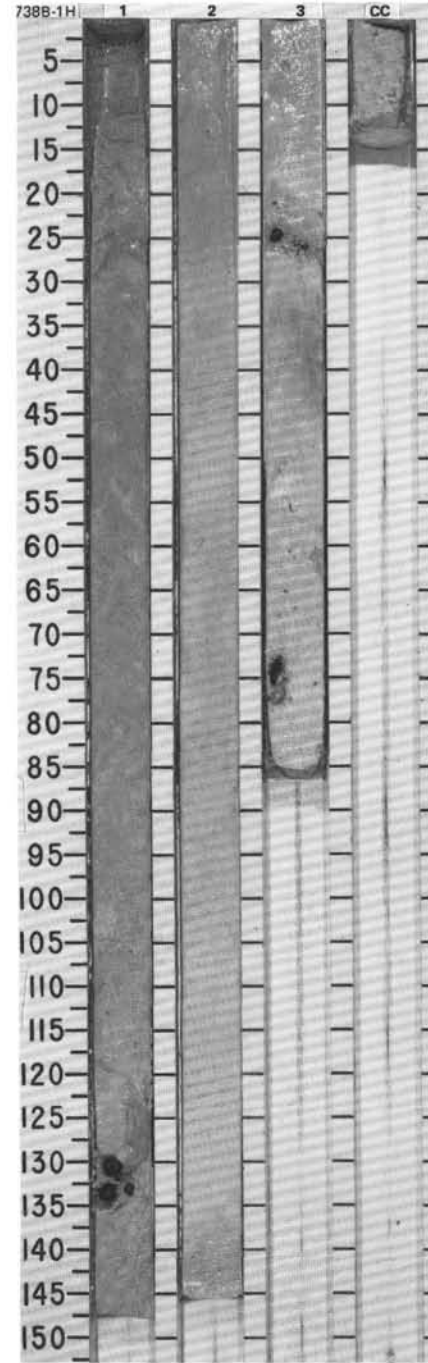
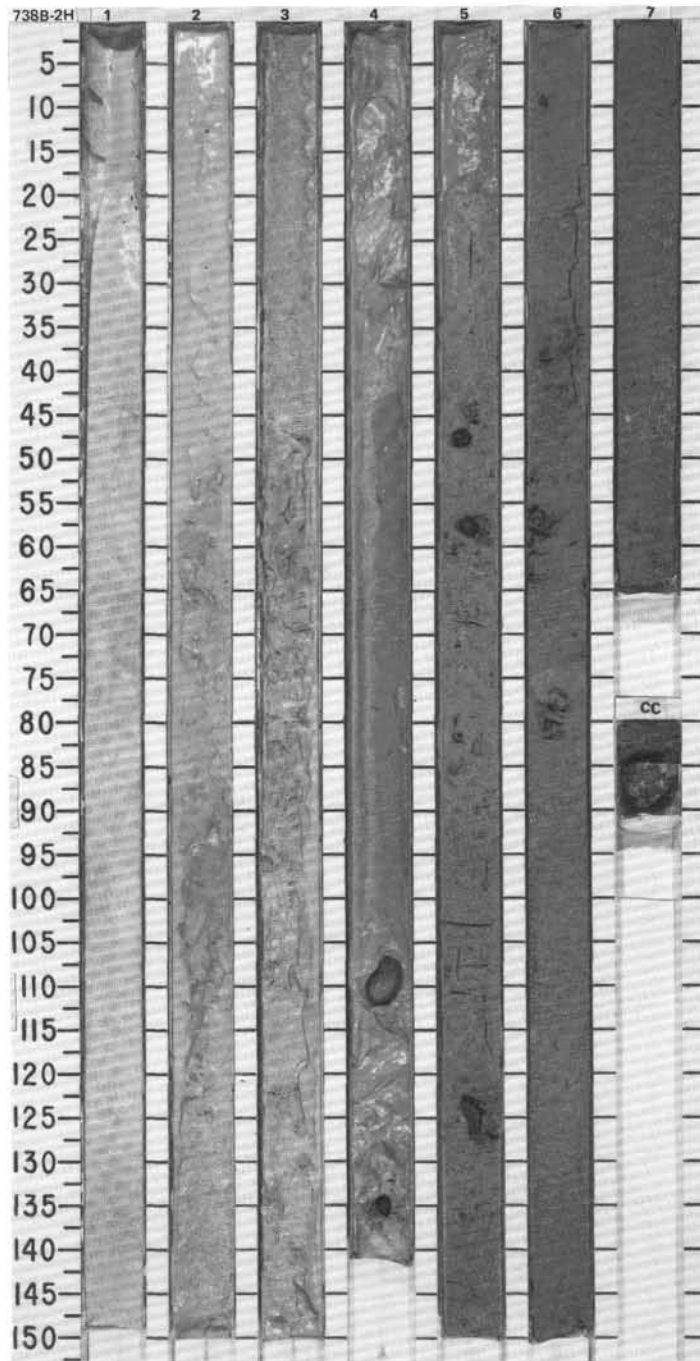


SITE 738 HOLE B CORE 1H CORED INTERVAL 0.0-4.0 mdsf

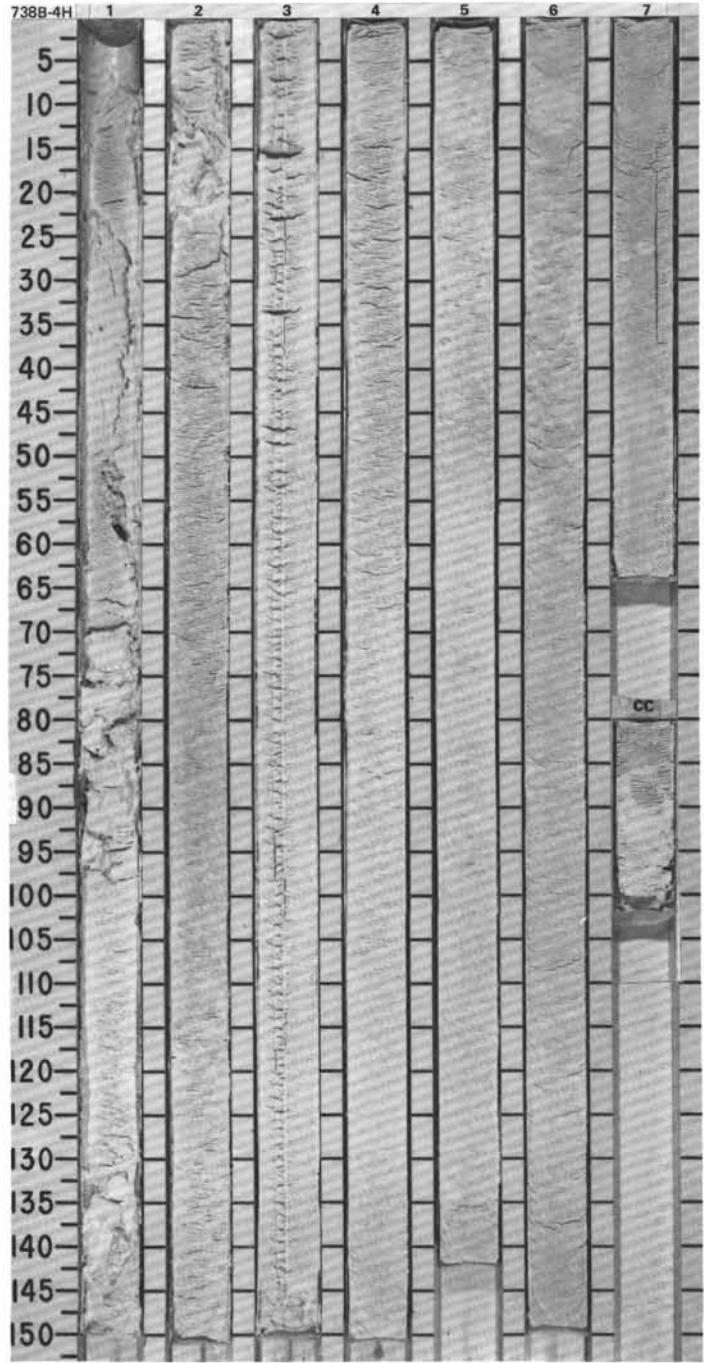
TIME-ROCK UNIT		BIOSTRAT. ZONE/ FOSSIL CHARACTER		PALEOMAGNETICS		SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION																																				
FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PHYS. PROPERTIES	CHEMISTRY																																											
QUATERNARY																																																
A/G	<i>Neogloboquadrina pachyderma</i> interval																																															
R/P	<i>Gephyrocapsa caribbeanica</i> / <i>Coccolithus pelagicus</i>																																															
A/G	NR3/4																																															
A/G	<i>Coscinodiscus elliptopora</i> / <i>Actinocyclus ingens</i>																																															
				(%CaCO ₃ = 58.9)																																												
				V = 1307, ● 7 = 1.55	V = 1477, ● 7 = 1.45																																											
				W = 48.1%	W = 54.7%																																											
				%CaCO ₃ = 13.0	%CaCO ₃ = 13.0	%CaCO ₃ = 13.0	%CaCO ₃ = 13.0	%CaCO ₃ = 13.0	%CaCO ₃ = 13.0	%CaCO ₃ = 13.0	%CaCO ₃ = 13.0	%CaCO ₃ = 13.0																																				
				%CaCO ₃ = 71.5	%CaCO ₃ = 71.5	%CaCO ₃ = 71.5	%CaCO ₃ = 71.5	%CaCO ₃ = 71.5	%CaCO ₃ = 71.5	%CaCO ₃ = 71.5	%CaCO ₃ = 71.5	%CaCO ₃ = 71.5																																				
				CC																																												
VOID																																																
DIATOM OOZE																																																
Major lithology: Diatom ooze with minor foraminifers, radiolarians and carbonate, pale brown (10YR 6/3) and very pale brown (10YR 7/3); some darker and lighter mottled zones in Section 1, 0-80 cm, possibly representing burrows. 0-80 cm, possibly representing burrows. Granules with diameters of 1-2 cm are mixed throughout the core: Section 1, 130 cm granitic granules of 1-10 mm diameter; Section 2, 24-26 cm and 75-77 cm; also layers with granules of 1-3 mm diameter that are either Mn nodules or Mn-coated clasts, some with smaller nodules cemented to them, also "iron-staining" in the sediment around the nodules.																																																
Drilling disturbance: sediment is soupy in Section 1 and 2, and highly disturbed in Section 3 and CC.																																																
SMEAR SLIDE SUMMARY (%):																																																
<table border="1"> <thead> <tr> <th></th> <th>1, 80</th> <th>2, 80</th> <th>3, 40</th> </tr> </thead> <tbody> <tr> <td>D</td> <td>D</td> <td>D</td> <td>D</td> </tr> </tbody> </table>														1, 80	2, 80	3, 40	D	D	D	D																												
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COMPOSITION:																																																
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TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS										
LOWER PLIOCENE														
R/G	Neoglobobadrina pachyderma interval													
R/M														
A/G NR7	Nitzschia angulata													
A/G														
					V=1566 γ=1.38 W=61.4%		%CaCO ₃ =86.9							
					V=1546 γ=1.54 W=48.5%		%CaCO ₃ =46.4							
					V=1546 γ=1.54 W=48.5%		%CaCO ₃ =38.8							
					V=1511 γ=1.38 W=62.1%		%CaCO ₃ =22.7							
					V=1546 γ=1.38 W=62.1%		%CaCO ₃ =0.4							
					V=1511 γ=1.38 W=62.1%		%CaCO ₃ =0.4							
					V=1511 γ=1.38 W=62.1%		%CaCO ₃ =0.4							
					V=1511 γ=1.38 W=62.1%		%CaCO ₃ =0.4							



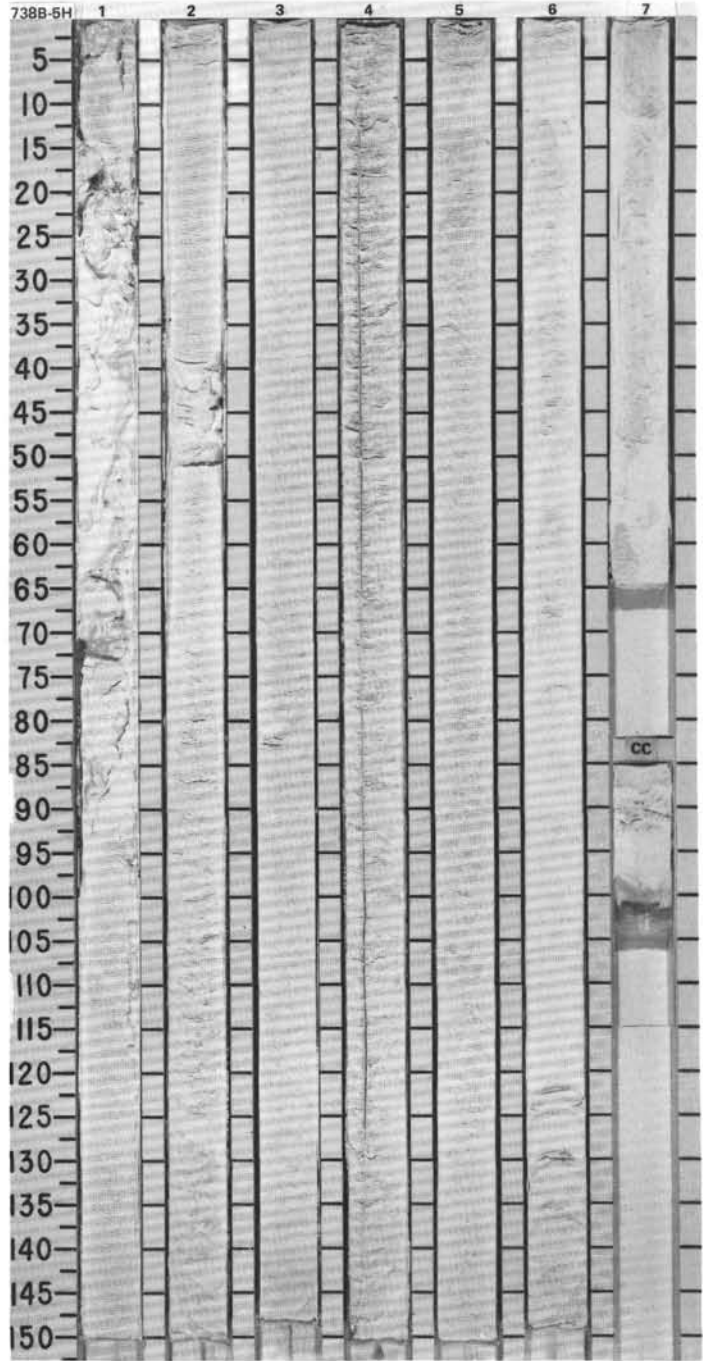
TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION																																																															
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIAZONES																																																																									
LOWER OLILOCENE	C/G P18-20							1	0.5	VOID				<p>NANNOFOSSIL OOZE</p> <p>Major lithology: Nannofossil ooze, white (10YR 8/1), homogeneous, almost 100% nannofossils; like clotted cream in Section 6.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <table border="1"> <tr> <td></td> <td>1, 100</td> <td>2, 80</td> <td>3, 80</td> <td>4, 80</td> <td>5, 80</td> <td>6, 80</td> </tr> <tr> <td>D</td> <td></td> <td>D</td> <td>D</td> <td>D</td> <td>D</td> <td>D</td> </tr> </table> <p>TEXTURE:</p> <table border="1"> <tr> <td>Sand</td> <td>2</td> <td>1</td> <td>3</td> <td>7</td> <td>2</td> <td>3</td> </tr> <tr> <td>Silt</td> <td>94</td> <td>95</td> <td>93</td> <td>90</td> <td>94</td> <td>93</td> </tr> <tr> <td>Clay</td> <td>4</td> <td>4</td> <td>4</td> <td>3</td> <td>4</td> <td>4</td> </tr> </table> <p>COMPOSITION:</p> <table border="1"> <tr> <td>Feldspar</td> <td>-</td> <td>-</td> <td>Tr</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>Foraminifers</td> <td>1</td> <td>-</td> <td>5</td> <td>7</td> <td>1</td> <td>2</td> </tr> <tr> <td>Nannofossils</td> <td>98</td> <td>99</td> <td>92</td> <td>92</td> <td>99</td> <td>96</td> </tr> <tr> <td>Spicules</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>1</td> </tr> </table>		1, 100	2, 80	3, 80	4, 80	5, 80	6, 80	D		D	D	D	D	D	Sand	2	1	3	7	2	3	Silt	94	95	93	90	94	93	Clay	4	4	4	3	4	4	Feldspar	-	-	Tr	-	-	-	Foraminifers	1	-	5	7	1	2	Nannofossils	98	99	92	92	99	96	Spicules	-	-	-	-	-	1
		1, 100	2, 80	3, 80	4, 80	5, 80	6, 80																																																																						
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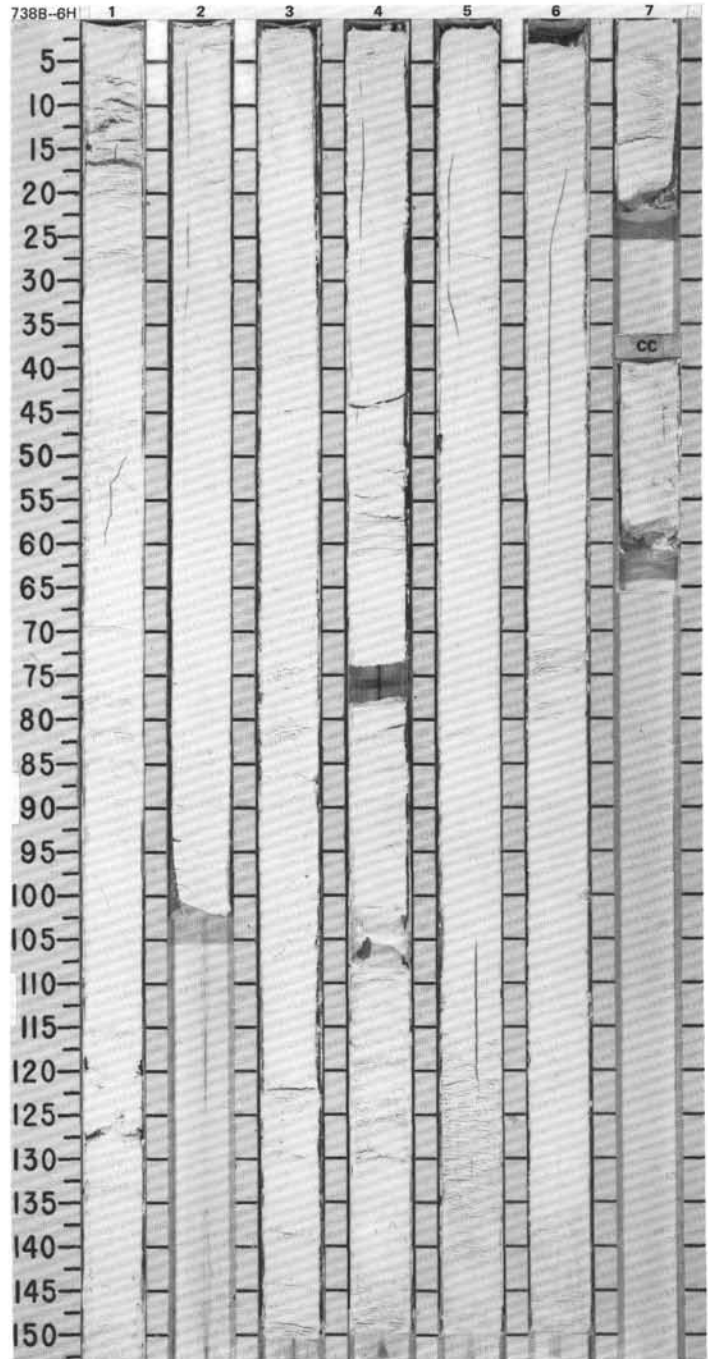
SITE 738 HOLE B CORE 5H CORED INTERVAL 32.5-42.0 mbsf

TIME-ROCK UNIT		BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION																																													
UPPER EOCENE	LOWER OLIGOCENE	FORAMINIFERS	NANNOFOSSILS	RADOLARIANS	DIATOMS																																																						
A/G	P16-17								0.5 1.0					NANNOFOSSIL OOZE Major lithology: Nannofossil ooze, white (10YR 8/2), homogeneous, with 1% foraminifers; black (5Y 2.5/1) manganese micronodules in Section 2, 88-92 cm; Section 6, 59-64 cm; Section 7, 25 cm. Drilling disturbance: Sediment is moderately disturbed in Section 1, 0-70 cm; it contains manganese coated basaltic granules and pebbles representing cave-in material. SMEAR SLIDE SUMMARY (%) : <table style="margin-left: 40px;"> <tr> <td></td> <td>1, 110</td> <td>2, 90</td> <td>4, 110</td> <td>7, 25</td> </tr> <tr> <td></td> <td>D</td> <td>M</td> <td>D</td> <td>M</td> </tr> </table> TEXTURE : <table style="margin-left: 40px;"> <tr> <td>Sand</td> <td>1</td> <td>1</td> <td>5</td> <td>3</td> </tr> <tr> <td>Silt</td> <td>95</td> <td>93</td> <td>90</td> <td>93</td> </tr> <tr> <td>Clay</td> <td>4</td> <td>6</td> <td>5</td> <td>4</td> </tr> </table> COMPOSITION : <table style="margin-left: 40px;"> <tr> <td>Foraminifers</td> <td>1</td> <td>2</td> <td>5</td> <td>3</td> </tr> <tr> <td>Micronodule</td> <td>—</td> <td>1</td> <td>—</td> <td>Tr</td> </tr> <tr> <td>Nannofossils</td> <td>96</td> <td>95</td> <td>95</td> <td>93</td> </tr> <tr> <td>Spicules</td> <td>—</td> <td>—</td> <td>Tr</td> <td>—</td> </tr> </table>		1, 110	2, 90	4, 110	7, 25		D	M	D	M	Sand	1	1	5	3	Silt	95	93	90	93	Clay	4	6	5	4	Foraminifers	1	2	5	3	Micronodule	—	1	—	Tr	Nannofossils	96	95	95	93	Spicules	—	—	Tr	—
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Nannofossils	96	95	95	93																																																							
Spicules	—	—	Tr	—																																																							
A/M	CP15a								2																																																		
B	CP15b-16								3																																																		
B									4																																																		
									5																																																		
									6																																																		
									7																																																		

Additional data from core log:
● V=1494 γ=1.72 ● W=42.7%
● V=1516 γ=1.80 ● W=37.8%
● V=1510 γ=1.75 ● W=39.7%
● XCaCO₃=93.8

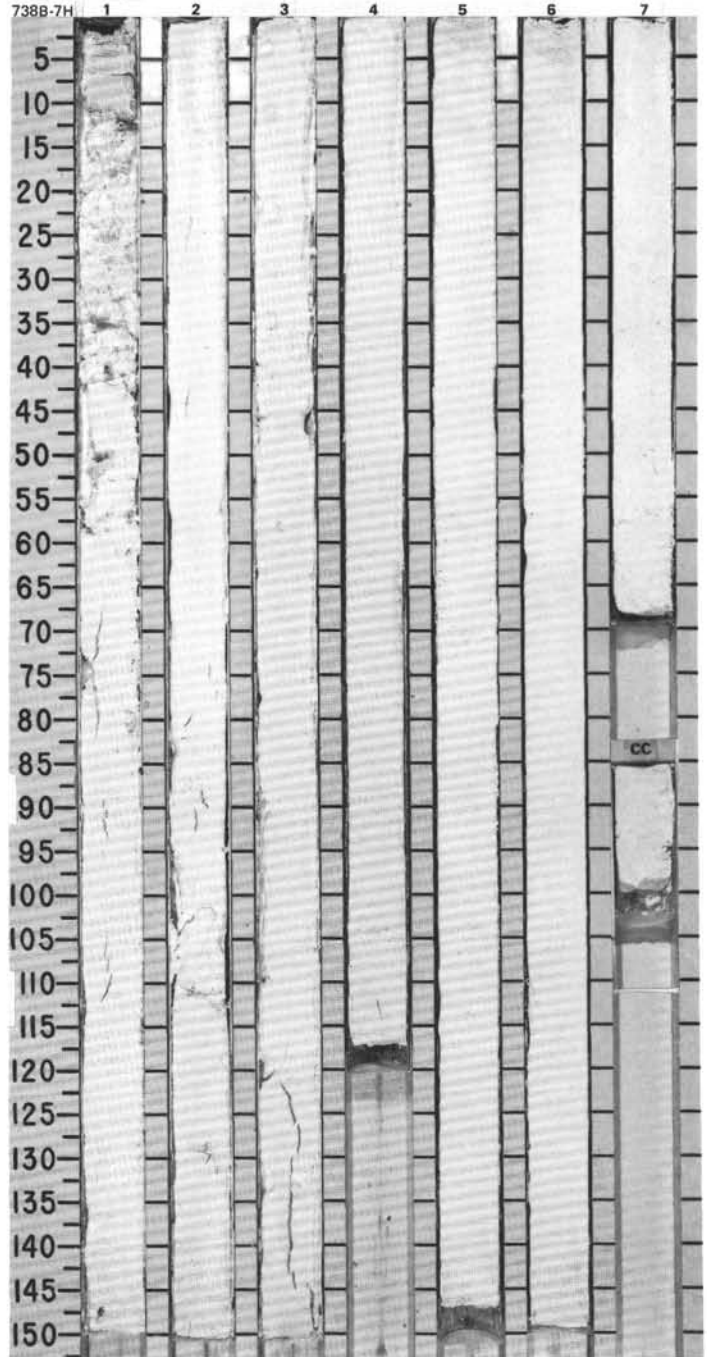


TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION																																																																	
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIAZONS																																																																											
UPPER EOCENE	A/G	P16-17							0.5					<p>NANNOFOSSIL OOZE</p> <p>Major lithology: Nannofossil ooze, white (10YR 8/2), homogeneous, with 2-3% foraminifers; black (5Y 2.5/1) manganese micronodules occur in Section 1, 56 cm, 147 cm; Section 2, 66-85 cm; Section 6, 60-64 cm. Small rounded pale brown (10YR 7/3) zones up to 0.5 cm in diameter occur in Section 6, 78 cm, and in core catcher, 13 cm. These zones are richer in foraminifers than rest of core.</p> <p>Drilling disturbance: Slight disturbance in Section 1, 0-16 cm.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <table border="1"> <thead> <tr> <th></th> <th>2, 76</th> <th>3, 59</th> <th>5, 50</th> <th>6, 78</th> </tr> <tr> <th>D</th> <th>D</th> <th>D</th> <th>D</th> <th>D</th> </tr> </thead> <tbody> <tr> <td>Sand</td> <td>1</td> <td>3</td> <td>2</td> <td>4</td> </tr> <tr> <td>Silt</td> <td>95</td> <td>93</td> <td>95</td> <td>92</td> </tr> <tr> <td>Clay</td> <td>4</td> <td>4</td> <td>3</td> <td>4</td> </tr> </tbody> </table> <p>TEXTURE:</p> <table border="1"> <thead> <tr> <th></th> <th>2, 76</th> <th>3, 59</th> <th>5, 50</th> <th>6, 78</th> </tr> </thead> <tbody> <tr> <td>Sand</td> <td>1</td> <td>3</td> <td>2</td> <td>4</td> </tr> <tr> <td>Silt</td> <td>95</td> <td>93</td> <td>95</td> <td>92</td> </tr> <tr> <td>Clay</td> <td>4</td> <td>4</td> <td>3</td> <td>4</td> </tr> </tbody> </table> <p>COMPOSITION:</p> <table border="1"> <thead> <tr> <th></th> <th>2</th> <th>4</th> <th>3</th> <th>3</th> </tr> </thead> <tbody> <tr> <td>Foraminifers</td> <td>2</td> <td>4</td> <td>3</td> <td>3</td> </tr> <tr> <td>Nannofossils</td> <td>97</td> <td>95</td> <td>95</td> <td>97</td> </tr> <tr> <td>Quartz</td> <td>Tr</td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table>		2, 76	3, 59	5, 50	6, 78	D	D	D	D	D	Sand	1	3	2	4	Silt	95	93	95	92	Clay	4	4	3	4		2, 76	3, 59	5, 50	6, 78	Sand	1	3	2	4	Silt	95	93	95	92	Clay	4	4	3	4		2	4	3	3	Foraminifers	2	4	3	3	Nannofossils	97	95	95	97	Quartz	Tr	-	-	-
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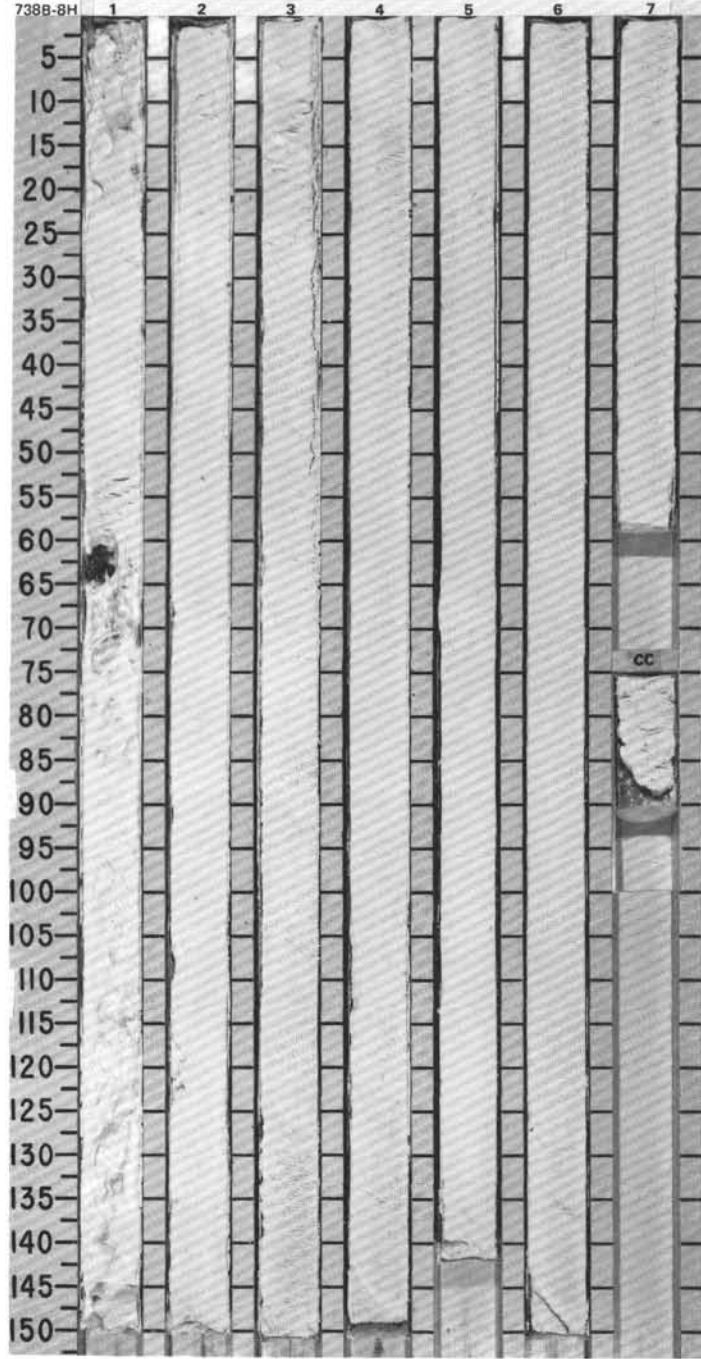


SITE 738 HOLE B CORE 7H CORED INTERVAL 51.5-61.0 mbsf

TIME-ROCK UNIT		BIOSTRAT. ZONE/ FOSSIL CHARACTER		PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS										
UPPER EOCENE													
A/G	P15			● V=1558 W=38.3%	γ=1.76	● XCaCO ₃ =95.6	1	0.5 1.0	[Lithology symbols]	○	*	*	NANNOFOSSIL OOZE Major lithology: Nannofossil ooze, white (10YR 8/2), homogeneous, with 5-10% foraminifers. Drilling disturbance: Contaminated with cave-in basaltic gravel in Section 1, 10-150 cm; gravel concentrated between 10-40 cm; from 40-150 cm gravel occurs along core liner.
A/M	CP15a												
B				● V=1528 W=36.7%	γ=1.81	● XCaCO ₃ =95.4	2		[Lithology symbols]	◇	◇	SMEAR SLIDE SUMMARY (%): TEXTURE: Sand 3 7 Silt 95 90 Clay 2 3 COMPOSITION: Foraminifers 5 12 Nannofossils 94 88	
			● V=1534 W=37.3%	γ=1.82	● XCaCO ₃ =95.6	3			[Lithology symbols]				
			● V=1528 W=36.7%	γ=1.81	● XCaCO ₃ =95.4	4			[Lithology symbols]			OG IW	
			● V=1534 W=37.3%	γ=1.82	● XCaCO ₃ =95.6	5			[Lithology symbols]				
			● V=1534 W=37.3%	γ=1.82	● XCaCO ₃ =95.6	6		VOID	[Lithology symbols]			*	
			● V=1534 W=37.3%	γ=1.82	● XCaCO ₃ =95.6	7			[Lithology symbols]				
			● V=1534 W=37.3%	γ=1.82	● XCaCO ₃ =95.6	CC			[Lithology symbols]				

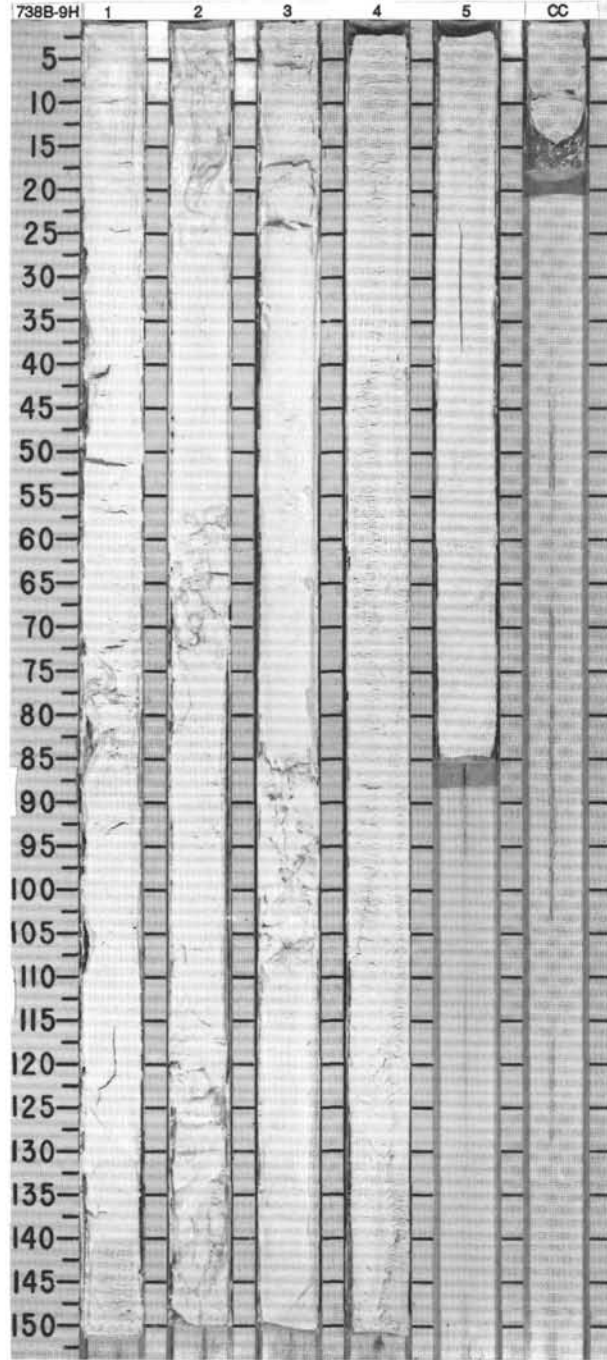


TIME-ROCK UNIT		BIOSTRAT. ZONE/ FOSSIL CHARACTER	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION												
UPPER EOCENE																								
A/G	P15						0.5					<p>NANNOFOSSIL OOZE</p> <p>Major lithology: Nannofossil ooze, white (10YR 8/2), homogeneous, with 2-7% foraminifers; black(5Y 2.5/1) manganese micronodules occur in Section 2, 47 cm, 90 cm; Section 4, 124-128 cm; Section 5, 30 cm, 65 cm, 70 cm, 92 cm; Section 6, 8-28 cm.</p> <p>Drilling disturbance: Contaminated with basaltic gravel from hole cave-in, Section 1, 0-8 cm, 87-150 cm; granite clast 4 cm long in Section 1, 62 cm.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <table border="0"> <tr><td>2, 140</td></tr> <tr><td>D</td></tr> </table> <p>TEXTURE:</p> <table border="0"> <tr><td>Sand</td><td>10</td></tr> <tr><td>Silt</td><td>85</td></tr> <tr><td>Clay</td><td>5</td></tr> </table> <p>COMPOSITION:</p> <table border="0"> <tr><td>Foraminifers</td><td>10</td></tr> <tr><td>Nannofossils</td><td>90</td></tr> </table>	2, 140	D	Sand	10	Silt	85	Clay	5	Foraminifers	10	Nannofossils	90
2, 140																								
D																								
Sand	10																							
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A/M	CP15a					1.0	VOID																	
B						2																		
						3																		
						4																		
						5																		
						6																		
						7																		
						CC																		



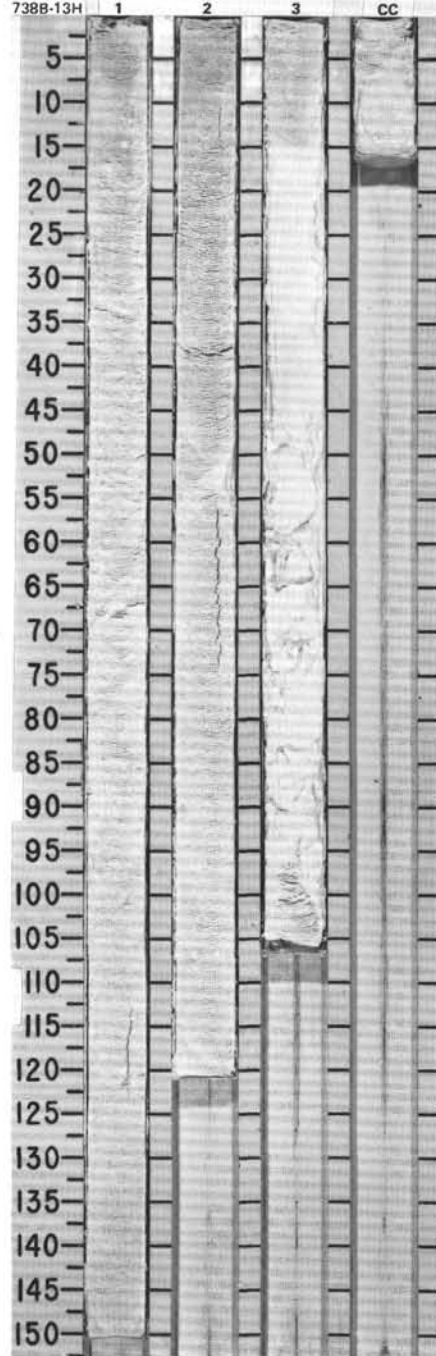
SITE 738 HOLE B CORE 9H CORED INTERVAL 70.5-80.0 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION																				
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIAATOMS																														
	MIDDLE EOCENE																																	
A/G	P13-14				• $V=13.00$, $\gamma=1.83$ • $V=1526$, $\gamma=1.85$ • $W=38.4\%$ • $XCaCO_3=94.6$		1	0.5					<p>NANNOFOSSIL OOZE</p> <p>Major lithology: Nannofossil ooze, white (10YR 8/2), homogeneous, with 3-9% foraminifers.</p> <p>Drilling disturbance: Section 1, 0-37 cm soupy, 130-150 cm moderately disturbed; Section 3, 87-105 cm moderately disturbed.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <table border="0"> <tr> <td></td> <td style="text-align: right;">2.78</td> <td style="text-align: right;">5.60</td> </tr> <tr> <td>D</td> <td></td> <td></td> </tr> </table> <p>TEXTURE:</p> <table border="0"> <tr> <td>Sand</td> <td style="text-align: right;">10</td> <td style="text-align: right;">10</td> </tr> <tr> <td>Silt</td> <td style="text-align: right;">85</td> <td style="text-align: right;">85</td> </tr> <tr> <td>Clay</td> <td style="text-align: right;">4</td> <td style="text-align: right;">4</td> </tr> </table> <p>COMPOSITION:</p> <table border="0"> <tr> <td>Foraminifers</td> <td style="text-align: right;">10</td> <td style="text-align: right;">10</td> </tr> <tr> <td>Nannofossils</td> <td style="text-align: right;">90</td> <td style="text-align: right;">90</td> </tr> </table>		2.78	5.60	D			Sand	10	10	Silt	85	85	Clay	4	4	Foraminifers	10	10	Nannofossils	90	90
	2.78	5.60																																
D																																		
Sand	10	10																																
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Foraminifers	10	10																																
Nannofossils	90	90																																
A/M	CP14a				2	1.0					*																							
B					3				VOID																									
					4				VOID																									
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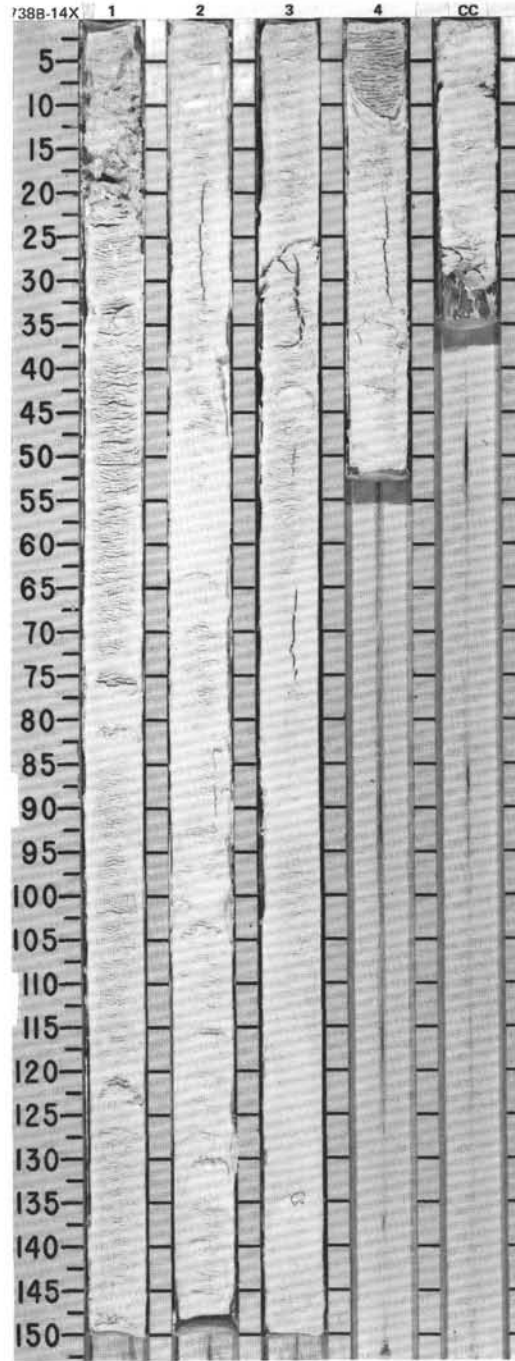


SITE 738 HOLE B CORE 13H CORED INTERVAL 104.0-108.2 mbsf

TIME-ROCK UNIT		BIOSTRAT. ZONE/ FOSSIL CHARACTER		PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION																														
FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS																																								
MIDDLE EOCENE													<p>NANNOFOSSIL OOZE</p> <p>Major lithology: Nannofossil ooze, white (10YR 8/2), homogeneous, with up to 7% foraminifers.</p> <p>Drilling disturbance: Section 3, 15-50 cm minor disturbance, 50-72 cm soupy, 72-106 cm minor disturbance.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <table border="1"> <tr> <td></td> <td>2.55</td> <td>3.50</td> </tr> <tr> <td>D</td> <td>D</td> <td>D</td> </tr> </table> <p>TEXTURE:</p> <table border="1"> <tr> <td>Sand</td> <td>4</td> <td>5</td> </tr> <tr> <td>Silt</td> <td>93</td> <td>93</td> </tr> <tr> <td>Clay</td> <td>3</td> <td>2</td> </tr> </table> <p>COMPOSITION:</p> <table border="1"> <tr> <td>Feldspar</td> <td>Tr</td> <td>1</td> </tr> <tr> <td>Foraminifers</td> <td>7</td> <td>4</td> </tr> <tr> <td>Glass</td> <td>1</td> <td>1</td> </tr> <tr> <td>Nannofossils</td> <td>88</td> <td>90</td> </tr> <tr> <td>Pyroxene</td> <td>-</td> <td>Tr</td> </tr> </table>		2.55	3.50	D	D	D	Sand	4	5	Silt	93	93	Clay	3	2	Feldspar	Tr	1	Foraminifers	7	4	Glass	1	1	Nannofossils	88	90	Pyroxene	-	Tr
	2.55	3.50																																									
D	D	D																																									
Sand	4	5																																									
Silt	93	93																																									
Clay	3	2																																									
Feldspar	Tr	1																																									
Foraminifers	7	4																																									
Glass	1	1																																									
Nannofossils	88	90																																									
Pyroxene	-	Tr																																									
A/G	P13-14			$\gamma = 1.86$ ● $V = 1504$ $W = 35.7\%$	$\gamma = 1.86$ ● $V = 1504$ $W = 35.7\%$	\bullet $XCaCO_3 = 95.0$ $\%TOC = 0.00$	1	0.5 1.0																																			
A/M	CPI4a																																										
B						\bullet $XCaCO_3 = 95.0$ $\%TOC = 0.00$	3																																				
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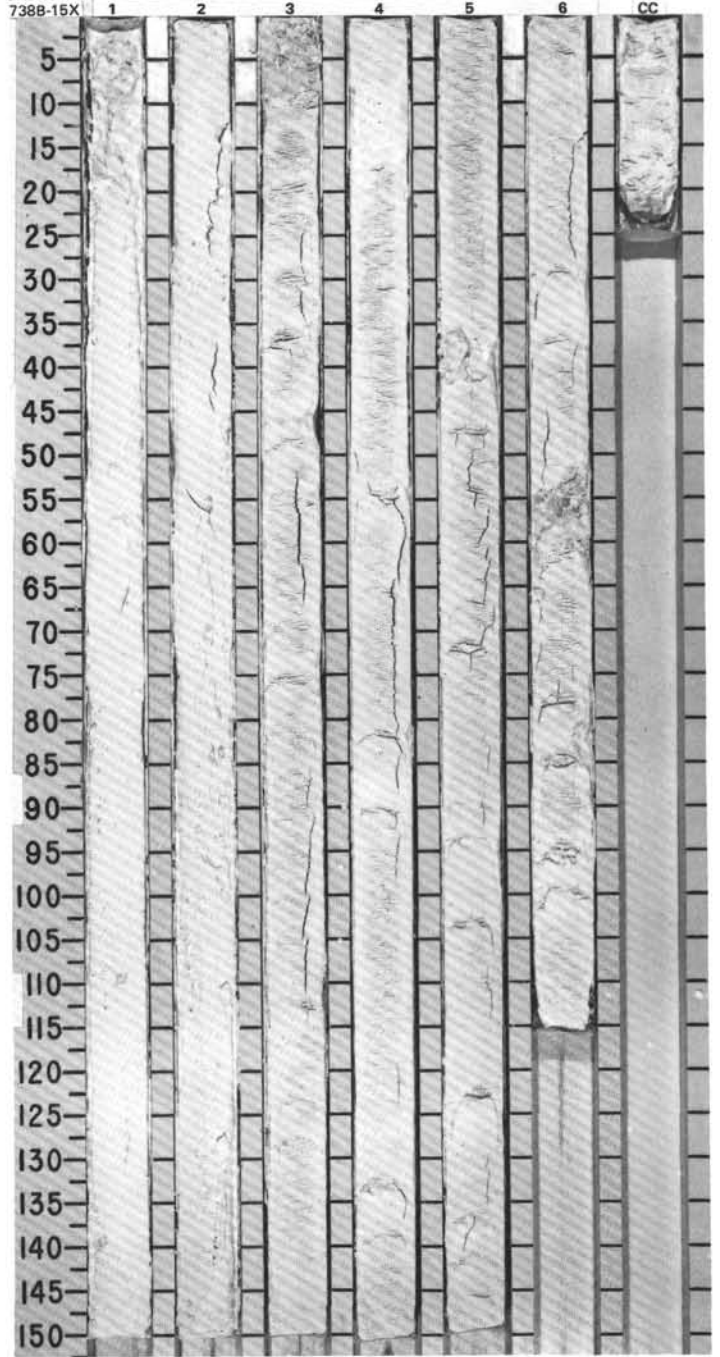


TIME-ROCK UNIT		BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB. SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION					
A/G	A/M	B	RADIOLARIANS	DIATOMS															
MIDDLE EOCENE	P13-14	CPT14a							0.5 1.0				FORAMINIFERAL NANNOFOSSIL OOZE						
							$w = 36\%$ $\%CaCO_3 = 69.07\%$	$w = 35.7\%$ $\%CaCO_3 = 93.5\%$	1				Major lithology: Foraminiferal nannofossil ooze, white (10YR 8/2), homogeneous, black (5Y 2.5/1) manganese micronodules in Section 2, 87 cm, 91 cm. Drilling disturbance: Section 1, moderately disturbed 0-7 cm, scattered basaltic granules and small pebbles 7-16 cm, basaltic gravel 16-21 cm and scattered granules and small pebbles along core liner from hole cave-in and contamination.						
									2				SMEAR SLIDE SUMMARY (%): <table border="0"> <tr> <td></td> <td>2, 66</td> <td>3, 111</td> </tr> <tr> <td>D</td> <td>D</td> <td>D</td> </tr> </table>		2, 66	3, 111	D	D	D
	2, 66	3, 111																	
D	D	D																	
									3				TEXTURE: Sand 12 14 Silt 86 84 Clay 2 2						
									4				COMPOSITION: Feldspar Tr Tr Foraminifers 25 25 Glass - Tr Nannofossils 72 72 Spicules Tr -						
									CC										



SITE 738 HOLE B CORE 15X CORED INTERVAL 117.8-127.5 mbsf

TIME-ROCK UNIT		BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION																																																																																											
A/G	A/M	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS																																																																																																					
MIDDLE EOCENE		P10-12													<p>FORAMINIFERAL NANNOFOSSIL OOZE</p> <p>Major lithology: Foraminiferal nannofossil ooze, white (10YR 8/2), sediment slightly more compact in Section 4, 10-13 cm, 82-90 cm; Section 5, 73-75 cm, 94-101 cm, 129-130 cm; Section 6, 30-38 cm, 94-96 cm, 99-102 cm.</p> <p>Minor lithologies: a. Nannofossil ooze, white (10YR 8/2), homogeneous; Section 6 and core catcher. b. Chert, white (10YR 8/2), partially fragmented; Section 3, 8-10 cm. c. Chert, light gray (7.5YR 7/0), fragmented; Section 6, 52-60 cm.</p> <p>Drilling disturbance: Section 1, 0-20 cm soupy and contaminated by basaltic gravel.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <table border="1"> <tr> <td></td> <td>1, 83</td> <td>1, 91</td> <td>3, 6</td> <td>3, 9</td> <td>3, 90</td> <td>6, 55</td> </tr> <tr> <td></td> <td>D</td> <td>D</td> <td>D</td> <td>D</td> <td>D</td> <td>D</td> </tr> </table> <p>TEXTURE:</p> <table border="1"> <tr> <td>Sand</td> <td>10</td> <td>3</td> <td>10</td> <td>5</td> <td>6</td> <td>1</td> </tr> <tr> <td>Silt</td> <td>85</td> <td>93</td> <td>89</td> <td>90</td> <td>90</td> <td>94</td> </tr> <tr> <td>Clay</td> <td>5</td> <td>4</td> <td>1</td> <td>2</td> <td>4</td> <td>5</td> </tr> </table> <p>COMPOSITION:</p> <table border="1"> <tr> <td>Carbonate</td> <td>5</td> <td>—</td> <td>5</td> <td>—</td> <td>—</td> <td>—</td> </tr> <tr> <td>Chert</td> <td>2</td> <td>—</td> <td>20</td> <td>—</td> <td>—</td> <td>6</td> </tr> <tr> <td>Diatoms</td> <td>Tr</td> <td>—</td> <td>—</td> <td>Tr</td> <td>5</td> <td>—</td> </tr> <tr> <td>Feldspar</td> <td>—</td> <td>1</td> <td>1</td> <td>1</td> <td>3</td> <td>—</td> </tr> <tr> <td>Foraminifers</td> <td>35</td> <td>7</td> <td>35</td> <td>8</td> <td>4</td> <td>—</td> </tr> <tr> <td>Glass</td> <td>—</td> <td>1</td> <td>—</td> <td>Tr</td> <td>Tr</td> <td>—</td> </tr> <tr> <td>Mica</td> <td>—</td> <td>—</td> <td>Tr</td> <td>—</td> <td>—</td> <td>—</td> </tr> <tr> <td>Nannofossils</td> <td>55</td> <td>90</td> <td>35</td> <td>88</td> <td>85</td> <td>94</td> </tr> </table>		1, 83	1, 91	3, 6	3, 9	3, 90	6, 55		D	D	D	D	D	D	Sand	10	3	10	5	6	1	Silt	85	93	89	90	90	94	Clay	5	4	1	2	4	5	Carbonate	5	—	5	—	—	—	Chert	2	—	20	—	—	6	Diatoms	Tr	—	—	Tr	5	—	Feldspar	—	1	1	1	3	—	Foraminifers	35	7	35	8	4	—	Glass	—	1	—	Tr	Tr	—	Mica	—	—	Tr	—	—	—	Nannofossils	55	90	35	88	85	94
	1, 83	1, 91	3, 6	3, 9	3, 90	6, 55																																																																																																				
	D	D	D	D	D	D																																																																																																				
Sand	10	3	10	5	6	1																																																																																																				
Silt	85	93	89	90	90	94																																																																																																				
Clay	5	4	1	2	4	5																																																																																																				
Carbonate	5	—	5	—	—	—																																																																																																				
Chert	2	—	20	—	—	6																																																																																																				
Diatoms	Tr	—	—	Tr	5	—																																																																																																				
Feldspar	—	1	1	1	3	—																																																																																																				
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TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB. SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION									
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS																		
	A/M-G P10-12													N ₁ 155	%	γ	1.91	1	VOID	O		
	A/M CP13																					
C/G <i>Podocorythis goethensis</i> / <i>Podocorythis chalarā</i>				● %CaCO ₃ 95.3				2	VOID	*												
								3	VOID													
								CC														

NANNOFOSSIL OOZE

Major lithology:
Nannofossil ooze, white (10YR 8/1), homogeneous, firm.

Drilling disturbance:
Uppermost part is soupy, rest of core is separated into pieces of 8-10 cm length. Where the sediment breaks up there appears to be a rust coloration in a few places.

SMEAR SLIDE SUMMARY (%):

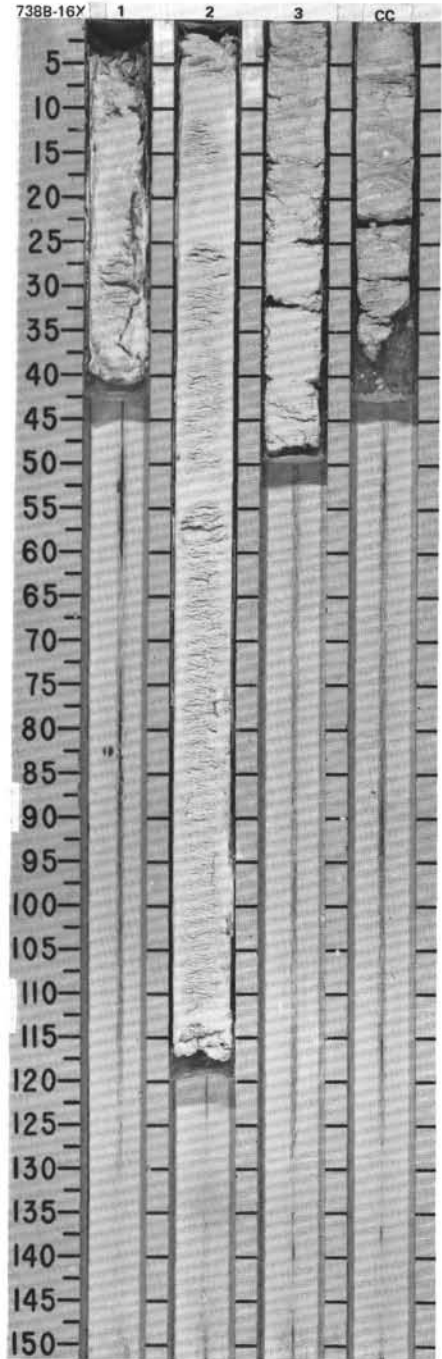
	2, 44	CC, 16
D	D	D

TEXTURE:

Sand	—	—
Silt	10	2
Clay	90	98

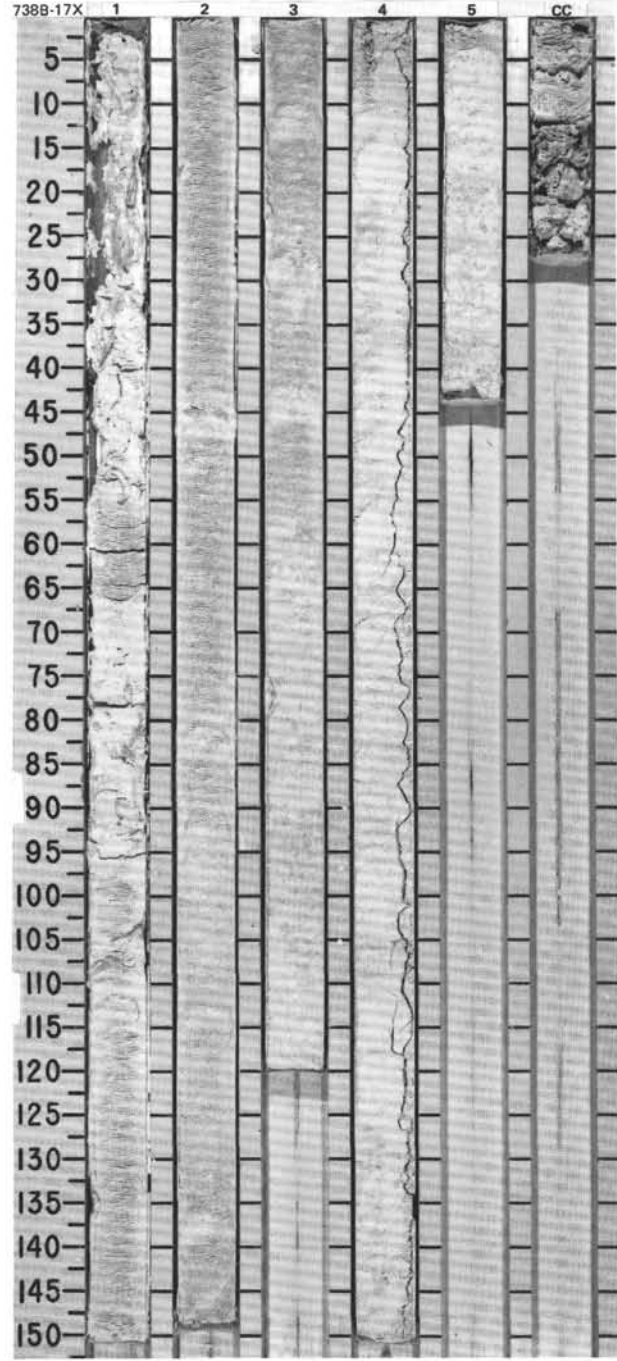
COMPOSITION:

Access. Minerals	—	Tr
Clay	5	5
Diatoms	Tr	—
Foraminifers	1	2
Nannofossils	94	92
Sparite	Tr	Tr

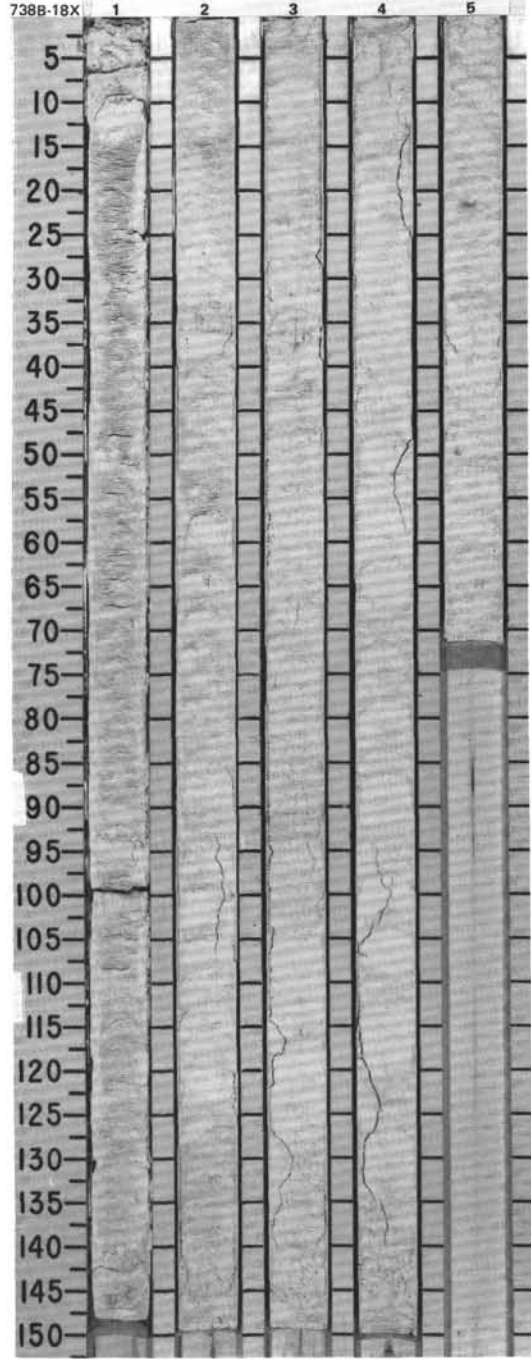


SITE 738 HOLE B CORE 17X CORED INTERVAL 137.2-146.8 mbsf

TIME-ROCK UNIT		BIOSTRAT. ZONE/ FOSSIL CHARACTER	PALEOMAGNETICS	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION		
FORAMINIFERS	NANNOFOSSILS												
A/M-G	P10-12	Podoccyrtis goethena / Podoccyrtis chalara	●θ=64% V=1330 /-1.78 W=58%	●θ=57% V=1361 /-1.78 W=52%	●%CaCO ₃ =94.9	●%TOC=0.00	1				NANNOFOSSIL OOZE Major lithology: Nannofossil ooze, white (10YR 8/1), homogeneous, soft. In Section 5, 5 cm and 25 cm are slightly harder and denser chalk-like pieces. Section 3, 6 cm and 27 cm shows a slight diffuse darkening suggestive of a chemical halo effect. In Section 3, 77 cm, faint darker layers, 1-5 mm thick, appear; they are slightly gray and/or green, but white (5Y 8/1) on color chart. Some laminae are in pairs, generally with two darker lines separated by <1 mm; some have a diffuse halo around the distinct lines. Drilling disturbance: The core has a highly disturbed top 40 cm, with a 5 mm pebble representing cave-in. The rest is slightly disturbed or undisturbed.		
A/M	CP13						2						SMEAR SLIDE SUMMARY (%): CC, 18 D
A/G							3						TEXTURE: Sand - Silt 20 Clay 80 COMPOSITION: Clay 5 Foraminifers 1 Nannofossils 94 Sparite Tr
		4					OG						
		5					W						
		CC									*		

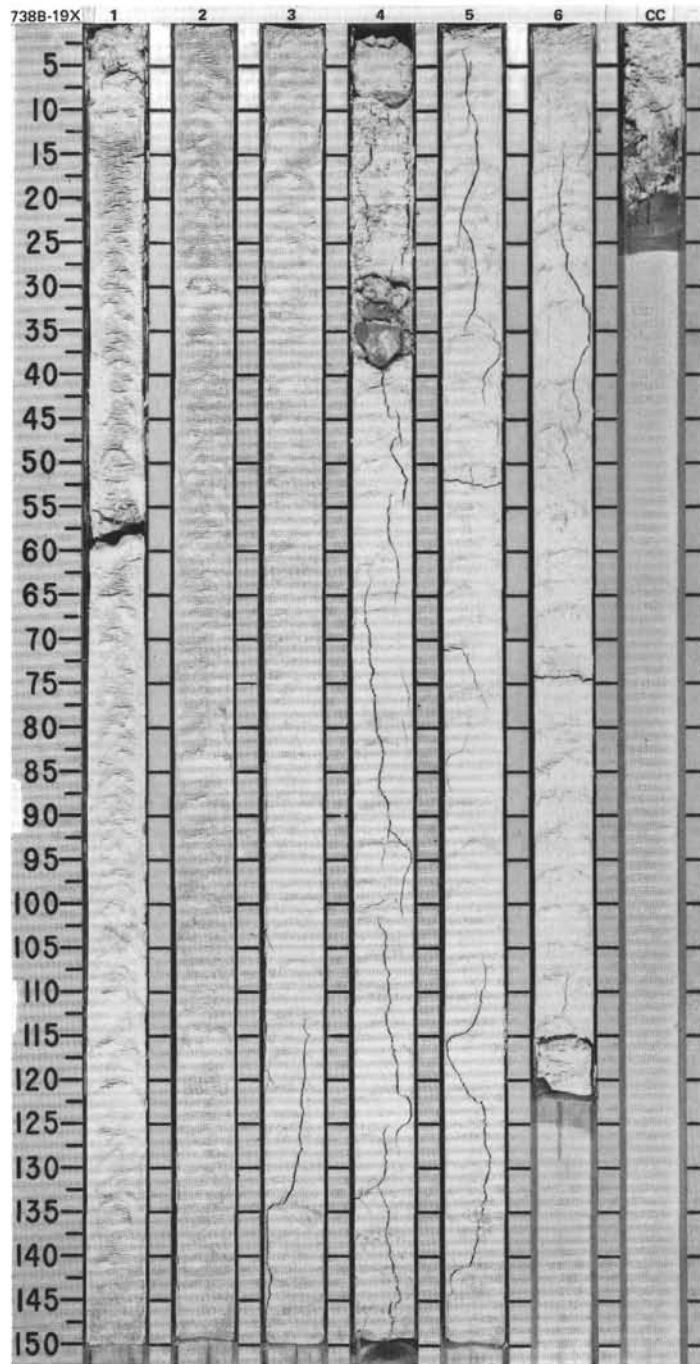


TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER			PALEOMAGNETICS PHYS. PROPERTIES CHEMISTRY	SECTION METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB. SED. STRUCTURES SAMPLES	LITHOLOGIC DESCRIPTION																																					
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS																																										
	DIATOMS																																												
MIDDLE EOCENE	P10-12	CP13	<i>P. goetheana / P. chalaria</i>		0.5 1.0		* *	NANNOFOSSIL OOZE Major lithology: Nannofossil ooze, white (10YR 8/1), homogeneous, soft. Harder, chalk-like bands, up to around 5 cm thick, increase in frequency down-core. There are some laminations, both wavy and diffuse, and distinct types (grayish to very light gray, uncodable). There are also some darker, diffuse patches (< 1 cm), which seem to have become streaked by the splitting wire. The streaking is probably derived from Mn-micronodules or smeared Mn concretions. SMEAR SLIDE SUMMARY (%): <table border="1"> <tr> <td>1, 113</td> <td>5, 48</td> </tr> <tr> <td>D</td> <td>M</td> </tr> </table> TEXTURE: <table border="1"> <tr> <td>Sand</td> <td>—</td> <td>—</td> </tr> <tr> <td>Silt</td> <td>10</td> <td>10</td> </tr> <tr> <td>Clay</td> <td>90</td> <td>90</td> </tr> </table> COMPOSITION: <table border="1"> <tr> <td>Clay</td> <td>7</td> <td>2</td> </tr> <tr> <td>Diatoms</td> <td>Tr</td> <td>—</td> </tr> <tr> <td>Foraminifers</td> <td>5</td> <td>2</td> </tr> <tr> <td>Nannofossils</td> <td>87</td> <td>88</td> </tr> <tr> <td>Opaques</td> <td>—</td> <td>5</td> </tr> <tr> <td>Quartz</td> <td>—</td> <td>Tr</td> </tr> <tr> <td>Radiolarians</td> <td>1</td> <td>—</td> </tr> <tr> <td>Sparite</td> <td>—</td> <td>3</td> </tr> </table>	1, 113	5, 48	D	M	Sand	—	—	Silt	10	10	Clay	90	90	Clay	7	2	Diatoms	Tr	—	Foraminifers	5	2	Nannofossils	87	88	Opaques	—	5	Quartz	—	Tr	Radiolarians	1	—	Sparite	—	3
1, 113	5, 48																																												
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Radiolarians	1	—																																											
Sparite	—	3																																											
C/M	P10-12			● q=60% V=15.07 r=1.81 w=3.5%																																									
A/M		CP13		● q=58% V=15.59 r=1.80 w=3.5%																																									
R/M			<i>P. goetheana / P. chalaria</i>																																										
				● %CaCO ₃ =96.0																																									

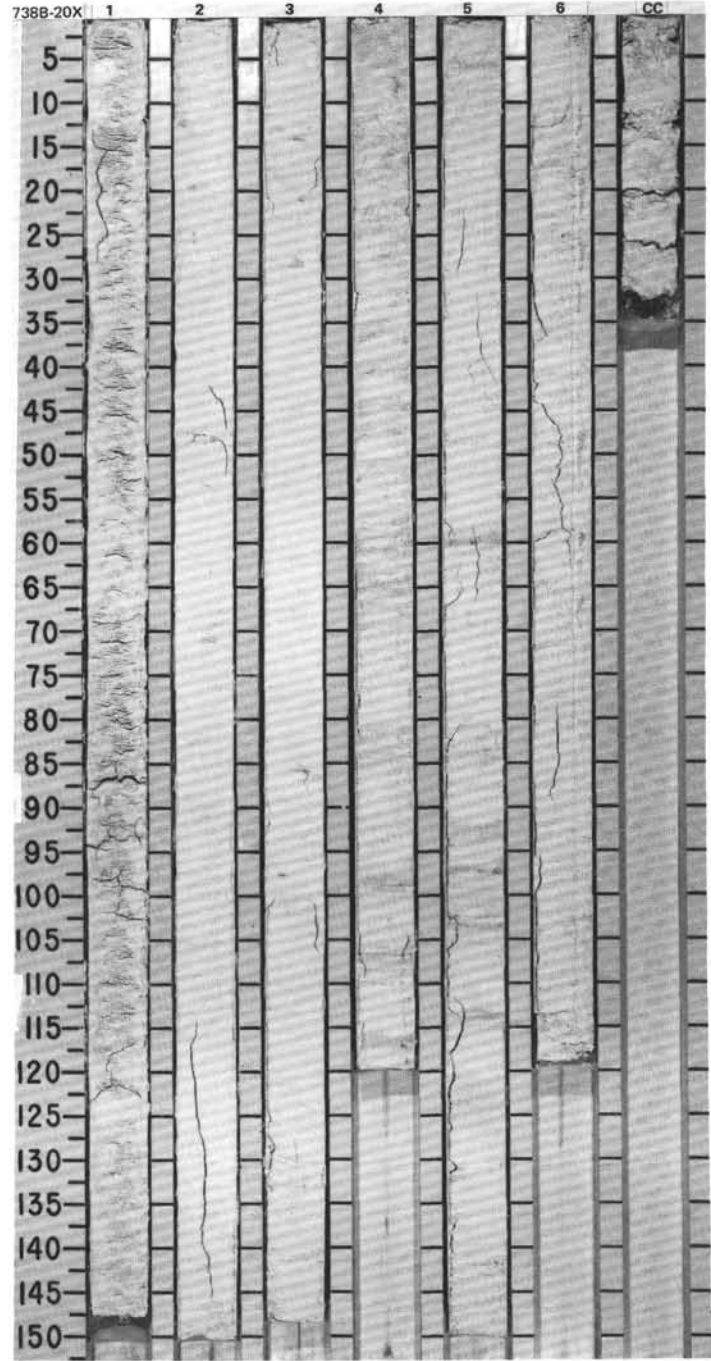


SITE 738 HOLE B CORE 19X CORED INTERVAL 156.5-166.2 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION																				
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS																														
MIDDLE EOCENE																																		
A/M-G	P10-12													<p>NANNOFOSSIL OOZE</p> <p>Major lithology: Nannofossil ooze, white (10YR 8/1), homogeneous, soft. Some harder bands down to Section 3, 80 cm. From this level to 150 cm and Section 4, 40-150 cm the sediment is also hard.</p> <p>Minor lithology: Chert, unnamed color (very light gray, 7.5GY 8/0), fractured. Section 4, 30-40 cm.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <table> <tr> <td></td> <td>2.90</td> </tr> <tr> <td>D</td> <td></td> </tr> </table> <p>TEXTURE:</p> <table> <tr> <td>Sand</td> <td>—</td> </tr> <tr> <td>Silt</td> <td>10</td> </tr> <tr> <td>Clay</td> <td>90</td> </tr> </table> <p>COMPOSITION:</p> <table> <tr> <td>Clay</td> <td>10</td> </tr> <tr> <td>Diatoms</td> <td>Tr</td> </tr> <tr> <td>Foraminifers</td> <td>85</td> </tr> <tr> <td>Nannofossils</td> <td>5</td> </tr> <tr> <td>Sparite</td> <td></td> </tr> </table>		2.90	D		Sand	—	Silt	10	Clay	90	Clay	10	Diatoms	Tr	Foraminifers	85	Nannofossils	5	Sparite	
	2.90																																	
D																																		
Sand	—																																	
Silt	10																																	
Clay	90																																	
Clay	10																																	
Diatoms	Tr																																	
Foraminifers	85																																	
Nannofossils	5																																	
Sparite																																		
A/M	CP13					● 0-56% V=1596 -1-84 W=33%		1	0.5 1.0																									
R/P						● 0-58% V=1505 -1-81 W=34%		2				*																						
						● 0-57% V=1862 -1-88 W=32%		3																										
						● %CaCO ₃ = 95.6		4		vdi		⊙																						
								5																										
								6																										
								CC																										

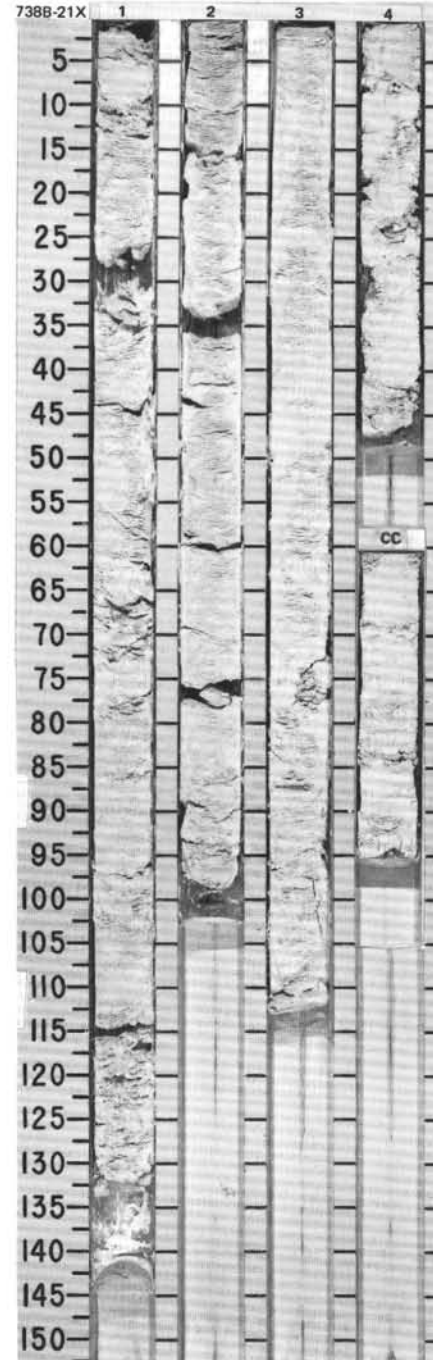


TIME-ROCK UNIT		BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS												
MIDDLE EOCENE															
A/G	P10-12				● $\phi = 60\%$ V=1596 d = 1.87 W=34%	● V=1604	● %CaCO ₃ *97.2 %TOC=0.00	1	0.5 1.0	VOID					
A/M	CP13														
B					● $\phi = 60\%$ V=1530 d = 1.94 W=32%	● V=1604	● %CaCO ₃ *95.6	2							
				● V=1604	● %CaCO ₃ *97.2 %TOC=0.00	3									
				● V=1604	● %CaCO ₃ *97.2 %TOC=0.00	4									
				● V=1604	● %CaCO ₃ *97.2 %TOC=0.00	5									
				● V=1604	● %CaCO ₃ *97.2 %TOC=0.00	6									
												OG			
												IW			
												*			
												*			



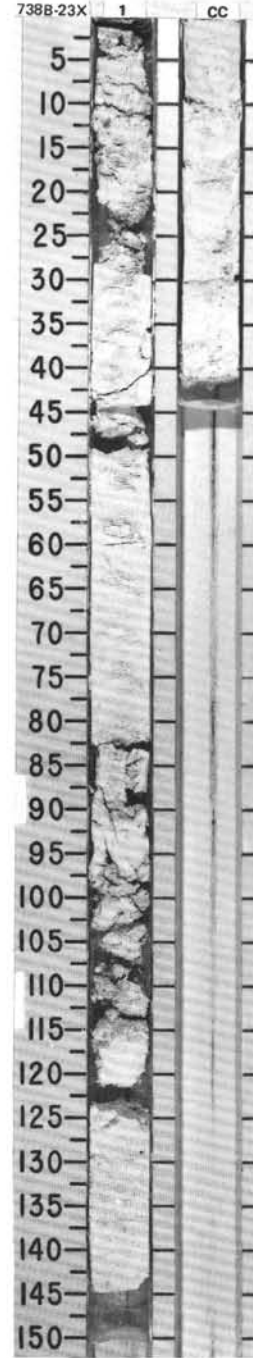
SITE 738 HOLE B CORE 21X CORED INTERVAL 175.8-185.4 mbsf

TIME-ROCK UNIT		BIOSTRAT. ZONE/ FOSSIL CHARACTER	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION																
C/M	A/M																											
	MIDDLE EOCENE	P10-12 CP13				1	0.5 1.0					<p>NANNOFOSSIL OOZE</p> <p>Major lithology: Nannofossil ooze, white (10YR 8/1), homogeneous, firm. One chalky interval occurs in CC, 2-7 cm. A few Mn nodule smears occur in Section 3, 10-15 cm.</p> <p>Drilling disturbance: Shattered core.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <table border="0"> <tr> <td>Clay</td> <td>10</td> </tr> <tr> <td>Glass</td> <td>Tr</td> </tr> <tr> <td>Nannofossils</td> <td>90</td> </tr> <tr> <td>Quartz</td> <td>Tr</td> </tr> </table> <p>COMPOSITION:</p> <table border="0"> <tr> <td>Clay</td> <td>10</td> </tr> <tr> <td>Glass</td> <td>Tr</td> </tr> <tr> <td>Nannofossils</td> <td>90</td> </tr> <tr> <td>Quartz</td> <td>Tr</td> </tr> </table>	Clay	10	Glass	Tr	Nannofossils	90	Quartz	Tr	Clay	10	Glass	Tr	Nannofossils	90	Quartz	Tr
Clay	10																											
Glass	Tr																											
Nannofossils	90																											
Quartz	Tr																											
Clay	10																											
Glass	Tr																											
Nannofossils	90																											
Quartz	Tr																											
						2		VOID			*																	
						3		VOID																				
						4		VOID																				
						CC																						



SITE 738 HOLE B CORE 23X CORED INTERVAL 195.0-204.6 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS										
MIDDLE EOCENE	C/G	P9	CP13	B		V=159% w=33%	● %CaCO ₃ =94.4		0.5 1.0	VOID			*	<p>NANNOFOSSIL OOZE</p> <p>Major lithology: Nannofossil ooze, white (10YR 8/1), homogeneous, firm. Some harder bands occur, mostly in CC. Micromanganese-smears are present throughout Section 1, often with 5-10 smears across a 1 cm band.</p> <p>Drilling disturbance: Shattered core.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <p style="text-align: right;">1, 80 D</p> <p>TEXTURE:</p> <p>Sand — Silt — Clay —</p> <p>COMPOSITION:</p> <p>Clay 10 Diatoms Tr Foraminifers 2 Glass Tr Nannofossils 85 Quartz Tr Sparite Tr Spicules Tr</p>

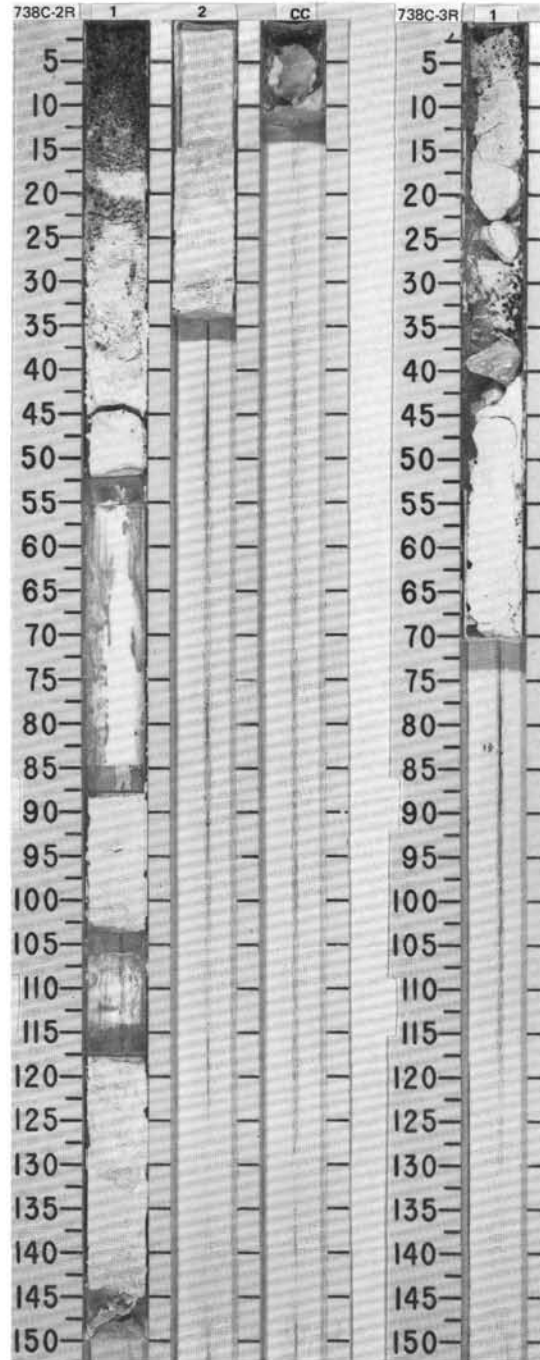


SITE 738 HOLE C CORE 2R CORED INTERVAL 196.6-206.2 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB. SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION													
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS																						
MIDDLE EOCENE	A/G	P9 CP13	A/M	R/P		$V=15.71$ $\gamma=1.95$ $\bullet \text{ \%CaCO}_3=93.1$		0.5 1 1.0 2 CC				<p>NANNOFOSSIL OOZE</p> <p>Major lithology: Nannofossil ooze, white (10YR 8/1), homogeneous.</p> <p>Drilling disturbance: Mixed gravel of chert, quartz, volcanic glass and vesicular basalt due to hole cave-in, Section 1, 0-23 cm. Section 1, 0-52 cm very disturbed, 88-103 cm and 118-145 cm moderately disturbed. Section 2, 15-33.5 cm moderately disturbed. Core catcher contains fragments of pale gray chert with black diffuse organic specks; chert coated with white drilling contaminated nannofossil ooze.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <table border="0"> <tr><td>1,</td><td>95</td></tr> <tr><td>D</td><td></td></tr> </table> <p>TEXTURE:</p> <table border="0"> <tr><td>Sand</td><td>0</td></tr> <tr><td>Silt</td><td>95</td></tr> <tr><td>Clay</td><td>5</td></tr> </table> <p>COMPOSITION:</p> <table border="0"> <tr><td>Micrite</td><td>5</td></tr> <tr><td>Nannofossils</td><td>95</td></tr> </table>	1,	95	D		Sand	0	Silt	95	Clay	5	Micrite	5	Nannofossils	95
1,	95																									
D																										
Sand	0																									
Silt	95																									
Clay	5																									
Micrite	5																									
Nannofossils	95																									

SITE 738 HOLE C CORE 3R CORED INTERVAL 206.2-215.9 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB. SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS									
MIDDLE EOCENE	C/G	P9 CP12	A/M	R/P		$\bullet \text{ \%CaCO}_3=95.2$		0.5 1 CC				<p>NANNOFOSSIL OOZE</p> <p>Major lithology: Nannofossil ooze, white (10YR 8/1).</p> <p>Drilling disturbance: Section 1, 0-86 cm contaminated by coarse gravel composed of chert, volcanic glass, quartz and vesicular basalt. Section 1 contains chert fragments from 36-48 cm; 43-70 cm is very disturbed.</p>	

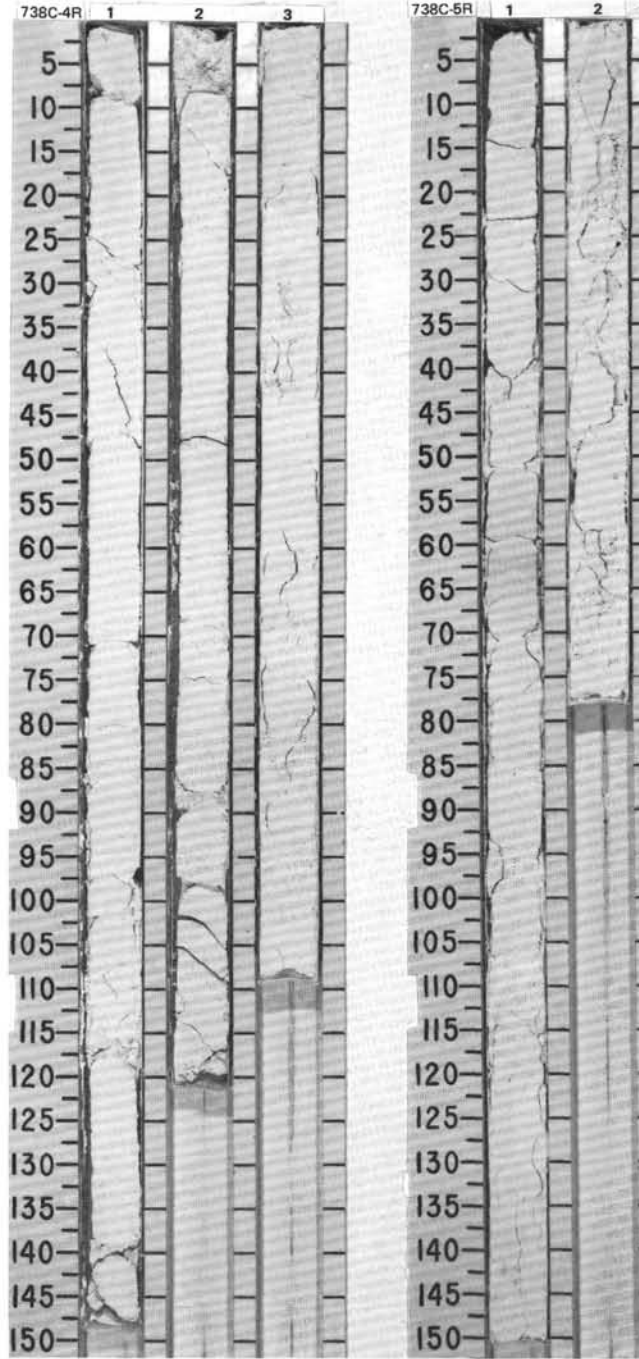


SITE 738 HOLE C CORE 4R CORED INTERVAL 215.9 - 225.6 mbsf

TIME-ROCK UNIT		BIOSTRAT. ZONE/ FOSSIL CHARACTER		PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION																														
FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS																																								
LOWER EOCENE	P6-8	CP12											<p>CALCAREOUS NANNOFOSSIL CHALK</p> <p>Major lithologies:</p> <ul style="list-style-type: none"> a. Nannofossil chalk with minor foraminifers with (10YR 8/1). Section 1. b. Nannofossil chalk, white (10YR 8/1), minor bioturbation throughout Sections 2 and 3. <p>Drilling disturbance:</p> <p>Sections 1 and 2 slightly fractured; Section 3, highly fractured. Nodular structures in chalk, harder and more intensely burrowed than thin interbeds of softer chalk probably represent drilling biscuits. Chalk fractures preferentially along softer layers.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <table border="1"> <tr> <td></td> <td>1, 140</td> <td>3, 82</td> </tr> <tr> <td></td> <td>M</td> <td>D</td> </tr> </table> <p>TEXTURE:</p> <table border="1"> <tr> <td>Sand</td> <td>3</td> <td>0</td> </tr> <tr> <td>Silt</td> <td>90</td> <td>95</td> </tr> <tr> <td>Clay</td> <td>7</td> <td>5</td> </tr> </table> <p>COMPOSITION:</p> <table border="1"> <tr> <td>Feldspar</td> <td>Tr</td> <td>--</td> </tr> <tr> <td>Foraminifers</td> <td>15</td> <td>--</td> </tr> <tr> <td>Glass</td> <td>Tr</td> <td>--</td> </tr> <tr> <td>Micrite</td> <td>1</td> <td>10</td> </tr> <tr> <td>Nannofossils</td> <td>79</td> <td>90</td> </tr> </table>		1, 140	3, 82		M	D	Sand	3	0	Silt	90	95	Clay	7	5	Feldspar	Tr	--	Foraminifers	15	--	Glass	Tr	--	Micrite	1	10	Nannofossils	79	90
	1, 140	3, 82																																									
	M	D																																									
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Feldspar	Tr	--																																									
Foraminifers	15	--																																									
Glass	Tr	--																																									
Micrite	1	10																																									
Nannofossils	79	90																																									
C/M					V=1750 W=28.7% γ=2.0		1																																				
A/M					V=1803 W=27.1% γ=2.0		2																																				
R/P							3																																				
						XCaCO ₃ 95.1	CC		VOID																																		

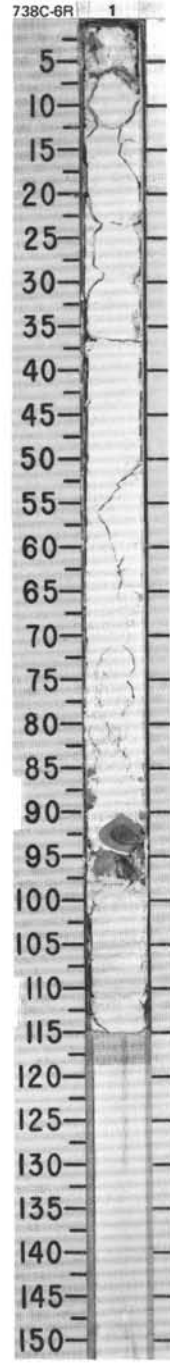
SITE 738 HOLE C CORE 5R CORED INTERVAL 225.6 - 235.2 mbsf

TIME-ROCK UNIT		BIOSTRAT. ZONE/ FOSSIL CHARACTER		PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION																				
FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS																														
LOWER TO MIDDLE EOCENE	P6-8	CP12											<p>NANNOFOSSIL CHALK</p> <p>Major lithology:</p> <p>Nannofossil chalk, white (10YR 8/1) with minor bioturbation. Mn specks throughout. Probable shark tooth(8 mm long) observed in Section 2, 30 cm; pale greenish layer in Section 2, 10-11 cm.</p> <p>Drilling disturbance:</p> <p>Break up of core into biscuits, surrounded by drilling ooze (disaggregated chalk).</p> <p>SMEAR SLIDE SUMMARY (%):</p> <table border="1"> <tr> <td></td> <td>1, 80</td> </tr> <tr> <td></td> <td>D</td> </tr> </table> <p>TEXTURE:</p> <table border="1"> <tr> <td>Sand</td> <td>--</td> </tr> <tr> <td>Silt</td> <td>--</td> </tr> <tr> <td>Clay</td> <td>--</td> </tr> </table> <p>COMPOSITION:</p> <table border="1"> <tr> <td>Clay</td> <td>10</td> </tr> <tr> <td>Feldspar</td> <td>7</td> </tr> <tr> <td>Foraminifers</td> <td>2</td> </tr> <tr> <td>Nannofossils</td> <td>73</td> </tr> <tr> <td>Spartite</td> <td>15</td> </tr> </table>		1, 80		D	Sand	--	Silt	--	Clay	--	Clay	10	Feldspar	7	Foraminifers	2	Nannofossils	73	Spartite	15
	1, 80																																
	D																																
Sand	--																																
Silt	--																																
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Nannofossils	73																																
Spartite	15																																
C/G					V=1782 W=27.6% γ=2.02		1																										
A/M					V=1487 W=28.8% γ=2.22		2		VOID																								
R/P						XCaCO ₃ 95.1	CC		VOID																								



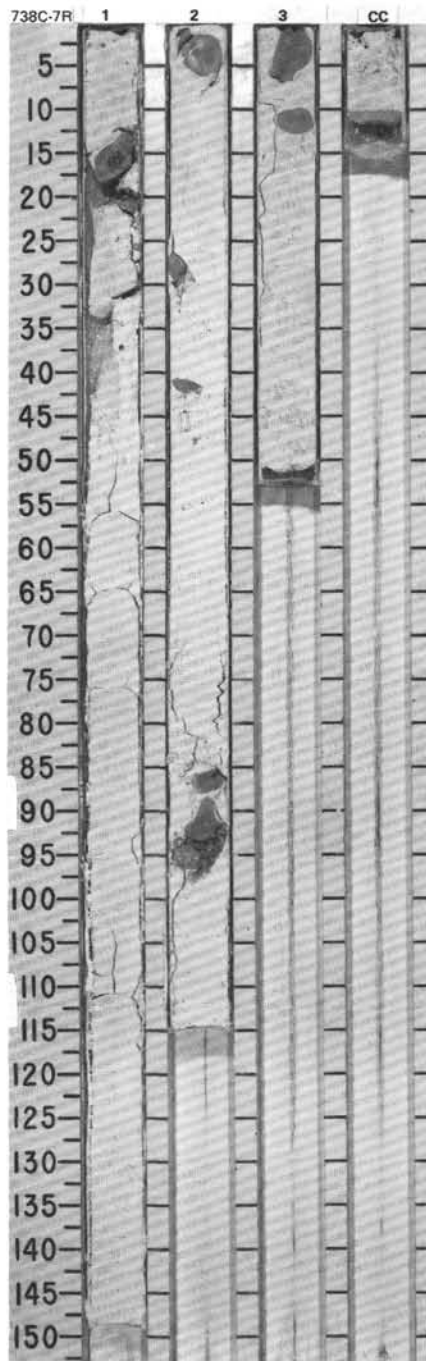
SITE 738 HOLE C CORE 6R CORED INTERVAL 235.2-244.8 mbsf

TIME - ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION												
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS																						
LOWER EOCENE	C/M	A/M	R/P											<p>CALCAREOUS NANNOFOSSIL CHALK</p> <p>Major lithology: Calcareous nannofossil chalk, white (10YR 8/1) but slightly greener (5Y 8/1) in Section 1, 102-115 cm and bioturbated (Planolites and Chondrites).</p> <p>Minor lithology: Chert occurs as nodules in Section 1, 90-97 cm. They have a dark core (5Y 2.5/1) with numerous small light (10YR 7/1) inclusions, surrounded by porcellanite-like rims (10YR 7/1). These in turn are surrounded by 3 mm thick rims of hard silicified white chalk.</p> <p>Drilling disturbance: The core is broken into biscuits, surrounded by drilling ooze (disaggregated chalk). Chert fragments are smeared along the liner in Section 1, 0-8 cm and 85-97 cm.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <table style="margin-left: 40px;"> <tr><td>1, 45</td></tr> <tr><td>D</td></tr> </table> <p>TEXTURE:</p> <p>Sand — Silt — Clay —</p> <p>COMPOSITION:</p> <table style="margin-left: 40px;"> <tr><td>Clay</td><td>7</td></tr> <tr><td>Foraminifers</td><td>2</td></tr> <tr><td>Micrite</td><td>20</td></tr> <tr><td>Nannofossils</td><td>65</td></tr> <tr><td>Sparite</td><td>5</td></tr> </table>	1, 45	D	Clay	7	Foraminifers	2	Micrite	20	Nannofossils	65	Sparite	5
1, 45																										
D																										
Clay	7																									
Foraminifers	2																									
Micrite	20																									
Nannofossils	65																									
Sparite	5																									



SITE 738 HOLE C CORE 7R CORED INTERVAL 244.8-254.4 mbsf

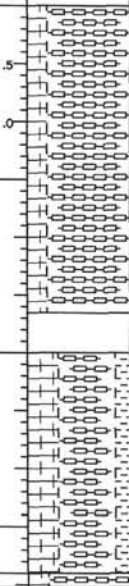
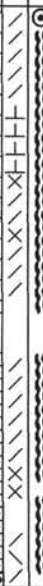




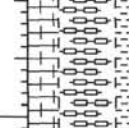


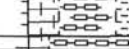


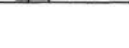


TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION																							
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS																																	
	LOWER EOCENE																																				
	C/M	A/M	B																																		
	P6-8	CP10-12			V ₁₈₆₀ = 7±2.07		1	0.5					<p>CLAYEY, CALCAREOUS NANNOFOSSIL CHALK</p> <p>Major lithology: Clayey, calcareous nannofossil chalk, white (10YR 8/1), minor diffuse bioturbation in Sections 1 and 3 (with Planolites and Chondrites).</p> <p>Minor lithology: Chert nodules and fragments occur in Section 1, 11-16 cm, Section 2, 0-6 cm, 26-28 cm, 41-42 cm, 85-97 cm, and Section 3, 0-6 cm, 9-12 cm. Some complete nodules have a darker core (5Y 2.5/1) with numerous small inclusions (10YR 7/1), mostly 1 mm in diameter. The core is surrounded by porcellanite-like rims (10YR 7/1) and hard silicified chalk. In others the cores are "light gray" (N7) and cloudy and boundaries at the rims are diffuse.</p> <p>Drilling disturbance: Break up of core into biscuits, surrounded by drilling ooze (disaggregated chalk). In Section 1, 0-50 cm and 130-135 cm small chert fragments were produced and smeared during drilling and splitting. In Section 2, some 1-2 mm pieces are sprinkled along the cut surface and adjacent to the core liner. The core catcher material is a drilling breccia.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <table border="1"> <tr><td>Sand</td><td>1.65</td></tr> <tr><td>Silt</td><td>D</td></tr> <tr><td>Clay</td><td></td></tr> </table> <p>TEXTURE:</p> <table border="1"> <tr><td>Sand</td><td>--</td></tr> <tr><td>Silt</td><td>--</td></tr> <tr><td>Clay</td><td>--</td></tr> </table> <p>COMPOSITION:</p> <table border="1"> <tr><td>Clay</td><td>25</td></tr> <tr><td>Feldspar</td><td>Tr</td></tr> <tr><td>Foraminifers</td><td>Tr</td></tr> <tr><td>Micrite</td><td>20</td></tr> <tr><td>Nannofossils</td><td>50</td></tr> <tr><td>Sparite</td><td>5</td></tr> </table>	Sand	1.65	Silt	D	Clay		Sand	--	Silt	--	Clay	--	Clay	25	Feldspar	Tr	Foraminifers	Tr	Micrite	20	Nannofossils	50	Sparite	5
Sand	1.65																																				
Silt	D																																				
Clay																																					
Sand	--																																				
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Clay	25																																				
Feldspar	Tr																																				
Foraminifers	Tr																																				
Micrite	20																																				
Nannofossils	50																																				
Sparite	5																																				
					X ₁₀₀₀ = 0.01	2	1.0																														
					X _{CaCO₃} = 83.2	3	2.0																														
					X _{CaCO₃} = 93.1		3.0																														

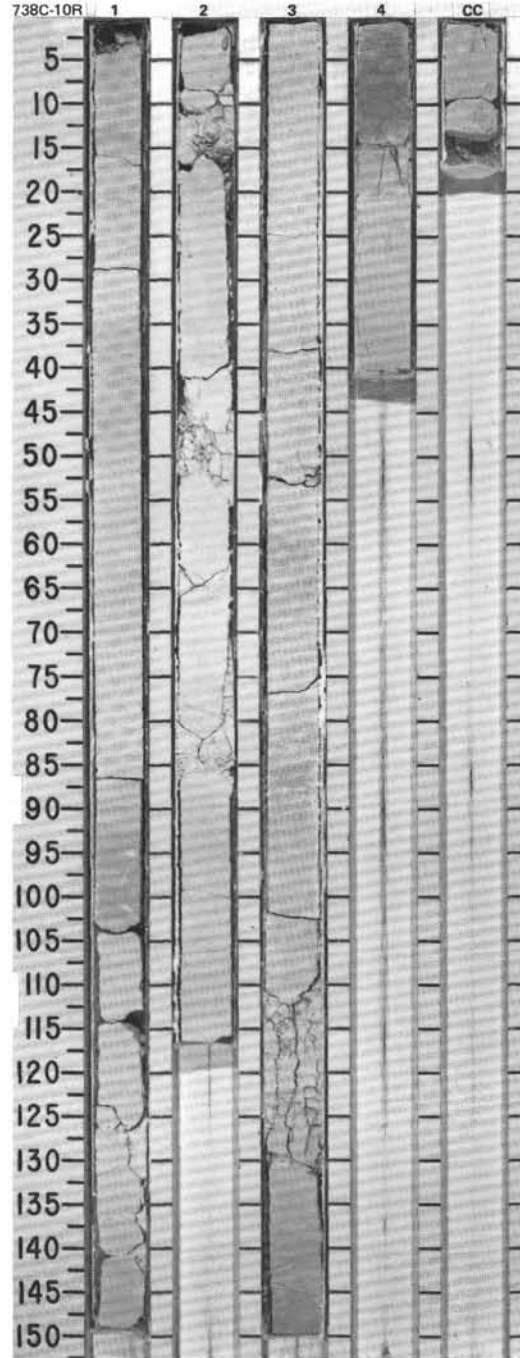


TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION																																				
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS																																														
LOWER EOCENE	F/M	A/M	R/P					1	0.5				*	<p>CALCAREOUS CHALK</p> <p>Major lithology: Calcareous chalk with minor nannofossils, foraminifers, and clay, white (5Y 8/1), with minor foraminifers and moderate bioturbation throughout. The bioturbation is diffuse, with possible Chondrites and Planolites. Chalk slightly more compact than in Core 8.</p> <p>Minor lithology: Irregular chert nodules occur in Section 1, 4-12 cm (fragmented), 75-79 cm, 80-85 cm. They show a complex patchy development of olive (5Y 5/3) chert in white (10YR 8/1) silicified chalk. Some white (5Y 8/1) inclusions occur in the chert.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <table border="1"> <tr> <td></td> <td>1, 7</td> <td>1, 40</td> </tr> <tr> <td>D</td> <td></td> <td>D</td> </tr> </table> <p>TEXTURE:</p> <table border="1"> <tr> <td>Sand</td> <td>—</td> <td>—</td> </tr> <tr> <td>Silt</td> <td>—</td> <td>—</td> </tr> <tr> <td>Clay</td> <td>—</td> <td>—</td> </tr> </table> <p>COMPOSITION:</p> <table border="1"> <tr> <td>Apatite</td> <td>Tr</td> <td>—</td> </tr> <tr> <td>Clay</td> <td>10</td> <td>5</td> </tr> <tr> <td>Foraminifers</td> <td>10</td> <td>5</td> </tr> <tr> <td>Micrite</td> <td>55</td> <td>65</td> </tr> <tr> <td>Nannofossils</td> <td>10</td> <td>10</td> </tr> <tr> <td>Quartz</td> <td>Tr</td> <td>—</td> </tr> <tr> <td>Sparite</td> <td>15</td> <td>15</td> </tr> </table>		1, 7	1, 40	D		D	Sand	—	—	Silt	—	—	Clay	—	—	Apatite	Tr	—	Clay	10	5	Foraminifers	10	5	Micrite	55	65	Nannofossils	10	10	Quartz	Tr	—	Sparite	15	15
	1, 7	1, 40																																																
D		D																																																
Sand	—	—																																																
Silt	—	—																																																
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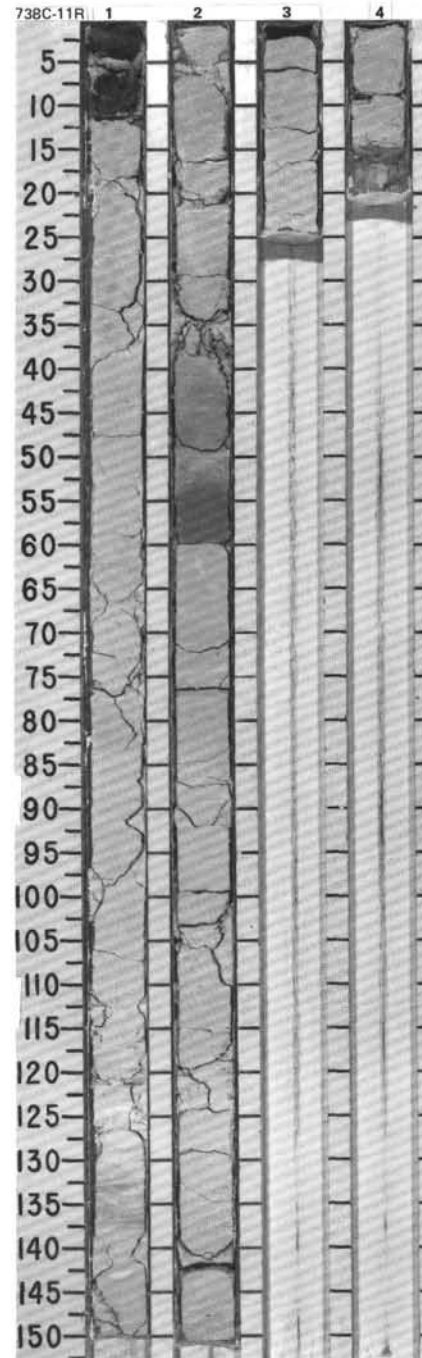
SITE 738 HOLE C CORE 10R CORED INTERVAL 273.8-283.4 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION																																							
	FORAMINIFERS	NANNOFOSSILS	RADIOLIARIANS	DIAATOMS																																																	
LOWER EOCENE	C/M	P6-8			•	$\gamma = 1994$ $\delta = 2.73\%$	$X_{CaCO_3} = 93.8$	1	0.5 1.0					<p>CALCAREOUS CHALK</p> <p>Major lithology: Calcareous chalk, with minor nannofossils, foraminifers, clay, and variable colors, mostly white (5Y 8/1); also unnamed (10Y 7/1), very pale brown (10YR 7/3). Moderate bioturbation is developed throughout, though sometimes diffuse and mottled. Planolites, Chondrites and possible Zoophycos are seen. Burrows filled by lighter (10YR 8/1) or darker chalk (5Y 7/2); two generations of Planolites burrows; Planolites burrowed by Chondrites. The chalk seems to be slightly silicified.</p> <p>Minor lithology: A chert nodule occurs in Section 1, 0-2 cm (possible cave-in); it is olive (5Y 5/3) and has a rim of hard silicified chalk.</p> <p>Drilling disturbance: Several intervals of drilling ooze (disaggregated chalk) occur sporadically throughout the core.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <table border="1" data-bbox="808 595 936 642"> <tr><td>OG</td><td>1, 90</td><td>3, 90</td></tr> <tr><td>IW</td><td>D</td><td>D</td></tr> </table> <p>TEXTURE:</p> <table border="1" data-bbox="702 674 936 721"> <tr><td>Sand</td><td>—</td><td>—</td></tr> <tr><td>Silt</td><td>—</td><td>—</td></tr> <tr><td>Clay</td><td>—</td><td>—</td></tr> </table> <p>COMPOSITION:</p> <table border="1" data-bbox="702 752 936 878"> <tr><td>Apatite</td><td>Tr</td><td>—</td></tr> <tr><td>Clay</td><td>5</td><td>15</td></tr> <tr><td>Foraminifers</td><td>5</td><td>15</td></tr> <tr><td>Micrite</td><td>70</td><td>50</td></tr> <tr><td>Nannofossils</td><td>10</td><td>15</td></tr> <tr><td>Quartz</td><td>—</td><td>Tr</td></tr> <tr><td>Radiolarians</td><td>Tr</td><td>—</td></tr> <tr><td>Sparite</td><td>10</td><td>5</td></tr> </table>	OG	1, 90	3, 90	IW	D	D	Sand	—	—	Silt	—	—	Clay	—	—	Apatite	Tr	—	Clay	5	15	Foraminifers	5	15	Micrite	70	50	Nannofossils	10	15	Quartz	—	Tr	Radiolarians	Tr	—	Sparite	10	5
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	A/M	CP9			•	$X_{CaCO_3} = 91.0$	2																																														
	B				•	$X_{CaCO_3} = 92.1$	3																																														
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TIME - ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION																																																				
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS																																																														
UPPER PALEOCENE														<p>CALCAREOUS FORAMINIFERAL NANNOFOSSIL CHALK</p> <p>Major lithology: Calcareous foraminiferal nannofossil chalk, white (5Y 8/1), minor burrowing in Section 2, 85-128 cm, moderate burrowing in rest of core; burrows diffuse, mottled and mainly of Planolites type. Section 1 contains Planolites and Chondrites, 126-140 cm and Thalassinoides, 144 cm. Nodules of hard chalk separated by thin (1-6 cm) zones of softer, less well burrowed chalk.</p> <p>Minor lithology: Clayey calcareous nannofossil chalk, pale yellow (5Y 7/3) in Section 1, 126-140 cm and Section 2, 37-58 cm. Clay-rich brownish streaks in Section 1, 126-140 cm are probably dissolution features; in Section 2 0-37 cm, 37-58 cm comprise two zones which become darker towards the base concomitant with an increased clay; sharp base to zones and color contrast is probably a dissolution surface.</p> <p>Drilling disturbance: Section 1, 45-150 cm; Section 2, Section 3, 0-24 cm; Section 4, 0-15 cm moderately fractured. Section 1, 0-10 cm contain granite and gneiss clast from hole contamination.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <table border="1"> <tr> <td></td> <td>1, 67</td> <td>1, 133</td> <td>2, 55</td> </tr> <tr> <td>D</td> <td></td> <td>M</td> <td>M</td> </tr> </table> <p>TEXTURE:</p> <table border="1"> <tr> <td>Sand</td> <td>10</td> <td>15</td> <td>5</td> </tr> <tr> <td>Silt</td> <td>85</td> <td>80</td> <td>70</td> </tr> <tr> <td>Clay</td> <td>5</td> <td>5</td> <td>25</td> </tr> </table> <p>COMPOSITION:</p> <table border="1"> <tr> <td>Apatite</td> <td>Tr</td> <td>Tr</td> <td>Tr</td> </tr> <tr> <td>Carbonate</td> <td>30</td> <td>30</td> <td>25</td> </tr> <tr> <td>Clay</td> <td>2</td> <td>—</td> <td>20</td> </tr> <tr> <td>Feldspar</td> <td>5</td> <td>5</td> <td>10</td> </tr> <tr> <td>Foraminifers</td> <td>30</td> <td>30</td> <td>5</td> </tr> <tr> <td>Glass</td> <td>2</td> <td>3</td> <td>5</td> </tr> <tr> <td>Nannofossils</td> <td>30</td> <td>30</td> <td>30</td> </tr> <tr> <td>Quartz</td> <td>—</td> <td>—</td> <td>2</td> </tr> </table>		1, 67	1, 133	2, 55	D		M	M	Sand	10	15	5	Silt	85	80	70	Clay	5	5	25	Apatite	Tr	Tr	Tr	Carbonate	30	30	25	Clay	2	—	20	Feldspar	5	5	10	Foraminifers	30	30	5	Glass	2	3	5	Nannofossils	30	30	30	Quartz	—	—	2
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Quartz	—	—	2																																																															
	P4-5	CP8				$\gamma = 2.10$ \bullet $V = 1997$ \bullet $W = 20.8\%$ \bullet $XCaCO_3 = 88.8$ \bullet		0.5 1.0																																																										
						$\gamma = 2.15$ \bullet $V = 1932$ \bullet $W = 20.8\%$ \bullet $XCaCO_3 = 89.5$ \bullet		2																																																										
						$\gamma = 2.02$ \bullet $V = 1932$ \bullet $W = 20.8\%$ \bullet $XCaCO_3 = 89.5$ \bullet		3		VOID																																																								

738 C 12R NO RECOVERY

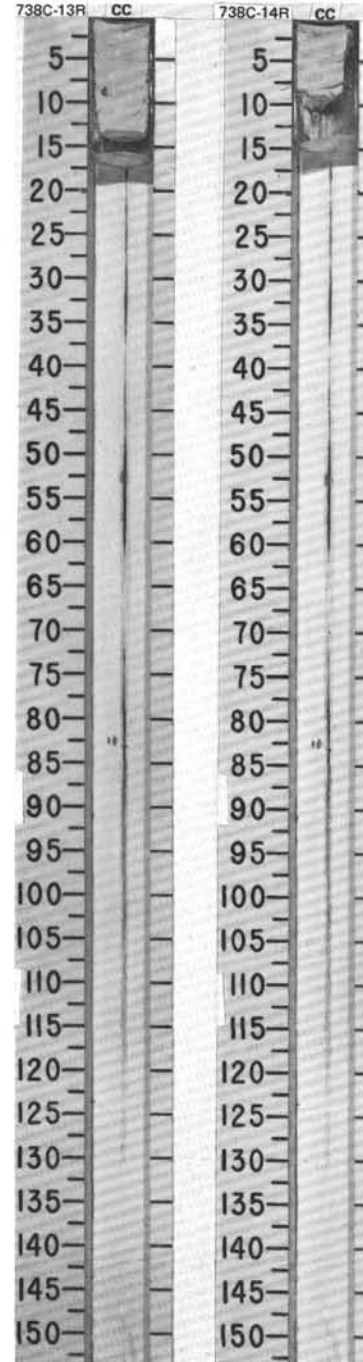


SITE 738 HOLE C CORE 13R CORED INTERVAL 302.7-312.3 mbsf

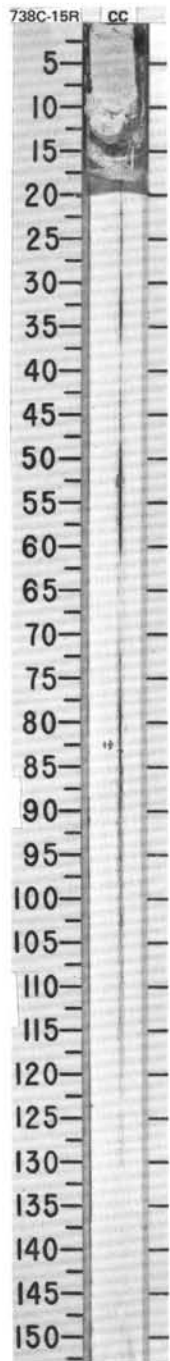
TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB. SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS									
UPPER PALEOGENE	P4-5	A/C	B				● CC						<p>No true recovery, only disturbed clayey calcareous nannofossil chalk with foraminifers in core catcher. A small pebble 4 mm long occurs at 8 cm.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <p style="text-align: right;">CC, 5 D</p> <p>TEXTURE:</p> <p>Sand — Silt — Clay —</p> <p>COMPOSITION:</p> <p>Carbonate 30 Clay 25 Feldspar Tr Foraminifers 10 Nannofossils 30</p>

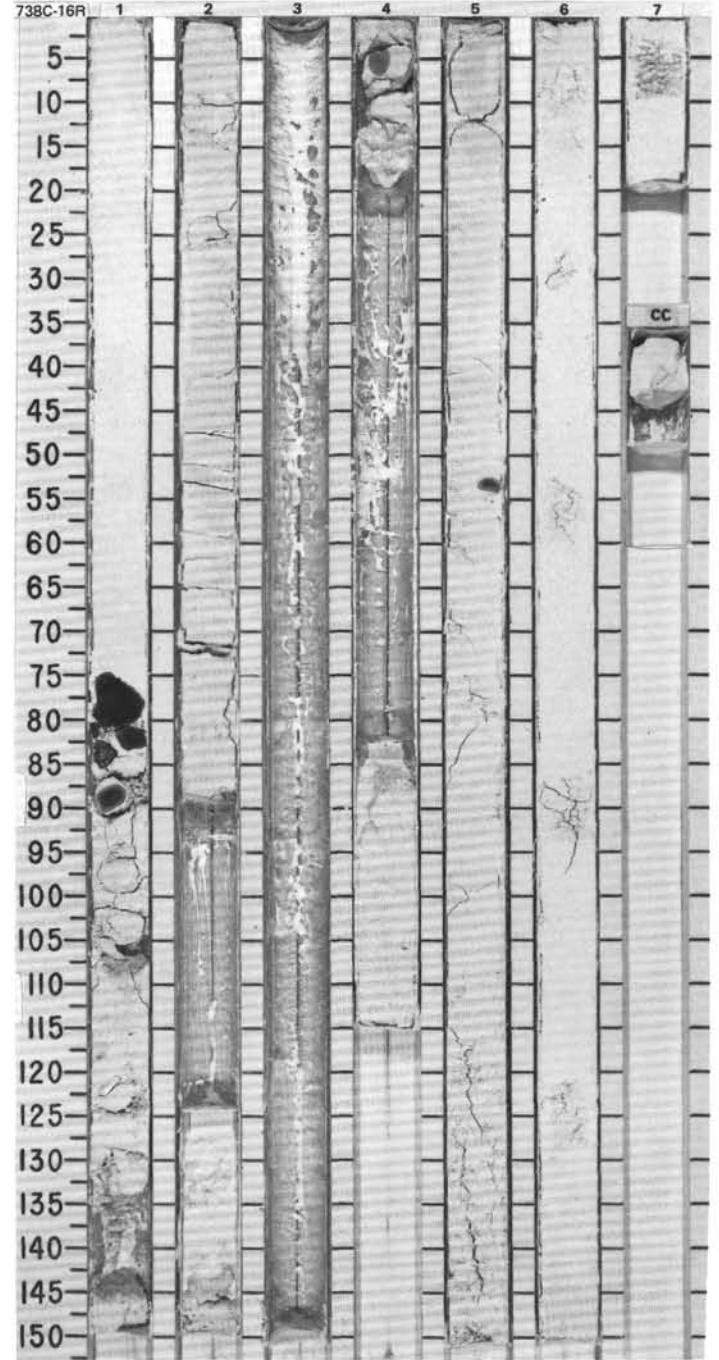
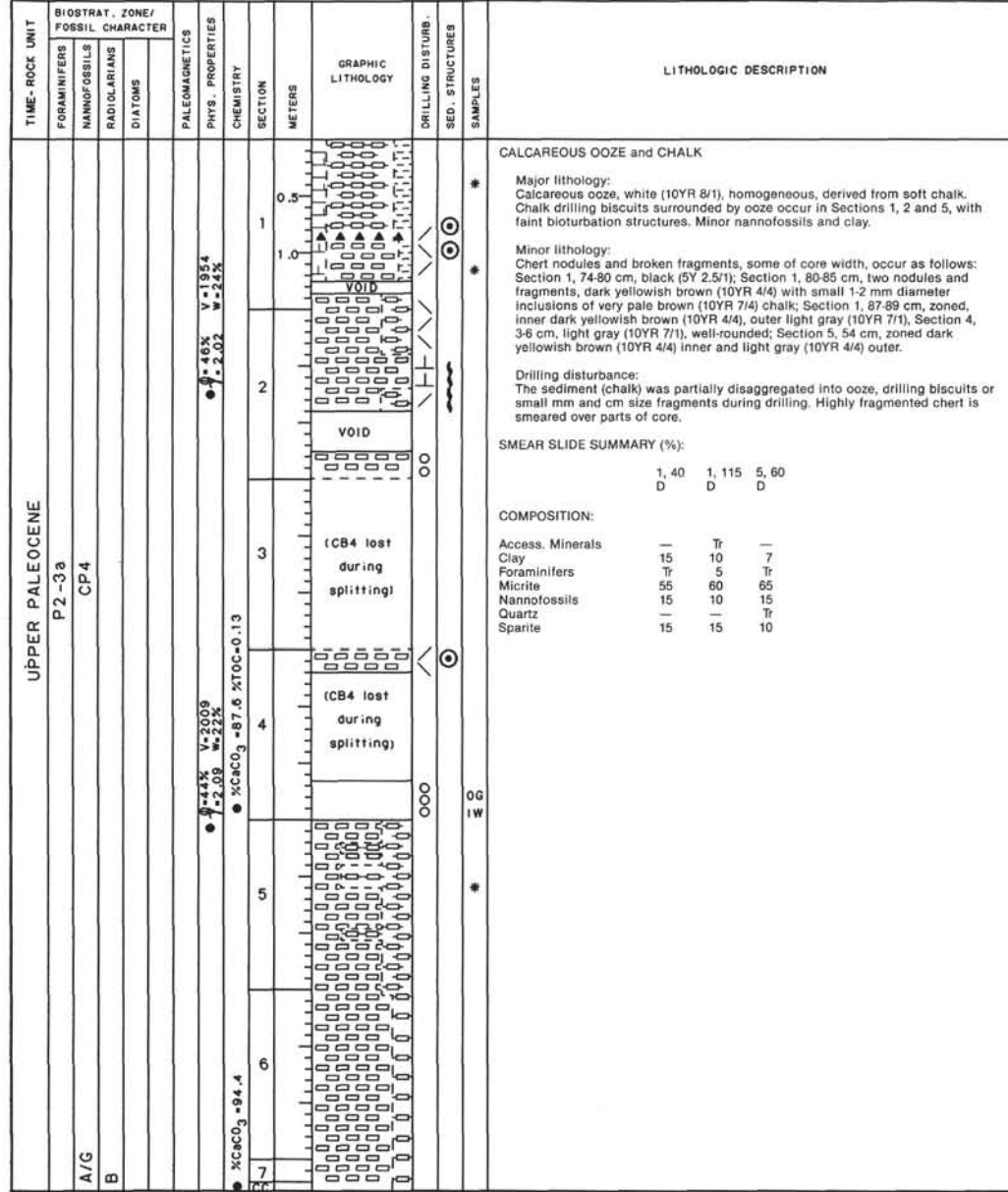
SITE 738 HOLE C CORE 14R CORED INTERVAL 312.3-321.9 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB. SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS									
UPPER PALEOGENE	P3b	CP6-7					● CC						<p>NANNOFOSSIL CHALK</p> <p>Major lithology: Nannofossil chalk with minor clay, white (10YR 8/1), homogeneous, derived from soft chalk.</p> <p>Drilling disturbance: The sediment (chalk) was totally disaggregated into ooze during drilling.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <p style="text-align: right;">CC, 5 D</p> <p>COMPOSITION:</p> <p>Access. Minerals Tr Clay 20 Foraminifers 5 Nannofossils 75</p>



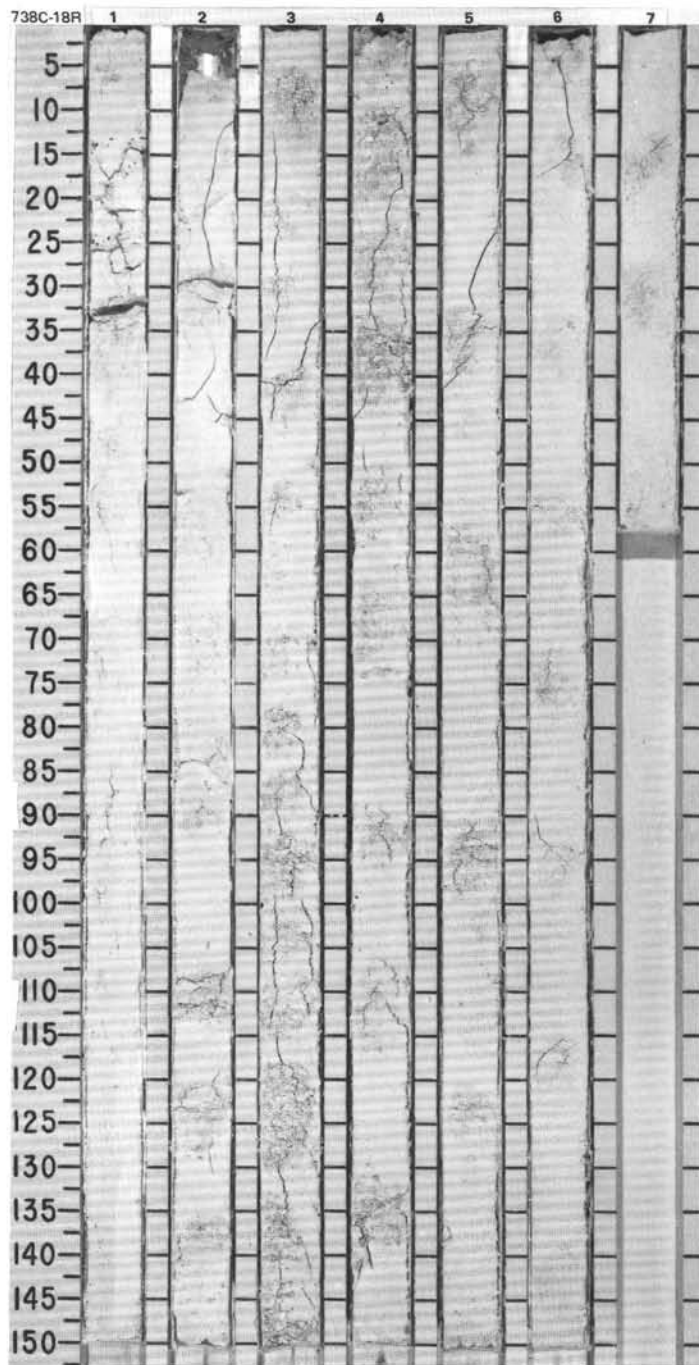
TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION												
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIAZONES																					
UPPER PALEOCENE	P2-3a	A/G	B				CC						<p>NANNOFOSSIL CALCAREOUS CHALK</p> <p>Major lithology: Nannofossil calcareous chalk, white (10YR 8/1), homogeneous, derived from soft chalk.</p> <p>Drilling disturbance: The sediment (chalk) was totally disaggregated into ooze during drilling. Angular chert granules are derived from cave-in.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <p style="text-align: right;">CC, 7 D</p> <p>COMPOSITION:</p> <table style="margin-left: 20px;"> <tr><td>Access. Minerals</td><td>1</td></tr> <tr><td>Clay</td><td>10</td></tr> <tr><td>Foraminifers</td><td>1</td></tr> <tr><td>Micrite</td><td>55</td></tr> <tr><td>Nannofossils</td><td>25</td></tr> <tr><td>Sparite</td><td>5</td></tr> </table>	Access. Minerals	1	Clay	10	Foraminifers	1	Micrite	55	Nannofossils	25	Sparite	5
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Clay	10																								
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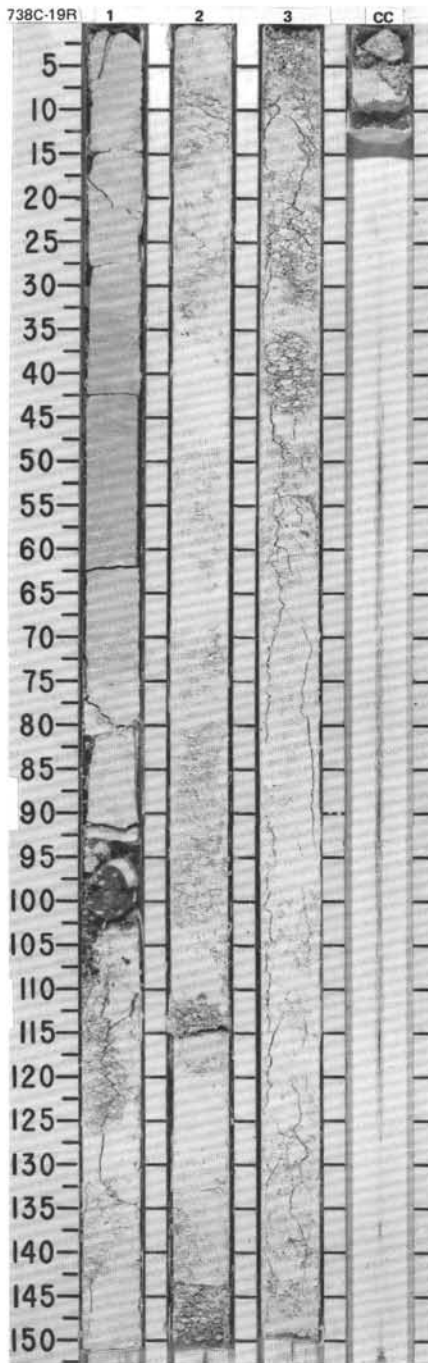


SITE 738 HOLE C CORE 18R CORED INTERVAL 350.9-360.5 mbsf

TIME-ROCK UNIT		BIOSTRAT. ZONE/ FOSSIL CHARACTER	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB. SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION																											
FORAMINIFERS	NANNOFOSSILS										RADIOLARIANS	DIAATOMS																									
LOWER PALEOCENE										<p>CALCAREOUS OOZE and CHALK</p> <p>Major lithology: Calcareous ooze with minor nannofossils, derived from crushed chalk, fragmented chalk and chalk biscuits, white (10YR 8/1).</p> <p>Drilling disturbance: Core is largely disaggregated during drilling to ooze and fragments. Contamination by chert fragments is visible in Sections 1 and 2.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <table> <tr> <td></td> <td>1, 90</td> <td>4, 99</td> </tr> <tr> <td>D</td> <td></td> <td>D</td> </tr> </table> <p>COMPOSITION:</p> <table> <tr> <td>Access. Minerals</td> <td>3</td> <td>Tr</td> </tr> <tr> <td>Clay</td> <td>5</td> <td>5</td> </tr> <tr> <td>Foraminifers</td> <td>7</td> <td>5</td> </tr> <tr> <td>Micrite</td> <td>70</td> <td>70</td> </tr> <tr> <td>Nannofossils</td> <td>10</td> <td>10</td> </tr> <tr> <td>Sparite</td> <td>5</td> <td>10</td> </tr> <tr> <td>Spicules</td> <td>1</td> <td>Tr</td> </tr> </table>		1, 90	4, 99	D		D	Access. Minerals	3	Tr	Clay	5	5	Foraminifers	7	5	Micrite	70	70	Nannofossils	10	10	Sparite	5	10	Spicules	1	Tr
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B	CP2-3		V-50% W-2.0B	V-2127 W-2.7%	V-2590 W-2.7%	1.0		X	*																												
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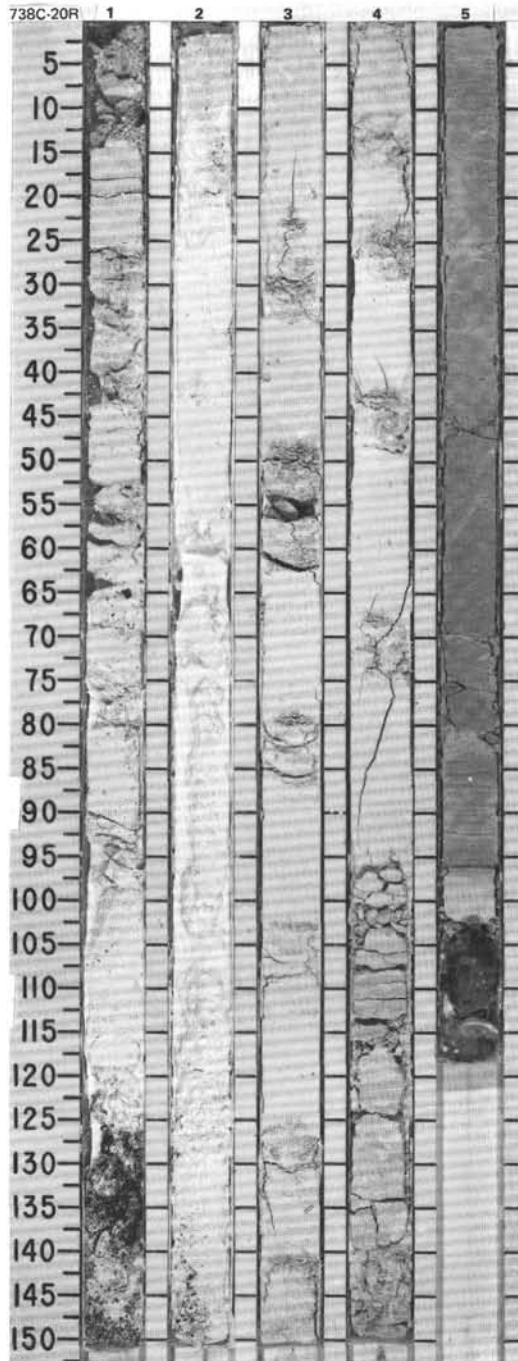


TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PHYS. PROPERTIES PALEOMAGNETICS	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION							
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIAATOMS															
LOWER PALEOCENE	P1b-c				● 9.52% V=21.32 ● 1.89 W=28%	1	0.5 1.0			*	*	CALCAREOUS CHALK and OOZE Major lithology: Calcareous chalk with minor nannofossils and foraminifers, fragmented chalk, and ooze derived from soft chalk, white (10YR 8/1). The chalk is intact in Section 1, 0-90 cm and is moderately bioturbated, with Chondrites, Planolites and Zoophycos, and light gray (10YR 7/1) mottling. Up to 20% foraminifers are present. Minor lithology: Chert: a fractured zoned nodule occurs in Section 1, 95-100 cm. It is 6 cm in diameter and has a yellowish brown (10YR 5/4) core and outer ring and a dark yellowish brown ring between. The inner core has a dark brown spot and the middle ring has various shades of light brown inclusions. Drilling disturbance: The sediment (chalk) was partially disaggregated into ooze during drilling, otherwise heavily fractured, although the core is intact in Section 1, 0-90 cm. Contamination by chert fragments is evident in parts of core.							
	A/G	CP2-3											● 50% V=21.26 ● 2.22 W=25%	2			*	*	SMEAR SLIDE SUMMARY (%): 1, 72 2, 80 3, 80 D D D COMPOSITION: Access. Minerals 1 2 Tr Clay 7 Tr 10 Foraminifers 20 5 5 Micrite 35 65 65 Nannofossils 15 20 10 Quartz 1 Tr Tr Sparite 20 7 10
	B																		
B				● XCaCO ₃ 84.3	3			*											
				● CC	CC														

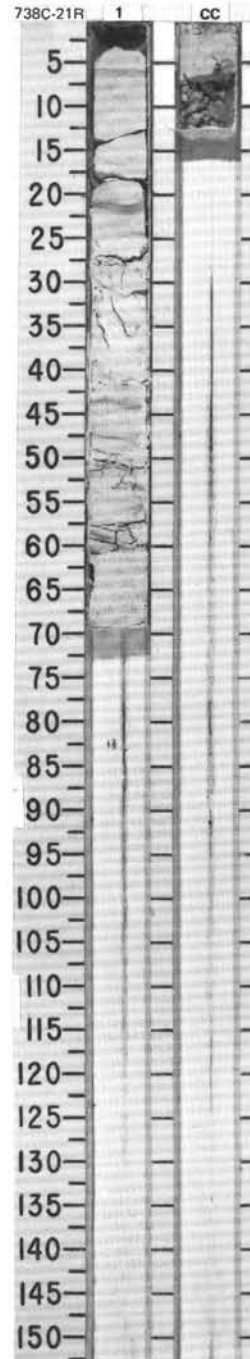


SITE 738 HOLE C CORE 20R CORED INTERVAL 370.2-379.9 mbsf

TIME-ROCK UNIT		BIOSTRAT. ZONE/ FOSSIL CHARACTER				PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION																																																																						
U. CRETACEOUS	(U. MAASTRICHTIAN)	FORAMINIFERS	NANNOFOSSILE	RADIOLARIANS	DIATOMS										DINO- FLAGELLATE	PALEOMAGNETICS																																																																				
	LOWER PALEOCECENE (LOWER DANIAN)	P1b-c				$\phi = 45\%$ v=2492 $\sigma = 2.01$ w=25%			0.5					<p>CALCAREOUS CHALK and OOZE</p> <p>Major lithologies:</p> <p>a. Calcareous chalk with minor nannofossils, white (10YR 8/1), mostly disaggregated to mm-cm size fragments and ooze. In Section 4, 100-140 cm, fractured core still shows bioturbation structures, including Planolites. There is a greenish tint to darker mottled areas which may be due to glauconite.</p> <p>b. Chalk, harder than overlying rocks, occurs in Section 5, 0-100 cm. Color ranges from white (10GY 8/1) to unnamed (greenish; 10GY 7?1), and unnamed (darker green; 10GY 6/1), the green color probably being due to glauconite. The rock is heavily bioturbated throughout with Zoophycos, Planolites and Chondrites. From 82-97 mm the chalk is laminated on a sub-mm scale, depicting various tints of greenish gray, 10GY 5/1 to 10GY 6/1, a prominent dark lamina occurring at 96.5 cm. The laminae are continuous across the core but have been normally microfaulted, either by soft sediment deformation or by drilling disturbance. Below the dark lamina the rock becomes white chalk and anastomosing laminae die out.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <table border="1"> <tr> <td></td> <td>1, 58</td> <td>2, 131</td> <td>3, 119</td> <td>5, 62</td> <td>5, 87</td> <td>5, 97</td> </tr> <tr> <td></td> <td>D</td> <td>D</td> <td>D</td> <td>D</td> <td>D</td> <td>D</td> </tr> </table> <p>COMPOSITION:</p> <table border="1"> <tr> <td>Clay</td> <td>5</td> <td>6</td> <td>7</td> <td>6</td> <td>6</td> <td>6</td> </tr> <tr> <td>Feldspar</td> <td>Tr</td> <td>Tr</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> </tr> <tr> <td>Foraminifers</td> <td>3</td> <td>5</td> <td>6</td> <td>10</td> <td>3</td> <td>2</td> </tr> <tr> <td>Glass</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>Tr</td> </tr> <tr> <td>Micrite</td> <td>75</td> <td>45</td> <td>60</td> <td>75</td> <td>82</td> <td>85</td> </tr> <tr> <td>Microsparite</td> <td>3</td> <td>—</td> <td>—</td> <td>—</td> <td>3</td> <td>—</td> </tr> <tr> <td>Nannofossils</td> <td>10</td> <td>40</td> <td>20</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Sparite</td> <td>—</td> <td>3</td> <td>5</td> <td>4</td> <td>—</td> <td>—</td> </tr> </table>		1, 58	2, 131	3, 119	5, 62	5, 87	5, 97		D	D	D	D	D	D	Clay	5	6	7	6	6	6	Feldspar	Tr	Tr	—	—	—	—	Foraminifers	3	5	6	10	3	2	Glass	—	—	—	—	—	Tr	Micrite	75	45	60	75	82	85	Microsparite	3	—	—	—	3	—	Nannofossils	10	40	20	2	2	2	Sparite	—	3	5	4	—	—
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	D	D	D	D	D	D																																																																														
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Nannofossils	10	40	20	2	2	2																																																																														
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						$\phi = 48\%$ w=27% $\sigma = 2.05$		1.0																																																																												
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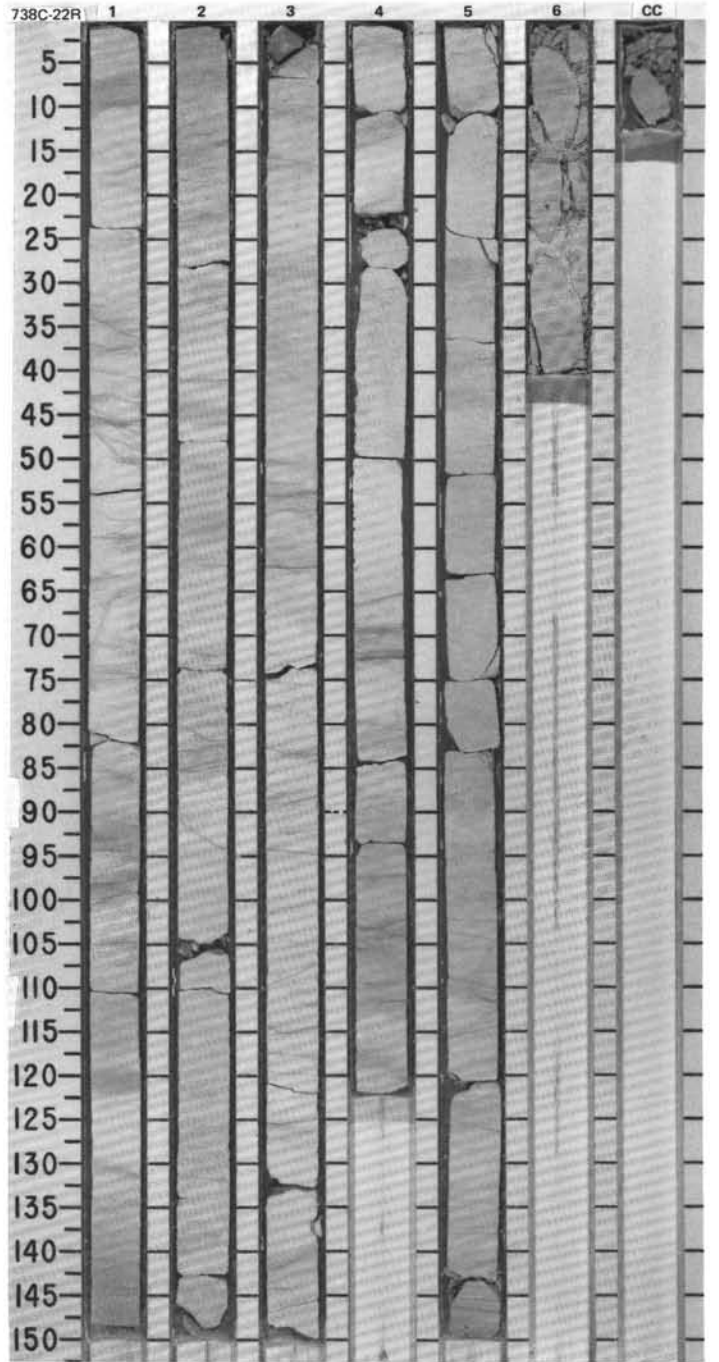


TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION																											
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS																																					
UPPER MAESTRICHTIAN	<i>A. myarocensis</i>	C/M NC23	R/P	B		• $\rho = 46\%$ $w = 24\%$ • $\rho = 4.07$ • $\%CaCO_3 = 93.6$	1	0.5	VOID			***	CALCAREOUS CHALK Major lithology: Calcareous chalk with minor foraminifers, white (10YR 8/1) to light gray (5Y 7/1), weak to moderate bioturbation, mainly Planolites burrows, some flattened by diagenesis and compaction, e.g., Section 1, 26 cm. Sandy streaks occur in Section 1, 5 cm, 21 cm, 43-60 cm; microfractures in Section 1, 5-10 cm. Drilling disturbance: Soupy in Section 1, 25-34 cm and 60-67 cm; Section 1, 42-58 cm moderately fractured.																												
SMEAR SLIDE SUMMARY (%): <table border="1" style="margin-left: 20px;"> <thead> <tr> <th></th> <th>1, 6 D</th> <th>1, 15 D</th> <th>1, 21 M</th> </tr> </thead> <tbody> <tr> <td>Clay</td> <td>6</td> <td>5</td> <td>5</td> </tr> <tr> <td>Feldspar</td> <td>—</td> <td>Tr</td> <td>—</td> </tr> <tr> <td>Foraminifers</td> <td>15</td> <td>7</td> <td>20</td> </tr> <tr> <td>Micrite</td> <td>70</td> <td>80</td> <td>67</td> </tr> <tr> <td>Nannofossils</td> <td>2</td> <td>—</td> <td>—</td> </tr> <tr> <td>Sparite</td> <td>3</td> <td>3</td> <td>3</td> </tr> </tbody> </table>															1, 6 D	1, 15 D	1, 21 M	Clay	6	5	5	Feldspar	—	Tr	—	Foraminifers	15	7	20	Micrite	70	80	67	Nannofossils	2	—	—	Sparite	3	3	3
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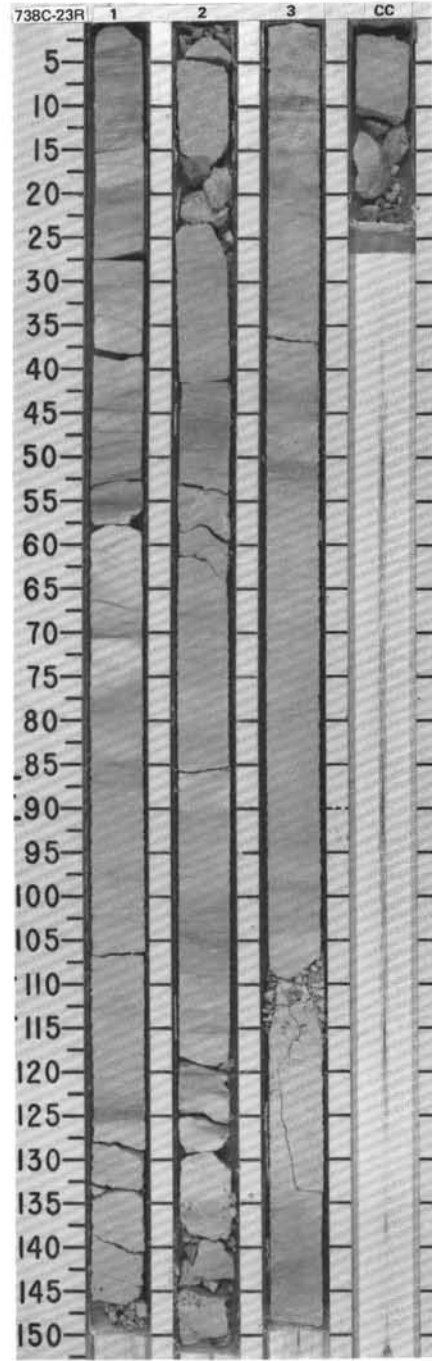


SITE 738 HOLE C CORE 22R CORED INTERVAL 389.6-399.2 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS PHYS. PROPERTIES	CHEMISTRY	SECTION METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB. SEP. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION																																																								
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIAATOMS																																																															
UPPER MAESTRICHtian	<i>A. mayaroensis</i>				● 4.2% V=2408 ● 2.37 W=21%		0.5 1.0				<p>CALCAREOUS CHALK</p> <p>Major lithology: Calcareous chalk with minor foraminifers, white (5YR 8/1), intensely bioturbated throughout, mainly Zoophycos burrows with some Chondrites and Planolites. Darker mm-scale laminae intersect burrows filled with coarser sandy material. Section 3 contains small shell structures, 35 cm and microfractures, 96-104 cm.</p> <p>Minor lithology: Chert, light gray (7.5 YR 7/1), highly fragmented in Section 2, 105-108 cm; Section 3, 21-24 cm.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <table border="1"> <tr> <td></td> <td>1, 5</td> <td>1, 120</td> <td>2, 64</td> <td>4, 12</td> <td>4, 55</td> <td>6, 9</td> </tr> <tr> <td></td> <td>D</td> <td>D</td> <td>D</td> <td>M</td> <td>D</td> <td>M</td> </tr> </table> <p>COMPOSITION:</p> <table border="1"> <tr> <td>Clay</td> <td>5</td> <td>6</td> <td>5</td> <td>5</td> <td>5</td> <td>6</td> </tr> <tr> <td>Foraminifers</td> <td>10</td> <td>15</td> <td>10</td> <td>5</td> <td>12</td> <td>5</td> </tr> <tr> <td>Micrite</td> <td>75</td> <td>65</td> <td>75</td> <td>75</td> <td>73</td> <td>40</td> </tr> <tr> <td>Nannofossils</td> <td>2</td> <td>5</td> <td>5</td> <td>—</td> <td>3</td> <td>—</td> </tr> <tr> <td>Sparite</td> <td>3</td> <td>5</td> <td>—</td> <td>10</td> <td>3</td> <td>10</td> </tr> <tr> <td>Pyrite</td> <td>3</td> <td>10</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> </tr> </table>		1, 5	1, 120	2, 64	4, 12	4, 55	6, 9		D	D	D	M	D	M	Clay	5	6	5	5	5	6	Foraminifers	10	15	10	5	12	5	Micrite	75	65	75	75	73	40	Nannofossils	2	5	5	—	3	—	Sparite	3	5	—	10	3	10	Pyrite	3	10	—	—	—	—
	1, 5	1, 120	2, 64	4, 12	4, 55	6, 9																																																													
	D	D	D	M	D	M																																																													
Clay	5	6	5	5	5	6																																																													
Foraminifers	10	15	10	5	12	5																																																													
Micrite	75	65	75	75	73	40																																																													
Nannofossils	2	5	5	—	3	—																																																													
Sparite	3	5	—	10	3	10																																																													
Pyrite	3	10	—	—	—	—																																																													
					● 3.8% V=2402 ● 2.17 W=19%		2																																																												
					● 4.6% V=2651 ● 2.38 W=25%		3																																																												
					● %CaCO ₃ =93.7		4																																																												
					● %CaCO ₃ =94.0		5																																																												
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							CC																																																												



TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION																		
	FORAMINIFERS	MAKNOFOSSILS	RADIOLARIANS	DINOF-LAGELLATE																												
UPPER MAESTRICHIAN																																
F/P	<i>A. mayaroensis</i>	NC23	F/G						0.5 1					<p>CALCAREOUS CHALK</p> <p>Major lithology: Calcareous chalk with minor foraminifers, white (10YR 8/1) to light greenish gray (5GY 7/1); moderate to intense bioturbation throughout core (Zoophycos, Chronitres, Planolites), some burrows flattened and modified by diagenesis and compactin. Sandy layers (1 cm or less thick) with shelly microfaunal debris and glauconite grains (1 cm or less thick) with shelly microfaunal debris and glauconite grains 1 cm or less thick, occur throughout core; darker diffuse pale gray (5Y 7/1) intervals from 1-10 cm thick also occur throughout core. Shell fragments in Section 3, 116 cm and in-situ chert clast in Section 2, 16 cm.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <table border="1"> <tr> <td></td> <td>1, 12</td> <td>3, 120</td> </tr> <tr> <td></td> <td>D</td> <td>D</td> </tr> </table> <p>COMPOSITION:</p> <table border="1"> <tr> <td>Clay</td> <td>25</td> <td>25</td> </tr> <tr> <td>Foraminifers</td> <td>15</td> <td>—</td> </tr> <tr> <td>Micrite</td> <td>55</td> <td>65</td> </tr> <tr> <td>Sparite</td> <td>5</td> <td>7</td> </tr> </table>		1, 12	3, 120		D	D	Clay	25	25	Foraminifers	15	—	Micrite	55	65	Sparite	5	7
	1, 12	3, 120																														
	D	D																														
Clay	25	25																														
Foraminifers	15	—																														
Micrite	55	65																														
Sparite	5	7																														
F/M	<i>N. frequens</i> F/M							2																								
F/M	<i>Amphipyndax tylotus</i>							3																								
B								CC																								



SITE 738 HOLE C CORE 24R CORED INTERVAL 408.9-418.6 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SAMPLES	LITHOLOGIC DESCRIPTION
CAMPANIAN							
F/M	Undifferentiated						
R/P	NC19b-NC22	R/P					
R/P	R/P						
B	<i>Amphipyndax tyotus</i>						
PALEOMAGNETICS							
PHYS. PROPERTIES							
CHEMISTRY							
	V=21.81		0.5				
	W=4.6%		1.0				
	W=2.4%						
	V=28.36		2				
	W=8%						
	V=21%						
	W=2.02%						
	W=0.95%		3				
	W=0.95%						
CC							

CLAYEY CALCAREOUS CHALK

Major lithology:
Clayey calcareous chalk with minor foraminifers, light gray (10YR 7/1) to light greenish gray (5GY 7/1) with pink and pale green mottles, e.g. Section 1, 98-105 cm; moderate to intensely burrowed (mainly Zoophycos), some burrows flattened. In Section 1, paler sandy interval, 22-40 cm, deformed zone 0-8 cm and 42-46 cm; mixed chert fragments and chalk occur in Section 3, 85-92 cm and in Core Catcher, 0-17 cm. Early diagenetic veinlets, Section 1, 85-110 cm; Section 3, 100 cm. Clay content up to 35%.

Minor lithology:
Chert, green-gray (5Y 5/1, 5Y 4/2) in Section 1, 129-134 cm (nodule); Section 2, 12-13 cm (nodule); Section 3, 25-36 cm (fragmented), 52 cm and 58 cm; chert often replaces burrows.

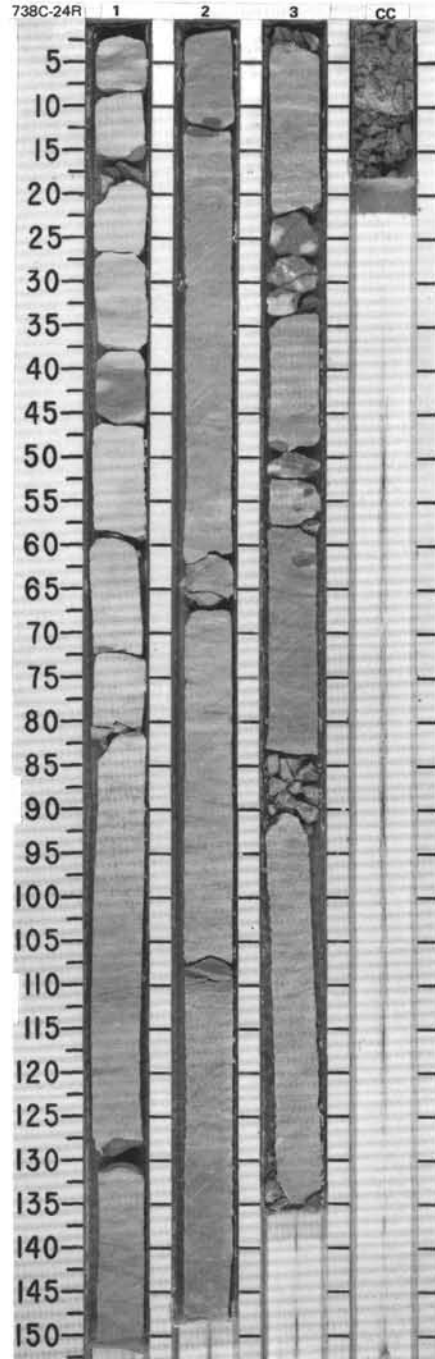
Drilling disturbance:
Mainly undisturbed except for drilling breccia in Section 1, 16-19 cm; Section 3, 0-6 cm and core catcher 0-17 cm.

SMEAR SLIDE SUMMARY (%):

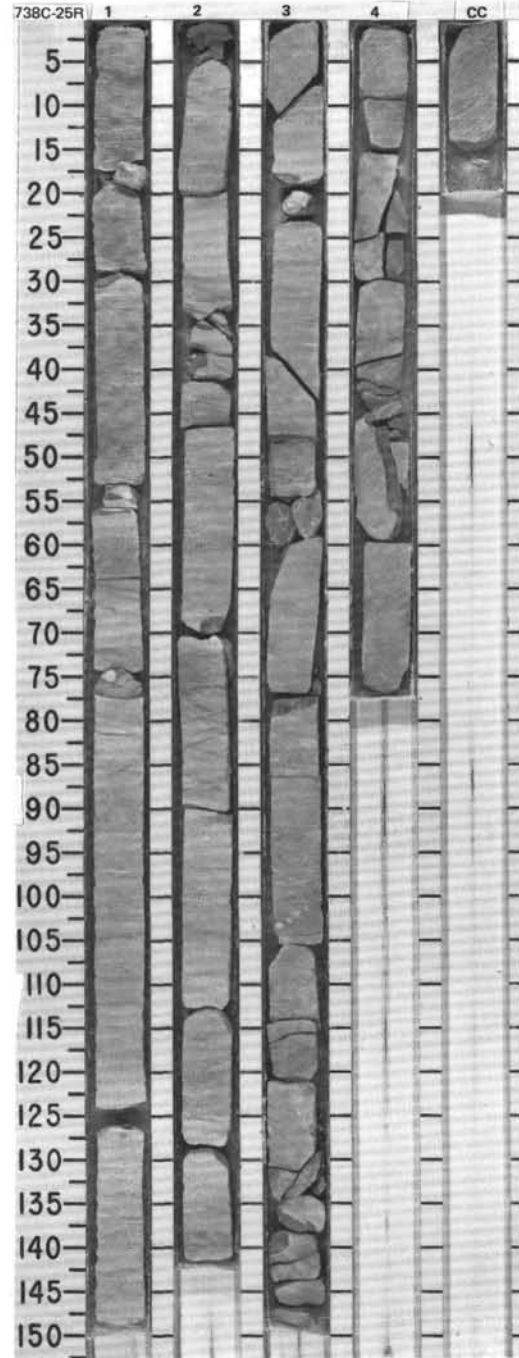
	1, 12	3, 120
	D	D

COMPOSITION:

Clay	25	25
Foraminifers	15	Tr
Micrite	55	65
Sparite	5	7



TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
	FORAMINIFERS	NANOFOSSILS	RADIOLARIANS	DIATOMS							
CAMPAIAN											
F-NC18-NC19a	Undifferentiated										
F/M R/P	R/P	R/P		B							
R/M	<i>Amphipyndax tylotus</i>										
B											
PALEOMAGNETICS ● 0-21% V=2828 ● 1-2.4% W=8% ● 0-19% V=2875 ● 1-2.5% W=8% ● %CaCO ₃ =88.7 %TCC=0.00											
PHYS. PROPERTIES ● 0-18% V=2956 ● 1-2.5% W=7% ● %CaCO ₃ =86.2											
CHEMISTRY SECTION METERS GRAPHIC LITHOLOGY DRILLING DISTURB. SED. STRUCTURES SAMPLES											
					1	0.5 1.0					
					2						
					3						
					4						
					CC						



LIMESTONE

Major lithology:
Limestone with minor clay and foraminifers, light gray (5Y 7/1) to light olive gray (5Y 6/2), moderate to intensely bioturbated (Zoophycos, Chondrites, Planolites); burrows occur within burrows and chert may fill central part of burrow; some burrows are stretched and deformed; sandy layer occurs in Section 1, 96-97 cm. Limestone highly compacted and fractured; some open fractures with clay-rich slickensided surfaces. Bivalve shell in Section 1, 77 cm.

Minor lithology:
Chert, brownish gray (5Y 6/1) in Section 1, 32 cm (nodule), 55-59 cm (fractured), 77-80 cm; Section 2, 0-6 cm, 37-42 cm, 70-86 cm; Section 3, 17-24 cm (fragments), 136-141 cm (nodules), 55-60 cm; Section 4, 44-45 cm (fragment).

Drilling disturbance:
Section 1, 0-80 cm, 128-132 cm intensely fractured; Section 2 and 3, moderately fractured; Section 4, intensely fractured.

SMEAR SLIDE SUMMARY (%):

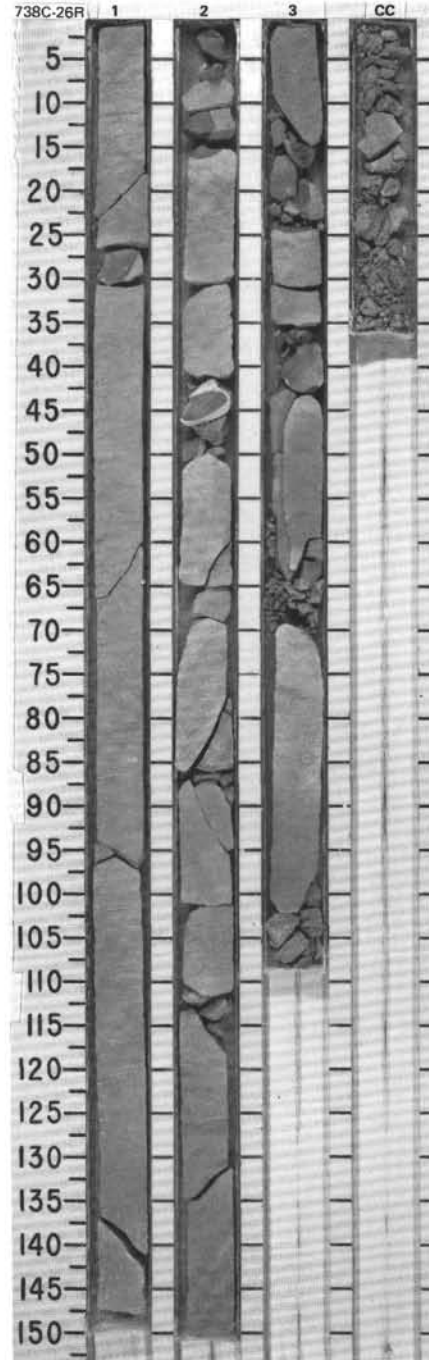
	1, 53	1, 87	4, 40
M		D	D

COMPOSITION:

Clay	11	10	10
Foraminifers	7	10	10
Micrite	65	70	67
Sparite	15	5	10

SITE 738 HOLE C CORE 26R CORED INTERVAL 428.2-437.9 mbsf

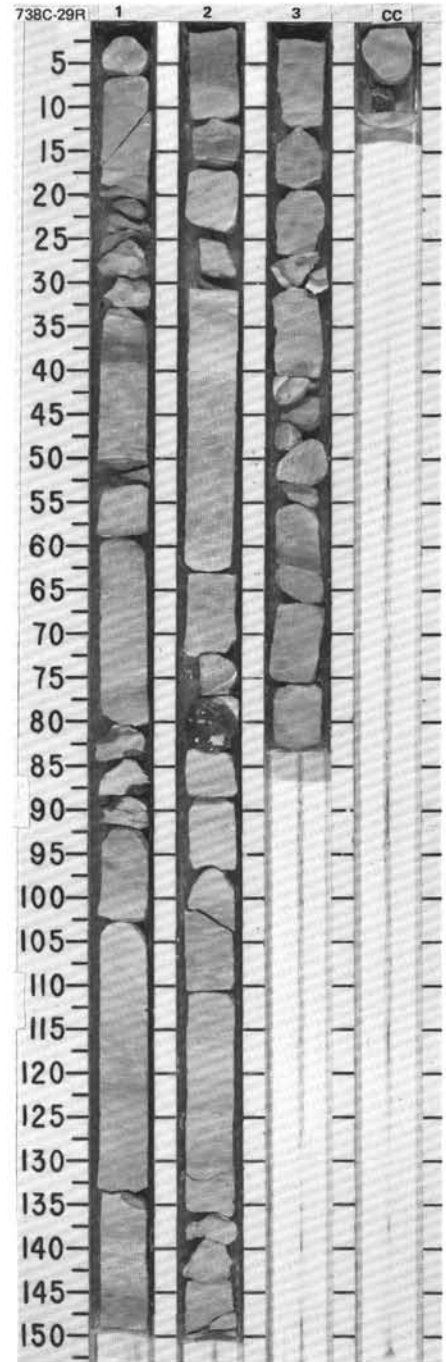
TIME - ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER			PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS										
CAMPANIAN													
	NC18-NC19a												
	F/P	F/P	R/P		V = 27.6% W = 1.0%		1	0.5					
	F/P	F/P	R/P		V = 26.74% W = 1.0%		2	1.0					
	R/P		<i>Amphipyndax tylotus</i>		V = 23% W = 2.48%		3						
						XCaCO ₃ = 79.7	CC						



SITE 738 HOLE C CORE 28R CORED INTERVAL 447.6-457.2 mbsf

TIME-ROCK UNIT		BIOSTRAT. ZONE/ FOSSIL CHARACTER		PHYS. PROPERTIES CHEMISTRY	SECTION METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB. SED. STRUCTURES SAMPLES	LITHOLOGIC DESCRIPTION																								
FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIAZONIS																													
SANTONIAN																																
F/P NC16	F/P	R/P	R/P		0.5		*	<p>LIMESTONE</p> <p>Major lithology: Limestone with minor clay, with streaky, discontinuous stratification on a mm-cm scale throughout defined by the following color variations: light gray (5Y 7/1), light greenish gray (5GY 7/1), unnamed (10GY 6/1, 10 GY7/1). Color changes are diffuse and subtle, in part due to bioturbation. Chondrites and compressed planolites are developed.</p> <p>Minor lithologies: a. Chert occurs as inclusions of 1-2 mm diameter in Section 1, 62 cm, and more generally as nodules of dark grayish brown (10YR 4/2) and very dark grayish brown (10YR 3/2) color. They are surrounded by white (10Y 8/1) siliceous limestone. b. Silicified limestone with chalky inclusions, light greenish gray (5BG 7/1), greenish gray (5G 6/1), occurs in Section 3, 22-28 cm, 114-127 cm, Section 4, 13-17 cm, 42-44 cm, 52-59 cm and 67-70 cm.</p> <p>A normal fault occurs in Section 2, 57 cm.</p> <p>Drilling disturbance: Some fracturing has occurred around chert nodules.</p> <p>SMEAR SLIDE SUMMARY (%):</p> <table style="margin-left: 20px;"> <tr> <td></td> <td>1, 45</td> <td>3, 75</td> </tr> <tr> <td>D</td> <td></td> <td>D</td> </tr> </table> <p>COMPOSITION:</p> <table style="margin-left: 20px;"> <tr> <td>Clay</td> <td>15</td> <td>5</td> </tr> <tr> <td>Foraminifers</td> <td>5</td> <td>Tr</td> </tr> <tr> <td>Micrite</td> <td>70</td> <td>85</td> </tr> <tr> <td>Microsparite</td> <td>10</td> <td>5</td> </tr> <tr> <td>Nannofossils</td> <td>Tr</td> <td>5</td> </tr> <tr> <td>Quartz</td> <td>Tr</td> <td>Tr</td> </tr> </table>		1, 45	3, 75	D		D	Clay	15	5	Foraminifers	5	Tr	Micrite	70	85	Microsparite	10	5	Nannofossils	Tr	5	Quartz	Tr	Tr
	1, 45	3, 75																														
D		D																														
Clay	15	5																														
Foraminifers	5	Tr																														
Micrite	70	85																														
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Nannofossils	Tr	5																														
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TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER				PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS										
SANTONIAN														
		R/P	NC16	R/P										
		B												
		B												
						$\phi = 29\%$ $V = 2700$ $W = 1.3\%$	$\phi = 28\%$ $V = 2703$ $W = 1.2\%$							
						$\%CaCO_3 = 82.6$	$\%CaCO_3 = 91.3$							



LIMESTONE

Major lithology:
Limestone with minor clay, with irregular, streaky, discontinuous stratification on a mm-cm scale throughout defined by the following color variations: light gray (5Y 6/1, 5Y 7/1), white (5Y 8/1), light greenish gray (5GY 7/1), unnamed. Bioturbation throughout is mainly moderately developed, though diffuse. Planolites and Chondrites are common; Zoophycos is also present. Shell fragments occur in Section 1, 11 cm, 96 cm and Section 3, 48 cm, in addition to Inoceramus in Section 2, 92 cm.

Minor lithologies:
a. Siliceous limestone, light gray (5Y 6/1, 5Y 7/1), very dark gray (5Y 3/1) and unnamed (10GY 7/1), is interbedded with the major lithology, with which it has both gradational and sharp contacts. It is developed in numerous horizons up to 20 cm thick throughout the core.
b. Chert occurs as irregular patches and nodules; they are very dark grayish brown (10YR 3/2), and are mottled and have whitish inclusions of limestone.

A normal fault, with slickensides, a clay concentration and a displacement of 5 mm occurs in Section 1, 9-16 cm.

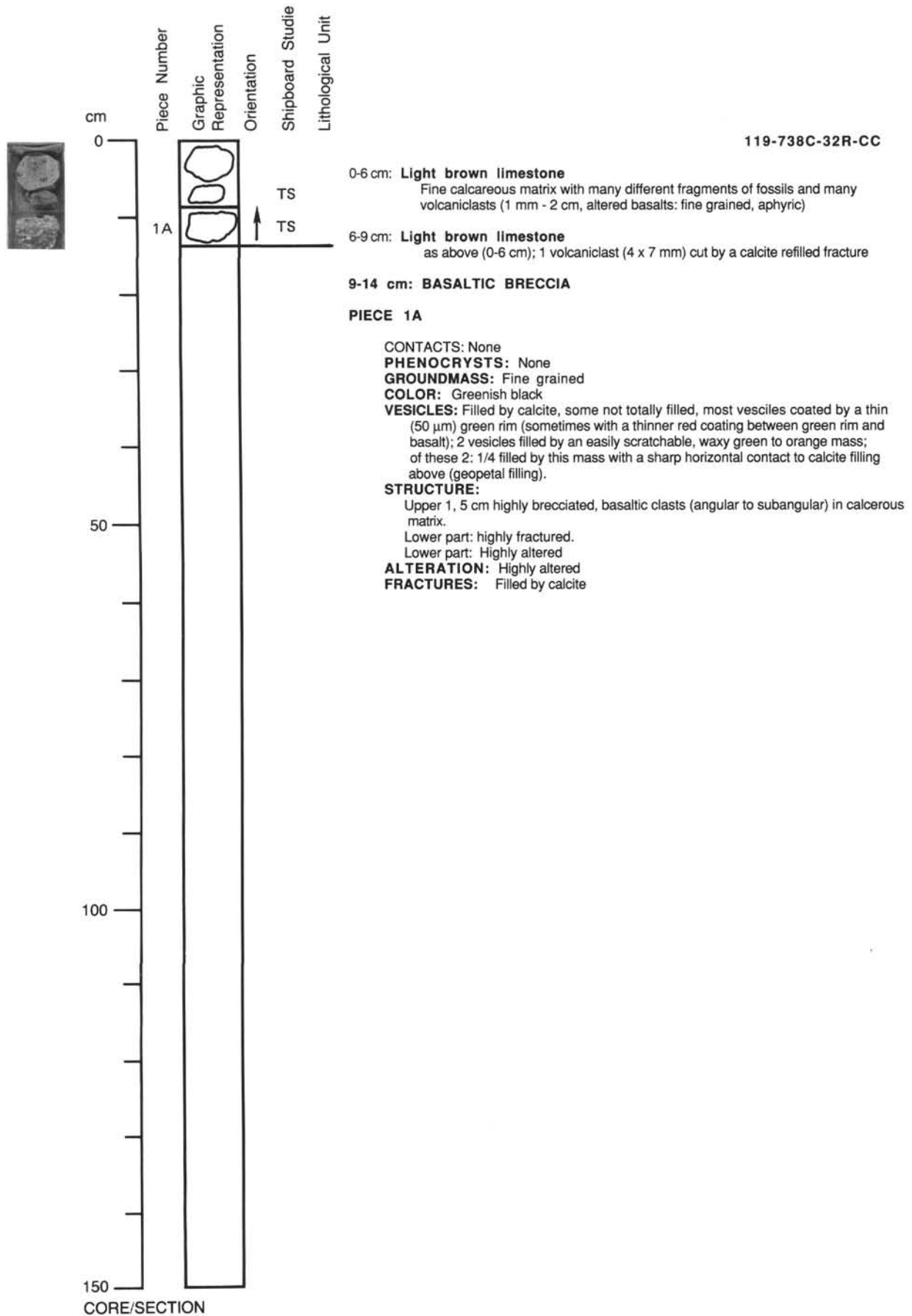
Drilling disturbance:
Some fracturing has occurred around chert nodules.

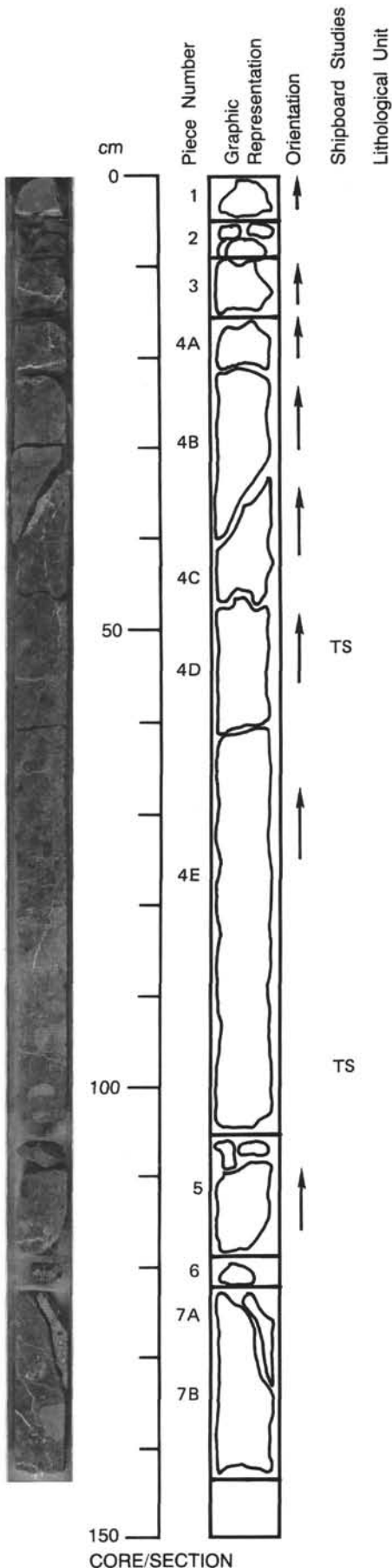
SMEAR SLIDE SUMMARY (%):

	1, 80	1, 120	3, 60
D		D	D

COMPOSITION:

Clay	10	10	15
Foraminifers	1	5	2
Glauconite	—	—	Tr
Micrite	80	60	70
Microsparite	3	7	10
Nannofossils	5	15	1
Quartz	1	Tr	1





119-738C-33R-1

0-5 cm: **SPARSELY PLAGIOCLASE PHYRIC BASALT**

PIECE 1

CONTACTS: None
PHENOCRYSTS: Single crystals, uniform distribution
 Plagioclase: 1-2%, 1-2 mm
GROUNDMASS: Fine grained
COLOR: Gray
VESICLES: 2%, round to oval, green rim, white neEde-like zeolites
STRUCTURE: Massive
ALTERATION: Moderately
FRACTURES: 1 fracture at the bottom - filled by calcite, up to 3 mm thick, horizontal

5-37 cm: **VOLCANICLASTIC ROCK**

PIECES 2-4B

CONTACTS: Lower contact: slicken side, 55° dip
MATRIX: Fine grained, dull red, very highly altered
CLASTS: 0, 5-45 mm, rounded to angular, highly altered 60°-70° (?rotation?)
 Type 1: Brownish black, vesicular (1-2 mm, 10-20%, ± regular distribution, dark green rim and small white zeolite needles & partially filled by calcite); (20-50%)
 Type 2: Greenish gray; small irregular vesicles (mostly ≤ 0, 5 mm with green rim or filling regular distribution; 20%)
FRACTURES: Few, mostly horizontal, filled by white calcite, 0, 5 mm 2, 5 wide, -2, 5 mm wide, irregular, cutting matrix and few clasts

37-135 cm: **VOLCANICLASTIC ROCK**

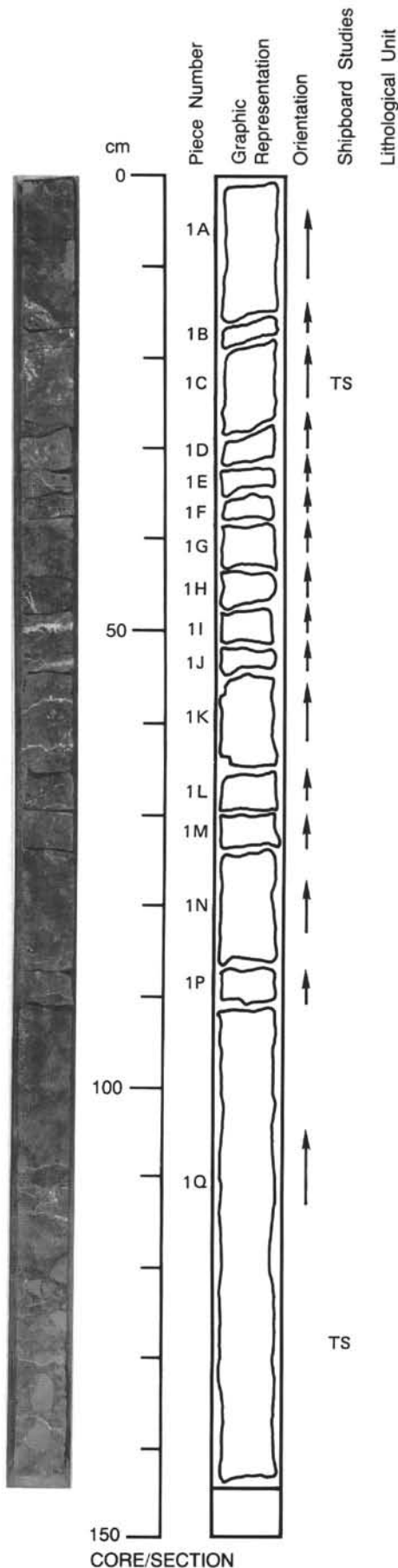
PIECES 4C-7A (INCL. 7B)

CONTACTS: Upper contact: fracture (filled with clasts of over and underlying rocks, embedded in calcitic matrix, 0-10 mm wide) and slicken slide, respectively;
 Lower contact: quite sharp, irregular
MATRIX: Fine grained, red, highly altered
CLASTS: Rounded to angular, 0, 5-35 mm, (40%)
 Type 1: Brownish black; vesicles (up to 5 mm long, partly totally filled by green to orange waxy mass; sharp straight contact; upper part filled by calcite; in 1 clast: in 2 vesicles horizontal contact; in 1 other clast contact dips 60°-70° (?rotation?))
 Type 2: Greenish gray; small irregular vesicles (mostly ≤ 5 mm with green rim or filling, regular distribution); 20%
 Type 3: Light grayish green; little vesicles (≤ 3%, dark green rim and white zeolite needles or totally filled by dark green substance; aphyric to sparsely feldspar phyric; moderately altered); distribution: mostly from 81-97 cm, not above, few in lower pat.
FRACTURES: Few horizontal and subvertical, irregular, 0, 5-1, 5 mm wide, some clasts rimmed by calcite, fractures cutting almost no clasts

135-143 cm: See 0-75 cm in Section 2

CORE/SECTION

119-738C-33R-2



0-75 cm: **VOLCANICLASTIC ROCK**

PIECES 1A-1N

+ 135-143 cm (Piece 7B) of Section 1

CONTACTS: Upper contact: Quite sharp, irregular; Lower contact: Gradational

MATRIX: Fine grained, black, moderately altered

CLASTS: Rounded to angular, mostly subangular; 80%

Type 1: Even and fine grained, no or little vesicles, greenish to reddish grey, 1-40 mm, mostly subangular to angular

Type 2: 20-75 mm, mostly subrounded gray; large vesicles (1-13 mm, median 3-4 mm, up to 25%, fillings: 1. dark green rim and white zeolite needles or 2. dark green rim and light green waxy mass or 3. dark green rim and light green waxy mass and calcite or 4. dark green rim and zeolite and calcite

Type 3: Small (up to 4 mm), red, angular, fine grained, no vesicles, occur only in Piece 1A

FRACTURES: Irregular, filled by calcite, cutting matrix and some clasts, horizontal to subhorizontal. Some clasts rimmed by calcite.

75-143 cm: **VOLCANICLASTIC ROCK**

PIECES IN-IT

+ 0-67 cm (Pieces 1A-1B) of Section 3

CONTACTS: Upper contact: gradational (color); Lower contact: gradational (color)

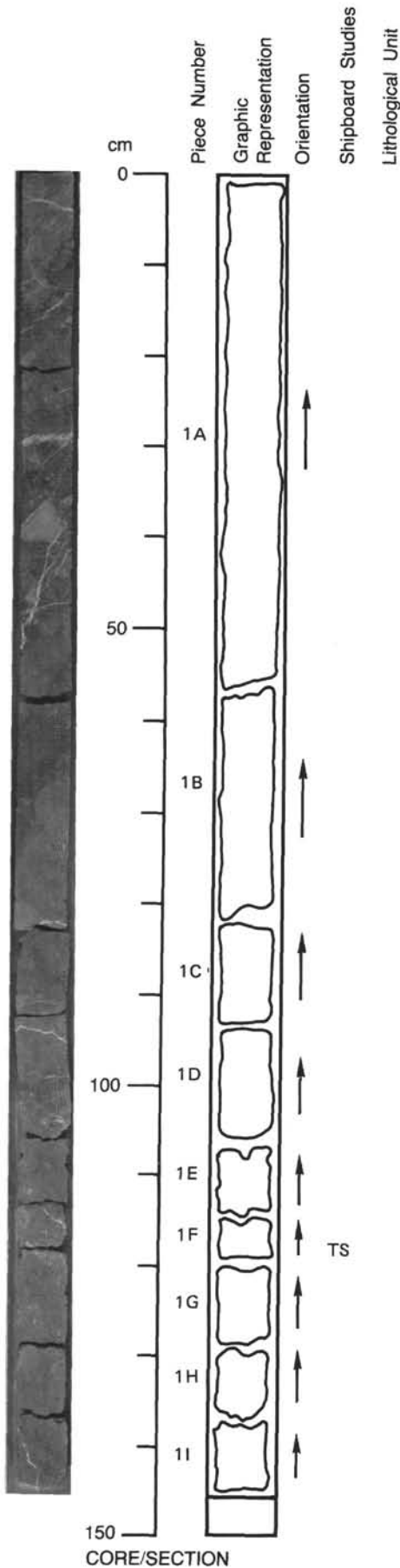
MATRIX: Dull red, fine grained, highly altered

CLASTS: Angular to subrounded, smaller ones better rounded (subangular to rounded) 60-70%, some clasts partly coated by calcite.

Type 1: Even and fine grained, no or little vesicles, 1-40 mm, mostly subangular to angular, greenish gray to grayish green (occur chiefly in Section 2, 120-142 cm and Section 3, 0-45 cm + 35-68 cm) and brownish (Section 3, 15-35 cm)

Type 2: Grey to black; vesicles (15%, \leq 2 mm, filling: dark green rim and white zeolite needles or: green to orange waxy mass; mainly in Section 2, 75-120 cm).

FRACTURES: Calcite filled, irregular, horizontal and dipping ($45^\circ - 75^\circ$)



119-738C-33R-3

0-67 cm: See Section 2, 75-143 cm

67-145 cm: **VOLCANICLASTIC ROCK**

PIECES 1B-1I

+ 0-112 CM (Pieces 1A-1K) OF SECTION 4

CONTACTS: Upper contact: Gradational (color), dipping 60°; Lower contact: sharp and horizontal

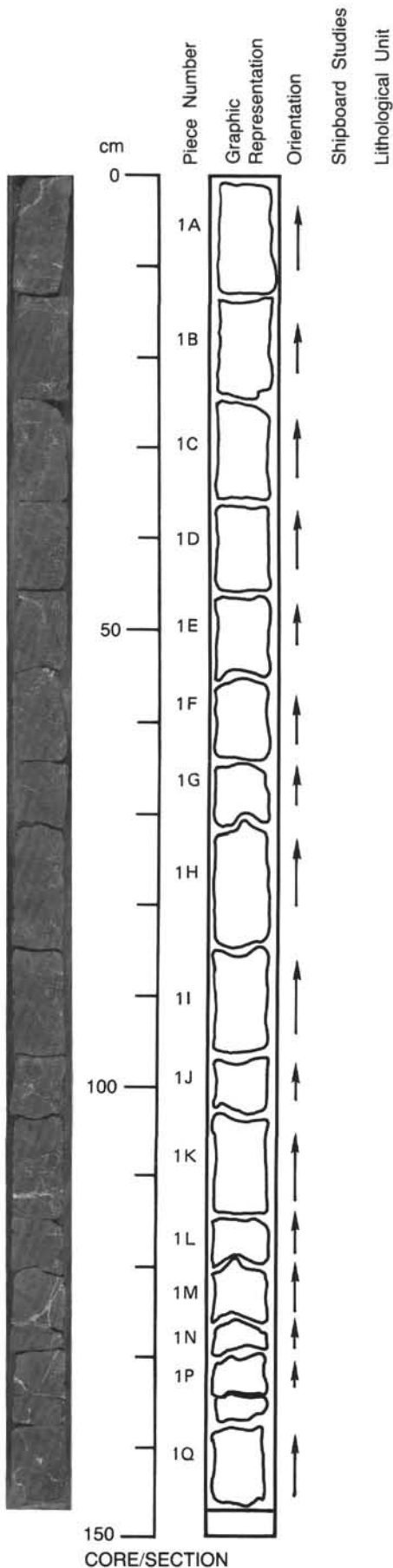
MATRIX: Green, highly altered

CLASTS: Subangular to angular, rarely subrounded, fine and even grained, up to 80 mm (in Section 4, 15-23 cm: no dyke, but clast, as visible at the backside); few clasts with vesicles (small ≤ 1 mm), dark green rim or completely filled by same substance; in Section 3, 80-83 cm: 1 clast with banded arrangement of vesicles, dipping 40°; clasts grey or yellowish brown, some with both colors of irregular distribution and no sharp boundary, several partly rimmed by calcite.

FRACTURES: Some, irregular, horizontal to vertical, up to 4 mm wide

NOTE: Black crystals \pm regularly scattered in matrix and clasts, 0, 1-0, 2 mm, occurring below Section 3, 100 cm.

119-738C-33R-4



0-112 cm: See Section 3, 67-145 cm

112-147 cm: **APHYRIC BASALT**

PIECES 1K-1T

+ 0-144 cm (Pieces 1A-1S) of Section 5

+ 0-103 cm (Pieces 1A-4) of Section 6

CONTACTS: Upper contact: Sharp, ± horizontal; Lower contact: None

PHENOCRYSTS: None

GROUNDMASS: Fine and even grained

COLOR: Grey to yellowish brown

VESICLES: 0-20%, ≤ 1.5 mm, round to irregular oblong, mostly: dark green rim and white zeolite needles (often totally filled), some with thin dark green rim (often totally filled), some with thin dark green rim and light green waxy mass; in Section 5, 109 cm: 1 vesicle filled by light green waxy mass in the lower part, sharp horizontal contact, upper part: calcite; irregular distribution:

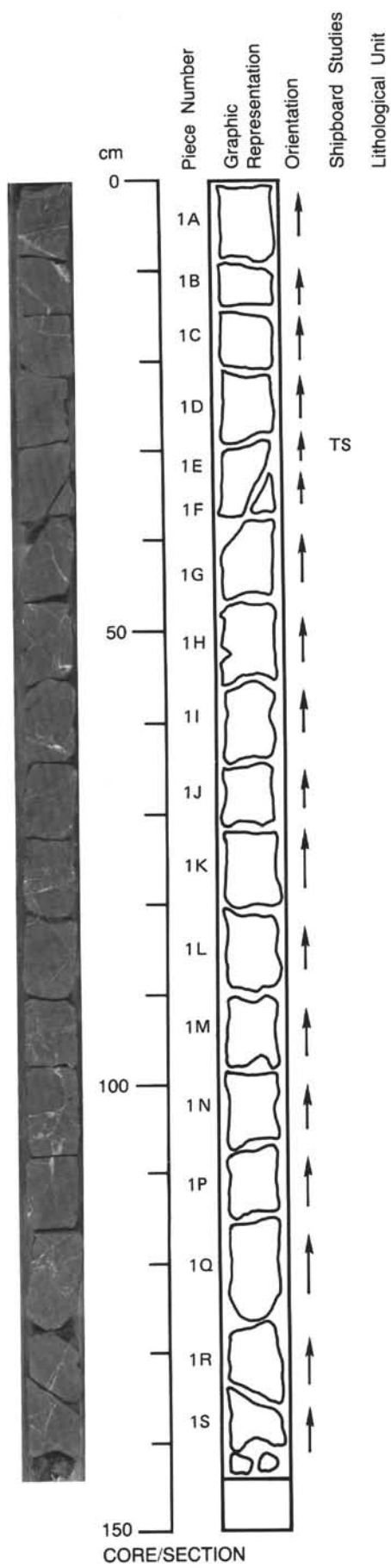
Section 4,	112-124 cm:	few vesicles (≤ 2%)
	124-147 cm:	some vesicles (5-10%)
Section 5,	0-11 cm:	some vesicles
	11-38 cm:	few vesicles
	38-46 cm:	some vesicles
	46-72 cm:	few vesicles
	72-79 cm:	some vesicles
	81-104 cm:	some vesicles
	104-118 cm:	common (10-20%)
	118-130 cm:	few vesicles
	130-134 cm:	some vesicles
	134-144 cm:	few vesicles
Section 6,	0-9 cm:	few vesicles
	9-40 cm:	few vesicles
	40-53 cm:	few vesicles
	53-55 cm:	some vesicles
	55-103 cm:	few vesicles

STRUCTURE: Massive to brecciated

ALTERATION: Moderately altered

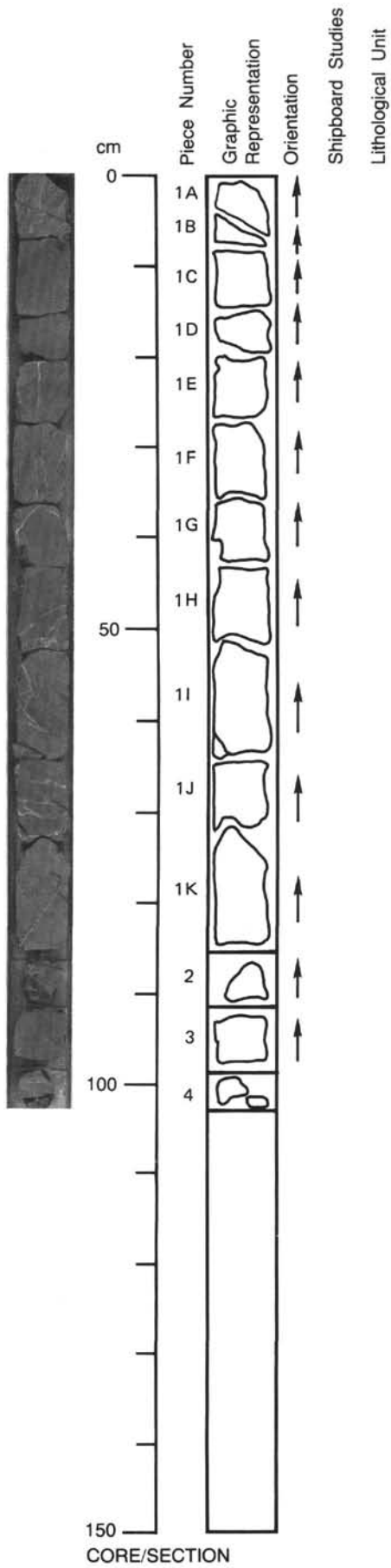
FRACTURES: Horizontal to vertical, irregular, filled by calcite; in Section 4, 112-123 cm: some red brown fractures, dipping 70-75°, no sharp contact to host rock. Section 5, 73-78 cm: brecciated, with green matrix, filled by calcite and clasts of host rock.

NOTE: No difference detected to clasts of overlaying sequence including black crystals; some yellowish brown streaks penetrate several clasts without displacements, irregular and not horizontal, occur especially in Section 4, 122-140 cm



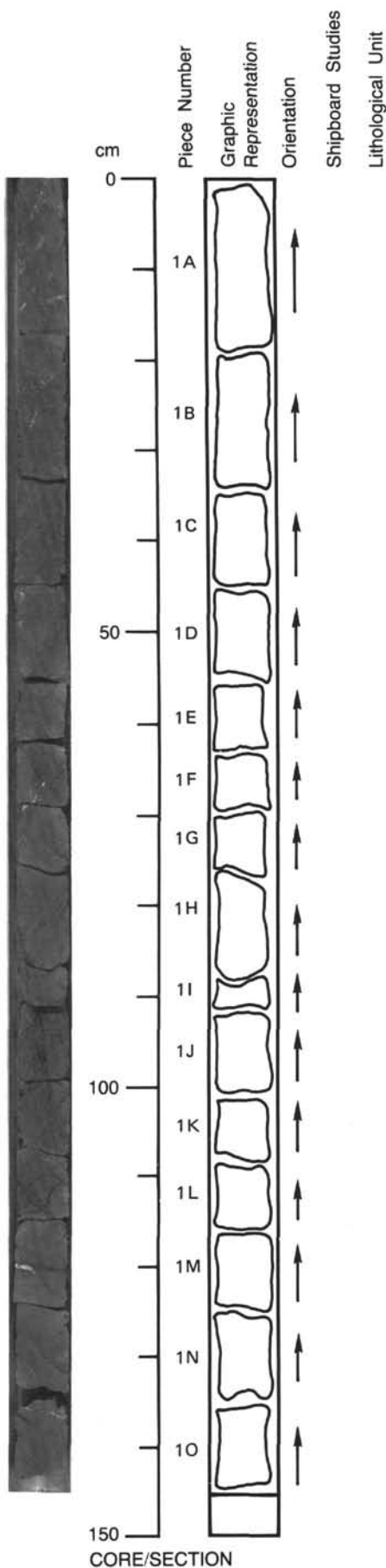
119-738C-33R-5

0-144 cm: Cont. from Section 4: 112-147 cm



0-103 cm: Cont. from Section 4: 112-147 cm

119-738C-33R-6



119-738C-34R-1

0-66 cm: **VOLCANICLASTIC ROCK**

PIECES 1F-1O

CONTACTS: Upper contact: None; Lower contact Sharp 50° dipping

MATRIX: Green, fine grained, very highly altered

CLASTS: Mostly gray, partly yellowish brown; aphyric, fine and even grained, no vesicles, moderately altered; distribution:

0-23 cm: 80-90% clasts

gradational transition

23-66 cm: 50-60% clasts

FRACTURES: Few, filled calcite (especially from 0-30 cm)

NOTE: Black crystals in clasts and matrix (cp. 33R-3, 67-145 cm)

66-145 cm: **APHYRIC BASALT**

PIECES 1A-1C

+ Section 2, 0-150 cm (Pieces 1A-1C)

+ Section 3, 0-17 cm (Pieces 1A-1C)

CONTACTS: None

PHENOCRYSTS: None

GROUNDMASS: Fine and even grained

COLOR: Gray, very little yellowish brown streaks and patches

VESICLES: None

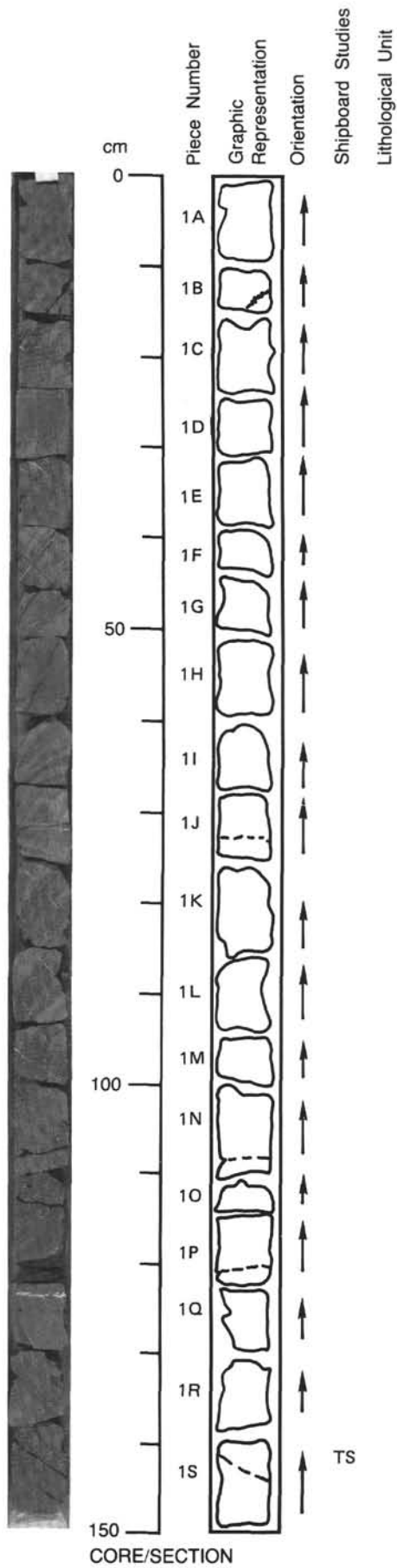
FRACTURES: In general slightly fractured; moderately to highly fractured:

Section 1, 90-110 cm: fracture swarm

Section 2, 53-61 cm: 1-3 mm wide, green filling, little calcitic innermost

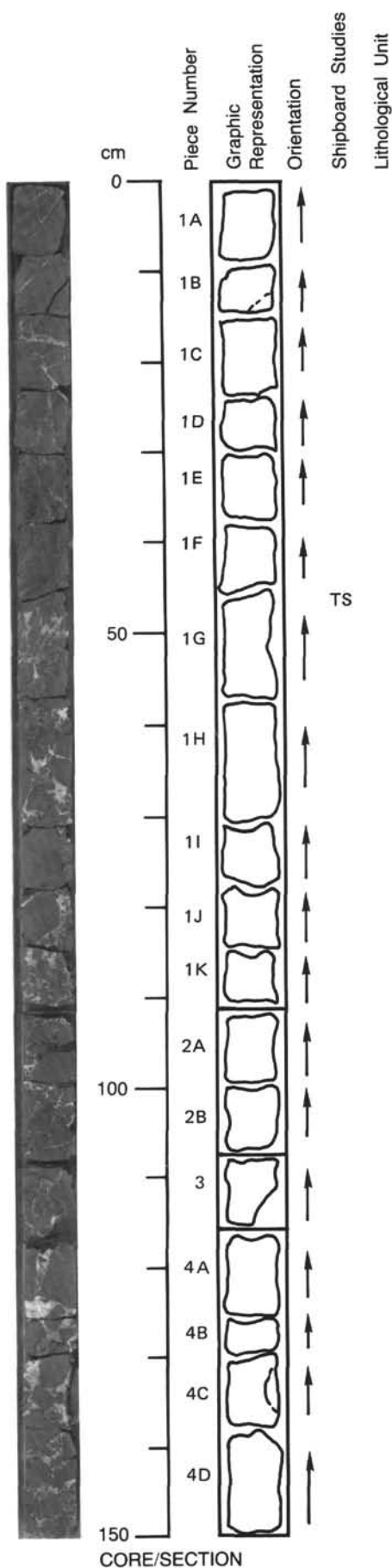
Section 2, 13-25 cm: 0.5 mm wide, green filling, 1 brecciated zone up to 6 mm wide

Section 3, 0-17 cm: up to 4 mm wide, filled by calcite



1-150 cm: Cont. from Section 1, 66-145 cm

119-738C-34R-2



119-738C-34R-3

0-17 cm: Cont. from Section 1, 66-145 cm

17-150 cm: **APHYRIC BASALT**

PIECES 1C-4D

CONTACTS: None

PHENOCRYSTS: None

GROUNDMASS: Fine and even grained

COLOR: Mostly gray, partly yellowish brown (different color inside single clasts)

VESICLES: None

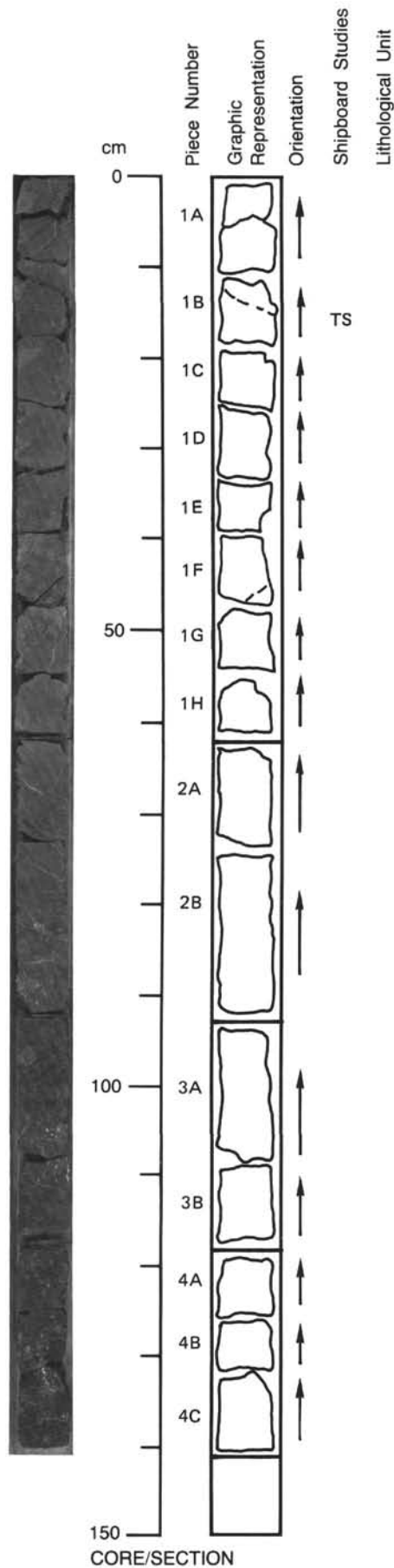
STRUCTURE: Highly fractured

ALTERATION: Moderately altered

FRACTURES: 0, 1-25 mm wide: wide fractures (especially from 17-28 cm and 47-150 cm) normally filled by dark green rim and calcite and basalt breccia (from host rock)

Other fractures (especially 28-47 cm): dark green mineral and basalt breccia; variant directions

CORE/SECTION



119-738C-34R-4

0-70 cm: **APHYRIC BASALT**

PIECES 1A-2A

CONTACTS: Upper contact: None; Lower contact: Irregular, ± gradational in color and brecciation

PHENOCRYSTS: None

GROUNDMASS: Fine and even grained

COLOR: Gray, with small (few mm) reddish-brown patches

VESICLES: None

STRUCTURE: Massive

ALTERATION: Moderately, lowest 2-3 cm highly altered

FRACTURES: Slightly fractured, 0.5-1 mm wide, normally with dark green rim and calcite filling, very few with calcite filling without visible green rim, mostly dipping near 45° (crosswise)

70-141 cm: **VOLCANICLASTIC ROCK**

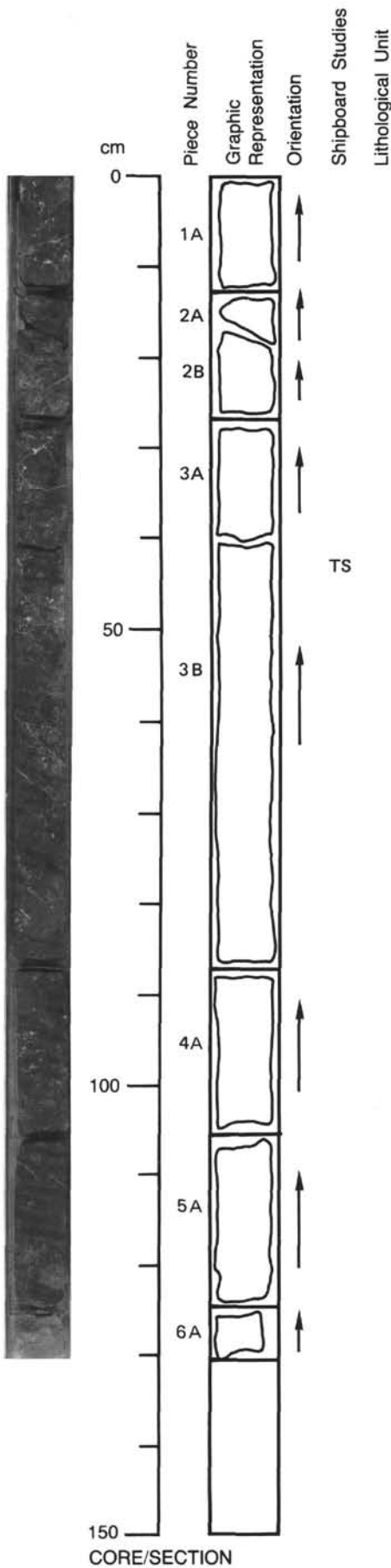
PIECES 2A- 4C

+ **SECTION 5, 0-125 cm (Pieces 1A-5A**

CONTACTS: Upper contact: None; Lower contact: Sharp (Pieces 5A and 6A fit together)

MATRIX: Dull red (Section 4, 70-141 cm and Section 5, 0-34 cm) and red (Section 5, 34-125 cm), sharp contact between different colors; fine grained (microcrystalline groundmass and grains mostly < 1 mm), very highly altered

CLASTS: Type 1: 1-70 mm, median near 5 mm, fine grained, no vesicles, aphyric, sharp boundary to matrix, subangular to rounded, gray and different red colors. Type 2: 3-80 mm, median 10-20 mm, vesicular (5-10%, 0.1-5 mm, fillings: dark green rim and white crystals (zeolite ?) or: light green (randomly darker, sometimes orange-brown) waxy mass (with cracks, created by drying)); mostly black, boundary to surrounding material sometimes not sharp (mixing of groundmass and fragments of clasts), subangular to rounded.



119-738C-34R-5

0-125 cm: Cont. from Section 4, 70-141 cm

125-131 cm: **APHYRIC BASALT**

PIECE 6A

+ Section 6, 0-48 cm (Pieces 1A-2B)

CONTACTS: Upper contact: Sharp (Piece 5A and 6A fit together); Lower contact: None

PHENOCRYSTS: None

GROUNDMASS: Fine and even grained

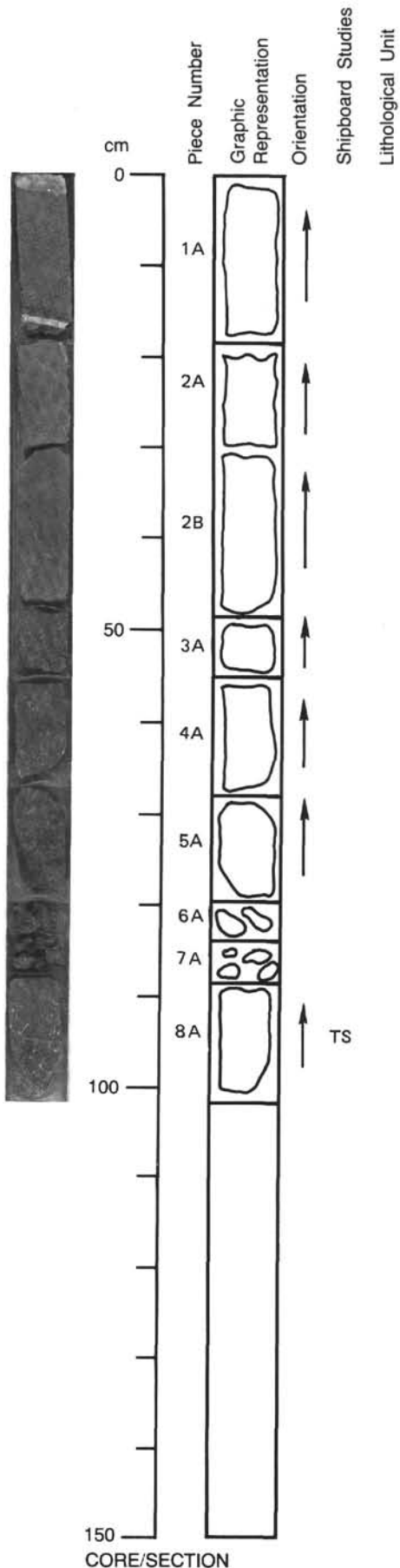
COLOR: GrAy

VESICLES: None

STRUCTURE: Highly brecciated

ALTERATION: Highly altered

FRACTURES: Filled with dark green, sometimes dark and light green substance, some wider (near 1 mm) fractures partly filled by calcite; 2 wide fracture fillings at the top (20 mm wide) and at the base (7-8 mm) of Piece 1A (both filled by calcite); 5 mm above lower fracture: slickenside; both fractures and slickenside: 25° dipping; other fractures without special orientation, mostly irregular shape.



119-738C-34R-6

0-48 cm: See Section 5, 125-131 cm

48-83 cm: **VOLCANICLASTIC ROCK**

PIECES 3A-6B

CONTACTS: None

MATRIX: Fine grained, greyish red to dull red, very highly altered.

CLASTS: Type 1: Similar or even to the non vesicular/massive ones of the overlaying volcanoclastic rocks; merely visible/distinguishable from the matrix; color like matrix

Type 2: dull-red, boundary to surrounding material sometimes not sharp (mixing of groundmass and fragments of clasts); vesicles (5-10%, coated by white crystals or totally filled by calcite; in Piece 4A lower part with light green to orange waxy mass, sharp 45° dipping contact, above empty or filled by calcite)

FRACTURES: Few

83-102 cm: **APHYRIC BASALT**

PIECES 7A-8A

CONTACTS: None

PHENOCRYSTS: None

GROUNDMASS: Fine grained

COLOR: Gray

VESICLES: 10-15%, 0, 5-8 mm (quite oblong), round to oblong, few drop-shaped, ± equal distribution, oblong ones vertical oriented; fillings: few barren; smaller vesicles mostly filled or coated by green needles, larger ones with green rim and calcite; some filled by light green waxy mass; few with light green waxy rim and green needles (innermost)

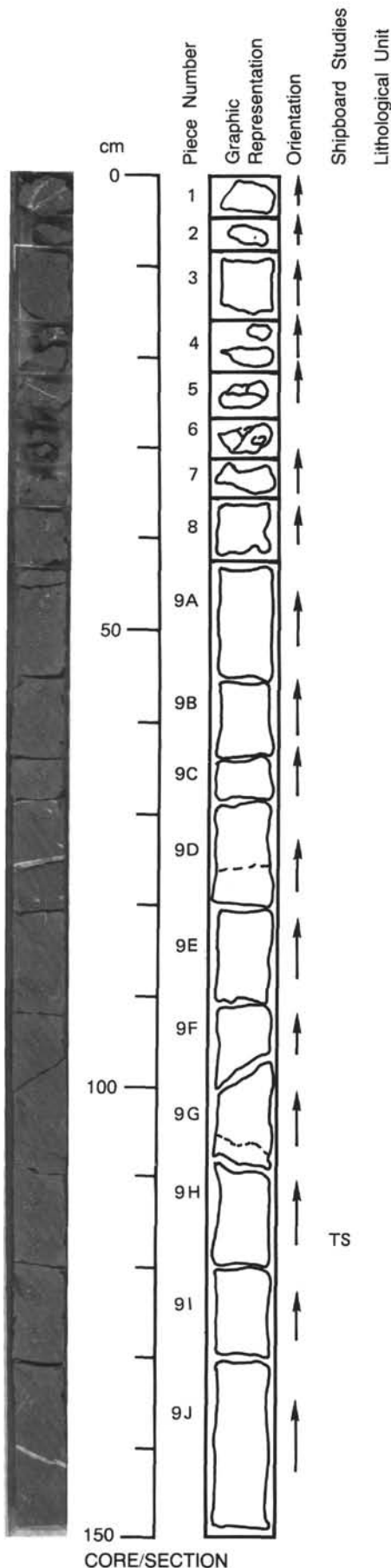
STRUCTURE: Moderately fractured

ALTERATION: Moderately altered

FRACTURES: Narrow ones mostly filled by green mineral (partly same green needles as in the vesicles), wider ones (up to 1 mm) with green rim and calcite filling

NOTE: Piece 8A: Lower left part highly brecciated, angular clasts of same material as upper part of Piece 8A, furthermore red angular clasts (small: 0.5-3 mm), cemented by calcite.

119-738C-35R-1



0-150 cm: **APHYRIC BASALT**

PIECES 1A-9J

+ Section 2, 0-146 cm (Pieces 1A-3C)

CONTACTS: None

PHENOCRYSTS: None

GROUNDMASS: Fine grained

COLOR: Grayish red brown

VESICLES: Few (near 1%) but large: mostly 3-10 mm, few up to much greater than 20 mm (not completely recovered); round to oblong; filling: light green waxy mass as rim and light green needles inside (building up radically arranged aggregates) or: dark green rim and filled by light green waxy mass; several pieces with sharp straight contact between different fillings in this same vesicle (geopetal fabric); various dipping (directions only descriptive, referring to archive half. Top = North)

Section 1 Piece 8A: 2 vesicles, dipping 35° W

Piece 9D: 1 vesicle, horizontal

Section 3 Piece 1A: 1 vesicle, dipping 35°W

Piece 2D: 5 vesicles, horizontal

Piece 3A: 11 vesicles, dipping 30°W

Piece 3B: 23 vesicles, dipping 35°W

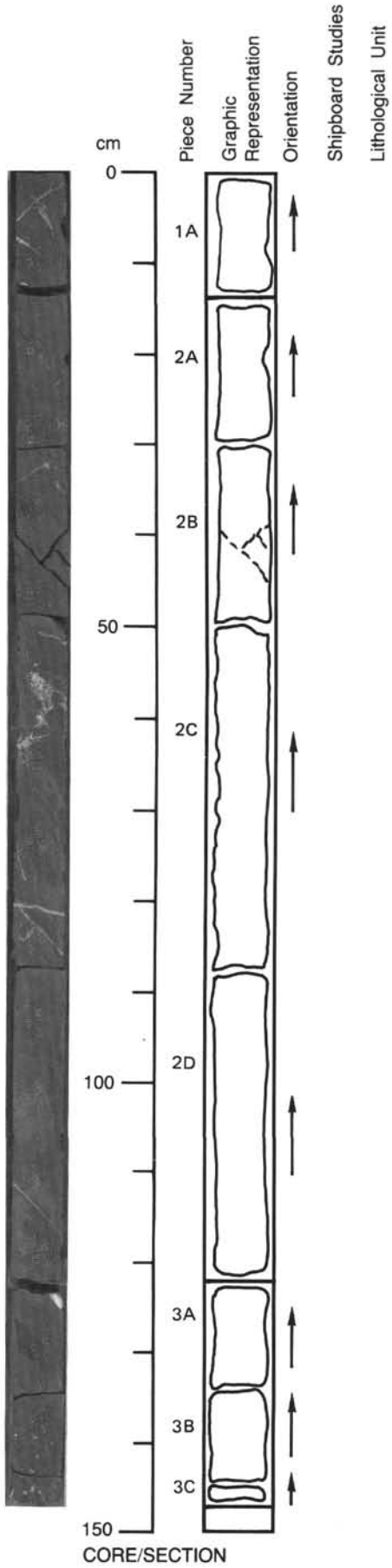
Piece 9F: 1 vesicle, dipping 20°E

Vesicle distribution in both sections regular except Section 2, 122-146 cm (Pieces 3A-3C): gradually but distinctly increasing

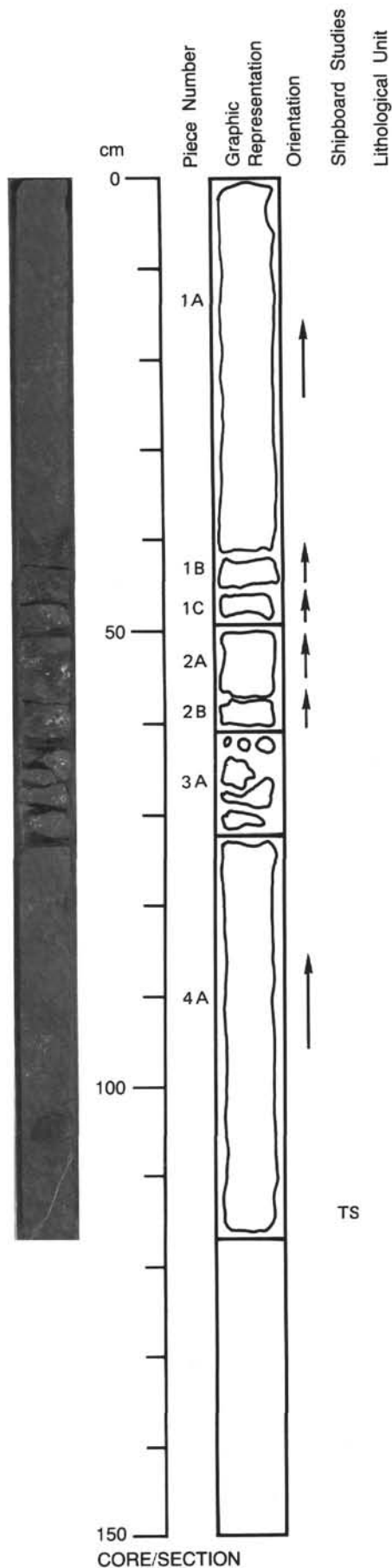
STRUCTURE: Massive

ALTERATION: Moderately altered

FRACTURES: Some wide (1-6 mm) fractures filled by calcite and dark green rim; various dipping; narrow fractures filled by dark green substance; relationship among fractures in Section 2, Piece 2C: calcitic fracture dislocated by green filled fractures and another calcitic one. Both calcitic fractures rimmed by dark green rim.



119-738C-35R-2



119-738C-35R-3

0-38 cm: **VOLCANICLASTIC ROCK**

PIECES 1A

CONTACTS: Upper contact: None; Lower contact: irregular and \pm and sharp
MATRIX: Fine grained, dull reddish gray, very highly altered.
CLASTS: Vesicles: 1-2%, very small (mostly <0.5 mm), round to irregular, dark green filling.
FRACTURES: None
NOTE: Vesicles probably in clasts, but differentiation between clasts and matrix mostly not possible

38-60 cm: **VOLCANICLASTIC ROCK**

PIECES 1A-2B

CONTACTS: Lower contact: sharp, irregular because of brecciation of top of underlying rock
MATRIX: Fine grained, dark brown
CLASTS: Vesicles (15%, near 6 mm, round or irregular, rimmed or filled with dark green needles (neolites ?)
FRACTURES: Some, filled by calcite, irregular

60-73 cm: **APHYRIC BASALT**

PIECES 2B-3A

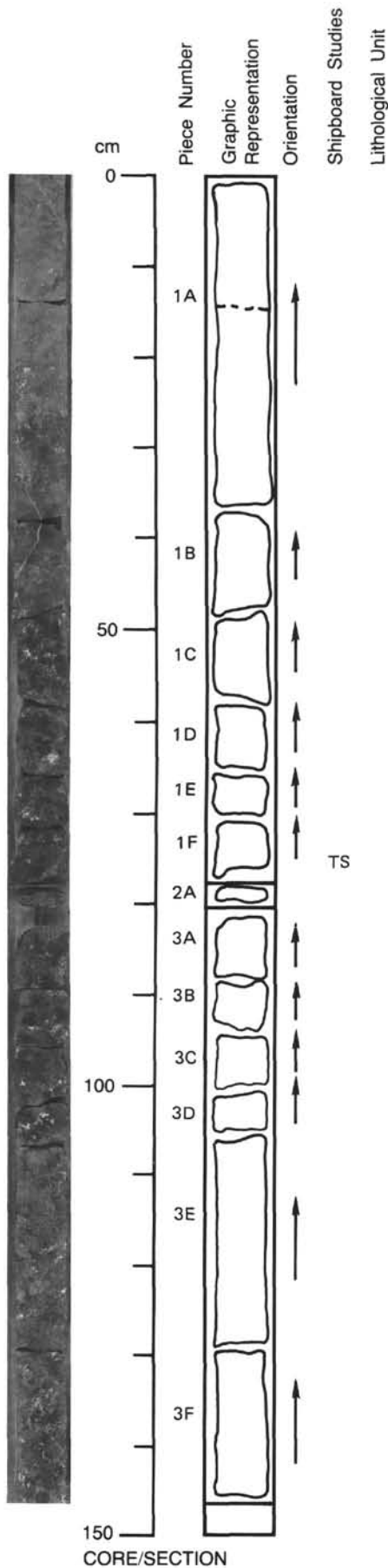
CONTACTS: Upper contact: Sharp, irregular because of brecciation of top of underlying rock; Lower contact: None
PHENOCRYSTS: None
GROUNDMASS: Fine grained
COLOR: Grayish brown
VESICLES: 5-10%, 1-9 mm, median 2-3 mm, round to oblong; fillings light green waxy mass, calcite, green needles; few with different fillings and sharp straight contact between: waxy light green mass and calcite or: waxy light green mass and green needles.
STRUCTURE: Brecciated
ALTERATION: Brecciated
FRACTURES: Few, \leq 1 mm wide, calcite or dark green filling

73-118 cm: **VOLCANICLASTIC ROCK**

PIECE 4A

+ Section 4, 0-26 cm (Piece 1A)
CONTACTS: Lower contact: sharp, very irregular
MATRIX: Dull red, fine grained, highly altered, small vesicles (<<1 mm) filled by green needles
CLASTS: Dull grey; sharp irregular boundaries; small vesicles (<<1 mm) filled by green needles; clasts 1-50 mm, median 10 mm; some clasts with larger vesicles (near 1 mm)
FRACTURES: 2 x 1-2 mm wide, with green rim and calcite filling

119-738C-35R-04



0-26 cm: See Section 3, 73-118 cm

26-147 cm: **VOLCANICLASTIC ROCK**

PIECES 1A-3F

+ Section 5, 0-37 cm (Pieces 1A-5)

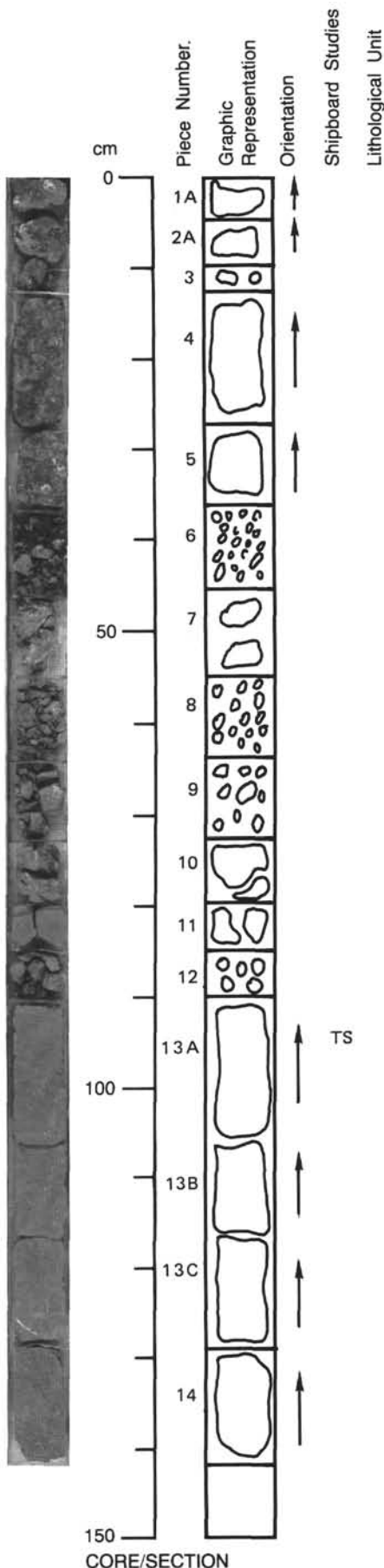
CONTACTS: Upper Contact: Sharp, very irregular;
Lower contact: None

MATRIX: Red and dull red, fine grained (microcrystalline groundmass and clasts mostly <1 mm), very highly altered

CLASTS: Up to 40 mm; vesicles (10%, 0, 1-2 mm, fillings: mostly green needles, some with calcite, few with light green waxy mass.

FRACTURES: Very few, narrow (≤ 1 mm), filled by calcite

TS



119-738C-35R-05

0-37 cm: See Section 4, 26-147 cm

37-142 cm: **APHYRIC BASALT**

PIECES 6-14

- + Section 6, 0-84 cm (Pieces 1-9)
- + Core 36, Section 1, 0-150 cm (Pieces 1A-3D)
- + Core 36, Section 2, 0-150 cm (Pieces 1A-14D)
- + Core 36, Section 3, 0-150 cm (Pieces 1A-12B)

CONTACTS: None

PHENOCRYSTS: None

GROUNDMASS: Fine grained

COLOR: Grayish red brown, greenish by green filled fractures, from Section 35R-2, 85 cm on downwards mostly dark gray to black (probably due to lesser alteration).

VESICLES: Varying from 0-15%, 0.5 - 10 mm, median 1 mm; round, oblong or irregular; fillings: mostly green needles, some with light green waxy mass, few vesicles filled by calcite.

Distribution: more frequently at

35R-5, near 110 cm

35R-5, 116-160 cm

35R-6, 0-84 cm

36R-1, 0-139 cm

36R-2, 15-41 cm

36R-2, 54-86 cm

36R-2, near 101 cm

36R-3: 20-24 cm

Some vesicles filled by different fillings with sharp straight boundary between them (geopetal fabric, compare Section 35R-1):

36R-1: Piece 1J One vesicle, contact dipping 40°W

36R-1: Piece 3C One vesicle, contact dipping 20° E

36R-2: Piece 7 One vesicle horizontal

36R-2: Piece 11A One vesicle dipping 30°E

STRUCTURE: Fractured

ALTERATION: Highly to slightly altered, decreasing with depth (color)

FRACTURES: Mostly <1 mm wide, no specific orientation prevailing, some wider ones

filled by calcite, otherwise by dark green mineral; in Section 36R-2, Piece 12:

Fracture: 7-8 mm wide, filled by calcite and basaltic breccia, dipping 60-65°

some pieces totally broken (compare graphical representation)

Highly fractured:

Section 35R-5, 91-110 cm

35R-6, 12-26 cm

36R-1, 55-65 cm

36R-1, 120-135 cm

Moderately fractured:

Section 36R-1, Piece 1D

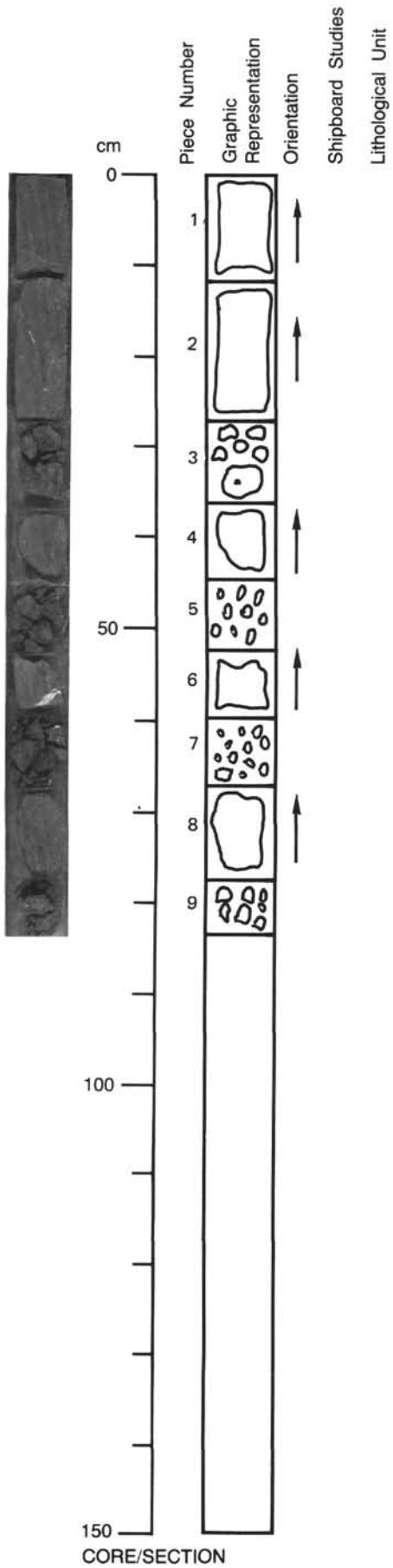
36R-2: 90-99 cm

In Section 36R-2: 90-99 cm

In Section 36R-3 only few fractures

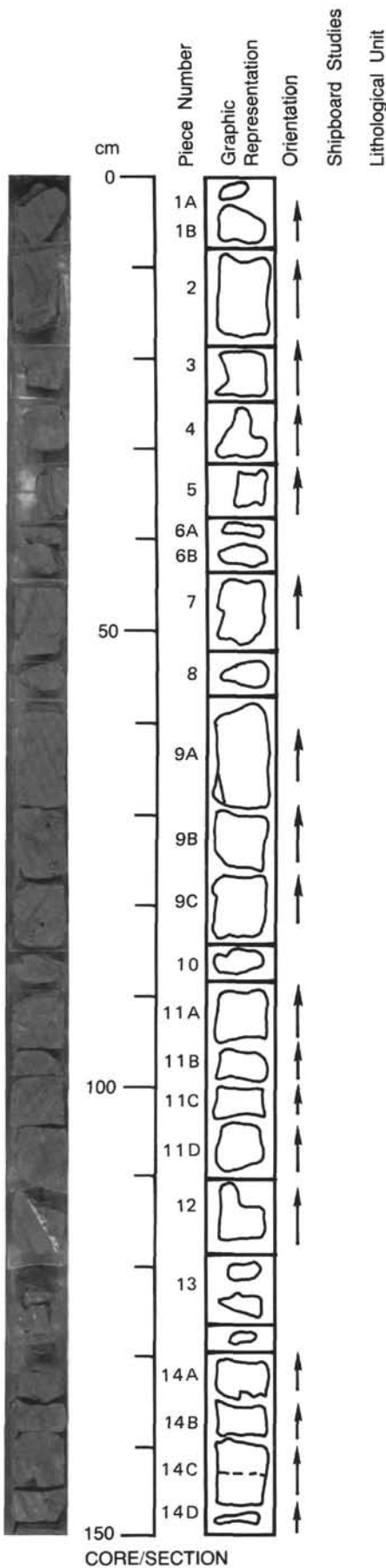
TS

150
CORE/SECTION



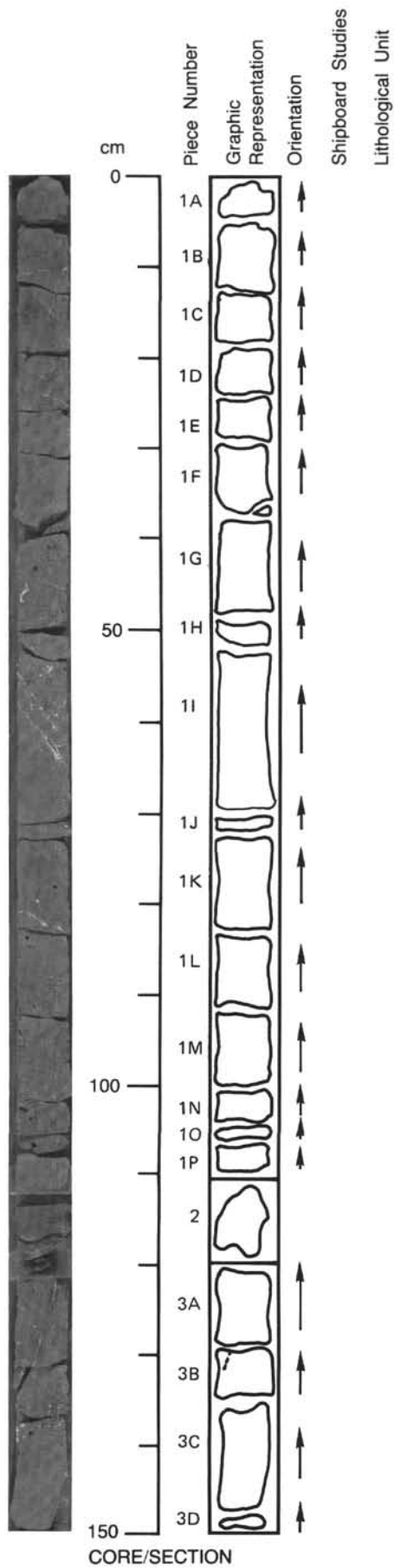
See Section 35R-5, 37-142 cm

119-738C-35R-06 thru 36R-03

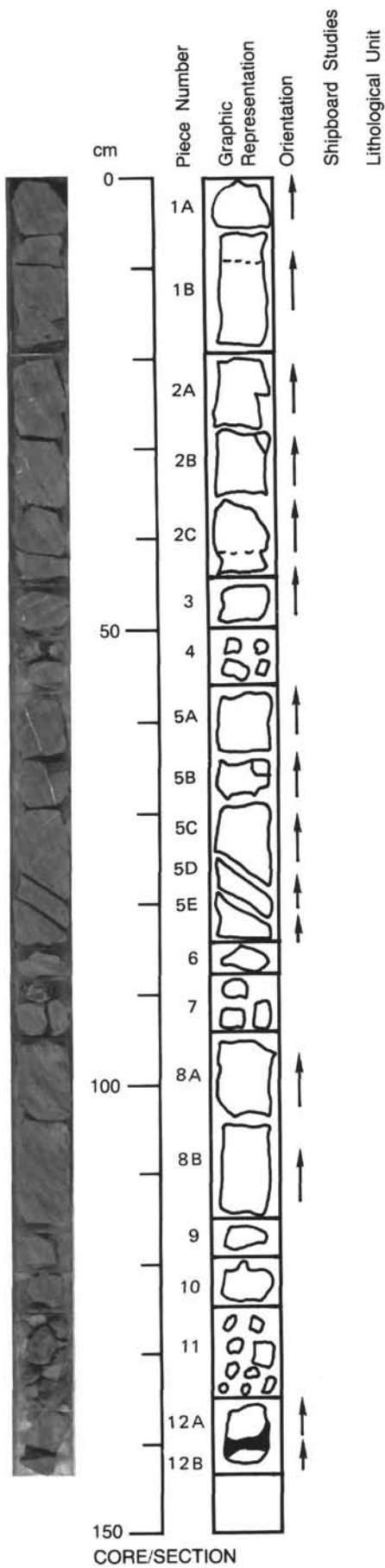


119-738C-35R-06 thru 36R-03

See Section 35R-5, 37-142 cm



119-738C-35R-06 thru 36R-03



119-738C-35R-06 thru 36R-03

See Section 35R-5, 37-142 cm