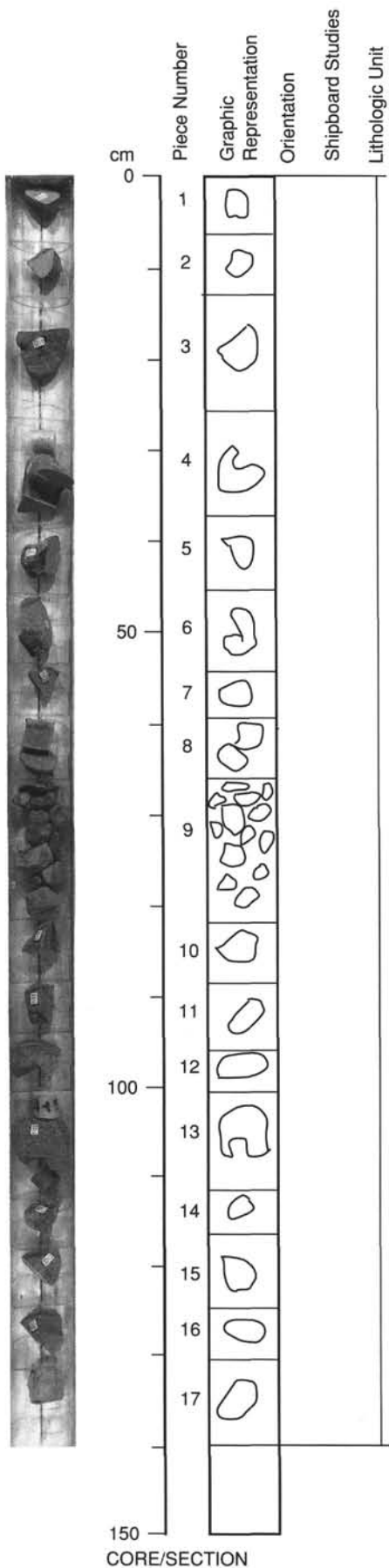


137-504B-171M-1

UNIT X: BASALT

Pieces 1-17

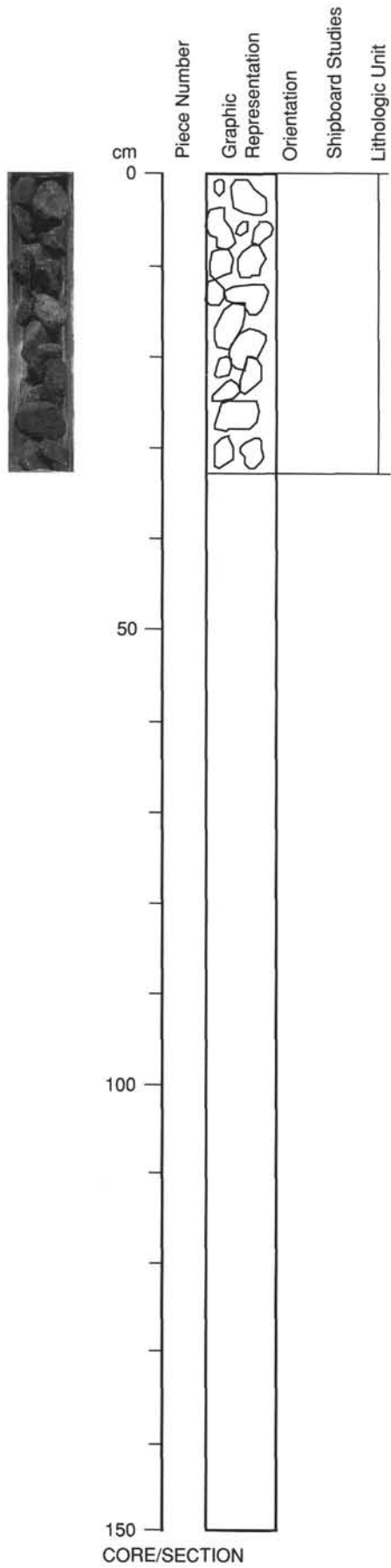
CONTACTS: None.
PHENOCRYSTS: Nd (not described).
GROUNDMASS: Nd.
VESICLES: Nd.
COLOR: Nd.
STRUCTURE: Nd.
ALTERATION: Nd.
VEINS/FRACTURES: Nd.
ADDITIONAL COMMENTS: Junk basket. Basalt rubble from unknown depth.



UNIT X: BASALT

Piece 1

CONTACTS: None.
PHENOCRYSTS: Nd (not described).
GROUND MASS: Nd.
VESICLES: Nd.
COLOR: Nd.
STRUCTURE: Nd.
ALTERATION: Nd.
VEINS/FRACTURES: Nd.
ADDITIONAL COMMENTS: Boot basket from mill bit. Basalt rubble from unknown depth.

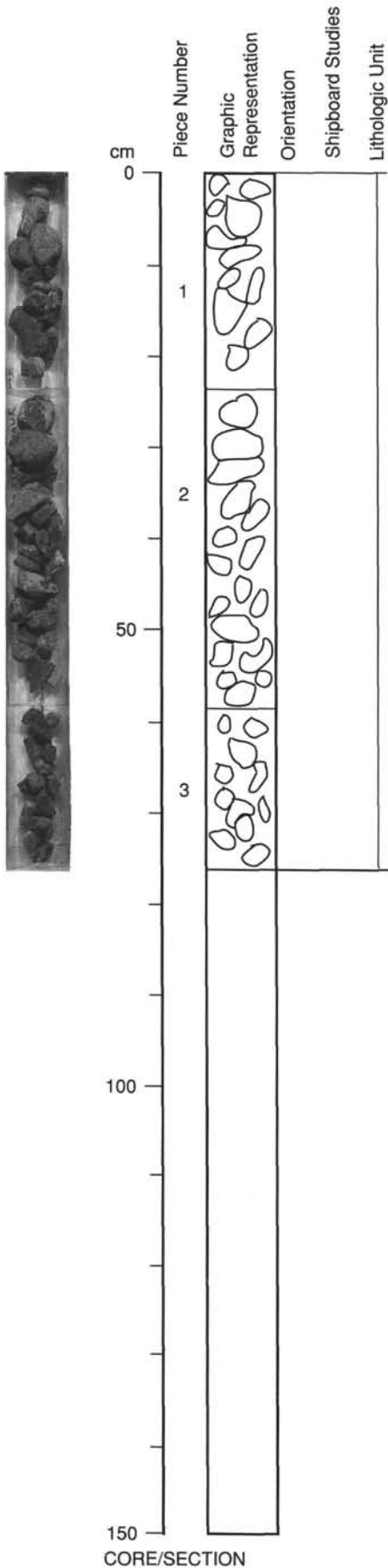


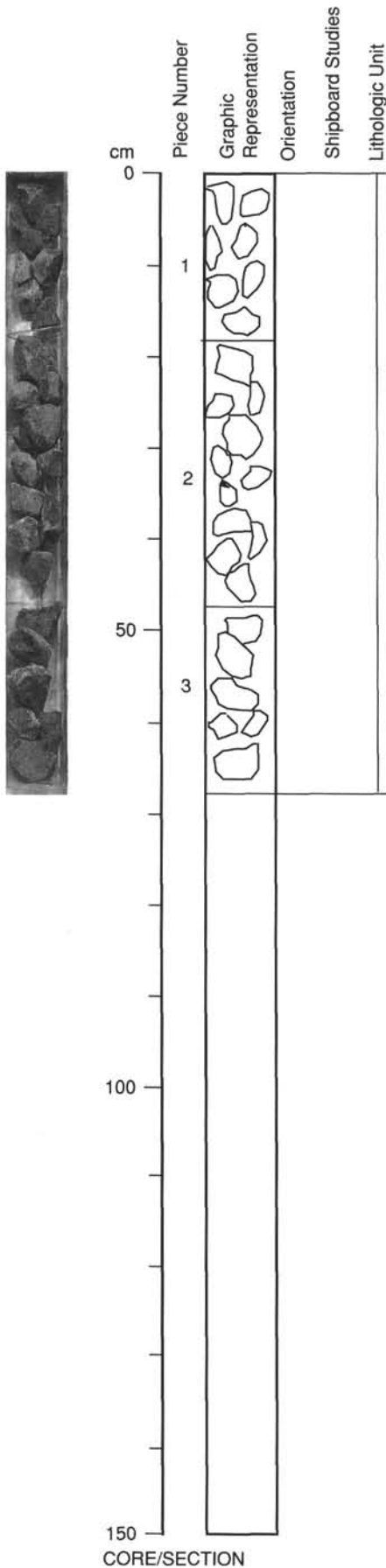
137-504B-171M-3

UNIT X: BASALT

Pieces 1-3

CONTACTS: None.
PHENOCRYSTS: Nd (not described).
GROUNDMASS: Nd.
VESICLES: Nd.
COLOR: Nd.
STRUCTURE: Nd.
ALTERATION: Nd.
VEINS/FRACTURES: Nd.
ADDITIONAL COMMENTS: Boot basket from mill bit. Basalt rubble from unknown depth.





UNIT X: BASALT

Pieces 1-3

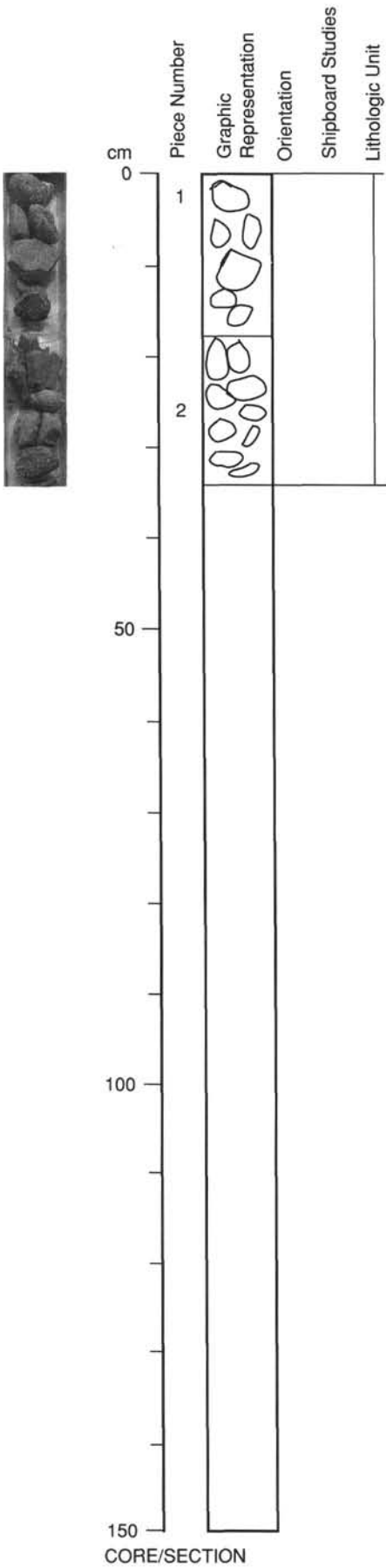
CONTACTS: None
PHENOCRYSTS: Nd (not described).
GROUNDMASS: Nd.
VESICLES: Nd.
COLOR: Nd.
STRUCTURE: Nd.
ALTERATION: Nd.
VEINS/FRACTURES: Nd.
ADDITIONAL COMMENTS: Boot basket from mill bit. Basalt rubble from unknown depth.

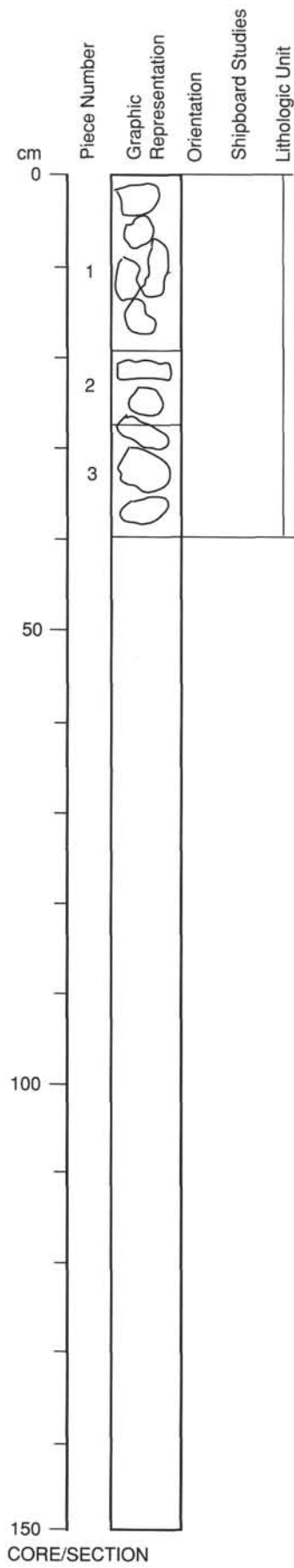
137-504B-171M-5

UNIT X: BASALT

Pieces 1-2

CONTACTS: None.
PHENOCRYSTS: Nd (not described).
GROUNDMASS: Nd.
VESICLES: Nd.
COLOR: Nd.
STRUCTURE: Nd.
ALTERATION: Nd.
VEINS/FRACTURES: Nd.
ADDITIONAL COMMENTS: Boot basket from mill bit. Basalt rubble from unknown depth.





UNIT X: BASALT

Pieces 1-3

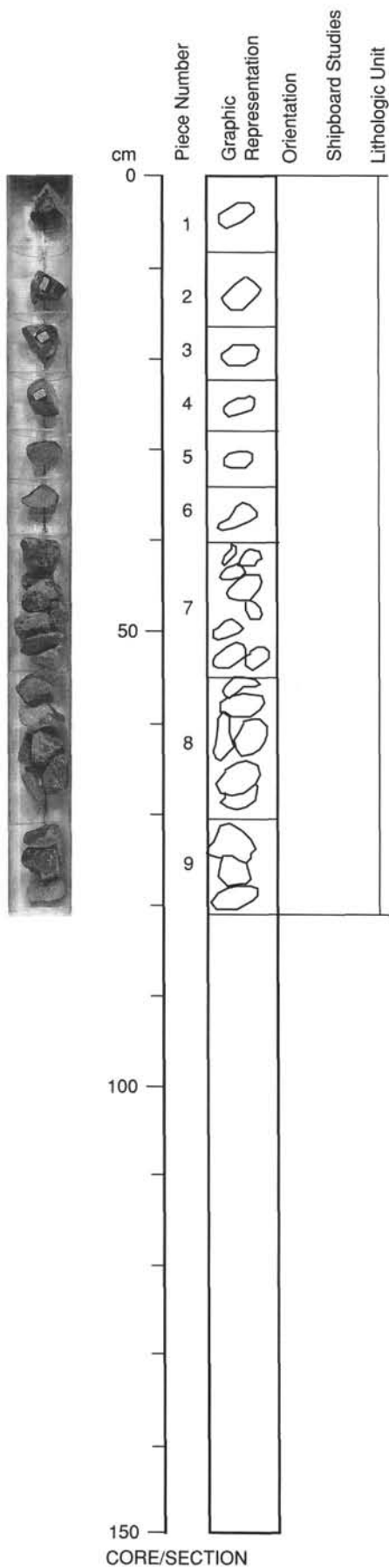
CONTACTS: None.
PHENOCRYSTS: Nd (not described).
GROUNDMASS: Nd.
VESICLES: Nd.
COLOR: Nd.
STRUCTURE: Nd.
ALTERATION: Nd.
VEINS/FRACTURES: Nd.
ADDITIONAL COMMENTS: boot basket from mill bit. Basaltic rubble from unknown depth.

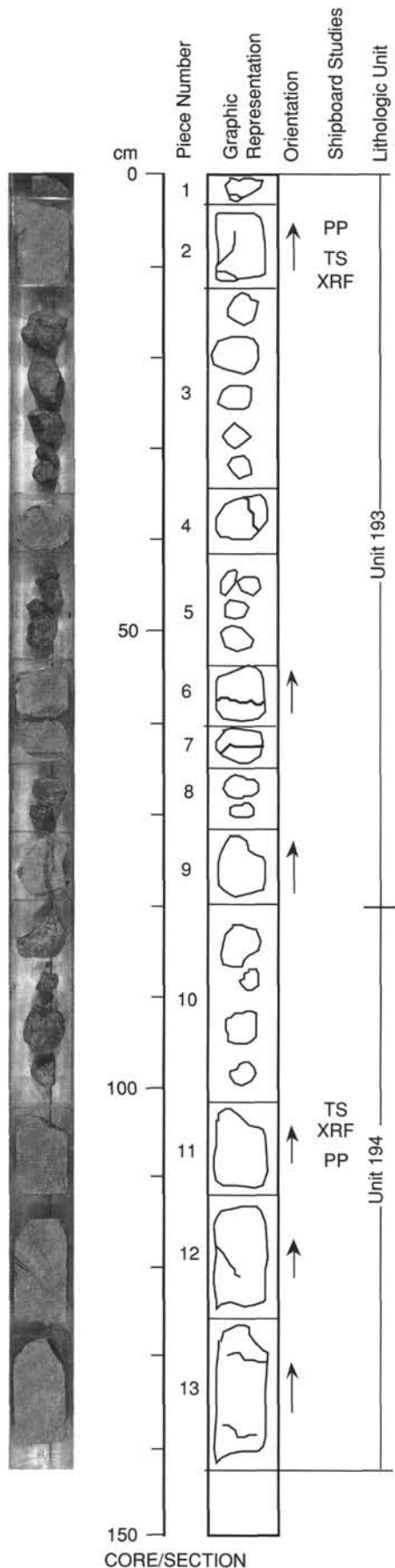
137-504B-172M-1

UNIT X: BASALT

Pieces 1-9

CONTACTS: None.
PHENOCRYSTS: Nd (not described).
GROUNDMASS: Nd.
VESICLES: Nd.
COLOR: Nd.
STRUCTURE: Nd.
ALTERATION: Nd.
VEINS/FRACTURES: Nd.
ADDITIONAL COMMENTS: Boot basket from drill bit. Basaltic rubble from unknown depth in hole.





UNIT 193: SPARSELY PLAGIOCLASE- OLIVINE-CLINOPYROXENE PHYRIC BASALT

Pieces 1-9

CONTACTS: None.
PHENOCRYSTS: Random distribution.
 Plagioclase - 1%, 1-3 mm, rounded to euhedral, fresh.
 Olivine - <1%, 1-3 mm, euhedral, totally replaced by chlorite.
 Clinopyroxene - <1%, 2 mm, rounded, unaltered.
GROUNDMASS: Uniformly fine-grained.
VESICLES: None.
COLOR: Dark gray.
STRUCTURE: Massive.
ALTERATION: Slightly altered, disseminated pyrite. Locally very highly altered: 5-10 mm chlorite patches surrounded by 5-10 mm light gray halos in Pieces 6,7, and 9.
VEINS/FRACTURES: <1%, <1 mm, horizontal to vertical, filled with white mineral in Pieces 1, 4, and 6.

UNIT 194: MODERATELY PLAGIOCLASE-CLINOPYROXENE- OLIVINE PHYRIC BASALT

Pieces 10-13

CONTACTS: None.
PHENOCRYSTS: Randomly distributed.
 Plagioclase - 2-3%, 2-5 mm, rounded to euhedral, unaltered.
 Clinopyroxene - 1-2%, 1-15 mm, 1-2 mm rounded to 1-2x10-15 mm euhedral laths, unaltered.
 Olivine - 1-2%, 1-2 mm, euhedral, totally replaced by chlorite and pyrite.
GROUNDMASS: Uniformly fine-grained.
VESICLES: None.
COLOR: Dark gray.
STRUCTURE: Massive.
ALTERATION: Mostly slightly altered. Locally very highly altered, 5-10 mm chlorite patches with 5-10 mm light gray alteration halos in Pieces 12 and 13. Disseminated pyrite.
VEINS/FRACTURES: <1%, <1mm, near vertical to subhorizontal, white mineral in Pieces 12 and 13. No alteration halos.

137-504B-173R-2

**UNIT 194: MODERATELY PLAGIOCLASE- CLINOPYROXENE-OLIVINE
PHYRIC BASALT**

Pieces 1-4

CONTACTS: None.

PHENOCRYSTS: Random distribution.

Plagioclase - 2-3%, 1-3 mm, rounded to euhedral, fresh.

Clinopyroxene - 1-2%, 1-2x10-15 mm, euhedral laths, unaltered.

Olivine - 1-2%, 1-2 mm, euhedral, totally altered to chlorite + pyrite.

GROUNDMASS: Uniformly fine-grained.

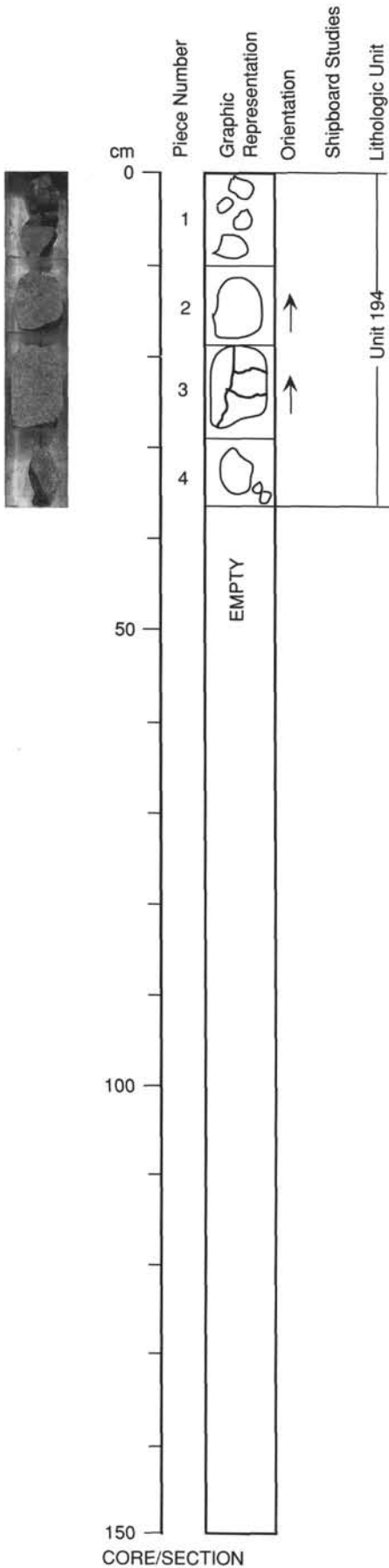
VESICLES: None.

COLOR: Dark gray.

STRUCTURE: Massive

ALTERATION: Slightly altered, disseminated pyrite. Locally very highly altered in Piece 2, with 5 mm chlorite patches surrounded by 5-10 mm light gray halos.

VEINS/FRACTURES: <1%, <1 mm, horizontal to vertical, open or filled with white mineral, all in Piece 3.



CORE/SECTION

UNIT 195: SPARSELY PLAGIOCLASE- OLIVINE- CLINOPYROXENE PHYRIC BASALT

Pieces 1-22

CONTACTS: None.

PHENOCRYSTS: Random distribution.

Plagioclase - <1%, 1-2 mm, euhedral, 20% altered to white albite/zeolite.

Clinopyroxene - <1%, 1-3 mm, rounded to euhedral, unaltered.

Olivine - <1%, 1-3 mm, euhedral, totally replaced by chlorite and pyrite.

GROUNDMASS: Uniformly fine-grained.

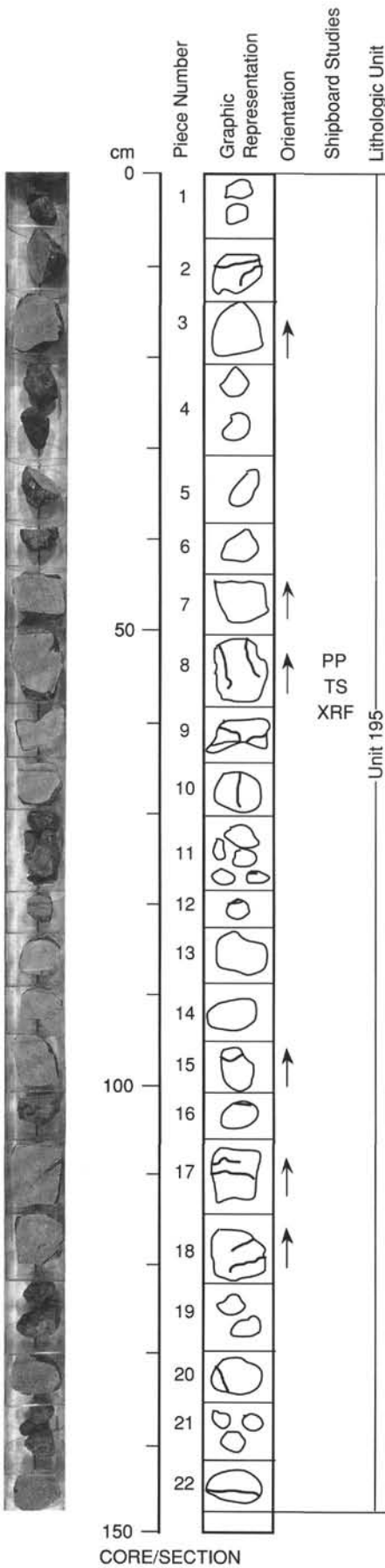
VESICLES: None.

COLOR: Dark gray.

STRUCTURE: Massive.

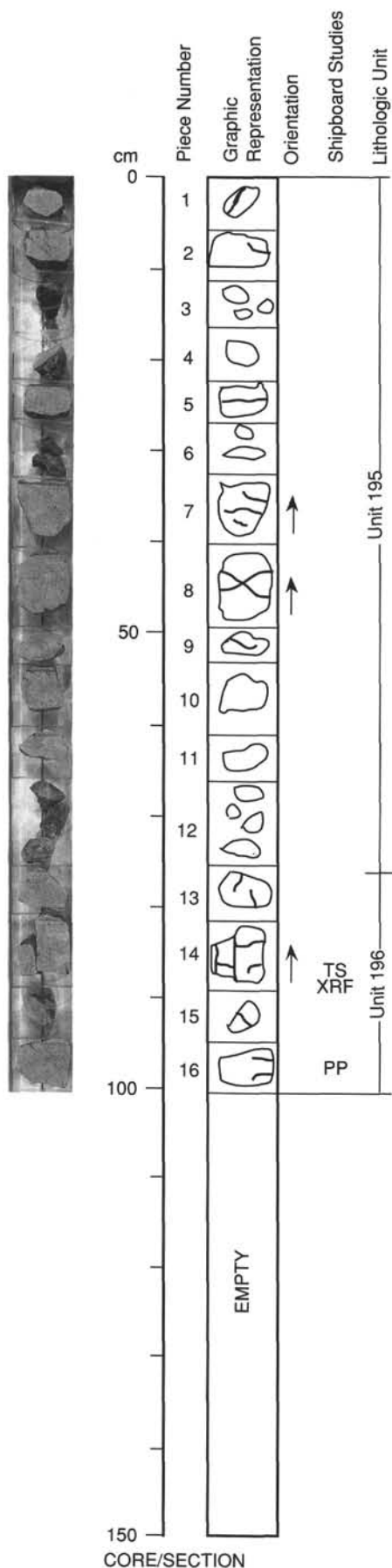
ALTERATION: Slightly altered. Disseminated pyrite. Locally very highly altered in Pieces 3,5,8,10, and 16-18, with 5-10 mm halos around 5 mm chlorite patches.

VEINS/FRACTURES: <1%, <1 mm to 1 mm, mostly subhorizontal. 1 cm light gray alteration halo around chlorite vein in Piece 2, similar halo around chlorite + light green prehnite(?) vein in Piece 9. Piece 3 has white prismatic mineral on fracture surface (anhydrite?).



CORE/SECTION

137-504B-174R-2



UNIT 195: APHYRIC TO SPARSELY PLAGIOCLASE- OLIVINE- CLINOPYROXENE PHYRIC BASALT

Pieces 1-12

CONTACTS: None.

PHENOCRYSTS: Randomly distributed.

Plagioclase - <1-1%, 1-2 mm, euhedral, 10% altered to white albite(?).

Clinopyroxene - <1%, 1-3 mm, rounded to euhedral, equant, unaltered.

Olivine - <1%, 1-2 mm, euhedral, totally replaced by chlorite + talc ± pyrite (± Fe-hydroxides in Piece 10).

GROUNDMASS: Uniformly fine-grained.

VESICLES: None.

COLOR: Dark gray.

STRUCTURE: Massive.

ALTERATION: Slightly altered, disseminated pyrite. Locally very highly altered with 5-10 mm light gray halos around 5 mm chlorite patches in Pieces 1,4,8,9,and 11.

VEINS/FRACTURES: <1%, <1mm, mostly subhorizontal, open vertical crack in Piece 14. Open subhorizontal crack in Pieces 7-9, white mineral in Pieces 2 and 5, chlorite in Piece 1 with 5 mm light gray halo.

UNIT 196: SPARSELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC BASALT

Pieces 13-16

CONTACTS: None.

PHENOCRYSTS: Randomly distributed.

Plagioclase - 1%, 1-10 mm, mostly 1-3 mm, but up to 10 mm euhedral laths, 10% altered to white albite(?).

Olivine - 1%, 1-2, euhedral, totally replaced by chlorite + talc ± pyrite (+ red Fe-oxide in Piece 15).

Clinopyroxene - <1%, 1-3 mm, rounded to euhedral, unaltered.

GROUNDMASS: Uniformly fine-grained.

VESICLES: None.

COLOR: Dark gray.

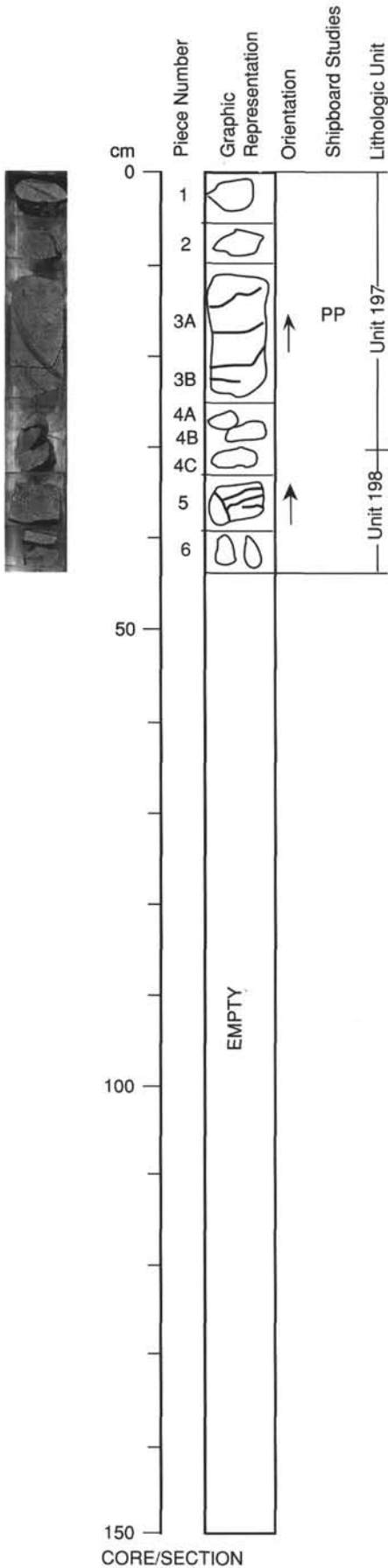
STRUCTURE: Massive.

ALTERATION: Slightly altered, disseminated pyrite. Locally very highly altered (Piece 14), with 5-10 mm light gray halos around 5-10 mm chlorite patches.

VEINS/FRACTURES: <1%, <1 mm, subhorizontal to vertical, open horizontal cracks in Pieces 14 and 16, open vertical crack in Piece 14, white mineral in Piece 14.

ADDITIONAL COMMENTS: Unit 196 separated from unit 195 based on decreased olivine and phenocryst abundance in Pieces 10 and 11, and increased olivine in Pieces 14 and 15.

137-504B-175R-1



UNIT 197: SPARSELY PLAGIOCLASE-CLINOPYROXENE PHYRIC BASALT

Pieces 1-4b

CONTACTS: None.
PHENOCRYSTS: Randomly distributed.
 Plagioclase - 1%, 1-4 mm, euhedral, unaltered.
 Clinopyroxene - 1%, 1-3 mm, rounded to euhedral, equant, unaltered.
 Olivine - <<1%, 1 mm, euhedral, replaced by chlorite in Piece 2.
GROUNDMASS: Uniformly fine-grained.
VESICLES: None.
COLOR: Dark gray.
STRUCTURE: Massive.
ALTERATION: Slightly altered, disseminated pyrite.
VEINS/FRACTURES: <1%, <1 mm, subhorizontal, open cracks in Piece 3, white mineral in Piece 3.

UNIT 198: SPARSELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC BASALT.

Pieces 4c-6

CONTACTS: None.
PHENOCRYSTS: Less abundant in finer grained Piece 4c.
 Plagioclase - 1-2%, 1-3 mm, euhedral, unaltered.
 Olivine - 1-2%, 1-2 mm, euhedral, totally replaced by chlorite, talc, and pyrite.
 Clinopyroxene - <1%, 2-3 mm, euhedral, unaltered.
GROUNDMASS: Fine-grained, finest grain size in Piece 4c.
VESICLES: None.
COLOR: Dark gray.
STRUCTURE: Massive.
ALTERATION: Slightly altered, disseminated pyrite.
VEINS/FRACTURES: <1%, <1 mm, subhorizontal, open and filled with white mineral in Piece 5.

137-504B-176R-1

UNIT 199: APHYRIC TO SPARSELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC BASALT

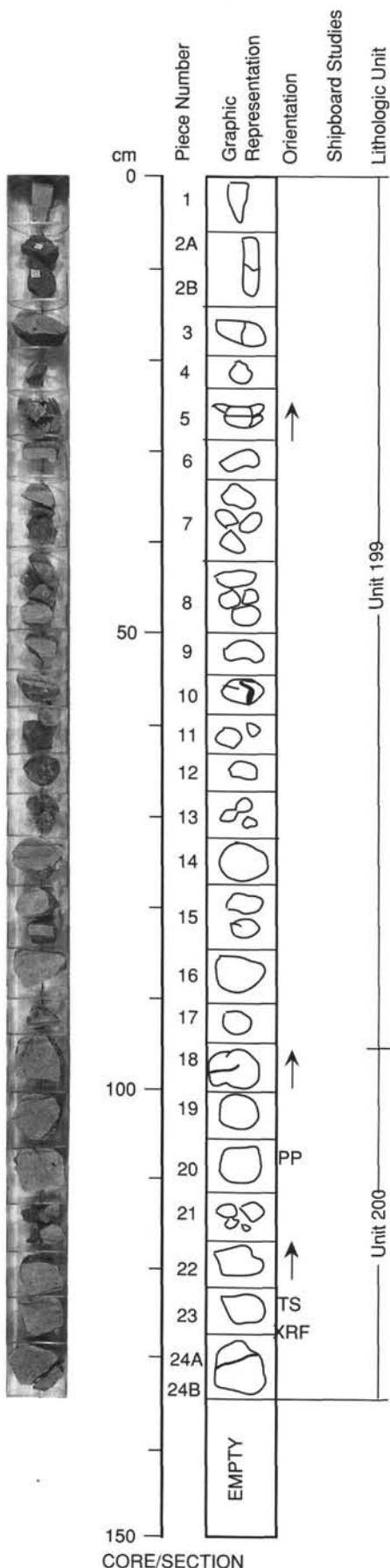
Pieces 1-17

CONTACTS: None.
PHENOCRYSTS: Randomly distributed.
 Plagioclase - <1-1%, 1-2 mm, euhedral, 10% altered to white albite?
 Olivine - <0.5-1 mm, euhedral, totally replaced by chlorite and pyrite.
GROUNDMASS: Fine-grained, finest in Piece 1, which is a chilled dike margin very close to a contact.
VESICLES: None.
COLOR: Mostly greenish gray, with darker gray color in Pieces 2,3 and 15-17.
STRUCTURE: Massive basalt, with chilled margin at top in Piece 1.
ALTERATION: Generally moderately altered to greenish gray color. Pieces 15-17 contain 5-10 mm chlorite patches with 5-10 mm light gray halos.
VEINS/FRACTURES: <1%, <1 mm, random. Breccia in Piece 5 is cemented by chlorite, and cut by later vein of white prismatic anhydrite(?). Anhydrite(?) also coats fractures in Pieces 6, 8, and 9. Chlorite veins in Pieces 3,6,10 and 16. 5 mm light gray alteration halo around vein in Piece 3.

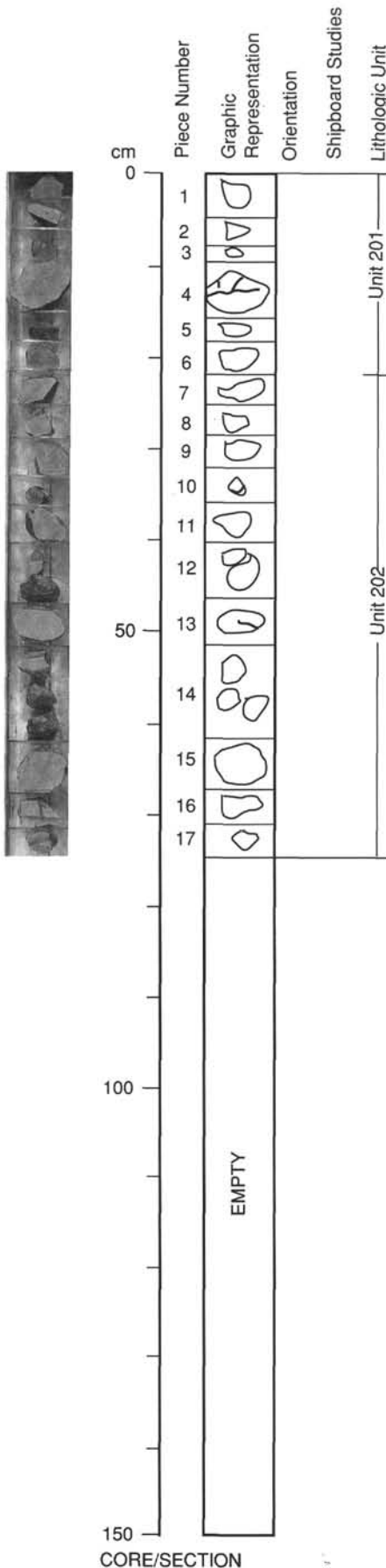
UNIT 200: MODERATELY PLAGIOCLASE-CLINOPYROXENE-OLIVINE PHYRIC BASALT

Pieces 18-24

CONTACTS: None.
PHENOCRYSTS: Random distribution. Olivine more abundant and clinopyroxene less abundant in Piece 24.
 Plagioclase - 3%, 1-3 mm, euhedral, unaltered.
 Clinopyroxene - 2%, 1-3 mm, rounded to euhedral laths, unaltered.
 Olivine - <1%, 0.5-1 mm, euhedral, totally replaced by chlorite, talc and pyrite.
GROUNDMASS: Uniformly fine-grained.
VESICLES: None.
COLOR: Dark gray.
STRUCTURE: Massive basalt.
ALTERATION: Slightly altered. Locally very highly altered in Pieces 18-20, and 22, with 5-10 mm chlorite patches surrounded by 5-10 mm light gray halos.
VEINS/FRACTURES: <1%, <1 mm, horizontal, open fracture in Pieces 18 and 24.



137-504B-177R-1



UNIT 201: MODERATELY PLAGIOCLASE- OLIVINE-CLINOPYROXENE PHYRIC BASALT

Pieces 1-6

CONTACTS: None.
PHENOCRYSTS: Random distribution.
 Plagioclase - 1-2%, 0.5-2 mm, euhedral, unaltered.
 Olivine - 1-2%, 0.5-2 mm, euhedral, totally replaced by chlorite and pyrite.
 Clinopyroxene - <1%, 2-10 mm, anhedral to euhedral laths, unaltered.
GROUNDMASS: Fine-grained, finer grained in Pieces 1 and 6.
VESICLES: None.
COLOR: Mostly dark gray, lighter greenish gray in Pieces 3,4, and 6.
STRUCTURE: Massive basalt.
ALTERATION: Slightly to moderately altered. Disseminated pyrite.
VEINS/FRACTURES: <1%, 1 mm, horizontal and vertical, 1 mm chlorite vein in Piece 1 is rimmed by 0.5 mm dark green chloritized zone plus 5 mm light gray halo.
ADDITIONAL COMMENTS: Very fine grained Pieces 1 and 6 are interpreted as margins of dike unit. Decreased phenocryst abundance, in particular olivine content, distinguishes underlying Unit 202.

UNIT 202: APHYRIC TO SPARSELY PLAGIOCLASE- OLIVINE-CLINOPYROXENE PHYRIC BASALT

Pieces 7-17

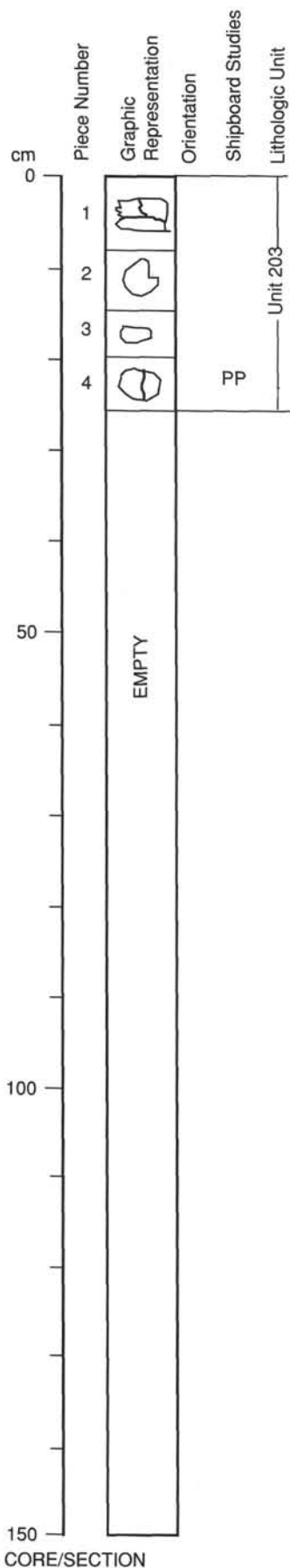
CONTACTS: None.
PHENOCRYSTS: Random distribution, most abundant in Pieces 9 and 17.
 Plagioclase - <1%, 0.5-2 mm, euhedral, unaltered. Most abundant in Piece 17.
 Olivine - <1%, 0.5-2 mm, euhedral, completely replaced by chlorite and pyrite.
 Clinopyroxene - <1%, 1-3 mm, euhedral laths, unaltered.
GROUNDMASS: Uniformly fine-grained.
VESICLES: None.
COLOR: Dark gray.
STRUCTURE: Massive basalt.
ALTERATION: Slightly altered. Disseminated pyrite.
VEINS/FRACTURES: <1%, <1 mm, subhorizontal, one open fracture in Piece 13.

137-504B-178R-1

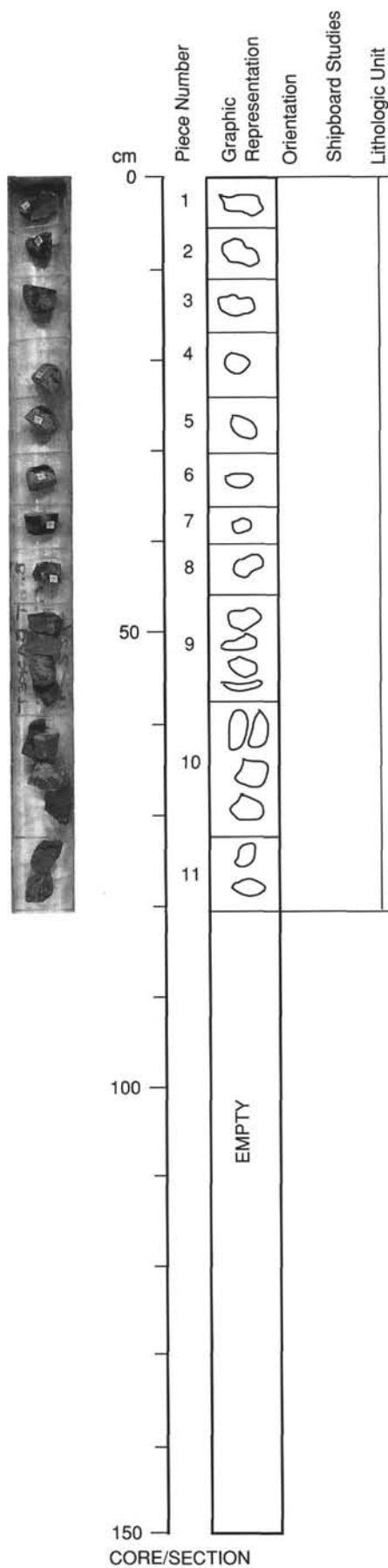
UNIT 203: MODERATELY PLAGIOCLASE- OLIVINE-CLINOPYROXENE PHYRIC BASALT

Pieces 1-4

CONTACTS: None.
PHENOCRYSTS: Randomly distributed.
 Plagioclase - 3%, 1-5 mm, euhedral, unaltered.
 Olivine - 2%, 0.5-4 mm, euhedral, totally replaced by chlorite, talc, pyrite, and Fe-oxides.
 Clinopyroxene - <1%, 1-2 mm, rounded to euhedral, unaltered.
GROUNDMASS: Uniformly fine-grained.
VESICLES: None.
COLOR: Dark gray.
STRUCTURE: Massive basalt.
ALTERATION: Slightly altered. Locally very highly altered in Piece 4, with 5 mm chlorite patches surrounded by 5-10 mm light gray halos.
VEINS/FRACTURES: <1%, <1 mm, horizontal and vertical, open fractures in Piece 1, white mineral in Piece 4.



CORE/SECTION



UNIT X: BASALT.

Pieces 1-11

CONTACTS: None.
PHENOCRYSTS: Nd (not described).
GROUNDMASS: Nd.
VESICLES: Nd.
COLOR: Nd.
STRUCTURE: Nd.
ALTERATION: Nd.
VEINS/FRACTURES: Nd.
ADDITIONAL COMMENTS: Boot basket from drill bit. Basalt rubble from unknown depth.

137-504B-180M-1

UNIT 204: MODERATELY OLIVINE-PLAGIOCLASE- CLINOPYROXENE PHYRIC BASALT.

Piece 1

CONTACTS: None.

PHENOCRYSTS:

- Plagioclase - 1%, 0.5-1 mm, unaltered, euhedral, tabular.
- Olivine - 3%, 0.5-2 mm, euhedral, totally replaced by chlorite and pyrite.
- Clinopyroxene - <1%, 2mm, anhedral.

GROUNDMASS: Very fine-grained.

VESICLES: None.

COLOR: Gray.

STRUCTURE: Massive, very fine-grained, close to dike margin?

ALTERATION: Slightly altered.

VEINS/FRACTURES: None.

ADDITIONAL COMMENTS: Separated from Unit 205 below based on relative abundances of phenocrysts. This is a 4-inch diameter core from the diamond bit.

UNIT 205: MODERATELY PLAGIOCLASE- CLINOPYROXENE-OLIVINE PHYRIC BASALT.

Pieces 2-9

CONTACTS: None.

PHENOCRYSTS:

- Plagioclase - 3-5%, 0.5-5 mm, euhedral tabular prisms.
- Olivine - 1-2%, 0.5-2 mm, euhedral, totally replaced by chlorite and pyrite.
- Clinopyroxene - 2%, 1-3 mm, euhedral tabular prisms, unaltered.

GROUNDMASS: Fine-grained.

VESICLES: None.

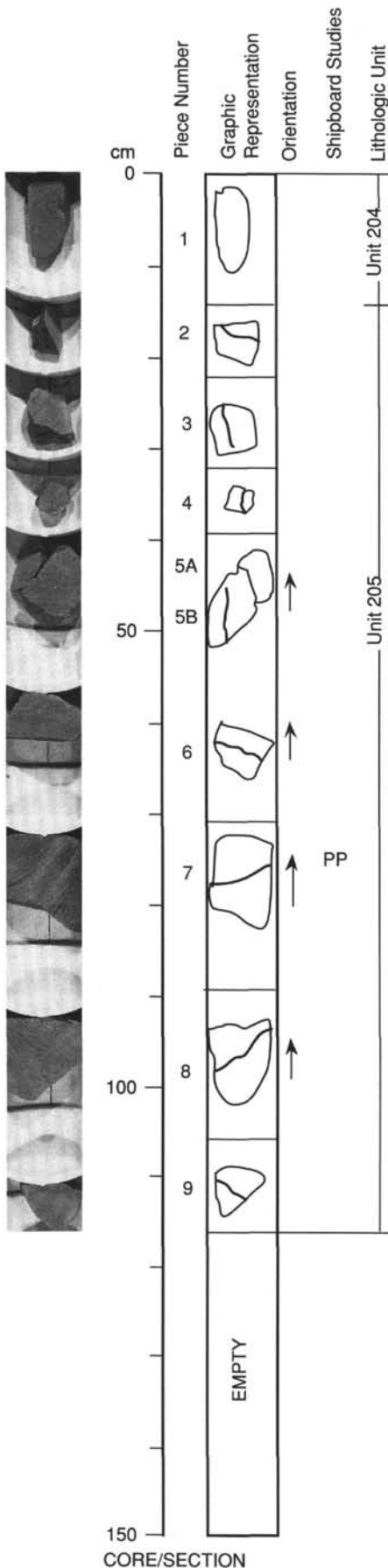
COLOR: Dark gray.

STRUCTURE: Massive. Aligned phenocrysts in Piece 7 indicate flow structure?

ALTERATION: Mostly slightly altered. Very highly altered in light gray alteration halos around veins, and in 5-10 mm patches.

VEINS/FRACTURES: <1%, <1 mm, vertical to horizontal. Filled with chlorite+actinolite, and with 5-10 mm lighter gray alteration halos in Pieces 2-8.

ADDITIONAL COMMENTS: This is a 4-inch diameter core from the diamond bit.



UNIT 205: MODERATELY PLAGIOCLASE- CLINOPYROXENE-OLIVINE PHYRIC BASALT.

Pieces 1-8

CONTACTS: None.

PHENOCRYSTS:

Plagioclase - 3-5%, 0.5-5 mm, euhedral tabular prisms.

Olivine - 1-2%, 0.5-2 mm, euhedral, completely replaced by chlorite, pyrite, and red Fe-oxides.

Clinopyroxene - 2%, 1-3 mm, euhedral tabular prisms, unaltered.

GROUNDMASS: Uniformly fine-grained.

VESICLES: None.

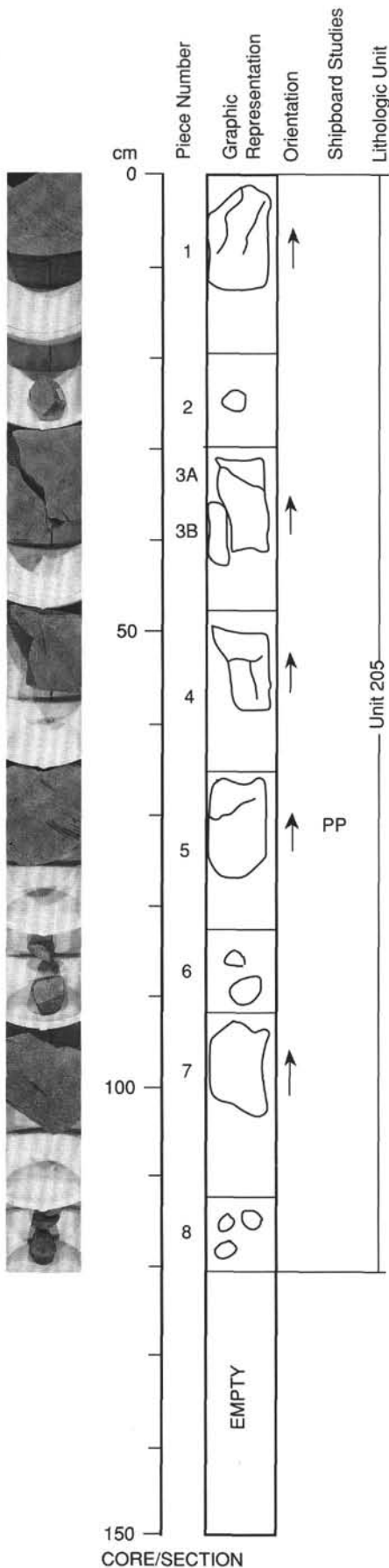
COLOR: Dark gray.

STRUCTURE: Massive. Aligned phenocrysts in Piece 7.

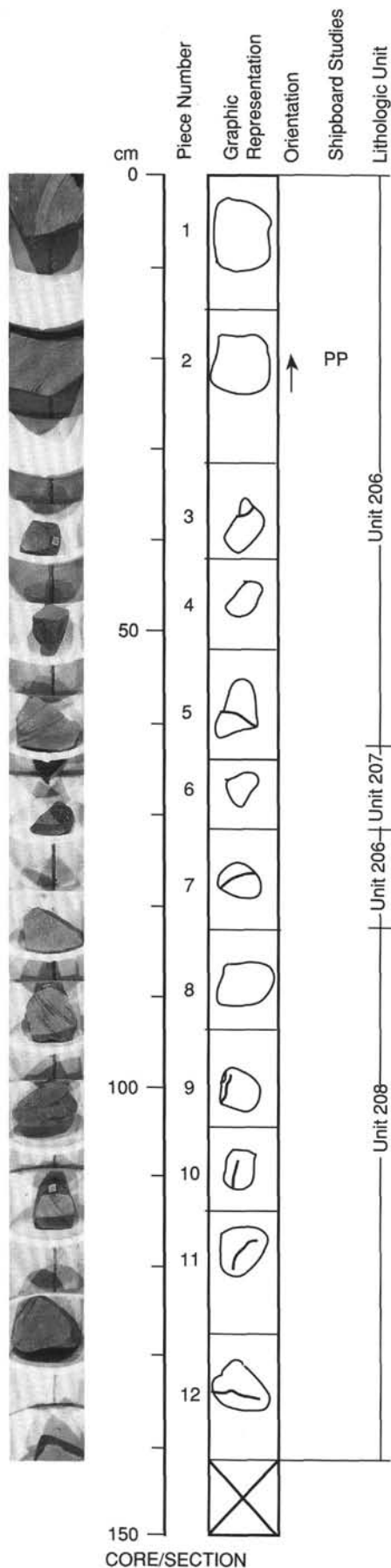
ALTERATION: Slightly altered. Locally very highly altered in 5-10 mm light gray patches and in 5 mm light gray halos around veins.

VEINS/FRACTURES: <1%, <1 mm, vertical to horizontal. Filled with actinolite and chlorite, with 5-10 mm light greenish gray alteration halos. Open crack in Pieces 1 and 4.

ADDITIONAL COMMENTS: This is a 4-inch diameter core from the diamond bit.



137-504B-181M-1



UNIT 206: SPARSELY CLINOPYROXENE-PLAGIOCLASE- OLIVINE PHYRIC BASALT

Pieces 1-5, 7

CONTACTS: None.

PHENOCRYSTS:

- Plagioclase - 1%, 0.5-3 mm, euhedral, unaltered.
- Olivine - <1%, 0.5-3 mm, euhedral, totally replaced by chlorite and pyrite.
- Clinopyroxene - 1%, 1-5 mm, euhedral tabular prisms, unaltered.

GROUNDMASS: Uniformly fine-grained.

VESICLES: None.

COLOR: Dark gray.

STRUCTURE: Massive.

ALTERATION: Slightly altered, disseminated pyrite. Locally very highly altered, 5 mm chlorite patches with 5-10 mm lighter greenish alteration halos.

VEINS/FRACTURES: <1, <1-1 mm, unoriented piece. Filled with chlorite and actinolite, surrounded by 5-10 mm alteration halos.

ADDITIONAL COMMENTS: This is 4-inch diameter core from the diamond bit. Pieces 1 and 2 show bit markings indicating that they were "cored twice"--that is, they are actually from the lowermost section of Core 180M.

UNIT 207: SPARSELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC BASALT.

Piece 6

CONTACTS: None.

PHENOCRYSTS:

- Plagioclase - 1%, 2 mm, euhedral, equant to tabular prisms. Unaltered.
- Olivine - <1%, 1 mm, euhedral, totally replaced by chlorite and pyrite.
- Clinopyroxene - <1%, 2 mm, equant, unaltered.

GROUNDMASS: Uniformly fine- to medium-grained.

VESICLES: None.

COLOR: Dark gray.

STRUCTURE: Massive.

ALTERATION: Slightly altered.

VEINS/FRACTURES: None.

ADDITIONAL COMMENTS: Four-inch core from diamond bit. Pieces 6 and 7 are rollers that likely switched positions during drilling and curation causing repetition of Unit 206 in Piece 7. Plagioclase - 3-5%, 1-3 mm, euhedral, equant. Phenocrysts and glomerocrysts ± clinopyroxene. Olivine - <1-1%, 1-4 mm, euhedral, totally replaced by chlorite and pyrite. Clinopyroxene - 1-3%, 2-7 mm, euhedral, equant to tabular. Phenocrysts and glomerocrysts with plagioclase.

GROUNDMASS: Uniformly fine-grained.

VESICLES: None.

COLOR: Dark gray.

STRUCTURE: Massive.

ALTERATION: Generally slightly altered. Locally very highly altered in 5-10 mm chlorite + actinolite patches with 5-10 mm greenish alteration halos in Pieces 3, 4, 6, 7, 9, 11, and 12.

VEINS/FRACTURES: <1%, 1 mm, random. Filled with chlorite and actinolite, with 5-10 mm greenish alteration halos in Pieces 5, 7, and 10-12.

ADDITIONAL COMMENTS: Four-inch diamond core. Piece 7A contains 1x5 cm very fine-grained, dark gray xenolith.

**UNIT 208: MODERATELY PLAGIOCLASE- CLINOPYROXENE-OLIVINE PHYRIC
BASALT.**

Pieces 8-12

CONTACTS: None.

PHENOCRYSTS:

Plagioclase - 3-5%, 1-3 mm, euhedral, equant. Phenocrysts and glomerocrysts ± clinopyroxene.

Olivine - <1-1%, 1-4 mm, euhedral, totally replaced by chlorite, pyrite, and red Fe-oxides.

Clinopyroxene - 1-3%, 2-7 mm, euhedral, equant to tabular prisms.

Phenocrysts and glomerocrysts with plagioclase.

GROUNDMASS: Uniformly fine-grained.

VESICLES: None.

COLOR: Dark gray.

STRUCTURE: Massive.

ALTERATION: Slightly altered. Very highly altered in Piece 11, with 5 mm chlorite and actinolite surrounded by 5 mm greenish alteration halo.

VEINS/FRACTURES: <1%, <1-1 mm, random. Filled with chlorite and actinolite, with 5-10 mm greenish alteration halos.

ADDITIONAL COMMENTS: Four-inch diamond core.

137-504B-181M-2

UNIT 208: MODERATELY PLAGIOCLASE- CLINOPYROXENE-OLIVINE PHYRIC BASALT.

Pieces 1-12

CONTACTS: None.
PHENOCRYSTS:

Plagioclase - 3-5%, 1-3 mm, euhedral, equant. Phenocrysts and glomerocrysts ± clinopyroxene.
 Olivine - <1-1%, 1-4 mm, euhedral, totally replaced by chlorite and pyrite.
 Clinopyroxene - 1-3%, 2-7 mm, euhedral, equant to tabular.
 Phenocrysts and glomerocrysts with plagioclase.

GROUNDMASS: Uniformly fine-grained.

VESICLES: None.

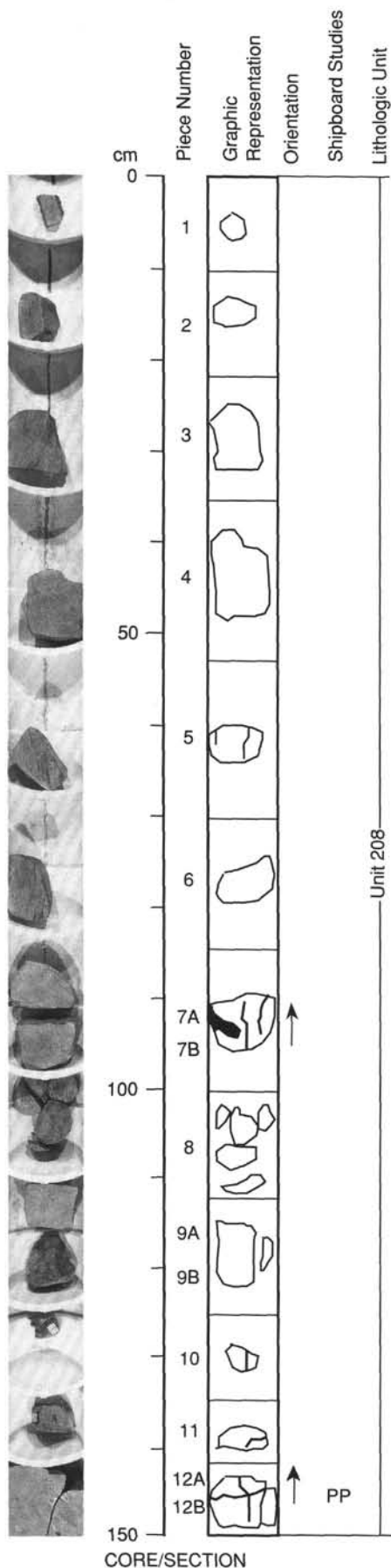
COLOR: Dark gray.

STRUCTURE: Massive.

ALTERATION: Generally slightly altered. Locally very highly altered in 5-10 mm chlorite + actinolite patches with 5-10 mm greenish alteration halos in Pieces 3, 4, 6, 7, 9, 11, and 12.

VEINS/FRACTURES: <1%, 1 mm, random. Filled with chlorite and actinolite, with 5-10 mm greenish alteration halos in Pieces 5, 7, and 10-12.

ADDITIONAL COMMENTS: Four-inch diamond core. Piece 7A contains 1x5 cm very fine-grained, dark gray xenolith.



137-504B-173R-01 (Piece 2,7-8 cm)

OBSERVER: ALT

WHERE SAMPLED: Unit 193

ROCK NAME: Sparsely plagioclase-olivine-clinopyroxene phyric basalt.

GRAIN SIZE: Fine- to medium-grained.

TEXTURE: Subophitic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	0	<1	0.8-2.0		Euhedral	Replaced by chlorite and actinolite, large plucked areas were olivine?
Plagioclase	2	2	0.4-2.0		Anhedral to euhedral.	Both as phenocrysts and as glomerocrysts. <1% altered to chlorite along fractures.
Clinopyroxene	<1	<1	0.8		Anhedral.	One crystal in plagioclase glomerocryst.
GROUNDMASS						
Plagioclase	49	49	0.1-1.0		Subhedral.	Intergrown with clinopyroxene.
Clinopyroxene	35	40	0.1-0.8		Anhedral.	Intergrown with plagioclase, 20% replaced by actinolite.
Olivine	0	5	0.1-0.4		Euhedral.	
Magnetite	4	4	0.01-0.25		Skeletal-euhedral.	Partly (10%) replaced by sphene(?).
SECONDARY MINERALOGY						
	PERCENT	REPLACING/ FILLING				COMMENTS
Chlorite	5	Olivine, plagioclase, pore space.				
Actinolite	5	Clinopyroxene, olivine, filling pore space.				
Sphene	<1	Replacing titanomagnetite.				
Pyrite	<1	Replaces silicates, igneous sulfides. 0.01-1.0 mm.				
Chalcopyrite	<1	Silicates, primary sulfides. 0.01-0.05 mm.				
VESICLES/ CAVITIES						
Vugs.	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	
	<1		0.05-0.10	Chlorite and actinolite.	Irregular.	

137-504B-173R-01 (Piece 11,103-106 cm)

OBSERVER: ALT

WHERE SAMPLED: Unit 194.

ROCK NAME: Moderately olivine-plagioclase-clinopyroxene phyric basalt.

GRAIN SIZE: Fine-grained.

TEXTURE: Subophitic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	2	2	0.5-2.4		Subhedral.	Some with rounded cores containing glass inclusions. Both as phenocrysts and 3 mm glomerocrysts. Unaltered.
Olivine	0	6	0.5-2.4		Euhedral.	Replaced by chlorite, talc, Fe-oxides and pyrite.
Clinopyroxene	1	1	0.5-2.8		Anhedral.	Both phenocrysts and as glomerocrysts with plagioclase. Outer rim of pyroxene is intergrown with groundmass plagioclase.
GROUNDMASS						
Plagioclase	46	46	0.1-0.6		Euhedral to subhedral.	1-5% replaced by chlorite.
Clinopyroxene	32	39	0.1-0.6		Anhedral.	10% recrystallized to actinolite plus magnetite "dust."
Olivine	0	2	0.1-0.4		Euhedral.	100% replaced by chlorite, talc and magnetite.
Magnetite	4	4	0.01-0.2		Skeletal-euhedral.	10-20% replaced by sphene.
SECONDARY MINERALOGY						
	PERCENT	REPLACING/ FILLING				COMMENTS
Chlorite	7	Replaces olivine, fills pores.				
Actinolite	6	Replaces clinopyroxene.				
Sphene	<1	Replaces magnetite.				
Pyrite	<1	Replaces olivine, 0.1-0.8 mm.				
VESICLES/CAVITIES						
Vugs.	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	
	<1			Chlorite.	Irregular.	

137-504B-174R-01 (Piece 8,50-53 cm)

OBSERVER: ALT

WHERE SAMPLED: Unit 195.

ROCK NAME: Sparsely plagioclase-clinopyroxene-olivine phyric basalt.

GRAIN SIZE: Fine (0.1-1.0 mm).

TEXTURE: Subophitic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Plagioclase	2	2	0.4-4.0		Euhedral.	Phenocrysts and as 3 mm glomerocrysts. Mostly about 10% replaced by chlorite and albite.
Olivine	0	<1	0.5-1.2		Euhedrals.	100% replaced by talc, chlorite, magnetite, and trace sulfides.
Clinopyroxene	1	1	0.8-2.8		Anhedral.	Phenocrysts and as glomerocrysts with plagioclase. Outer rims intergrown with groundmass plagioclase.
GROUNDMASS						
Plagioclase	51	51	0.1-1.0		Anhedral.	Slightly altered to chlorite.
Clinopyroxene	34	36	0.1-1.0		Anhedral.	Partly replaced by actinolite plus magnetite.
Olivine	0	5	0.1-0.2		Rounded to Euhedral.	100% replaced by chlorite, actinolite, magnetite.
Magnetite	5	5	0.01-0.20		Skeletal-Euhedral.	20% replaced by sphene.
SECONDARY MINERALOGY						
	PERCENT	REPLACING/ FILLING				COMMENTS
Chlorite	5	Replaces olivine, fills pores.				
Actinolite	2	Replaces olivine and clinopyroxene, fills vugs with chlorite.				
Sphene	<1	Replaces magnetite.				
Pyrite	<1	Replaces igneous sulfides, 0.01-0.05 mm.				
Chalcopyrite	<1	Replaces igneous sulfides, 0.01-0.02 mm.				
VESICLES/CAVITIES						
	PERCENT	LOCATION	SIZE (mm)	FILLING SHAPE		COMMENTS
Vugs.	5		0.1-3.0	Chlorite and actinolite.		Irregular. Larger vugs concentrated in one corner of thin section.

COMMENTS: One corner of thin section contains 5 mm chlorite-filled vugs with 5-10 mm light gray alteration halos, where the rock is very highly altered. Plagioclase is replaced (50%) by albite and chlorite, clinopyroxene is replaced (80%) by actinolite and magnetite, and magnetite is replaced (90%) by sphene.

137-504B-174R-02 (Piece 14,85-88 cm)

OBSERVER: ALT

WHERE SAMPLED: Unit 196.

ROCK NAME: Moderately clinopyroxene-plagioclase-olivine phyric basalt.

GRAIN SIZE: Fine-grained (0.1-1.0 mm).

TEXTURE: Subophitic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	0	<1	0.5-1.2		Skeletal-euhedral.	100% replaced by chlorite and magnetite.
Plagioclase	1	1	0.4		Subhedral.	Phenocrysts and glomerocrysts. Some with rounded cores containing glass inclusions. Unaltered.
Clinopyroxene	3	3	0.4-2.4		Anhedral.	Phenocrysts and glomerocrysts. Tabular prisms with outer edges intergrown with groundmass plagioclase. Unaltered.
GROUNDMASS						
Plagioclase	53	53	0.1-1.0		Subhedral.	Slightly altered to chlorite. Locally up to 40% replaced by chlorite and albite around vugs.
Olivine	0	4	0.2-0.4		Subhedral.	100% replaced by chlorite, magnetite and pyrite.
Clinopyroxene	27	35	0.1-0.6		Anhedral.	10-20% replaced by actinolite.
Magnetite	4	4	0.01-0.20		Skeletal.	Partly replaced by sphene.
SECONDARY MINERALOGY						
	PERCENT	REPLACING/ FILLING				COMMENTS
Zeolites	<1	In vug with quartz.				
Chlorite	4	Replaces olivine, fills vugs.				
Actinolite	8	Replaces clinopyroxene and olivine, fills vugs.				
Sphene	<1	Magnetite.				
Quartz	<1	Fills vug center.				
Pyrite	<1	Replaces olivine and igneous sulfides, 0.01-0.06 mm.				
Chalcopyrite	<1	Replaces olivine and igneous sulfides, 0.01-0.05 mm.				
VESICLES/ CAVITIES						
Vugs.	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS
	<1		3		Irregular.	One vug with zoned filling: 1. chlorite, 2. quartz and interstitial zeolite.

SITE 504

137-504B-176R-01 (Piece 23,126-127 cm)

OBSERVER: ALT

WHERE SAMPLED: Unit 200.

ROCK NAME: Moderately plagioclase-clinopyroxene-olivine phyric basalt.

GRAIN SIZE: Fine-grained (0.1-1.0 mm).

TEXTURE: Subophitic.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
PHENOCRYST						
Olivine	0	1	0.5-1.2		Rounded.	100% replaced by chlorite, actinolite, magnetite and pyrite. Phenocrysts and glomerocrysts with plagioclase.
Plagioclase	5	5	0.4-2.0		Subhedral.	Phenocrysts and glomerocrysts, with or without olivine. Unaltered.
Clinopyroxene	5	5	0.8-2.5		Anhedral.	Unaltered.
GROUNDMASS						
Plagioclase	52	52	0.1-1.0		Subhedral.	Unaltered.
Clinopyroxene	24	30	0.1-0.4		Anhedral.	Partly replaced by actinolite.
Olivine	0	2	0.1-0.4		Rounded.	100% replaced by chlorite, actinolite, and magnetite.
Magnetite	5	5	0.01-0.2		Skeletal-anhedral.	Extensively (50-90%) altered to sphene.
SECONDARY MINERALOGY						
	PERCENT	REPLACING/ FILLING				COMMENTS
Chlorite	3	Replaces olivine, fills vugs.				
Actinolite	6	Replaces clinopyroxene, olivine, fills vugs.				
Sphene	<1	Magnetite.				
Chalcopyrite	<1	Replaces olivine, 0.01-0.05 mm.				
Pyrite	<1	Replaces olivine and igneous sulfides, 0.01-0.05 mm.				

VESICLES/ CAVITIES	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE
Vugs	<1		0.5	Chlorite and actinolite.	Irregular.