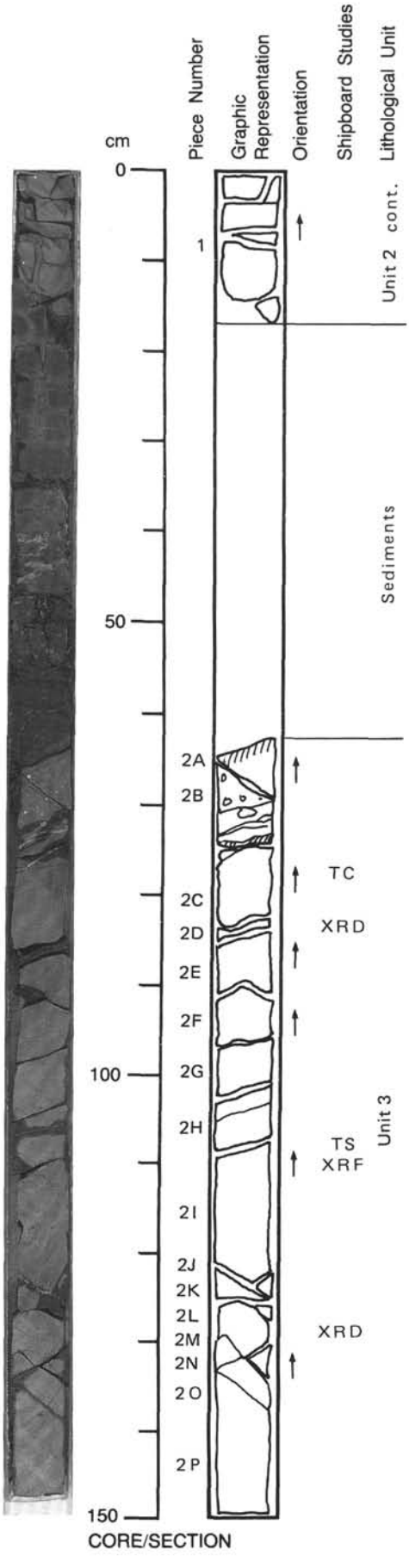
VESICLES: <1 mm to 15 mm; spherical to ovoidal; n/a; Filled with calcite. The largest one is in the lower part of Piece 49R-3, 1E.
Miaroles: A miarole, 3 x 0.5 mm in size, at the top of 49R-3, 1E is filled by medium-grained euhedral calcite with dark green clays.

COLOR: Dark gray, but lighter than the sediments.

STRUCTURE: Massive, but irregularly shaped igneous body (flow or sill, very thin).

ALTERATION: Slightly altered. Calcite and green clay minerals fill the vesicles, veins, and miaroles. No alteration halos along veins.

VEINS/FRACTURES: A breccia vein, 2.5 x 0.5 mm in size is present in the middle of Piece 49R-3, 1C. Very thin calcite veins are present. Piece 49R-4, 1 is fragmented into 3 cm cubes.



123-766A-49R-4

UNIT 3: APHYRIC BASALT SILL

Pieces 49R-4, 2A-2P

CONTACTS: Upper contact is formed by Piece 2A which is chilled against the overlying sediments: black fine-grained sandstone. A thin film of sediments is attached to the top of a 3 mm thick medium gray microcrystalline basalt. Grain size coarsens downward to Piece 2E, and is uniformly fine-grained below. A vesicular zone, 6 cm-thick, is present in the top part (Pieces 2A and 2B, 66-72 cm). This unit continues into the next section.

PHENOCRYSTS: Aphyric, very rare, <1 mm plagioclase clots and independent euhedral-subhedral phenocrysts of clinopyroxene present.

GROUNDMASS: Microcrystalline at the top. Very fine-grained in Pieces 2B and 2C, and fine-grained (0.3 mm) below.

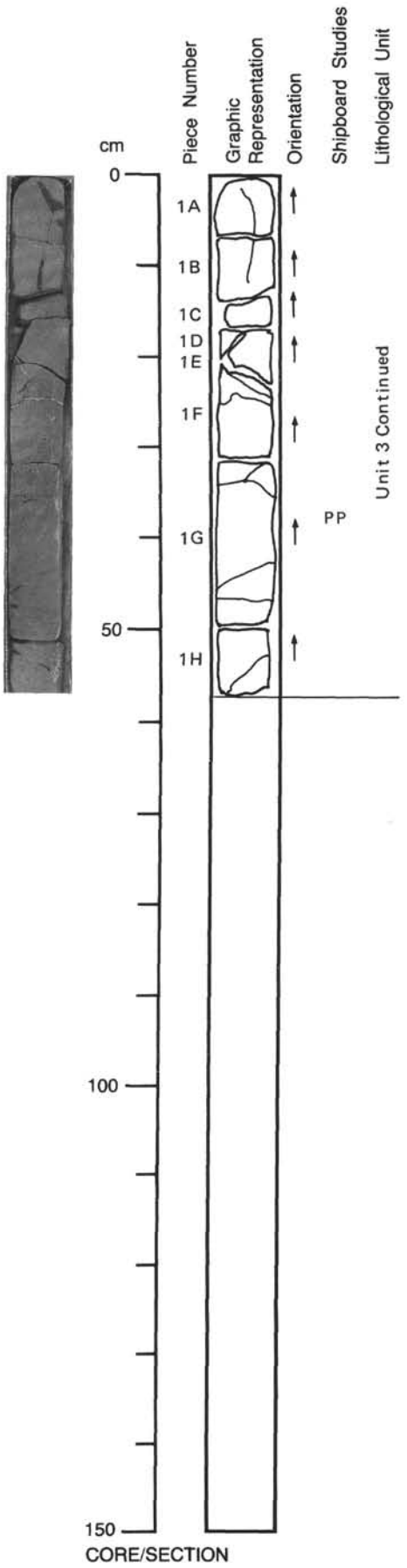
VESICLES: 1%; <1 mm up to 7 mm in size; Filled by calcite. Several large calcite vesicles (up to 7 mm) are present in the upper vesicular zone. They have zeolite in the center.

COLOR: Dark gray, slightly lighter in the chilled zone at the top.

STRUCTURE: Massive basement sill.

ALTERATION: Slightly altered; no alteration halos along veins.

VEINS/FRACTURES: Relatively thick (about 2 mm) veins at 70-76 cm; azimuth 0 degrees, dip 20 degrees; Very thin calcite veins at 90-92 cm, 104-105 cm, 108-109 cm, 121-124 cm, and 129-131 cm intervals; azimuth 0 degrees, dip 20 degrees.

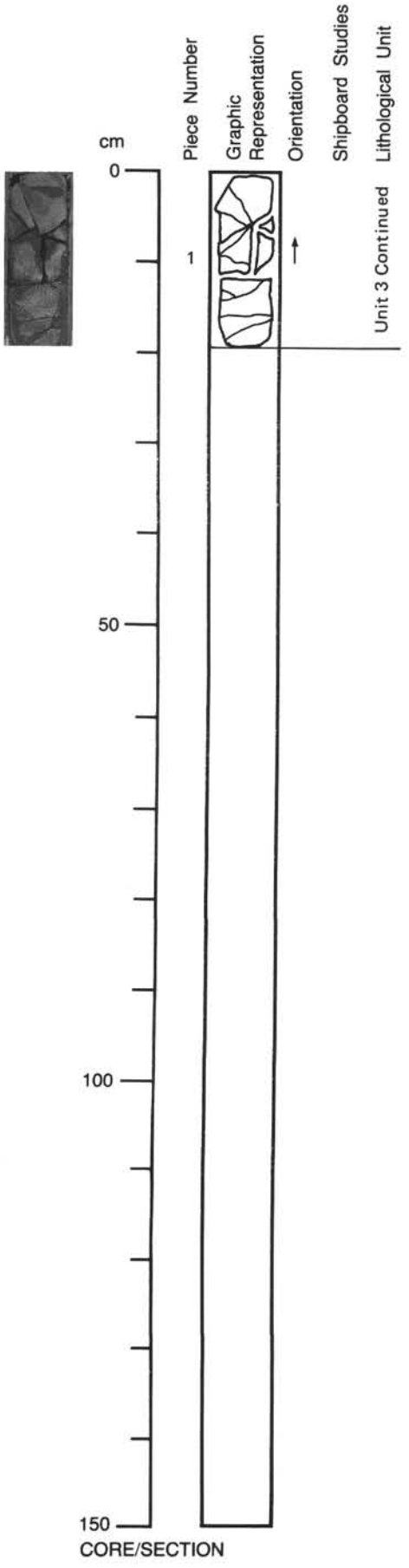


123-766A-49R-5

UNIT 3: APHYRIC BASALT SILL

Pieces 49R-5, 1A-1H

CONTACTS: Continuation of Unit 3: Comprises central part of sill.
PHENOCRYSTS: Only rare clinopyroxene-plagioclase clots are visible, 2 mm in size.
GROUNDMASS: Uniformly fine-grained (0.5 mm) and well crystallized (80% or more).
VESICLES: 1%; <1 mm; Spherical; Filled by calcite or clays.
COLOR: Gray
STRUCTURE: Massive sill center.
ALTERATION: Slightly altered. Dark-colored alteration halos, 5 mm thick, on both sides of the fracture separating Pieces 1B and 1C.
VEINS/FRACTURES: 2 mm thick; Subhorizontal and convex upward; A calcite vein is present in Piece 1F (24-25 cm). Thin calcite-clay veins in 20-23 cm, 33-34 cm, 44-46 cm, and 54-57 cm intervals. Some calcite veins are rimmed by dark green clay minerals.

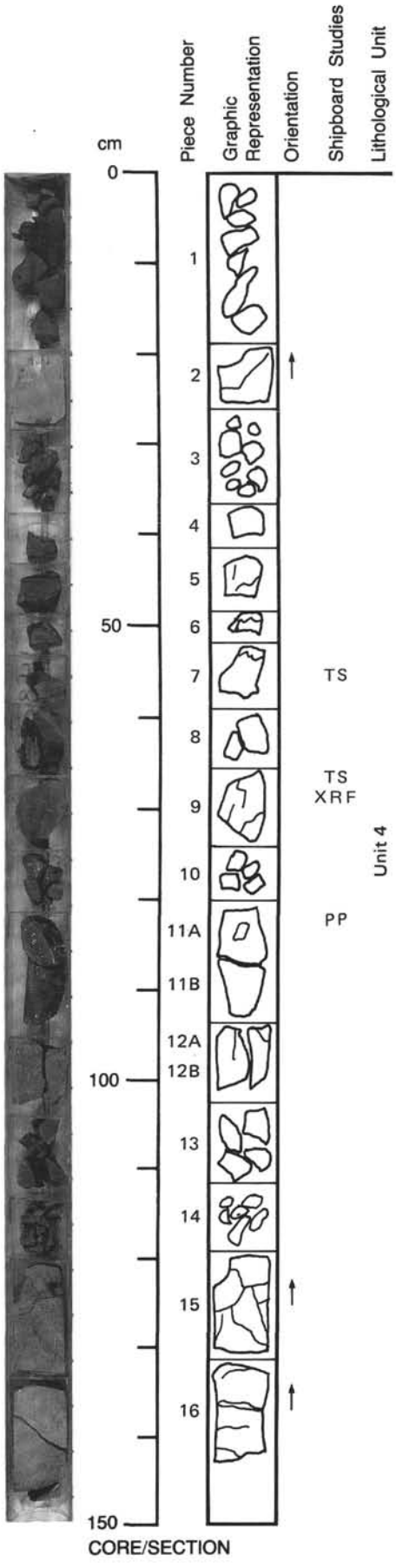


123-766A-49R-CC

UNIT 3: APHYRIC BASALT SILL

Pieces 49R-CC, 1A and 1B

CONTACTS: Continuation of Unit 3; no lower contact seen.
PHENOCRYSTS: Aphyric
GROUNDMASS: Uniformly fine-grained (0.3 mm). This part may represent lower part of the sill. Grain size is finer than in Section 49R-5.
VESICLES: Almost non-vesicular.
COLOR: Medium gray.
STRUCTURE: Massive basalt sill.
ALTERATION: Slightly altered.
VEINS/FRACTURES: Developed. Thin calcite veins in 8-12 cm, 12-14 cm, 16 and 17 cm intervals. No alteration halos around veins.

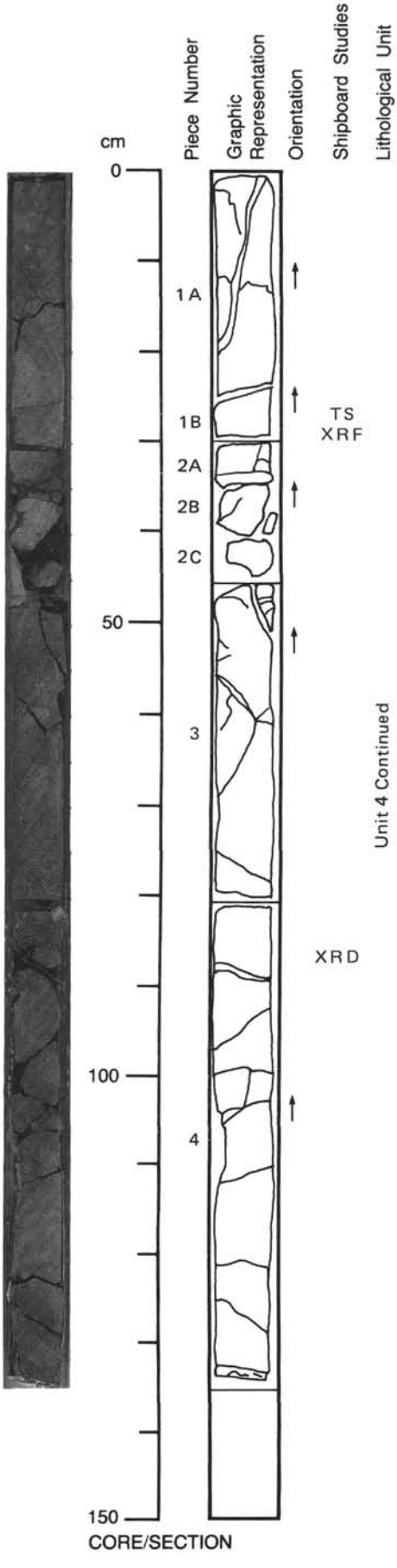


123-766A-50R-1

UNIT 4: APHYRIC VESICULAR BASALT SILLS

Pieces 50R-1, 1-16

CONTACTS: Pieces 3-9 form the chilled top of a sill; The bottom is in Section 51R-1.
PHENOCRYSTS: Aphyric. Very large plagioclase in Piece 15 (3 mm, tabular).
GROUNDMASS: Very fine-grained, chilled-looking basalt in Pieces 4-9. Grain size coarsens downward from Piece 10 to Piece 16, yet is still fine-grained.
VESICLES: 2%; <1 mm; filled with blocky to equant crystals in Piece 4-9; Some vesicles are filled by black mineral and pyrite blebs. Piece 7 has a spherulitic-type edge. 2% vesicles in Pieces 15 and 16; 10% vesicles in Piece 12, filled by black mineral and calcite.
COLOR: Gray
STRUCTURE: Massive sill.
ALTERATION: Slightly to moderately altered.
VEINS/FRACTURES: <1 mm thick veins are present in Pieces 10-16, filled with black/green minerals, calcite, and pyrite.
ADDITIONAL COMMENTS: Piece 1: Greenish sandy siltstone rubble probably fell in from above. Piece 2: Featureless, fine-grained basalt, rare vesicles filled with calcite; this piece belongs in the middle of flow/sill.

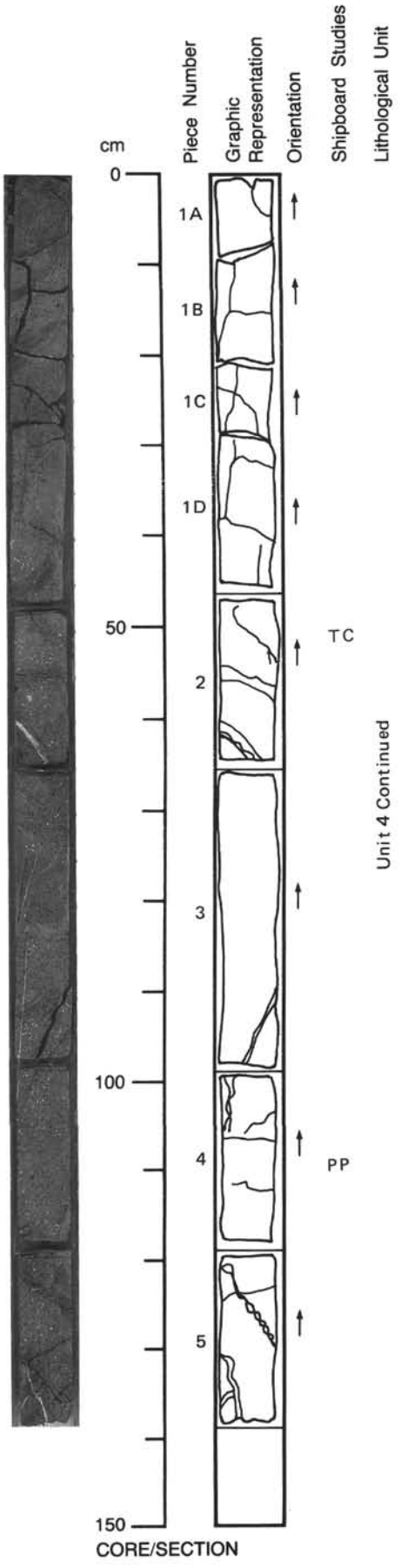


123-766A-50R-2

UNIT 4: APHYRIC VESICULAR BASALT SILLS

Pieces 50R-2, 1A-4

CONTACTS: None, Unit 4 continued.
PHENOCRYSTS: Aphyric
GROUNDMASS: Uniformly fine-grained, but coarser than base of last section.
VESICLES: 2-10%; 1-2 mm; unevenly distributed; Highly vesicular in Piece 3. Most vesicles are filled with black/green minerals. A blotchy patch of vesicles is present at the top of Piece 4; fewer vesicles (7%) are present in the lower part of Piece 4. These are filled with calcite.
COLOR: Gray
STRUCTURE: Massive sill.
ALTERATION: Slightly to moderately altered.
VEINS/FRACTURES: 2 mm to 8 mm; Well developed vein in Piece 1, with waxy/greenish mineral in the middle, rimmed by darker green clay mineral and patches of pyrite. Also vein at the top of Piece 4 filled with waxy/greenish mineral and calcite; a branching vein. At base of Piece 4 is another branching vein with waxy, green calcite and pyrite.

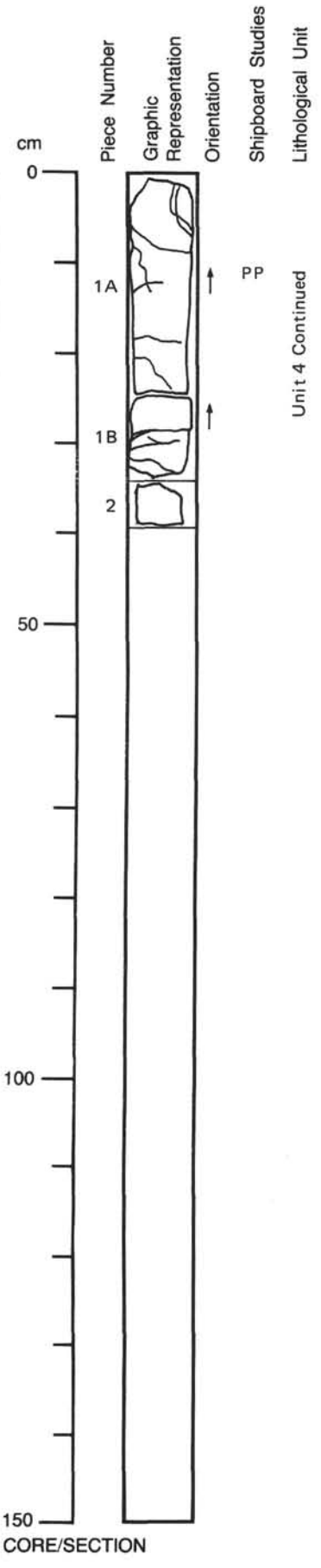


123-766A-50R-3

UNIT 4: APHYRIC VESICULAR BASALT SILLS

Pieces 50R-3, 1A-5

CONTACTS: None, Unit 4 continued.
PHENOCRYSTS: Aphyric
GROUNDMASS: Fine-grained basalt.
VESICLES: 10%; 1-3 mm; uniformly distributed; Filled by black-green minerals within 1-2 cm halo around veins. Elsewhere they are calcite- filled.
COLOR: Gray
STRUCTURE: Massive sills.
ALTERATION: Slightly to moderately altered.
VEINS/FRACTURES: 2-3 mm wide with dark 2 mm wide alteration. Piece 2: Large calcite vein, and large (6 x 4 cm) calcite-filled vug. Piece 1: Pyrite patches in veins throughout piece. Piece 5: Beautiful vein of pyrite, turns into vibrant red mineral at the top of piece.

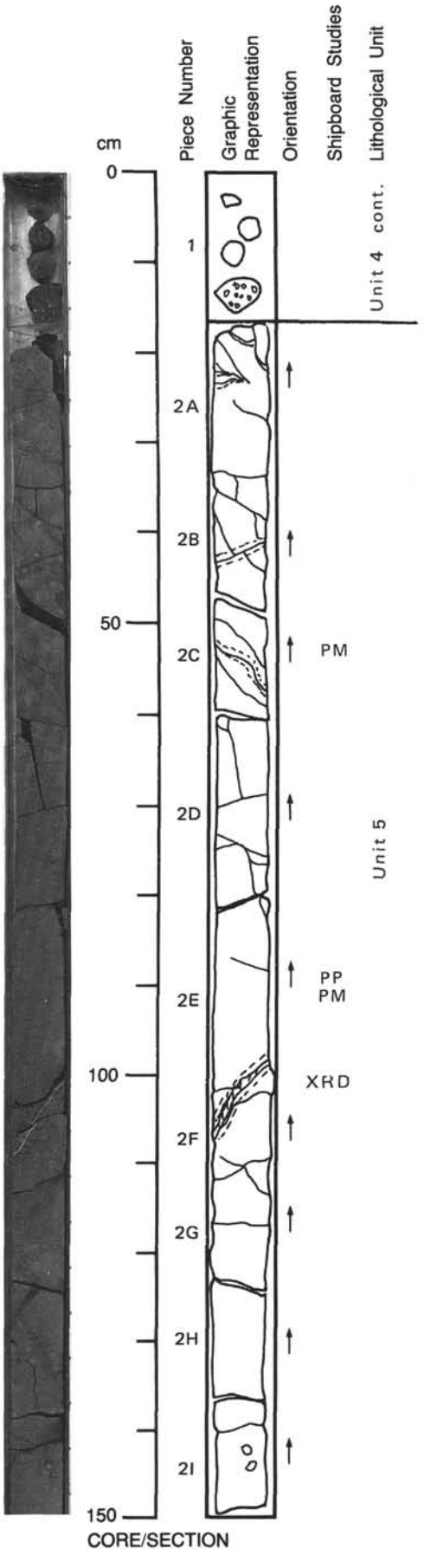


123-766A-50R-4

UNIT 4: APHYRIC VESICULAR BASALT SILLS

Pieces 50R-4, 1A-2 and 51R-1, 1

CONTACTS: Unit 4 continued: lower contact not seen.
PHENOCRYSTS: Aphyric
GROUNDMASS: Fine-grained basalt.
VESICLES: Piece 50R-4, 1A contains vesicles filled with half and half crescents of calcite and a dark green mineral. Piece 51R-1, 1 is highly vesicular. The vesicles are filled with calcite in half the piece and by dark green clay in the other half.
COLOR: Gray. Piece 50R-4, 2 is bleached looking.
STRUCTURE: Massive sills.
ALTERATION: Slightly to moderately altered.
VEINS/FRACTURES: A 3 mm thick zoned vein is present - pyrite core with calcite rim.

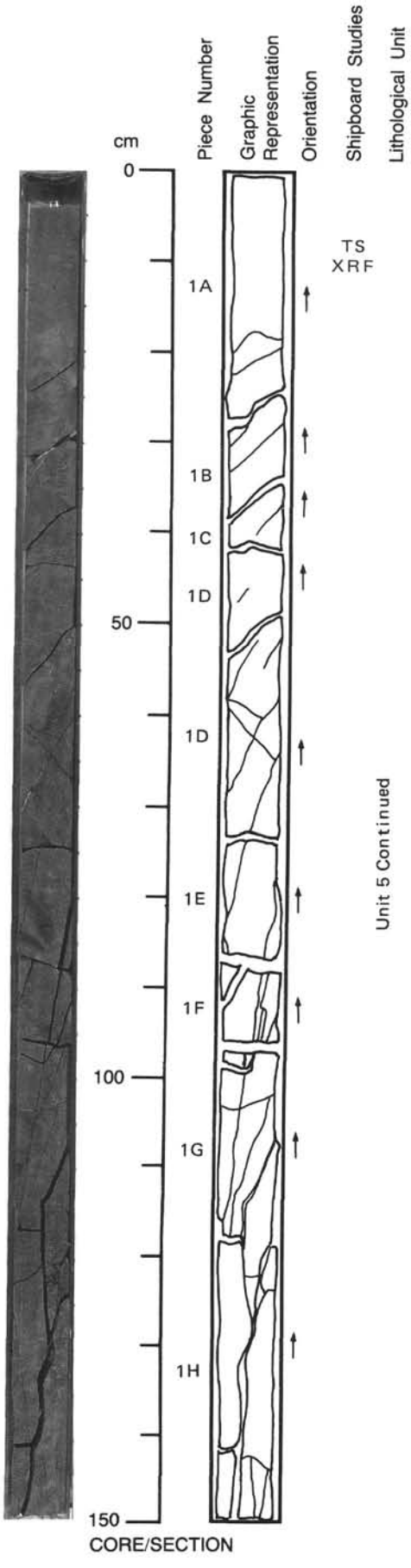


123-766A-51R-1

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 51R-1, 2A-2I

CONTACTS: Not seen
PHENOCRYSTS: Aphyric
GROUNDMASS: Uniformly fine-grained. No apparent change in grain size (0.3 mm) through the section.
VESICLES: 2%; <2 mm; spherical; Totally filled by dark green clay minerals, except for two large vesicles in Piece 2I, which are filled by quartz.
COLOR: Medium gray.
STRUCTURE: Massive basalt/diabase dike.
ALTERATION: Slightly altered. Alteration halos, 3-5 mm wide, are formed along some veins filled by dark green clay minerals (Pieces 2B, 2C, and 2F).
VEINS/FRACTURES: 5 mm thick. Fractures are mostly filled by dark green clay minerals. Calcite is present only in the central part of the thick vein in Piece 2F.

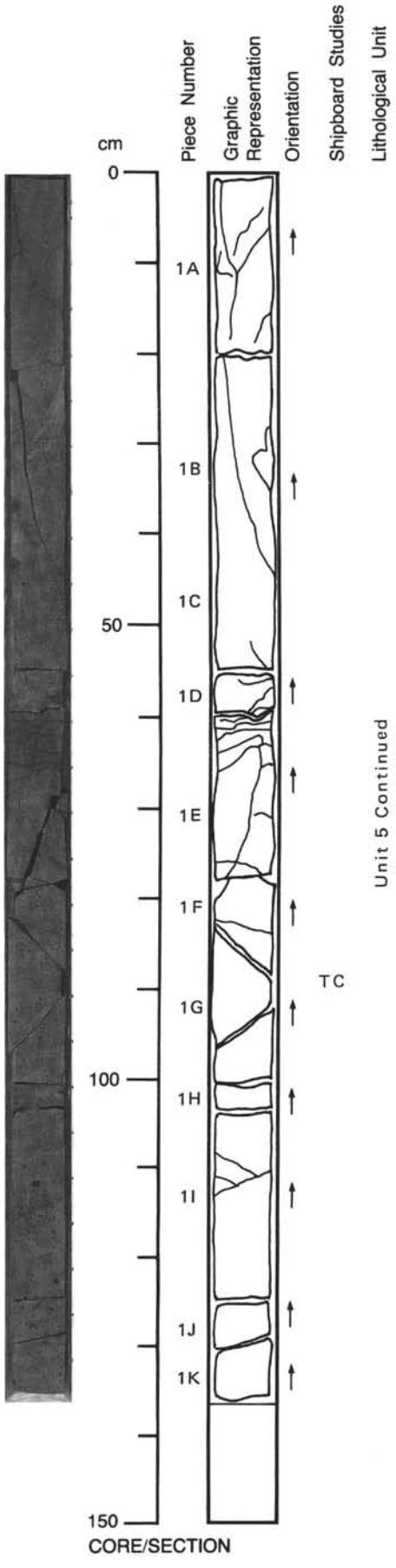


123-766A-51R-2

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 51R-2, 1A-1H

CONTACTS: None, Unit 5 continued
PHENOCRYSTS: Aphyric
GROUNDMASS: Uniformly fine-grained through the section (0.3 mm in size), but slightly coarser-grained than Section 51R-1.
VESICLES: 1-2%; <1 mm diameter; spherical; n/a; Mostly filled by dark green clay minerals. Not so apparent as in previous section.
COLOR: Medium gray.
STRUCTURE: Massive basalt/diabase dike.
ALTERATION: Slightly altered. Alteration halos poorly developed; only 1 mm thick halos along a few veins.
VEINS/FRACTURES: <2 mm thick. Thin calcite veins are present in the lower part of Piece 1A and the upper part of Piece 1B. They are roughly parallel, azimuth 0 degrees, dip 30 degrees. The other calcite veins are in the 63-69 cm interval (azimuth 0 degrees, dip 60 degrees), and in the 103-104 cm interval (azimuth 0 degrees, dip 10 degrees). Fractures dipping 30 degrees are developed in the upper part of the section, while the dip increases downward to 90 degrees in the lower part (Pieces 1G-1H).

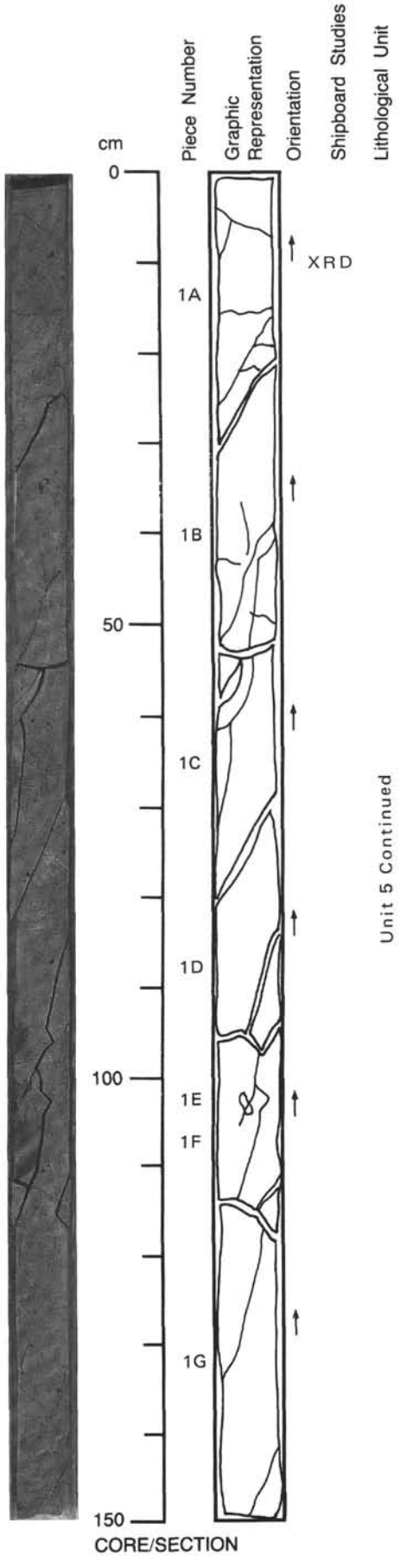


123-766A-51R-3

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 51R-3, 1A-1K

CONTACTS: None, Unit 5 continued.
PHENOCRYSTS: Aphyric
GROUNDMASS: Uniformly fine-grained basalt/diabase with vesicles.
VESICLES: 1-7%; 1-7 mm; spherical; Number and size of vesicles increases down section from about 1%, 1 mm sized, spherical vesicles in Piece 1A to about 7%, 7 mm sized vesicles in Pieces 1I-1K. Vesicles are filled with black and orange brown minerals.
COLOR: Gray
STRUCTURE: Massive basalt/diabase dike.
ALTERATION: Alteration halos up to 1 mm from veins. Basalt/diabase appears fresh.
VEINS/FRACTURES: At most 1 mm thick.; n/a; Piece 1E: Several sub-horizontal fractures, filled with dark green clay with minor calcite.

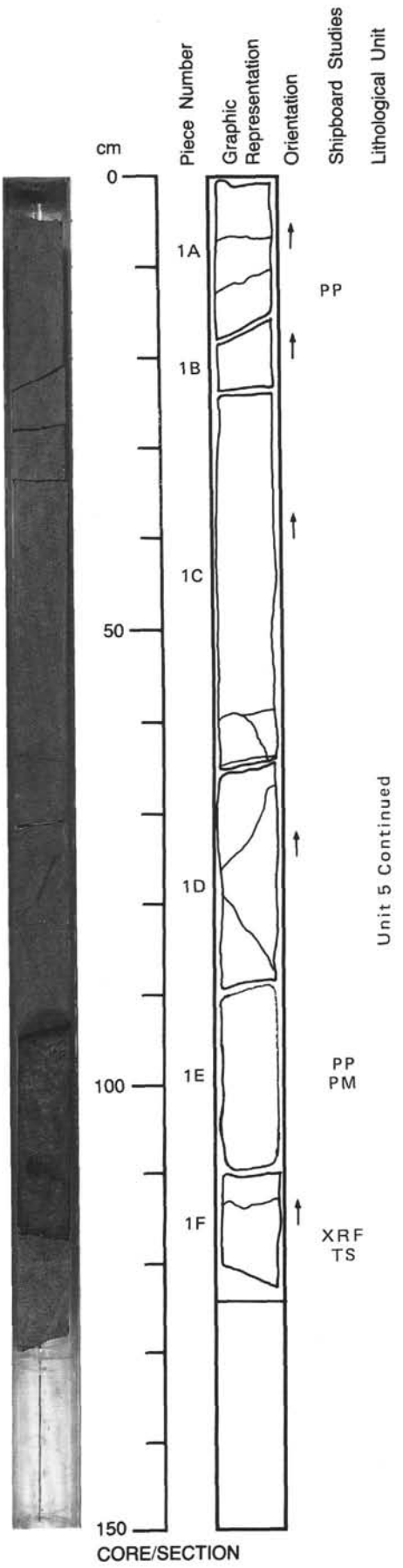


123-766A-51R-4

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 51R-4, 1A-1G

CONTACTS: None, Unit 5 continued.
PHENOCRYSTS: Pieces 1C and 1G may contain clinopyroxene(?) phenocrysts.
GROUNDMASS: Uniformly fine-grained.
VESICLES: 2-5%; 1-3 mm and up to 6 mm; Most vesicles are filled with dark green/black clay mineral, A few vesicles in Pieces 1A and 1E contain calcite, and a few vesicles in Piece 1C have calcite cores. Vesicles are less abundant down section, changing from 2% to 5% in Piece 1A to 1% in Piece 1G.
COLOR: Gray
STRUCTURE: Massive basalt/diabase dike.
ALTERATION: Pieces 1C and 1G have blocky-locking dark patches, up to 2 mm across, forming <1% of pieces.
VEINS/FRACTURES: Fractures up to 1 mm across are filled with a dark green mineral.
ADDITIONAL COMMENTS: Piece 1F: Large void (1 cm x 5 mm) filled with quartz and rimmed with pyrite and celadonite/epidote(?).

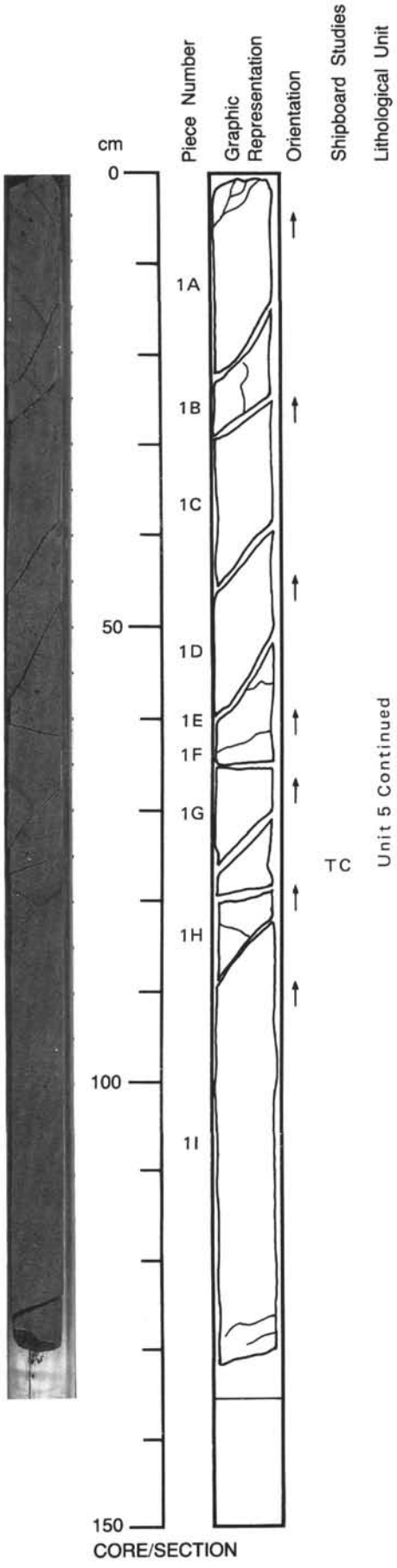


123-766A-51R-5

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 51R-5, 1A-1F

CONTACTS: None, Unit 5 continued.
PHENOCRYSTS: Perhaps sparsely clinopyroxene, phyric.
GROUNDMASS: Uniformly fine-grained.
VESICLES: Fewer and smaller than in previous section. Vesicles in Piece 1C are cored by pyrite.
COLOR: Gray
STRUCTURE: Massive basalt/diabase dike.
ALTERATION: Slightly to moderately altered.
VEINS/FRACTURES: Fewer than in Section 51R-4. Piece 1C: Quartz vein and pyrite blebs at base.
ADDITIONAL COMMENTS: It is hard to distinguish between clinopyroxene and vesicles in this section. They are the same color (black-green) and of similar size (1-2 mm). Only difference is the shape.

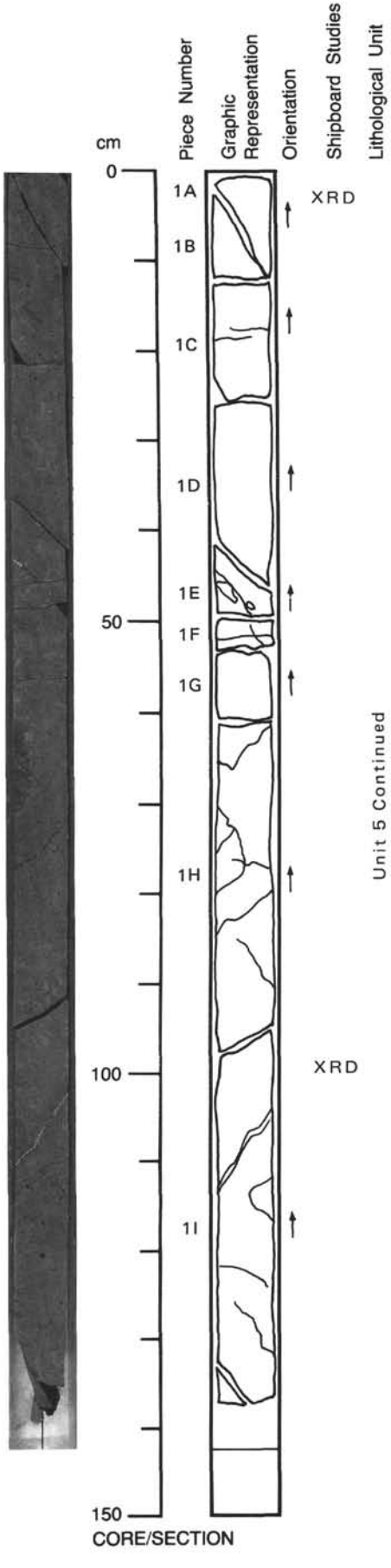


123-766A-51R-6

UNIT 4: APHYRIC BASALT/DIABASE DIKE

Pieces 51R-6, 1A-1I

CONTACTS: None, Unit 5 continued.
PHENOCRYSTS: Possible clinopyroxene phenocrysts; crystals are slightly larger than those in groundmass.
GROUNDMASS: Uniformly fine- to medium-grained.
VESICLES: Sparse; 2-6 mm. Pyrite cores to vesicles in Pieces 1F through 1H.
COLOR: Gray
STRUCTURE: Massive basalt/diabase dike.
ALTERATION: Slightly altered.
VEINS/FRACTURES: 1 mm wide. Pyrite fills veins at the top of Piece 1I, and is also found on fracture surfaces.

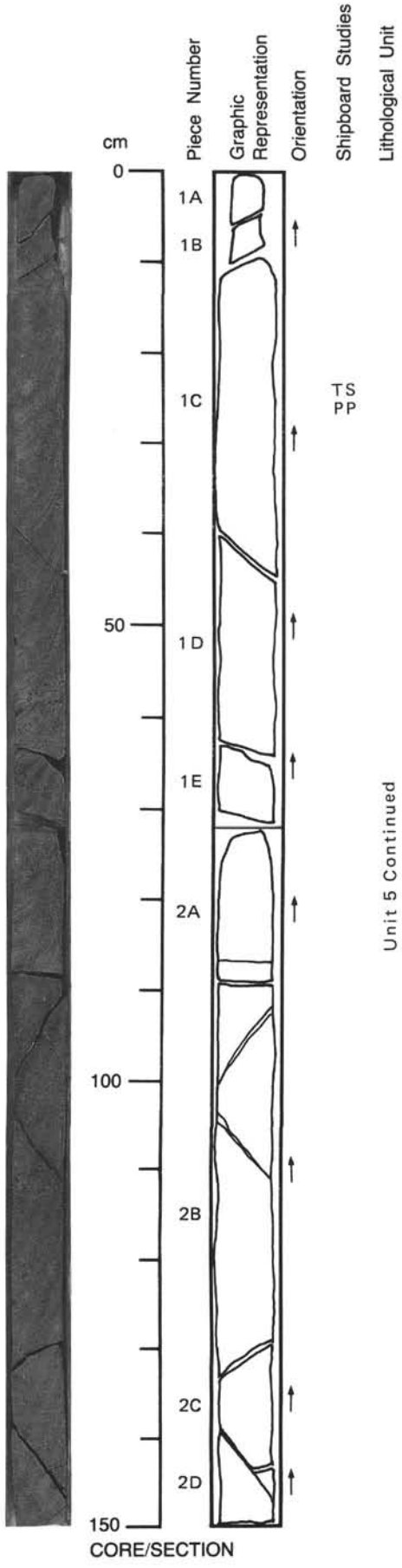


123-766A-51R-7

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 51R-7, 1A-1I

CONTACTS: None, Unit 5 continued.
PHENOCRYSTS: Aphyric
GROUNDMASS: Uniformly fine- to medium-grained.
VESICLES: 1-6 mm in size; Are larger and more abundant than in the last two sections, and similar to Section 51R-4. Many vesicles have cores of pyrite.
COLOR: Gray
STRUCTURE: Massive basalt/diabase dike.
ALTERATION: Slightly altered.
VEINS/FRACTURES: 4 mm wide calcite filled vein in Piece 1I. 1.5 cm, irregularly shaped, elongated void, filled with quartz in Piece 1I.

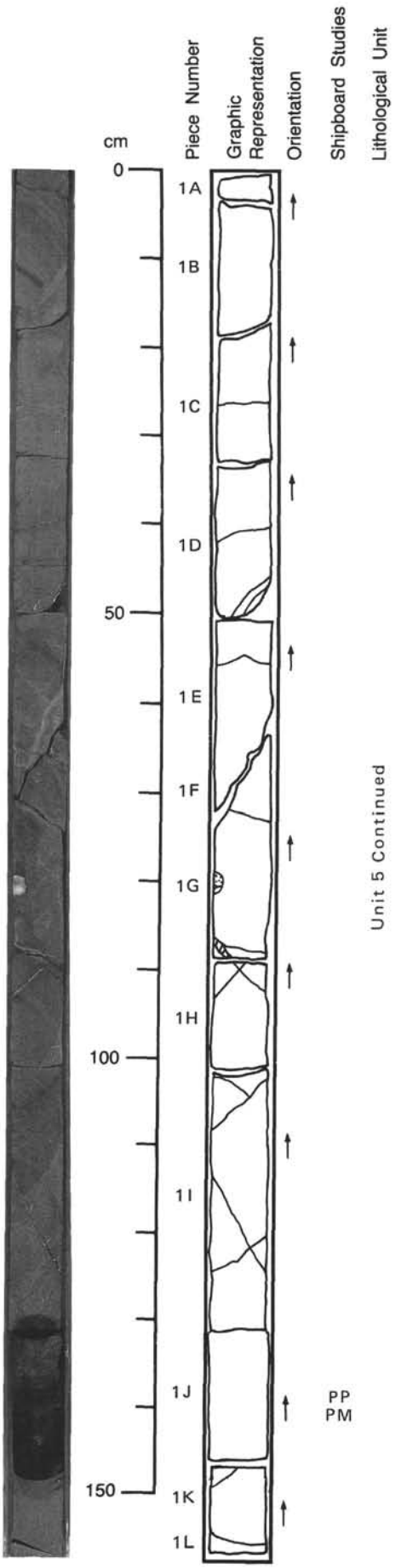


123-766A-52R-1

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 52R-1, 1A-2D

CONTACTS: None, Unit 5 continued
PHENOCRYSTS: Aphyric. However, pieces have spotty appearance due to large (about 2 mm) groundmass clinopyroxenes and vesicles filled by dark green minerals.
GROUNDMASS: Uniformly medium-grained (about 1mm).Subophitic texture. Clinopyroxenes are sometimes up to 2 mm in size.
VESICLES: 2%; 1-5 mm in size; spherical or irregular shaped; Filled with dark green mineral (chlorite?), pale green mineral (epidote?), quartz, and pyrite.
COLOR: Medium gray.
STRUCTURE: Massive basalt/diabase dike.
ALTERATION: Slightly altered. Alteration minerals fill veins and vesicles. Dark green mineral (chlorite?) is dominant. Calcite is scarce.
VEINS/FRACTURES: 1-2 mm thick. Located as follows: 87 cm, chlorite vein, 2 mm thick; 105-112 cm, chlorite vein, 2 mm thick; 89 cm and 92-100 cm, chlorite-calcite-quartz(?) vein, 1 mm thick; 4-6 cm, calcite-chlorite vein, 1 mm thick.

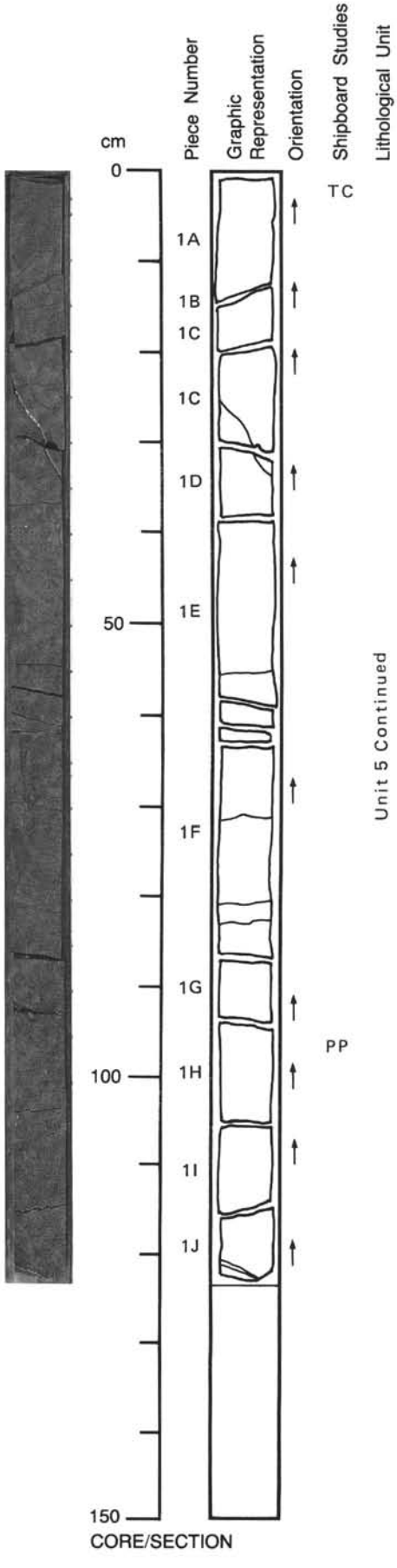


123-766A-52R-2

UNIT 4: APHYRIC BASALT/DIABASE DIKE

Pieces 52R-2, 1A-1L

CONTACTS: None, Unit 5 continued
PHENOCRYSTS: Clinopyroxene - Rare, <2 mm in size; Some plagioclase clots.
GROUNDMASS: Uniformly medium-grained (1.0 mm)
VESICLES: <1%; <2 mm; spherical; Small vesicles are filled by chlorite.
Miaroles: A large miarole, 2.3 cm in size and roughly spherical is present in Pieces 1G (80-82 cm) it is filled by quartz.
COLOR: Medium gray.
STRUCTURE: Massive basalt/diabase dike.
ALTERATION: Slightly altered.
VEINS/FRACTURES: Thin calcite veins are present in the intervals 40-41 cm, 48 54-55 cm, 64-73 cm, 88-93 cm, 102-108 cm, 113-123 cm, and 146-149 cm, and are associated with chlorite.

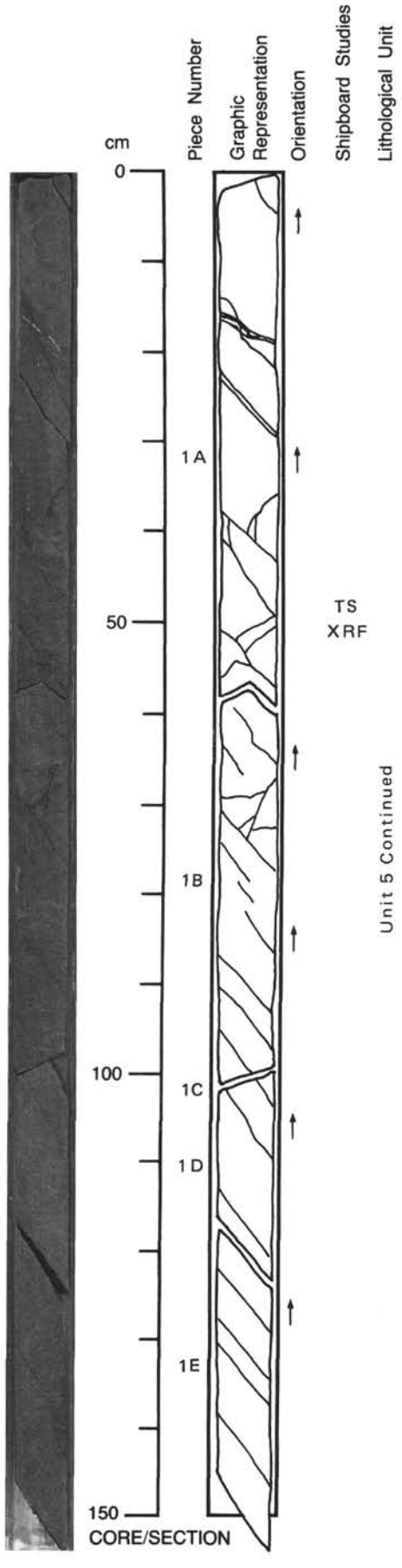


123-766A-52R-3

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 52R-3, 1A-1J

CONTACTS: None, Unit 5 continued.
PHENOCRYSTS: Aphyric
GROUNDMASS: Uniformly medium-grained (1.0 mm), subophitic texture, nearly holocrystalline.
VESICLES: Scarce, mainly filled by chlorite.
COLOR: Medium gray.
STRUCTURE: Massive basalt/diabase dike.
ALTERATION: Very slight.
VEINS/FRACTURES: 2 mm thick. Parallel fractures (azimuth 270 degrees, dip 50 degrees) are developed at regular intervals (1-2 mm). Calcite- chlorite veins, 2 mm thick, are present in the intervals 25-35 cm (azimuth 180 degrees, dip 60 degrees) and 122-123 cm (azimuth 180 degrees, dip 20 degrees). The veins are crosscutting the fractures. Chlorite is formed along fractures, whose walls are black-stained.

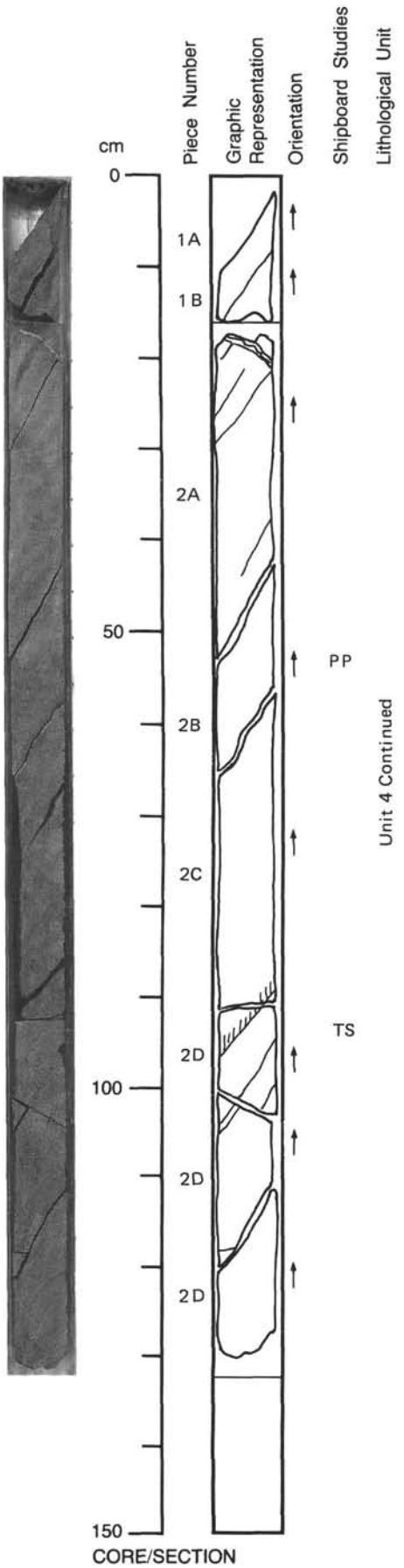


123-766A-52R-4

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 52R-4, 1A-1E

CONTACTS: None, Unit 5 continued.
PHENOCRYSTS: Aphyric
GROUNDMASS: Uniformly medium-grained (1.0 mm). Subophitic, nearly holocrystalline.
VESICLES: Scarce
COLOR: Medium gray.
STRUCTURE: Massive basalt/diabase dike.
ALTERATION: Slightly altered.
VEINS/FRACTURES: 5 mm thick, regular, parallel fractures, azimuth 180 degrees, dip 50-60 degrees, are developed. The change of azimuth is the result of the rotation of the cutting surface in comparison with the previous section. A 5 mm thick quartz vein, is present between 15 cm and 20 cm; azimuth 320 degrees, dip 70 degrees, and is cut by a thin chlorite-calcite vein parallel to the fractures.
ADDITIONAL COMMENTS: High magnetic susceptibility.



123-766A-52R-5

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 52R-5, 1A-2D

CONTACTS: Clear grain size boundary at the top of Piece 2D (92-97 cm), azimuth 0 degrees, dip 50 degrees. The attitude of the boundary is parallel with the regular fractures. The upper sill/dike, from Piece 51R-1, 2A to the top of Piece 52R-5, 2D, is chilled against the lower sill/dike 2, which is of 2 mm grain size at the contact. Chilled zone is very fine grained, and shows lighter color. Both sills are of similar lithology, except for grain size at the contact.

PHENOCRYSTS: Aphyric

GROUNDMASS: Uniformly medium-grained (1 mm) in Piece 1, fining downward from Piece 2A to Piece 2C, to very fine-grained at the top of Piece 2D, where sill/dike 1 is intrusive against sill/dike 2. Sill/dike 2 is medium-grained (2 mm) at the top, fining downward to the next section.

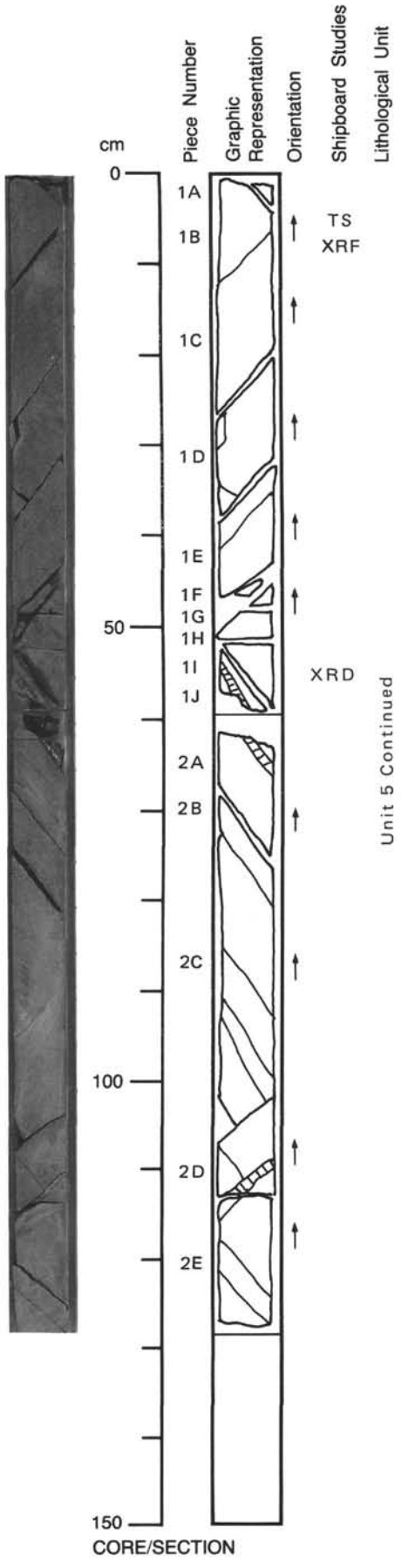
VESICLES: <1%; <1 mm; Filled by chlorite.

COLOR: Medium gray, lighter in the chilled zone at the contact.

STRUCTURE: Massive sills. Intrusive contact in the middle of the section.

ALTERATION: Very slight.

VEINS/FRACTURES: Quartz-calcite-chlorite vein present at the top of Piece 2A. Parallel regular fractures, azimuth 0 degrees, dip 60 degrees are developed. They are roughly parallel to the boundary plane between the two sills.

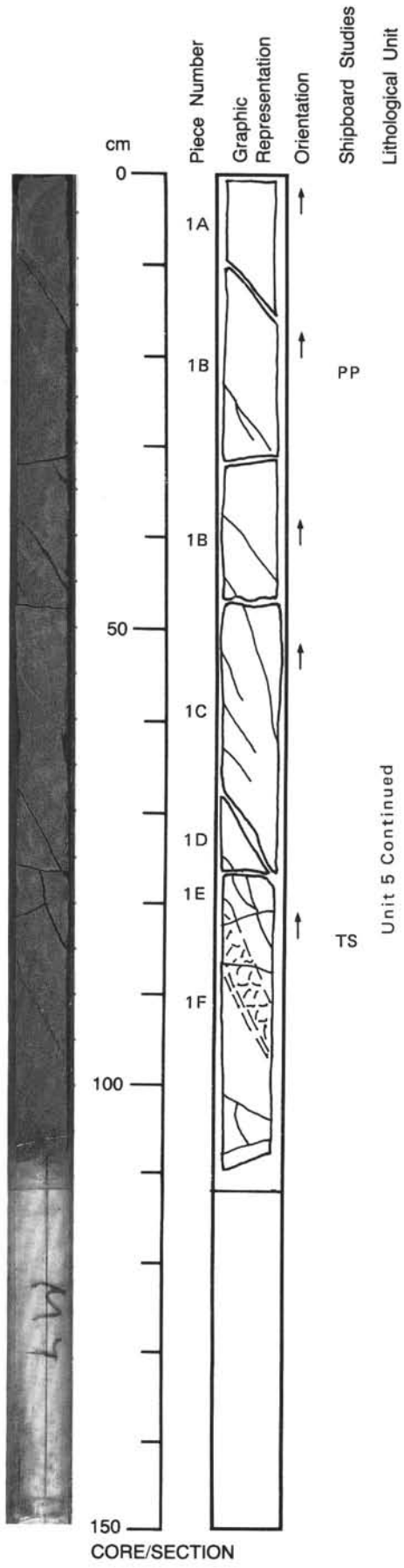


123-766A-52R-6

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 52R-6, 1A-

CONTACTS: None, Unit 5 continued.
PHENOCRYSTS: Aphyric
GROUNDMASS: Uniformly medium-grained (1 mm).
VESICLES: Scarce. Filled with chlorite.
COLOR: Medium gray.
STRUCTURE: Massive basalt/diabase dike.
ALTERATION: Very slightly altered.
VEINS/FRACTURES: 7 mm (thickest); Regular; Parallel fractures dipping 50-60 degrees are developed as in the previous sections. Change of azimuth from 0 degrees to 180 degrees at Piece 1 - Piece 2 boundary is due to a technical mistake, and is not real. Calcite-chlorite-quartz veins are present in the intervals 1-3 cm, 54-64 cm, and 110-113 cm. The middle vein is the thickest. They are either parallel to (middle vein) or cross-cutting (the other two veins) the fractures.

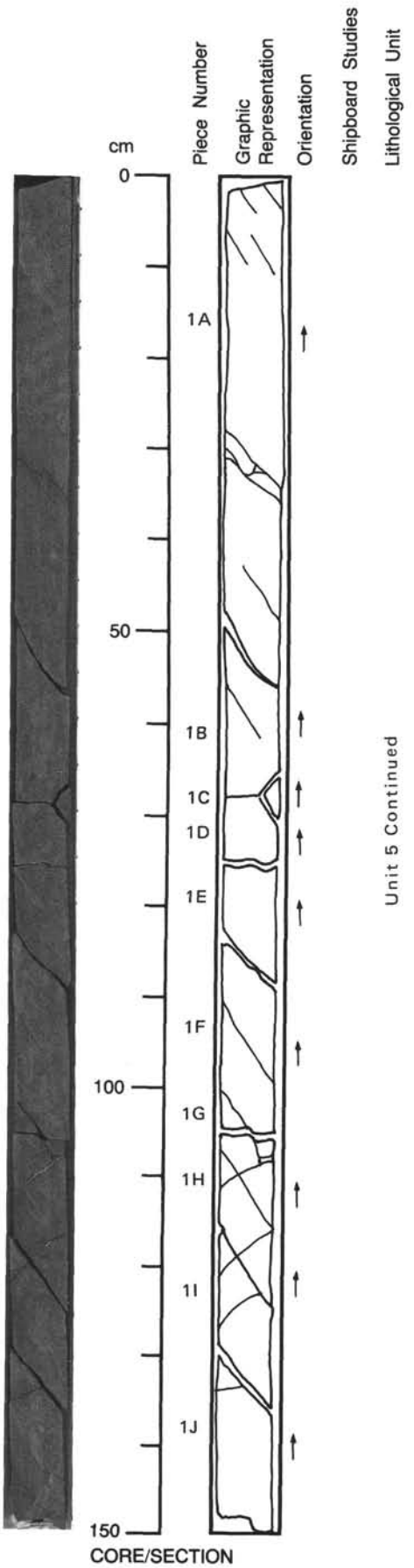


123-766A-53R-1

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 53R-1, 1A-1F

CONTACTS: A coarse-grained, inclined layer, 4 cm thick is present in Piece 1F (80-97 cm), azimuth 180 degrees, dip 60 degrees. The layer is made up of coarse-grained, bladed plagioclase (up to 7 mm long) and interstitial clinopyroxene.
PHENOCRYSTS: Aphyric
GROUNDMASS: Uniformly medium-grained (1 mm) except for the coarse-grained gabbroic layer and fine-grained zones (1-2 cm thick) on both sides of the layer.
VESICLES: Very rare.
COLOR: Medium gray.
STRUCTURE: The contact between the coarse-grained gabbroic layer and the medium-grained homogeneous diabase is relatively sharp. As the layer is parallel to the regional platy fractures, it may represent a patch of residual liquid formed parallel to the isothermal surfaces during a later stage of solidification.
ALTERATION: Scarce. Lower contact of the gabbroic layer is chloritized.
VEINS/FRACTURES: A subhorizontal quartz-chlorite vein is present in 107-108 cm interval (azimuth 0 degrees, dip 10 degrees). Platy, parallel fractures, parallel to the gabbroic layer, are regularly developed.

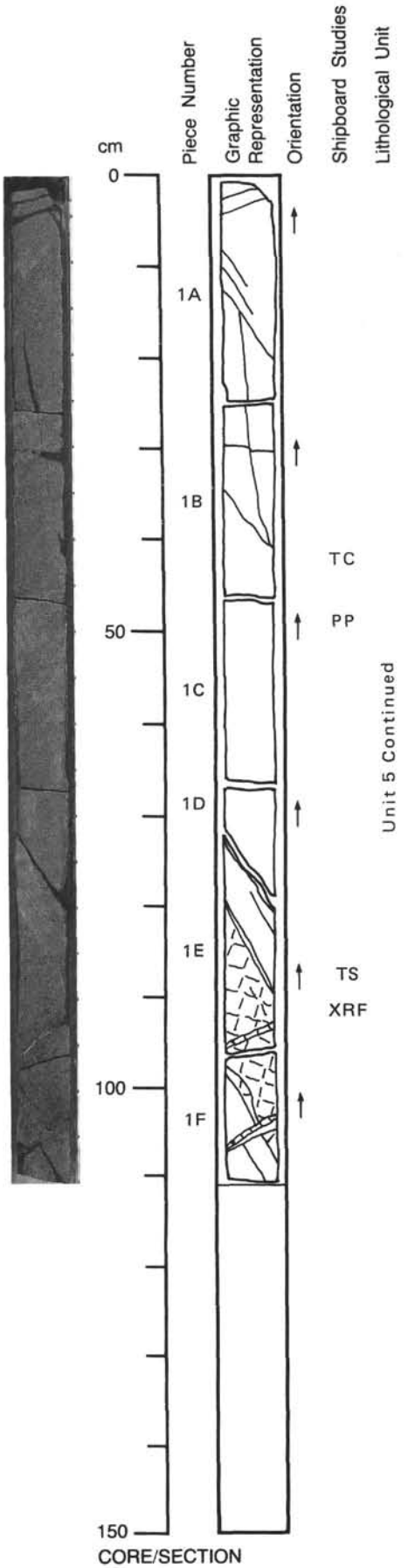


123-766A-53R-2

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 53R-2, 1A-1J

CONTACTS: None, Unit 5 continued.
PHENOCRYSTS: Aphyric
GROUNDMASS: Uniformly medium-grained (1 mm).
VESICLES: <1%; <2 mm; Mainly filled by chlorite.
COLOR: Medium gray.
STRUCTURE: Massive, structureless part of a sill/dike.
ALTERATION: Very slight.
VEINS/FRACTURES: <2 mm thick; dipping 50 degrees, azimuth 180 degrees; Chlorite veins with or without quartz or calcite are present in 29-34 cm, 108-112 cm, 117-121 cm, and 134-135 cm intervals. The first vein is parallel to the fractures, but the other three veins are perpendicular. Veins are less than 2 mm thick, and are associated with narrow alteration halos (<5 mm wide).

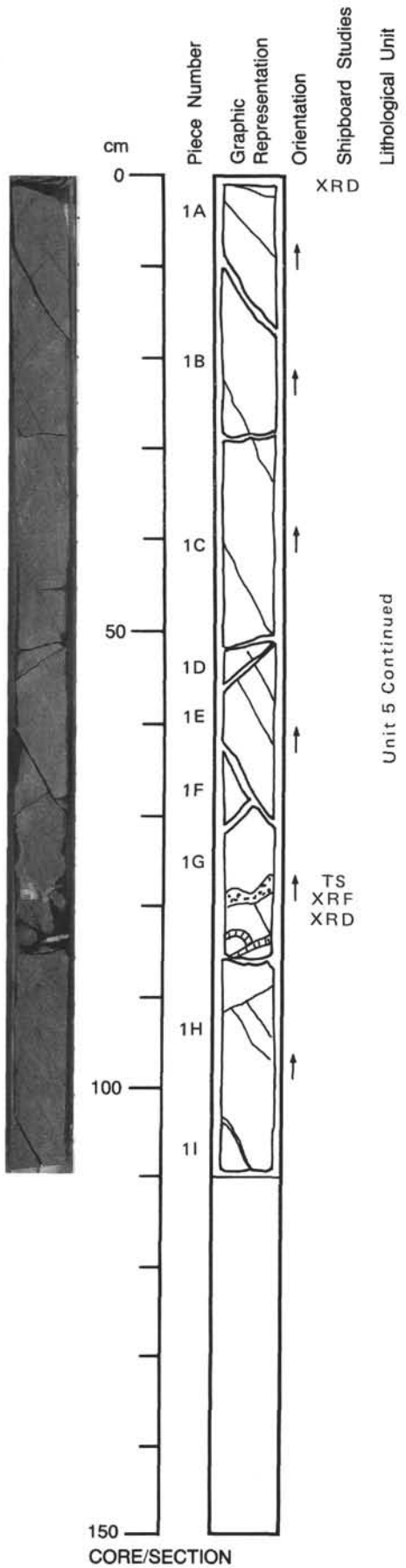


123-766A-53R-3

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 53R-3, 1A-1F

CONTACTS: A 10 cm thick coarse-grained gabbroic layer is present in Pieces 1E and 1F, dipping 55 degrees, azimuth 180 degrees. The upper and lower boundaries are in contact with medium-grained diabase.
PHENOCRYSTS: Aphyric
GROUNDMASS: Uniformly medium-grained (1 mm) in the diabase, and coarse-grained in the gabbroic layer, in which some plagioclase crystals are as long as 7 mm. Subophitic to ophitic.
VESICLES: Very scarce. Vesicles are filled by chlorite.
COLOR: Medium gray.
STRUCTURE: Massive diabase sill/dike with gabbroic layers, possibly representing patches of residual liquids crystallized in the last stages of solidification of the sill/dike.
ALTERATION: Slightly altered. Vesicles are filled by chlorite. Mesostasis may also be replaced by chlorite.
VEINS/FRACTURES: Up to 5 mm thick. Regular, platy, parallel fractures are developed which are parallel to the gabbroic layer. Two calcite- chlorite-quartz veins cut the gabbroic layer in an attitude perpendicular to the layer (92-95 cm and 103-107 cm intervals).
ADDITIONAL COMMENTS: The gabbroic layer has very high magnetic susceptibility (> 6000 cgs unit) possibly due to coarser grain size of the constituent magnetite and/or the abundance of magnetite (i.e. high Fe content of the rock itself).

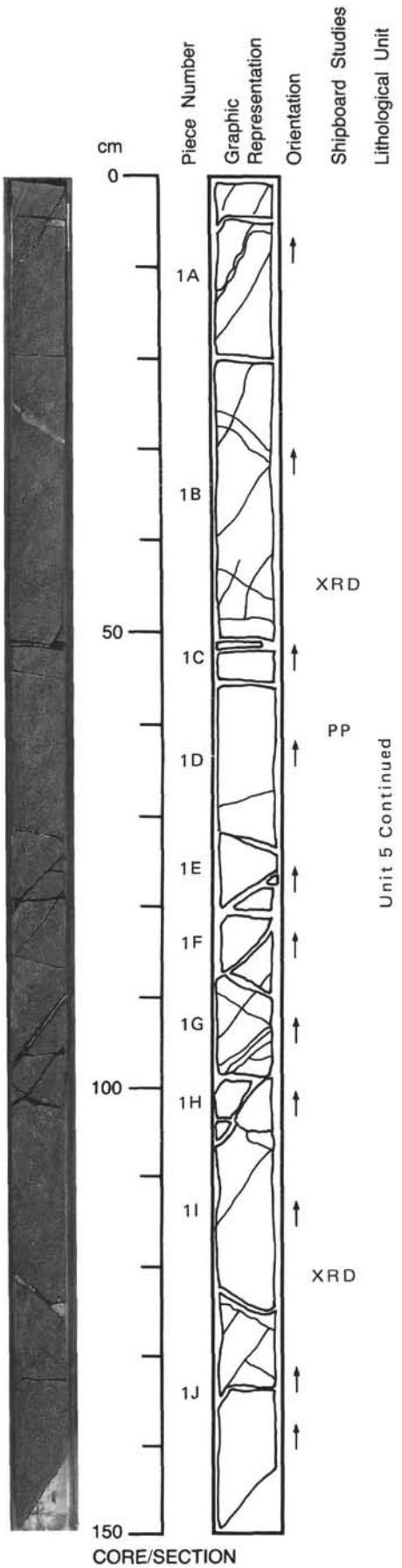


123-766A-53R-4

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 53R-4, 1A-1I

CONTACTS: None, Unit 5 continued.
PHENOCRYSTS: Aphyric
GROUNDMASS: Uniformly medium-grained (1 mm).
VESICLES: Very rare.
COLOR: Medium gray.
STRUCTURE: Massive basalt/diabase dike.
ALTERATION: Slightly altered.
VEINS/FRACTURES: Two calcite-chlorite-epidote-quartz veins are present in the 78-80 cm and 83-85 cm intervals (azimuth 270 degrees, dip 75 degrees, and azimuth 120 degrees dip 20 degrees, respectively). Fractures dipping 60 degrees to azimuth 180 degree are well developed, as in the previous sections.

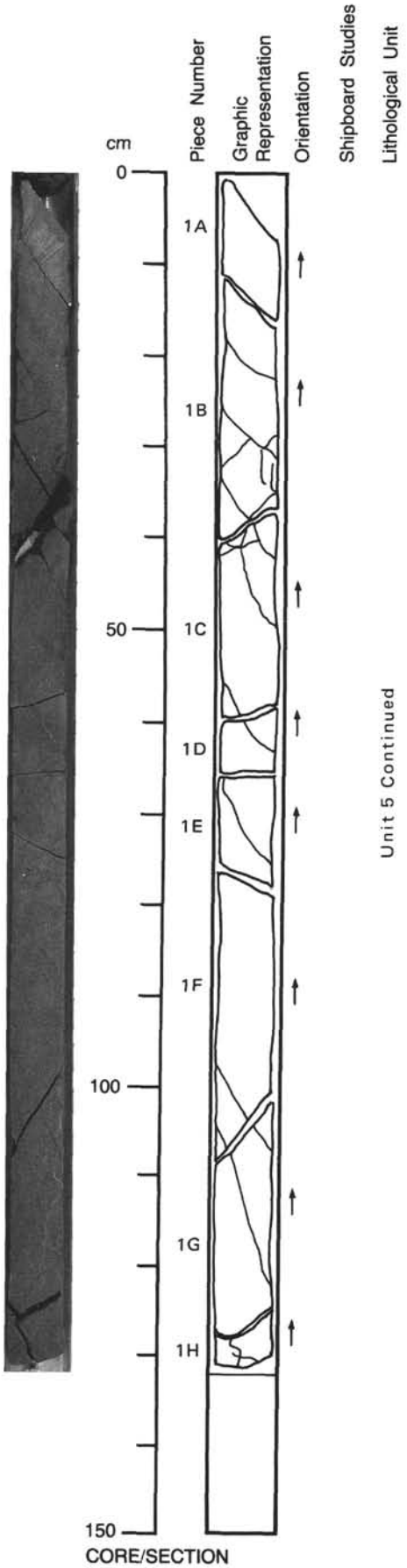


123-766A-53R-5

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 53R-5, 1A-1J

CONTACTS: None, Unit 5 continued
PHENOCRYSTS: Rare clinopyroxene phenocrysts, slightly larger than the groundmass.
GROUNDMASS: Uniformly medium-grained.
VESICLES: Rare, <1 mm, filled with dark green mineral.
COLOR: Medium gray.
STRUCTURE: Massive basalt/diabase dike.
ALTERATION: Slightly altered.
VEINS/FRACTURES: Most <1 mm. Anastomosing, dusty, white/gray zeolite(?) veins in Pieces 1A and 1B (about 5 mm wide), at the base of Piece 1B (3 mm), at the base of Piece 1D (2 mm), and in the middle of Piece 1G (4 mm with chlorite and pyrite). Small pyrite vein in Piece 1H (2 mm). Vein with chlorite and calcite in the top of Piece 1J. Nice conjugate fracture sets present, dipping 60-65 degrees. Fine, hair-like fractures present, most <1 mm, some unfilled.

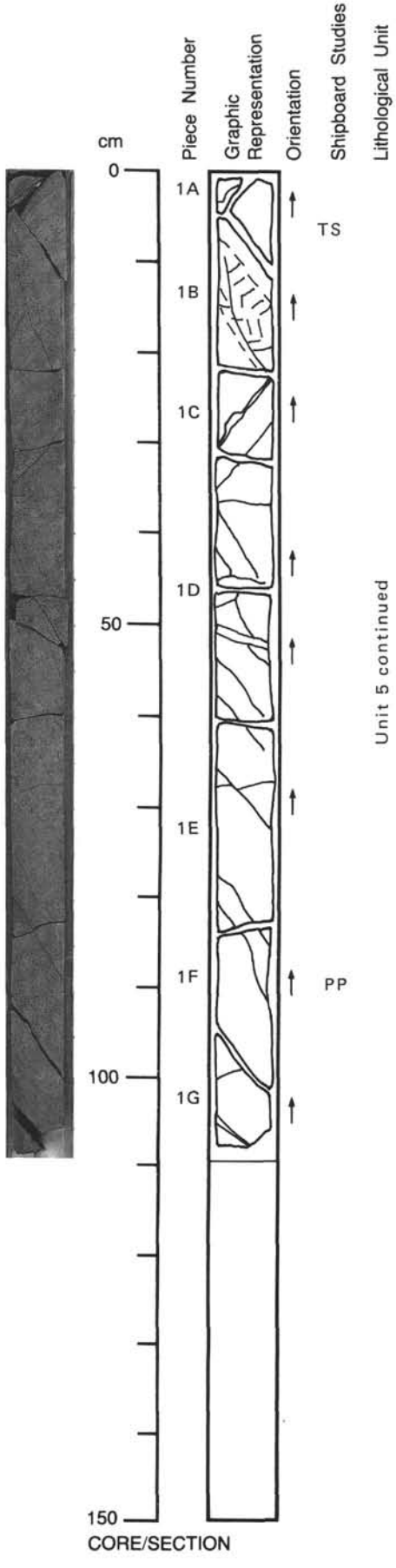


123-766A-53R-6

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 53R-6, 1A-1H

CONTACTS: None, Unit 5 continued
PHENOCRYSTS: Aphyric; Clinopyroxene phenocrysts, ~1 mm, in base of Piece 1B; 3 mm clinopyroxene clot in Piece 1E.
GROUNDMASS: Uniformly medium-grained.
VESICLES: Rare, <1 mm, calcite filled.
COLOR: Medium gray.
STRUCTURE: Massive basalt/diabase.
ALTERATION: Slightly altered.
VEINS/FRACTURES: Up to 9 mm wide. Large calcite-pyrite-chlorite vein at the top of Piece 1C. Same fracture pattern as in Section 53R-5.

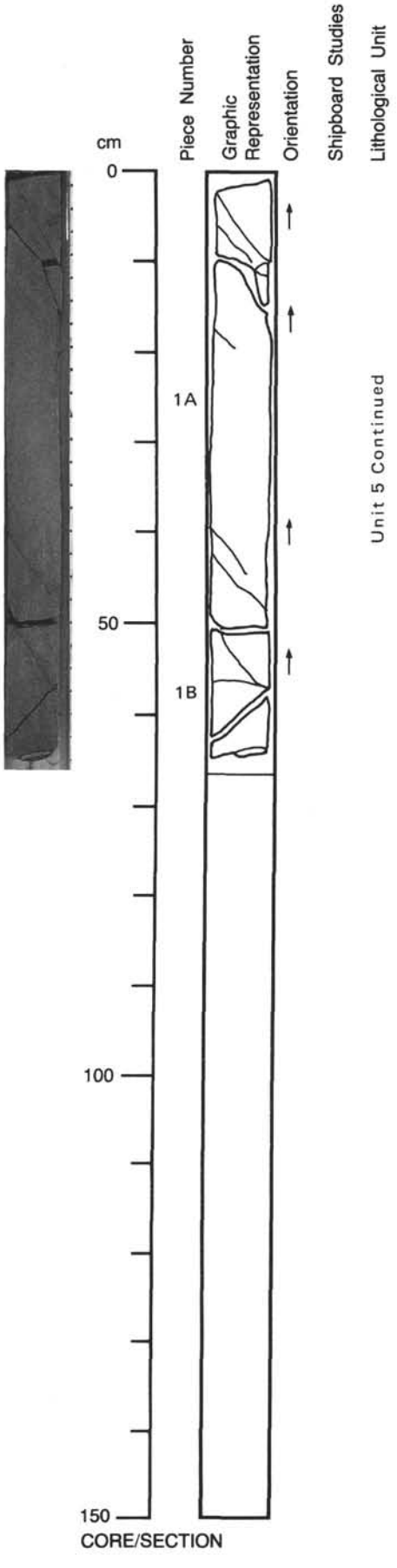


123-766A-53R-7

UNIT 5: APHYRIC MEDIUM-GRAINED DIABASE DIKE

Pieces 53R-7, 1A-1G

CONTACTS: None, Unit 5 continued
PHENOCRYSTS: Aphyric. Occasional large (~1-2 mm) clinopyroxene clots throughout.
GROUNDMASS: Medium-grained. Coarsely crystallized patch in Piece 1B. Well crystallized patch in top of Piece 1E, can see jackstraw plagioclase- clinopyroxene.
VESICLES: Rare
COLOR: Medium gray.
STRUCTURE: Massive basalt/diabase dike.
ALTERATION: Slightly altered.
VEINS/FRACTURES: Same fracture set as in preceeding section. Small (2 mm) calcite-chlorite-zeolite vein in Piece 1A. A chlorite-zeolite vein cuts through 1C with a pull-apart void in the middle. Also,1 mm thick chlorite vein cuts Piece 1C.

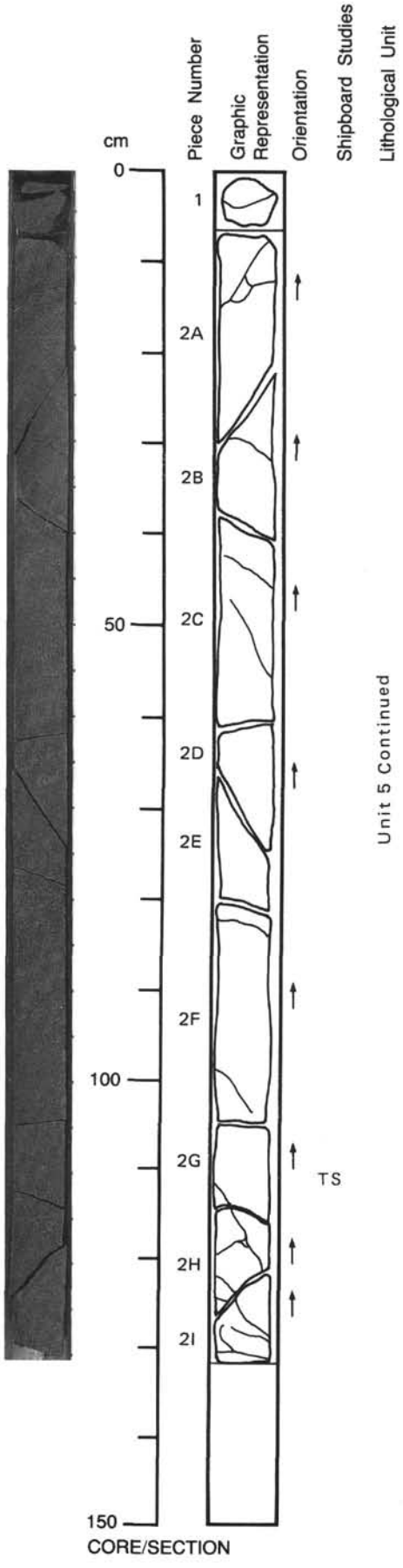


123-766A-53R-8

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 53R-8, 1A and 1B

CONTACTS: None, Unit 5 continued.
PHENOCRYSTS: Aphyric
GROUNDMASS: Uniformly medium-grained.
VESICLES: Scarce
COLOR: Medium gray.
STRUCTURE: Massive basalt/diabase dike.
ALTERATION: Slightly altered.
VEINS/FRACTURES: Same fracture pattern as in previous sections. Piece 1B (base): 5 mm wide vein filled with dusty white zeolite(?) and chlorite.

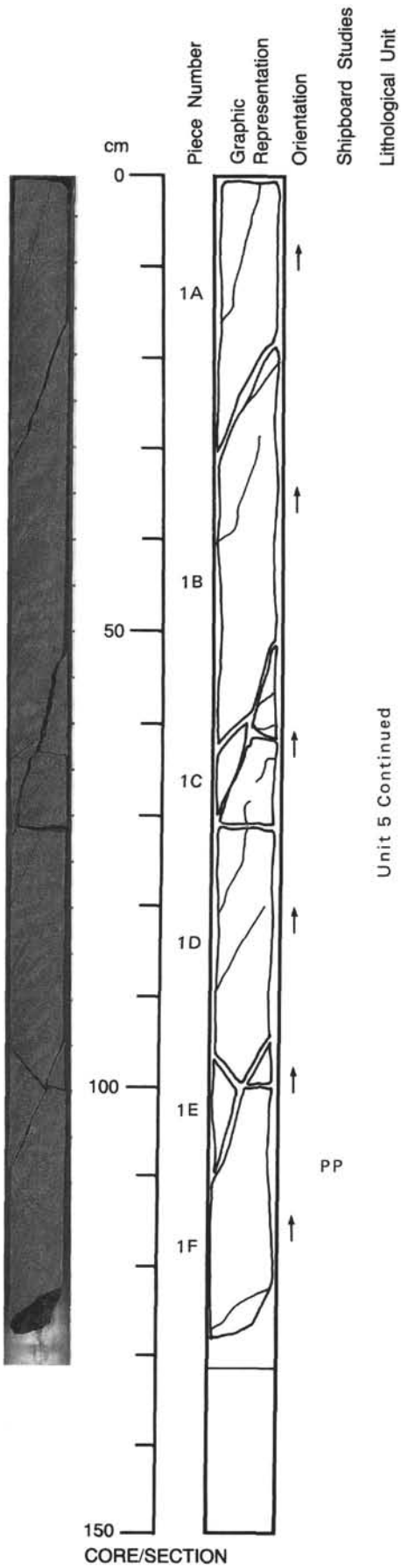


123-766A-54R-1

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 54R-1, 1-2I

CONTACTS: None, Unit 5 continued
PHENOCRYSTS: Aphyric. Occasional mm-sized clinopyroxene microphenocrysts, slightly larger than groundmass. A few coarse-grained patches of clinopyroxene (5 mm to 1 cm across) in Piece 2E-2F.
GROUNDMASS: Medium-grained.
VESICLES: Scarce
COLOR: Medium gray.
STRUCTURE: Massive basalt/diabase dike.
ALTERATION: Slightly altered.
VEINS/FRACTURES: Most veins <1 mm thick, except for one mm-sized vein of chlorite at the base of Piece 2I, and one of chlorite-calcite at top of Piece 2A. Fairly prominent fracture set, dipping ~60 degrees (some are shallower), present throughout section.

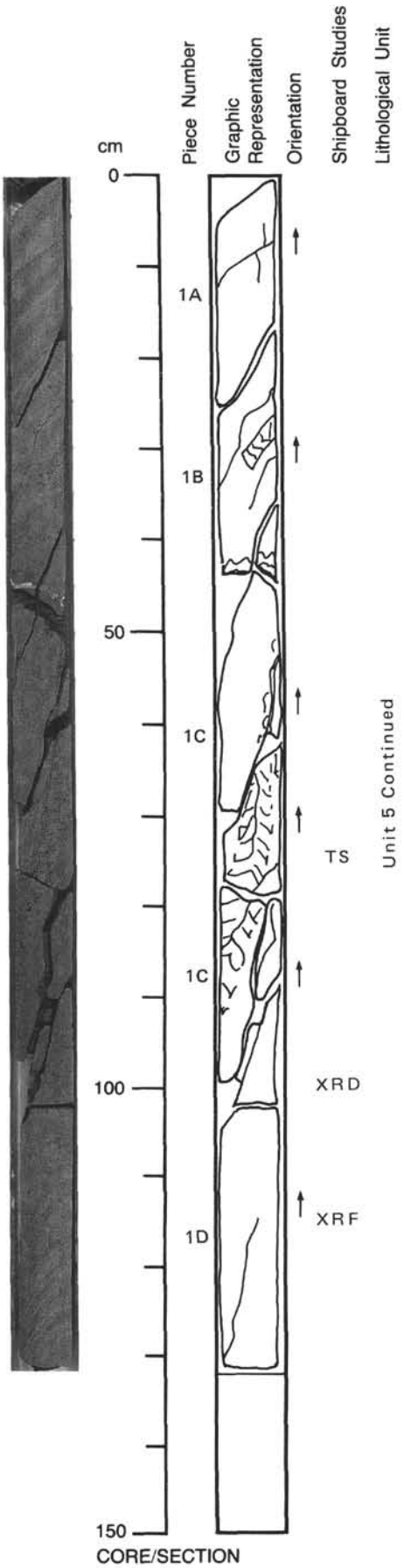


123-766A-54R-2

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 54R-2, 1A-1F

CONTACTS: None, Unit 5 continued
PHENOCRYSTS: A few well-shaped, blocky clinopyroxene crystals stick out from the groundmass.
GROUNDMASS: Medium-grained.
VESICLES: A single chlorite filled vesicle is present.
COLOR: Medium gray.
STRUCTURE: Massive basalt/diabase dike.
ALTERATION: Slightly altered.
VEINS/FRACTURES: 1 mm wide. Chlorite-filled veins in top of Pieces 1A and 1D. The fracture set seen in previous sections now dips ~70 degrees. Nice pyrite coatings on Piece 1C fracture surfaces.

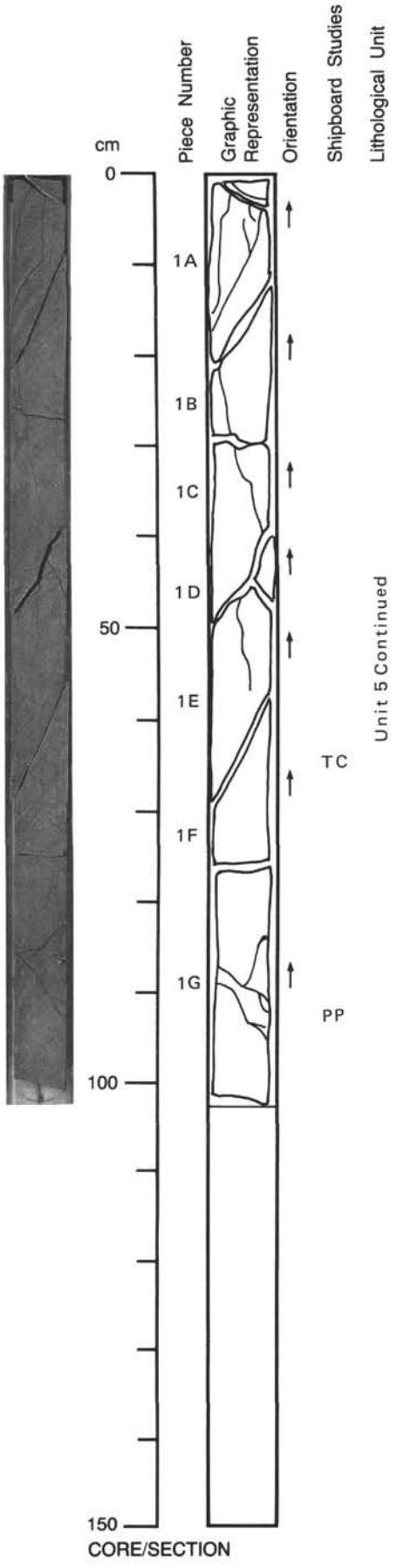


123-766A-54R-3

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 54R-3, 1A-1D

CONTACTS: None, Unit 5 continued
PHENOCRYSTS: Aphyric. Well crystallized jackstraw of clinopyroxene and plagioclase in Piece 1B and 1C, with clinopyroxene crystals up to 3 mm.
GROUNDMASS: Medium-grained; coarse-grained patches in Piece 1B and 1C, characterized by high magnetic susceptibility.
VESICLES: Scarce
COLOR: Medium gray.
STRUCTURE: Massive basalt/diabase dike.
ALTERATION: Slightly altered.
VEINS/FRACTURES: 1 mm sized veins through Pieces 1B and 1C. Splotchy vein of dusty white zeolite and pyrite at base of Piece 1B. Strange shadowy vein through Piece 1B.

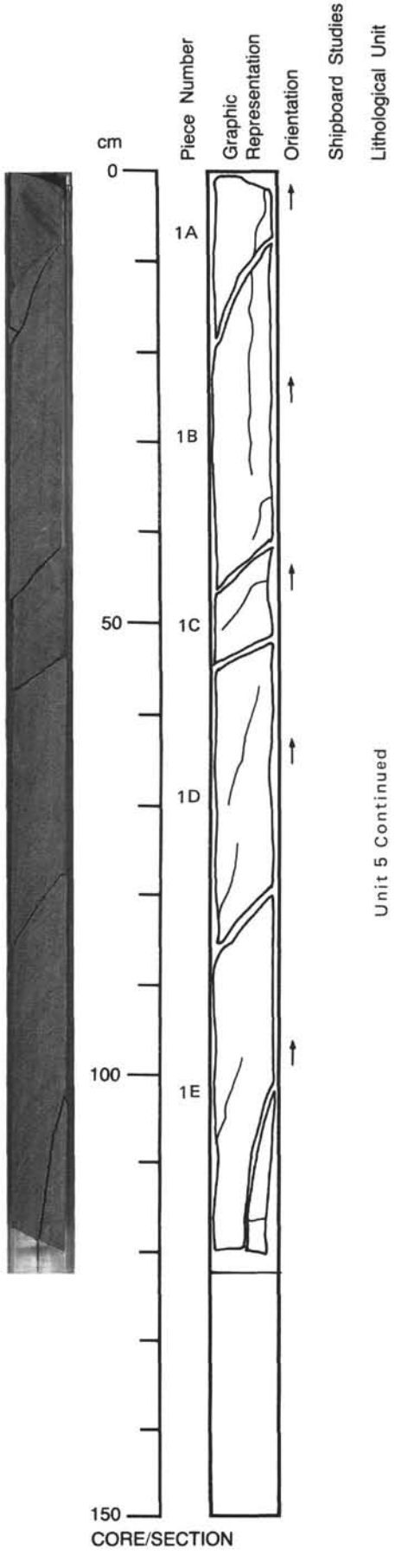


123-766A-54R-4

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 54R-4, 1A-1G

CONTACTS: None, Unit 5 continued
PHENOCRYSTS: Aphyric. Piece 1G: A few well-formed clinopyroxene crystals present.
GROUNDMASS: Medium-grained.
VESICLES: Scarce
COLOR: Medium gray.
STRUCTURE: Massive basalt/diabase dike.
ALTERATION: Slightly altered.
VEINS/FRACTURES: 3 mm wide dusty white zeolite vein at top of Piece 1A. Nice, mm-sized, chlorite veins cutting through Pieces 1A and 1G. 2 mm wide zeolite vein with pyrite splotches in Piece 1G.

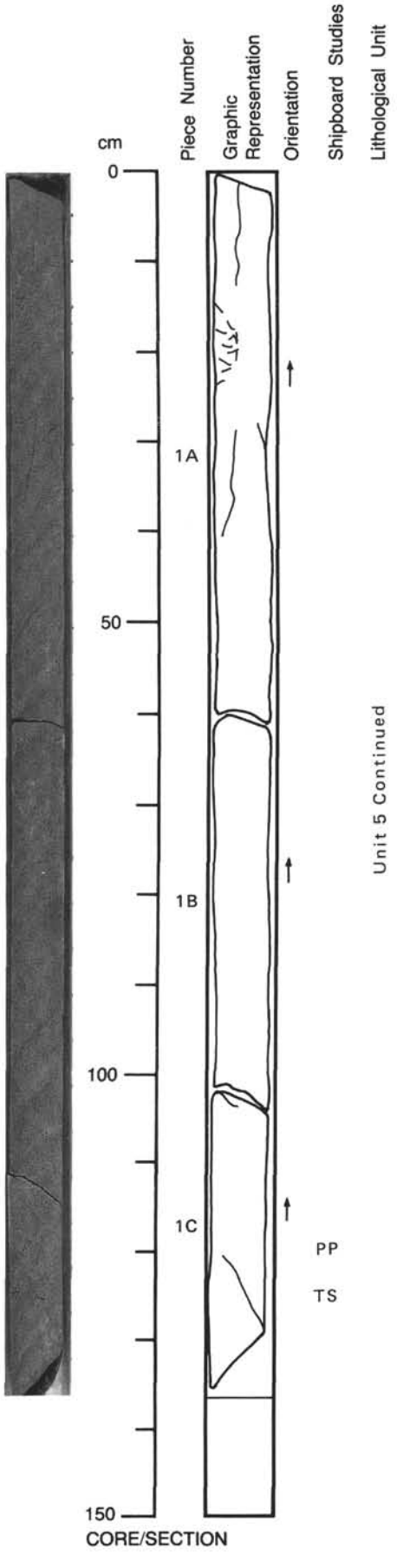


123-766A-54R-5

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 54R-5, 1A-1E

CONTACTS: None, Unit 5 continued
PHENOCRYSTS: Clinopyroxene crystals particularly prominent in Piece 1B, and are larger than in the previous section.
GROUNDMASS: Medium-grained.
VESICLES: Scarce
COLOR: Medium gray.
STRUCTURE: Massive basalt/diabase dike.
ALTERATION: Slightly altered.
VEINS/FRACTURES: Veins <1 mm wide.

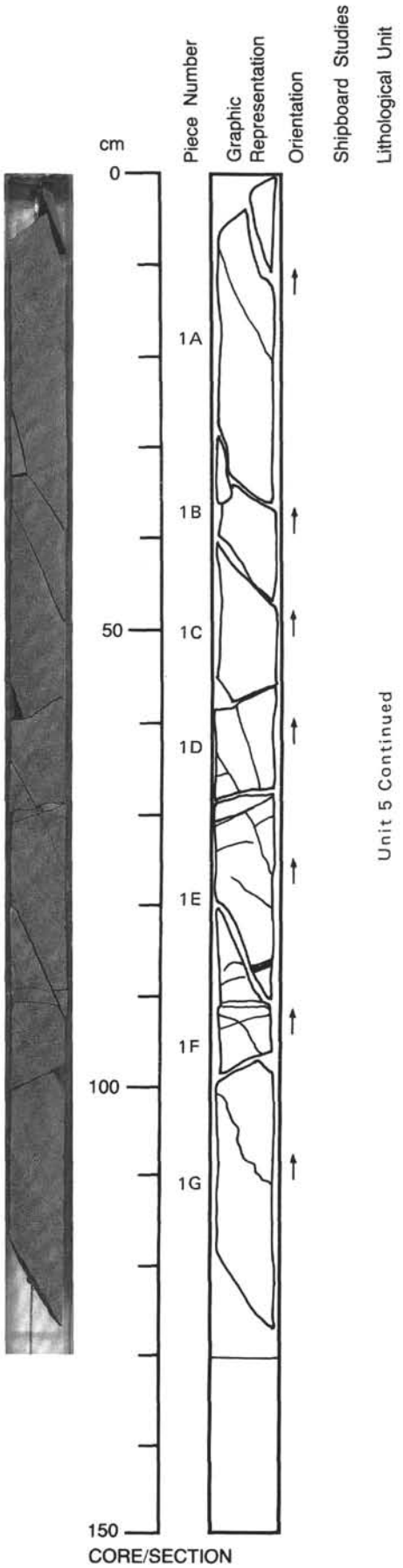


123-766A-54R-6

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 54R-6, 1A-1C

CONTACTS: None, Unit 5 continued
PHENOCRYSTS: Clinopyroxene clumps up to 2 mm in coarser-grained part.
GROUNDMASS: Medium-grained; Patch in Piece 1A is slightly coarser- grained.
VESICLES: A few mm-sized, chlorite-filled vesicles in Piece 1B and 1C.
COLOR: Medium gray.
STRUCTURE: Massive basalt/diabase dike.
ALTERATION: Slightly altered to fresh.
VEINS/FRACTURES: Very few fractures or veins in this section.

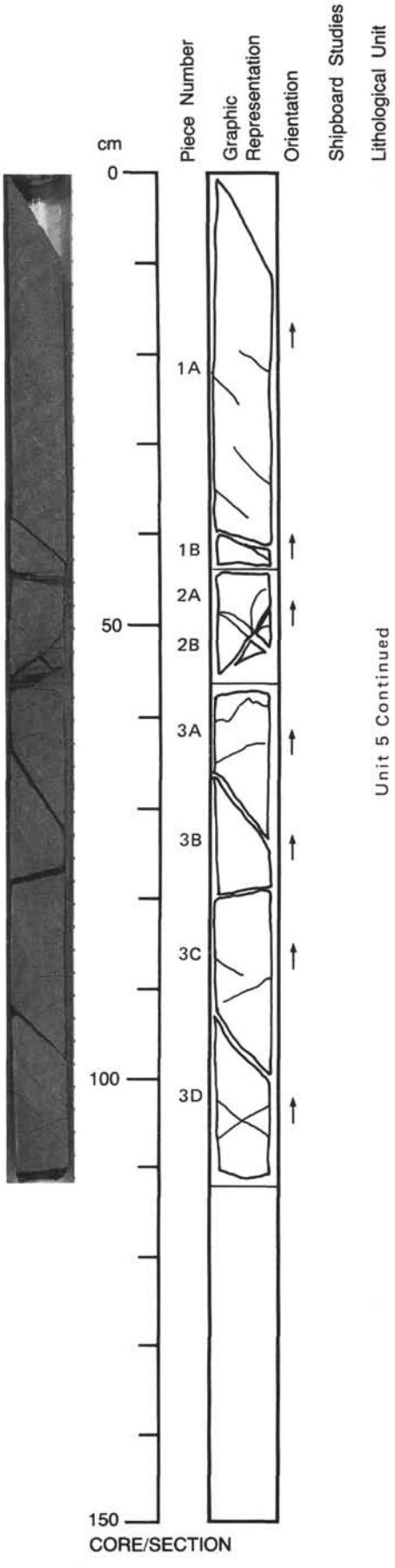


123-766A-54R-7

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 54R-7, 1A-1G

CONTACTS: None, Unit 5 continued
PHENOCRYSTS: Aphyric. One or more well-formed, slightly larger clinopyroxene crystals per piece.
GROUNDMASS: Medium-grained.
VESICLES: Possibly one or two vesicles per piece (difficult to distinguish between vesicles and phenocrysts.
COLOR: Medium gray.
STRUCTURE: Massive basalt/diabase dike.
ALTERATION: Slightly altered to fresh.
VEINS/FRACTURES: A steeply dipping, (65-70 degrees) fracture set is present throughout the section. Piece 1E (top); 2 mm thick vein filled with pyrite and calcite. A 1 mm thick vein below it is filled with chlorite. Both veins are subhorizontal. Piece 1E (bottom): 1 mm thick, subhorizontal, chlorite-filled vein. Pyrite coats fracture surfaces. In this section,the fractures dipping at 70 degrees are basically unfilled (<1 mm), while the subhorizontal fractures are wider and filled.

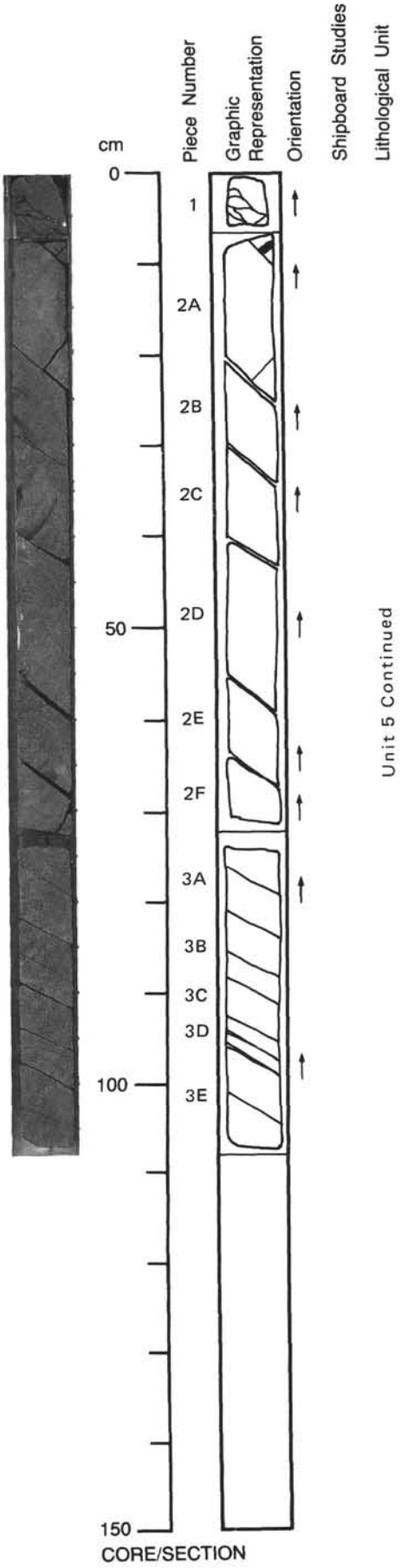


123-766A-54R-8

UNIT 5: APHYRIC MEDIUM-GRAINED DIABASE DIKE

Pieces 54R-8, 1A-3D

CONTACTS: None, Unit 5 continued.
PHENOCRYSTS: Aphyric
GROUNDMASS: Medium-grained; coarsening slightly in the middle of Piece 1A.
VESICLES: Scarce
COLOR: Medium gray.
STRUCTURE: Massive, featureless basalt/diabase dike.
ALTERATION: Slightly altered to fresh.
VEINS/FRACTURES: A few chlorite-filled veins, ~1 mm thick, are present through the base of Piece 2B and the top of Piece 3A. A set of shallower fractures, dipping at 45-55 degrees are present. Pyrite coats fracture surfaces

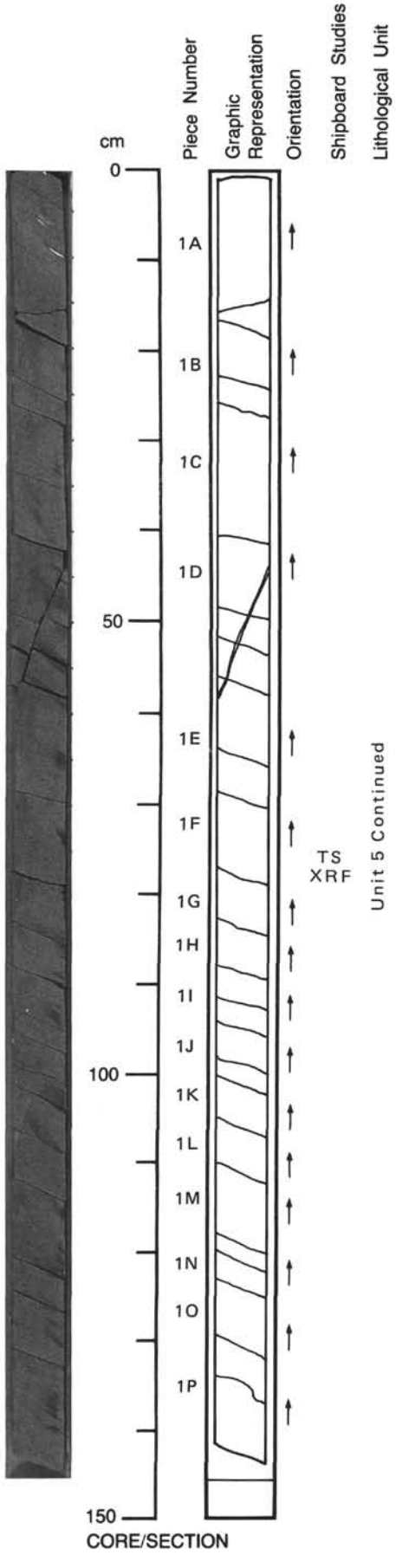


123-766A-55R-1

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 55R-1, 1-3E

CONTACTS: None, Unit 5 continued.
PHENOCRYSTS: Aphyric
GROUNDMASS: Uniformly medium-grained (1 mm).
VESICLES: <1 mm; Very rare, filled by chlorite.
COLOR: Gray
STRUCTURE: Massive basalt/diabase dike.
ALTERATION: Very fresh.
VEINS/FRACTURES: 1-3 mm thick, chlorite-calcite veins, in Piece 1 and at the top of Piece 2A. Thin chlorite veins along fractures. Regular, parallel fractures dipping 40 degrees to azimuth 180 degrees. The dip decreases to 30 degrees in Piece 3.

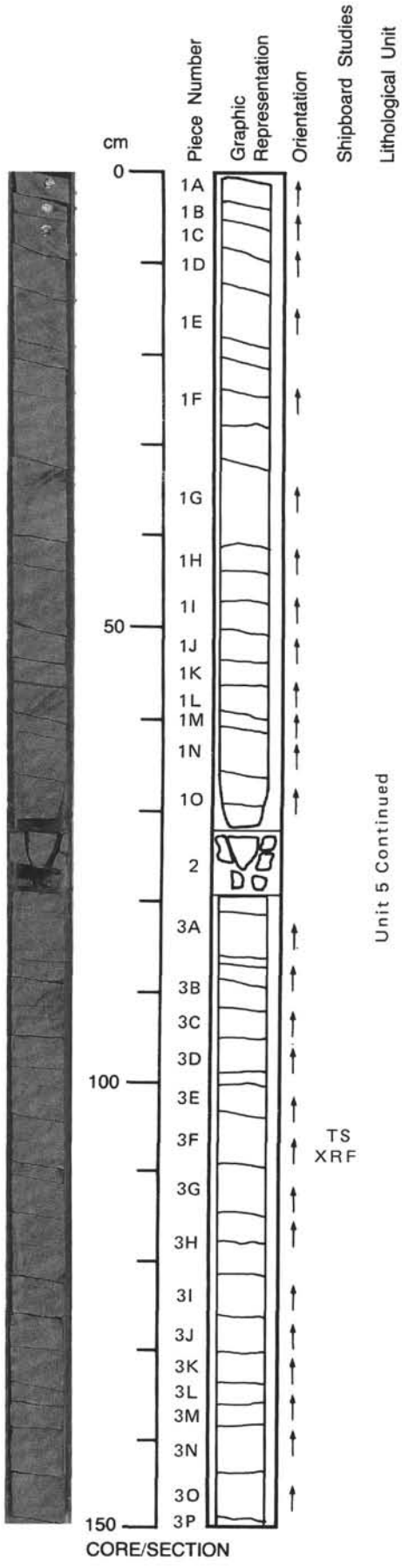


123-766A-55R-2

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 55R-2, 1A-1P

CONTACTS: None, Unit 5 continued.
PHENOCRYSTS: Aphyric
GROUNDMASS: Uniformly medium-grained (1 mm).
VESICLES: Very rare.
COLOR: Medium gray.
STRUCTURE: Massive, homogeneous, basalt/diabase.
ALTERATION: Fresh.
VEINS/FRACTURES: 1 mm thick, chlorite vein, in Piece 1A (15-16 cm). Sinuous thin calcite vein in Piece 1P (136-138 cm). Regularly spaced, parallel fractures dipping 15 degrees or 25 degrees to azimuth 180 degrees are developed.

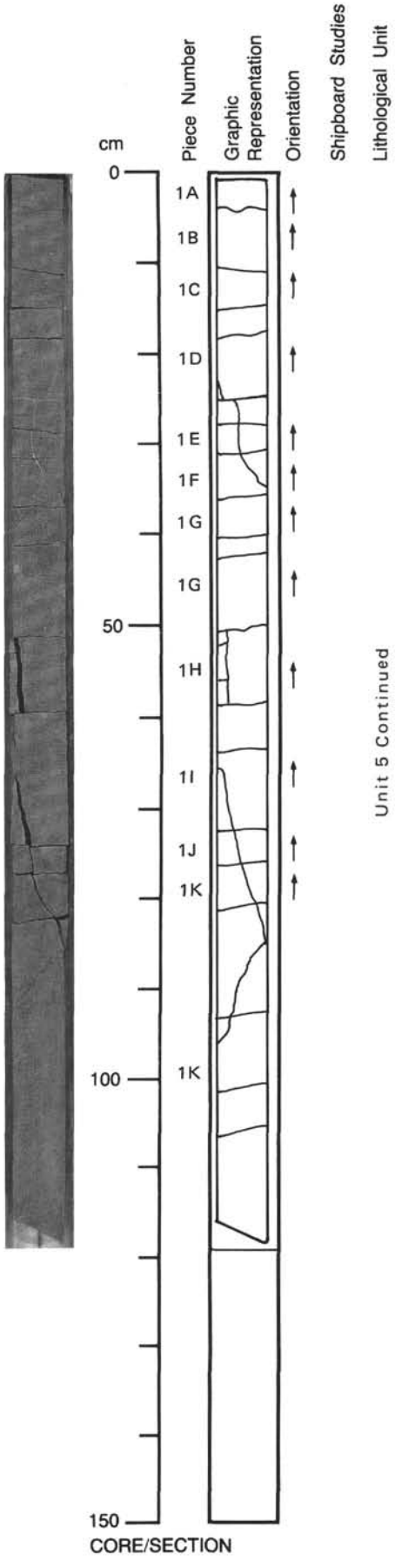


123-766A-55R-3

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 55R-3, 1A-3P

CONTACTS: None, Unit 5 continued.
PHENOCRYSTS: Aphyric
GROUNDMASS: Uniformly medium-grained (1 mm).
VESICLES: Very rare.
COLOR: Medium gray. Slightly lighter than Sections 55R-1 and -2, but as dark as the following sections.
STRUCTURE: Massive, homogeneous, basalt/diabase dike.
ALTERATION: Fresh.
VEINS/FRACTURES: No veins are present. Regular, parallel fractures are developed, azimuth 180 degrees, dip 15-5 degrees, decreasing downward. As 43 fractures are counted in 150-cm section, the average interval is 3.5 cm.

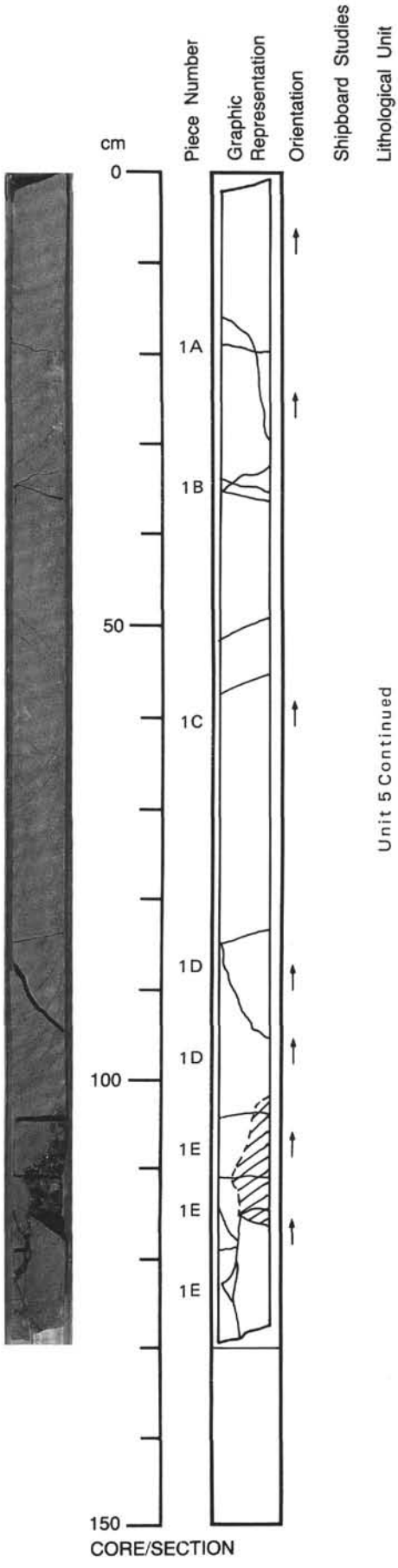


123-766A-55R-4

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 55R-4, 1A-1K

CONTACTS: None, Unit 5 continued.
PHENOCRYSTS: Aphyric
GROUNDMASS: Uniformly medium-grained (1 mm).
VESICLES: Very rare.
COLOR: Medium gray.
STRUCTURE: Massive, homogeneous, basalt/diabase dike.
ALTERATION: Fresh
VEINS/FRACTURES: <1 mm thick calcite veins, are present in Pieces 1D to 1F (azimuth 240 degrees dip 80 degrees). The former, steeply dipping vein, is cut and displaced by the later subhorizontal fracture (vein). Thin chlorite vein in Piece 1K (87-96 cm). Regular, parallel subhorizontal fractures are developed. Average interval is about 7 cm. Piece 1K (the bottom of this section) is relatively unfractured.

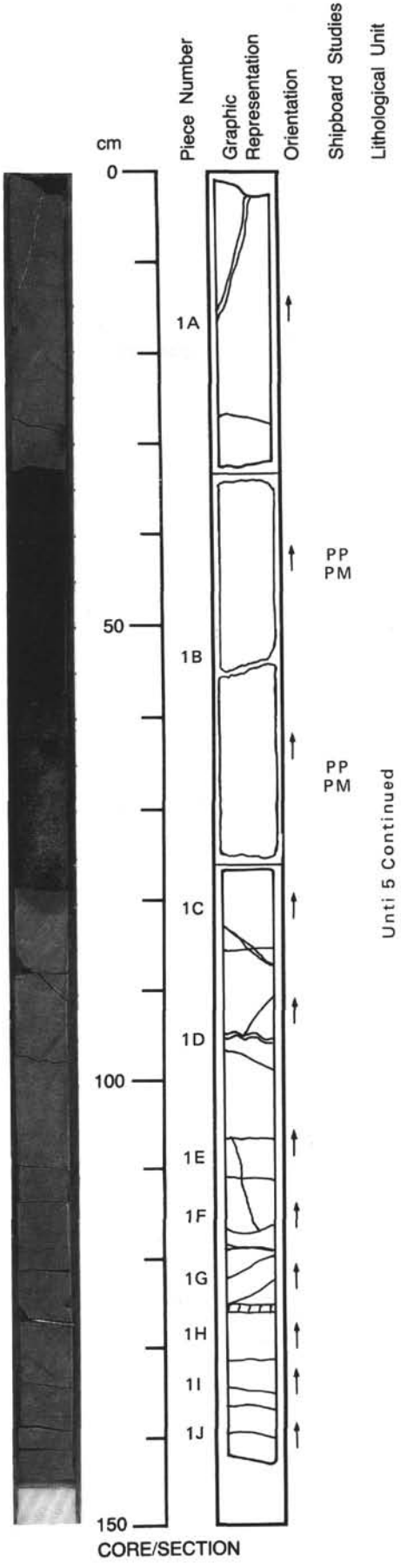


123-766A-55R-5

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 55R-5, 1A-E

CONTACTS: None, Unit 5 continued.
PHENOCRYSTS: Aphyric
GROUNDMASS: Uniformly medium-grained (1 mm).
VESICLES: Very rare.
COLOR: Medium gray.
STRUCTURE: Massive, homogeneous, basalt/diabase sill.
ALTERATION: Fresh
VEINS/FRACTURES: Quartz-chlorite vein with minor calcite is present in Piece 1E (123-130 cm). The piece is partly scraped off along a chlorite vein; there is some calcite and pyrite in the 107-119 cm interval. Fractures are scarce in this section. Some fractures dip 20 degrees to azimuth 0 degrees in Piece 1C. These may be members of the regional regular fracture set seen in previous sections.

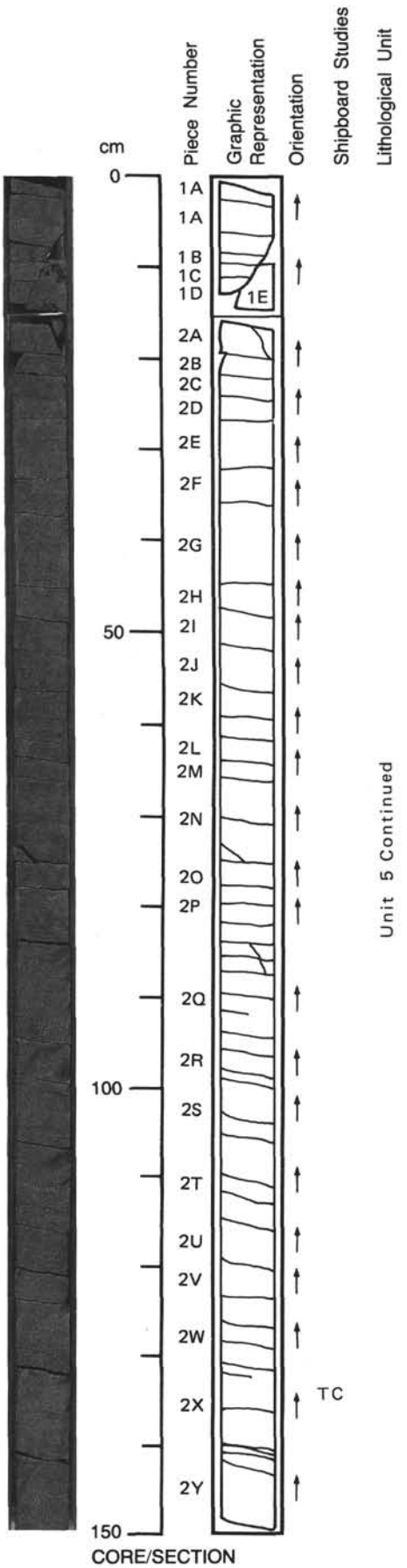


123-766A-55R-6

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 55R-6, 1A-1J

CONTACTS: None, Unit 5 continued
PHENOCRYSTS: Aphyric, Very rare plagioclase blades up to 1 cm long are visible.
GROUNDMASS: Uniformly medium-grained (1 mm).
VESICLES: Absent
COLOR: Medium gray.
STRUCTURE: Massive, homogeneous, basalt/diabase dike.
ALTERATION: Fresh
VEINS/FRACTURES: 2 mm thick calcite-epidote-chlorite-quartz vein, is present in Piece 1A (dip 70 degrees azimuth 0 degrees, curved). The upper and middle parts of the section are almost free from fractures, but regular, parallel, subhorizontal fractures are developed in the lower part (Pieces 1E to 1J). The walls of fractures are coated by black chlorite with some pyrite crystals.

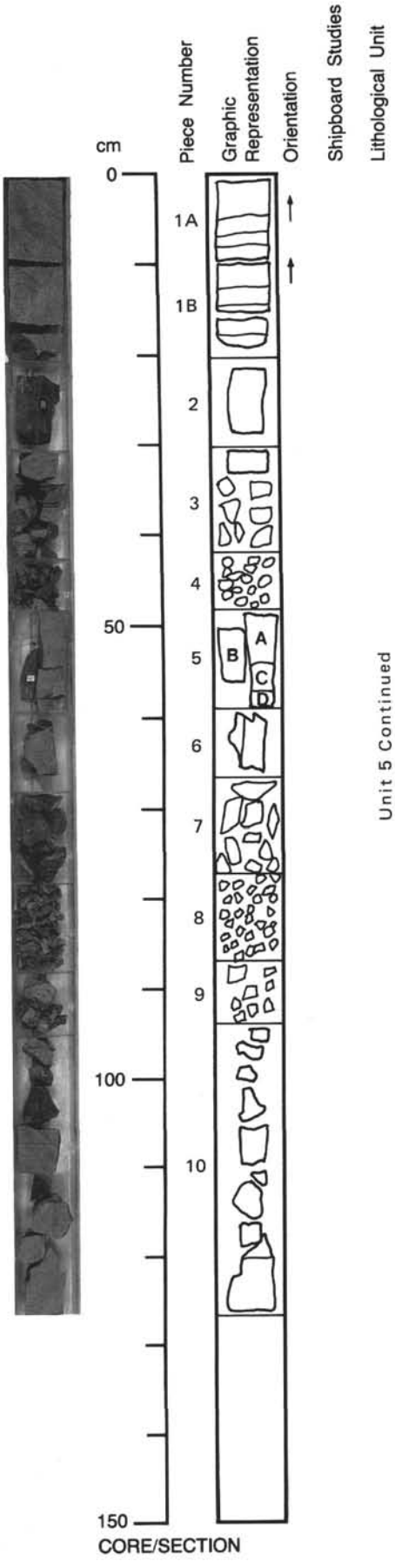


123-766A-55R-7

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 55R-7, 1A-2Y

CONTACTS: None, Unit 5 continued
PHENOCRYSTS: Aphyric, although several groundmass clinopyroxene crystals are as long as 3 mm and look like phenocrysts.
GROUNDMASS: Uniformly medium-grained.
VESICLES: Absent
COLOR: Medium gray.
STRUCTURE: Massive, homogeneous, basalt/diabase dike.
ALTERATION: Fresh
VEINS/FRACTURES: Very thin, calcite veins along parallel fractures. Subhorizontal, regular, parallel fractures are developed throughout the section. Most of them dip 10 degrees to azimuth 180 degrees. One fracture for every 2-3 cm. The walls of the fractures are coated by chlorite.



123-766A-55R-8

UNIT 5: APHYRIC BASALT/DIABASE DIKE

Pieces 55R-8, 1A-10

CONTACTS: None, Unit 5 continued.
PHENOCRYSTS: Aphyric
GROUNDMASS: Uniformly medium-grained (1 mm).
VESICLES: Absent
COLOR: Medium gray.
STRUCTURE: Massive basalt/diabase dike.
ALTERATION: Fresh
VEINS/FRACTURES: Thin calcite vein in Pieces 1A and 10. Subhorizontal, parallel fractures are developed in Piece 1. One fracture for every 2-3 cm. Pieces 5 and 10 also have fractures of the same kind. Other pieces are smaller than the fracture interval.

123-766A-5R-01 (Piece 1, 15-16 cm) OBSERVER: ISH WHERE SAMPLED: Pebble in sediments

ROCK NAME: Sparsely plagioclase-olivine phyric vesicular basalt

GRAIN SIZE: Fine-grained (0.2 mm)

TEXTURE: Hyalophitic, spherulitic

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	0	0.3	0.6		Euhedral	Completely replaced by clays and calcite.
Plagioclase	0	0.9	0.5-1.0		Subhedral bulky	Completely replaced by clays and zeolite.
GROUNDMASS						
Plagioclase	1.5	2	0.1-0.5		Laths, forks	Partly replaced by clay.
Clinopyroxene	0.5	0.5	0.1-0.2		Subhedral tabular	Fresh.
Mesostasis	57	87				Spherulitic.

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Clays	30	Plagioclase, mesostasis	Dirty yellow brown clays.
Carbonate	10	Vesicles, olivine	
Zeolites	1		

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE
Vesicles	9.5	Even	0.5-4.5	Calcite	Irregular, amoeboid

COMMENTS: Thin section #259.

123-766A-9R-05 (Piece 1, 51-53 cm) OBSERVER: ISH WHERE SAMPLED: Pebble in sediments

ROCK NAME: Highly plagioclase-olivine phyric basalt

GRAIN SIZE: Very fine grained (0.2 mm)

TEXTURE: Intersertal

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	0	1.5	0.5-1.0		Euhedral-subhedral-equant	Completely replaced by clays and calcite.
Plagioclase	10	16	0.5-2.0		Subhedral-anhedral-equant bulky	Partly replaced by clays and zeolites.
Spinel	trace	trace	< 0.1		Euhedral	Inclusions in olivine pseudomorph opaque.
GROUNDMASS						
Plagioclase	25	30	0.1-0.3		Laths	Partly replaced by clay.
Mesostasis	0	49				Completely replaced by clays.

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Clays	59	Olivine, plag, mesostasis, vesicles	Dirty yellowish clays.
Carbonate	2	Vesicles, olivine, calcite	
Zeolites	4	Plagioclase	

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	3.5	Even	0.7-1.5	Ilmenite, Ti-augite, plagioclase	Spherical	Segregation vesicles, 10/section.

COMMENTS: Pseudomorphs of dendritic crystals in meniscus-shaped marginal parts, and yellowish clays, calcite or void space in central part. Thin section #261.

123-766A-9R-05 (Piece 1, 63-65 cm) OBSERVER: ISH WHERE SAMPLED: Pebble in sediments

ROCK NAME: Moderately plagioclase-olivine phyric basalt

GRAIN SIZE: Very fine-grained (0.1 mm)

TEXTURE: Intersertal

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	0	1	0.5-0.9		Euhedral-subhedral-equant	Completely replaced by clays.
Plagioclase	3	8.5	0.5-2.0		Subhedral tabular-bulky	Mostly replaced by zeolites and clays.
Spinel	0	trace	< 0.1		Euhedral	Inclusion in olivine replaced by hematite.
GROUNDMASS						
Plagioclase	15	30	0.05-0.2		Laths	Partly replaced by clays and zeolites.
Mesostasis	0	58				Completely replaced by clays.
Fe-Ti oxide	2	2	< 0.05		Subhedral	

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Clays	70	Mesostasis, olivine, plagioclase	Dirty yellowish clays.
Carbonate	trace	Olivine	
Zeolites	10	Plagioclase	

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE
Vesicles	0.4	Scarce	0.6	Void	Spherical

COMMENTS: Thin section #260.

123-766A-9R-05 (Piece 1, 74-76 cm) OBSERVER: ISH WHERE SAMPLED: Pebble in sediments

ROCK NAME: Moderately plagioclase-olivine phyric basalt

GRAIN SIZE: Fine-grained (0.5 mm)

TEXTURE: Intersertal

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	0	1.7	0.7-1.3		Anhedral-subhedral-equant	Replaced by calcite and clays.
Plagioclase	0.4	2.1	1.0-1.2		Subhedral-tabular-bulky	Mostly replaced by clays.
Clinopyroxene	0.05	0.05	0.3		Anhedral, rounded	Fresh.
GROUNDMASS						
Plagioclase	65	70	0.2-0.9		Laths	
Clinopyroxene	1	1	0.05-0.2		Anhedral	
Mesostasis	0	22				
Ilmenite	3	3			Subhedral	Elongated ilmenite.

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Clays	30	Olivine, mesostasis, plagioclase	Dirty yellow-brown clays.
Carbonate	1	Calcite	

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	0					Non-vesicular.

COMMENTS: XRF analysis available. Segregation vesicle, 1.8 mm in size, is present, completely spherical. An irregular-shaped clay patch, 0.5 mm in size, is placed in the center of the segregation vesicle. Thin section #257.

123-766A-48R-07 (Piece 1E, 73-76 cm) OBSERVER: ISH WHERE SAMPLED: Sill margin, unit 1

ROCK NAME: Aphyric basalt

GRAIN SIZE: Very fine-grained (0.2 mm)

TEXTURE: Hyalophitic, patchy

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	0.2	0.4	0.5-1.1		Subhedral equant	Fresh, center of some crystals are replaced by clays.
Clinopyroxene	0.1	0.1	0.3		Anhedral granular	Fresh.
GROUNDMASS						
Plagioclase	10	10	0.1-0.6		Laths, needles	Fresh, concentrated in patches.
Clinopyroxene	1	1	0.05-0.1		Anhedral granular	Fresh.
Mesostasis	82	88			Cryptocrystalline	

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Clays	5	Mesostasis, vesicles, plagioclase	
Carbonate	2	Cavities, calcite	

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	1.3	Even	0.2-1.0	Greenish brown clays	Spherical	Radial structures are developed. Most of the vesicles are segregation vesicles.

COMMENTS: There are irregular cavities, filled with calcite. They are aligned along a line. Each cavity is up to 7 mm long and up to 1.5 mm wide. Meniscus fractures are also developed. Thin section #284.

123-766A-49R-01 (Piece 3A, 9-13 cm) OBSERVER: ISH WHERE SAMPLED: Sill margin, unit 1

ROCK NAME: Highly plagioclase-olivine-clinopyroxene phyric basalt

GRAIN SIZE: Very fine-grained (0.2 mm)

TEXTURE: Intersertal, patchy

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	0	1.8	0.5-1.1		Euhedral-subhedral-equant	Completely replaced by clays.
Plagioclase	8.7	8.7	0.5-2.0		Subhedral equant	Fresh.
Clinopyroxene	0.1	0.1	0.3-0.6			
GROUNDMASS						
Plagioclase	30	30	0.1-0.3		Laths, needles	Fresh.
Clinopyroxene	15	15	0.05-0.3		Anhedral granular	Fresh, partly subophitic.
Mesostasis	37	40				Cryptocrystalline.
Fe-Ti oxide	4	4	0.1-0.2		Elongated	Ilmenite(?)

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Clays	5	Vesicles, olivine, mesostasis	Dirty brownish clays.
Carbonate	0.5	Vesicles, olivine, calcite	

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	0.3	Even	0.3-0.5	Calcite, clays	Spherical	Dirty brown clay or radial calcite.

COMMENTS: Thin section #287.

123-766A-49R-04 (Piece 2H, 106-108 cm) OBSERVER: ISH WHERE SAMPLED: Sill margin, unit 3

ROCK NAME: Aphyric basalt (or diabase)

GRAIN SIZE: Fine-grained (0.3 mm)

TEXTURE: Intergranular/variolitic

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	0.1	0.1	0.8		Anhedral equant	Fresh.
GROUNDMASS						
Plagioclase	50	50	0.1-0.5		Subhedral laths	
Clinopyroxene	40	40	0.1-0.2		Anhedral, granular, subophitic	
Mesostasis	3	8				Cryptocrystalline. Mostly replaced by clays.
Fe-Ti oxide	2	2			Subhedral	

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Clays	3	Mesostasis	Green clays.
Carbonate	1	Vesicles, mesostasis.	

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	0.3	Even	0.2-0.4	Calcite	Spherical	Some are irregular.

COMMENTS: Thin section #288. XRF analysis available.

123-766A-9R-05 (Piece 1, 92-95 cm) OBSERVER: ISH WHERE SAMPLED: Pebble in sediments

ROCK NAME: Moderately plagioclase phyric basalt

GRAIN SIZE: Fine-grained (0.4 mm)

TEXTURE: Intersertal

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	4	4.6	1.0-3.0	Labradorite	Subhedral bulky	Fresh, partly replaced by clays occur in two patches of glomerocrysts.
GROUNDMASS						
Plagioclase	40	50	0.2-0.6		Laths	Partly replaced by clays.
Clinopyroxene	20	25	0.1-0.2		Anhedral irregular-subophitic	Mostly fresh, partly replaced by clays.
Mesostasis	9	18				
Fe-Ti oxide	2	2	0.05-0.1		Subhedral	

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Clays	25	Plagioclase, cpx, mesostasis, vesicles	Orange yellow highly birefringent clays.

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	0.3	Even	0.2-0.5	Mostly void	Spherical	Partly filled by clays. 4/thin section.

COMMENTS: Thin section #255.

123-766A-48R-07 (Piece 1B, 24-27 cm) OBSERVER: ISH WHERE SAMPLED: Sill margin, unit 1

ROCK NAME: Sparsely plagioclase phyric basalt

GRAIN SIZE: Very fine grained (0.2 mm)

TEXTURE: Intersertal

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	0.1	1.1	2.7		Euhedral bulky	Core is completely replaced by clays.
GROUNDMASS						
Plagioclase	40	50	0.05-0.3		Short laths	
Clinopyroxene	trace	trace	0.3		Anhedral irregular	Fresh.
Mesostasis	31	45				Cryptocrystalline.
Fe-Ti oxide	3	3	0.05-0.1		Euhedral-subhedral-equant	

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Clays	25	Plagioclase, mesostasis, vesicles	
Carbonate	0.5	Vesicles	

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	1	Even	0.6-0.8	Quench crystals, clay	Spherical	Segregation vesicles. Some are filled by calcite.

COMMENTS: A pyrite vein, 1 mm thick cuts the central part. XRF analysis available. Thin section #285.

123-766A-48R-07 (Piece 1D, 61-63 cm) OBSERVER: ISH WHERE SAMPLED: Sill center, unit 1

ROCK NAME: Aphyric basalt

GRAIN SIZE: Very fine grained (0.2 mm)

TEXTURE: Intersertal

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	0	0.1	0.5-1.3		Subhedral tabular	Completely replaced by calcite.
Plagioclase	0.1	0.1	0.5-1.0		Subhedral tabular-bladed	Fresh.
GROUNDMASS						
Plagioclase	40	40	0.1-0.4		Short laths	Fresh.
Clinopyroxene	10	10	0.05-0.2		Anhedral granular	Fresh.
Mesostasis	15	44				Mostly replaced by clays.
Fe-Ti oxide	2	2			Subhedral	

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Clays	30	Mesostasis	Dirty brownish-yellowish green clays.
Carbonate	2	Vesicles, olivine	
Pyrite	1	Vesicles	

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	3	Uneven	0.2-1.0	Calcite pyrite	Spherical or irregular	Concentrated in some places.

COMMENTS: Segregation vesicles: size 0.6-0.4 mm, spherical. Quench texture, replaced by dark colored clay minerals. Five in number. Thin section #283.

123-766A-50R-01 (Piece 7, 53-55 cm) OBSERVER: ISH WHERE SAMPLED: Sill margin, unit 4

ROCK NAME: Aphyric basalt (altered)

GRAIN SIZE: Very fine-grained (0.2 mm)

TEXTURE: Hyalophitic (spherulitic)

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	0	0.4	0.5-0.7		Subhedral equant	Completely replaced by zeolites and clays.
GROUNDMASS						
Plagioclase	0	10	0.1-0.4		Laths	Completely replaced by clays and zeolites.
Mesostasis	0	87				Microcrystalline, spherulitic. Completely replaced by clays.

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Clays	92	Vesicles, plagioclase, mesostasis	Dirty yellow brown clays.
Zeolites	8	Plagioclase	Birefringent. Typically replacing plagioclase.
Pyrite	0.2		

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	2.5	Even	0.6-2.0	Clays	Spherical or amoeboid	10/square cm.

COMMENTS: A clay mineral vein, 0.1 mm thick, cuts the center of thin section. Thin section #293.

123-766A-50R-01 (Piece 9, 68-70 cm) OBSERVER: ISH WHERE SAMPLED: Sill margin, unit 4

ROCK NAME: Aphyric basalt

GRAIN SIZE: Very fine-grained (0.2 mm)

TEXTURE: Hyalophitic

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	0.1	0.2	0.6		Euhedral, axe-like	Partly replaced by clays.
GROUNDMASS						
Plagioclase	5	5	0.1-0.6		Laths	
Mesostasis	89	92				Partly spherulitic, cryptocrystalline.

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Clays	6	Vesicles, plagioclase, mesostasis	Pale yellow-colorless clay minerals.
Pyrite	0.2		

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	3	Even	0.4-1.1	Clays	Spherical, ovoidal	Pale yellow-colorless clays. (17/thin section).

COMMENTS: Thin section #291. XRF analysis available.

123-766A-50R-02 (Piece 1B, 26-28 cm) OBSERVER: ISH WHERE SAMPLED: Sill margin, unit 4

ROCK NAME: Aphyric basalt

GRAIN SIZE: Very fine-grained (0.2 mm)

TEXTURE: Intersertal, patchy

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	0.2	0.2	0.5-0.7		Subhedral, tabular	Fresh.
GROUNDMASS						
Plagioclase	30	30	0.1-0.5		Needles, laths	Rich in segregation vesicles.
Clinopyroxene	15	15	0.05-0.1		Anhedral	
Mesostasis	44	46				Patchy, quench texture is developed in fine-grained patches and segregation vesicles.
Fe-Ti oxide	5	5	0.05-0.1		Elongated	Ilmenite(?)

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Clays	5	Vesicles, mesostasis	Dirty brownish green clays.
Carbonate	1	Vesicles	

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	3.6	Even	0.3-1.2	Clays, calcite	Spherical	Segregation vesicles with calcite and/or brown clay filling. Clays and calcite occupy less than half of the total vesicles in volume.

COMMENTS: Thin section #292.

123-766A-51R-02 (Piece 1A, 8-10 cm) OBSERVER: ISH WHERE SAMPLED: Sill margin, unit 5

ROCK NAME: Aphyric basalt (or diabase)

GRAIN SIZE: Fine-grained (0.4 mm)

TEXTURE: Intergranular

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
Plagioclase	45	45	0.2-0.7		Laths, blades	Fresh.
Clinopyroxene	40	40	0.1-0.3	Augite	Anhedral	2V(+)35 degrees. Fresh.
Mesostasis	6	12				Mostly replaced by clays.
Fe-Ti oxide	3	3			Subhedral	

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Clays	6	Vesicles, mesostasis	Brown dirty clays minerals.

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	0.3	Even	0.4-1.2	Brown clays	Spherical	Segregation vesicles.

COMMENTS: A part of the slide glass is broken and missing. Thin section #289. XRF analysis available.

123-766A-51R-05 (Piece 1F, 118-120 cm) OBSERVER: ISH WHERE SAMPLED: Sill margin, unit 5

ROCK NAME: Aphyric diabase

GRAIN SIZE: Fine-grained (0.9 mm)

TEXTURE: Intergranular/subophitic

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
Plagioclase	50	50	0.2-1.5	An60	Subhedral tabular	
Clinopyroxene	40	40	0.1-0.4	Augite	Anhedral granular subophitic	Large crystals are preferentially altered. They may be subcalcic.
Mesostasis	0	7	0.05		Intersertal	
Fe-Ti oxide	3	3	0.4		Subhedral	Partly altered to clays.

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Clays	7	Mesostasis	Dense brown clays.

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	0					Non-vesicular.

COMMENTS: Thin section #290. XRF analysis available.

123-766A-52R-01 (Piece 1C, 25-27 cm) OBSERVER: ISH WHERE SAMPLED: Sill center, unit 5

ROCK NAME: Aphyric diabase

GRAIN SIZE: Fine-grained (0.9 mm)

TEXTURE: Intergranular/subophitic

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
Plagioclase	50	50	0.4-1.3		Subhedral, tabular	Fresh, mostly zoned.
Clinopyroxene	40	40			Anhedral granular subophitic	Fresh.
Mesostasis	0	7			Intersertal	Completely replaced by clays, sometimes makes patches as large as 3 mm, irregular shape.
Fe-Ti oxide	0	3	0.1-1.0		Subhedral	

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Clays	7	Mesostasis	Dirty dark brown clays.
Clays	3		
Pyrite	0.3		At center of the irregular patches of mesostasis.

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	0					Non-vesicular.

COMMENTS: Groundmass includes fine-grained irregular patch, 2 mm in size. Thin section #301.

123-766A-52R-04 (Piece 1A, 47-49 cm) OBSERVER: ISH WHERE SAMPLED: Sill center, unit 5

ROCK NAME: Aphyric diabase

GRAIN SIZE: Fine-grained (0.8 mm)

TEXTURE: Subophitic

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
Plagioclase	50	50	0.5-1.2		Subhedral tabular-bladed	Fresh.
Clinopyroxene	42	42	0.2-0.4		Anhedral subophitic	Fresh, rarely replaced by clays. Colorless.
Fe-Ti oxide	4	4	0.05-0.3		Subhedral	
Mesostasis	0	4				Completely altered by clays.

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Clays	4		Dirty dense brown clays.

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	0					Non-vesicular.

COMMENTS: Thin section #300. XRF analysis available.

123-766A-52R-06 (Piece 1B, 4-6 cm) OBSERVER: ISH WHERE SAMPLED: Sill center, unit 5

ROCK NAME: Aphyric diabase

GRAIN SIZE: Medium-grained (1.0 mm)

TEXTURE: Subophitic

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
Plagioclase	46	46	0.5-1.2		Subhedral tabular	Fresh.
Clinopyroxene	40	40	0.2-0.6	Augite	Anhedral subophitic	Fresh. 2V(+)30 degrees. Subcalcic.
Quartz	0.3	0.3			Euhedral	In mesostasis.
Fe-Ti oxide	3	3			Subhedral	
Mesostasis	9	10				Brown intersertal patch. Possibly representing residual liquid, including many iron oxides. Partly replaced by clays. Groundmass: Several fine-grained variolitic patches exist.

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Clays	1	Intersertal glass	Dirty dense brown.
Pyrite	0.2		

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	0					Non-vesicular.

COMMENTS: Thin section #299. XRF analysis available.

123-766A-53R-01 (Piece 1F, 82-85 cm) OBSERVER: ISH WHERE SAMPLED: Sill center, unit 5

ROCK NAME: Aphyric diabase (coarse/fine contact)

GRAIN SIZE: Fine-grained (0.5 mm-0.9 mm)

TEXTURE: Intergranular

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
(COARSE-GRAINED PART)						
Plagioclase	45	45	0.2-1.4		Subhedral laths-tabular	
Clinopyroxene	35	35	0.1-0.5		Anhedral granular	
Fe-Ti oxide	2	4	0.05-0.3		Euhedral-subhedral	Partly skeletal.
Mesostasis	16	16				Interstitial. Dense brown partly replaced by clays.
(FINE-GRAINED PART)						
Plagioclase	50	50	0.1-1.3		Subhedral tabular	Fresh.
Clinopyroxene	40	40	0.1-0.4		Anhedral granular	Fresh.
Fe-Ti oxide	2	2	0.05-0.3		Subhedral	Fresh.
Mesostasis	8	8				Intersertal.

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Clays	2		

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	0					Non-vesicular.

COMMENTS: Very fine-grained zone, 0.3 mm in grain size and 1.0 to 1.5 mm in width, is present between the two parts. The very fine-grained zone is a straight texture. Thin section #310.

123-766A-53R-03 (Piece 1E, 91-93 cm) OBSERVER: ISH WHERE SAMPLED: Sill center, unit 5

ROCK NAME: Aphyric diabase

GRAIN SIZE: Fine-grained (0.6 mm)

TEXTURE: Intergranular/subophitic

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
Plagioclase	50	50	0.3-1.5		Subhedral tabular-bladed	Fresh.
Clinopyroxene	40	40	0.1-0.4		Anhedral granular-subophitic	Fresh.
Quartz	0.5	0.5	0.1-0.4		Subhedral-anhedral	Occurs in interstitial glass.
Mesostasis	1	5				
Fe-Ti oxide	4	4	0.1-0.3		Euhedral-subhedral.	

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Clays	2	Mesostasis	
Carbonate	2	Mesostasis	

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	0					Non-vesicular

COMMENTS: Thin section #305. XRF analysis available.

123-766A-52R-05 (Piece 2D, 93-96 cm) OBSERVER: ISH WHERE SAMPLED: Sill center, unit 5

ROCK NAME: Aphyric diabase, (fine/coarse contact)

GRAIN SIZE: Fine-grained/medium-grained (1.3 mm)

TEXTURE: Intergranular/subophitic

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
(COARSE-GRAINED PART)						
Plagioclase	46.5	46.5	0.4-2.3		Subhedral tabular-bladed	Fresh.
Clinopyroxene	34.1	34.1	0.3-3.4		Anhedral subophitic	Fresh.
Mesostasis	11.6	11.6				Devitrified glass, cryptocrystalline.
Fe-Ti oxide	7.8	7.8	0.1-0.5		Subhedral	
(FINE-GRAINED PART)						
Plagioclase	50	50	0.2-0.6		Euhedral laths	
Clinopyroxene	37	37	0.1-0.3		Anhedral granular	
Fe-Ti oxide	5	5	0.1		Subhedral	
Mesostasis	8	8				

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	0					Non-vesicular.

COMMENTS: Thin section #302.

123-766A-53R-04 (Piece 1G, 75-77 cm) OBSERVER: ISH WHERE SAMPLED: Sill center, unit 5

ROCK NAME: Aphyric diabase

GRAIN SIZE: Fine-grained (0.9 mm)

TEXTURE: Intergranular

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
Plagioclase	50	50	0.2-1.5		Subhedral tabular-bladed	Fresh.
Clinopyroxene	40	40	0.1-0.6		Anhedral granular-subophitic	Fresh.
Mesostasis	4	6				Interstitial, cryptocrystalline.
Fe-Ti oxide	4	4	0.05-0.3		Subhedral	

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Clays	2	Mesostasis	

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	0					Non-vesicular.

COMMENTS: Thin section #306. XRF analysis available.

123-766A-53R-07 (Piece 1B, 6-9 cm) OBSERVER: ISH WHERE SAMPLED: Sill center, unit 5

ROCK NAME: Aphyric diabase

GRAIN SIZE: Fine-grained (0.7 mm)

TEXTURE: Intergranular

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	0.6	0.6	2.2		Subhedral bulky	
GROUNDMASS						
Plagioclase	50	50	0.3-1.2		Subhedral tabular	Fresh.
Clinopyroxene	40	40	0.1-0.4		Anhedral-granular	Fresh.
Fe-Ti oxide	4	4	0.1-0.4		Subhedral-euhedral	
Mesostasis	6	6			Interstitial	

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Pyrite	0.2	In mesostasis.	

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	0					Non-vesicular.

COMMENTS: Thin section #311. Groundmass includes fine-grained clots.

123-766A-54R-01 (Piece 2G, 109-110 cm) OBSERVER: ISH WHERE SAMPLED: Sill center, unit 5

ROCK NAME: Aphyric diabase

GRAIN SIZE: Medium grained (1.5 mm)

TEXTURE: Subophitic

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
Plagioclase	40	40	0.5-3.2		Subhedral tabular	Fresh.
Clinopyroxene	30	30	0.2-5.3		Anhedral subophitic	Pale brown, fresh. Some long crystals with rugged surfaces.
Mesostasis	17	20				Devitrified glass, partly replaced by clays.
Fe-Ti oxide	10	10	0.2-0.8		Subhedral	

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Clays	3	Mesostasis	

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	0					Non-vesicular.

COMMENTS: Thin section #303. Groundmass includes fine-grained patches, 2 mm in size.

123-766A-54R-03 (Piece 1, 76-78 cm) OBSERVER: ISH WHERE SAMPLED: Sill center, unit 5

ROCK NAME: Aphyric diabase, (fine/coarse contact)

GRAIN SIZE: Fine-grained (0.6 mm)/medium-grained (1.3 mm)

TEXTURE: Subophitic or intergranular

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
(COARSE-GRAINED PART)						
Plagioclase	48	48	0.3-2.0		Subhedral tabular	Fresh.
Clinopyroxene	37	37	0.2-0.3		Anhedral subophitic	Fresh.
Quartz	0.2	0.2	0.2-0.4		Euhedral	In mesostasis.
Fe-Ti oxide	5	5	0.1-0.4		Subhedral	Some are skeletal.
Mesostasis	8	10				Cryptocrystalline. Partly replaced by clays.
(FINE-GRAINED PART)						
Plagioclase	55	55	0.2-1.6		Laths	
Clinopyroxene	39	39	0.1-0.5		Anhedral granular	
Fe-Ti oxide	2	2	0.05-0.5		Subhedral	
Mesostasis	4	4				Cryptocrystalline.

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Clays	2	Mesostasis	
Pyrite	0.5		

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	0					Non-vesicular.

COMMENTS: XRF analysis of fine grained part was done for 116-118 cm interval in section 54R-3. Thin section #309.

123-766A-54R-06 (Piece 1C, 121-123 cm) OBSERVER: ISH WHERE SAMPLED: Sill center, unit 5

ROCK NAME: Aphyric diabase

GRAIN SIZE: Medium-grained (1.4 mm)

TEXTURE: Subophitic

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
Plagioclase	50	50	0.3-2.8		Subhedral tabular	Fresh. Simple gradual zoning.
Clinopyroxene	38	38	0.2-2.4	Augite	Anhedral ophitic	2V(+)35 degrees. Fresh. Twinned. Some crystals are elongated parallel to crystals.
Mesostasis	5	7				Cryptocrystalline.
Fe-Ti oxide	5	5	0.1-0.4		Subhedral euhedral	

SECONDARY MINERALOGY	PERCENT	REPLACING/ FILLING	COMMENTS
Clays	2	Mesostasis	Dirty greenish brown clays.

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	0					Non-vesicular.

COMMENTS: This thin section is scratched in the center.

123-766A-55R-02 (Piece 1F, 74-76 cm) OBSERVER: ISH WHERE SAMPLED: Sill center, unit 5

ROCK NAME: Aphyric diabase

GRAIN SIZE: Fine-grained (0.7 mm)

TEXTURE: Intergranular

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
Plagioclase	50	50	0.2-1.6		Subhedral tabular	Fresh.
Clinopyroxene	38	38			Anhedral granular subophitic	Fresh.
Quartz	0.5	0.5			Euhedral-subhedral	Occurs in interstitial space. Some show beautiful hexagonal shape.
Mesostasis	7	7				Devitrified glass.
Fe-Ti oxide	4	4	0.1-0.6		Subhedral	Some are skeletal.

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	0					Non-vesicular.

COMMENTS: Thin section #307. XRF analysis available.

123-766A-55R-03 (Piece 3F, 105-107 cm) OBSERVER: ISH WHERE SAMPLED: Sill center, Unit 5

ROCK NAME: Aphyric diabase (coarse/fine contact)

GRAIN SIZE: Medium-grained (2.3 mm)

TEXTURE: Subophitic/intergranular

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
(MEDIUM-GRAINED PART [2.3 mm, subophitic])						
Plagioclase	48	48	1.0-4.0		Subhedral tabular equant or bladed	Fresh.
Clinopyroxene	39	39	0.3-7.0		Anhedral, subophitic	Large crystals are elongated, including Fe-Ti oxides. Fresh.
Mesostasis	15	15				Devitrified glass, including plagioclase microlites.
Fe-Ti oxide	8	8	0.3-1.0		Subhedral	Mostly skeletal.
(FINE-GRAINED PART [0.7 mm, intergranular])						
Plagioclase	53	53	0.2-1.3		Subhedral laths	
Clinopyroxene	38	38	0.2-0.5		Anhedral granular subophitic	
Fe-Ti oxide	3	3	0.1-0.3		-	
Mesostasis	6	6	-		-	

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
Vesicles	0					Non-vesicular.

COMMENTS: Thin section #308. XRF analysis available.