1001A-1R Entire core given to paleontologists.

SITE 1001 HOLE A CORE 2R CORED 6.4 - 16.1 mbsf

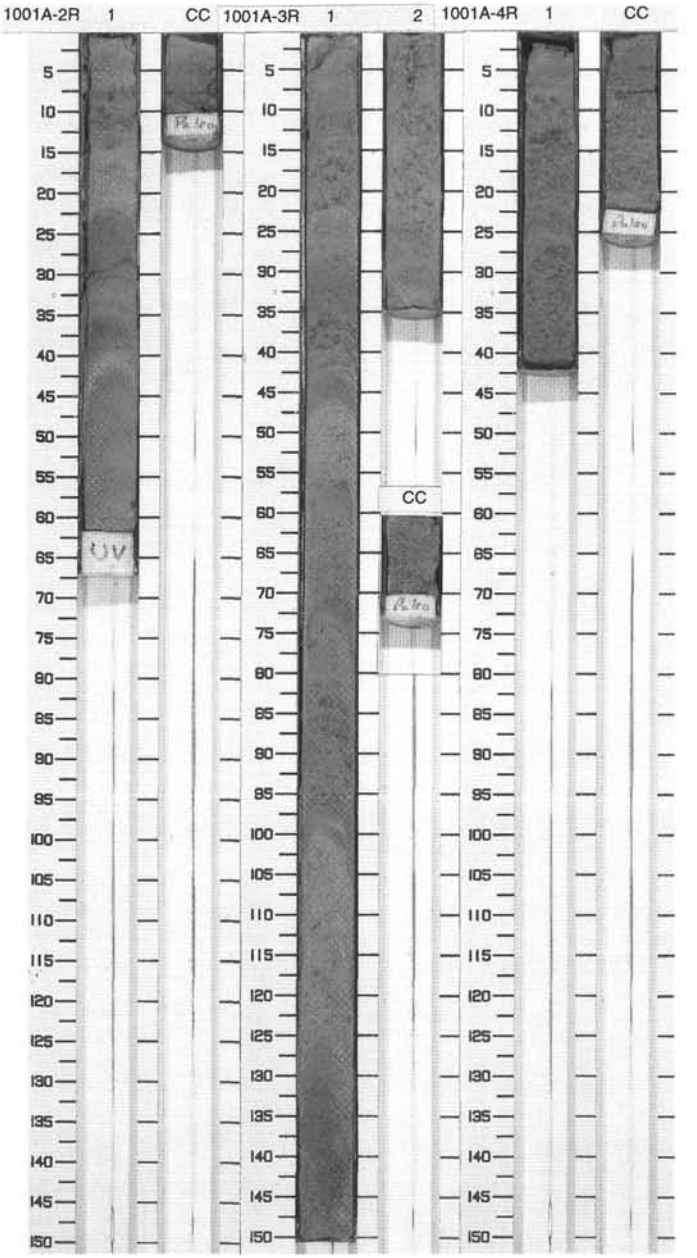
Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
		1 CC	Pleistocene	P		F S M D	2.5Y 7/4	NANNOFOSSIL CLAYEY MIXED SEDIMENT General Description: This core consists of light yellowish brown (2.5Y 7/4) NANNOFOSSIL CLAYEY MIXED SEDIMENT. The sediment has suffered moderate deformation during coring that resulted in the juxtaposition of varying lithologies. A thin interval of FORAMINIFERAL SAND occurs in Section 1, 28–29 cm. Minor pyrite is observed from 0–10 cm.

SITE 1001 HOLE A CORE 3R CORED 16.1 - 25.7 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1		1 2 CC	Pleistocene			S S F M	2.5Y 6/2	NANNOFOSSIL CLAYEY MIXED SEDIMENT General Description: This core consists of light yellowish brown (2.5Y 6/3) to light olive gray (5Y 6/2) NANNOFOSSIL CLAYEY MIXED SEDIMENT and CLAYEY NANNOFOSSIL MIXED SEDIMENT WITH FORAMINIFERS. Thin intervals of FORAMINIFERAL SAND, usually less than 10 cm in thickness, occur in Sections 1 and 2.

SITE 1001 HOLE A CORE 4R CORED 25.7 - 35.3 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
		1 CC	Pleistocene			M	2.5Y 5/2	CLAYEY NANNOFOSSIL MIXED SEDIMENT WITH FORAMINIFERS General Description: This core consists of grayish brown (2.5Y 5/2) CLAYEY NANNOFOSSIL MIXED SEDIMENT WITH FORAMINIFERS and minor NANNOFOSSIL CLAYEY MIXED SEDIMENT. The sediment alternates between intervals that are enriched in foraminifers and intervals with lower numbers.



SITE 1001 HOLE A CORE 5R CORED 35.3 - 44.9 mbsf

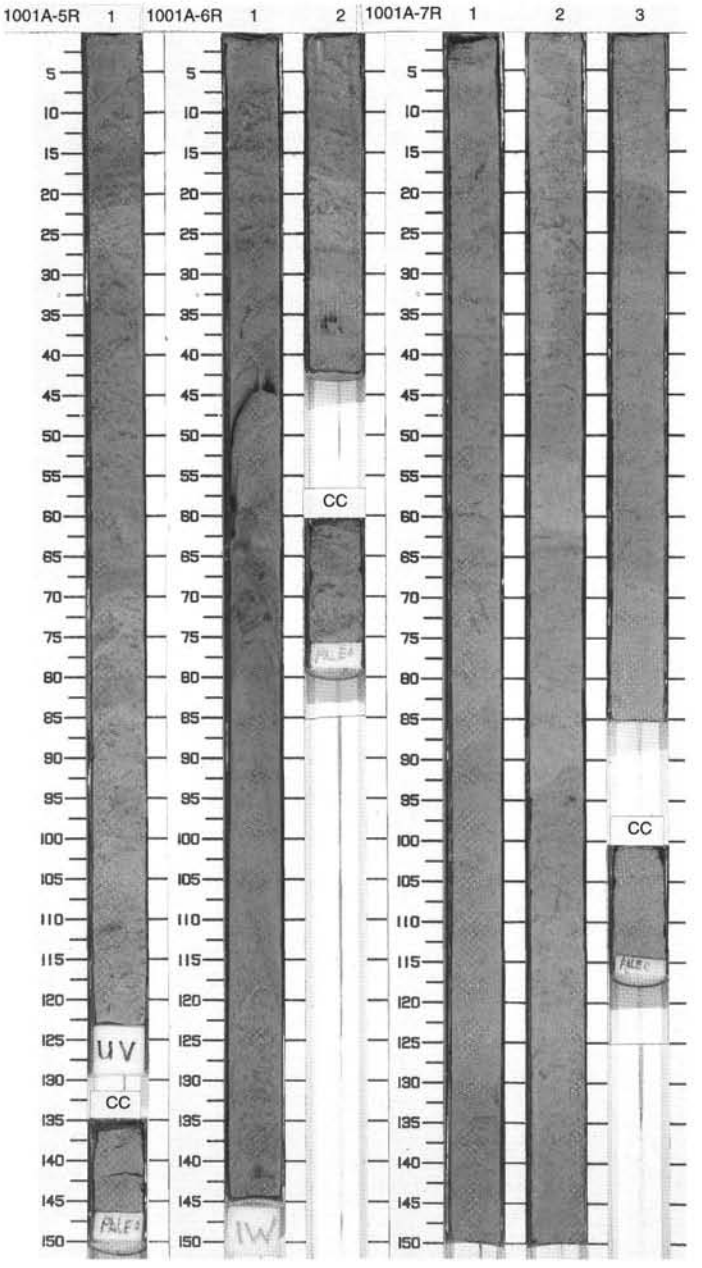
Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1		1, CC	late Pleistocene	P, P		S, M	5Y 6/2	CLAYEY NANNOFOSSIL MIXED SEDIMENT WITH FORAMINIFERS General Description: This core consists of light olive gray (5Y 6/2) CLAYEY NANNOFOSSIL MIXED SEDIMENT WITH FORAMINIFERS. The sediment is homogeneous and moderately bioturbated. Yellow gray color banding occurs in Section 1, 66–70 and 80–88 cm. Some minor disseminated pyrite is observed on the core surface in Section 1.

SITE 1001 HOLE A CORE 6R CORED 44.9 - 54.6 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2		1, 2, CC	late Pliocene	P		D, I, M	5Y 6/2	CLAYEY NANNOFOSSIL MIXEDSEDIMENT WITH FORAMINIFERS General Description: This core consists of light olive gray (5Y 6/2) CLAYEY NANNOFOSSIL MIXED SEDIMENT WITH FORAMINIFERS. The sediment is homogeneous and moderately bioturbated. A 1 cm diameter pyrite nodule occurs in Section 1 at 43 cm. Some faint yellow color banding is observed in the core catcher.

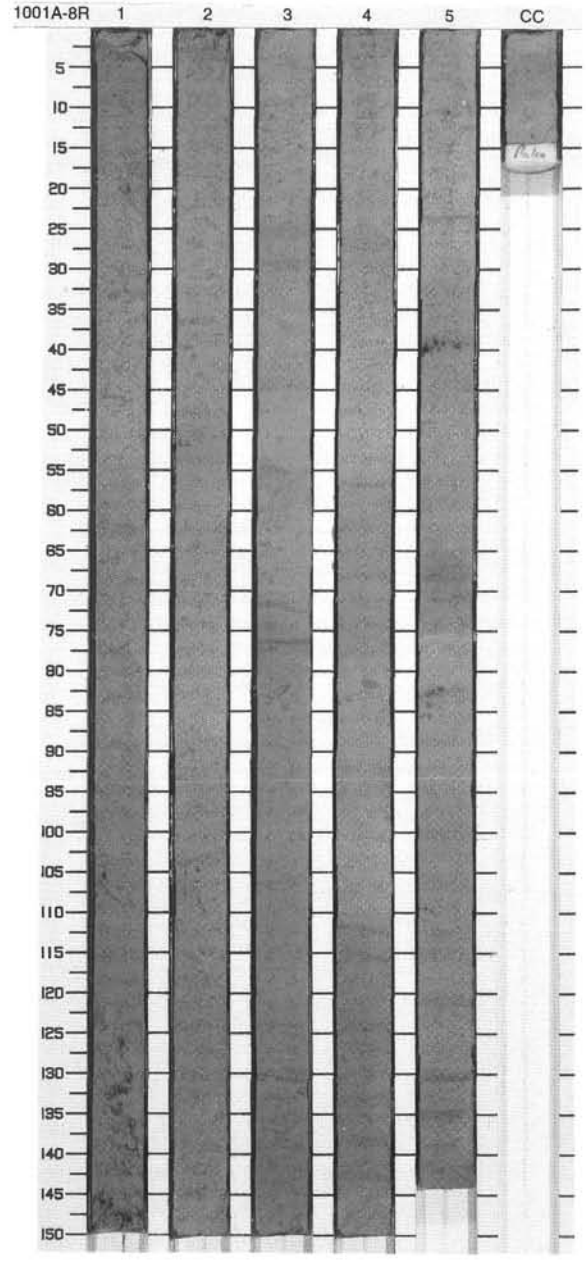
SITE 1001 HOLE A CORE 7R CORED 54.6 - 64.2 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2, 3, 4		1, 2, 3, CC	late Pliocene	P, P, P, P		S	5Y 6/2	CLAYEY NANNOFOSSIL MIXED SEDIMENT WITH FORAMINIFERS General Description: This core consists of light olive gray (5Y 6/2) CLAYEY NANNOFOSSIL MIXED SEDIMENT WITH FORAMINIFERS. The sediment is massive, homogeneous and moderately bioturbated. Disseminated pyrite occurs throughout the core and is often concentrated in burrows. Some faint yellow color banding is observed in Sections 1 and 2. Broken pteropod shells are observed on the core surface in Section 2.



SITE 1001 HOLE A CORE 8R CORED 64.2 - 73.8 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1 2 3 4 5 6 7		1 2 3 4 5 CC	late Pliocene early Pliocene	P P P P P P P P P		S D M	5Y 7/2	CLAYEY NANNOFOSSIL MIXED SEDIMENT WITH FORAMINIFERS and CLAYEY NANNOFOSSIL MIXED SEDIMENT General Description: This core consists of light olive gray (5Y 6/2) CLAYEY NANNOFOSSIL MIXED SEDIMENT WITH FORAMINIFERS and CLAYEY NANNOFOSSIL MIXED SEDIMENT. The sediment is massive, homogeneous, and moderately bioturbated. Contacts between the major lithologies are gradational. Disseminated pyrite occurs throughout the core and is often concentrated in burrows. Some faint yellow color banding is observed in Sections 3, 4, and 5.

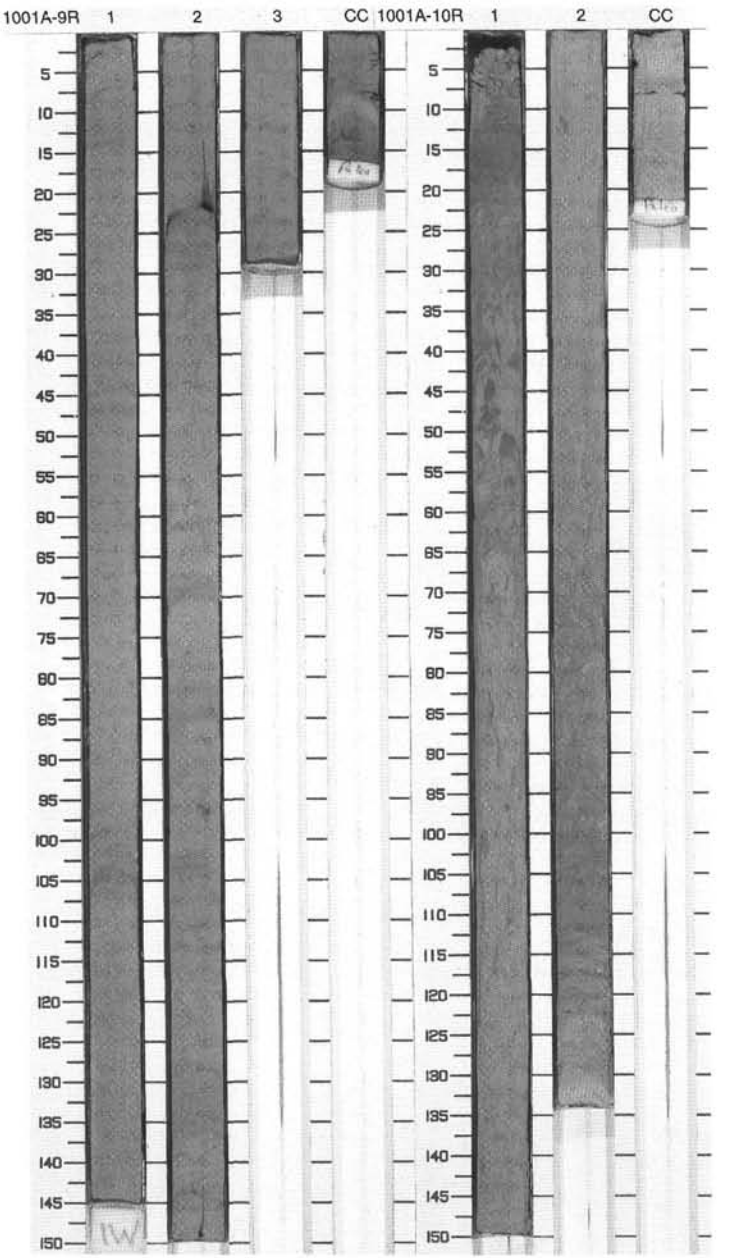


SITE 1001 HOLE A CORE 9R CORED 73.8 - 83.4 mbsf

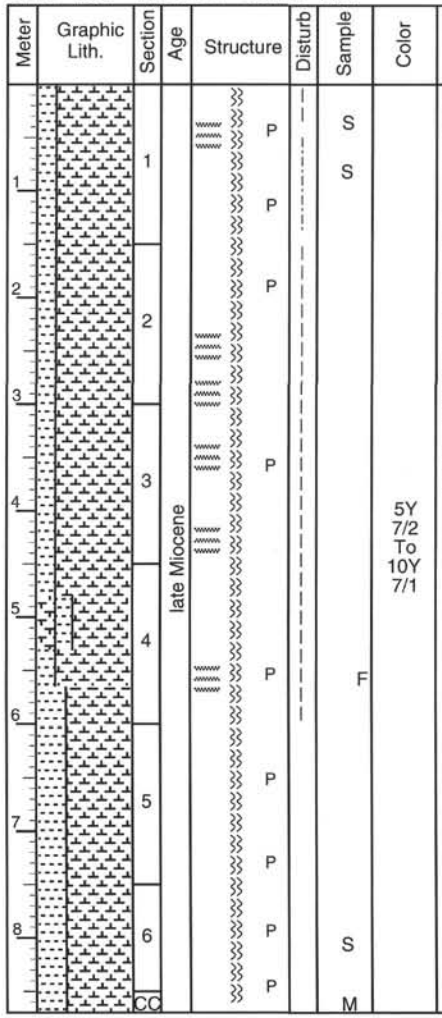
Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1 2 3		1 2 3 CC	early Pliocene	P P		I SD M	5Y 7/2	CLAYEY NANNOFOSSIL OOZE WITH FORAMINIFERS and CLAYEY NANNOFOSSIL OOZE General Description: This core consists of light olive gray (5Y 6/2) CLAYEY NANNOFOSSIL OOZE WITH FORAMINIFERS and CLAYEY NANNOFOSSIL OOZE. The sediment is massive, homogeneous, and moderately bioturbated. Contacts between the major lithologies are gradational. Disseminated pyrite occurs in sections 2 and CC and is often concentrated in burrows. Some faint yellow color banding is observed in Sections 1, 2, and CC.

SITE 1001 HOLE A CORE 10R CORED 83.4 - 93.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1 2 3		1 2 CC	early Pliocene			M	5Y 7/2	CLAYEY NANNOFOSSIL OOZE General Description: This core consists of light olive gray (5Y 7/2) CLAYEY NANNOFOSSIL OOZE. The sediment is massive, homogenous and moderately bioturbated. All of Section 1 and Section 2, 0–110 cm has suffered deformation by flow-in.



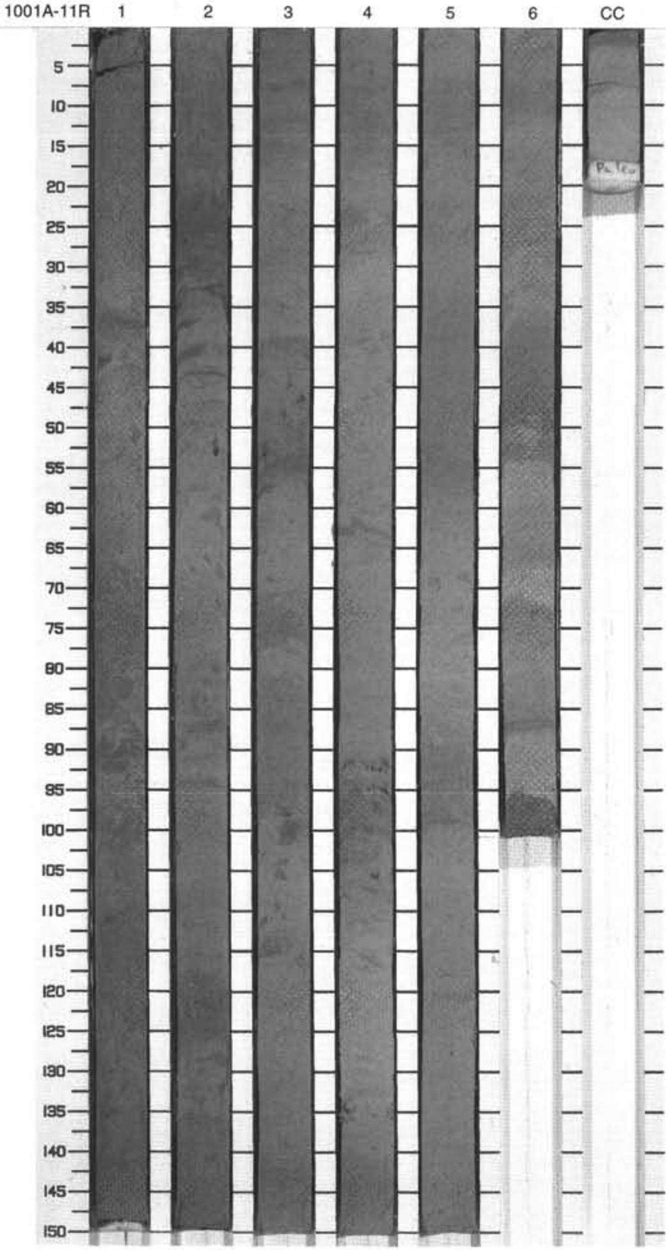
SITE 1001 HOLE A CORE 11R CORED 93.0 - 102.6 mbsf



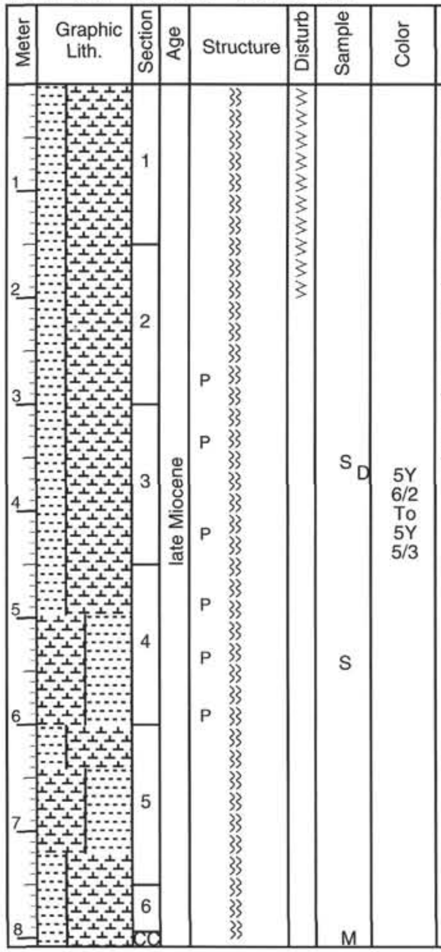
Description

NANNOFOSSIL OOZE WITH CLAY, NANNOFOSSIL OOZE WITH CLAY AND FORAMINIFERS and CLAYEY NANNOFOSSIL OOZE

General Description:
This core consists of light gray (5Y 7/2) NANNOFOSSIL OOZE WITH CLAY, NANNOFOSSIL OOZE WITH CLAY AND FORAMINIFERS, and CLAYEY NANNOFOSSIL OOZE. The sediment is massive, homogenous, and moderately bioturbated. Contacts between the major lithologies are gradational. Disseminated pyrite occurs throughout the core and is often concentrated in burrows. Some faint blue/green color banding is observed in sections 1, 2, 3, and 4.



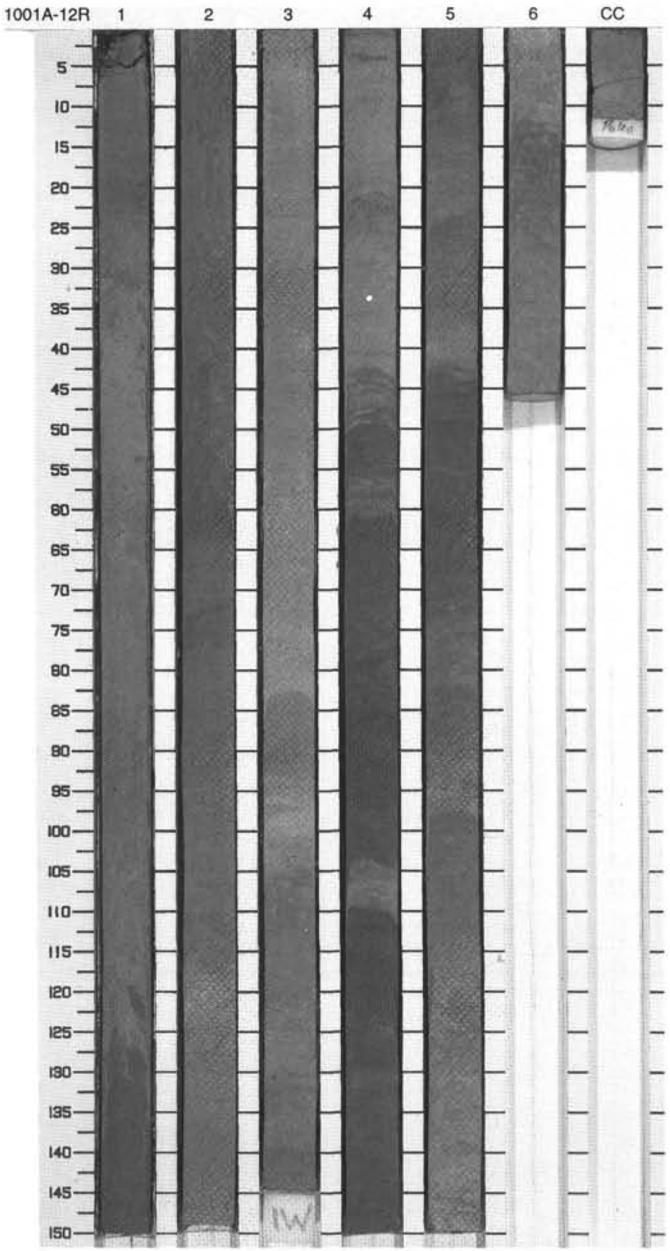
SITE 1001 HOLE A CORE 12R CORED 102.6 - 112.2 mbsf



Description

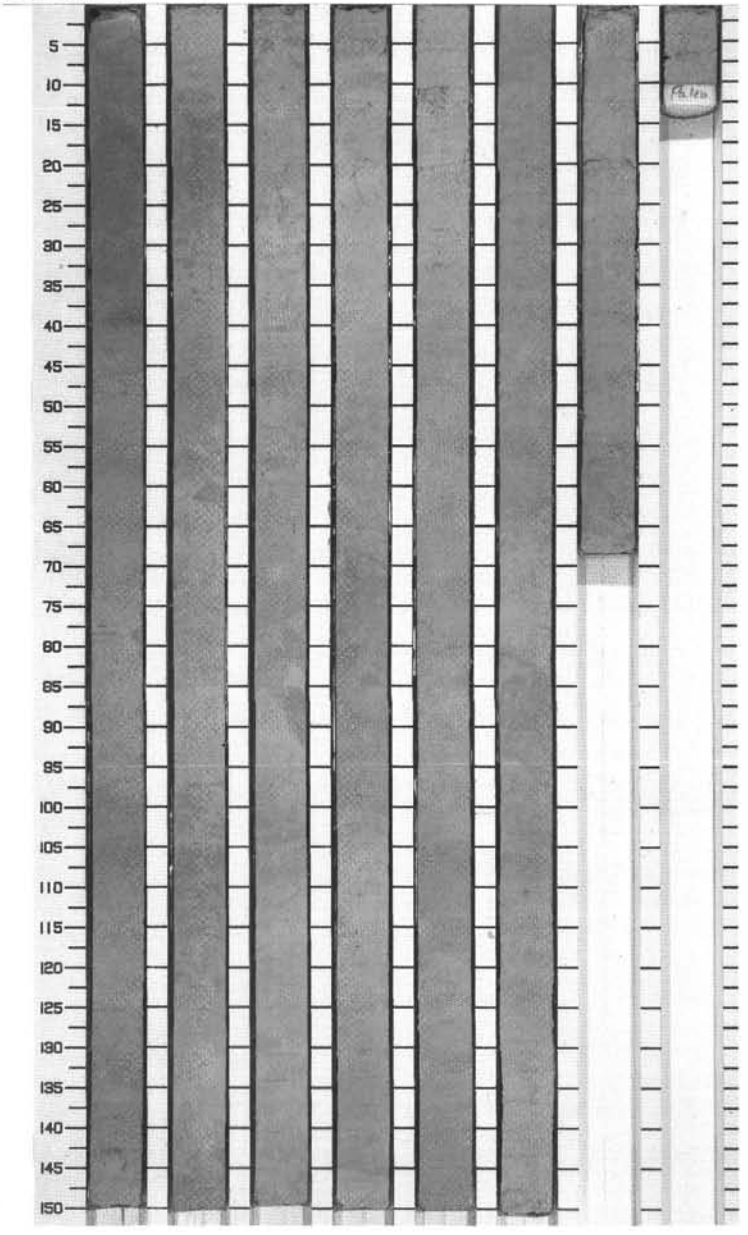
CLAYEY NANNOFOSSIL OOZE and CLAYEY NANNOFOSSIL MIXED SEDIMENT

General Description:
This core consists of light olive gray (5Y 6/2) to olive gray (5Y 5/3) CLAYEY NANNOFOSSIL OOZE and CLAYEY NANNOFOSSIL MIXED SEDIMENT. The sediment is massive, homogenous, and moderately bioturbated. Contacts between the major lithologies are gradational. Disseminated pyrite occurs throughout the core and is often concentrated in burrows. All of Section 1 and 60 cm of Section 2 are severely disturbed by flow-in.



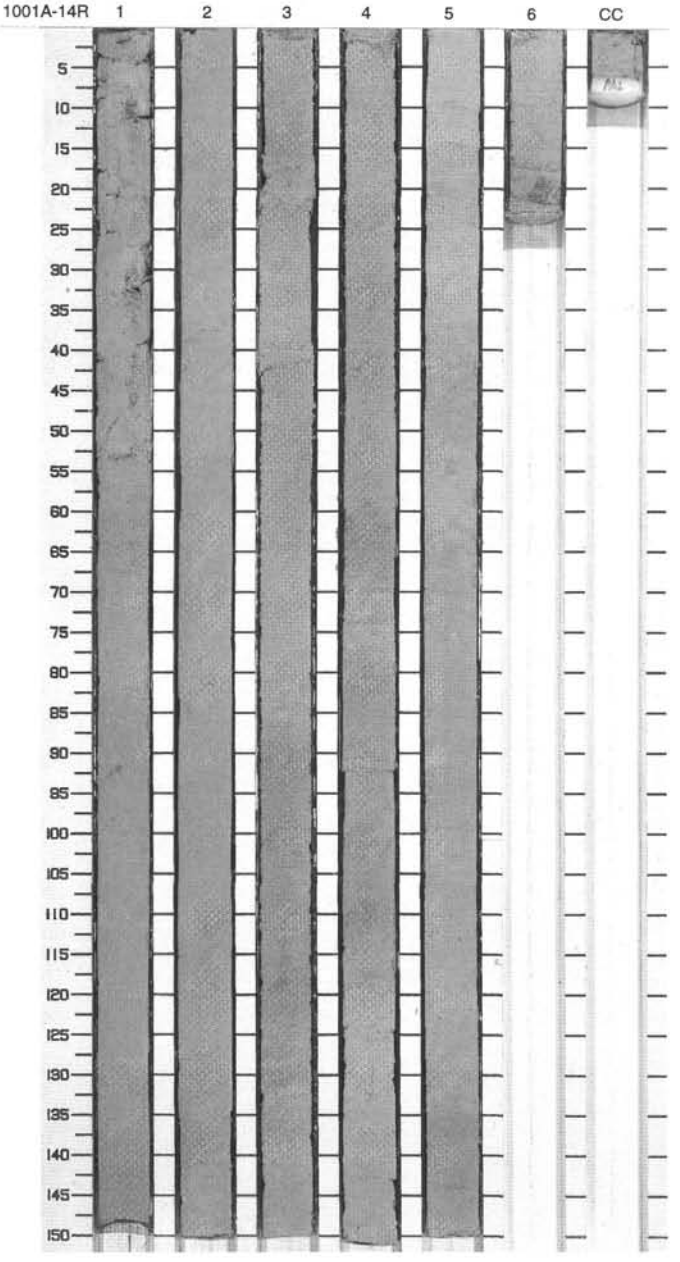
SITE 1001 HOLE A CORE 13R CORED 112.2 - 121.8 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2, 3, 4, 5, 6, 7, 8, 9		1, 2, 3, 4, 5, 6, 7, CC	late Miocene	P		S, M	5Y 6/3 To 10Y 7/1	CLAYEY NANNOFOSSIL OOZE, NANNOFOSSIL OOZE WITH CLAY and NANNOFOSSIL OOZE WITH CLAY AND FORAMINIFERS General Description: This core consists of light olive gray (5Y 6/2) to olive gray (5Y 5/3) CLAYEY NANNOFOSSIL OOZE, NANNOFOSSIL OOZE WITH CLAY, and NANNOFOSSIL OOZE WITH CLAY AND FORAMINIFERS. The sediment is massive, homogenous, and moderately bioturbated. Contacts between the major lithologies are gradational. Disseminated pyrite occurs throughout the core and is often concentrated in burrows. Parts of Section 4 are well indurated and are approaching chalk in their degree of lithification.



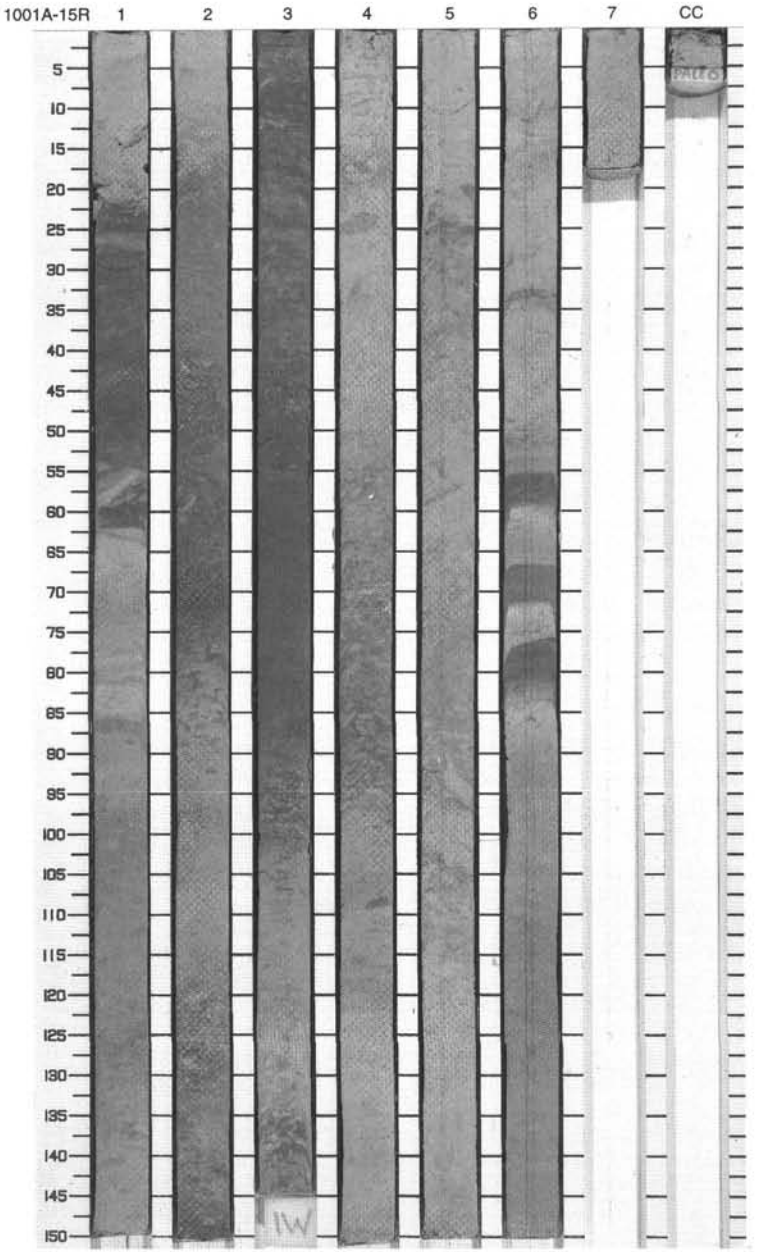
SITE 1001 HOLE A CORE 14R CORED 121.8 - 131.5 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2, 3, 4, 5, 6, 7		1, 2, 3, 4, 5, 6 CC	late Miocene	P, P, P, P, P, P		D, M	10Y 7/1	NANNOFOSSIL OOZE WITH CLAY and NANNOFOSSIL OOZE WITH CLAY AND FORAMINIFERS General Description: This core consists of light gray (10Y 7/1) CLAYEY NANNOFOSSIL OOZE and NANNOFOSSIL OOZE WITH CLAY AND FORAMINIFERS. The sediment is massive, homogenous, and moderately bioturbated. Contacts between the major lithologies are gradational. Disseminated pyrite occurs throughout the core and is often concentrated in burrows. Parts of Section 3 are well indurated and are approaching chalk in their degree of lithification.



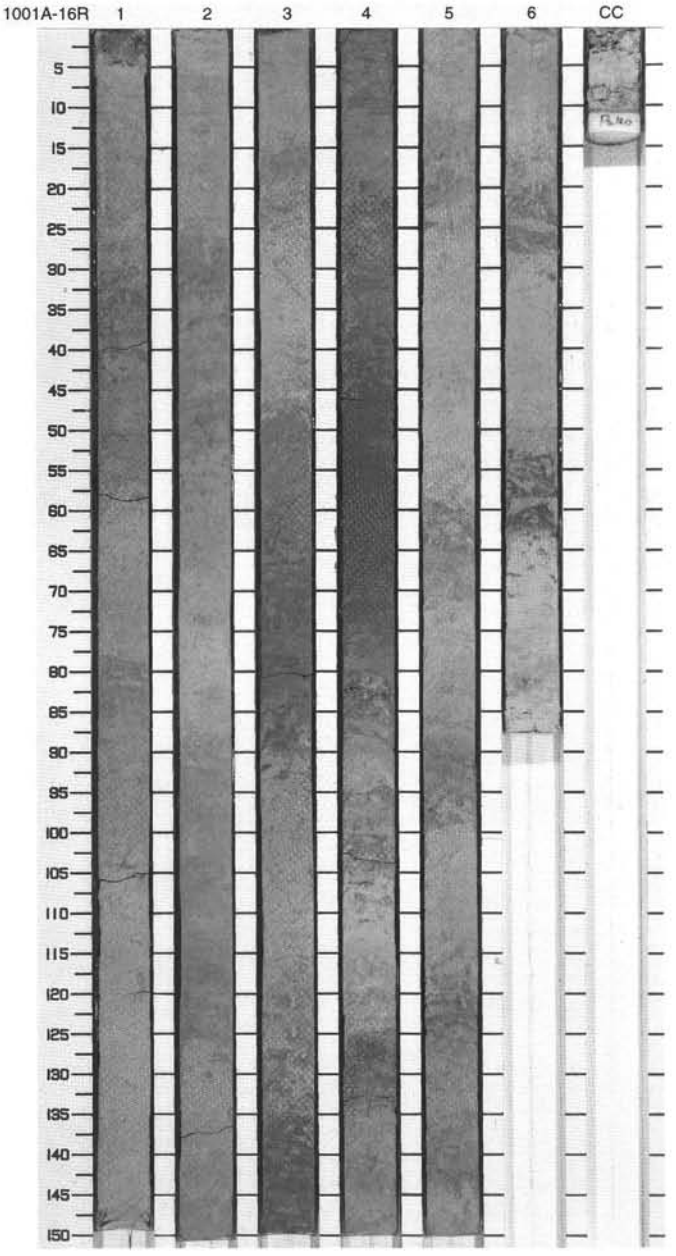
SITE 1001 HOLE A CORE 15R CORED 131.5 - 141.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2, 3, 4, 5, 6, 7, 8, 9		1, 2, 3, 4, 5, 6, CC	late Miocene	P	W	S, M	2.5Y 6/2 To 10Y 7/2	CLAYEY NANNOFOSSIL OOZE, NANNOFOSSIL OOZE WITH CLAY and NANNOFOSSIL CLAY General Description: This core consists of interbedded light yellowish brown (2.5Y 6/3) CLAYEY NANNOFOSSIL OOZE, pale yellow (5Y 7/3) NANNOFOSSIL OOZE WITH CLAY, light yellowish brown (2.5Y 6/3) NANNOFOSSIL CLAY and minor light yellowish brown (2.5Y 6/3) CLAYEY NANNOFOSSIL MIXED SEDIMENT. The sediment is fine grained and homogenous in texture within each lithology. Contacts between the lithologies are typically gradational and bioturbated.

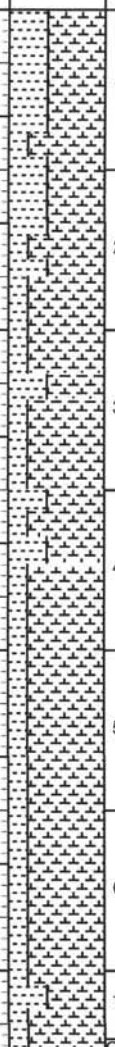


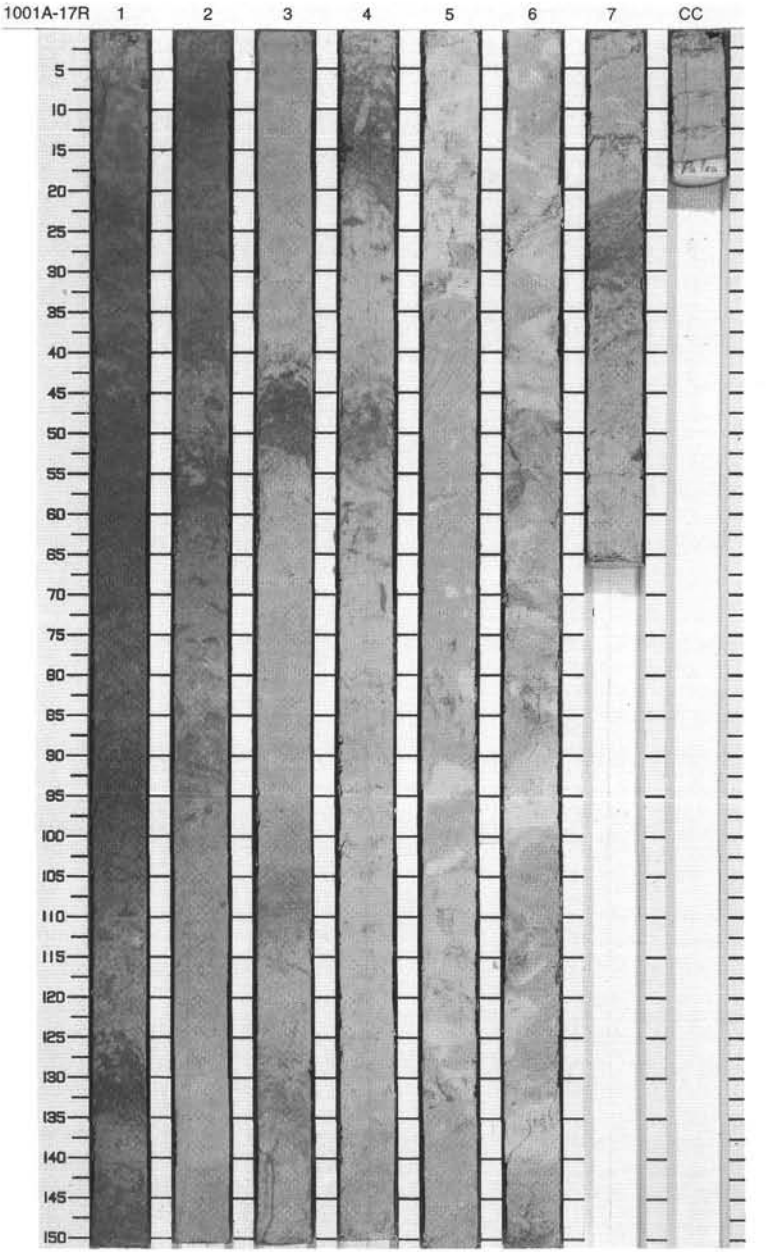
SITE 1001 HOLE A CORE 16R CORED 141.0 - 150.7 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2, 3, 4, 5, 6, 7, 8		1, 2, 3, 4, 5, 6, CC	late Miocene; middle Miocene	P	W	D, M	2.5Y 7/4 To 2.5Y 7/2; 2.5Y 7/2 To 2.5Y 6/2	NANNOFOSSIL OOZE WITH CLAY and CLAYEY NANNOFOSSIL OOZE General Description: This core consists of interbedded pale yellow (5Y 7/3) NANNOFOSSIL OOZE WITH CLAY and light yellowish brown (2.5Y 6/3) CLAYEY NANNOFOSSIL OOZE, light olive brown (2.5Y 5/3) NANNOFOSSIL CLAY. The sediment is fine grained, homogenous in texture, and moderately bioturbated within each lithology. Contacts between the lithologies are typically gradational and bioturbated. Most of the section consists of firm ooze with smaller intervals of soft chalk.

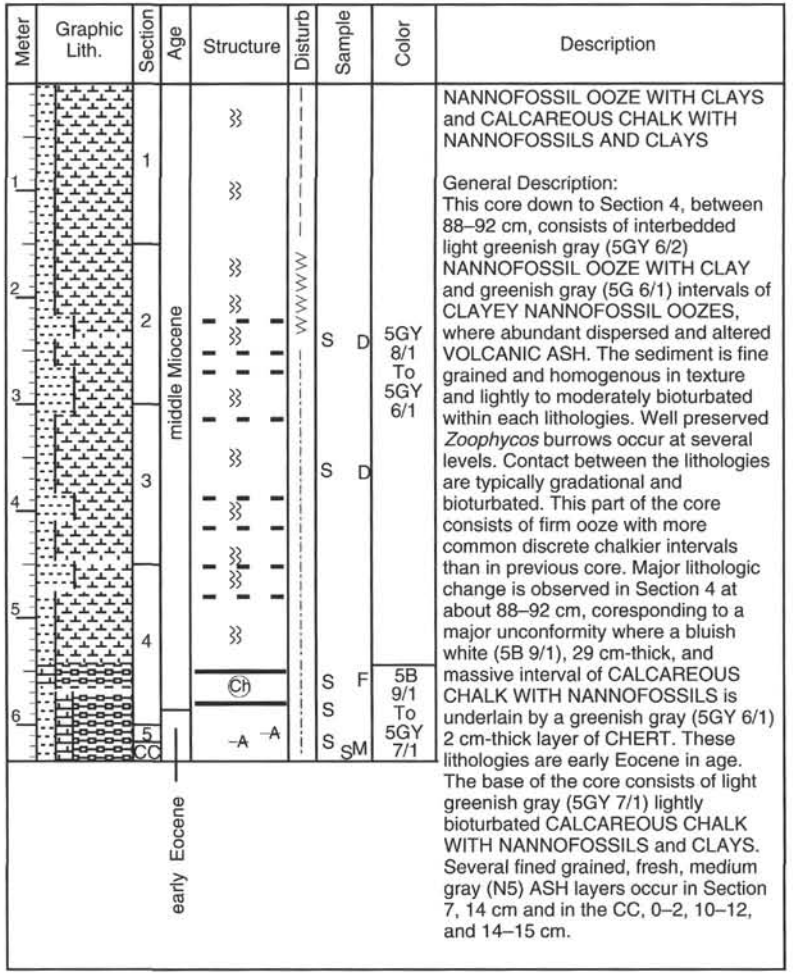


SITE 1001 HOLE A CORE 17R CORED 150.7 - 160.3 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1–9		1, 2, 3, 4, 5, 6, 7, CC	middle Miocene		W	D, S, F, M	5Y 5/2 To 5Y 6/2; 2.5Y 6/2; 5GY 6/1 To 5GY 8/1; 5GY 7/1 To 5GY 8/1; 5GY 7/1 To 5GY 6/1	NANNOFOSSIL OOZE WITH CLAY and CLAYEY NANNOFOSSIL OOZE General Description: This core consists of interbedded light olive gray (5Y 6/2) and light gray (10Y 7/1) NANNOFOSSIL OOZE WITH CLAY and olive gray (5Y 5/2) CLAYEY NANNOFOSSIL OOZE. Color shows a subtle change possibly related to a redox reduction below Section 3, at about 50–60 cm and becomes light greenish gray (5GY 8/1) to greenish gray (5GY 6/1). The sediment is fine grained and homogenous in texture within each lithologies. Contact between the lithologies are typically gradational and bioturbated. Section 5 below 30 cm and the full Section 6 are moderately to heavily disturbed. Disturbance is interpreted to be related to the rotary drilling or perhaps (less probable) to slumping or redeposited debris. Most of the core consists of firm ooze with more common discrete chalkier intervals.

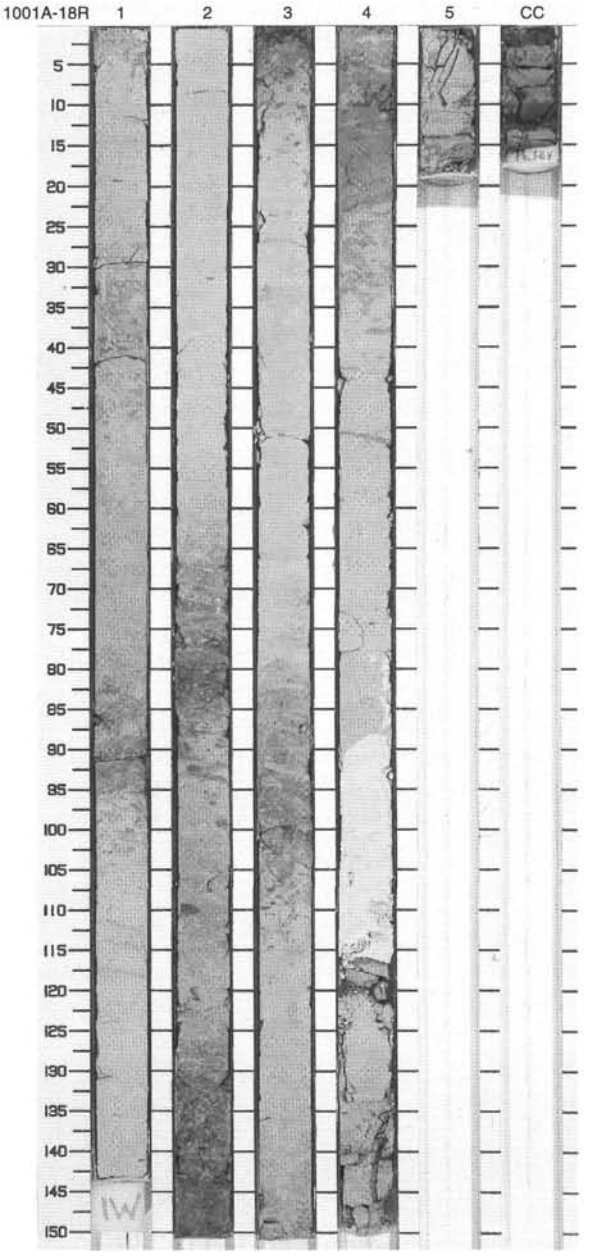


SITE 1001 HOLE A CORE 18R CORED 160.3 - 168.0 mbsf



NANNOFOSSIL OOZE WITH CLAYS and CALCAREOUS CHALK WITH NANNOFOSSILS AND CLAYS

General Description:
This core down to Section 4, between 88–92 cm, consists of interbedded light greenish gray (5GY 6/2) NANNOFOSSIL OOZE WITH CLAY and greenish gray (5G 6/1) intervals of CLAYEY NANNOFOSSIL OOZES, where abundant dispersed and altered VOLCANIC ASH. The sediment is fine grained and homogenous in texture and lightly to moderately bioturbated within each lithologies. Well preserved *Zoophycos* burrows occur at several levels. Contact between the lithologies are typically gradational and bioturbated. This part of the core consists of firm ooze with more common discrete chalkier intervals than in previous core. Major lithologic change is observed in Section 4 at about 88–92 cm, coresponding to a major unconformity where a bluish white (5B 9/1), 29 cm-thick, and massive interval of CALCAREOUS CHALK WITH NANNOFOSSILS is underlain by a greenish gray (5GY 6/1) 2 cm-thick layer of CHERT. These lithologies are early Eocene in age. The base of the core consists of light greenish gray (5GY 7/1) lightly bioturbated CALCAREOUS CHALK WITH NANNOFOSSILS and CLAYS. Several fined grained, fresh, medium gray (N5) ASH layers occur in Section 7, 14 cm and in the CC, 0–2, 10–12, and 14–15 cm.



SITE 1001 HOLE A CORE 19R CORED 168.0 - 170.0 mbsf

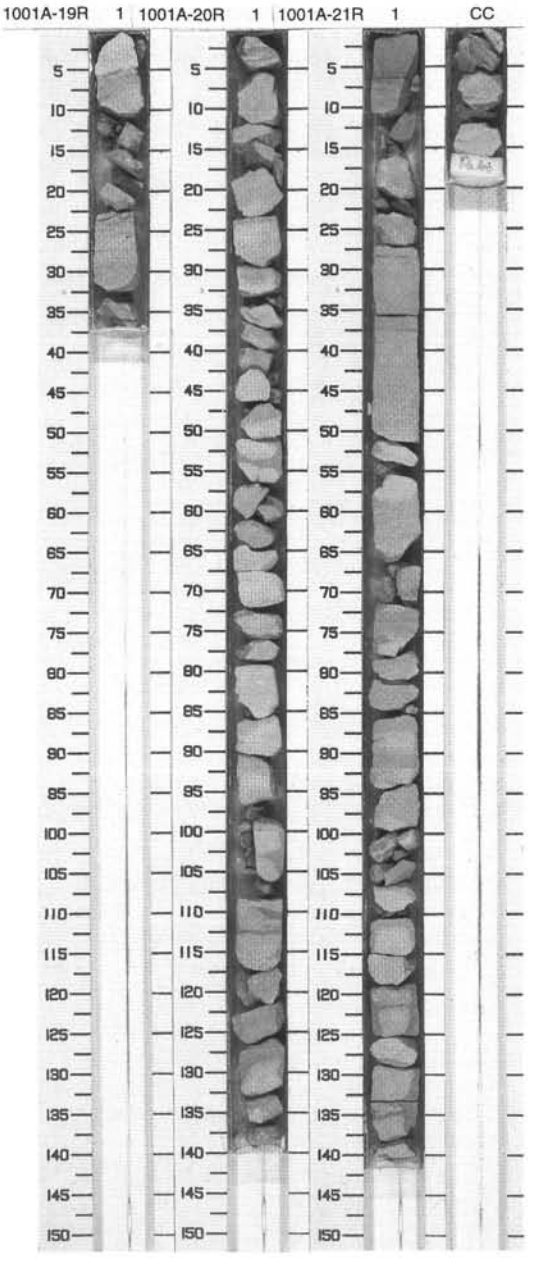
Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
		1	early Eocene	Ch Ch		MD		CALCAREOUS CHALK General Description: This core comprises several rock fragments without any preserved stratigraphic continuity. The fragments consist of moderately bioturbated light greenish gray (5GY 6/2) CALCAREOUS CHALK. Chert nodules and disseminated chert occur at Section 1, 6–9 cm.

SITE 1001 HOLE A CORE 20R CORED 170.0 - 179.6 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1		1	early Eocene	Ch		D S M	5GY 6/2	CALCAREOUS CHALK General Description: This core consists of highly fractured, well lithified light greenish gray (5GY 6/2) CALCAREOUS CHALK. Bioturbation is moderate, and burrows are compacted. Chert nodules and disseminated chert occur at Section 1, 1–4 cm.

SITE 1001 HOLE A CORE 21R CORED 179.6 - 189.2 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1		1 CC	early Eocene	A A A A		F M	5GY 7/1	CALCAREOUS CHALK WITH FORAMINIFERS General Description: This core consists of highly fractured, well lithified CALCAREOUS CHALK WITH FORAMINIFERS. The color ranges from light greenish gray (5GY 7/1) to olive gray (5GY 5/1). Bioturbation is moderate, and burrows are compacted. Layers of dispersed ash occur in Section 1, 4, 5–7, and 28–37 cm; and CC, 3 cm.



SITE 1001 HOLE A CORE 22R CORED 189.2 - 198.8 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
		1	early Eocene	–A		S M	5GY 7/1	CLAYEY CALCAREOUS CHALK WITH FORAMINIFERS

General Description:
This core consists of highly fractured, well lithified CLAYEY CALCAREOUS CHALK WITH FORAMINIFERS. The color ranges from light gray (5GY 7/1) to olive gray (5GY 5/1). One layer with altered volcanic ash occurs in Section 1, 7–12 cm.

SITE 1001 HOLE A CORE 23R CORED 198.8 - 208.4 mbsf

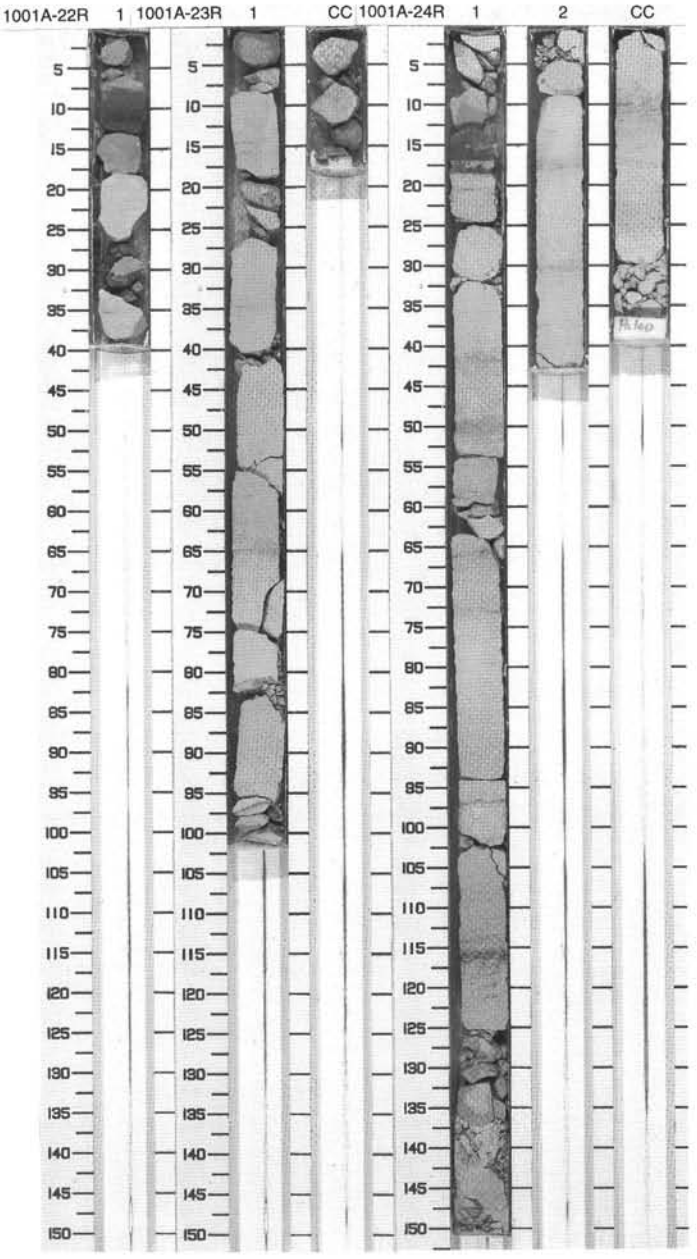
Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1		1	early Eocene	–A –A –A Ch Ch		D M	5GY 7/1	CLAYEY CALCAREOUS CHALK WITH FORAMINIFERS and CALCAREOUS CHALK WITH CLAY AND FORAMINIFERS
		CC						

General Description:
This core consists of light gray (5GY 7/1) CLAYEY CALCAREOUS CHALK WITH FORAMINIFERS alternating with CALCAREOUS CHALK WITH CLAY AND FORAMINIFERS. Chert nodules and disseminated chert occur in Section 1, 81–83 and 96–102 cm. Dispersed layers with altered volcanic ash occur in Section 1, 14, 15.5, and 64–65 cm.

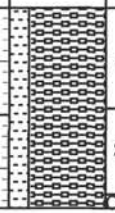
SITE 1001 HOLE A CORE 24R CORED 208.4 - 218.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1		1	early Eocene	–A –A Ch Ch		F S F	5GY 7/1 To 5GY 8/1	CALCAREOUS CHALK WITH CLAY
2		2				D		
		CC		Ch		M		

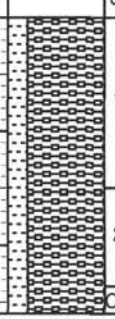
General Description:
This core consists of light gray (5GY 7/1) CALCAREOUS CHALK WITH CLAY. The sediment is massive and moderately bioturbated. Disseminated chert occurs in all sections. VOLCANIC ASH layers occur in Section 1, 13–17, and 17.5–18.5 cm. A dispersed volcanic ash layer occurs in Section 1, 115.5–116.5 cm.

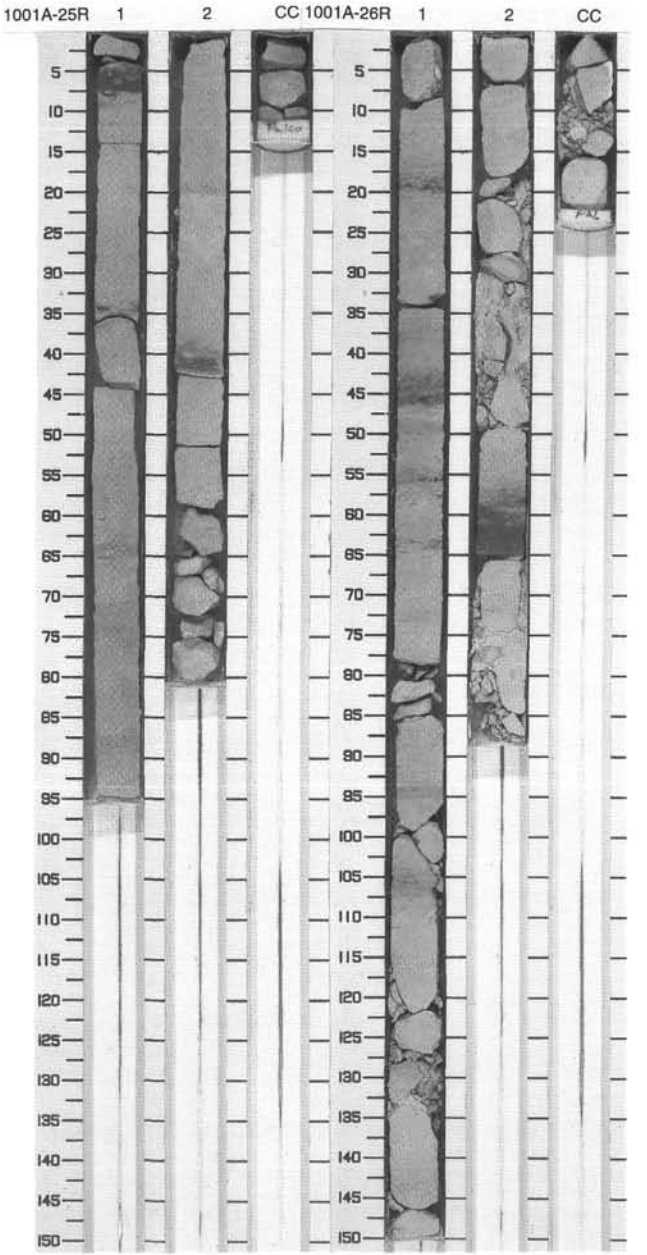


SITE 1001 HOLE A CORE 25R CORED 218.0 - 227.6 mbsf

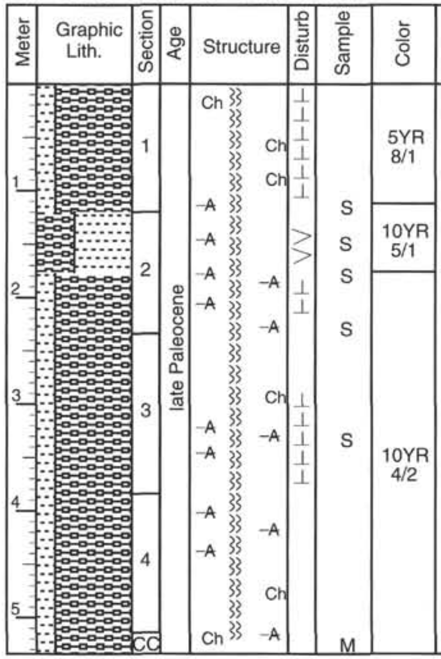
Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1		1 2 CC	early Eocene	Ch, –A, –A, –A, Ch		M	5GY 7/1	CALCAREOUS CHALK WITH CLAY General Description: This core consists of light gray (5GY 7/1) CALCAREOUS CHALK WITH CLAY. The sediment is massive and moderately bioturbated. Disseminated chert occurs in Section 1 and the CC. VOLCANIC ASH layers occur in Section 1, 4–7 cm and Section 2, 38–42 cm. A dispersed volcanic ash layer occurs in Section 1, 34–35 cm.

SITE 1001 HOLE A CORE 26R CORED 227.8 - 237.2 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1 2		1 2 CC	late Paleocene - early Eocene	–A, –A, –A, –A, Ch, –A, Ch		S, D, S, M	5GY 8/1	CALCAREOUS CHALK WITH CLAY General Description: This core consists of light gray (5GY 8/1) CALCAREOUS CHALK WITH CLAY. The sediment is massive and moderately bioturbated. Burrows are flattened due to compaction. Disseminated chert occurs in Sections 1 and CC. Bioturbated VOLCANIC ASH layers occur in Section 1, 18–19, 45–47, 55–56, 63–64, and 105–106 cm and Section 2, 57–65 cm.



SITE 1001 HOLE A CORE 27R CORED 237.2 - 246.9 mbsf

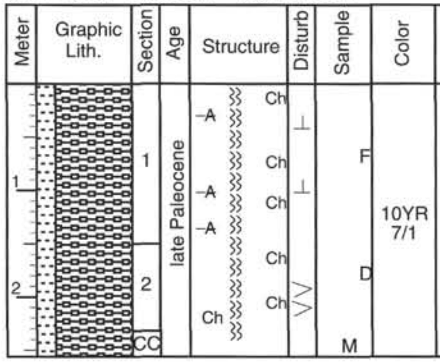


Description

CALCAREOUS CHALK WITH CLAY and MIXED SEDIMENTARY ROCK WITH CLAY

General Description:
This core consists of light gray (5GY 8/1) CALCAREOUS CHALK WITH CLAY and light brownish gray (10Y 5/1) MIXED SEDIMENTARY ROCK WITH CLAY. The sediment is generally massive and moderately bioturbated. Part of the MIXED SEDIMENTARY ROCK WITH CLAY section appears faintly laminated. Burrows are flattened due to compaction. Disseminated chert occurs in Sections 1, 3, 4, and CC. VOLCANIC ASH layers occur in Section 1, 100–105 cm; Section 2, 17–22, 49–50, 56–60, 72–77, 82–83, and 86–87 cm; Section 3, 76–80, 82–85, 90–96, and 110–115 cm; and Section 4, 7–13, 42–49, and 125–125 cm.

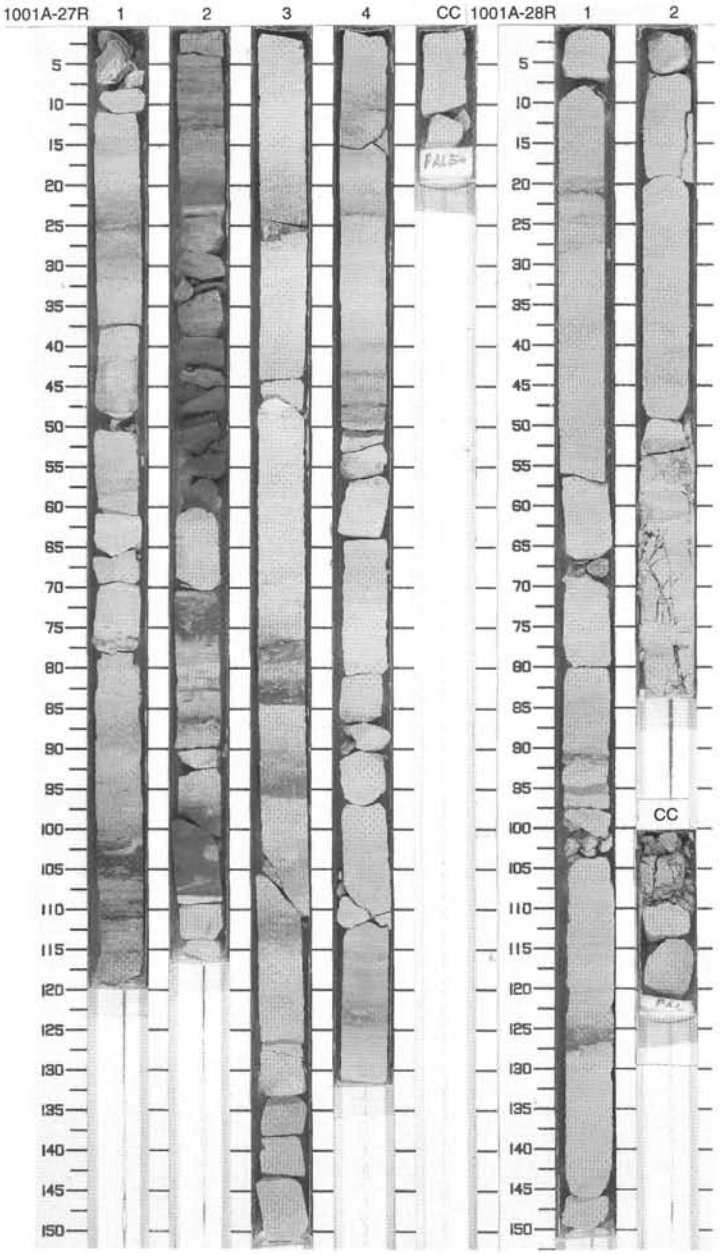
SITE 1001 HOLE A CORE 28R CORED 246.9 - 256.5 mbsf



Description

CALCAREOUS CHALK WITH CLAY

General Description:
This core consists of light gray (10Y 7/1) CALCAREOUS CHALK WITH CLAY. The sediment is massive and moderately bioturbated. Burrows are flattened due to compaction. Disseminated chert occurs in Sections 1 and 2. Bioturbated VOLCANIC ASH layers occur in Section 1, 21–22, 91–92, and 125–128 cm.



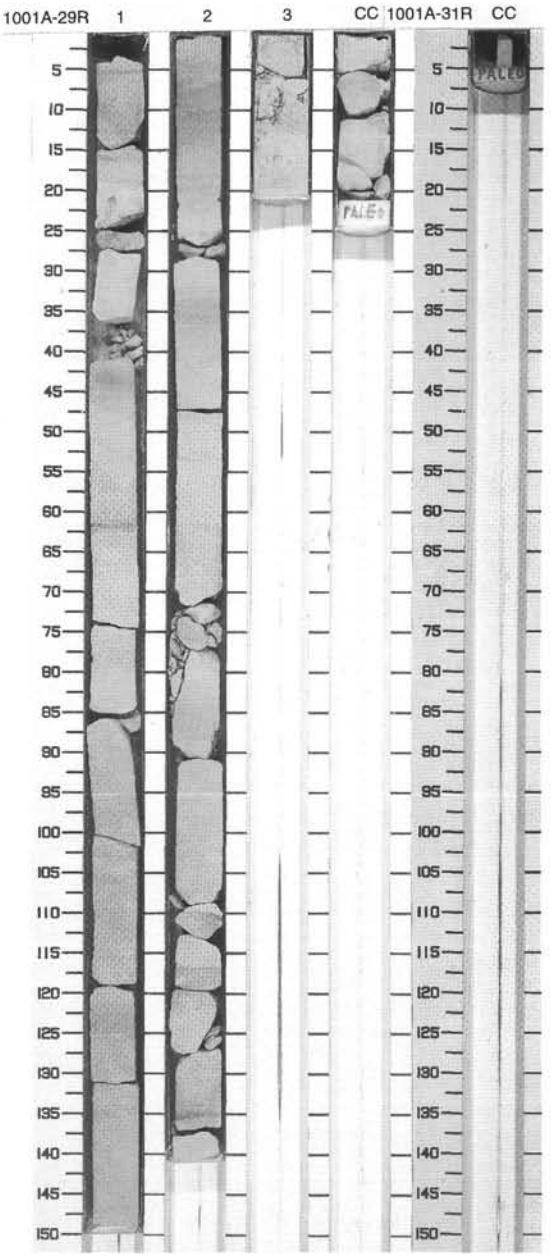
SITE 1001 HOLE A CORE 29R CORED 256.6 - 266.1 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2, 3		1, 2, 3, CC	late Paleocene	Ch, A•, Ch, Ch, Ch, Ch	Ch	M	10Y 7/1 To 10Y 8/1	CALCAREOUS CHALK WITH CLAY General Description: This core consists of light gray (10Y 7/1) CALCAREOUS CHALK WITH CLAY. The sediment is massive and moderately bioturbated. Burrows are flattened due to compaction. Disseminated chert occurs in all sections. Bioturbated VOLCANIC ASH occurs in Section 1, 61–63 cm and Section 2, 135–136 cm.

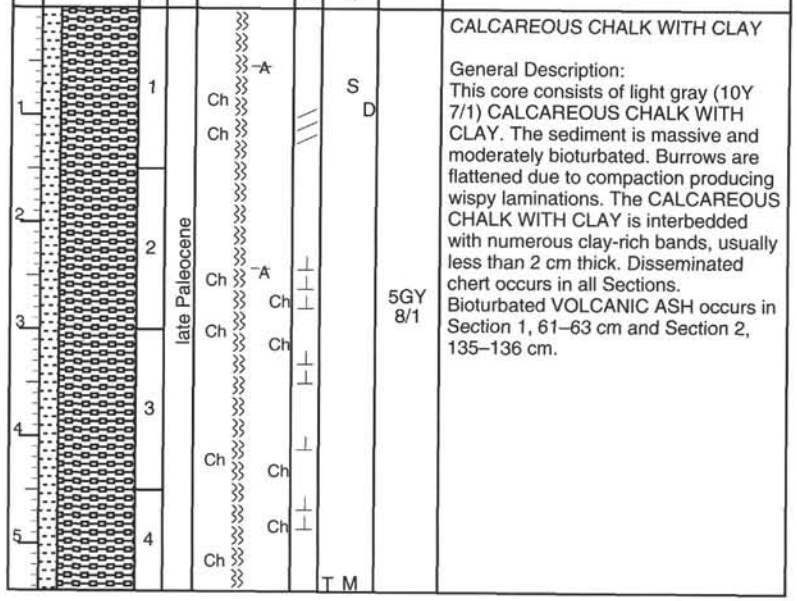
1001A-30R NO RECOVERY

SITE 1001 HOLE A CORE 31R CORED 275.7 - 285.4 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
		CC	late Paleocene					CALCAREOUS LIMESTONE General Description: This core consists of a small piece of light gray (10Y 7/1) CALCAREOUS LIMESTONE. It is massive and well indurated.



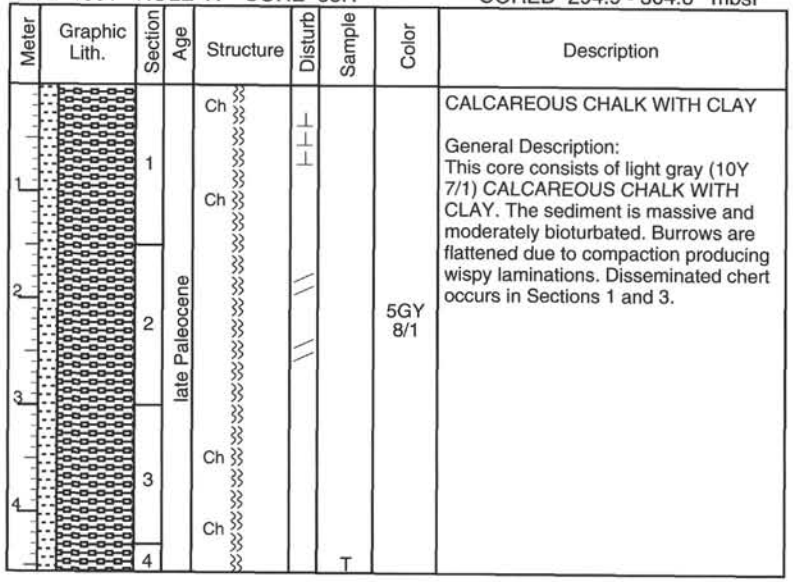
SITE 1001 HOLE A CORE 32R CORED 285.4 - 294.9 mbsf



CALCAREOUS CHALK WITH CLAY

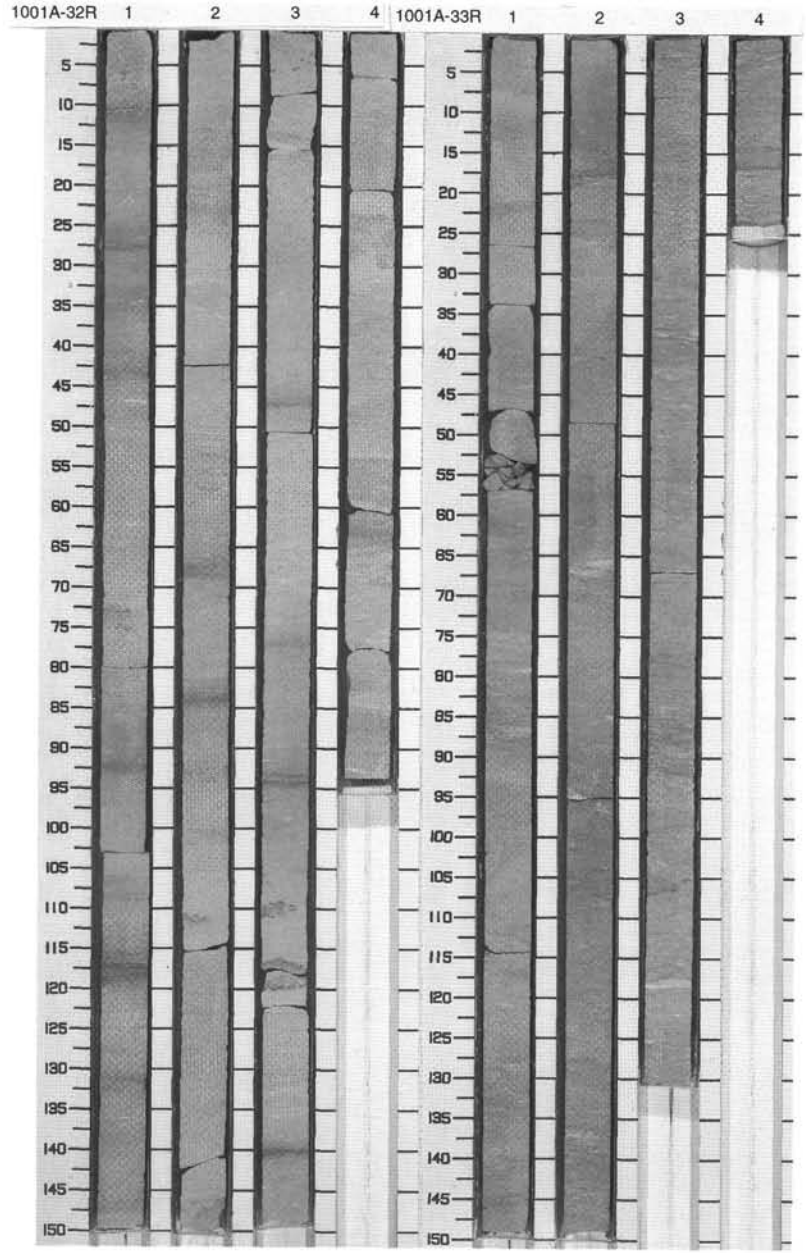
General Description:
This core consists of light gray (10Y 7/1) CALCAREOUS CHALK WITH CLAY. The sediment is massive and moderately bioturbated. Burrows are flattened due to compaction producing wispy laminations. The CALCAREOUS CHALK WITH CLAY is interbedded with numerous clay-rich bands, usually less than 2 cm thick. Disseminated chert occurs in all Sections. Bioturbated VOLCANIC ASH occurs in Section 1, 61–63 cm and Section 2, 135–136 cm.

SITE 1001 HOLE A CORE 33R CORED 294.9 - 304.6 mbsf

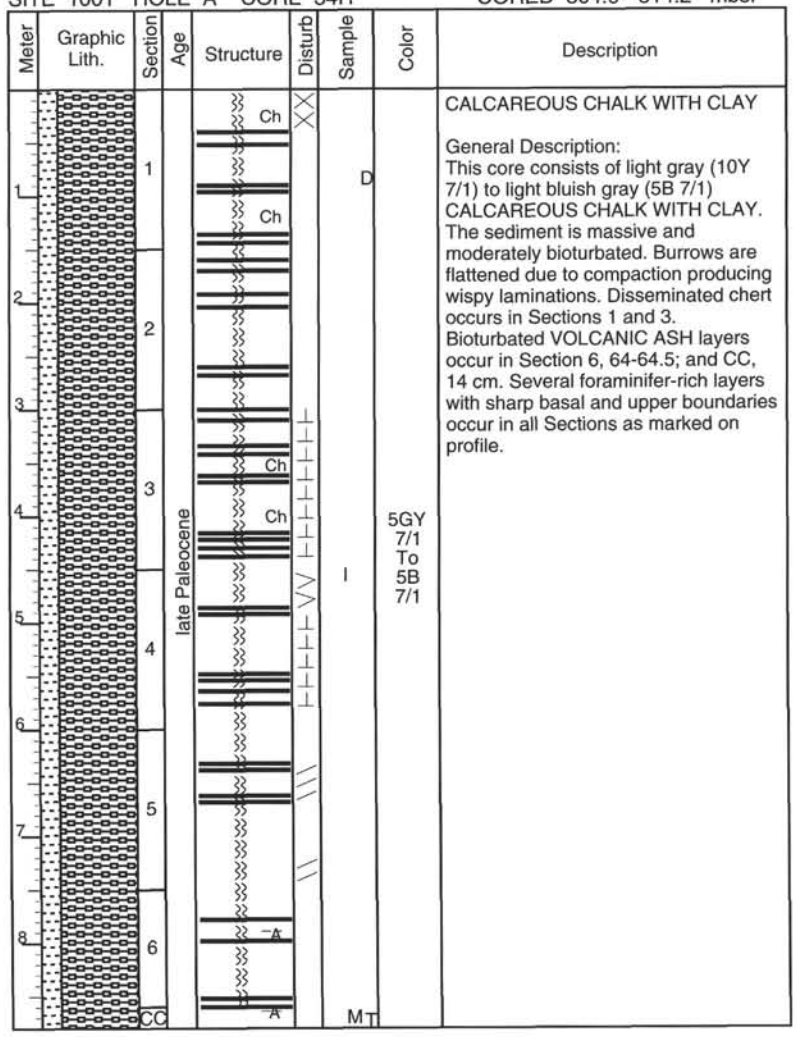


CALCAREOUS CHALK WITH CLAY

General Description:
This core consists of light gray (10Y 7/1) CALCAREOUS CHALK WITH CLAY. The sediment is massive and moderately bioturbated. Burrows are flattened due to compaction producing wispy laminations. Disseminated chert occurs in Sections 1 and 3.

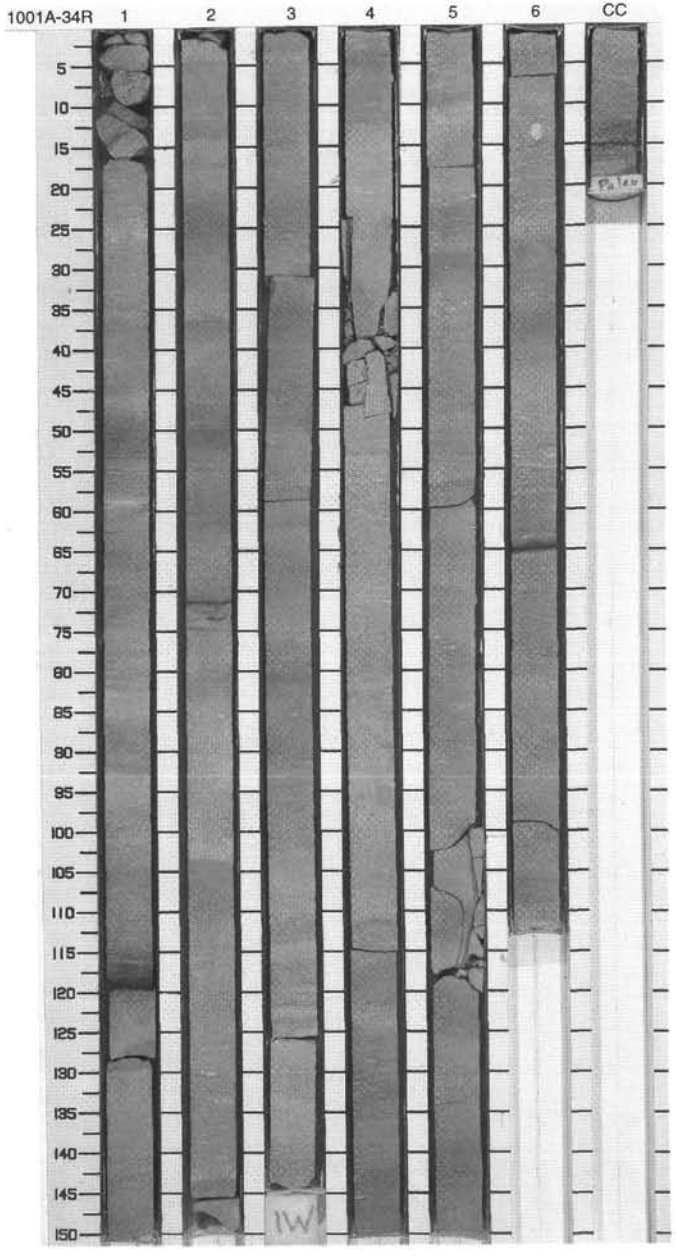


SITE 1001 HOLE A CORE 34R CORED 304.6 - 314.2 mbsf

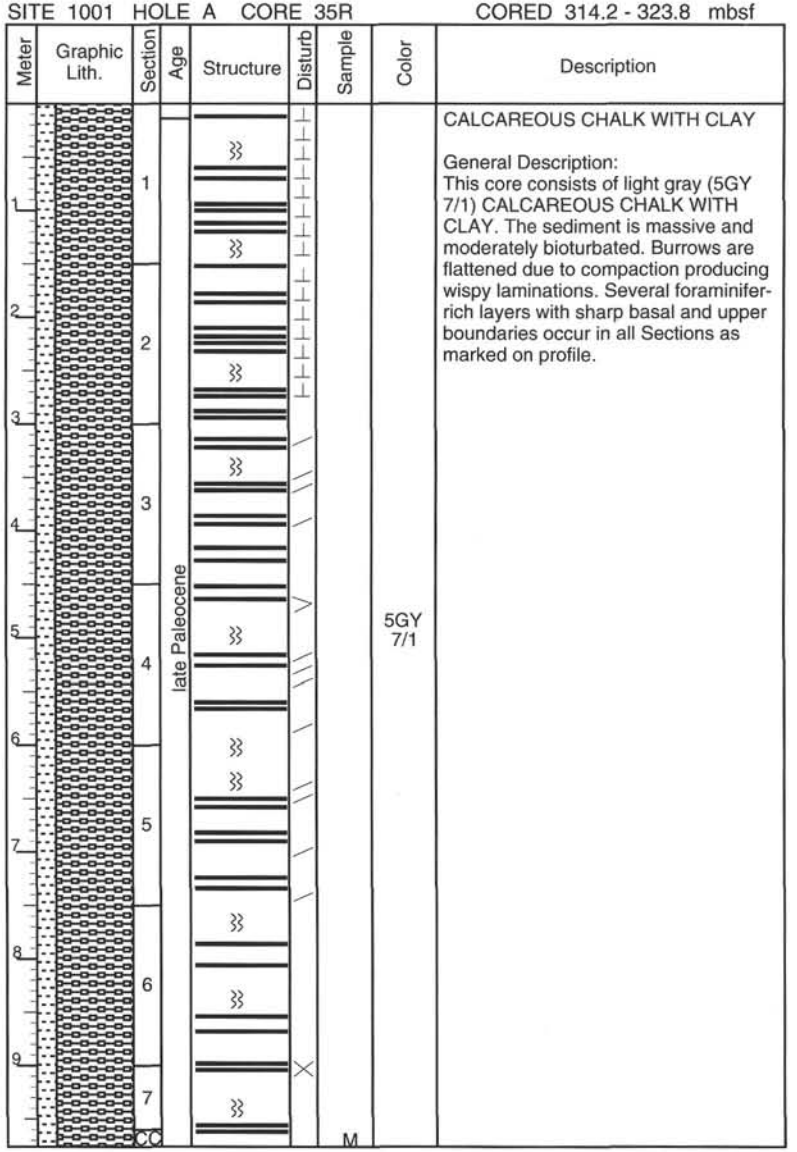


CALCAREOUS CHALK WITH CLAY

General Description:
This core consists of light gray (10Y 7/1) to light bluish gray (5B 7/1) CALCAREOUS CHALK WITH CLAY. The sediment is massive and moderately bioturbated. Burrows are flattened due to compaction producing wispy laminations. Disseminated chert occurs in Sections 1 and 3. Bioturbated VOLCANIC ASH layers occur in Section 6, 64-64.5; and CC, 14 cm. Several foraminifer-rich layers with sharp basal and upper boundaries occur in all Sections as marked on profile.

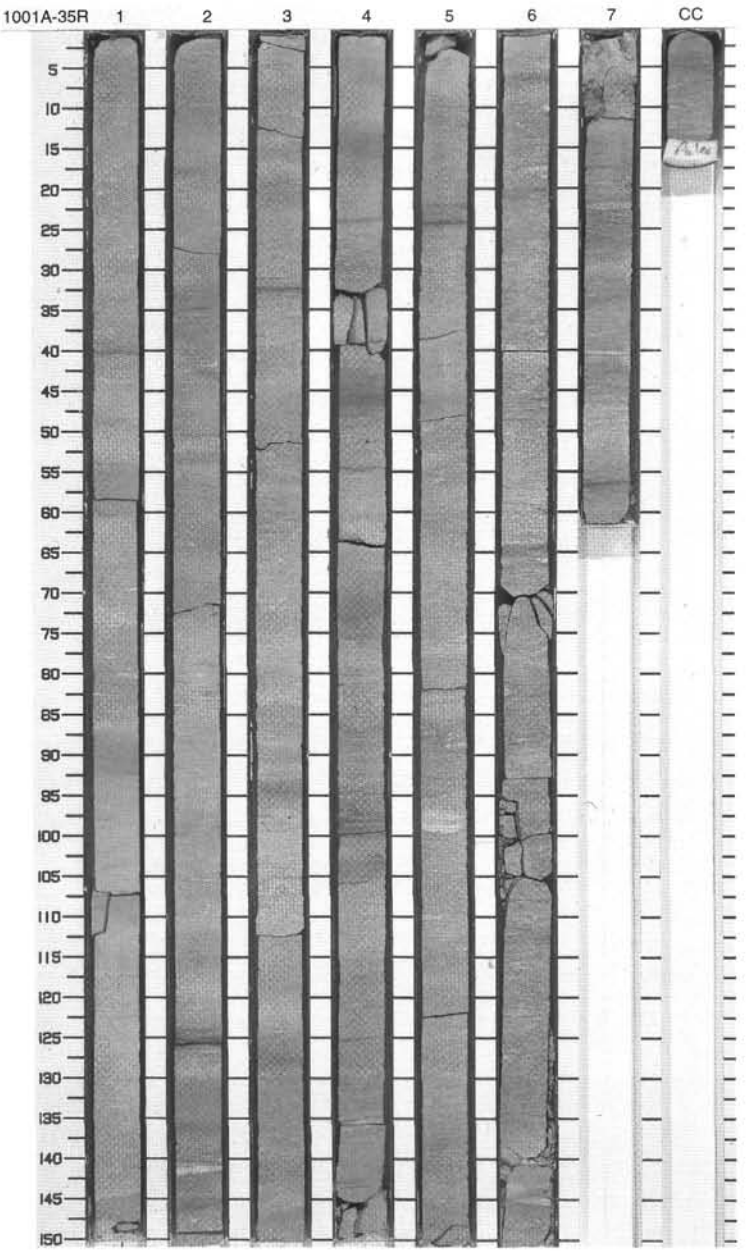


SITE 1001 HOLE A CORE 35R CORED 314.2 - 323.8 mbsf

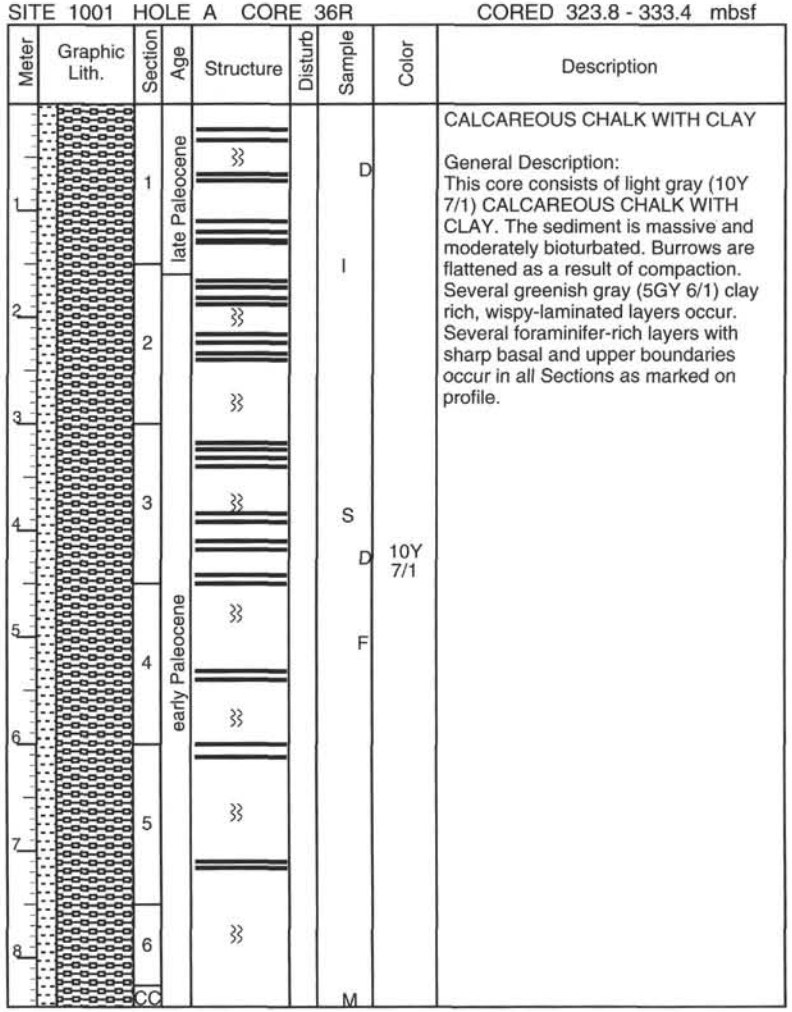


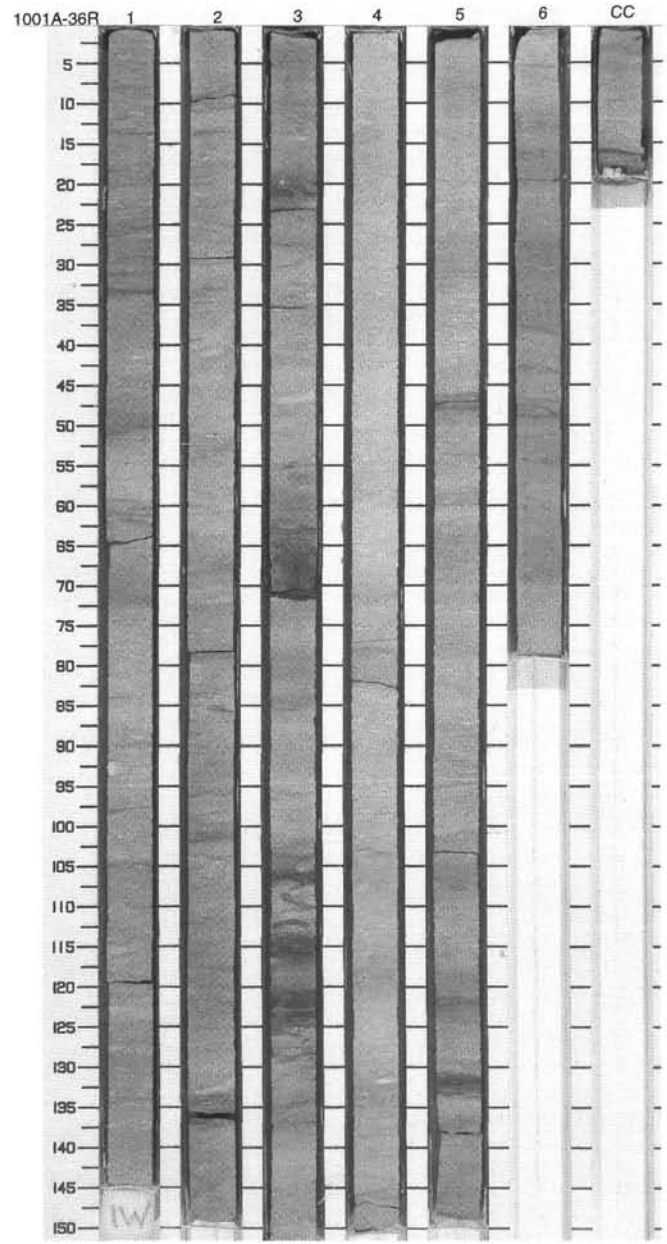
CALCAREOUS CHALK WITH CLAY

General Description:
This core consists of light gray (5GY 7/1) CALCAREOUS CHALK WITH CLAY. The sediment is massive and moderately bioturbated. Burrows are flattened due to compaction producing wispy laminations. Several foraminifer-rich layers with sharp basal and upper boundaries occur in all Sections as marked on profile.

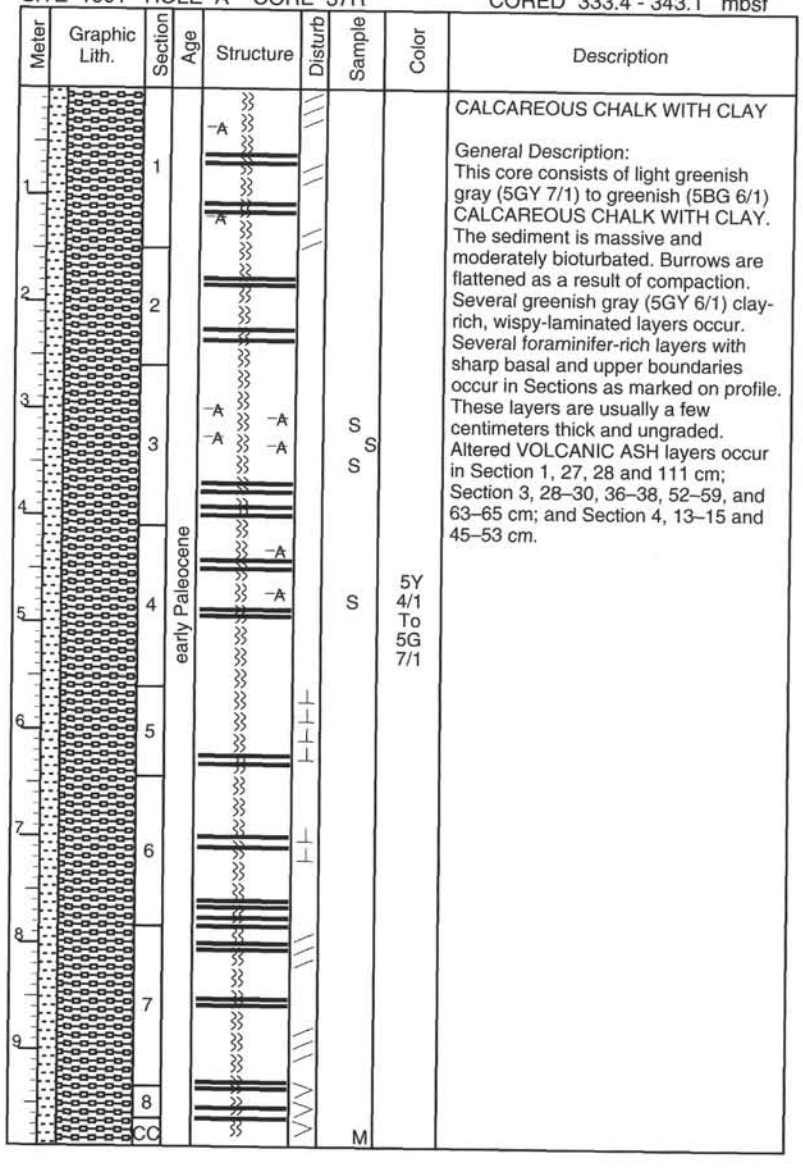


SITE 1001 HOLE A CORE 36R CORED 323.8 - 333.4 mbsf





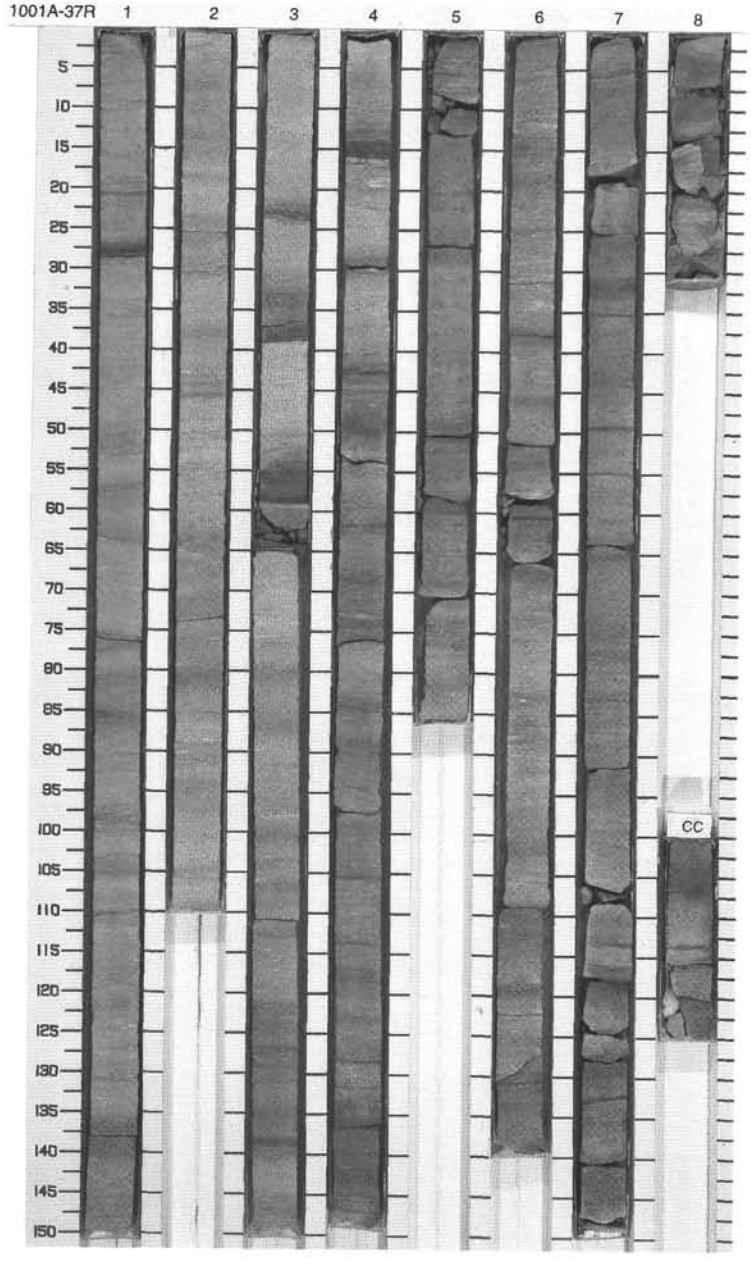
SITE 1001 HOLE A CORE 37R CORED 333.4 - 343.1 mbsf



Description

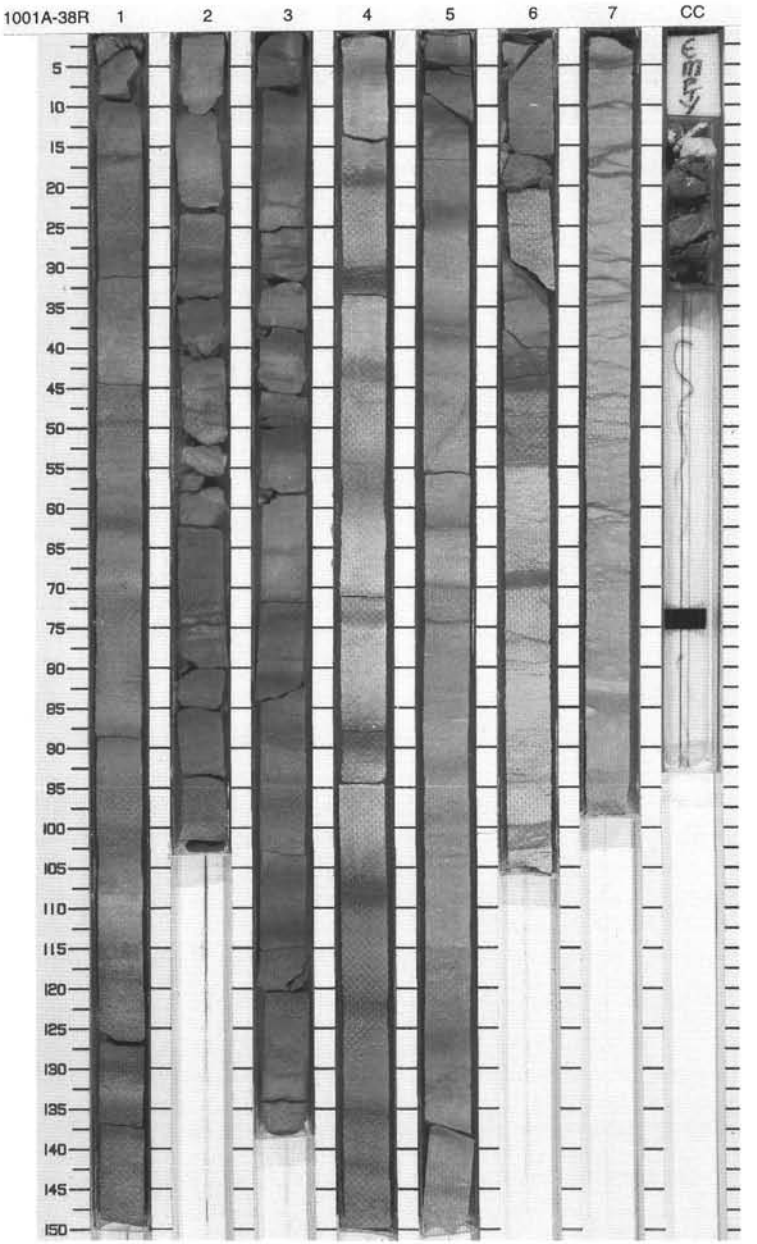
CALCAREOUS CHALK WITH CLAY

General Description:
This core consists of light greenish gray (5GY 7/1) to greenish (5BG 6/1) CALCAREOUS CHALK WITH CLAY. The sediment is massive and moderately bioturbated. Burrows are flattened as a result of compaction. Several greenish gray (5GY 6/1) clay-rich, wispy-laminated layers occur. Several foraminifer-rich layers with sharp basal and upper boundaries occur in Sections as marked on profile. These layers are usually a few centimeters thick and ungraded. Altered VOLCANIC ASH layers occur in Section 1, 27, 28 and 111 cm; Section 3, 28–30, 36–38, 52–59, and 63–65 cm; and Section 4, 13–15 and 45–53 cm.

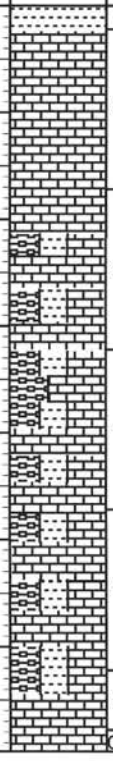


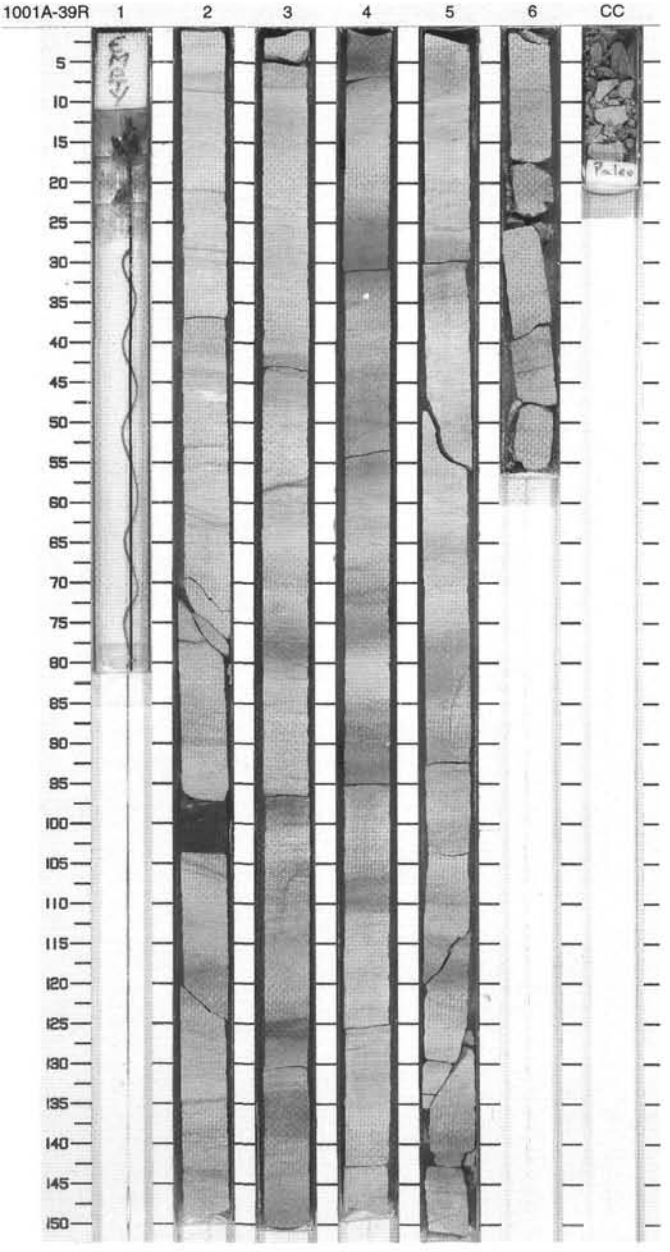
SITE 1001 HOLE A CORE 38R CORED 343.1 - 352.7 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1–9		1, 2, 3, 4, 5, 6, 7, CC	early Paleocene	A		M T	10Y 7/1 To 10Y 5/1	MIXED SEDIMENTARY ROCK and CLAYSTONE General Description: This core consists of alternating (cm- to dm-scale) light gray (7.5YR 7/1) MIXED SEDIMENTARY ROCK and light brownish gray (2.5Y 6/2) CLAYSTONE. Slight bioturbation is observed in the Mixed Sedimentary Rock. No bioturbation in the CLAYSTONE, but several faint laminations occur. Burrows are flattened as a result of compaction. One VOLCANIC ASH layer occurs in Section 7, 17–19 cm. The CC consists probably of the K/T-Boundary sequence. Section CC, 0–6.5 cm consists of light gray (5Y 8/1) LIMESTONE; CC, 6.5–12.5 cm consists of greenish gray (5Y 5/1) CLAYSTONE; CC, 12.7–17 cm consists of bluish gray (5G 5/1) CLAYSTONE/SILTSTONE; and CC, 17–21.4 cm consists of greenish gray (5GY 5/1) CLAYSTONE.

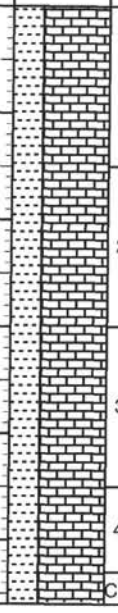


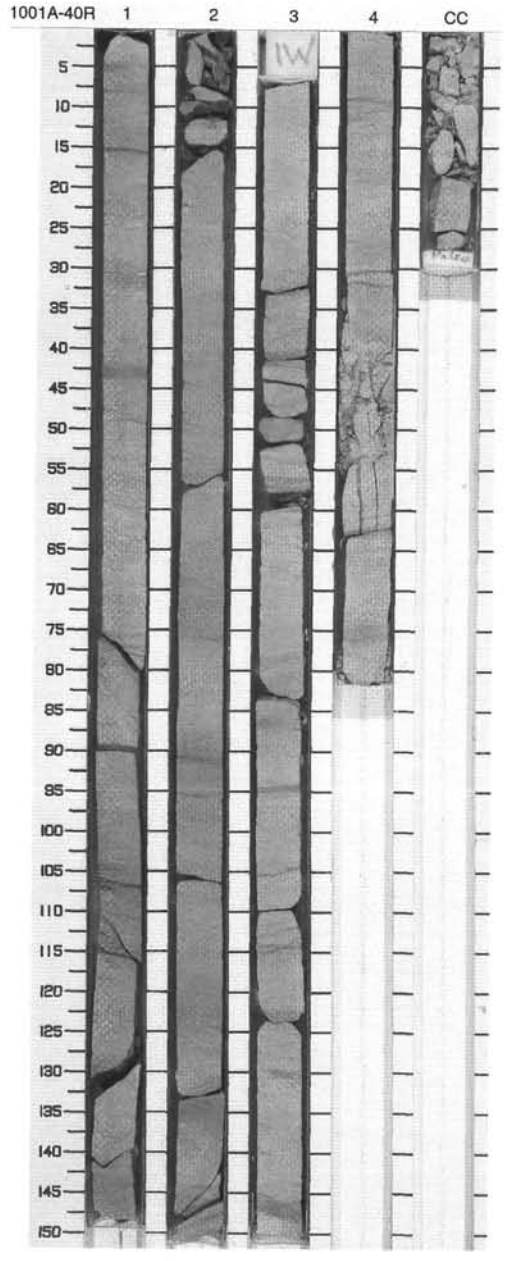
SITE 1001 HOLE A CORE 39R CORED 352.7 - 362.3 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1 2 3 4 5 6		1 2 3 4 5 6 CC	late Maastrichtian	⋯ ⋯ ⋯ ⋯ ⋯ ⋯		T S M	10Y 7/1 To 10Y 6/1	CALCAREOUS LIMESTONE and CALCAREOUS MIXED SEDIMENTARY ROCK General Description: This core consists of light gray (10Y 7/1) CALCAREOUS LIMESTONE alternating with gray (10Y 6/1) CALCAREOUS MIXED SEDIMENTARY ROCK. The bioturbation is moderate. Burrows are flattened as a result of compaction. Foraminifer-rich layers with sharp basal and upper boundaries occur at Section 2, 37–41, 73–77, and 120–123 cm; Section 3, 5–7 cm; and Section 5, 100–110 cm. One VOLCANIC ASH layer occurs in Section 2, 97–103 cm. Section 1, 11–17 cm consists of poorly sorted broken pieces of dark greenish gray (5GY 4/1) to greenish gray (5GY 6/1) CLAY with spherical darker green fragments up to 1 mm in diameter (possible K/T altered tektite layer?). In Section 1, 19–23 cm occur broken pieces of light brownish gray (5YR 6/1) soft CLAY, poorly sorted with brown fragments up to 4 mm in diameter (possible K/T altered tektite layer?).



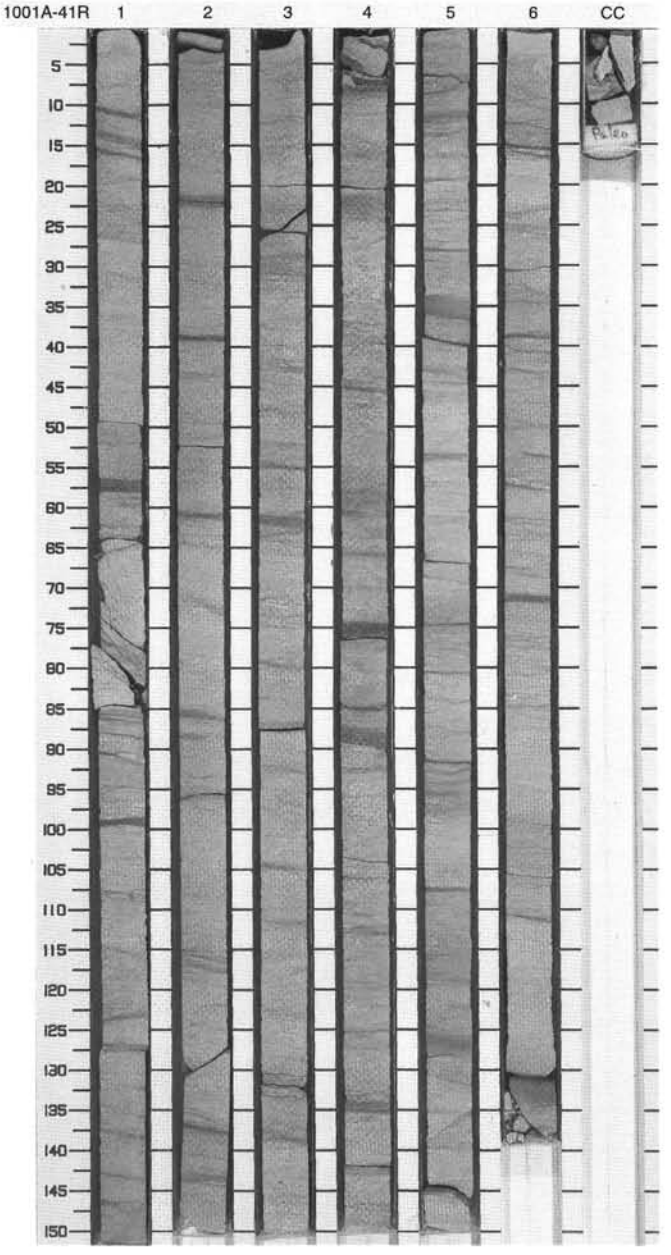
SITE 1001 HOLE A CORE 40R CORED 362.3 - 372.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2, 3, 4, 5		1, 2, 3, 4, CC	late Maastrichtian			D	10Y 7/1	CLAYEY CALCAREOUS LIMESTONE General Description: This core consists of moderately bioturbated, light gray (10Y 7/1) CLAYEY CALCAREOUS LIMESTONE. Burrows are flattened as a result of compaction. Foraminifer-rich layers occur at Section 3, 78–86 and 110–114 cm. Several slightly darker clay-rich intervals occur throughout the core.



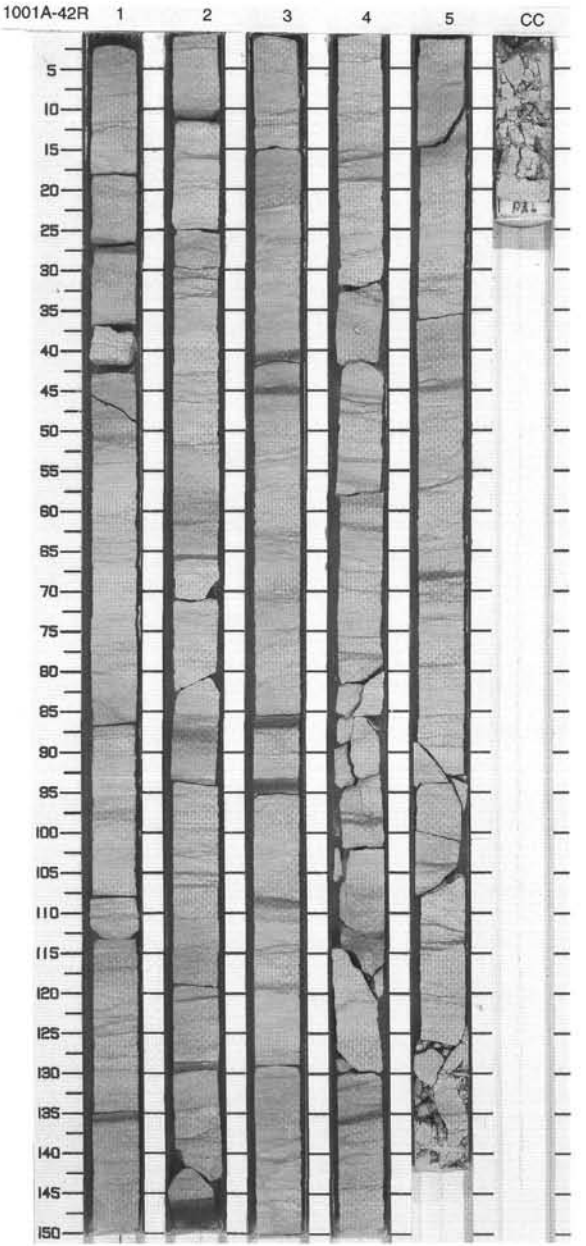
SITE 1001 HOLE A CORE 41R CORED 372.0 - 381.6 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2, 3, 4, 5, 6, 7, 8, 9		1, 2, 3, 4, 5, 6, CC	Maastrichtian			S, S, M	10Y 8/1	CLAYEY CALCAREOUS LIMESTONE General Description: This core consists of moderately bioturbated, light gray (10Y 7/1) CLAYEY CALCAREOUS LIMESTONE. Burrows are flattened as a result of compaction and commonly infilled with pyrite. Foraminifer-rich layers occur at Section 1, 49–50 and 75–76 cm; Section 2, 49.5–50 cm; Section 3, 20–25 and 131–134 cm; Section 4, 14–20 cm; Section 5, 6–7, 37–39, 67–74, and 92–94 cm; and Section 6, 30–34 and 100–103 cm. Several slightly darker clay-rich intervals occur throughout the core.



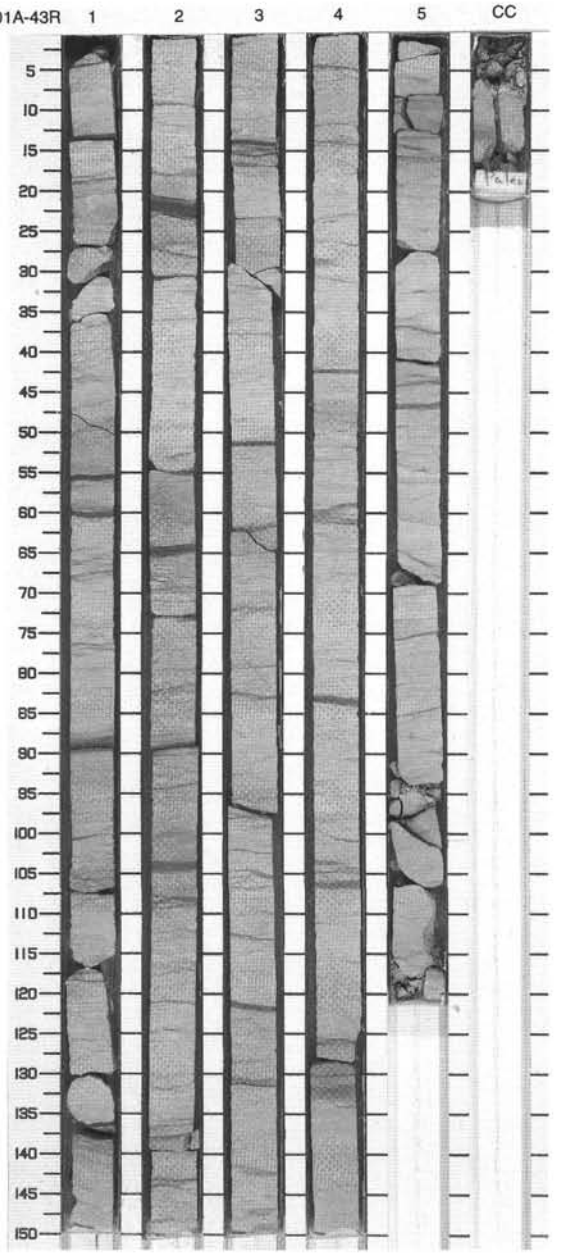
SITE 1001 HOLE A CORE 42R CORED 381.6 - 391.2 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2, 3, 4, 5, 6, 7		1, 2, 3, 4, 5, CC	Maastrichtian			M	10Y 7/1 To 10Y 8/1	CLAYEY CALCAREOUS LIMESTONE General Description: This core consists of moderately bioturbated, white (10Y 8/1) to light gray (10Y 7/1) CLAYEY CALCAREOUS LIMESTONE. Burrows are flattened as a result of compaction. Coarser-grained foraminifer-rich layers occur at Section 1, 44–47, 84–87, 114–118, and 136–137 cm; Section 2, 25–28, 57–61, and 116–119 cm; Section 3, 15–20 and 130–130 cm; Section 4, 36–41, 82–88, and 105–108 cm; and Section 5, 33–39 and 91–99 cm. Several slightly darker clay-rich intervals occur in the core.



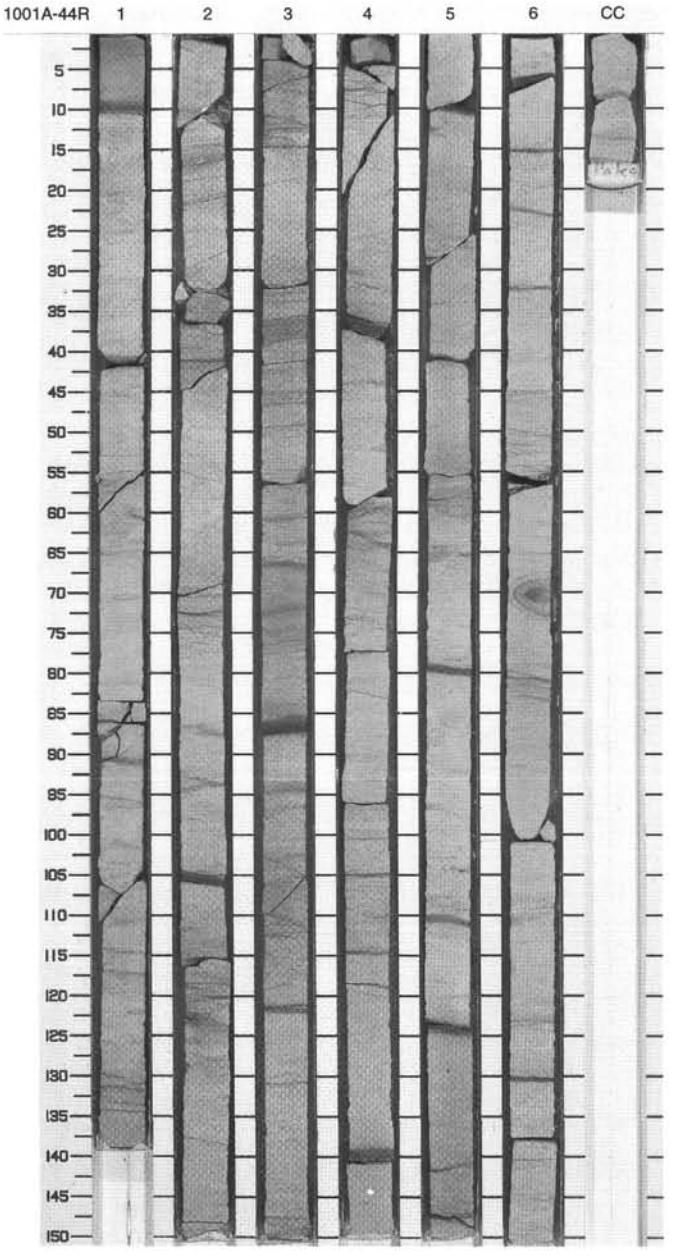
SITE 1001 HOLE A CORE 43R CORED 391.2 - 400.8 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2, 3, 4, 5, 6, 7		1, 2, 3, 4, 5, CC	Maastrichtian			F, M	10Y 7/1	CLAYEY CALCAREOUS LIMESTONE General Description: This core consists of moderately bioturbated, light gray (10Y 7/1) CLAYEY CALCAREOUS LIMESTONE. Burrows are flattened as a result of compaction. Coarser-grained foraminifer-rich layers occur at Section 1, 21–26, 48–51, and 137–139 cm; Section 2, 53–64 and 138–140 cm; Section 3, 24–28 cm; Section 4, 45–53 and 127–132 cm; and Section 5, 7–12 cm. Several slightly darker clay-rich intervals occur in the core.



SITE 1001 HOLE A CORE 44R CORED 400.8 - 410.4 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2, 3, 4, 5, 6, 7, 8, 9		1, 2, 3, 4, 5, 6, CC	Maastrichtian			D, M	10Y 7/1	CLAYEY CALCAREOUS LIMESTONE General Description: This core consists of moderately bioturbated, light gray (10Y 7/1) CLAYEY CALCAREOUS LIMESTONE. Burrows are flattened as a result of compaction. Coarser-grained foraminifer-rich layers occur at Section 1, 84–87 cm; Section 3, 35–38 cm; and Section 4, 0–3 cm. Several slightly darker wispy laminated clay-rich intervals occur in the core. One VOLCANIC ASH layer occurs at Section 5, 9–10 cm.

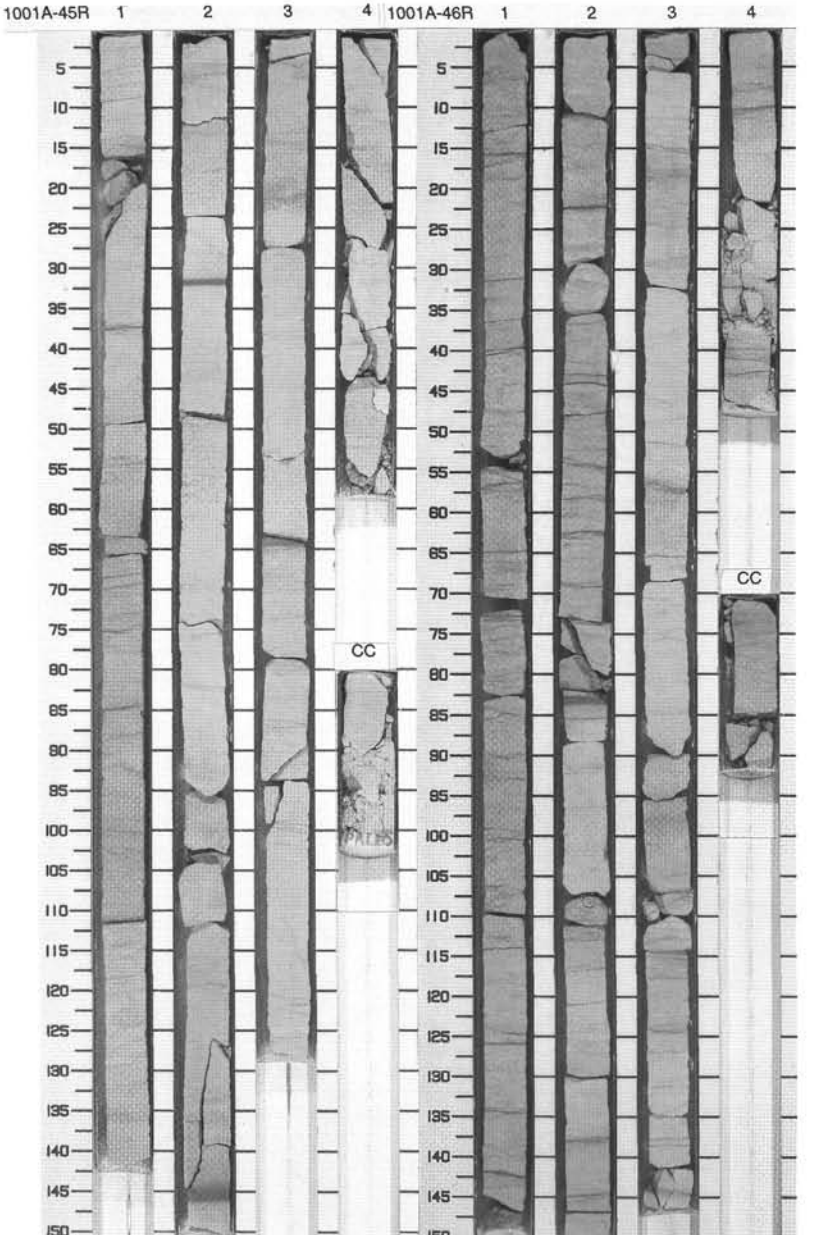


SITE 1001 HOLE A CORE 45R CORED 410.4 - 420.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2, 3, 4, 5		1, 2, 3, 4, CC	Maastrichtian			M	10Y 7/1	CLAYEY CALCAREOUS LIMESTONE General Description: This core consists of moderately bioturbated, light gray (10Y 7/1) CLAYEY CALCAREOUS LIMESTONE. Burrows are flattened as a result of compaction. Several slightly darker wispy laminated clay-rich intervals occur in the core.

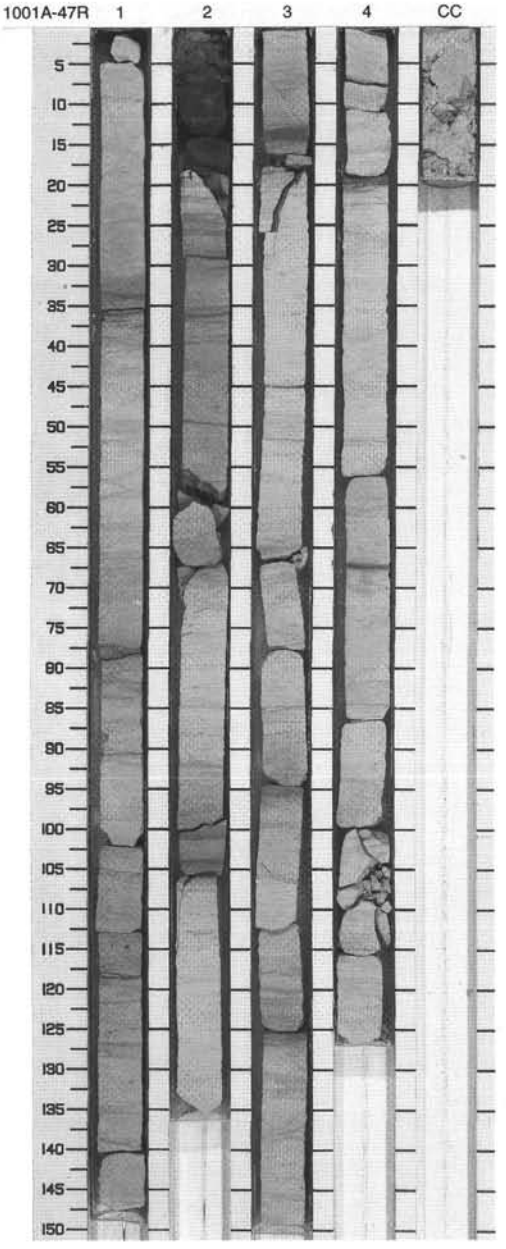
SITE 1001 HOLE A CORE 46R CORED 420.0 - 429.6 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2, 3, 4, 5		1, 2, 3, 4, CC	late Campanian - Maastrichtian	** **		F, M	10Y 7/1; 10Y 8/1; 10Y 7/1	CLAYEY CALCAREOUS LIMESTONE and CALCAREOUS LIMESTONE WITH CLAY General Description: This core consists of light gray (10Y 7/1) CLAYEY CALCAREOUS LIMESTONE and grayish white (10Y8/1) CALCAREOUS LIMESTONE WITH CLAY. The bioturbation is moderate. Burrows are flattened as a result of compaction. Coarser-grained foraminifer-rich layers occur at Section 1, 85 cm; and Section 2, 107–111 cm. Several slightly darker wispy laminated clay-rich intervals occur in the core.



SITE 1001 HOLE A CORE 47R CORED 429.6 - 439.2 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1 2 3 4 5		1 2 3 4 CC	late Campanian	⁃A ⁃A		S M	10Y 8/1	CALCAREOUS LIMESTONE WITH CLAY General Description: This core consists of moderately bioturbated, grayish white (10Y 8/1) CALCAREOUS LIMESTONE WITH CLAY. Burrows are flattened as a result of compaction. Coarser-grained foraminifer-rich layers occur at Section 1, 34–36, 78–79, and 114–119 cm; and Section 2, 15.5–17.5 cm. Several slightly darker wispy laminated clay-rich intervals occur in the core. VOLCANIC ASH layers occur at Section 2, 0–18 cm; and Section 4, 18.5–20 cm.

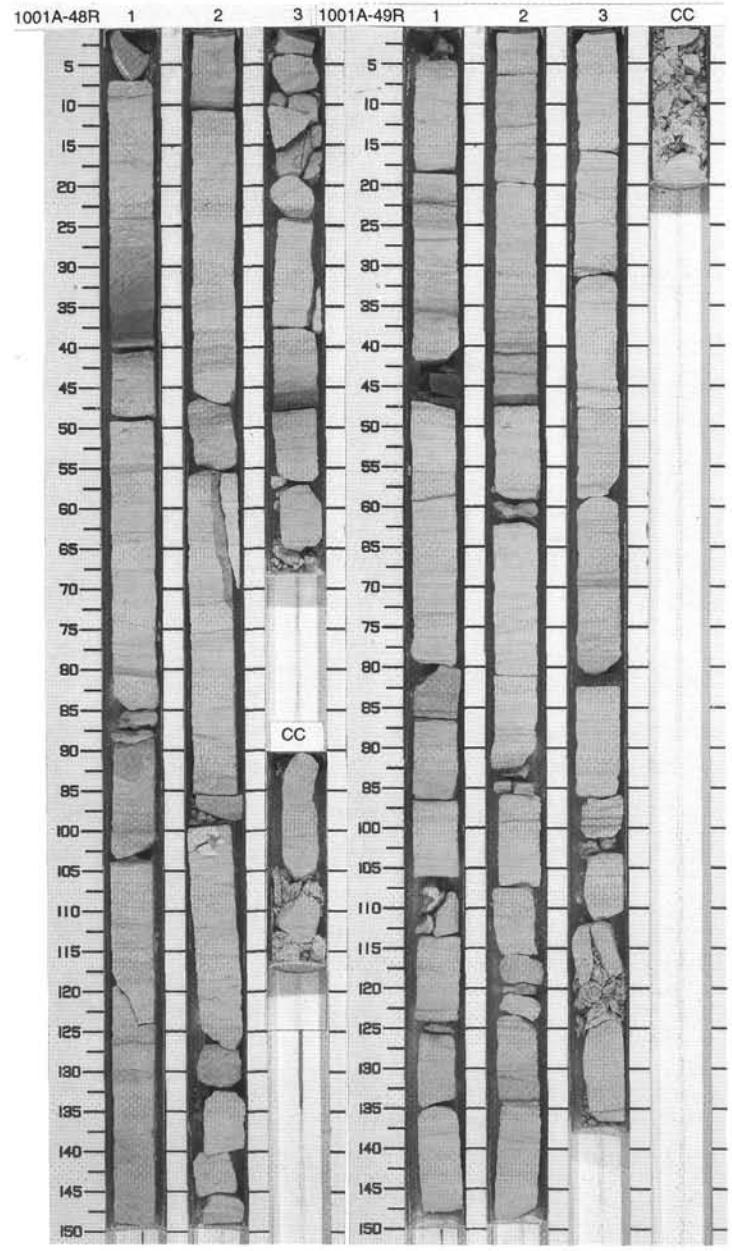


SITE 1001 HOLE A CORE 48R CORED 439.2 - 448.8 mbsf

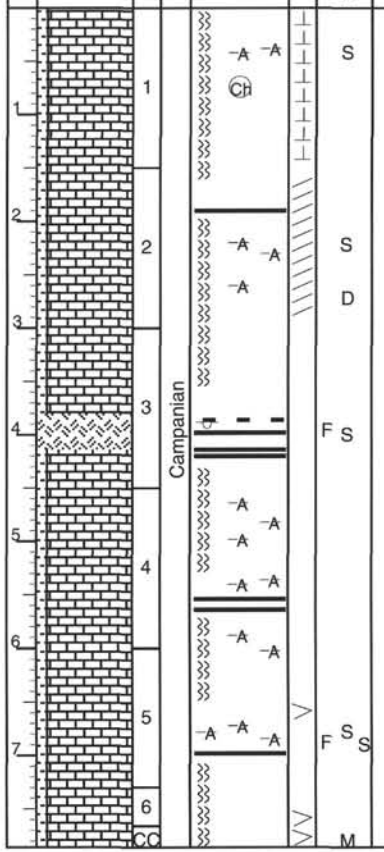
Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2, 3		1, 2, 3, CC	late Campanian	A		M	10Y 8/1	CALCAREOUS LIMESTONE WITH CLAY General Description: This core consists of moderately bioturbated, grayish white (10Y 8/1) CALCAREOUS LIMESTONE WITH CLAY. Burrows are flattened as a result of compaction. Several slightly darker wispy laminated clay-rich intervals occur in the core. VOLCANIC ASH layers occur at Section 1, 103–104 cm; Section 2, 9–10 cm; and Section 3, 46–48 cm.

SITE 1001 HOLE A CORE 49R CORED 448.8- 458.4 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2, 3, 4		1, 2, 3, CC	Campanian	A, Ch, A, Ch, A, Ch		S, S, M	10Y 8/1	CALCAREOUS LIMESTONE WITH CLAY General Description: This core consists of moderately bioturbated, grayish white (10Y 8/1) CALCAREOUS LIMESTONE WITH CLAY. Burrows are flattened as a result of compaction. Several slightly darker wispy laminated clay-rich intervals occur throughout the core and have often a vein-like appearance. CHERT Nodules occur at Section 1, 108–112 cm; Section 2, 58–62 cm; and Section 3, 102–103 cm. VOLCANIC ASH layers occur at Section 1, 42–47 cm; Section 2, 46–47; and Section 3, 81–82 cm.

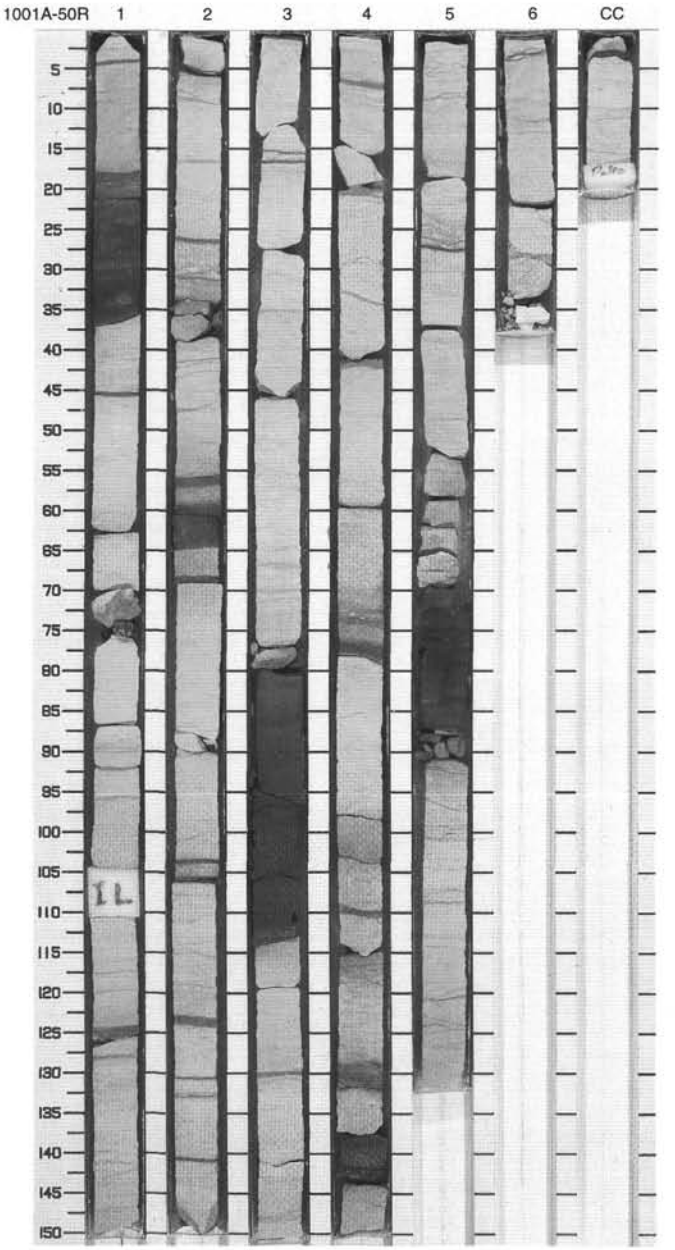


SITE 1001 HOLE A CORE 50R CORED 458.4 - 468.0 mbsf

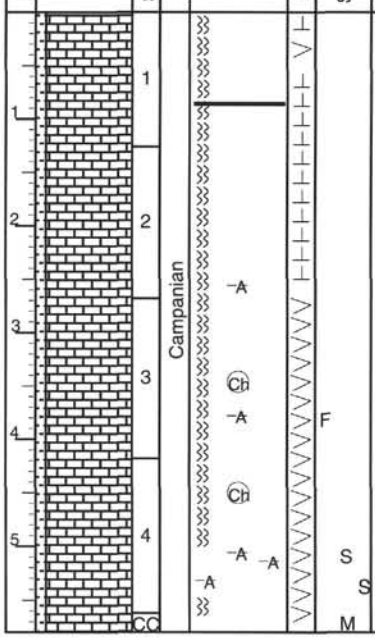


CALCAREOUS LIMESTONE WITH CLAY

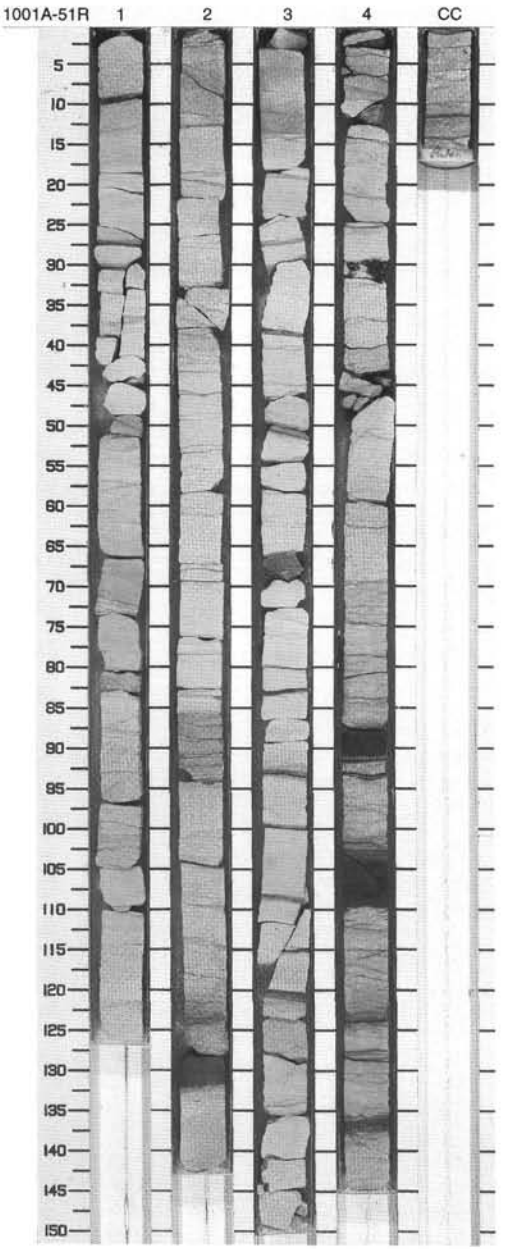
General Description:
This core consists of moderately bioturbated, grayish white (10Y 8/1), very light greenish gray (5GY 8/1), and white (N8) CALCAREOUS LIMESTONE WITH CLAY. Burrows are flattened as a result of compaction. A CHERT nodule is observed in Section 1, 72 cm. Several slightly darker wispy laminated clay-rich intervals occur throughout the core and often have a vein-like appearance. *Several rare foraminifer- and* radiolarian-rich sandy horizons occur throughout the core; they generally have sharp but non-erosive boundaries, as indicated. Similarly minor cm-scale CLAYSTONE beds are distributed throughout the core. Several composite VOLCANIC ASH horizons occur in Section 1, 19–37 cm (2 events); Section 3, 79–114 cm (3 events? are indicated on the downhole log); and Section 5, 70–88 cm (3 events). These ASHES often show normal grading and load structures. Individual VOLCANIC ASHES occur at Section 2, 59–66.5, 68–69, 103, and 107 cm; and Section 4, 6–7?, 20?, 39–40, 75–77, 78–80, 128–132, and 138–144 cm.



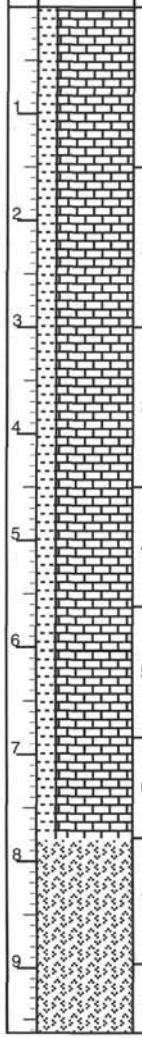
SITE 1001 HOLE A CORE 51R CORED 468.0 - 477.7 mbsf



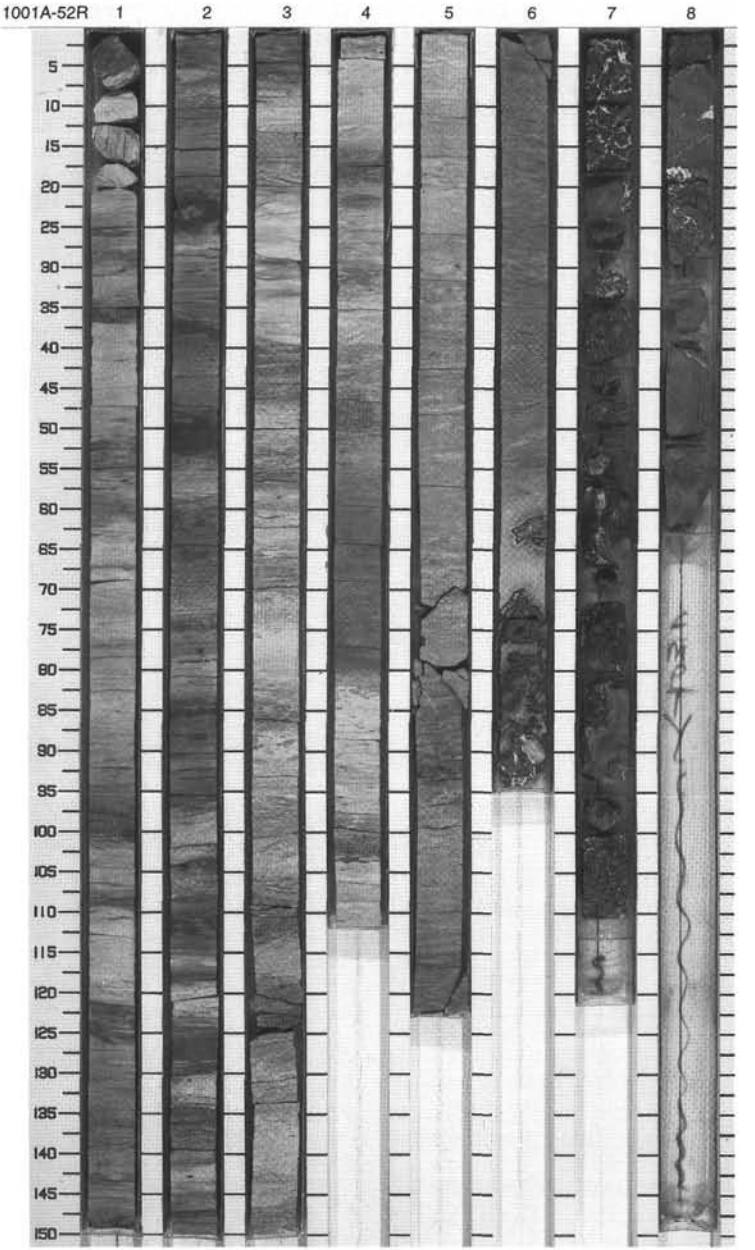
Description
CALCAREOUS LIMESTONE WITH CLAY General Description: This core consists of massive, white (N8), grayish white (10Y 8/1), very light greenish gray (5GY 8/1), and light greenish gray (5GY 7/1) CALCAREOUS LIMESTONE WITH CLAY. The bioturbation is moderate. Burrows are flattened as a result of compaction. CHERT nodules are observed in Section 3, 66–69 cm; and Section 4, 29–32 cm. Several slightly darker wispy laminated clay-rich intervals occur throughout the core and often have a vein-like appearance. A foraminifer- and radiolarian-rich sandy horizon with sharp but non-erosive boundary occurs in Section 1, 80–82 cm. Minor mm- to cm-scale CLAYSTONE beds are distributed throughout the core. VOLCANIC ASH horizons are observed at Section 2, 128–132 cm; Section 3, 121–122 cm; Section 4, 87.5–91, 91.5, and 102–109.5 cm.



SITE 1001 HOLE A CORE 52R CORED 477.7 - 487.3 mbsf

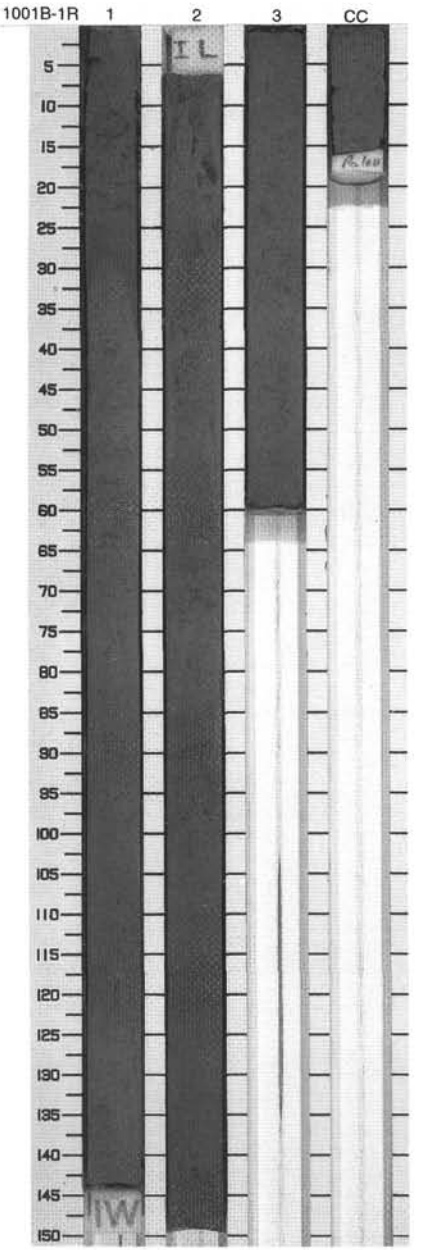


Meter	Section	Age	Structure	Disturb	Sample	Color	Description
1–9	1–8	Campanian			S, T, M	10GY 7/2 To 5G 6/1	CALCAREOUS LIMESTONE WITH CLAY, CLAYEY MIXED SEDIMENTARY ROCK and IGNEOUS BASEMENT General Description: This core consists of light greenish gray (5G 7/1) CALCAREOUS LIMESTONE WITH CLAY and greenish gray (5G 6/1) CLAYEY MIXED SEDIMENTARY ROCK. The two lithology alternate at the cm- to dm-scale, and give the core a wavy laminated appearance. Bioturbation is moderate. VOLCANIC ASH layers partially to extensively bioturbated occur at Section 1, 0–7 cm; Section 2, 20–25, 36–37, 48–52, 60–61, 84–85, and 103–104 cm; and Section 3, 110–113 and 123–124 cm. Sections 7 and 8 consist of IGNEOUS BASEMENT (see following Igneous Visual Core Descriptions).



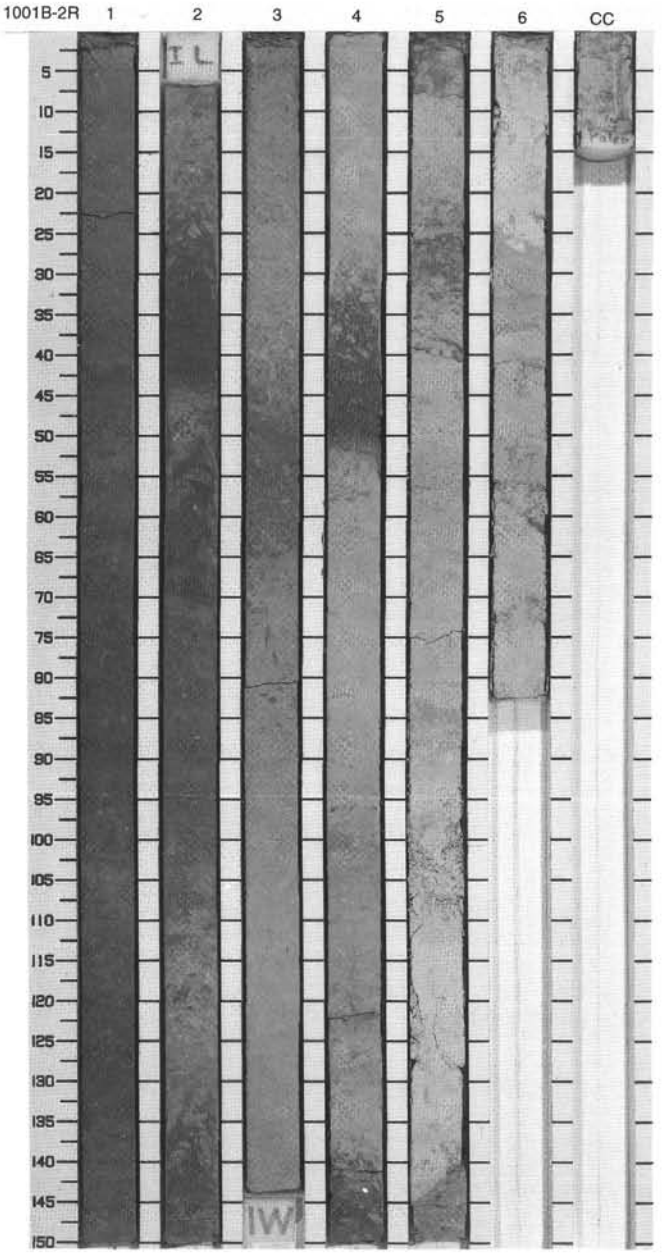
SITE 1001 HOLE B CORE 1R CORED 25.3 - 35.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1 2 3		1 2 3 CC	Pleistocene	P P P P P		W[I] M	5Y 6/3	NANNOFOSSIL CLAYEY MIXED SEDIMENT WITH FORAMINIFERS General Description: This core consists of light olive gray (5Y 6/2) NANNOFOSSIL CLAYEY MIXED SEDIMENT WITH FORAMINIFERS. The sediment is massive, moderately bioturbated with foraminifers concentrated within burrows. Disseminated pyrite occurs over most of the core surface.



SITE 1001 HOLE B CORE 2R CORED 150.3 - 160.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2, 3, 4, 5, 6, 7, 8		1, 2, 3, 4, 5, 6, CC	middle Miocene			W, I, M	5Y 6/2 To 10Y 7/1	NANNOFOSSIL OOZE WITH CLAY and CLAYEY NANNOFOSSIL OOZE General Description: This core consists of alternating beds of light gray (10Y 7/1) light gray NANNOFOSSIL OOZE WITH CLAY and light olive gray (5Y 6/2) CLAYEY NANNOFOSSIL OOZE. The sediments are massive and moderately bioturbated throughout the core. Some slight disturbance has been caused by the push-in coring method. In Section 5 some of the intervals are more indurated and are close to the chalk transition.

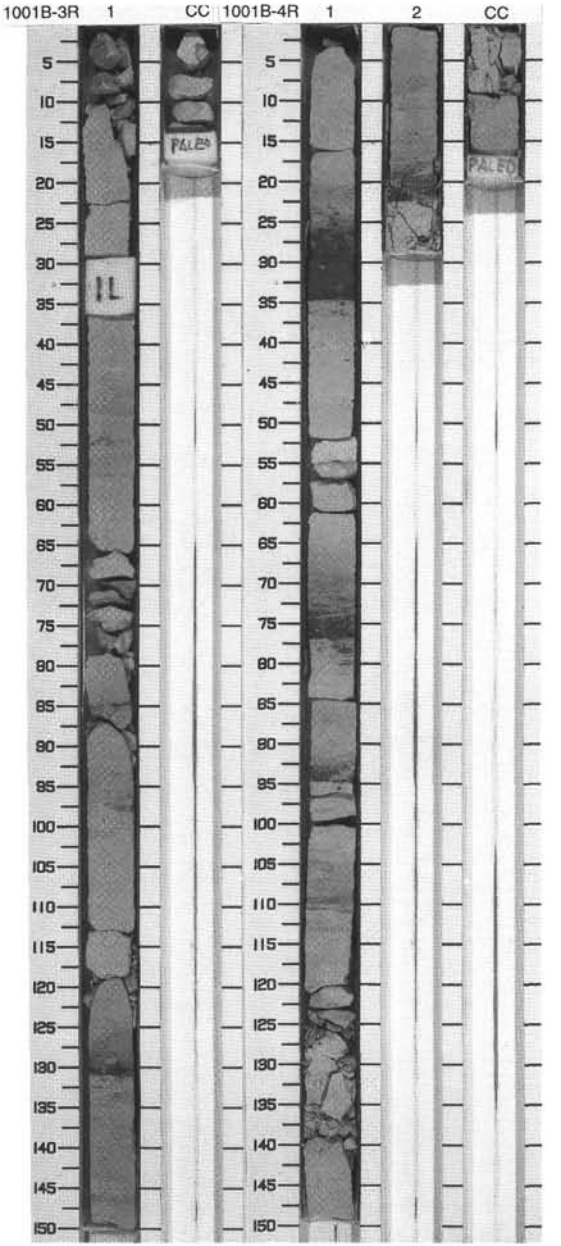


SITE 1001 HOLE B CORE 3R CORED 206.5 - 216.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1		1 CC	early Eocene	Ch Ch -A -A -A		I M	5GY 7/1	CLACAREOUS CHALK WITH CLAY General Description: This core consists of light greenish gray (5GY 7/1) CALCAREOUS CHALK WITH CLAY. The sediment is massive and moderately bioturbated throughout the core. VOLCANIC ASH layers occur in Section 1, 86–87, 96–98, and 127–132 cm. Zones of silicification occur in Section 1 at 0–10 and 74–76 cm.

SITE 1001 HOLE B CORE 4R CORED 216.0 - 225.6 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1		1 2 CC	early Eocene	-A Ch Ch -A -A -A -A -A		M	5GY 7/1	CALCAREOUS CHALK WITH CLAY AND FORAMINIFERS General Description: This core consists of light greenish gray (5GY 7/1) CALCAREOUS CHALK WITH CLAY AND FORAMINIFERS. The sediment is massive and moderately bioturbated throughout the core. VOLCANIC ASH layers occur in Section 1, 26–35, 74–78, 93–95, 103–111, and 133–113.5 cm; and Section 2, 16–29 cm. Zones of silicification occur in Section 1, 0–2, 55–57, and 121–127 cm.

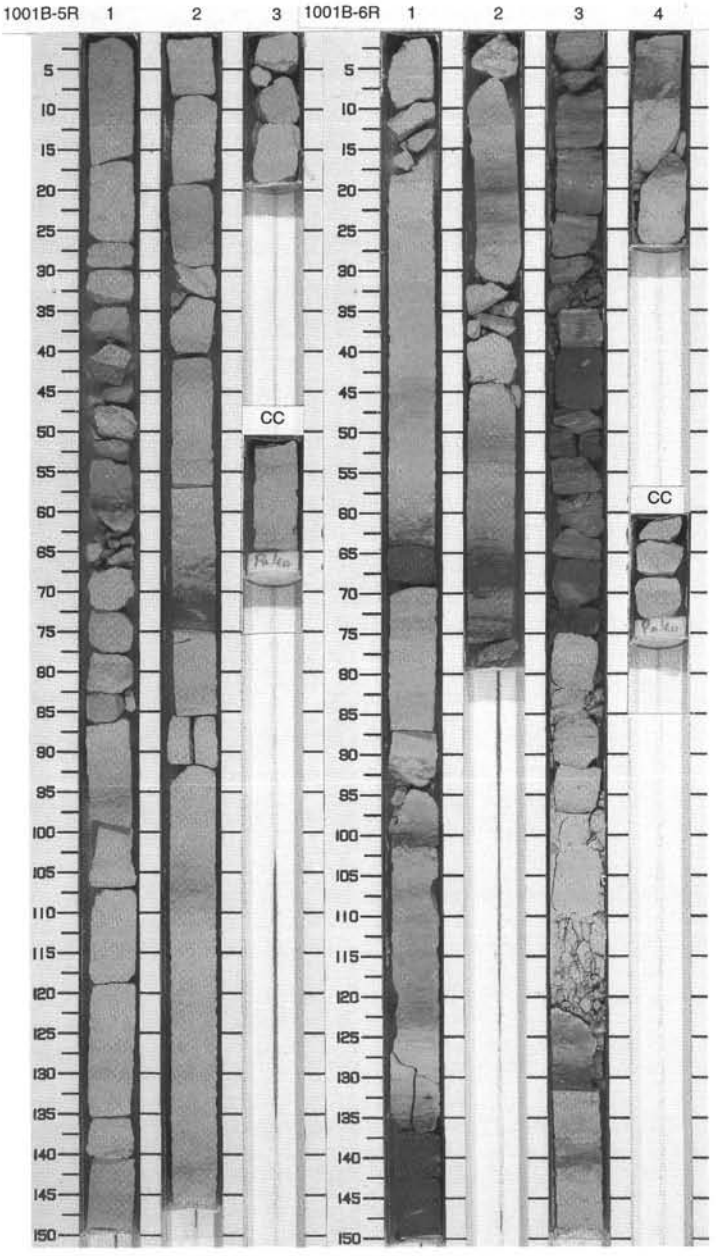


SITE 1001 HOLE B CORE 5R CORED 225.6 - 235.3 mbsf

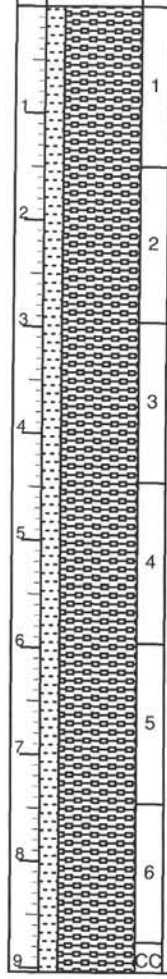
Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1 2 3		1 2 3 CC	late Paleocene - early Eocene	-A -A Ch Ch -A Ch	Ch Ch	M	5GY 8/1	CALCAREOUS CHALK WITH CLAY General Description: This core consists of light greenish gray (5GY 7/1) CALCAREOUS CHALK WITH CLAY. The sediment is massive and moderately bioturbated throughout the core. VOLCANIC ASH layers occur in Section 1, 58–60 and 96–97 cm; and Section 2, 70–79 cm. Zones of silicification occur in Section 1, 65–66, 79–83, and 139–140 cm; and Section 2, 29–32 cm.

SITE 1001 HOLE B CORE 6R CORED 235.3 - 244.9 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1 2 3 4		1 2 3 4 CC	late Paleocene	-A -A -A -A -A -A -A -A -A	-A -A -A -A	S S M	10Y 8/1 10YR 6/1 10Y 8/1	CALCAREOUS CHALK WITH CLAY and MIXED SEDIMENTARY ROCK WITH CLAY General Description: This core consists of light gray (10Y 7/1) CALCAREOUS CHALK WITH CLAY and greenish gray (5G 6/1) MIXED SEDIMENTARY ROCK WITH CLAY. The sediment is massive and moderately bioturbated throughout the core. VOLCANIC ASH layers occur in Section 1, 60–69, 99–102, and 135–149 cm; Section 2, 63–69.5 cm; Section 3, 10–13, 20–23, 33–34, 40–48, and 51–53 cm; and Section 4, 3–9 cm. Zones of silicification occur in Section 1, 91–94 cm; Section 2, 0–5, 32–34, 35–37, and 43–44 cm; and CC, 4–5, and 10–12 cm.



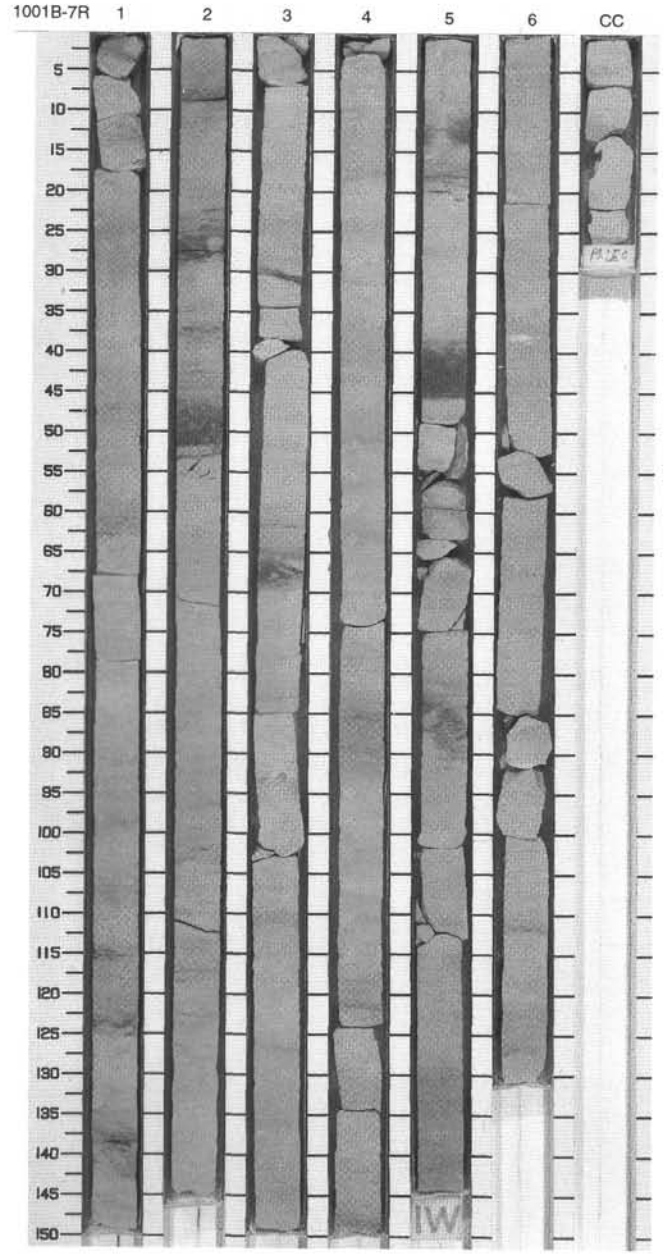
SITE 1001 HOLE B CORE 7R CORED 244.9 - 254.5 mbsf



Description

CALCAREOUS CHALK WITH CLAY

General Description:
This core consists of light gray (10Y 7/1) CALCAREOUS CHALK WITH CLAY. The sediment is massive and moderately bioturbated throughout the core. VOLCANIC ASH layers occur in Section 2, 8–9, 24–29, and 46–52 cm; Section 3, 30–31 and 64–69 cm; and Section 5, 10–14, 17–19, 38–45, and 83–91 cm. Zones of silicification occur in Section 1, 15–16 cm; Section 3, 2–6 and 93–103 cm; Section 6, 87–91 cm; and CC, 3–5 cm.

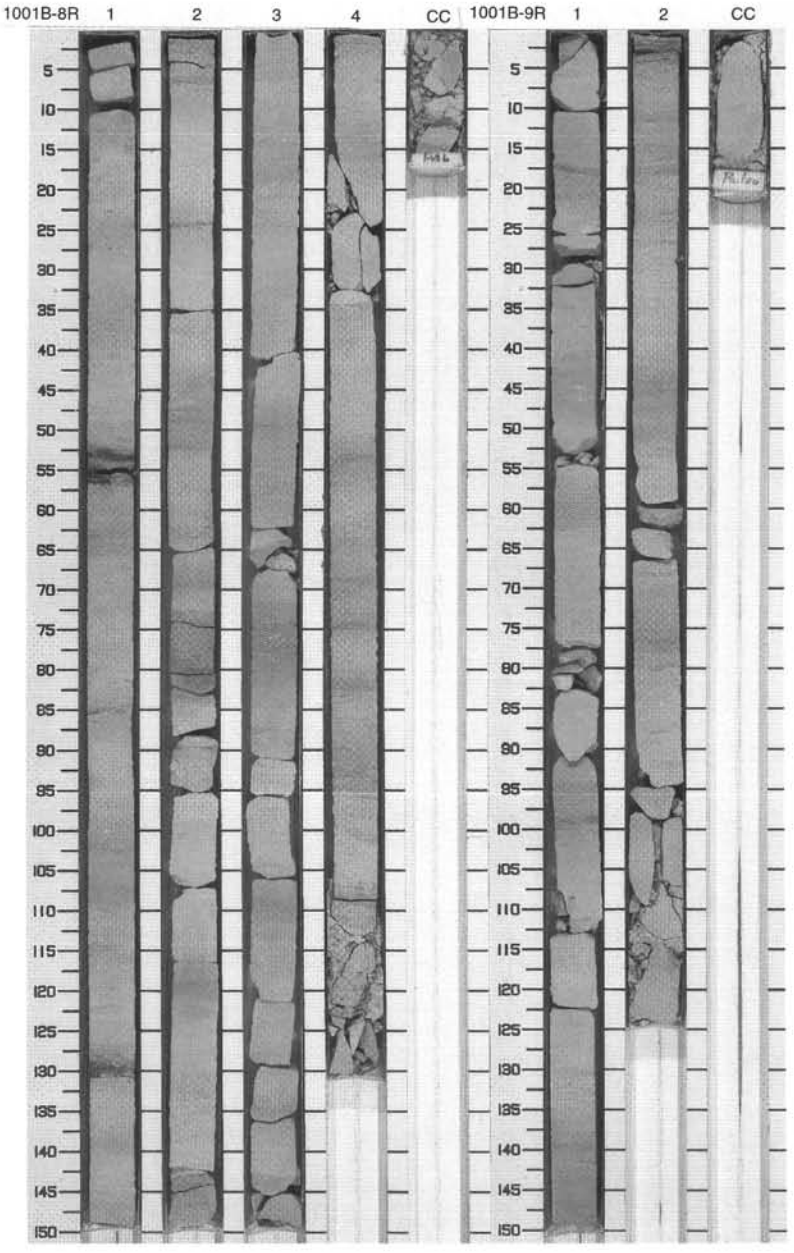


SITE 1001 HOLE B CORE 8R CORED 254.5 - 264.1 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2, 3, 4, 5		1, 2, 3, 4, CC	late Paleocene	Ch, A, A, A, Ch, Ch, Ch, Ch		S, S, M	5Y 8/1 To 5Y 7/1	CALCAREOUS LIMESTONE WITH NANNOFOSSILS AND CLAY General Description: This core consists of light gray (5Y 8/1) CALCAREOUS LIMESTONE WITH NANNOFOSSILS AND CLAY. The sediment is massive and moderately bioturbated throughout the core. VOLCANIC ASH layers occur in Section 1, 52–54, 54–56, and 128–131 cm. Zones of silicification occur in Section 1, 10–15 cm; Section 2, 89–94 and 143–150 cm; Section 3, 64–68 cm; and Section 4, 34–39 and 107–112 cm.

SITE 1001 HOLE B CORE 9R CORED 264.1 - 273.7 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2		1, 2, CC	late Paleocene	Ch, A, Ch		M	5Y 7/1 To 5Y 8/1	CALCAREOUS LIMESTONE WITH CLAY AND FORAMINIFERS General Description: This core consists of light gray (5Y 7/1) to grayish white (5Y 8/1) CALCAREOUS LIMESTONE WITH CLAY AND FORAMINIFERS. The sediment is massive and moderately bioturbated throughout the core. Zones of silicification occur in Section 1, 78-84 cm; and Section 2, 59-66. A dispersed volcanic ash is observed at Section 2, 0–4 cm.

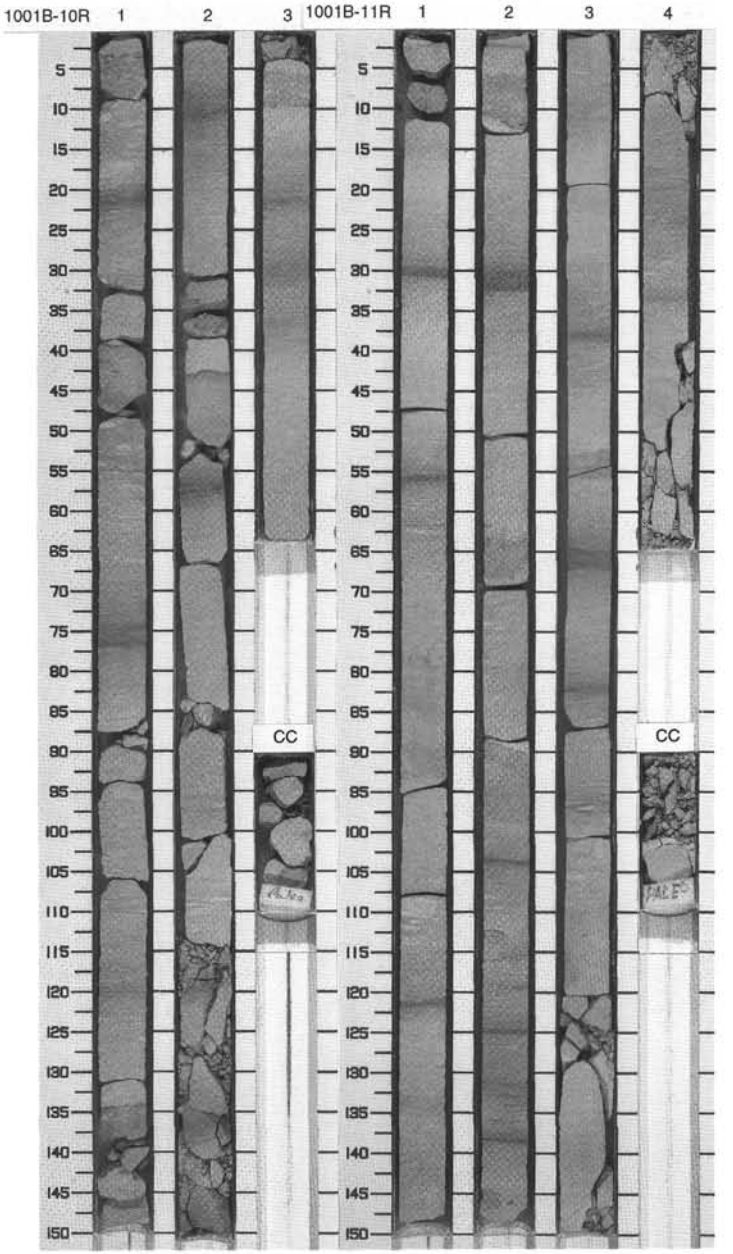


SITE 1001 HOLE B CORE 10R CORED 273.7 - 283.4 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2, 3		1, 2, 3, CC	late Paleocene	Ch, Ch, Ch, Ch, Ch, Ch, Ch	⊥, V, V	M	5Y 7/1 To 5Y 8/1	CALCAREOUS CHALK WITH CLAY General Description: This core consists of light gray (5Y 7/1) to grayish white (5Y 8/1) CALCAREOUS CHALK WITH CLAY. The sediment is massive and moderately bioturbated. Burrows are flattened by compaction, forming wispy laminations. Zones of silicification occur in Section 1, 3–8, 39–48, 134–138, and 142–143 cm; Section 2, 34–38, and 43–51 cm; and CC, 13–17 cm. Two burrows comprising of coarse-grained, sandy material (including foraminifers) occur at Section 1, 9–10 and 15–17 cm.

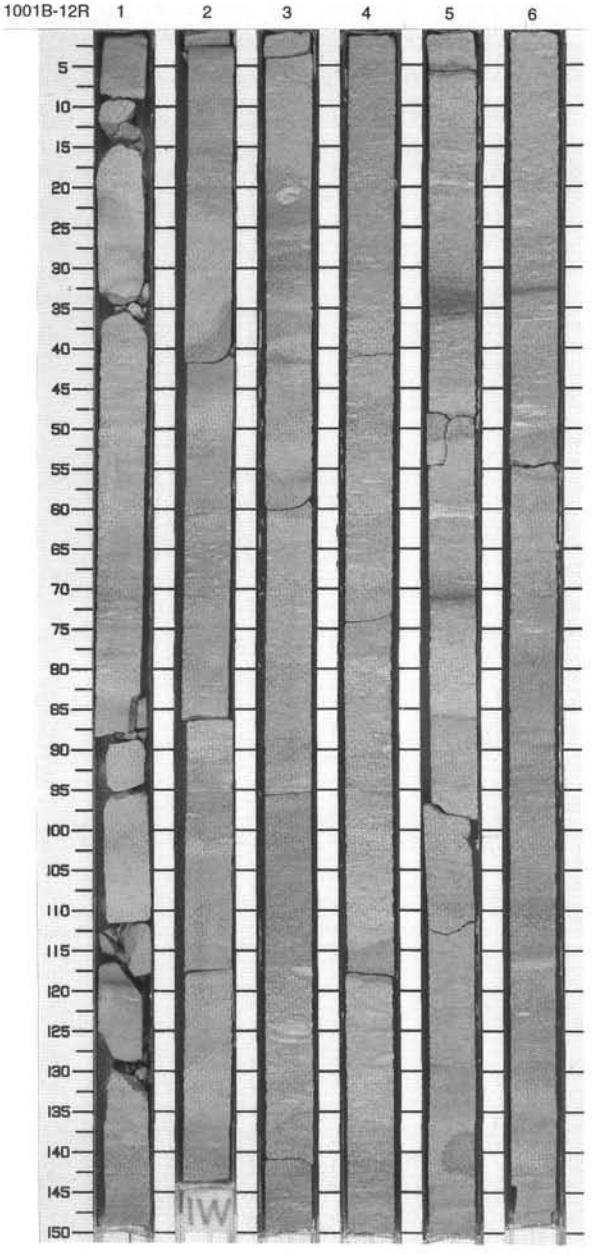
SITE 1001 HOLE B CORE 11R CORED 283.4 - 292.9 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2, 3, 4, 5		1, 2, 3, 4, CC	late Paleocene	Ch, Ch, Ch, Ch, A, A, Ch	⊥, V, X V	M	5Y 7/1 To 5Y 8/1	CALCAREOUS CHALK WITH CLAY General Description: This core consists of light gray (5Y 7/1) to grayish white (5Y 8/1) CALCAREOUS CHALK WITH CLAY. The sediment is massive and moderately bioturbated. Burrows are flattened by compaction, forming wispy laminations. Zones of silicification occur in Section 1, 0–11 cm; Section 2, 6–12, 64–69, and 147–149 cm; and Section 3, 52–55, and 110–113 cm. Several clay-rich layers are observed throughout the core, two of which contain dispersed ASH. They occur at Section 3, 64–67 and 82–83 cm.

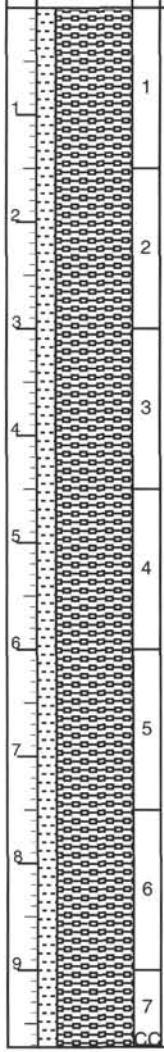


SITE 1001 HOLE B CORE 12R CORED 292.9 - 302.6 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1–9		1, 2, 3, 4, 5, 6, CC	late Paleocene	Ch, Ch		I, M	5GY 7/1 To 5GY 8/1	CALCAREOUS CHALK WITH CLAY General Description: This core consists of light greenish gray (5GY 7/1) to greenish white (5GY 8/1) CALCAREOUS CHALK WITH CLAY. The sediment is massive, well indurated, moderately bioturbated and contains burrows flattened by compaction, producing wispy lamination. Coarse-grained foraminifer- and radiolarian-rich intervals occur throughout the core, as indicated. The boundaries of these layers range from transitional to sharp and uneven. Incipient silicification is evident along the boundaries of the coarse grained interval at Section 1, 84–103 cm.



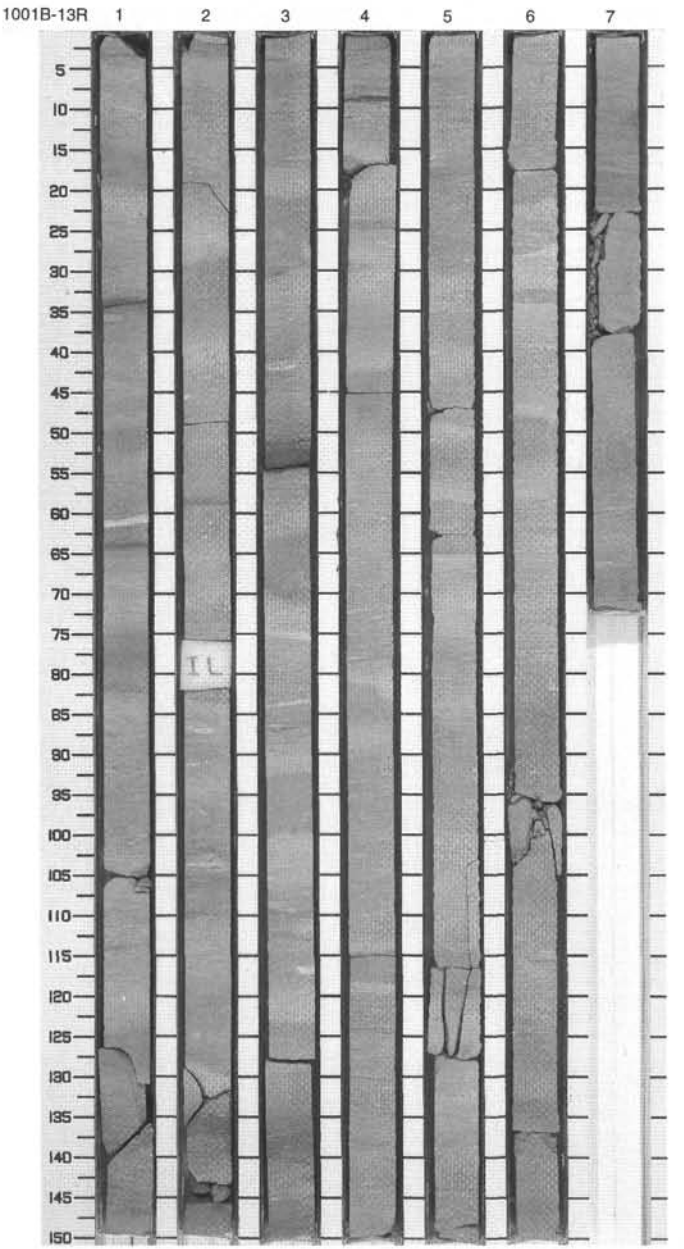
SITE 1001 HOLE B CORE 13R CORED 302.6 - 312.2 mbsf



Description

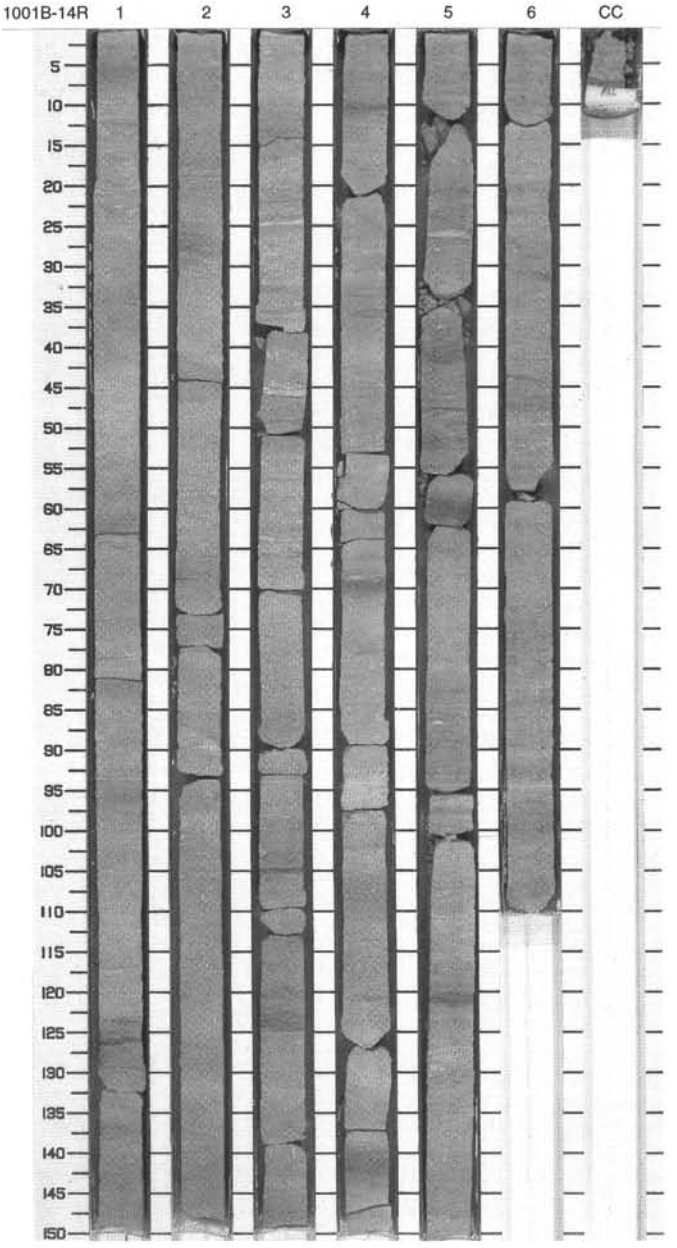
CALCAREOUS CHALK WITH CLAY

General Description:
This core consists of light bluish gray (5B 7/1), light greenish gray (5GY 7/1), and greenish white (5GY 8/1) CALCAREOUS CHALK WITH CLAY. The sediment is massive, well-indurated, moderately bioturbated and contains burrows flattened by compaction, producing wispy lamination. Coarse grained foraminifer- and radiolarian-rich intervals occur throughout the core, as indicated. The boundaries of these layers range from transitional to sharp and uneven. A VOLCANIC ASH, slightly dispersed by bioturbation, occurs in Section 3, 53–54 cm. It appears to correlate with a thin ASH in 165-1001A-34R-1, 120 cm. A second ASH (dispersed) occurs in Section 4, 9 cm.

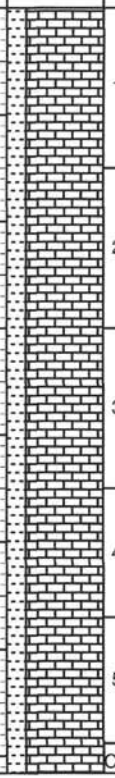


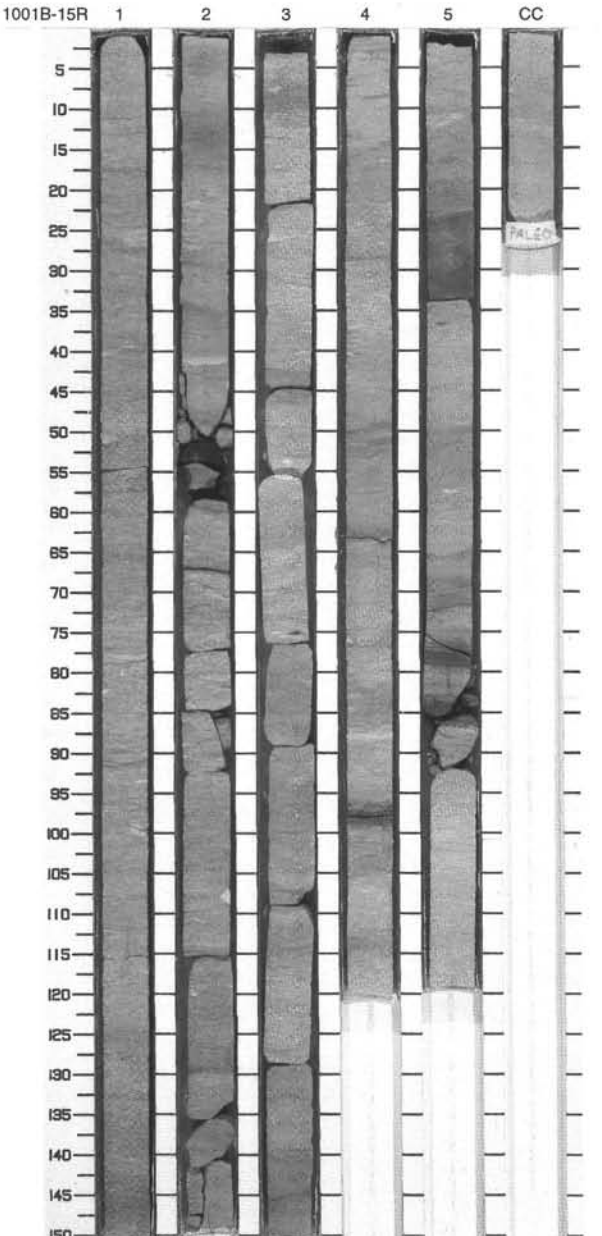
SITE 1001 HOLE B CORE 14R CORED 312.2 - 321.8 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2, 3, 4, 5, 6, 7, 8		1, 2, 3, 4, 5, 6, CC	late Paleocene			M	5GY 7/1 To 5B 7/1	CALCAREOUS CHALK WITH CLAY General Description: This core consists of light bluish gray (5B 7/1) to light greenish gray (5GY 7/1) CALCAREOUS CHALK WITH CLAY. The sediment is massive, well indurated, moderately bioturbated and contains burrows flattened by compaction, producing wispy lamination. Coarse-grained foraminifer- and radiolarian-rich intervals occur throughout the core, as indicated. The boundaries of these layers range from transitional to sharp and uneven.



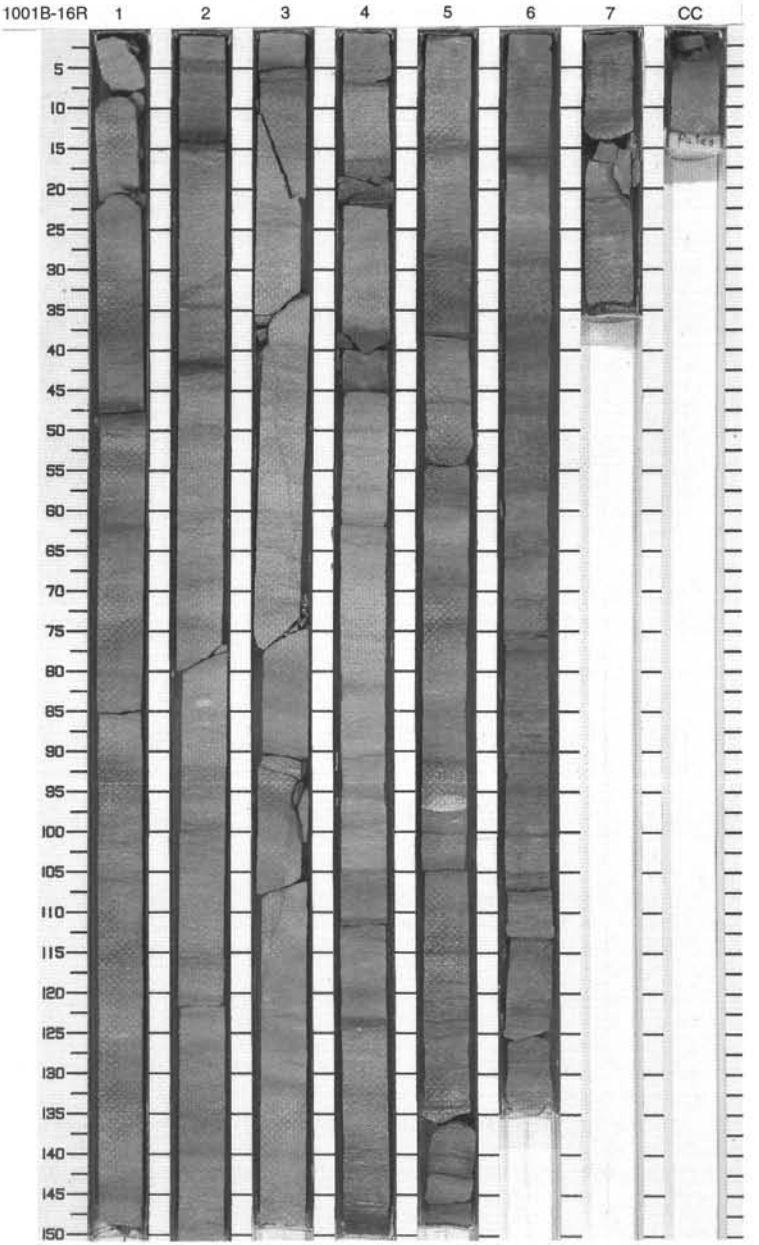
SITE 1001 HOLE B CORE 15R CORED 321.8 - 331.4 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2, 3, 4, 5, 6, 7		1, 2, 3, 4, 5, CC	late Paleocene	Ch, A		S, M	5GY 7/1 To 5B 7/1	CALCAREOUS LIMESTONE WITH CLAY General Description: This core consists of light bluish gray (5B 7/1) to light greenish gray (5GY 7/1) CALCAREOUS LIMESTONE WITH CLAY. The sediment is massive, well indurated, moderately bioturbated and contains burrows flattened by compaction, producing wispy lamination. Coarse-grained foraminifer- and radiolarian-rich intervals occur throughout the core, as indicated. The boundaries of these layers range from transitional to sharp and uneven. A VOLCANIC ASH layer occurs in Section 5, 22–33 cm.

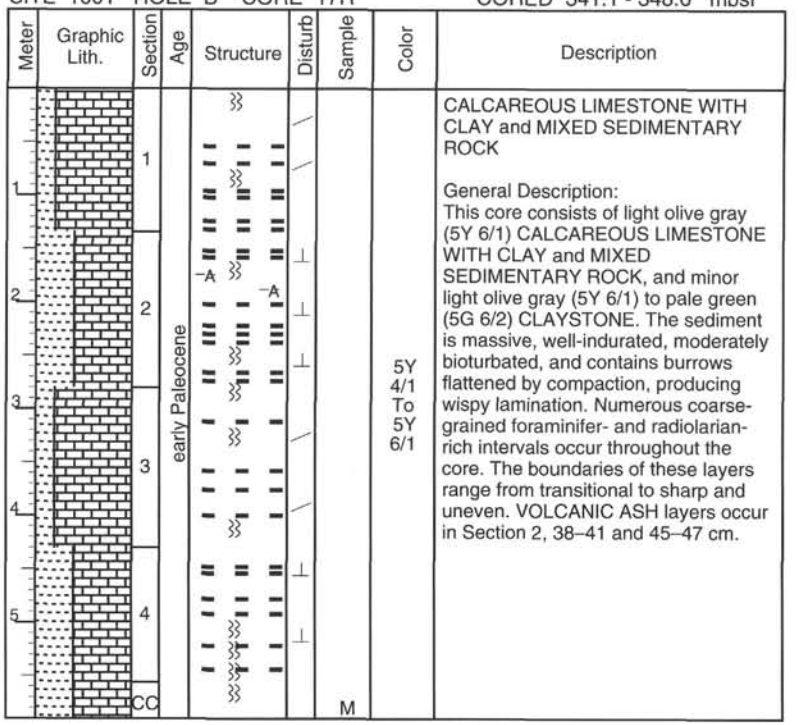


SITE 1001 HOLE B CORE 16R CORED 331.4 - 341.1 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2, 3, 4, 5, 6, 7, 8, 9		1, 2, 3, 4, 5, 6, 7, CC	early Paleocene			M	5GY 7/1 To 5B 7/1	CALCAREOUS LIMESTONE WITH CLAY General Description: This core consists of light bluish gray (5B 7/1) to light greenish gray (5GY 7/1) CALCAREOUS LIMESTONE WITH CLAY and minor CLAYSTONE. The sediment is massive, well-indurated, moderately bioturbated and contains burrows flattened by compaction, producing wispy lamination. Coarse grained foraminifer- and radiolarian-rich intervals occur throughout the core, as indicated. The boundaries of these layers range from transitional to sharp and uneven. VOLCANIC ASH layers occur in Section 2, 12–15 and 41–42 cm; Section 4, 19–21, 37–54, and 148–150 cm; and Section 5, 30–37 cm.



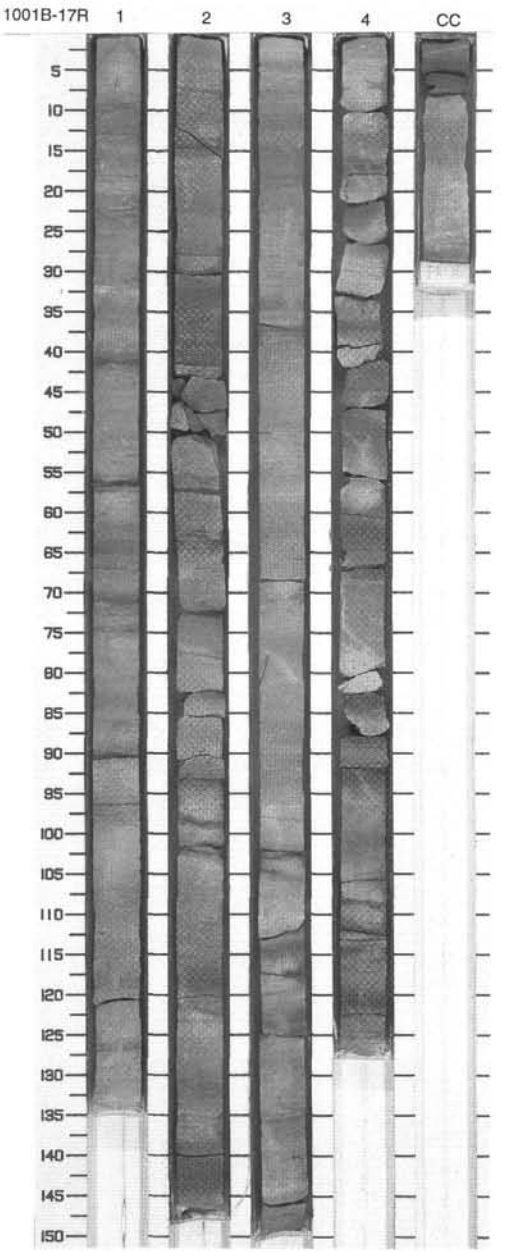
SITE 1001 HOLE B CORE 17R CORED 341.1 - 348.0 mbsf



Description

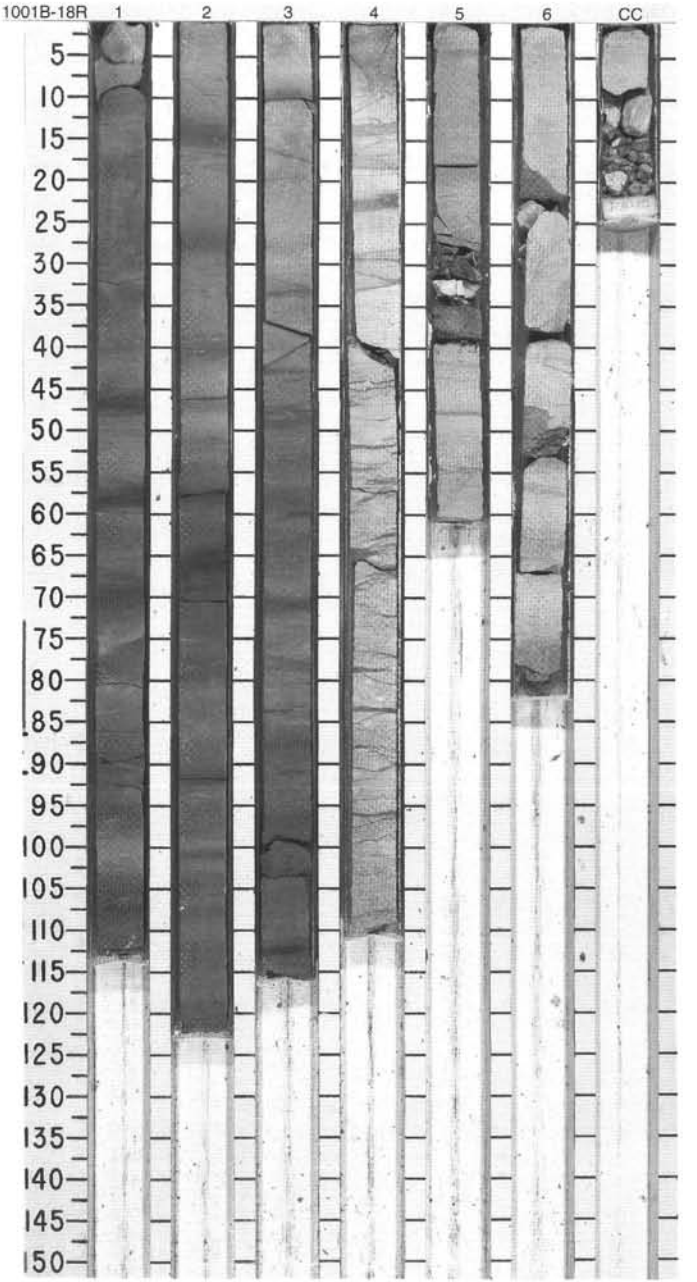
CALCAREOUS LIMESTONE WITH CLAY and MIXED SEDIMENTARY ROCK

General Description:
This core consists of light olive gray (5Y 6/1) CALCAREOUS LIMESTONE WITH CLAY and MIXED SEDIMENTARY ROCK, and minor light olive gray (5Y 6/1) to pale green (5G 6/2) CLAYSTONE. The sediment is massive, well-indurated, moderately bioturbated, and contains burrows flattened by compaction, producing wispy lamination. Numerous coarse-grained foraminifer- and radiolarian-rich intervals occur throughout the core. The boundaries of these layers range from transitional to sharp and uneven. VOLCANIC ASH layers occur in Section 2, 38–41 and 45–47 cm.



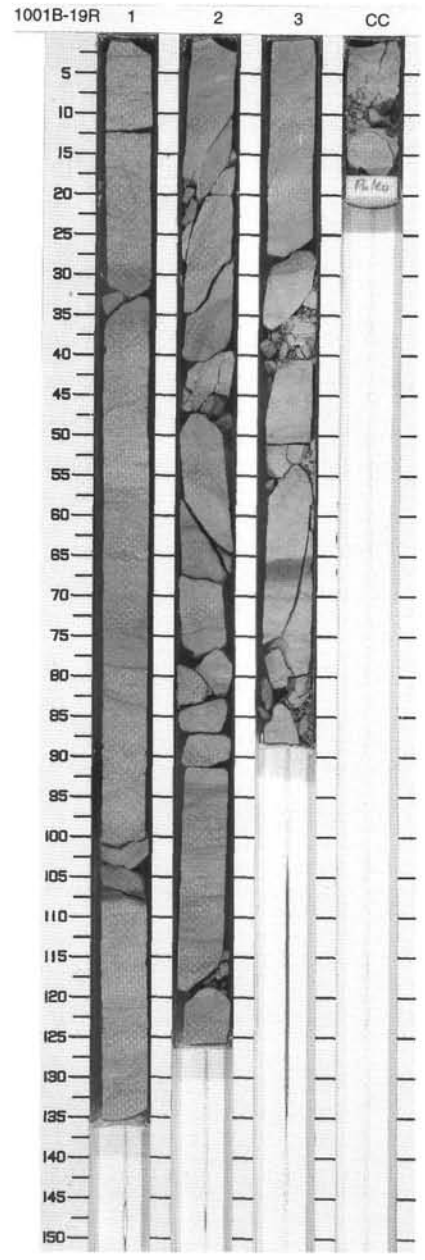
SITE 1001 HOLE B CORE 18R CORED 348.0 - 356.3 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1 2 3 4 5 6		1 2 3 4 5 6 CC	early Paleocene l. Maastrichtian	A		M	5Y 6/1 To 10YR 6/1 5Y 7/1 To 5Y 5/1 N8 To N7	MIXED SEDIMENTARY ROCK and CLAYSTONE General Description: This core consists of alternating beds of light olive gray (5Y 6/1) MIXED SEDIMENTARY ROCK and gray (10Y 6/1) CLAYSTONE. The sediment is massive, well-indurated, moderately bioturbated and contains burrows flattened by compaction, producing wispy lamination. Beds of the major lithologies are of the order of 5-10 cm in thickness and the contacts are typically gradational. A VOLCANIC ASH layer occurs in Section 3, 100-103 cm. The K/T boundary occurs in Section 5 from 33.5 to 39.0 cm. The boundary deposit consists of the following sequence: 33.5 to 34.0 cm 10YR 5/1 (gray) silty clay, normally graded with faint laminations; 34.0-35.5 cm 10YR 6/1 (gray) normally graded siltstone with some fine sand-size dark green grains: 35.5-38.5 cm 5GY 6/1 (greenish gray) at top to 5GY 4/1 (dark greenish gray) at the base, laminated, normally-graded smectitic spherule layer (up to 2 mm diameter); 38.5-39.0 cm 10YR 6/1 (gray) silty clay.



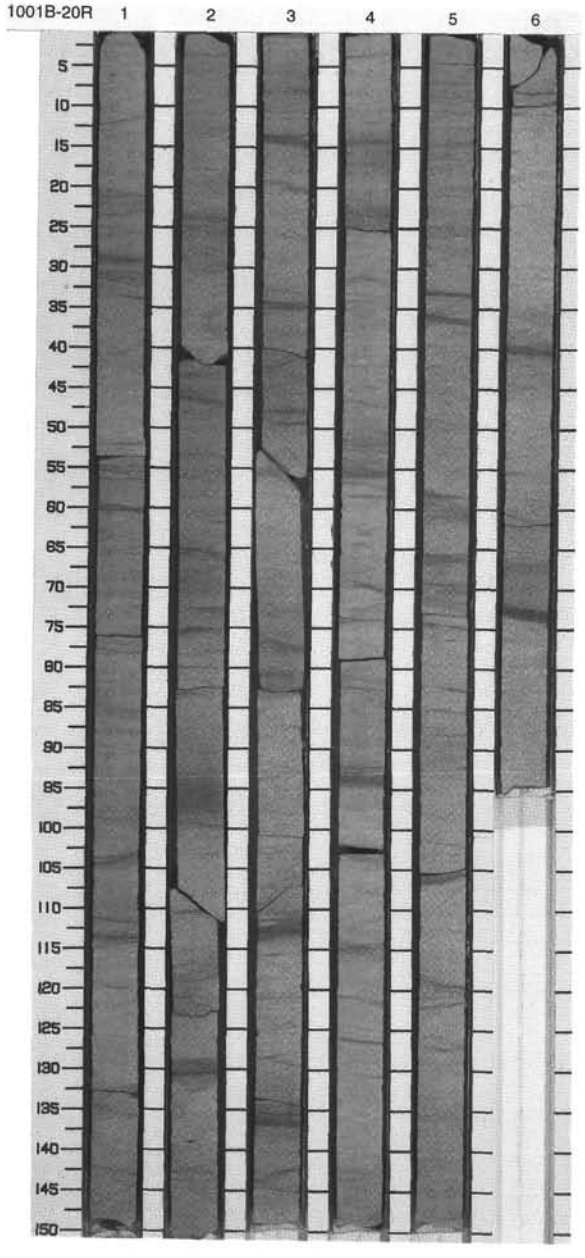
SITE 1001 HOLE B CORE 19R CORED 356.3 - 362.3 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2, 3		1, 2, 3, CC	late Maastrichtian			M	10Y 7/1	CALCAREOUS LIMESTONE WITH CLAY General Description: This core consists dominantly of CALCAREOUS LIMESTONE WITH CLAY. The sediment is massive, well-indurated, moderately bioturbated and contains burrows flattened by compaction, producing wispy lamination. Coarse foraminiferal-rich layers occur throughout the core as indicated.



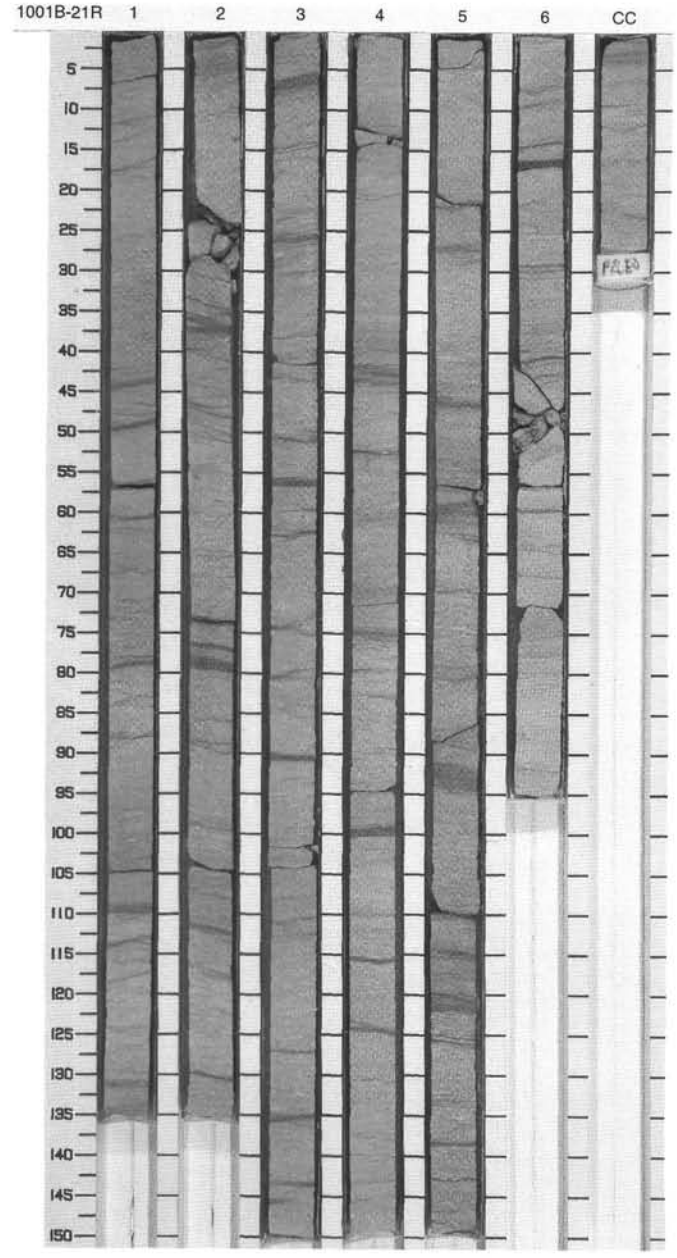
SITE 1001 HOLE B CORE 20R CORED 362.3 - 372.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2, 3, 4, 5, 6, 7, 8		1, 2, 3, 4, 5, 6	Maastrichtian			M	5Y 7/1 To 5Y 6/1	CALCAREOUS LIMESTONE WITH CLAY General Description: This core consists dominantly of CALCAREOUS LIMESTONE WITH CLAY. The sediment is massive, well-indurated, moderately bioturbated and contains burrows flattened by compaction, producing wispy lamination. There are numerous clay-rich, darker green layers in all Sections that are 1–2 cm and have gradational contacts. Coarse foraminiferal-rich layers occur throughout the core as indicated.



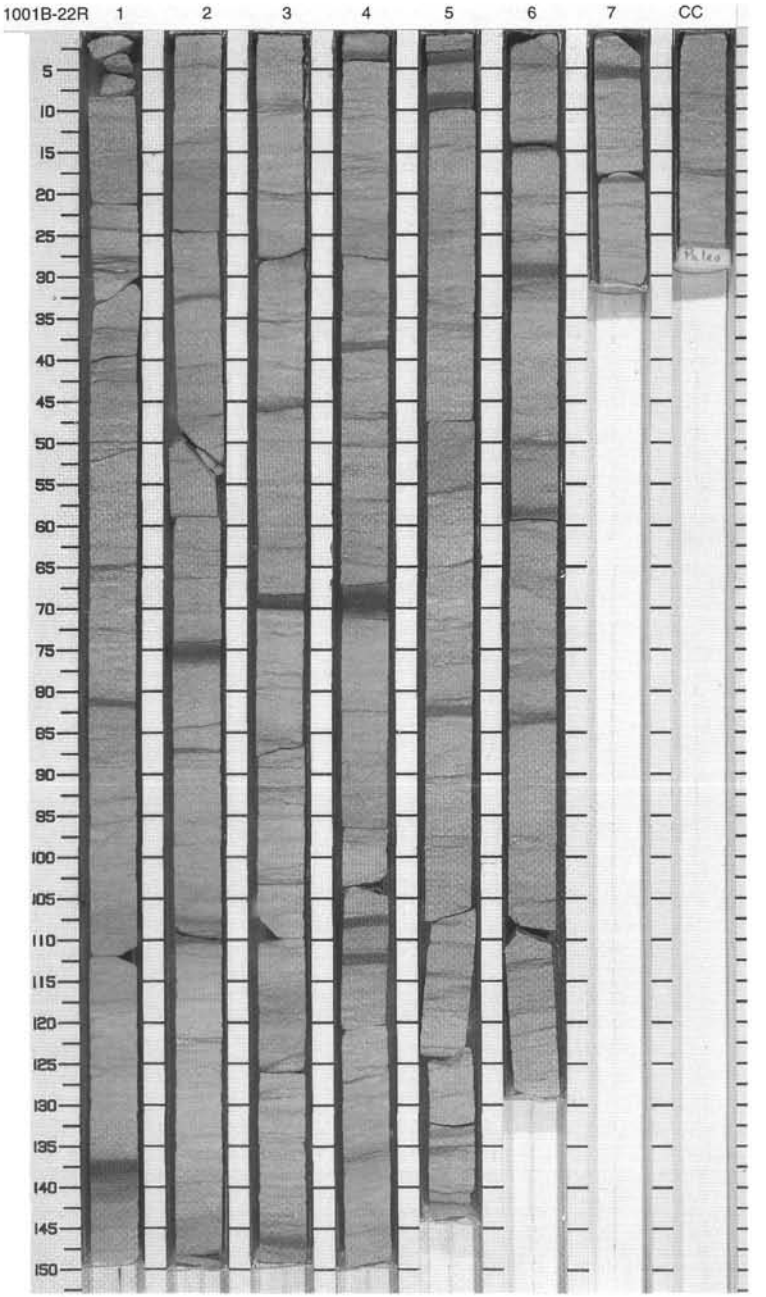
SITE 1001 HOLE B CORE 21R CORED 372.0 - 379.6 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2, 3, 4, 5, 6, 7, 8		1, 2, 3, 4, 5, 6, CC	Maastrichtian			M	5Y 7/1 To 5Y 6/1	CALCAREOUS LIMESTONE WITH CLAY General Description: This core consists dominantly of CALCAREOUS LIMESTONE WITH CLAY. The sediment is massive, well-indurated, moderately bioturbated and contains burrows flattened by compaction, producing wispy lamination. There are numerous clay-rich, darker green layers in all sections that are 1–2 cm and have gradational contacts. Coarse foraminiferal-rich layers occur throughout the core as indicated.



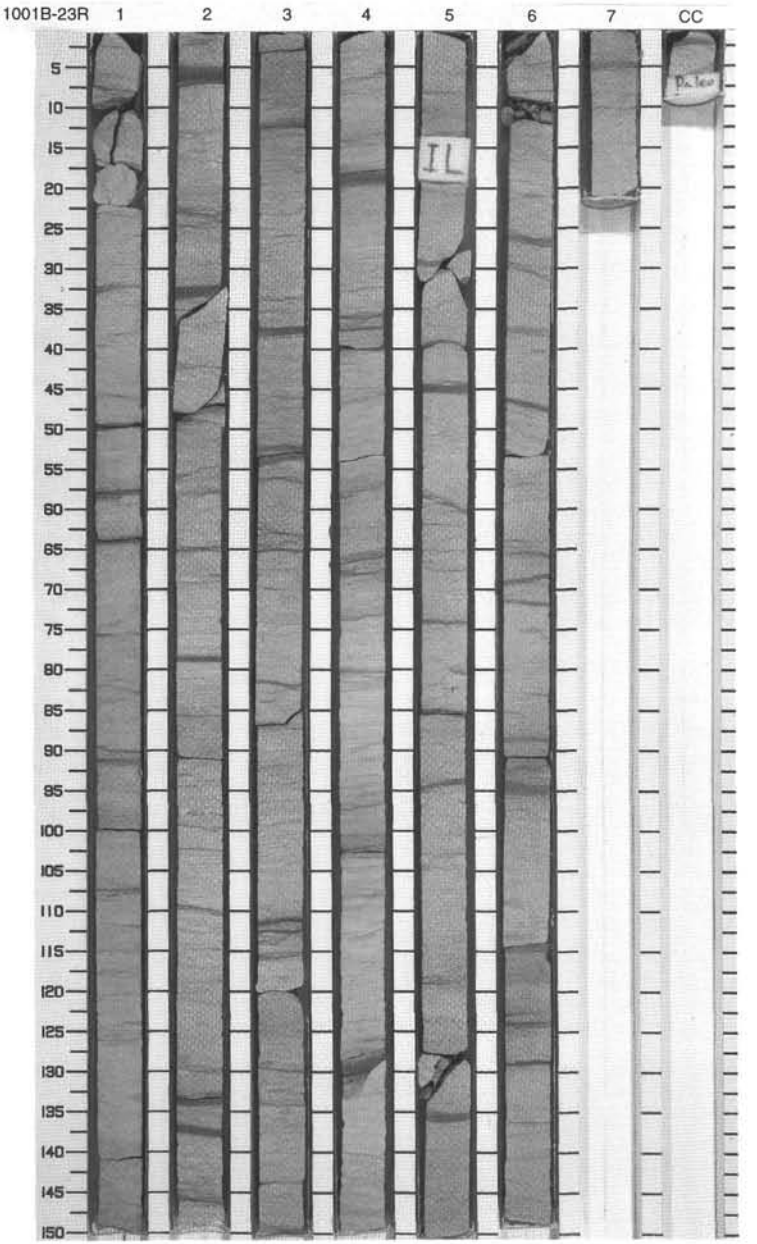
SITE 1001 HOLE B CORE 22R CORED 379.6 - 389.2 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2, 3, 4, 5, 6, 7, 8, 9		1, 2, 3, 4, 5, 6, 7, CC	Maastrichtian			M	5Y 7/1 To 5Y 6/1	CALCAREOUS LIMESTONE WITH CLAY General Description: This core consists dominantly of CALCAREOUS LIMESTONE WITH CLAY. The sediment is massive, well-indurated, moderately bioturbated and contains burrows flattened by compaction, producing wispy lamination. There are numerous clay-rich, darker green layers in all sections that are 1–2 cm and have gradational contacts. Coarse foraminiferal-rich layers occur throughout the core as indicated.



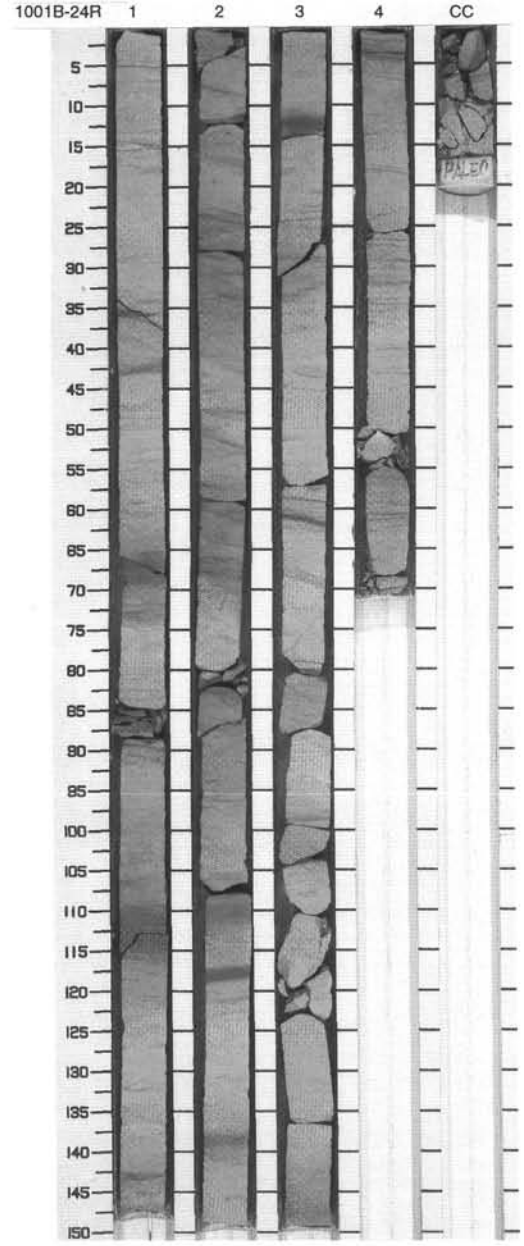
SITE 1001 HOLE B CORE 23R CORED 389.2 - 398.8 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2, 3, 4, 5, 6, 7, 8, 9		1, 2, 3, 4, 5, 6, 7 CC	Maastrichtian			M	5Y 7/1 To 5Y 6/1	CALCAREOUS LIMESTONE WITH CLAY General Description: This core consists dominantly of CALCAREOUS LIMESTONE WITH CLAY. The sediment is massive, well-indurated, moderately bioturbated and contains burrows flattened by compaction, producing wispy lamination. There are numerous clay-rich, darker green layers in all sections that are 1–2 cm and have gradational contacts. Coarse foraminiferal-rich layers occur throughout the core as indicated.



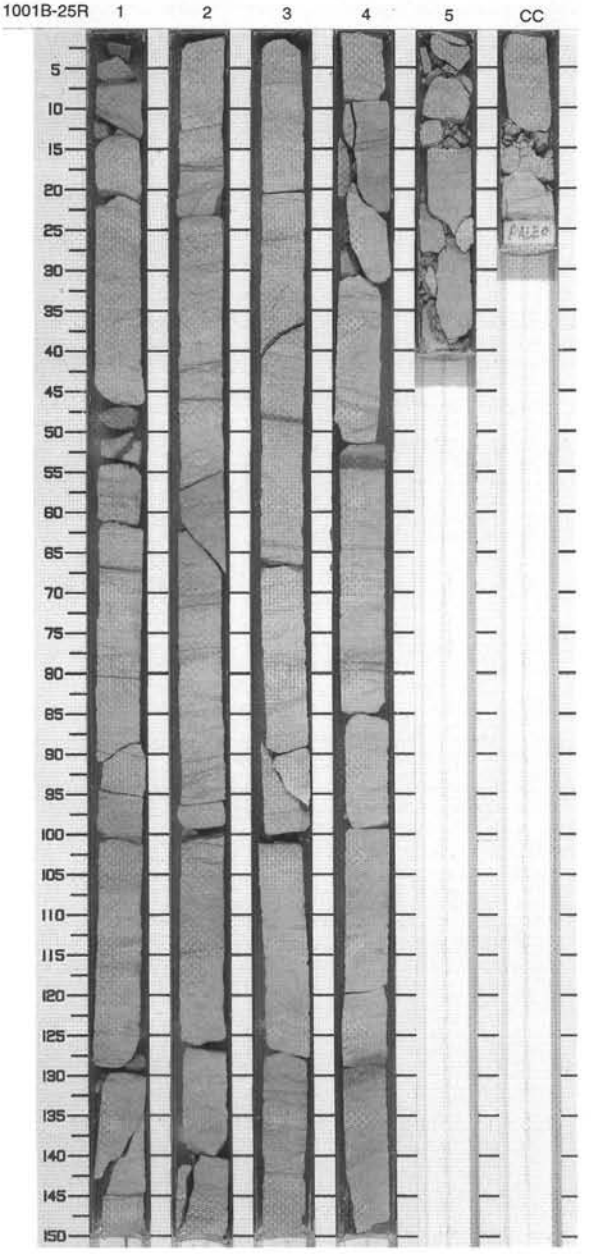
SITE 1001 HOLE B CORE 24R CORED 398.8 - 408.4 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1 2 3 4 5		1 2 3 4 CC	Maastrichtian			M	5Y 7/1 To 5Y 6/1	CALCAREOUS LIMESTONE WITH CLAY General Description: This core consists predominantly of light gray (5Y 7/1) to gray (5Y 6/1) CALCAREOUS LIMESTONE WITH CLAY. The sediment is massive, well indurated, moderately bioturbated and contains burrows flattened by compaction, producing wispy lamination. Thin 1 to 7 cm-thick interbeds of darker CLAYEY CALCAREOUS LIMESTONE comprise a common minor lithology of the core. One foraminiferal-rich layer occurs within the core as indicated.



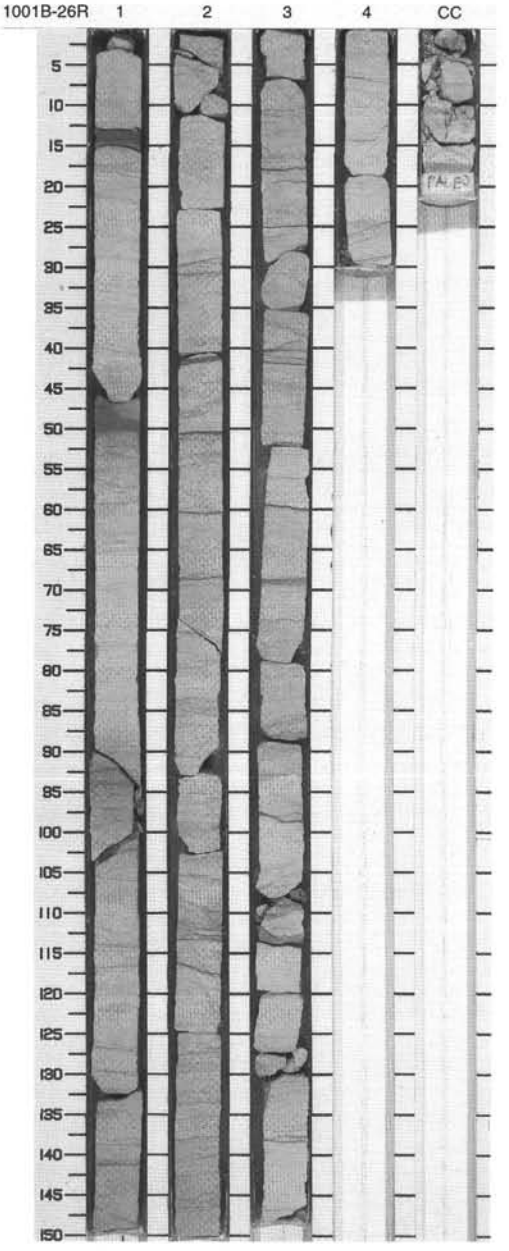
SITE 1001 HOLE B CORE 25R CORED 408.4 - 418.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2, 3, 4, 5, 6		1, 2, 3, 4, 5, CC	Maastrichtian	(P)		S, M	5Y 7/1 To 10Y 7/1	CALCAREOUS CHALK WITH CLAY General Description: This core consists predominantly of pinkish gray (5YR 7/2), greenish white (5GY 8/1), and light gray (10Y 7/1 to 5Y 7/1) CALCAREOUS LIMESTONE WITH CLAY. The sediment is massive, well-indurated, moderately bioturbated and contains burrows flattened by compaction, producing wispy lamination. Centimeter-scale interbeds of darker CLAYEY CALCAREOUS LIMESTONE comprise a common minor lithology of the core. In Section 1, 50–55 cm, a pyrite concretion with gypsum is present.



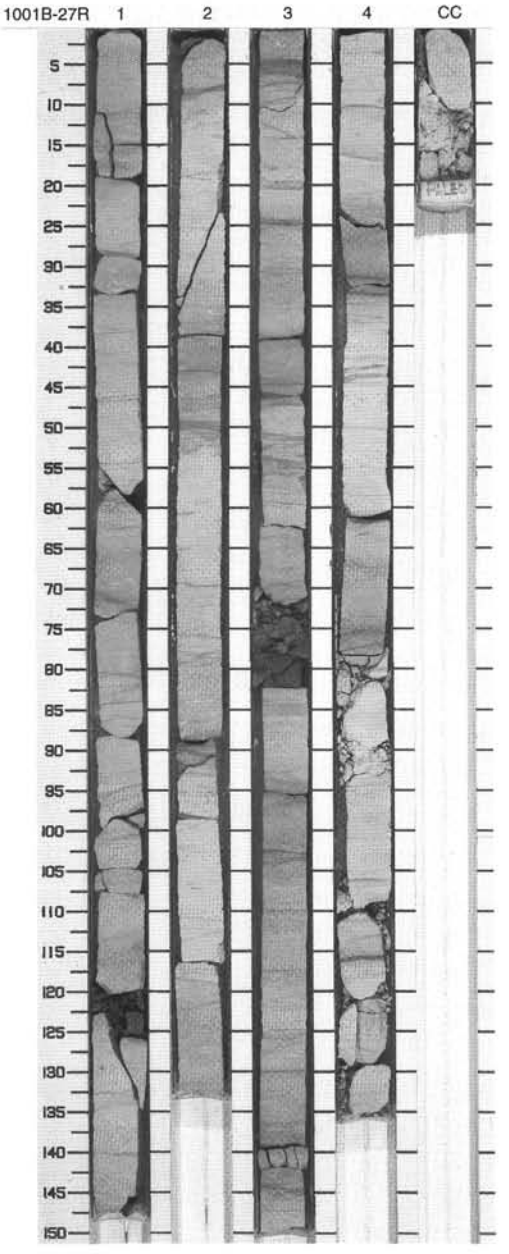
SITE 1001 HOLE B CORE 26R CORED 418.0 - 427.6 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1 2 3 4 5		1 2 3 4 CC	Campanian - Maastrichtian			M	10Y 7/1 To 10Y 8/1	CALCAREOUS LIMESTONE WITH CLAY General Description: This core consists predominantly of light gray (10Y 7/1) to white (10Y 8/1) CALCAREOUS LIMESTONE WITH CLAY. The sediment is massive, well indurated, moderately bioturbated and contains burrows flattened by compaction, producing wispy lamination. Centimeter-scale interbeds of darker CLAYEY CALCAREOUS LIMESTONE comprise a common minor lithology of the core. Intervals of vein-like laminae occur throughout the core. Two foraminiferal-rich layers occur within the core as indicated.

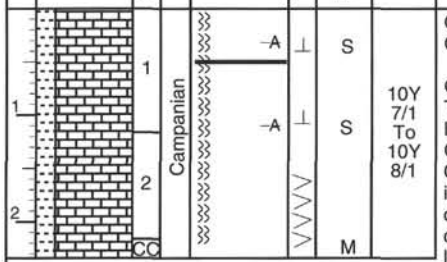


SITE 1001 HOLE B CORE 27R CORED 427.6 - 437.2 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2, 3, 4, 5		1, 2, 3, 4, CC	Campanian	–A		S, S, M	5Y 7/1 To 10Y 7/1	CALCAREOUS LIMESTONE WITH CLAY General Description: This core consists predominantly of light gray (10Y 7/1 to 5Y 7/1), and greenish gray (5GY 7/1) CALCAREOUS LIMESTONE WITH CLAY. The sediment is massive, well-indurated, moderately bioturbated and contains burrows flattened by compaction, producing wispy lamination. Centimeter-scale interbeds of darker CLAYEY CALCAREOUS LIMESTONE comprise a common minor lithology of the core. Intervals of vein-like laminae occur throughout the core, and foraminiferal-rich layers occur as indicated. One VOLCANIC ASH layer occurs at Section 1, 121–126 cm.



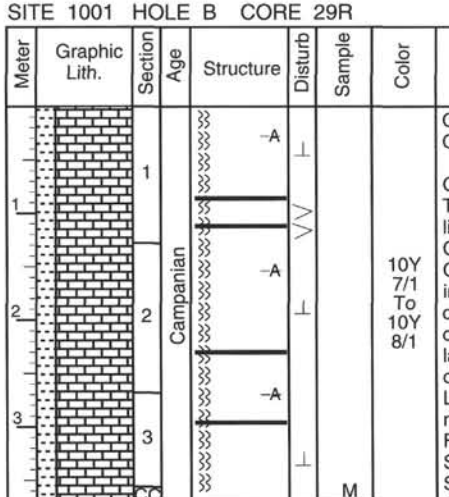
SITE 1001 HOLE B CORE 28R CORED 437.2 - 446.8 mbsf



CALCAREOUS LIMESTONE WITH CLAY

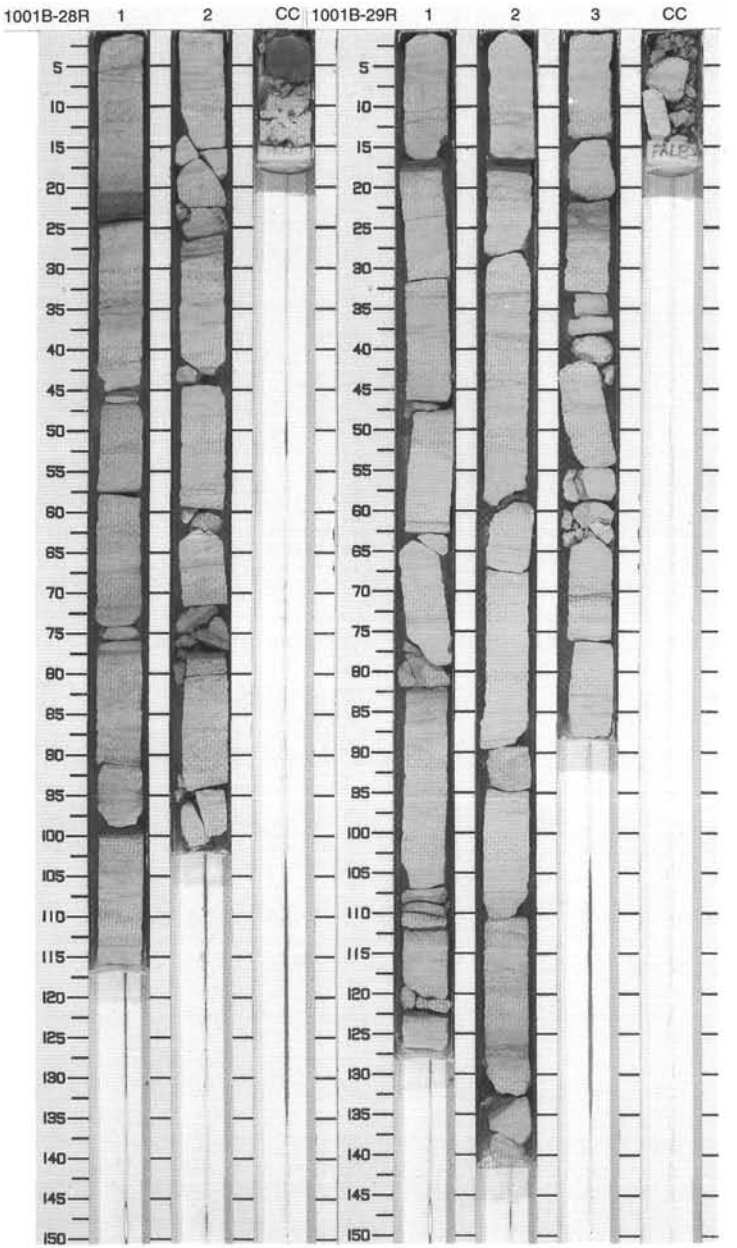
General Description:
This core consists predominantly of light gray (10Y 7/1 to 10Y 8/1) CALCAREOUS LIMESTONE WITH CLAY. The sediment is massive, well indurated, moderately bioturbated and contains burrows flattened by compaction, producing wispy lamination. Centimeter-scale interbeds of darker CLAYEY CALCAREOUS LIMESTONE comprise a common minor lithology of the core. Intervals of vein-like laminae occur throughout the core, and one foraminiferal-rich layer occurs in Section 1, 44–46 cm. VOLCANIC ASH layers occur in Section 1, 23–24 and 99–101 cm.

SITE 1001 HOLE B CORE 29R CORED 446.8 - 457.4 mbsf



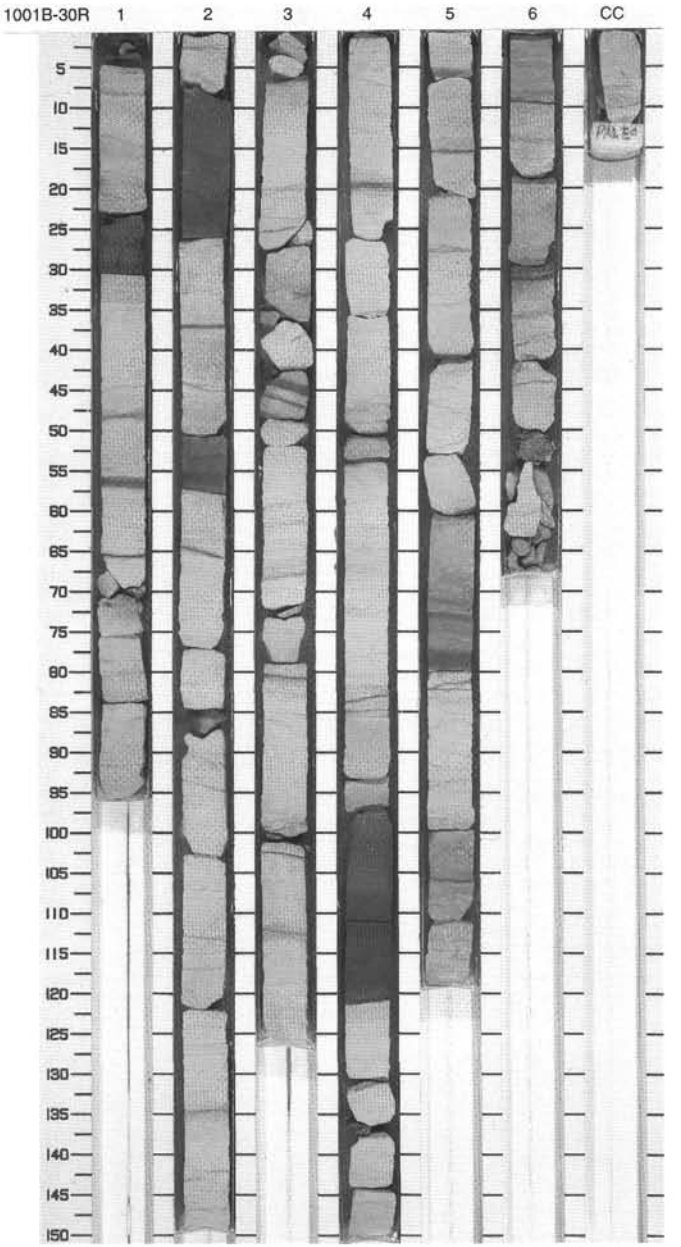
CALCAREOUS LIMESTONE WITH CLAY

General Description:
This core consists predominantly of light gray (10Y 7/1 to 10Y 8/1) CALCAREOUS LIMESTONE WITH CLAY. The sediment is massive, well indurated, moderately bioturbated and contains burrows flattened by compaction, producing wispy lamination. Centimeter-scale interbeds of darker CLAYEY CALCAREOUS LIMESTONE comprise a common minor lithology of the core. Foraminiferal-rich layers occur in Section 1, 80–83 and 105–107 cm; Section 2, 90–94 cm; and Section 3, 22–26. VOLCANIC ASH layers occur in Section 1, 17–18 cm; and Section 2, 16–17 and 132–134 cm.

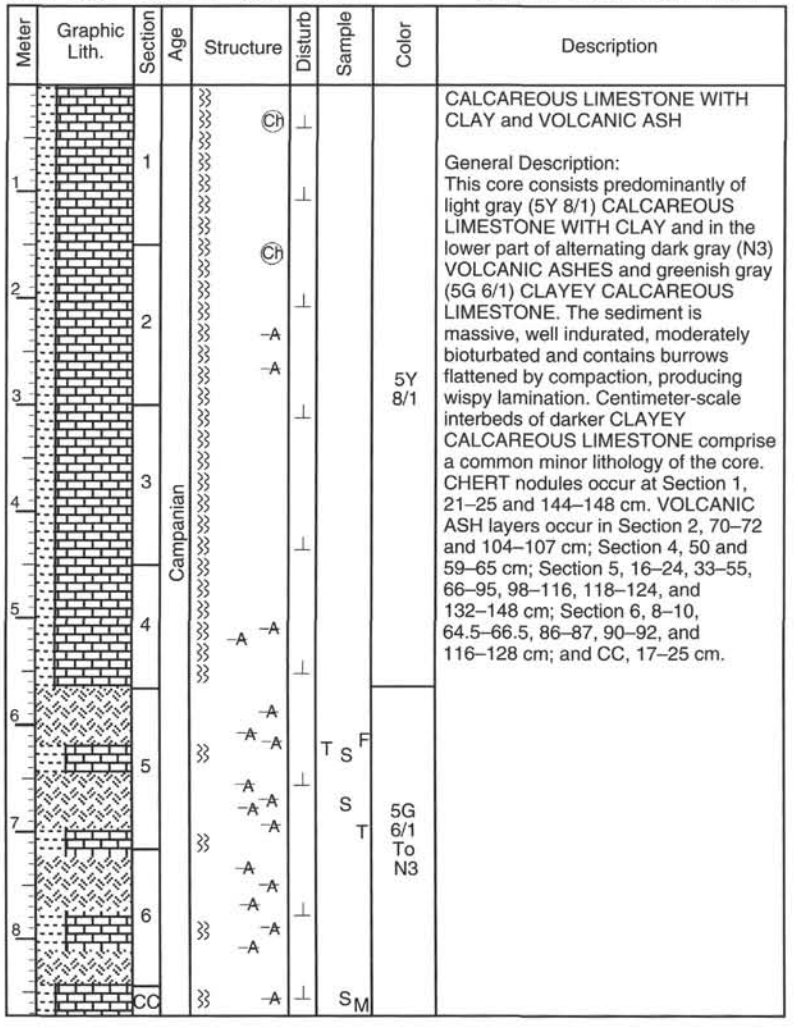


SITE 1001 HOLE B CORE 30R CORED 457.4 - 468.0 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1, 2, 3, 4, 5, 6, 7		1, 2, 3, 4, 5, 6, CC	Campanian	A, A, A, A, A, A, Ch, Ch, A		S, S, S, S, M	10Y 3/1 To 10Y 8/1	CLACAROUS LIMESTONE WITH CLAY General Description: This core consists predominantly of light gray (10Y 7/1 to 10Y 8/1) CALCAREOUS LIMESTONE WITH CLAY. The sediment is massive, well indurated, moderately bioturbated and contains burrows flattened by compaction, producing wispy lamination. Centimeter-scale interbeds of darker CLAYEY CALCAREOUS LIMESTONE comprise a common minor lithology of the core. CHERT nodules occur at Section 2, 84–86 cm; and Section 4, 136–138 cm. VOLCANIC ASH layers occur in Section 1, 4–5, 23–30, and 56–57 cm; Section 2, 7–25 and 50–56 cm; Section 4, 98–122; and Section 6, 29–30 cm.

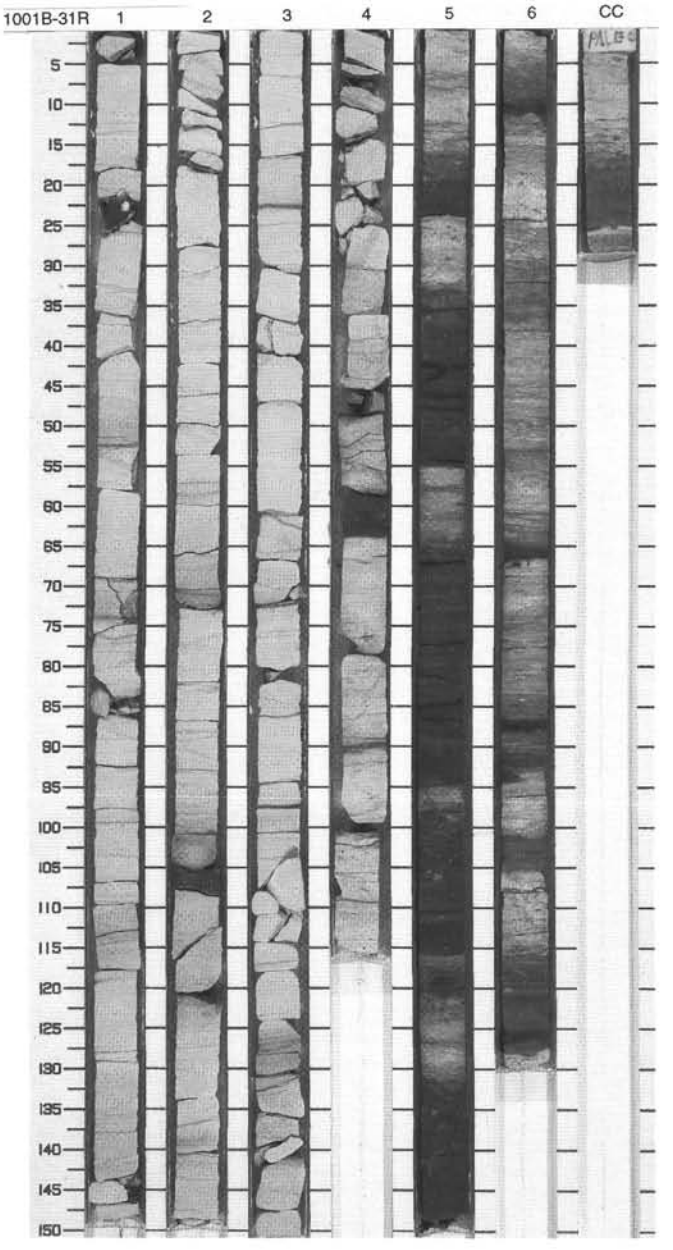


SITE 1001 HOLE B CORE 31R CORED 468.0 - 478.7 mbsf

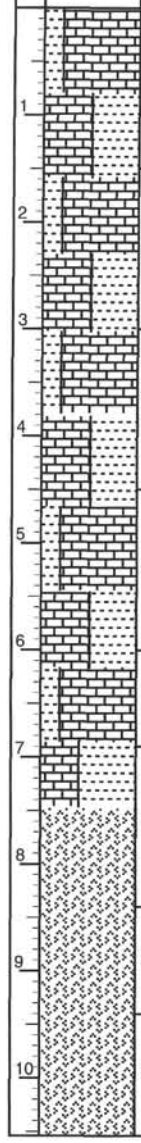


CALCAREOUS LIMESTONE WITH CLAY and VOLCANIC ASH

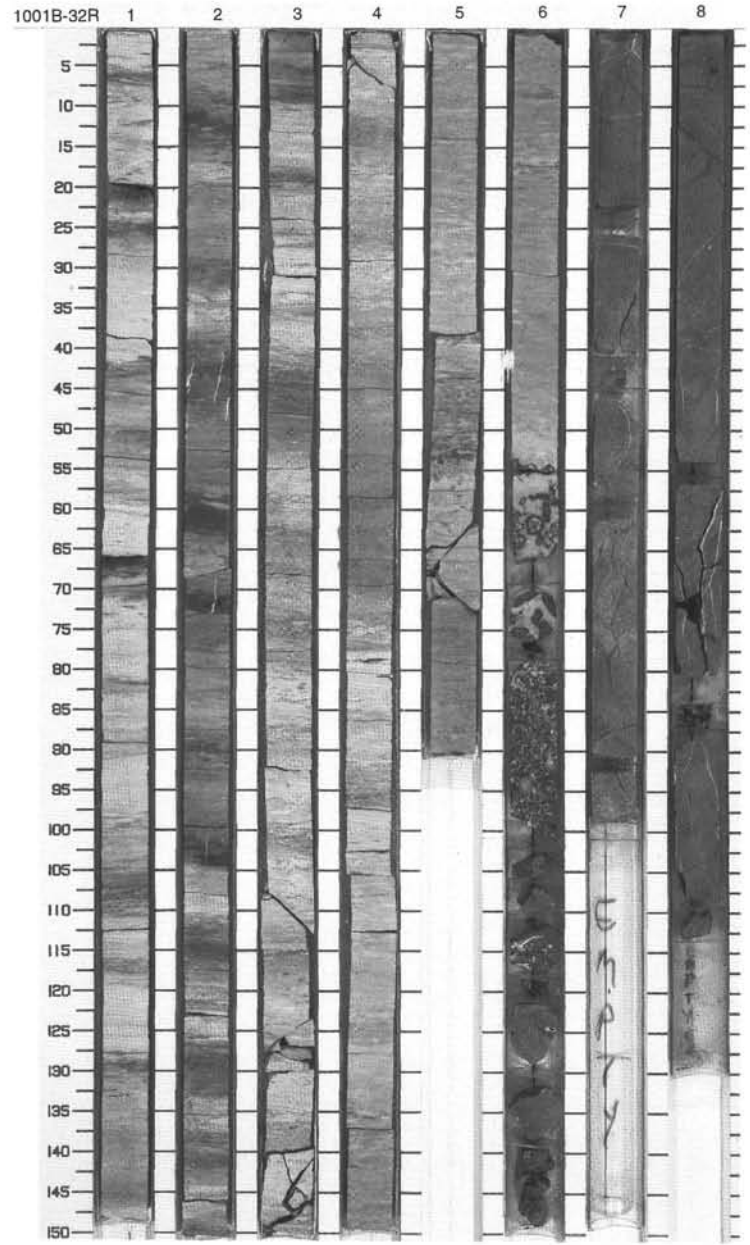
General Description:
This core consists predominantly of light gray (5Y 8/1) CALCAREOUS LIMESTONE WITH CLAY and in the lower part of alternating dark gray (N3) VOLCANIC ASHES and greenish gray (5G 6/1) CLAYEY CALCAREOUS LIMESTONE. The sediment is massive, well indurated, moderately bioturbated and contains burrows flattened by compaction, producing wispy lamination. Centimeter-scale interbeds of darker CLAYEY CALCAREOUS LIMESTONE comprise a common minor lithology of the core. CHERT nodules occur at Section 1, 21–25 and 144–148 cm. VOLCANIC ASH layers occur in Section 2, 70–72 and 104–107 cm; Section 4, 50 and 59–65 cm; Section 5, 16–24, 33–55, 66–95, 98–116, 118–124, and 132–148 cm; Section 6, 8–10, 64.5–66.5, 86–87, 90–92, and 116–128 cm; and CC, 17–25 cm.

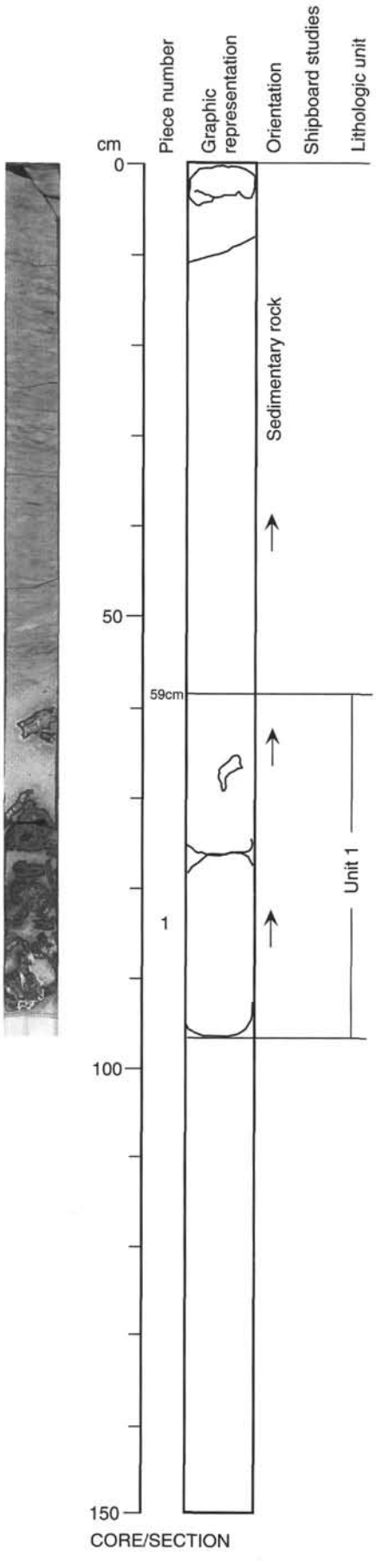


SITE 1001 HOLE B CORE 32R CORED 478.8 - 488.3 mbsf



Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
1–10		1–8	Campanian	–A	⊥	S		CALCAREOUS LIMESTONE WITH CLAY, MIXED SEDIMENTARY ROCK and IGNEOUS BASEMENT General Description: This core consists of alternating light greenish gray (5GY 8/1) CALCAREOUS LIMESTONE WITH CLAY and dark greenish gray (5G 4/1) MIXED SEDIMENTARY ROCK. The sediment is massive, well indurated, moderately bioturbated and contains burrows flattened by compaction, producing wispy lamination. VOLCANIC ASH layers occur in Section 1, 6–7, 25–26, 107–109, and 129–131 cm; and Section 2, 11–15, 41–43, 59–63, 71–73, 90–91, and 103–105 cm. Section 6, 54–150 cm, Section 7, and Section 8 consist of IGNEOUS BASEMENT (see following Igneous Visual Core Descriptions).



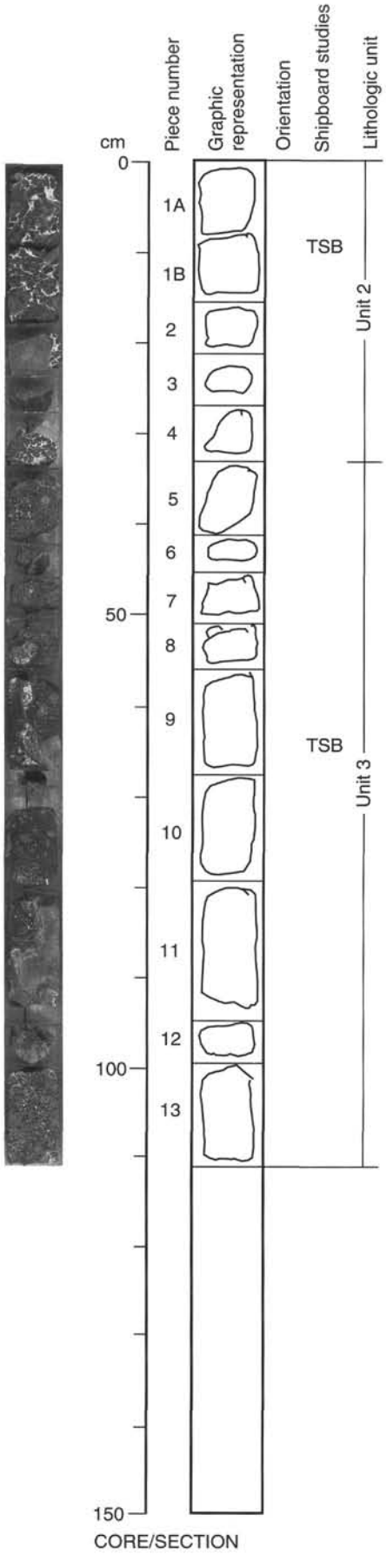


165-1001A-52R-6

UNIT 1: ALTERED BASALT CLASTS IN LIMESTONE

Piece 1

CONTACTS: Gradational.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Glassy to microcrystalline, basaltic.
VESICLES: 0%
COLOR: 5G 6/1, greenish gray (limestone), N3 to 5B 4/1, black to dark bluish gray (clast margin to interior).
STRUCTURE: Angular to subangular clasts of basalt with glassy margins in limestone matrix. Grades downcore from matrix supported to clast supported. Many elongated pieces are horizontal, others are random. Many clasts have concave curvilinear boundaries.
ALTERATION: High, margins may contain glass, interior altered to chloritic material.
VEINS/FRACTURES: <5%; 5 mm; random; probably carbonate.
ADDITIONAL COMMENTS: Maximum clast length is 7 cm.



165-1001A-52R-7

UNIT 2: ALTERED BASALT CLASTS WITH CALCITE INFILLINGS.

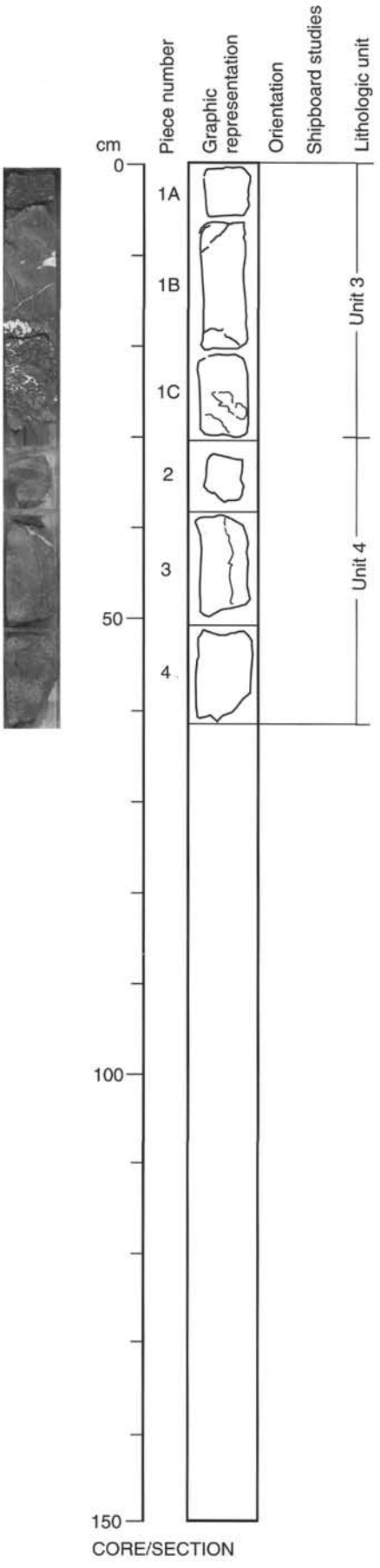
Pieces 1 to 4

CONTACTS: Upper gradational, lower gradational.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Glassy to microcrystalline.
VESICLES: No vesicles.
COLOR: N3 to 5B 4/1 black to bluish gray clasts
STRUCTURE: Angular to subangular clasts of basalt with calcite infilling. Clasts have concave curvilinear boundaries with some sharp edges. Most clasts have thin, <1 mm rind (formerly glassy)
ALTERATION: High, margins may contain glass, interior may be altered to chlorite.
VEINS/FRACTURES: No veins observed.
ADDITIONAL COMMENTS: Average clast sizes up to about 1 cm in diameter. One piece of highly altered aphyric basalt with chilled edges on some margins, 5 cm. Some voids, irregularly shaped and containing quartz and calcite.

UNIT 3: BASALTIC LAPILLI

Pieces 5 to 13

CONTACTS: Upper, gradational; lower, possibly sharp.
PHENOCRYSTS: Sparsely phyric. Plagioclase - 1%; 1-2 mm; subhedral.
GROUNDMASS: Glassy to microcrystalline, basaltic.
VESICLES: 5%; 1 mm; spherical; homogeneous.
COLOR: 5G 4/1 (dark greenish gray for average rock); 10YR 4/2 (dark yellowish brown for large altered basalt clasts).
STRUCTURE: Angular to subangular altered basalt clasts with rinds (alteration 2-3 mm thick). Average size 1-5 cm in diameter. Highly altered basaltic clasts up to 13 cm in length, vertically elongated, microcrystalline interior with glassy margins (possibly synchronous veins from massive flow below).
ALTERATION: High, margins may contain glass, interiors of clasts have chloritic material.
ADDITIONAL COMMENTS: Lower part gradational to breccia. Large altered basalt clasts have exteriors that exhibit a micro-pillowed structure with quenched margins. Calcite infilling in basal 12 cm of unit. Also calcite veins in 13-cm basalt clast.



165-1001A-52R-8

UNIT 3: BASALTIC LAPILLI

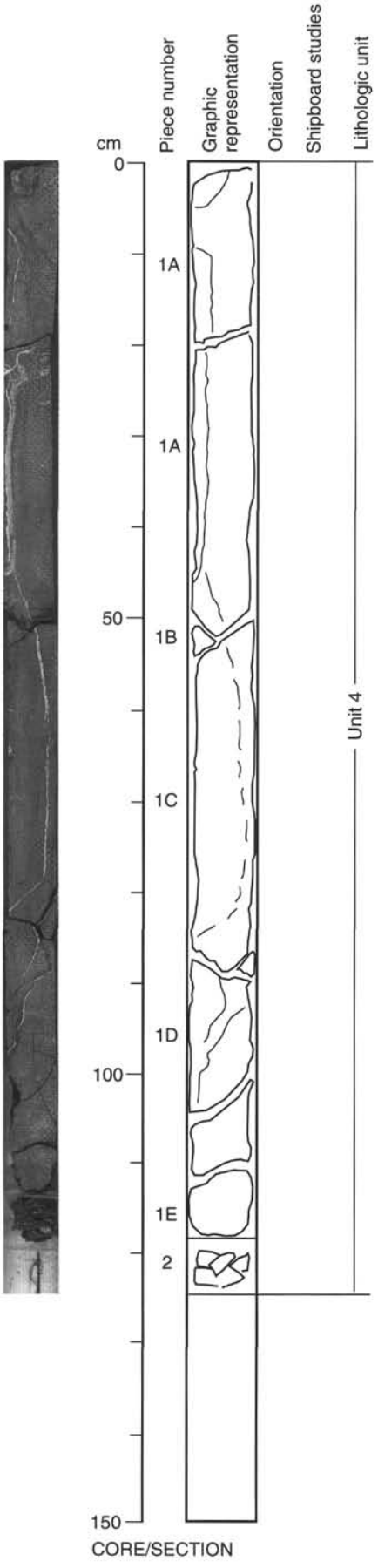
Pieces 1A, 1B, 1C

CONTACTS: Upper, gradational; lower, possibly sharp.
PHENOCRYSTS: Sparsely phyric.
Plagioclase - 1%; 1-2 mm; subhedral.
GROUNDMASS: Glassy to microcrystalline, basaltic.
VESICLES: 5%; 1 mm; spherical; homogeneous.
COLOR: 5G 4/1 (dark greenish gray for average rock); 10YR 4/2 (dark yellowish brown for large altered basalt clasts).
STRUCTURE: Angular to subangular altered basalt clasts with rinds alteration 2-3 mm thick. Average size 1-5 cm in diameter. Highly altered basaltic clasts up to 13 cm in length, vertically elongated, microcrystalline interior with glassy margins (possibly synchronous veins from massive flow below).
ALTERATION: High, margins may contain glass, interiors of clasts have chloritic material.
ADDITIONAL COMMENTS: Lower part gradational to breccia. Large altered basalt clasts have exteriors that exhibit a micro-pillowed structure with quenched margins. Calcite infilling in basal 12 cm of unit. Also calcite veins in 13-cm basalt clast.

UNIT 4: VESICULAR BASALT

Pieces 2, 3, 4

CONTACTS: Upper, possibly sharp.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: <40%; 2 mm; spherical; increases downcore. Some infilled with calcite, some have chlorite rims, majority are empty.
COLOR: N6, medium light gray.
STRUCTURE: Massive, with some joints.
ALTERATION: Moderate.
VEINS/FRACTURES: <1%; 1 mm; subvertical.
ADDITIONAL COMMENTS: Vesicularity is low in Piece 2 and increases downcore. Lithology of basalt is similar to that in the larger pieces of Unit 3.

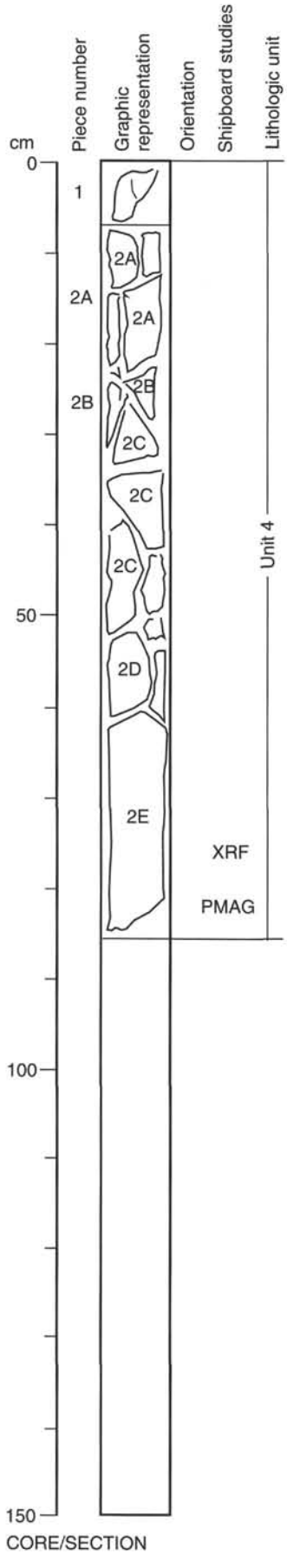


165-1001A-53R-1

UNIT 4: VESICULAR BASALT GRADING TO NON-VESICULAR BASALT

Pieces 1A, 1B, 1C, 1D, 1E, 2

CONTACTS: None in section.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: 10%; 1 mm; spherical; decreases downsection.
COLOR: N5, medium gray.
STRUCTURE: Massive with vertical jointing.
ALTERATION: Grading from moderately at top to slight at base of section.
VEINS/FRACTURES: 5 mm; vertical; bright red vein filling in Piece 1A, calcite occurs in other veins, chlorite(?).
ADDITIONAL COMMENTS: Grain size coarsens towards the base.



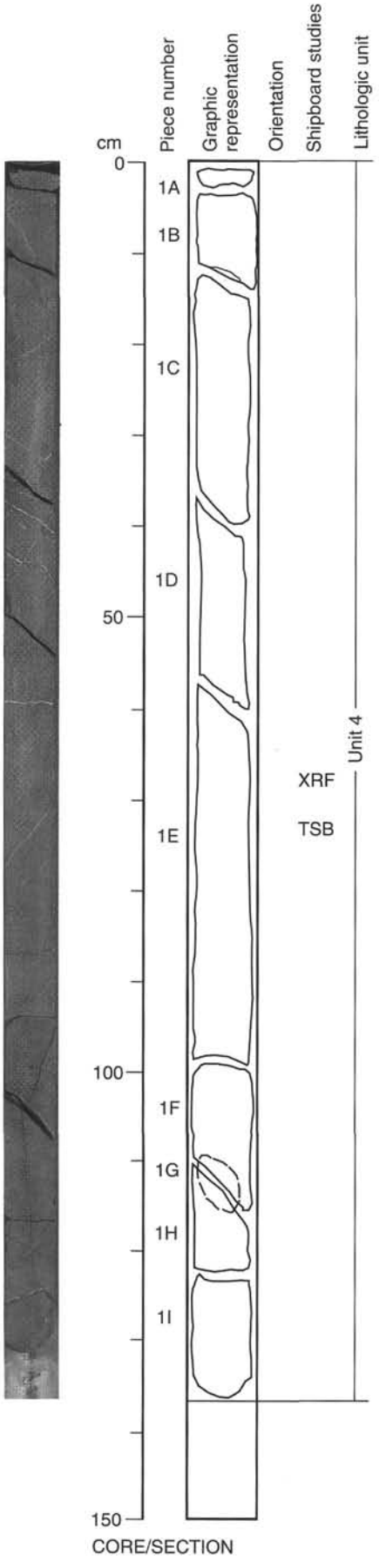
165-1001A-53R-2

UNIT 4: APHYRIC BASALT

Pieces 1, 2A, 2B, 2C, 2D, 2E

CONTACTS: None seen in section.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Fine- to medium-grain downcore, basaltic.
VESICLES: <1%; 1 mm; spherical; uniform. Chlorite-filled.
COLOR: N5, medium gray.
STRUCTURE: Massive with subvertical joints and fractures.
ALTERATION: Slight to moderate, more altered around veins.
VEINS/FRACTURES: <5%; 5 mm; subvertical; calcite and chlorite(?) fillings.

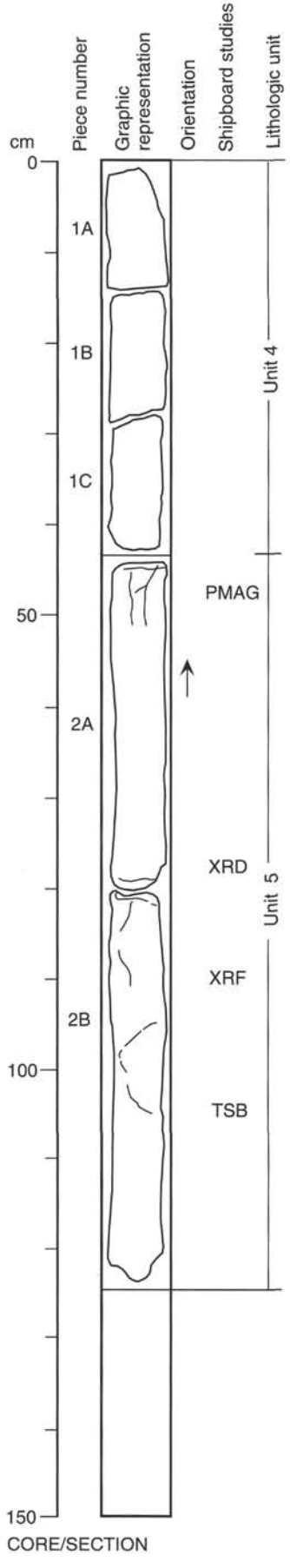
165-1001A-53R-3



UNIT 4: APHYRIC BASALT

Pieces 1A, 1B, 1C, 1D, 1E, 1F, 1G, 1H, 1I

CONTACTS: None seen in section.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Medium, basaltic.
VESICLES: 0%
COLOR: N5, medium gray.
STRUCTURE: Massive with some jointing.
ALTERATION: Slight.
VEINS/FRACTURES: <1%; 1-2 mm; subvertical.
ADDITIONAL COMMENTS: Calcite filling in veins.



165-1001A-53R-4

UNIT 4: APHYRIC BASALT

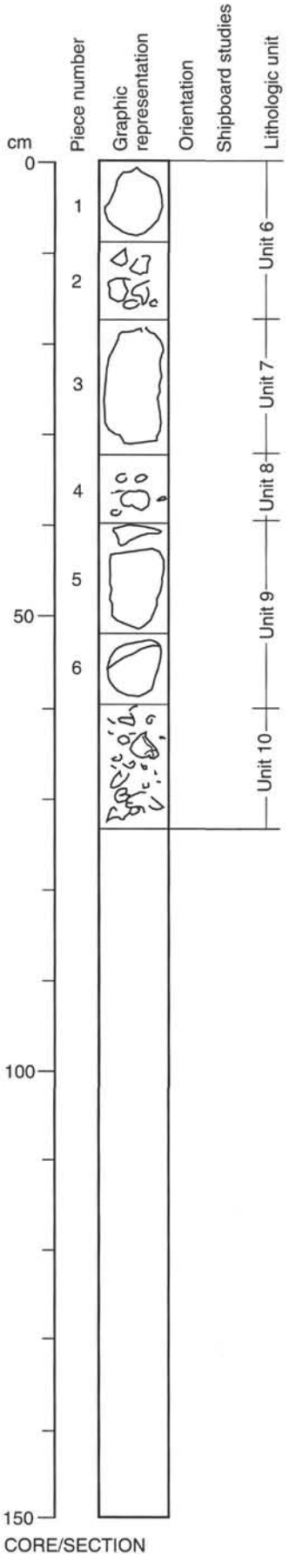
Pieces 1A, 1B, 1C

CONTACTS: Lower sharp.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Medium- to fine- grained at base, basaltic.
VESICLES: <1%; 1 mm; spherical; at base. Chlorite and calcite filled.
COLOR: N6, medium light gray.
STRUCTURE: Massive with subvertical jointing.
ALTERATION: Moderate.
VEINS/FRACTURES: <5%; 2 mm; subvertical; chlorite and calcite.

UNIT 5: SPARSELY PLAGIOCLASE-PHYRIC BASALT

Pieces 2A, 2B

CONTACTS: Upper sharp.
PHENOCRYSTS: Sparsely phyric.
Plagioclase - 2%; 2 mm; subhedral.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: 30%; 2 mm; spherical; in Piece 2A. Filled with calcite and chlorite.
COLOR: N6, medium light gray.
STRUCTURE: Massive with some jointing.
ALTERATION: Moderate.
VEINS/FRACTURES: 5%; 4 mm; subvertical.
ADDITIONAL COMMENTS: 5 mm glassy selvage on top of Piece 2A. 1-cm (carbonate?) vein between Pieces 2A and 2B.



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UNIT 6: BASALT BRECCIA

Pieces 1, 2

CONTACTS: None.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Fine, basaltic.
VESICLES: 10%; 3 mm; spherical; uniform. Filled with calcite.
COLOR: 5YR 4/1, brownish gray.
STRUCTURE: Fractured.
ALTERATION: Moderate.
VEINS/FRACTURES: 5%; 1 mm; random.
ADDITIONAL COMMENTS: Basaltic and glass clasts.

UNIT 7: SPARSELY PLAGIOCLASE-PHYRIC BASALT

Piece 3

CONTACTS: None seen.
PHENOCRYSTS: Plagioclase - 1%; 4 mm; euhedral.
GROUNDMASS: Fine, basaltic.
VESICLES: 5%; 3 mm; subround; upper part.
COLOR: 5YR 4/1, brownish gray.
STRUCTURE: Massive, jointed.
ALTERATION: Moderate.
VEINS/FRACTURES: 3%; 2 mm; random; calcite cement.
ADDITIONAL COMMENTS: Pillow lava fragment(?).

UNIT 8: BASALT BRECCIA

Piece 4

CONTACTS: None.
PHENOCRYSTS: Plagioclase - 2%; 3 mm.
VESICLES: 2%; 1 mm; spherical; random.
COLOR: N4, medium dark gray.
STRUCTURE: Fractured.
ALTERATION: Moderate.

UNIT 9: SPARSELY PLAGIOCLASE-PHYRIC BASALT

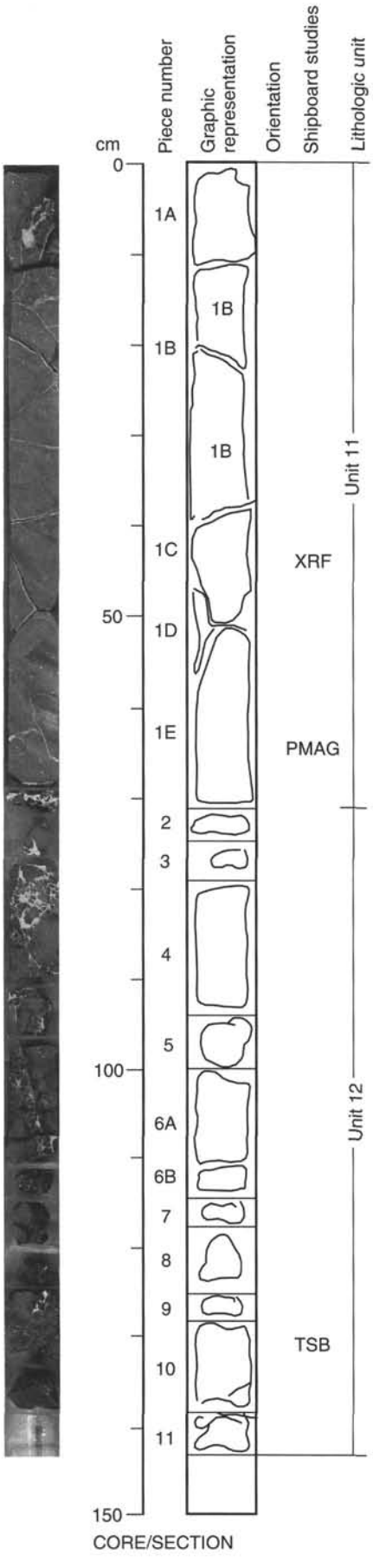
Pieces 5, 6

CONTACTS: None seen.
PHENOCRYSTS: Plagioclase - 1%; 3 mm; euhedral.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: 5%; 1 mm; round; uniform.
COLOR: N5, medium gray.
STRUCTURE: Massive.
ALTERATION: Moderate.
VEINS/FRACTURES: 2%; 1 mm; calcite infilling.
ADDITIONAL COMMENTS: Pillow lava fragments. Top of Piece 5 has glassy chilled margin.

UNIT 10: BASALT BRECCIA

Pieces Core Catcher

CONTACTS: None.
PHENOCRYSTS: None seen.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: Non-vesicular(?).
COLOR: N4, medium gray.
STRUCTURE: Fractured.
ALTERATION: Moderate.
ADDITIONAL COMMENTS: Rubble from core catcher.



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UNIT 11: SPARSELY PLAGIOCLASE-PHYRIC BASALT

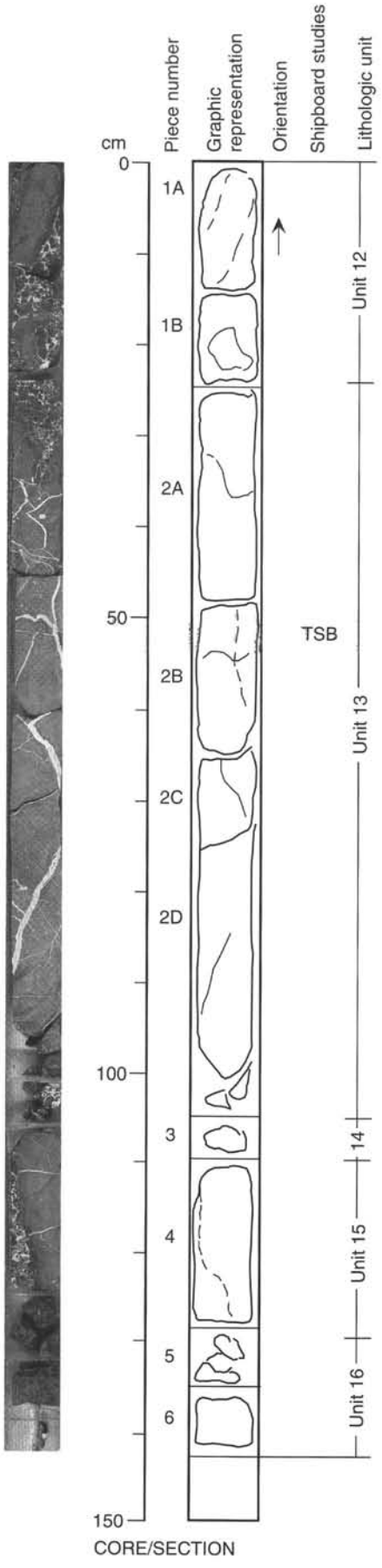
Pieces 1A, 1B, 1C, 1D, 1E

CONTACTS: Depositional at base; horizontal with glass.
PHENOCRYSTS: Plagioclase - 2%; 3 mm; euhedral.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: 3%; 1 mm; round; uniform. Calcite and chlorite infilling.
COLOR: N6, medium light gray.
STRUCTURE: Massive, jointed.
ALTERATION: Moderate.
VEINS/FRACTURES: 4%; 4 mm; random.
ADDITIONAL COMMENTS: Glassy contact at base, 3 mm thick. Glassy apophyses at top (Piece 1A). Larger and more abundant plagioclase phenocrysts at base.

UNIT 12: BASALTIC BRECCIA

Pieces 2 to 11

CONTACTS: None.
PHENOCRYSTS: Plagioclase - 2%; 3 mm; euhedral.
GROUNDMASS: Glassy/microcrystalline, basaltic.
VESICLES: 2%; 1 mm; spherical; uniform.
COLOR: N3, dark gray (glass); 10YR 4/2 dark yellowish brown (basalt; and N9, white (calcite infillings).
ALTERATION: Moderate.
VEINS/FRACTURES: None.
ADDITIONAL COMMENTS: Basaltic hyaloclastite breccia with brown veins of basalt in glassy clastic matrix. Vugs filled by calcite, up to 1 cm wide. Some infilling is carbonate sediment in Piece 4 and in Piece 5.



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UNIT 12: BASALT BRECCIA

Pieces 1A, 1B

PHENOCRYSTS: Plagioclase - 4%; 3 mm; euhedral.
GROUNDMASS: Glassy/microcrystalline, basaltic.
VESICLES: 1%; 1 mm; spherical; uniform.
COLOR: 5G 4/1 for glass; 10YR 4/2 for basalt.
STRUCTURE: Polymict, massive breccia.
ALTERATION: Moderate.
VEINS/FRACTURES: None.
ADDITIONAL COMMENTS: 12-cm veins of basalt, brown, in hyaloclastite breccia with calcite infilling in vugs and carbonate sediment.

UNIT 13: BASALT LAVA

Pieces 2A, 2B, 2C, 2D

CONTACTS: Irregular contact with overlying breccia of unit 12, in Piece 2a. Basal contact glassy, chilled, horizontal.
PHENOCRYSTS: Plagioclase - 4%; 3 mm; euhedral.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: 2%; 1 mm; spherical; uniform.
COLOR: N6, medium light gray.
STRUCTURE: Massive, jointed.
ALTERATION: Moderate.
VEINS/FRACTURES: 5%; 8 mm; subvertical.
ADDITIONAL COMMENTS: Top of flow has apophyses into overlying breccia, with glassy rinds.

UNIT 14: BASALTIC LAPILLI

Piece 3

CONTACTS: None.
PHENOCRYSTS: Plagioclase - 1%; 2 mm; euhedral.
GROUNDMASS: Glassy, basaltic.
VESICLES: 0%; Non-vesicular.
COLOR: N3, dark gray.
STRUCTURE: Massive.
ALTERATION: Moderate.
VEINS/FRACTURES: None.
ADDITIONAL COMMENTS: Basalt glass, angular clasts in calcite and carbonate matrix.

UNIT 15: SPARSELY PLAGIOCLASE-PHYRIC BASALT

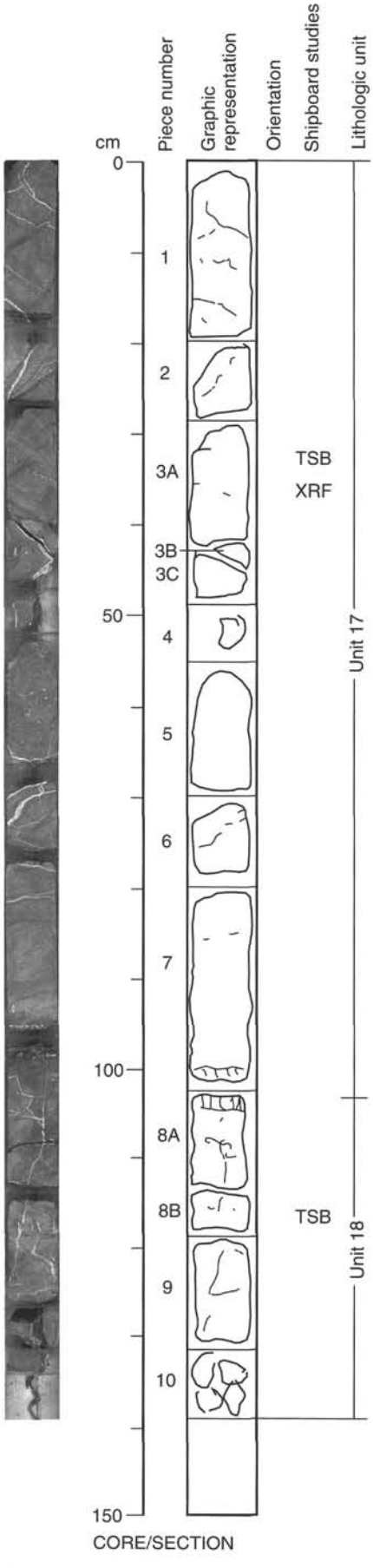
Piece 4

CONTACTS: Near-vertical contact with co-genetic breccia.
PHENOCRYSTS: Plagioclase - 2%; 2 mm; euhedral.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: 2%; 1 mm; spherical; uniform.
COLOR: 10YR 4/2, dark yellowish brown; N4, medium gray.
STRUCTURE: Massive, jointed, with breccia.
ALTERATION: Moderate.
VEINS/FRACTURES: 4%; 2 mm; horizontal
ADDITIONAL COMMENTS: Basalt grades laterally into hyaloclastite breccia.

UNIT 16: BASALTIC BRECCIA

Pieces 5, 6

CONTACTS: None.
PHENOCRYSTS: Plagioclase - 1%; 2 mm; euhedral.
GROUNDMASS: Glassy, basaltic.
VESICLES: Non-vesicular.
COLOR: 5GY 4/1, dark greenish gray.
STRUCTURE: Massive.
ALTERATION: Moderate.
VEINS/FRACTURES: None.



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UNIT 17: MODERATELY PLAGIOCLASE-PHYRIC BASALT

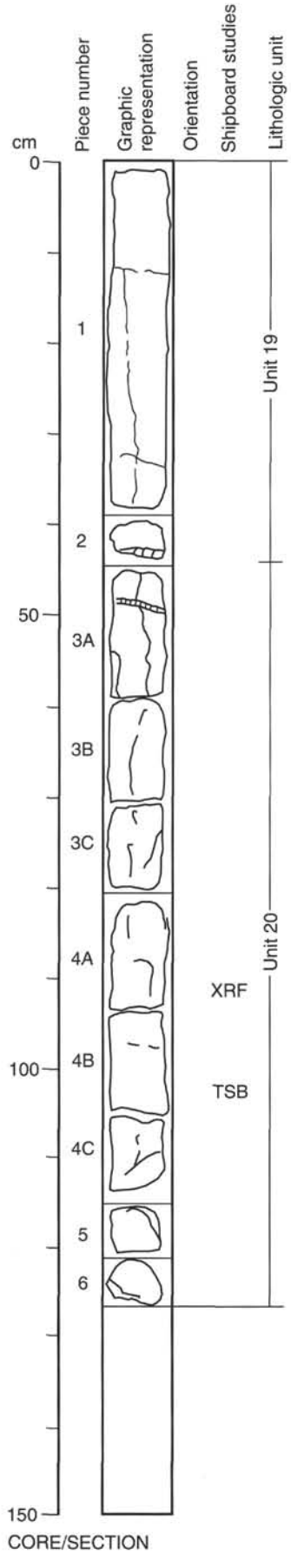
Pieces 1 to 7

CONTACTS: Basal contact is quenched glass, 6 mm, horizontal.
PHENOCRYSTS: Plagioclase - 10%; 6 mm; subhedral.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: 10%; 1 mm; spherical; uniform. Filled with calcite and chlorite.
COLOR: N5, medium gray.
STRUCTURE: Massive.
ALTERATION: Moderate.
VEINS/FRACTURES: 5%; 3 mm; subhorizontal.
ADDITIONAL COMMENTS: Plagioclase most abundant and largest in center of flow. These feldspars are up to 6 mm across and could be useful for Ar-Ar dating.

UNIT 18: SPARSELY PLAGIOCLASE-PHYRIC BASALT

Pieces 8A, 8B, 9, 10

CONTACTS: Top contact is horizontal, quenched glass, 1 cm wide.
PHENOCRYSTS: Plagioclase - 2%; 3 mm; euhedral.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: 2%; 1 mm; spherical; uniform.
COLOR: N5, medium gray.
STRUCTURE: Massive, jointed.
ALTERATION: Moderate.
VEINS/FRACTURES: 2%; 2 mm; random.
ADDITIONAL COMMENTS: Beautiful top contact, quenched.



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UNIT 19: APHYRIC BASALT

Pieces 1, 2

CONTACTS: Basal contact is horizontal, quenched, glass in base of Piece 2 with pipe vesicles.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: 2%; 1 mm; spherical; upper part.
COLOR: N5, medium gray.
STRUCTURE: Massive.
ALTERATION: Moderate.
VEINS/FRACTURES: 3%; 2 mm; vertical. Vein in upper part of Piece 1 has a green infilling mineral (epidote).
ADDITIONAL COMMENTS: Pipe vesicles at basal contact; good basal glass.

UNIT 20: APHYRIC BASALT

Pieces 3A, 3B, 3C, 4A, 4B, 4C, 5, 6

CONTACTS: Top contact is quenched glass; horizontal, 1 cm thick.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: 5%; 1-2 mm; spherical; upper part.
COLOR: N5, medium gray.
STRUCTURE: Massive.
ALTERATION: Moderate.
VEINS/FRACTURES: 4%; 3 mm; vertical.

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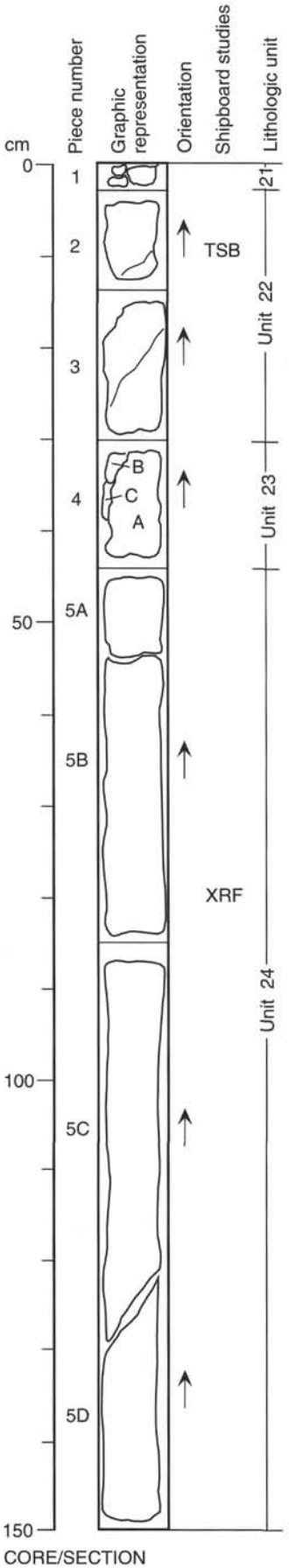


UNIT 21: BASALTIC LAPILLI

Piece 1

CONTACTS: None.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: Non-vesicular.
COLOR: 5G 4/1, dark greenish gray.
STRUCTURE: Hyaloclastite glass up to 0.5 cm. Total thickness 1.5 cm.
ALTERATION: Highly altered.
VEINS/FRACTURES: 10%; 3 mm; horizontal; calcite.

UNIT 22: APHYRIC BASALT

Pieces 2, 3

CONTACTS: Upper not seen. Lower, possibly sharp with main glassy selvage at base.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: 10%; 1 mm; round; uniform.
COLOR: N6, medium light gray.
STRUCTURE: Massive.
ALTERATION: Moderate.
VEINS/FRACTURES: <5%; 4 mm; subvertical.
ADDITIONAL COMMENTS: Some elongate vesicles at base of unit in Piece 2: wedge shaped area, graded from top of greenish sediments(?) with small clasts up to 1 mm across into white chalk(?) Some signs of lamination in chalk.

UNIT 23: APHYRIC BASALT

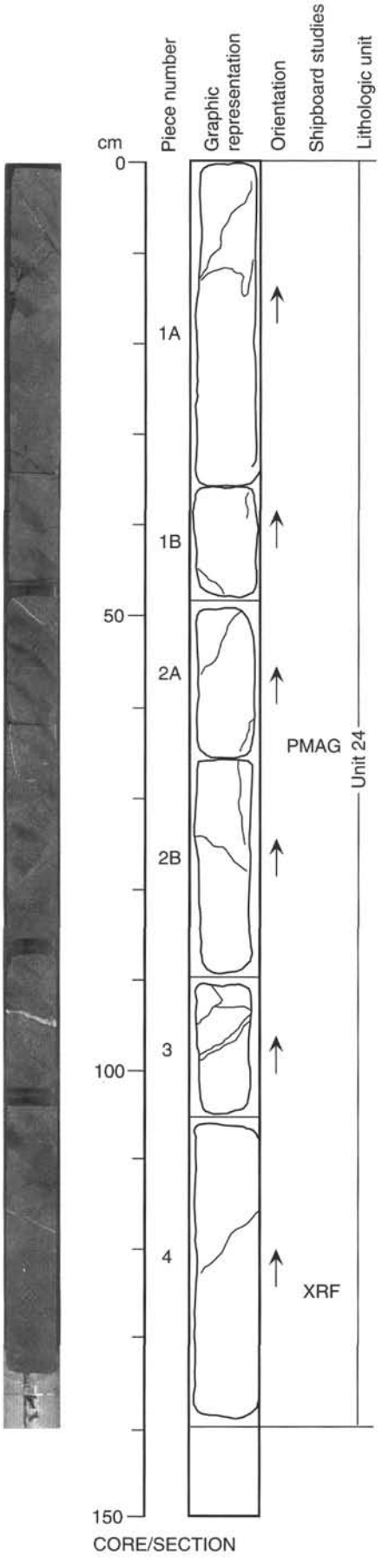
Piece 4

CONTACTS: Neither upper or lower contact seen.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: 10%; up to 1 mm; spherical; uniform.
COLOR: N6, medium light gray.
STRUCTURE: Massive.
ALTERATION: Moderate.
VEINS/FRACTURES: <1%; <1 mm; irregular; Some epidote.

UNIT 24: SPARSELY PLAGIOCLASE-PHYRIC BASALT

Piece 5

CONTACTS: Upper sharp.
PHENOCRYSTS: Plagioclase - <2%; <1 mm; subhedral.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: 15%; 1 mm; spherical; decreases slightly downcore. Some altered sulfide infills(?)
COLOR: N6, medium light gray.
STRUCTURE: Massive.
ALTERATION: Moderate.
VEINS/FRACTURES: up to 4 mm; possibly altered sulfide vein fills.
ADDITIONAL COMMENTS: Upper contact - above is a 1-cm thick greenish sediment(?) with small, altered basalt clasts up to 1 mm across. Magnetic reversal found at upper contact.



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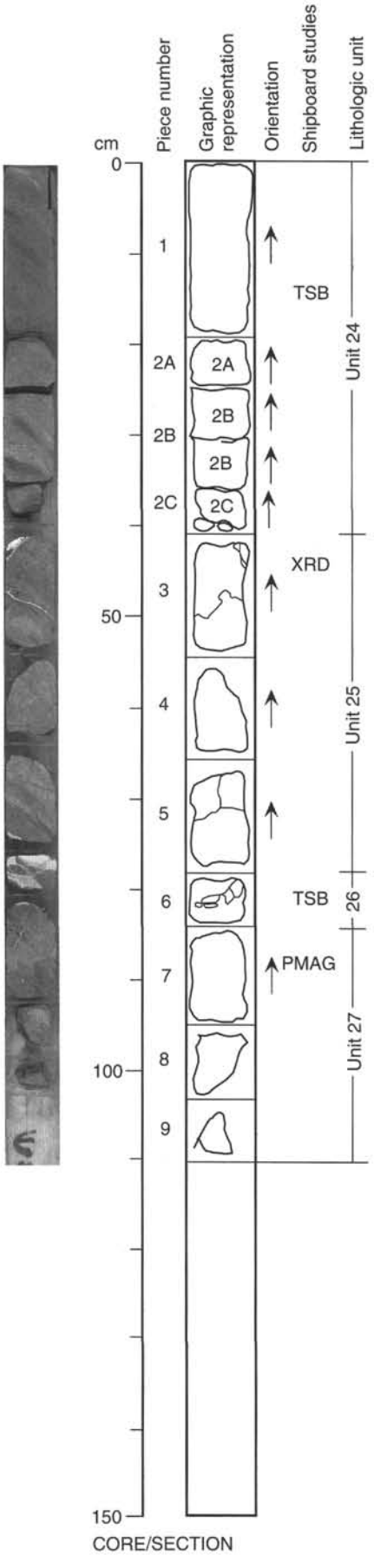
UNIT 24: SPARSELY PLAGIOCLASE-PYROXENE-PHYRIC BASALT

Pieces 1A, 1B, 2A, 2B, 3, 4

CONTACTS: Not seen in section.
PHENOCRYSTS: Some glomerocrysts.
Plagioclase - 1%; 1 mm; subhedral.
Pyroxene - 1%; up to 2 mm; subhedral.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: 10%; 1 mm; In Piece 4, vesicle content decreases abruptly ~1/2 way down to vesicle poor.
COLOR: N6, medium light gray.
STRUCTURE: Massive.
ALTERATION: Moderate.
VEINS/FRACTURES: <5%; 7 mm; subhorizontal to subvertical. Some altered sulfide(?)
ADDITIONAL COMMENTS: In Piece 4, groundmass grain size coarsens.



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UNIT 24: SPARSELY PLAGIOCLASE-PYROXENE-PHYRIC BASALT

Pieces 1, 2A, 2B, 2C

CONTACTS: Base in Piece 2C;some possible glassy selvage at base.
PHENOCRYSTS: Sparsely phyric.
Plagioclase - 1%; 1 mm; subhedral.
Pyroxene - 1%; up to 2 mm; subhedral.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: 2%; 1 mm; spherical; uniform.
COLOR: N6, medium light gray.
STRUCTURE: Massive.
ALTERATION: Moderate.
VEINS/FRACTURES: <1%; 1 mm; subhorizontal; calcite and altered sulfide(?)

UNIT 25: APHYRIC BASALT

Pieces 3, 4, 5

CONTACTS: None seen.
PHENOCRYSTS: Aphyric
GROUNDMASS: Fine-grained, basaltic.
VESICLES: to 10%; 2 mm; spherical; uniform.
COLOR: N6, medium light gray.
STRUCTURE: Massive.
ALTERATION: Moderate.
VEINS/FRACTURES: <5%; 1 to 10 mm; subhorizontal, subvertical; Vein contains layered sequence of carbonate, epidote(?) 5-mm thick bright orange-red globular aggregates. Well developed gray-green crystals up to 3 mm.

UNIT 26: BASALTIC LAPILLI WITH CARBONATE MATRIX

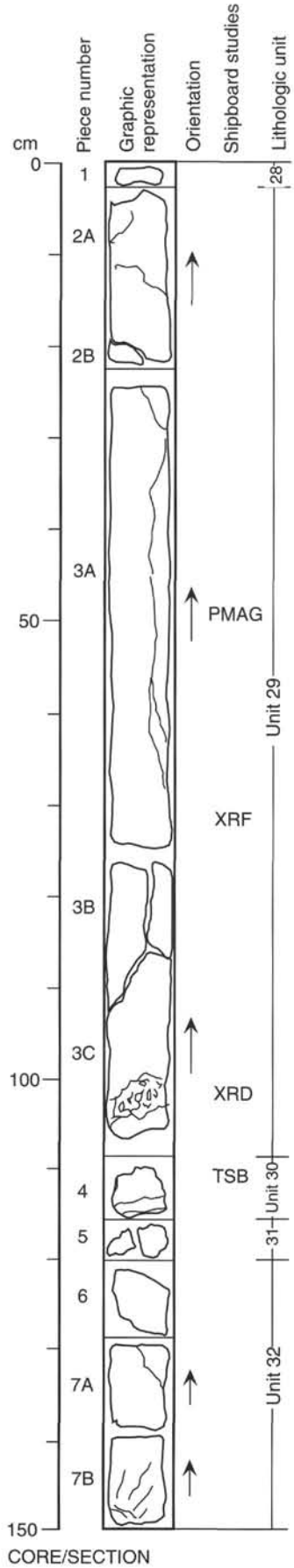
Piece 6

CONTACTS: None seen.
PHENOCRYSTS: Plagioclase - 1%; 1 mm; subhedral.
GROUNDMASS: Fine-grained (in clasts), basaltic.
VESICLES: <5%; 1 mm; spherical; uniform.
COLOR: Basalt clasts: N6, medium light gray.
STRUCTURE: Angular to subangular clasts of basalts up to 3 cm in length in matrix of carbonate.
ALTERATION: Moderate.
VEINS/FRACTURES: <1%; <1 mm; irregular; In clasts.
ADDITIONAL COMMENTS: Orientation arrow may be incorrect.

UNIT 27: SPARSELY PLAGIOCLASE-PHYRIC BASALT

Pieces 7, 8, 9

CONTACTS: Possible sharp upper contact with thin hyaloclastite lapilli.
PHENOCRYSTS: Plagioclase - 1%; to 1 mm; subhedral.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: 10%; to 1 mm; spherical; uniform.
COLOR: N6, medium light gray.
STRUCTURE: Massive.
ALTERATION: Moderate.
VEINS/FRACTURES: <5%; 2 mm; subvertical; calcite.



CORE/SECTION

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UNIT 28: BASALTIC LAPILLI

Piece 1

CONTACTS: Not seen.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: <5%; <1 mm; spherical; uniform.
COLOR: 5GY 4/1, dark greenish gray.
STRUCTURE: Altered basaltic hyaloclastite fragments up to 1 cm across. Clasts are angular in a carbonate matrix.
ALTERATION: High.
VEINS/FRACTURES: None.
ADDITIONAL COMMENTS: Some fragments have glassy margins.

UNIT 29: SPARSELY PLAGIOCLASE-PYROXENE-PHYRIC BASALT

Pieces 2A, 2B, 3A, 3B, 3C

CONTACTS: Upper not seen. Base sharp with possible glassy margins.
PHENOCRYSTS: Plagioclase - 2%; 2 mm; subhedral. Pyroxene - 1%; 2 mm; subhedral.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: to 10%; 1 mm; spherical; uniform. Vesicle content decreases down unit.
COLOR: N6, medium light gray.
STRUCTURE: Massive.
ALTERATION: Moderate.
VEINS/FRACTURES: <5%; to 4 mm; subvertical; serpentine and calcite.
ADDITIONAL COMMENTS: Base of Piece 3C, 3-cm thick zone containing angular basalt clasts in carbonate/chlorite(?) matrix up to 1 cm across. Possible chilled contacts of surrounding basalt. Vein contains well crystalline sheet silicate, vermiculite(?)

UNIT 30: SPARSELY PLAGIOCLASE-PHYRIC BASALT

Piece 4

CONTACTS: Not seen.
PHENOCRYSTS: Plagioclase - 1%; to 1 mm; subhedral.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: 5%; 1 mm; spherical; In band parallel to quenched margin
COLOR: N6 (medium light gray) to N1 (black) at margin
STRUCTURE: Massive with quenched glassy margin.
ALTERATION: Moderate.
VEINS/FRACTURES: <5%; <1 mm; vertical; calcite.
ADDITIONAL COMMENTS: Possibly part of pillow margin.

UNIT 31: APHYRIC BASALT

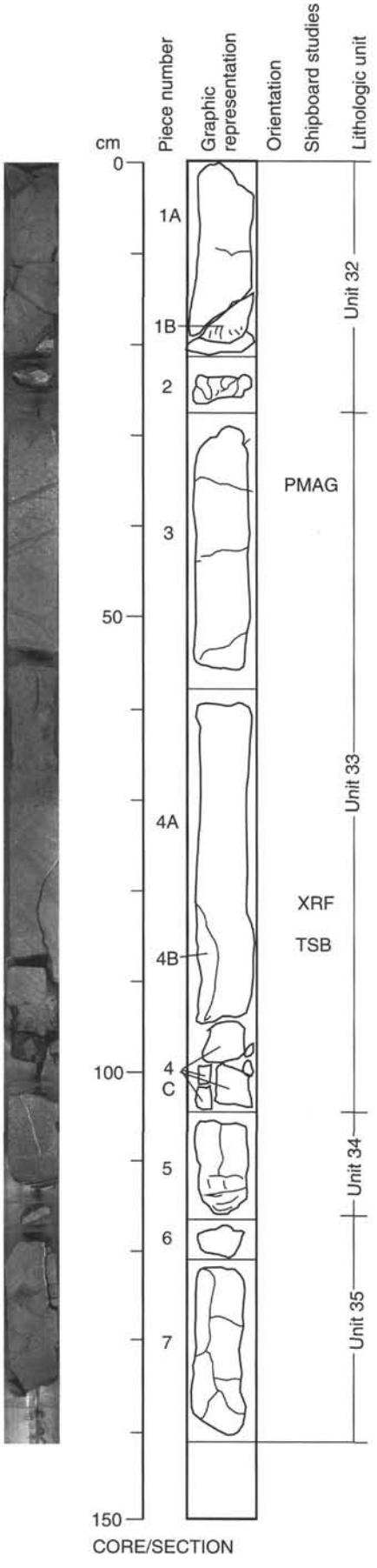
Piece 5

CONTACTS: None observed.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: 5%; 1 mm; spherical; uniform.
COLOR: 5Y 4/1, olive gray.
STRUCTURE: Massive.
ALTERATION: High.
VEINS/FRACTURES: 1%; <1 mm; irregular.

UNIT 32: SPARSELY PLAGIOCLASE-PHYRIC BASALT

Pieces 6, 7A, 7B

CONTACTS: Occasional pillow margins.
PHENOCRYSTS: Sparsely phyric. Plagioclase - 1%; 1 mm; subhedral.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: 10%; to 3 mm; most spherical, some elongate; patchy.
COLOR: N6 (medium light gray) to 5G 2/1 (greenish black) at quenched margins
STRUCTURE: Massive with chilled margins in Pieces 6 and 7B.
ALTERATION: Moderate.
VEINS/FRACTURES: <5%; <1 mm; possible radial orientation at pillow margins; some vertical.
ADDITIONAL COMMENTS: Pillow lava fragments.



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UNIT 32: SPARSELY PLAGIOCLASE-PHYRIC BASALT

Pieces 1A, 1B, 2

CONTACTS: Base of Piece 1B is a glassy margin, curved downwards.
PHENOCRYSTS: Sparsely.
Plagioclase - 1%; 1 mm; subhedral.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: <10%; to 1 mm; spherical, some elongate; in band parallel to quenched margin.
COLOR: N6 (medium light gray) to N3 (dark gray) on quenched margin.
STRUCTURE: Massive, with curved, quenched margins. Some hint of radial jointing. Alteration appears concentric with margin.
ALTERATION: Moderate.
VEINS/FRACTURES: <5%; <1 mm; radial to quenched margin.
ADDITIONAL COMMENTS: Possible pillow fragments. Quenched margin has glassy hyaloclastite fragments with carbonate matrix.

UNIT 33: MODERATELY PLAGIOCLASE-PYROXENE-PHYRIC BASALT

Pieces 3, 4A, 4B, 4C

CONTACTS: Upper contact sharp, subhorizontal quenched margin. Base sharp with thin quenched margin.
PHENOCRYSTS: Moderately phyric.
Plagioclase - 3%; to 3 mm; subhedral.
Pyroxene - 1%; to 1 mm; subhedral.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: to 10%; to 2 mm; spherical; decreases downcore. Varies from 10% at top, decreases downcore.
COLOR: N7 (light gray) to N6 (medium light gray)
STRUCTURE: Massive.
ALTERATION: Variable, moderate to high.
VEINS/FRACTURES: <5%; 1 mm; subvertical; some calcite, dark red mineral and serpentine(?)

UNIT 34: APHYRIC BASALT

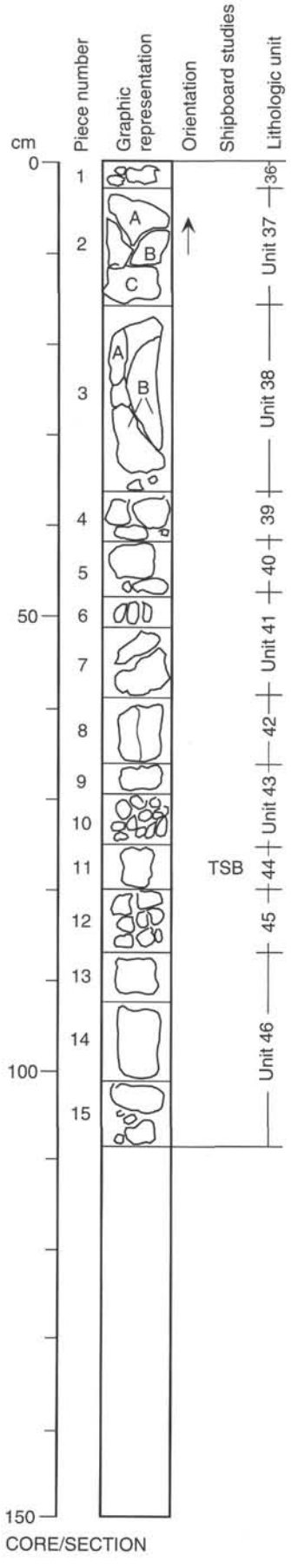
Piece 5

CONTACTS: Upper not seen. Lower possibly sharp with quenched margin.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: <10%; to 2 mm; spherical; see comments. Spherical vesicles decrease to quenched margin.
COLOR: N6 (medium light gray) to 5Y 6/1 (light olive gray).
STRUCTURE: Massive with quenched glassy base.
ALTERATION: Moderate to high.
VEINS/FRACTURES: <5%; to 2 mm; subvertical; veins and fractures appear to emanate radially from quenched margin.
ADDITIONAL COMMENTS: Good glass on quenched margin.

UNIT 35: SPARSELY PLAGIOCLASE-PHYRIC BASALT

Pieces 6, 7

CONTACTS: Upper not seen. Lower subhorizontal, possibly sharp with quenched margin.
PHENOCRYSTS: Sparsely phyric.
Plagioclase - 1%; to 2 mm; subhedral.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: <5%; 1 mm; spherical; see comments. Spherical vesicles concentrated at top and elongated ones at base.
COLOR: N7, light gray.
STRUCTURE: Massive, with subhorizontal quenched base.
ALTERATION: Moderate.
VEINS/FRACTURES: <5%; 2 mm; anastomosing.
ADDITIONAL COMMENTS: Possibly a pillow fragment.



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UNIT 36: APHYRIC BASALT

Piece 1

CONTACTS: None seen.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: <5%; 1 mm; spherical; uniform.
COLOR: 5GY 2/1, greenish black.
STRUCTURE: Massive. Numerous small chips up to 1 cm across.
ALTERATION: High.
VEINS/FRACTURES: None.

UNIT 37: SPARSELY PLAGIOCLASE-PHYRIC BASALT

Pieces 2A, 2B, 2C

CONTACTS: Upper contact not observed. Lower contact has thin quenched margin, may be sharp.
PHENOCRYSTS: Sparsely phyric.
Plagioclase - 2%; 2 mm; subhedral.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: 5%; <2 mm; spherical; concentrated towards top. Some elongate vesicles near quenched margin.
COLOR: N5, medium gray.
STRUCTURE: Massive, with fine-grained quenched base.
ALTERATION: Moderate.
VEINS/FRACTURES: <1 mm; subhorizontal.
ADDITIONAL COMMENTS: Possibly part of a larger pillow fragment.

UNIT 38: SPARSELY PLAGIOCLASE-PHYRIC BASALT

Pieces 3A, 3B

CONTACTS: Not seen in section.
PHENOCRYSTS: Sparsely phyric.
Plagioclase - 1%; 2 mm; subhedral.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: 2%; 1 mm; spherical; concentrated at top and base.
COLOR: N6, medium light gray.
STRUCTURE: Massive.
ALTERATION: Moderate.
VEINS/FRACTURES: <2%; 2 mm; subvertical

UNIT 39: APHYRIC BASALT

Piece 4

CONTACTS: Not observed, broken pieces.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: <2%; 1 mm; spherical; uniform.
COLOR: 5GY 2/1, greenish black.
STRUCTURE: Collection of small broken pieces of massive basalts with some veining.
ALTERATION: High.
VEINS/FRACTURES: <10%; 3 mm; random.

165-1001A-55R-3 (continued)

UNIT 40: APHYRIC BASALT

Piece 5

CONTACTS: Not observed, broken pieces.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: <5%; 1 mm; spherical.
COLOR: N6, medium light gray.
STRUCTURE: Massive.
ALTERATION: Moderate.
VEINS/FRACTURES: <1%; <1 mm; random.
ADDITIONAL COMMENTS: Three small pieces of basalt.

UNIT 41: APHYRIC BASALT

Pieces 6, 7

CONTACTS: Not observed, broken pieces.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: <5%; 1 mm; spherical.
COLOR: N6, medium light gray.
STRUCTURE: Massive.
ALTERATION: Moderate.
VEINS/FRACTURES: <1%; <1 mm; random.
ADDITIONAL COMMENTS: 3 small pieces of basalt.

UNIT 42: APHYRIC BASALT

Piece 8

CONTACTS: One broken piece, no contacts observed.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: <5%; 2 mm; spherical; random.
COLOR: N6, medium light gray.
STRUCTURE: Massive.
ALTERATION: Moderate.
VEINS/FRACTURES: None.

UNIT 43: APHYRIC BASALT

Pieces 9, 10

CONTACTS: Not seen, broken pieces.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: 2%; 1 mm; spherical; random.
COLOR: 5Y 4/1, olive gray.
STRUCTURE: Massive.
ALTERATION: High.
VEINS/FRACTURES: None observed.

165-1001A-55R-3 (continued)

UNIT 44: APHYRIC BASALT

Piece 11

CONTACTS: Not seen in section, broken piece.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: 2%; 1 mm; spherical; random.
COLOR: N6, medium light gray.
STRUCTURE: Massive.
ALTERATION: Slight to moderate.
VEINS/FRACTURES: None observed.

UNIT 45: APHYRIC BASALT

Piece 12

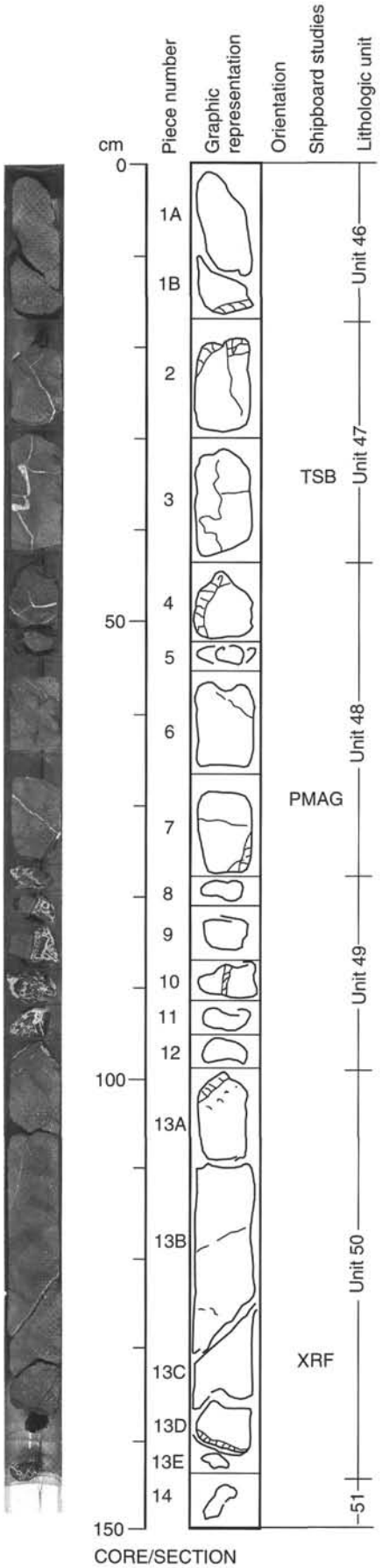
CONTACTS: Not observed in section, broken pieces.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: <2%; 1 mm; spherical; random.
COLOR: N5, medium gray.
STRUCTURE: Massive, numerous small pieces.
ALTERATION: Moderate.
VEINS/FRACTURES: <1%; <1 mm; random

UNIT 46: SPARSELY PLAGIOCLASE-PHYRIC BASALT

Pieces 13, 14, 15

CONTACTS: Not seen in section, broken upper pieces.
PHENOCRYSTS: Sparsely phyric.
Plagioclase - 1%; 2 mm; subhedral.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: 3%; 1 mm; spherical; uniform.
COLOR: N6, medium gray.
STRUCTURE: Massive.
ALTERATION: Slight to moderate.
VEINS/FRACTURES: None observed.

165-1001A-56R-1



UNIT 46: SPARSELY PLAGIOCLASE-PHYRIC BASALT

Pieces 1A, 1B

CONTACTS: Chilled basal contact, subhorizontal, with glass rind.
PHENOCRYSTS: Plagioclase - 2%; 2 mm; euhedral.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: 3%; 1 mm; spherical; uniform.
COLOR: N6, medium light gray.
STRUCTURE: Massive, jointed.
ALTERATION: Moderate.
VEINS/FRACTURES: 2%; 1 mm; oblique.
ADDITIONAL COMMENTS: Base of unit from Section 55R-3.

UNIT 47: SPARSELY PLAGIOCLASE-PHYRIC BASALT

Pieces 2, 3

CONTACTS: Chilled top contact, 6 mm glass selvage, subhorizontal.
PHENOCRYSTS: Plagioclase - 1%; 2 mm; euhedral.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: 4%; <2 mm; spherical; upper part; some filled with calcite, some with chlorite lining.
COLOR: N5, medium gray.
STRUCTURE: Massive, jointed.
ALTERATION: Moderate.
VEINS/FRACTURES: 7%; 4 mm; vertical; calcite veins.
ADDITIONAL COMMENTS: Pillow fragment(?).

UNIT 48: SPARSELY PLAGIOCLASE-PHYRIC BASALT

Pieces 4, 5, 6, 7

CONTACTS: Top and basal contacts are oblique and with quenched glass rinds 4-10 cm thick.
PHENOCRYSTS: Plagioclase - 1%; 1 mm; euhedral.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: 5%; 2 mm; spherical; uniform. Filled with calcite or lined with chlorite.
COLOR: N5, medium gray.
STRUCTURE: Massive.
ALTERATION: Moderate.
VEINS/FRACTURES: 4%; 3 mm; subhorizontal; calcite filled.
ADDITIONAL COMMENTS: Pillow lava fragment. Some pipe vesicles near basal contact.

UNIT 49: BASALTIC BRECCIA

Pieces 8, 9, 10, 11, 12

CONTACTS: None.
PHENOCRYSTS: None.
GROUNDMASS: Glassy, basaltic.
VESICLES: 0%; Non-vesicular.
COLOR: 5YR 6/1 for basalt clasts; N9 for calcite (white); 5GY 2/1 for glass.
STRUCTURE: Clasts of angular basalt and glass surrounded by calcite infillings.
ALTERATION: Moderate.
VEINS/FRACTURES: None.
ADDITIONAL COMMENTS: 1-2 cm size angular glass clasts are elongate, surrounded by white calcite cements. Vugs partly filled by euhedral calcite crystals.

UNIT 50: SPARSELY PLAGIOCLASE-PHYRIC BASALT

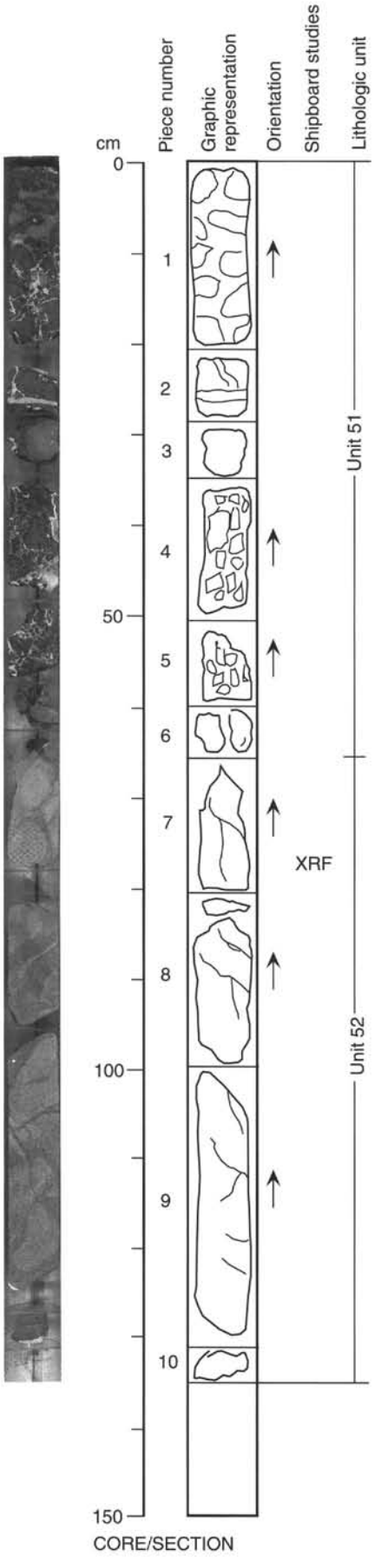
Pieces 13A, 13B, 13C, 13D, 13E

CONTACTS: Top and basal contacts chilled glass, subhorizontal, 1-2 cm thick.
PHENOCRYSTS: Plagioclase - <1%; 1 mm; euhedral.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: 4%; 1 mm; spherical; upper part.
COLOR: N5, medium gray.
STRUCTURE: Massive, jointed.
ALTERATION: Moderate.
VEINS/FRACTURES: 5%; 5 mm; subvertical.
ADDITIONAL COMMENTS: Some pipe vesicle trains near top and base. Pillow basalt; single pillow(?).

UNIT 51: BASALT BRECCIA

Piece 14

CONTACTS: None.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Glassy, basaltic.
VESICLES: Non-vesicular.
COLOR: 5GY 2/1, greenish black.
STRUCTURE: Glass clasts in calcite matrix.
ALTERATION: Moderate.
VEINS/FRACTURES: None.
ADDITIONAL COMMENTS: Glass clasts, 2-cm diameter, with calcite infilling between clasts.



165-1001A-56R-2

UNIT 51: BASALTIC BRECCIA

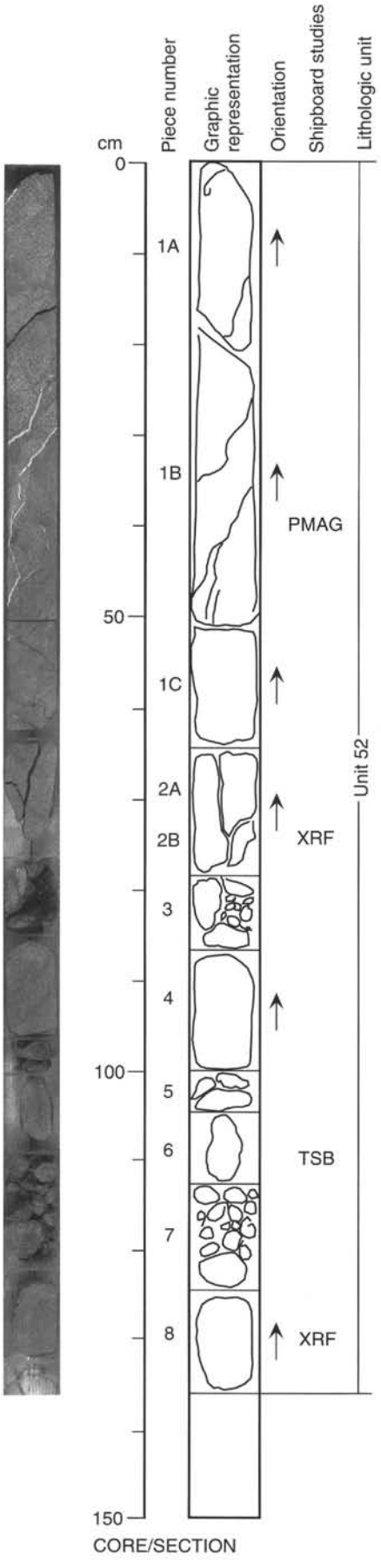
Pieces 1, 2, 3, 4, 5, 6

CONTACTS: None.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Glassy, basaltic.
VESICLES: Non-vesicular.
COLOR: 5YR 2/1, brownish black basalt clasts. 5GY 2/1, greenish black glass clasts.
ALTERATION: Moderate to minor.
VEINS/FRACTURES: None.
ADDITIONAL COMMENTS: 2-6 cm angular basalt clasts, brownish interior, with glassy rinds. Also glass clasts in matrix, with carbonate matrix and calcite infilling vugs. Carbonate matrix is reddish brown stained in upper part of section. Fresh glass.

UNIT 52: APHYRIC BASALT

Pieces 7, 8 ,9 ,10

CONTACTS: None.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: 2%; 1 mm; spherical; upper part. Calcite filling and chlorite lining.
COLOR: N6, medium light gray.
STRUCTURE: Massive, jointed.
ALTERATION: Moderate.
VEINS/FRACTURES: 2%; 1 mm; subvertical.
ADDITIONAL COMMENTS: Grades in grain size from microcrystalline top to fine-grained base.

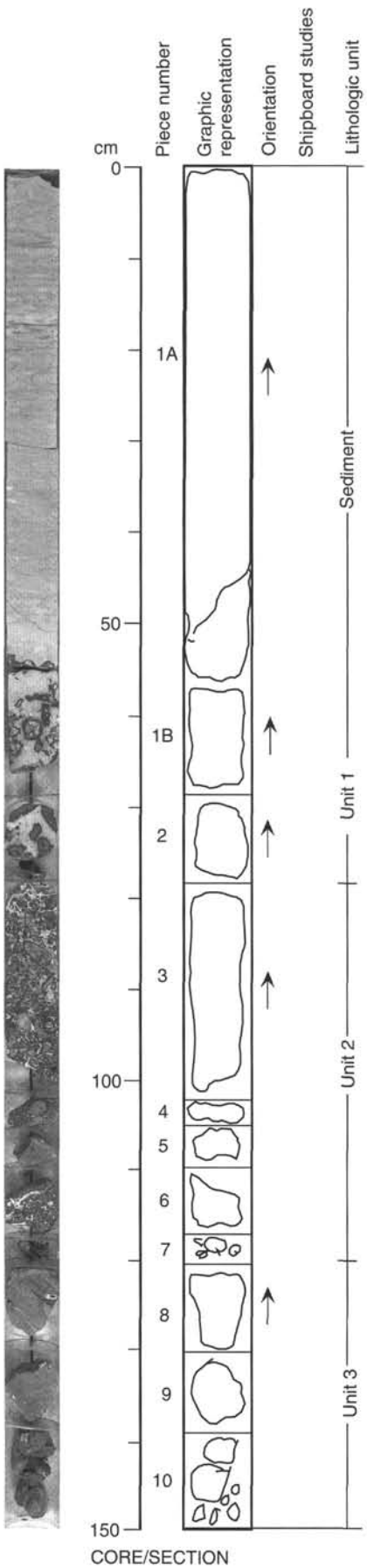


165-1001A-56R-3

UNIT 52: APHYRIC BASALT

Pieces 1A, 1B, 1C, 2A, 2B, 3, 4, 5, 6, 7, 8

CONTACTS: None.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Fine-grained, basaltic.
VESICLES: 2%; 1 mm; spherical; upper part; chlorite lining, minor calcite infilling near top.
COLOR: N5, medium gray.
STRUCTURE: Massive.
ALTERATION: Moderate.
VEINS/FRACTURES: 2%; 3 mm; subvertical.
ADDITIONAL COMMENTS: Grain size increases downwards, vesicles decrease downwards.



165-1001B-32R-6

UNIT 1: ALTERED BASALT CLASTS IN LIMESTONE

Pieces 1B, 2

CONTACTS: Gradational upper and lower.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Glassy to microcrystalline.
VESICLES: 1%; <1 mm; spherical; interior. Small vesicles are present in the interiors of the clasts.
COLOR: 5G 6/1, greenish gray (limestone), 5GY, greenish black (clasts).
STRUCTURE: Angular to subangular clasts of basalt with altered glassy margins supported in a matrix of greenish limestone. Clasts are up to 2.8 cm in diameter. Many clasts have concave curvilinear boundaries.
ALTERATION: High, margins may contain glass, interiors altered to chloritic material.
VEINS/FRACTURES: <2%; <1 mm; subvertical; probably carbonate.

UNIT 2: ALTERED BASALT CLASTS WITH CALCITE INFILLINGS

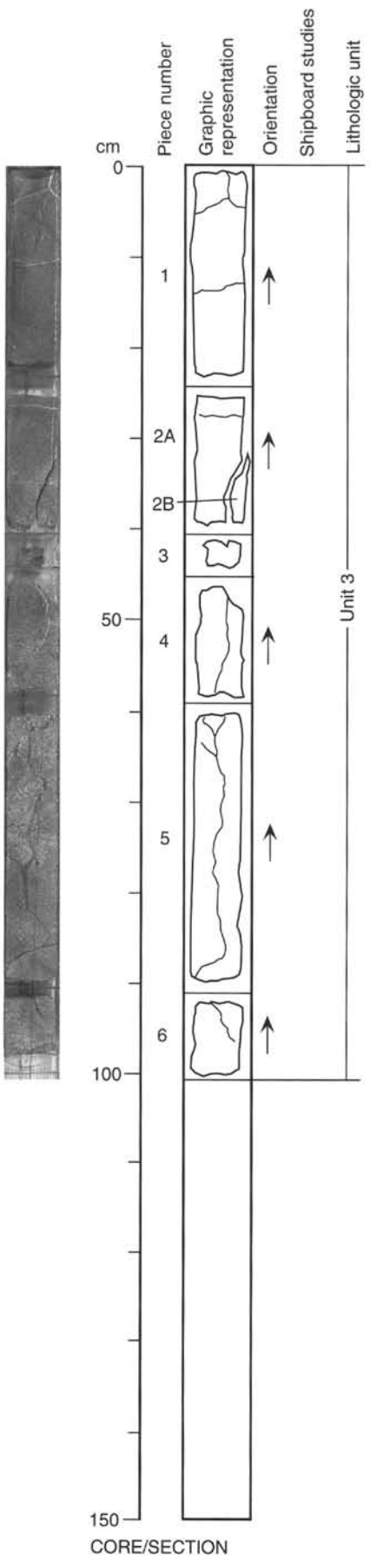
Pieces 3, 4, 5, 6, 7

CONTACTS: Upper gradational, lower sharp.
PHENOCRYSTS: Aphyric.
GROUNDMASS: Glassy to microcrystalline.
VESICLES: 1%; <1 mm; spherical; interior.
COLOR: 5BG 4/1 (altered clasts) dark greenish gray.
STRUCTURE: Angular to subangular altered basalt clasts with calcite infilling. Clasts have concave curvilinear boundaries with some sharp edges.
ALTERATION: High, margins may contain glass, interior altered to chlorite.
VEINS/FRACTURES: <5%; 2 mm; subhorizontal; calcite.
ADDITIONAL COMMENTS: Pore space between basaltic clasts decreases downcore. Maximum clast size is up to 3 cm in length.

UNIT 3: SPARSELY PLAGIOCLASE-PHYRIC BASALT

Pieces 8, 9, 10

CONTACTS: Not seen in section.
PHENOCRYSTS: Plagioclase - 2%; 1 mm; subhedral to euhedral.
GROUNDMASS: Fine-grained basaltic.
VESICLES: 15%; 1 mm; spherical; concentrated near middle and base of section; vesicle size increases slightly downcore. Miaroles: concentrated near middle and base of section, vesicle size increases.
COLOR: N6 medium light to gray.
STRUCTURE: Massive.
ALTERATION: slight to moderate, vesicles filled with calcite
VEINS/FRACTURES: 5%; 4 mm; subvertical; predominantly calcite.



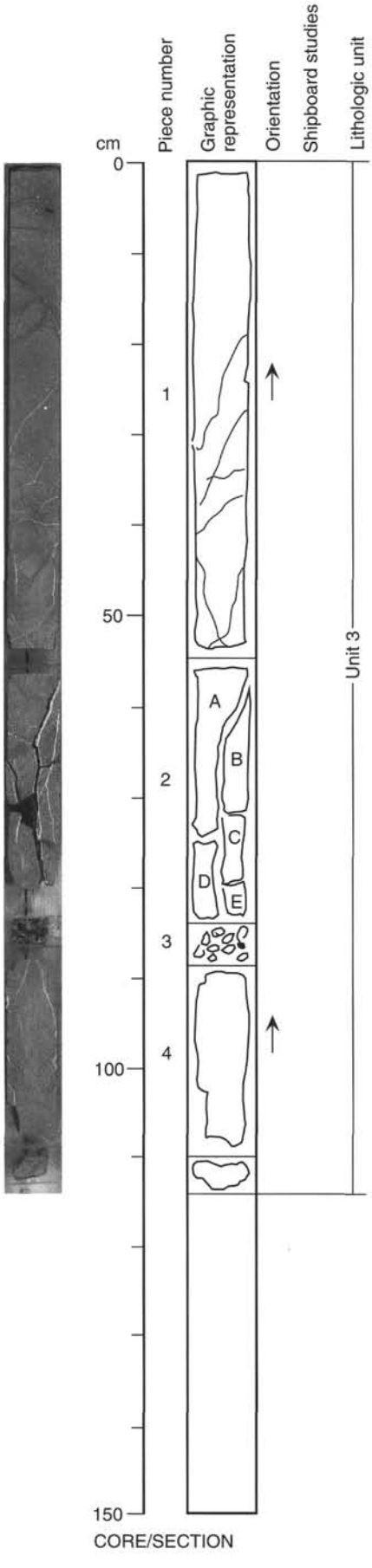
165-1001B-32R-7

UNIT 3: SPARSELY PLAGIOCLASE-PHYRIC BASALT

Pieces 1, 2A, 2B, 3, 4, 5, 6

CONTACTS: Not seen in section.
PHENOCRYSTS: Plagioclase - 2%; 1 mm; subhedral to euhedral.
GROUNDMASS: Fine-grained basaltic.
VESICLES: 15%; 1 mm; spherical; concentrated near middle and base of section; vesicle size increases slightly downcore. Miaroles: concentrated near middle and base of section, vesicle size increases.
COLOR: N6 medium light to gray.
STRUCTURE: Massive.
ALTERATION: slight to moderate, vesicles filled with calcite.
VEINS/FRACTURES: 5%; 4 mm; subvertical; predominantly calcite.

165-1001B-32R-8



UNIT 3: SPARSELY PHYRIC BASALT

Pieces 1, 2A, 2B, 2C, 2D, 2E, 3, 4

CONTACTS: Upper not seen in core.
PHENOCRYSTS: Plagioclase - 2%; 1 mm; subhedral to euhedral.
GROUNDMASS: Fine-grained basaltic.
VESICLES: 10%; 1 mm; spherical; decreases down core; some vesicles up to 0.5 cm in diameter.
COLOR: N6 - medium to light gray.
STRUCTURE: Massive.
VEINS/FRACTURES: 5%; 4 mm; subvertical.
ADDITIONAL COMMENTS: Vesicle content decreases downcore.