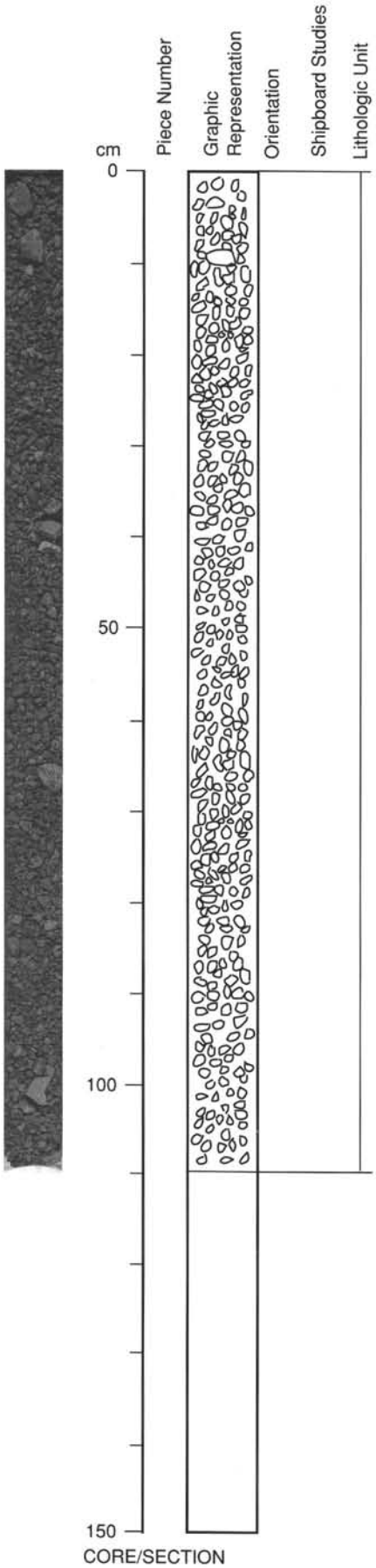
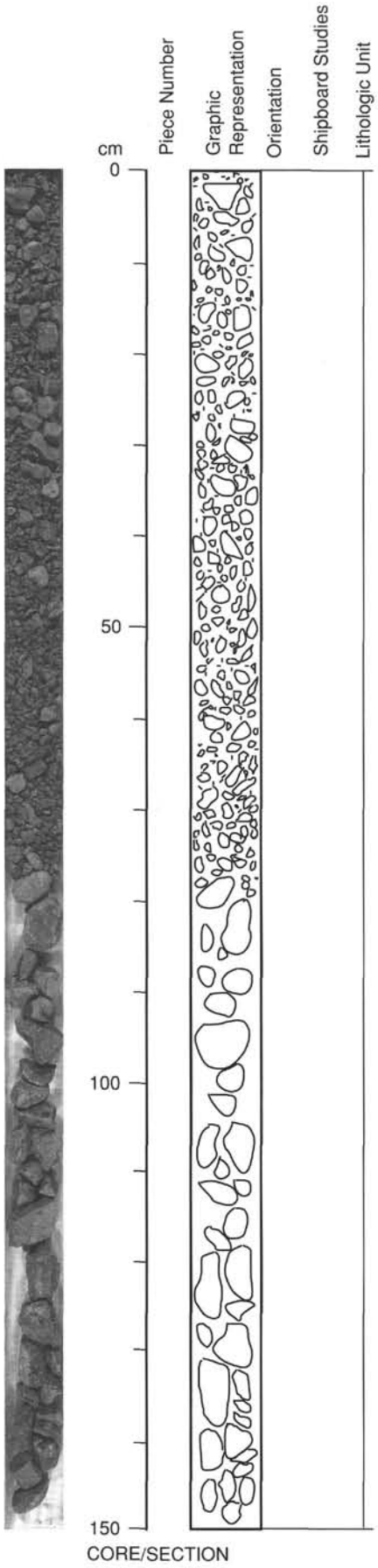
140-504B-182M-1

COMMENTS: Gravel from overshot and core barrel derived from unknown depth. The material was not described in detail.

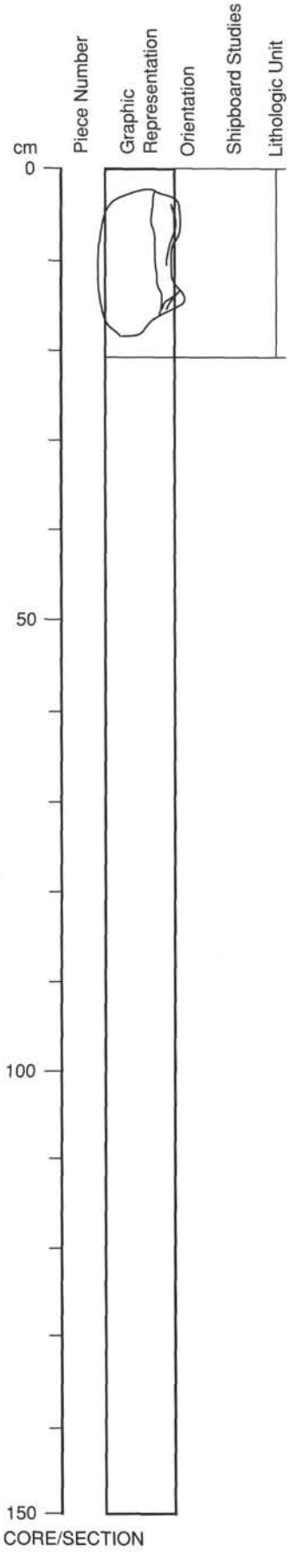


140-504B-182M-2

COMMENTS: Core contains gravel from overshot and core barrel derived from unknown depth and was not described in detail.



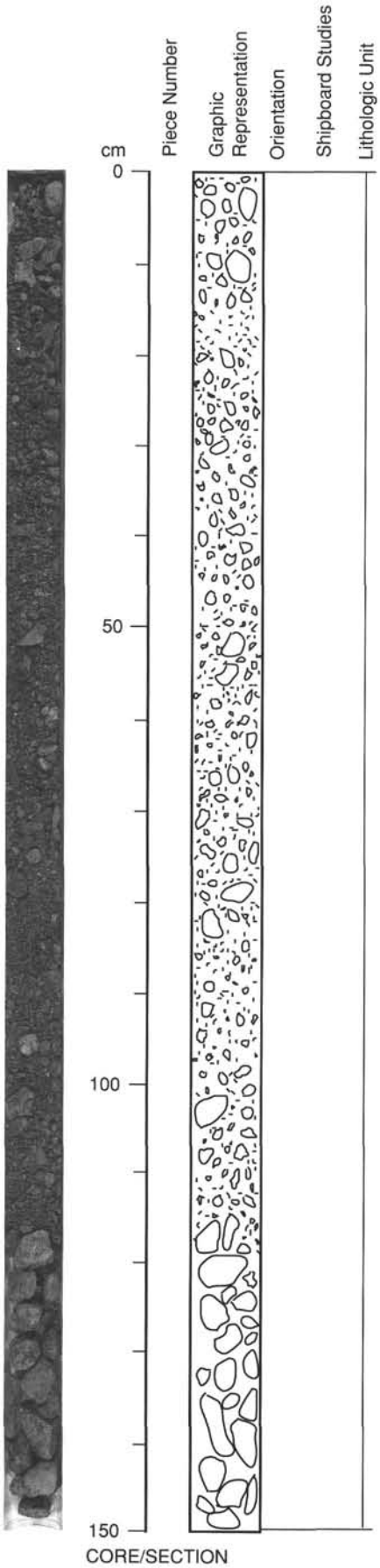
140-504B-182M-3



COMMENTS: Gravel from overshot and core barrel derived from unknown depth. This section contains plagioclase+pyroxene+magnetite inclusions and plagioclase-pyroxene clots. Coarse-grained pale-green pyroxenes and plagioclase xenocrysts are present. One plagioclase xenocryst contains Fe-Ti oxide minerals and pale-green pyroxene.

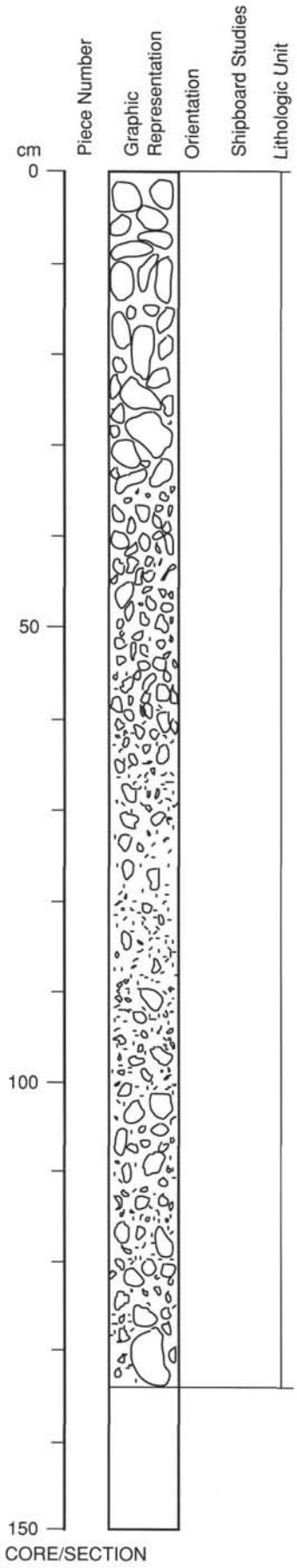
140-504B-183M-1

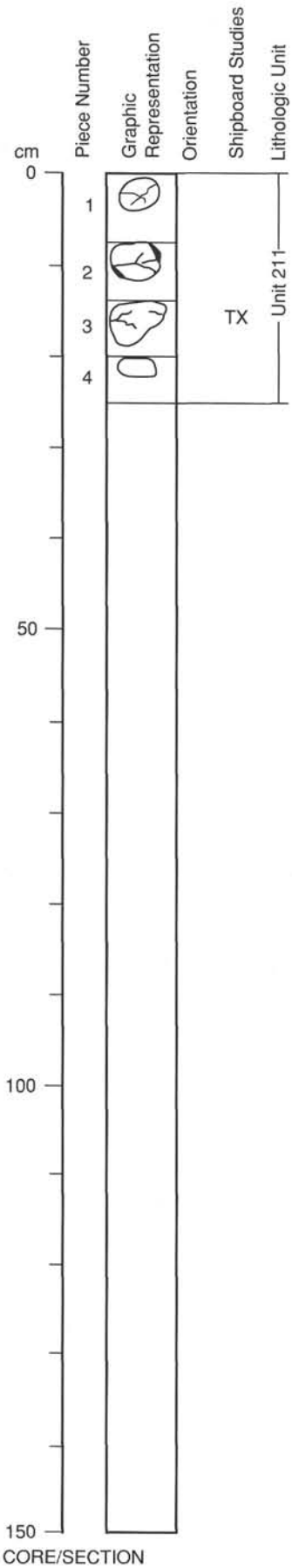
COMMENTS: Core contains material recovered from boot basket when washing down to diamond bit and stabilizer. Gravel is derived from unknown depth in hole and was not described.



140-504B-184M-1

COMMENTS: Core contains material recovered in basket during drilling without coring. Gravel was derived from unknown depth in hole and was not described.



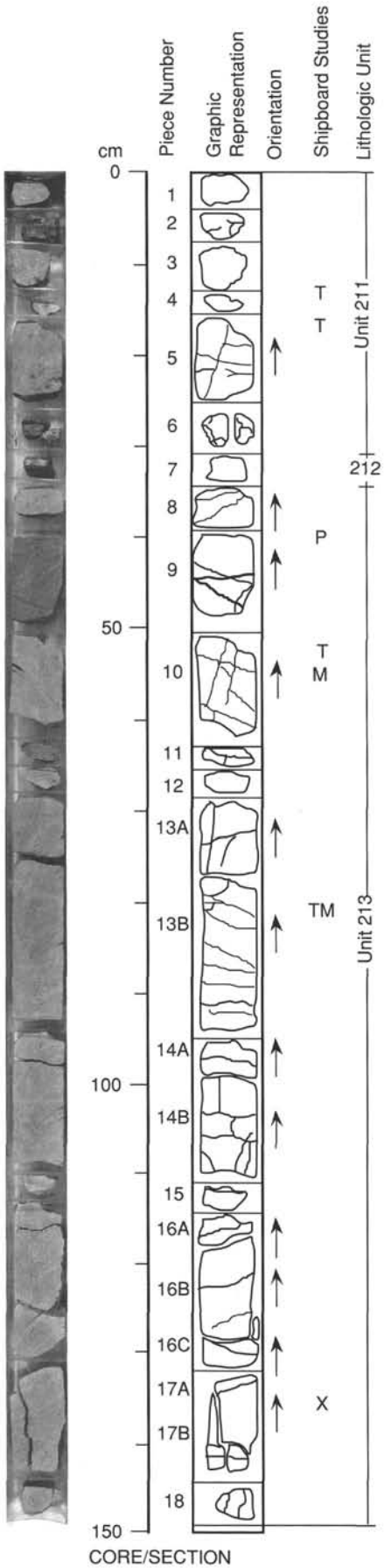


140-504B-185R-1

UNIT 211: MODERATELY PLAGIOCLASE-CLINOPYROXENE-OLIVINE PHYRIC DIABASE

Pieces 1–4

CONTACTS: Not observed.
PHENOCRYSTS:
Plagioclase - 3.0%; 3.0 mm; euhedral.
Augite - 0.5%; 0.8 mm; subhedral.
Olivine - 0.3%; 2.5 mm; euhedral.
Cr-Augite - 2.0%; 6.5 mm; euhedral.
GROUNDMASS: Texture: Fine-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Slightly altered, locally highly altered in amygdules and halos. Olivine: 100% altered to actinolite, mixed-layer clay, magnetite, chalcopyrite, and pyrite. Groundmass: 10% altered to actinolite, chlorite, albite, and titanite. Amygdule of chlorite and albite in Pieces 1 and 2 is rimmed by halos of albite, actinolite, chlorite, and titanite.
VEINS/FRACTURES: <1%; <0.5 mm; 7 open fractures, unoriented.



140-504B-186R-1

UNIT 211: MODERATELY PLAGIOCLASE-CLINOPYROXENE-OLIVINE PHYRIC DIABASE

Pieces 1–6

CONTACTS: Not observed.
PHENOCRYSTS:
Plagioclase - 3.0%; 3.0 mm; euhedral.
Augite - 0.5%; 0.8 mm; subhedral.
Olivine - 0.3%; 2.5 mm; euhedral.
Cr-Augite - 2.0%; 6.5 mm; euhedral.
GROUNDMASS: Texture: Fine-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Slightly altered. Olivine: 100% altered to chlorite, actinolite, pyrite, chalcopyrite, and iron oxide minerals. Groundmass: 10% altered to actinolite, chlorite, albite, and titanite.
VEINS/FRACTURES: <0.5–1 mm; unoriented. Five open fractures, 1 dark green vein, 1 light green vein.
ADDITIONAL COMMENTS: Sulfide associated with altered olivine. Gabbroic xenoliths in Pieces 4 and 5. Two types of cumulate gabbroic clots: (1) olivine-bearing plagioclase+clinopyroxene ± Fe-Ti oxide minerals, and (2) olivine-free plagioclase+clinopyroxene (without visible Fe-Ti oxide minerals). Composite pyroxenite-gabbro nodule in Piece 2.

UNIT 212: APHYRIC DIABASE

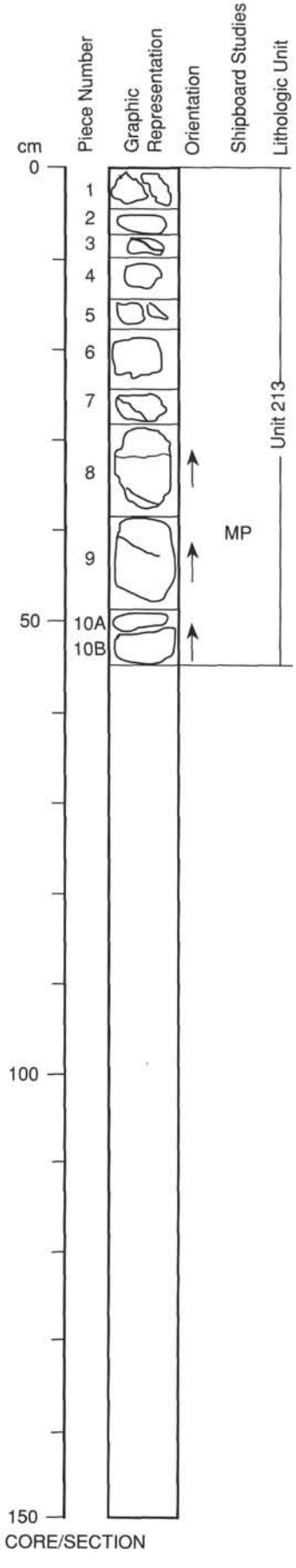
Piece 7

CONTACTS: Not observed.
PHENOCRYSTS:
Plagioclase - 0.2%; 2.5 mm; euhedral.
Augite - 0.2%; 0.8 mm; subhedral.
Cr-Augite - 0.2%; 6.5 mm; euhedral.
GROUNDMASS: Texture: Fine-grained, equigranular. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Slightly altered. Olivine: 100% altered to chlorite, actinolite, pyrite, chalcopyrite, serpentine, and magnetite. Groundmass: 10% altered to actinolite, chlorite, albite, and titanite.
VEINS/FRACTURES: No fractures or veins.

UNIT 213: APHYRIC DIABASE

Pieces 8–18

CONTACTS: Not observed.
PHENOCRYSTS:
Olivine - 0.2%; 3.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained, equigranular. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 6/1).
STRUCTURE: Massive.
ALTERATION: Moderately altered. Olivine: 100% altered to chlorite, and actinolite. Groundmass: 50% altered to actinolite, chlorite, albite, and titanite.
VEINS/FRACTURES: <2%; <0.5 mm; unoriented; 12 dark green veins, 6 light green veins, 23 dark/light green veins, 8 open fractures. Well-developed saddle-shaped disking fracture in Piece 16A.

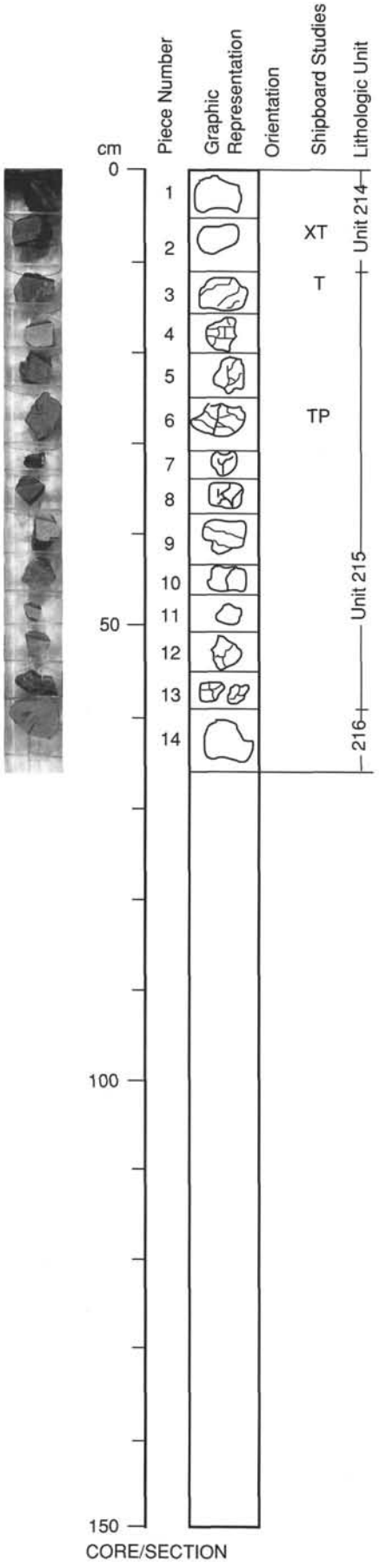


140-504B-186R-2

UNIT 213: APHYRIC DIABASE

Pieces 1–10B

CONTACTS: Not observed.
PHENOCRYSTS:
Olivine - 0.2%; 3.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained, equigranular. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Moderately altered. Olivine: 100% altered to chlorite. Groundmass: 50% altered to actinolite, chlorite, albite, and titanite.
VEINS/FRACTURES: 2%; <1.5 mm; 2 dark green veins, 2 epidote veins, 4 veins containing epidote+ sulfide minerals, 4 dark/light green veins, 1 open fracture. Of the veins that are oriented, the dark green and the dark/light green veins are mostly of shallow dip. The light green veins have variable dips. Epidote+sulfide veins dip steeply. Dip of fractures is variable. Well-developed saddle-shaped fractures in Pieces 6 and 10A.



140-504B-187R-1

UNIT 214: APHYRIC DIABASE

Pieces 1–2

CONTACTS: Not observed, top piece of unit contains fragment of chilled margin.
PHENOCRYSTS:
Plagioclase - 0.1%; 1.5 mm; euhedral.
Olivine - 0.3%; 0.8 mm; euhedral.
Cr-Augite - 0.05%; 1.5 mm; euhedral.
GROUNDMASS: Texture: Fine-grained, equigranular. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Slightly altered. Olivine: 100% altered to chlorite. Groundmass: 10% altered to actinolite, chlorite, albite, and titanite.
VEINS/FRACTURES: <1%; <0.5 mm; 1 unoriented open fracture.

UNIT 215: APHYRIC DIABASE

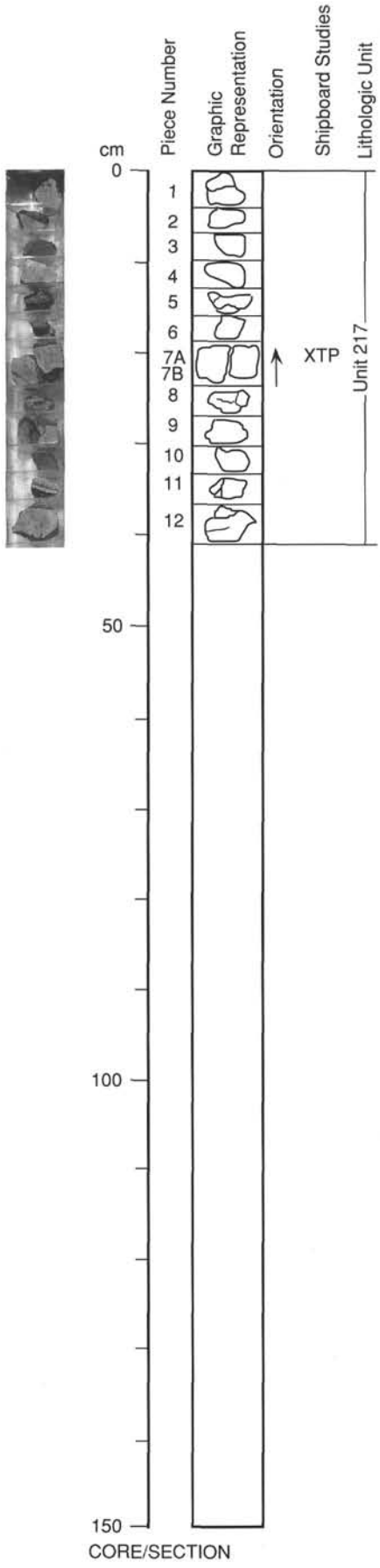
Pieces 3–13

CONTACTS: Not observed, chilled contact?
PHENOCRYSTS:
Plagioclase - 0.2%; 1.2 mm; euhedral.
Olivine - 0.1%; 1.2 mm; euhedral.
Cr-Augite - 0.1%; 2.5 mm; euhedral.
GROUNDMASS: Texture: Very fine-grained, equigranular. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 6/1).
STRUCTURE: Brecciation along chilled contact, otherwise massive.
ALTERATION: Pieces 3–10 are moderately to highly altered (40%–60%), Pieces 11–13 are slightly altered (10%). Olivine: 100% altered to chlorite, actinolite, and magnetite. Groundmass: 60%–10% altered to actinolite, chlorite, albite, and titanite.
VEINS/FRACTURES: <3%; <1 mm; variable dips; 5 dark/light green networks, 3 light green veins (unoriented), 1 dark/light green vein.
ADDITIONAL COMMENTS: Abundance of sulfide minerals is higher than 0.2% in Piece 3.

UNIT 216: SPARSELY PLAGIOCLASE-CLINOPYROXENE PHYRIC DIABASE

Piece 14

CONTACTS: Not observed.
PHENOCRYSTS:
Plagioclase - 1.5%; 3.0 mm; euhedral.
Cr-Augite - 0.2%; 2.5 mm; euhedral.
GROUNDMASS: Texture: Fine-grained, doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 6/1).
STRUCTURE: Massive.
ALTERATION: Olivine: 100% altered to chlorite. Groundmass: 80% altered to actinolite, chlorite, albite, and titanite. Plagioclase: 80% altered to albite and pyrite.
VEINS/FRACTURES: No fractures or veins.

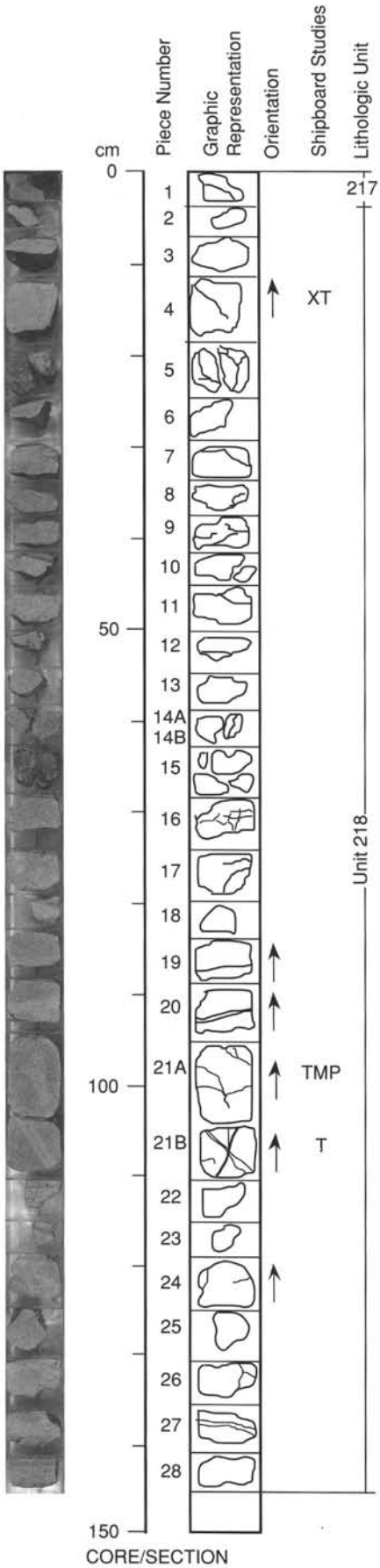


140-504B-188R-1

UNIT 217: SPARSELY CLINOPYROXENE-PLAGIOCLASE-OLIVINE PHYRIC DIABASE

Pieces 1–12

CONTACTS: Not observed.
PHENOCRYSTS:
Plagioclase - 0.3%; 2.5 mm; euhedral.
Augite - 0.1%; 0.4 mm; subhedral.
Olivine - 0.1%; 1.5 mm; subhedral.
Cr-Augite - 0.5%; 2.5 mm; euhedral.
GROUNDMASS: Texture: Fine-grained, doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Slightly altered. Olivine: 100% altered to actinolite, chlorite, magnetite, and pyrite. Groundmass: 10% altered to actinolite, chlorite, albite, and titanite.
VEINS/FRACTURES: <1%; <0.5 mm; unoriented; 2 dark green veins, 2 dark/light green veins, 1 light green vein, 7 open fractures.
ADDITIONAL COMMENTS: Microgabbroic clots; sulfide+plagioclase+augite inclusion (clot) in Piece 6 (also plagioclase+clinopyroxene).



140-504B-189R-1

UNIT 217: SPARSELY CLINOPYROXENE-PLAGIOCLASE-OLIVINE PHYRIC DIABASE

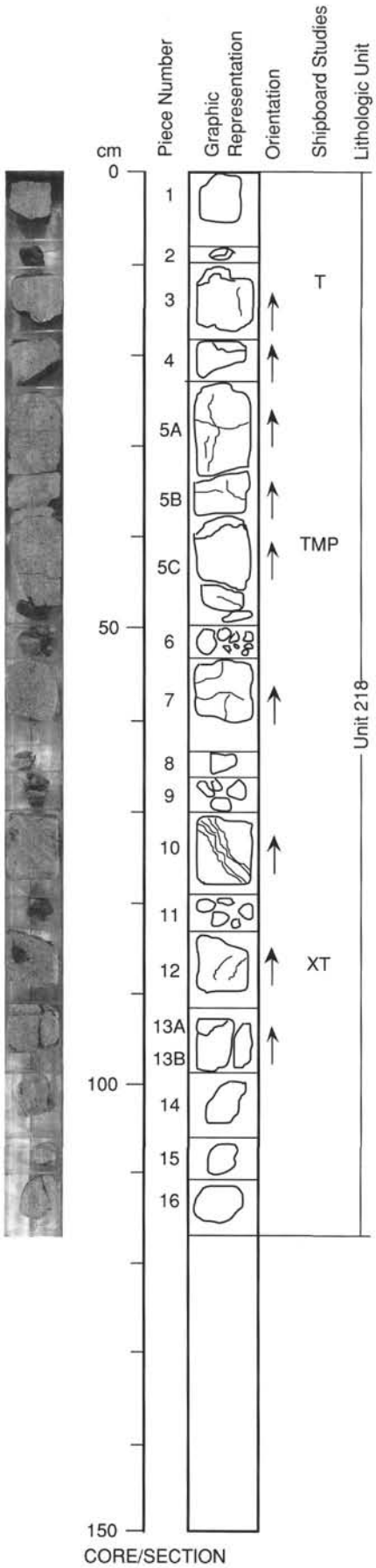
Piece 1

CONTACTS: Not observed.
PHENOCRYSTS:
Augite - 0.1%; 0.4 mm; subhedral.
Olivine - 0.1%; 1.5 mm; subhedral.
Cr-Augite - 0.5%; 2.5 mm; euhedral.
GROUNDMASS: Texture: Fine-grained, doleritic, Compositon: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
ALTERATION: Slightly altered. Oliveine: 100% altered to serpentine, chlorite, talc, mixed-layer clay, magnetite, pyrite, and iron oxide minerals. Groundmass: 10% altered to actinolite, chlorite, albite, and titanite.
VEINS/FRACTURES: <1%; <0.5 mm; unoriented; 1 dark/light green vein.

UNIT 218: MODERATELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

Pieces 2–28

CONTACTS: Not observed.
PHENOCRYSTS:
Plagioclase - 3%; 4 mm; euhedral.
Augite - 0.1%; 1.0 mm; subhedral.
Olivine - 2.0%; 1.5 mm; subhedral.
Cr-Augite - 1.5%; 4.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained, doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 6/1).
STRUCTURE: Massive.
ALTERATION: Slightly altered, locally highly altered near actinolite amygdules and halos. Olivine: 100% altered to serpentine, chlorite, talc, mixed-layer clays, magnetite, pyrite, Fe-oxide minerals. Plagioclase: 1% altered to albite. Groundmass: 10% altered to actinolite, chlorite, albite, titanite. Amygdules (0.1–3 cm) rimmed by halos of actinolite, chlorite, albite, and titanite, are present in Pieces 7, 13, 17, 18, 20, 21, 24, 26. Halos form 5%–75% of sample.
VEINS/FRACTURES: <6%; <2 mm; dips variable; 43 open fractures, one of which is oriented and moderately to steeply dipping; 3 dark green veins (shallowly to moderately dipping); 1 light green vein (steeply dipping); 1 dark/light green vein of variable dip.
ADDITIONAL COMMENTS: Green clinopyroxene+olivine clot, Piece 28.

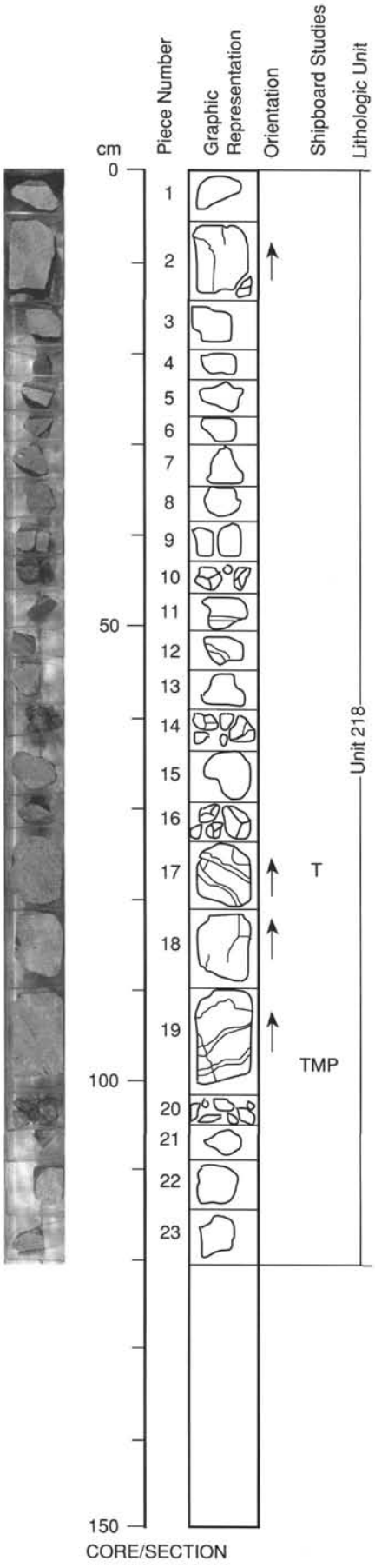


140-504B-189R-2

UNIT 218: MODERATELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

Pieces 1–16

CONTACTS: Not observed.
PHENOCRYSTS:
Plagioclase - 3.0%; 4.0 mm; euhedral.
Augite - 0.1%; 1.0 mm; subhedral
Olivine - 2.0%; 1.5 mm; subhedral
Cr-Augite - 1.5%; 4.0 mm; euhedral
GROUNDMASS: *Texture: Fine-grained, doleritic. Composition:* Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 6/1).
STRUCTURE: Massive.
ALTERATION: Slightly altered, locally highly altered near halos and amygdules. Olivine: 100% altered to pyrite, iron oxide minerals, talc, and mixed-layer clays. Groundmass: 10% altered to actinolite, chlorite, albite, and titanite. Amygdules of actinolite comprise 15% of sample. Halos (5 mm) of actinolite, chlorite, albite, and titanite in rim.
VEINS/FRACTURES: 19 fractures of variable, but generally shallow, dip; 1 light green vein (shallow dip); 1 dark green vein, containing pyrite (steep dip); 2 light green veins of moderate dip.
ADDITIONAL COMMENTS: Plagioclase and green pyroxene clots.

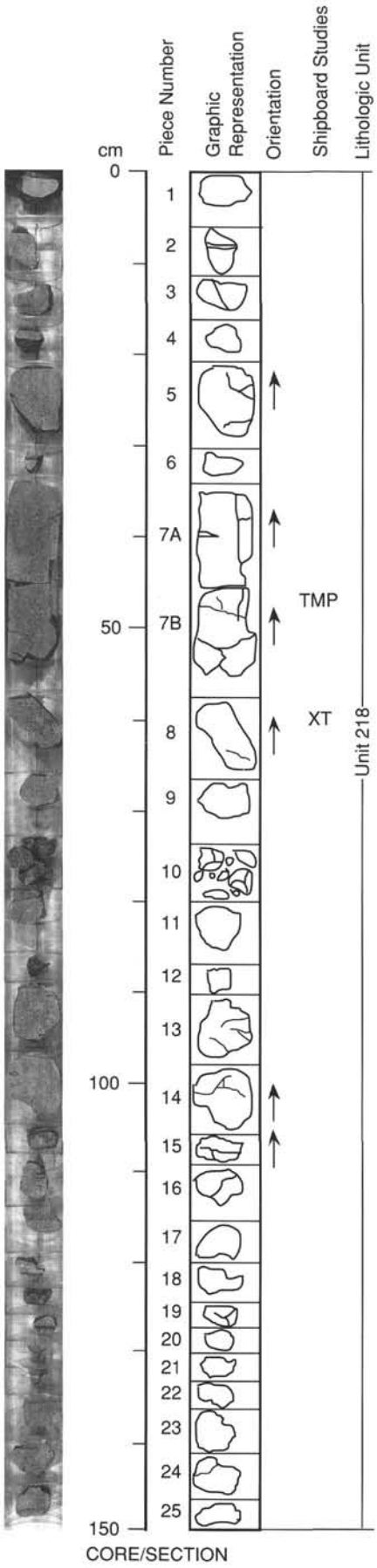


140-504B-190R-1

UNIT 218: MODERATELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

Pieces 1–23

CONTACTS: Not observed.
PHENOCRYSTS:
Plagioclase - 3.0%; 4.0 mm; euhedral.
Augite - 0.1%; 1.0 mm; subhedral.
Olivine - 2.0%; 1.5 mm; subhedral.
Cr-Augite - 1.5%; 4.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained, doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 6/1).
STRUCTURE: Massive.
ALTERATION: Slightly altered, locally highly altered near actinolite amygdules, which are rimmed by halos of actinolite, chlorite, albite, and titanite. Olivine: 100% altered to chlorite and pyrite. Plagioclase: 1% altered to albite and chlorite. Groundmass: 10% altered to actinolite, chlorite, albite, and titanite. Actinolite amygdules (0.1 to 0.2 cm) form up to 15% of the sample. Halos range in size from 0.3 to 1.5 cm and comprise 20%–100% of the sample. Halos occur in Pieces 1–4, 8, 9, 13, 14, 18, 19, 22, and 23.
VEINS/FRACTURES: <5%; <1.5 mm; dips variable; 10 open fractures (steeply dipping), 1 dark green vein (steeply dipping), 2 light green veins (moderately dipping), 2 dark/light green veins (shallowly dipping).

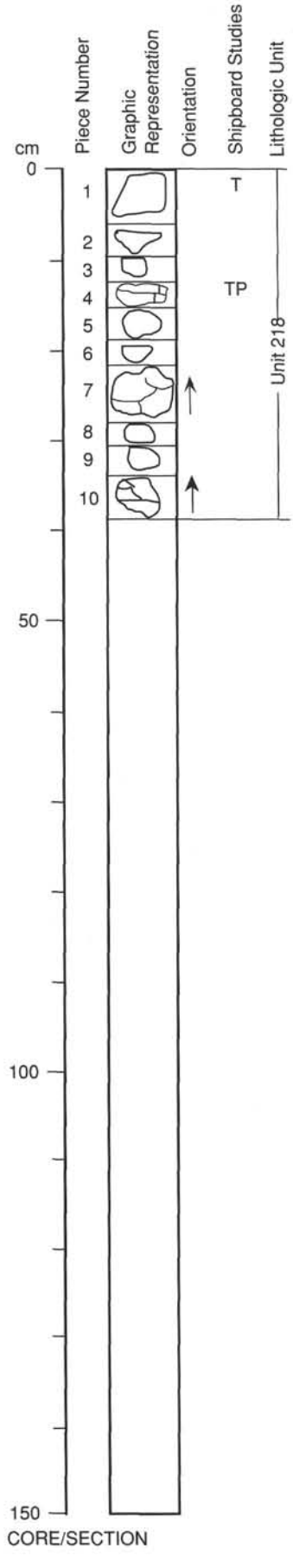


140-504B-191R-1

UNIT 218: MODERATELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

Pieces 1–25

CONTACTS: Not observed.
PHENOCRYSTS:
Plagioclase - 3.0%; 4.0 mm; euhedral.
Augite - 0.1%; 1.0 mm; subhedral.
Olivine - 2.0%; 1.5 mm; subhedral.
Cr-Augite - 1.5%; 4.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained, doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 6/1).
STRUCTURE: Massive.
ALTERATION: Slightly altered, locally highly altered near actinolite amygdules. Olivine: 100% altered to chlorite, pyrite, iron oxide minerals, mixed-layer clays, and talc. Groundmass: 10% altered to actinolite, chlorite, albite, and titanite. Actinolite amygdules (0.1–0.2 cm) form 1%–10% of sample and are rimmed by halos (0.2–0.5 cm wide) that comprise 3%–90% of the sample. Halos occur in Pieces 1, 3, 7, 8, 11, 13, 14, 16, 21, 23–25.
VEINS/FRACTURES: <2%; <0.5 mm; orientations variable; 19 open fractures (shallowly and steeply dipping), 1 light green vein (shallowly dipping), 2 dark green veins (moderately to steeply dipping).
ADDITIONAL COMMENTS: Troctolite clot (plagioclase+olivine) in Piece 4 approximately 1 cm in diameter. Green clinopyroxene+plagioclase gabbroic inclusions 3–5 mm in diameter (Pieces 9 and 11). Plagioclase megacrysts up to 5 mm in diameter (Piece 11).

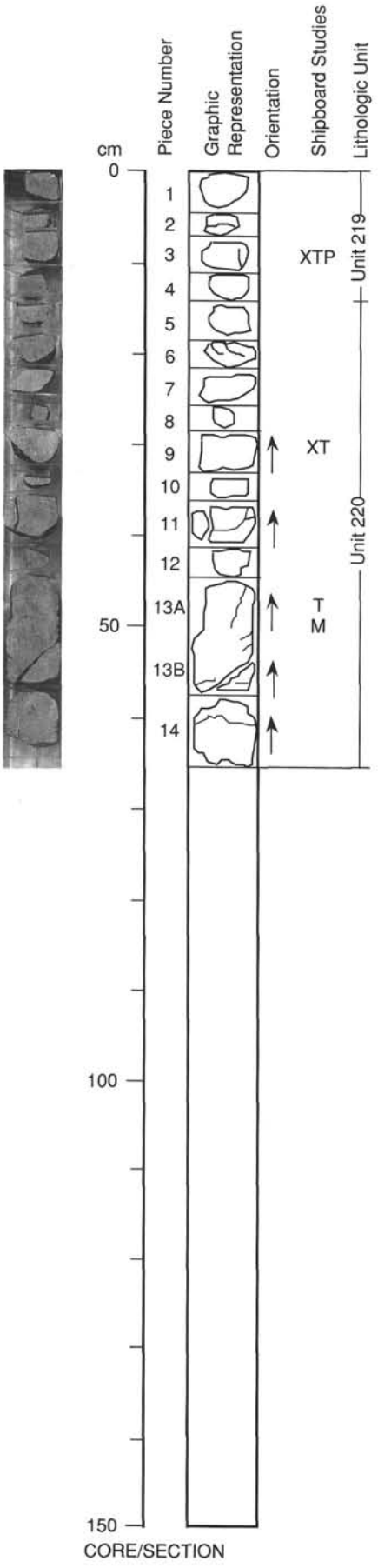


140-504B-192R-1

UNIT 218: MODERATELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

Pieces 1–10

CONTACTS: Not observed.
PHENOCRYSTS:
Plagioclase - 3.0%; 4.0 mm; euhedral.
Augite - 0.1%; 1.0 mm; subhedral.
Olivine - 2.0%; 1.5 mm; subhedral.
Cr-Augite - 1.5%; 4.0 mm; euhedral.
GROUNDMASS: Fine-grained, doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 6/1).
STRUCTURE: Massive.
ALTERATION: Slightly altered. Olivine: 100% altered to chlorite, pyrite, iron oxide minerals, mixed-layer clays, magnetite, and chalcopyrite. Groundmass: 10% altered to actinolite, chlorite, albite, and titanite.
VEINS/FRACTURES: 8%; <2 mm; dips variable; 3 open fractures (shallowly dipping), 1 light green vein (steeply dipping), 1 pistachio vein (unoriented).
ADDITIONAL COMMENTS: Olivine is smaller in size and less abundant in lower part of the unit.



140-504B-193R-1

UNIT 219: MODERATELY PLAGIOCLASE-CLINOPYROXENE-OLIVINE PHYRIC DIABASE

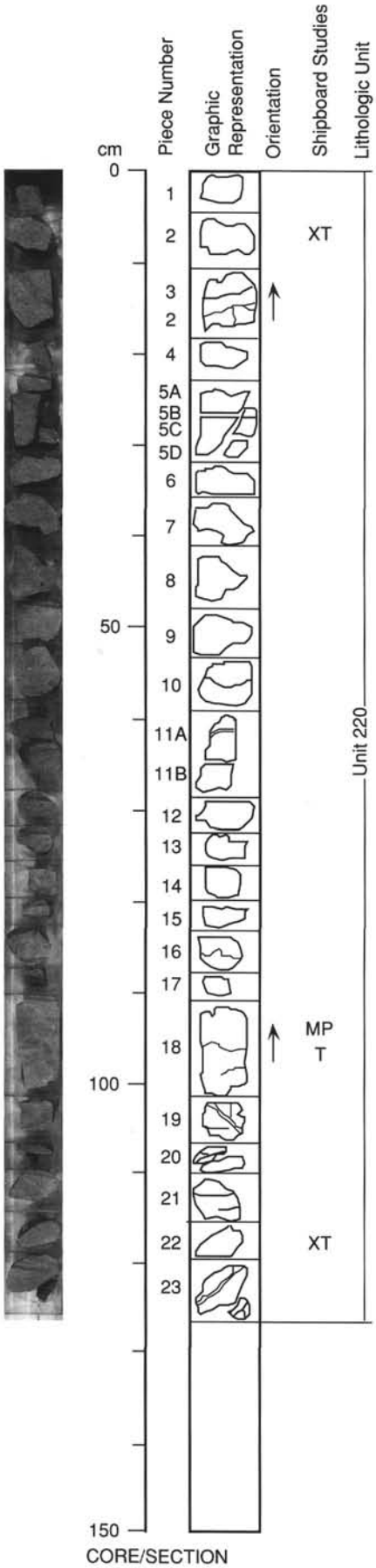
Pieces 1–4

CONTACTS: Not observed.
PHENOCRYSTS:
Plagioclase - 2.0%; 2.0 mm; euhedral.
Augite - 0.5%; 0.5 mm; subhedral.
Olivine - 0.5%; 1.2 mm; euhedral.
Cr-Augite - 0.1%; 1.5 mm; euhedral.
GROUNDMASS: Texture: Fine-grained, doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 6/1).
STRUCTURE: Massive.
ALTERATION: Slightly altered. Olivine: 100% altered to chlorite, pyrite, iron oxide minerals, mixed-layer clays, and talc. Groundmass: 10% altered to actinolite, chlorite, albite, and titanite.
VEINS/FRACTURES: <1%; <0.5 mm; unoriented; 4 open fractures.
ADDITIONAL COMMENTS: Unit is bounded on top and bottom by aphyric chilled margins.

UNIT 220: MODERATELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

Pieces 5–14

CONTACTS: Not observed, chilled margin on top of Piece 5.
PHENOCRYSTS:
Plagioclase - 3.0%; 3.0 mm; euhedral.
Augite - 0.3%; 0.8 mm; subhedral.
Olivine - 1.0%; 1.5 mm; euhedral.
Cr-Augite - 0.3%; 3.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained, doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 6/1 to 5B 5/1).
STRUCTURE: Massive.
ALTERATION: Slightly altered. Olivine: 100% altered to chlorite, pyrite, iron oxide minerals, mixed-layer clays, and talc. Groundmass: 10% altered to actinolite, chlorite, albite, and titanite. More extensively altered halos of actinolite, chlorite, albite, and titanite. In Pieces 7, 9, 13, and 14, halos (0.2–1.2 cm) are 60%–95% recrystallized.
VEINS/FRACTURES: <1%; <0.5 mm; dips variable; 8 open fractures (dominantly steeply dipping, also shallowly dipping), several light green veins (shallowly to moderately dipping).

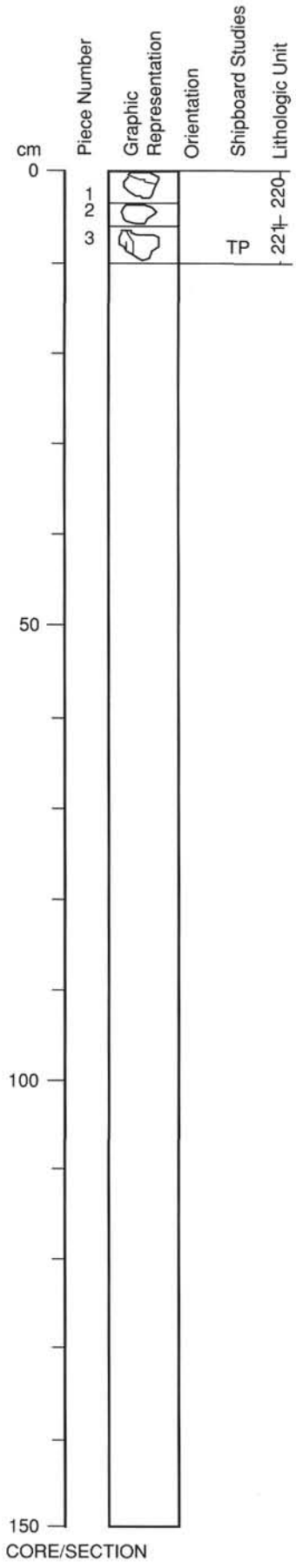


140-504B-194R-1

UNIT 220: MODERATELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

Pieces 1–23

CONTACTS: Not observed.
PHENOCRYSTS:
Plagioclase - 3.0%; 3.0 mm; euhedral.
Augite - 0.3%; 0.8 mm; subhedral.
Olivine - 1.0%; 1.5 mm; euhedral.
Cr-Augite - 0.3%; 3.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained, doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 6/1 to 5B 5/1).
STRUCTURE: Massive.
ALTERATION: Slightly altered, locally altered near amygdules and halos. Olivine: 100% altered to chlorite, pyrite, iron oxide minerals, mixed-layer clays, and talc. Groundmass: 10% altered to actinolite, chlorite, albite, and titanite. Amygdules of actinolite (0.1–0.2 cm) in Pieces 9, 14 are surrounded by halos of actinolite, chlorite, albite, and titanite. Halos of actinolite, chlorite, albite, and titanite in Pieces 8–11 and 13–18.
VEINS/FRACTURES: <4%; <2 mm; orientations variable; 10 open fractures (both shallowly and steeply dipping), 4 light green veins (mostly shallowly dipping), 9 dark green veins (unoriented), 4 light/dark green veins (mostly steeply dipping).
ADDITIONAL COMMENTS: Unit contains more altered olivine than overlying unit; lower part of unit has zones of variable plagioclase content and variable alteration. Clinopyroxene+plagioclase+olivine inclusions (3 mm) in Piece 5. Plagioclase clots (2.5 mm), sometimes containing Fe-Ti oxide mineral inclusions (Piece 12). Percentage of green pyroxene strongly varies from piece to piece. Pieces 6 and 7 are somewhat coarser grained than the rest; Pieces 20, 22, and 23 are finer grained.



140-504B-195R-1

UNIT 220: MODERATELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

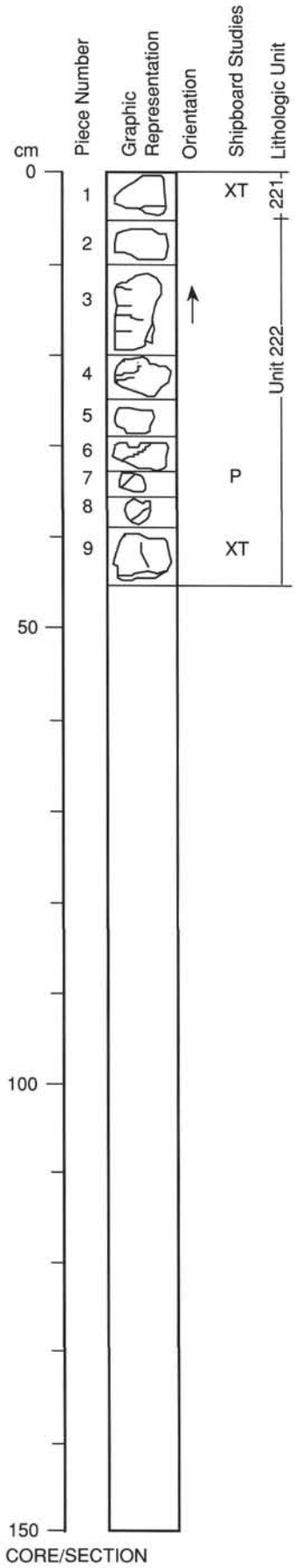
Pieces 1–2

CONTACTS: Not observed.
PHENOCRYSTS:
Plagioclase - 3.0%; 3.0 mm; euhedral.
Augite - 0.3%; 0.8 mm; subhedral.
Olivine - 1.0%; 1.5 mm; euhedral.
Cr-Augite - 0.3%; 3.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained, doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 6/1 to 5B 5/1).
STRUCTURE: Massive.
ALTERATION: Slightly altered. Olivine: 100% altered to chlorite, pyrite, iron oxide minerals, mixed-layer clays, and talc. Groundmass: 10% altered to actinolite, chlorite, albite, and titanite.
VEINS/FRACTURES: <1%; <0.5 mm; unoriented; 1 open fracture, 1 dark green vein.
ADDITIONAL COMMENTS: Unit contains more altered olivine than overlying unit; lower part of unit has zones of variable plagioclase content and variable alteration. Microgabbroic clot in Piece 2.

UNIT 221: APHYRIC DIABASE

Piece 3

CONTACTS: Chilled margins.
PHENOCRYSTS:
Plagioclase - 0.1%; 1.0 mm; euhedral.
Olivine - 0.5%; 1.0 mm; euhedral.
Cr-Augite - 0.3%; 1.5 mm; euhedral.
GROUNDMASS: Texture: Microcrystalline. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (10%) to actinolite, chlorite, albite, and titanite. Chlorite, mixed-layer clay, iron oxide minerals, talc, and pyrite completely replace olivine.
VEINS/FRACTURES: <1%–1%; 0.5 mm; dips variable; 2 shallowly dipping and one steeply dipping fractures.



140-504B-196R-1

UNIT 221: APHYRIC DIABASE

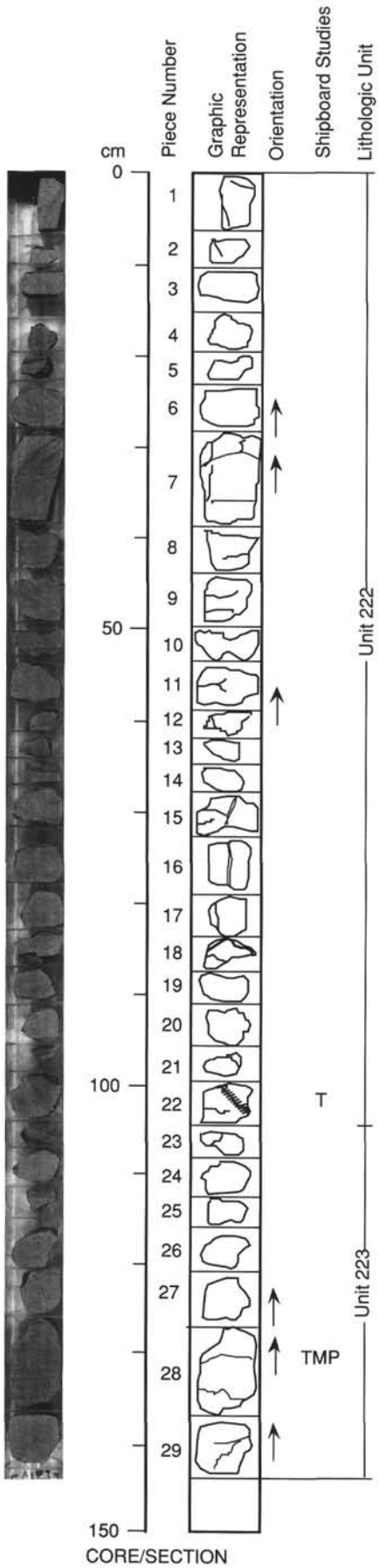
Piece 1

CONTACTS: Chilled margins.
PHENOCRYSTS:
Plagioclase - 0.1%; 1.0 mm; euhedral.
Olivine - 0.5%; 1.0 mm; euhedral.
Cr-Augite - 0.3%; 1.5 mm; euhedral.
GROUNDMASS: Texture: Microcrystalline. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (15%) to actinolite, chlorite, albite, and titanite. Olivine phenocrysts are completely replaced by chlorite, mixed-layer clay, iron oxide minerals, and pyrite.
VEINS/FRACTURES: 1%–2%; 0.5 mm; no oriented veins or fractures.
ADDITIONAL COMMENTS: Sulfide minerals mostly in altered olivine and along fractures.

UNIT 222: MODERATELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

Pieces 2–9

CONTACTS: Lower boundary of upper unit.
PHENOCRYSTS:
Plagioclase - 1.0%; 1.6 mm; euhedral.
Augite - 0.5%; 1.2 mm; subhedral.
Olivine - 1.0%; 1.5 mm; ophitic.
Cr-Augite - 0.1%; 1.5 mm; euhedral.
GROUNDMASS: Texture: Fine-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 6/1).
STRUCTURE: Massive.
ALTERATION: Groundmass slightly altered (15%) to albite, actinolite, chlorite, and titanite. Olivine phenocrysts are completely replaced by chlorite, mixed-layer clay, iron oxide mineral, and pyrite.
VEINS/FRACTURES: 1%–2%; 0.5 mm; dips variable; 3 oriented light green veins in Piece 6.



140-504B-197R-1

UNIT 222: MODERATELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

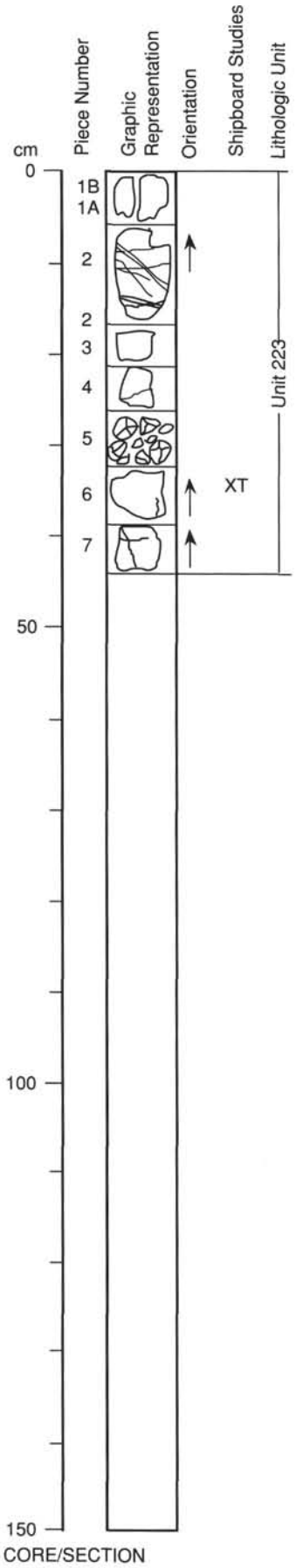
Pieces 1–22

CONTACTS: Lower boundary of upper unit.
PHENOCRYSTS:
Plagioclase - 1.0%; 1.6 mm; euhedral.
Augite - 0.5%; 1.2 mm; subhedral.
Olivine - 1.0%; 1.5 mm; ophitic.
Cr-Augite - 0.1%; 1.5 mm; euhedral.
GROUNDMASS: Texture: Fine-grained, doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 6/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (15%) to actinolite, chlorite, albite, and titanite. Locally, core is extensively altered near amygdules and halos. Olivine phenocrysts are completely replaced by chlorite, mixed-layer clay, iron oxide minerals, talc, and pyrite. Amygdules of chlorite and actinolite (0.5%–2%) are rimmed by actinolite-chlorite-albite-titanite alteration halos (0.2–0.3 cm wide) which comprise 5%–10% of the rock. Amygdules are present in Pieces 3, 7–9, and 11.
VEINS/FRACTURES: <1%–3%; <0.5–1 mm; dips variable; 4 shallowly dipping oriented fractures (Pieces 6, 7, 11), 3 light/dark green veins dipping both shallowly and steeply (Pieces 22, 6), 3 steeply dipping light green veins (Pieces 7, 15), 1 steeply dipping oriented dark green vein (Piece 7).
ADDITIONAL COMMENTS: Sulfide mineral with clay in altered olivine. Groundmass finer grained in Pieces 20, 21, and 22. Phenocryst plagioclase aspect ratio 1x2, groundmass plagioclase 1x6.

UNIT 223: SPARSELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

Pieces 23–29

CONTACTS: Lower boundary chilled margin.
PHENOCRYSTS:
Plagioclase - 1.0%; 2.5 mm; euhedral.
Augite - 0.1%; 1.0 mm; subhedral.
Olivine - 0.3%; 1.5 mm; euhedral.
Cr-Augite - 0.1%; 3.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained, seriate porphyritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (15%) to actinolite, chlorite, albite, and titanite. Olivine phenocrysts are completely replaced by chlorite, mixed-layer clay, talc, pyrite, and iron oxide minerals.
VEINS/FRACTURES: <1%–3%; <0.5–1 mm; dips variable; 2 shallowly dipping fractures on Pieces 28 and 29.

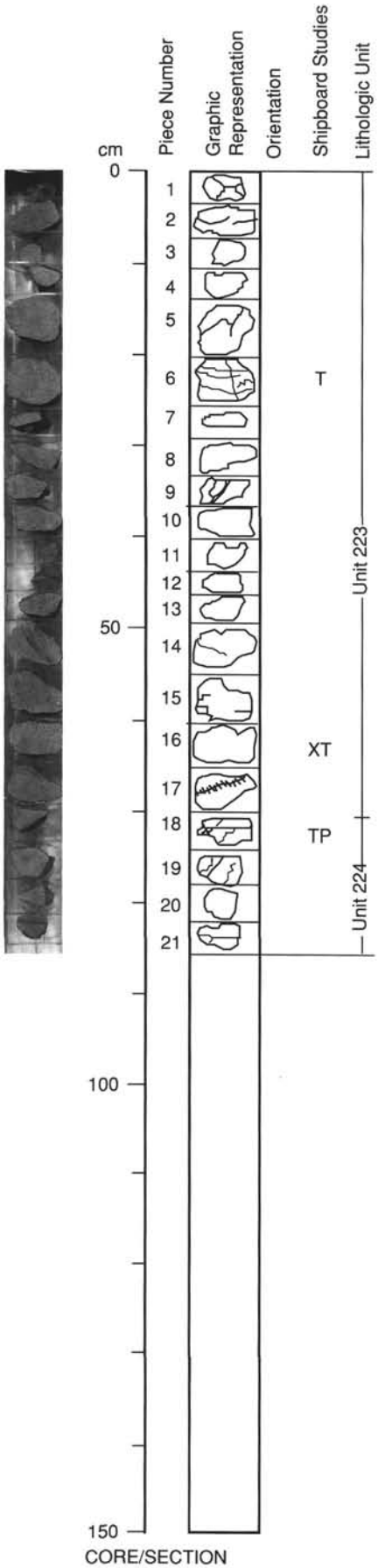


140-504B-197R-2

UNIT 223: SPARSELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

Pieces 1A–7

CONTACTS: Lower boundary chilled margin.
PHENOCRYSTS:
Plagioclase - 1.0%; 2.5 mm; euhedral.
Augite - 0.1%; 1.0 mm; subhedral.
Olivine - 0.3%; 1.5 mm; euhedral.
Cr-Augite - 0.1%; 3.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained, seriate porphyritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly (10%) altered to actinolite, chlorite, albite, and titanite. Olivine phenocrysts are completely replaced by chlorite, mixed-layer clay, talc, and pyrite.
VEINS/FRACTURES: <1%–3%; <0.5–1 mm; dips variable; 2 steeply dipping fractures (Pieces 2 and 7), 1 shallowly dipping chlorite vein (Piece 2), 3 light green veins of variable dip (Piece 2).



140-504B-198R-1

UNIT 223: SPARSELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

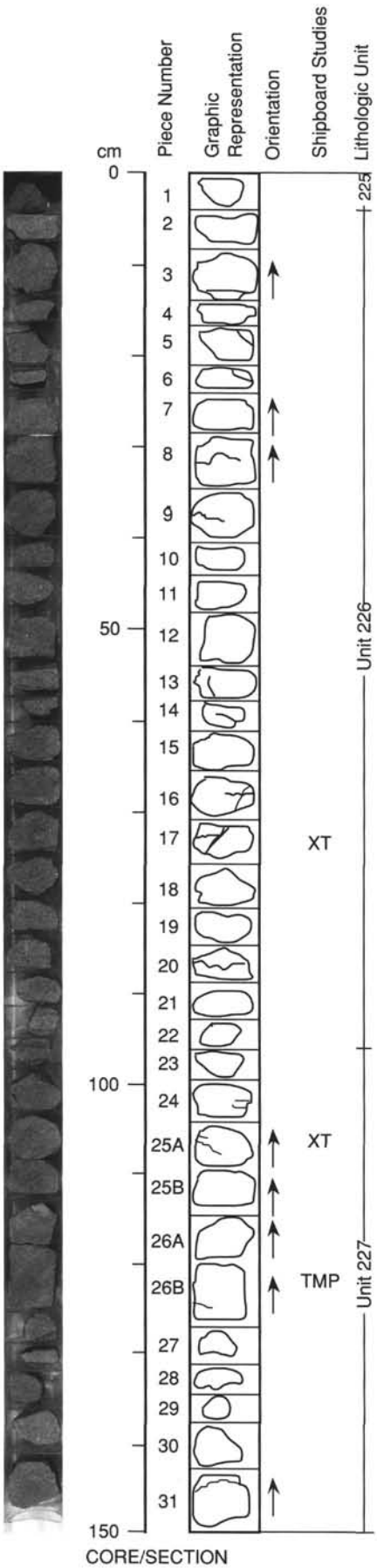
Pieces 1–17

CONTACTS: Lower boundary chilled margin.
PHENOCRYSTS:
Plagioclase - 1.0%; 2.5 mm; euhedral.
Augite - 0.1%; 1.0 mm; subhedral.
Olivine - 0.3%; 1.5 mm; euhedral.
Cr-Augite - 0.1%; 3.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained seriate porphyritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (15%) to actinolite, chlorite, albite, and titanite. Olivine is completely replaced by chlorite, mixed-layer clay, talc, iron oxide minerals, and pyrite. Disseminated pyrite is present in the groundmass.
VEINS/FRACTURES: <1%–2%; <0.5–1.5 mm; dip of fractures is dominantly shallow, 1 steeply dipping fracture in Piece 6, shallowly to moderately dipping dark green veins in Piece 6, 1 shallowly dipping light green vein in Piece 17.

UNIT 224: APHYRIC DIABASE

Pieces 18–21

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.2%; 0.8 mm; euhedral.
Augite - 0.05%; 0.6 mm; subhedral.
Olivine - 0.1%; 1.0 mm; euhedral.
GROUNDMASS: Texture: Microcrystalline to fine-grained aphanitic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 6/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is highly altered (60%) to actinolite, chlorite, albite, and titanite. Chlorite, mixed-layer clay, talc, iron oxide minerals, and pyrite completely replace olivine.
VEINS/FRACTURES: <1%–2%; <0.5 mm; no orientation data.



140-504B-199R-1

UNIT 225: APHYRIC DIABASE

Piece 1

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.3%; 2.0 mm; euhedral.
Olivine - 0.2%; 1.2 mm; euhedral.
Cr-Augite - 0.05%; 1.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained aphanitic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray.
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (15%) to actinolite, chlorite, albite, and titanite.
VEINS/FRACTURES: <1%; <0.5–1.5 mm; no orientation data.

UNIT 226: MODERATELY PLAGIOCLASE-CLINOPYROXENE-OLIVINE PHYRIC DIABASE

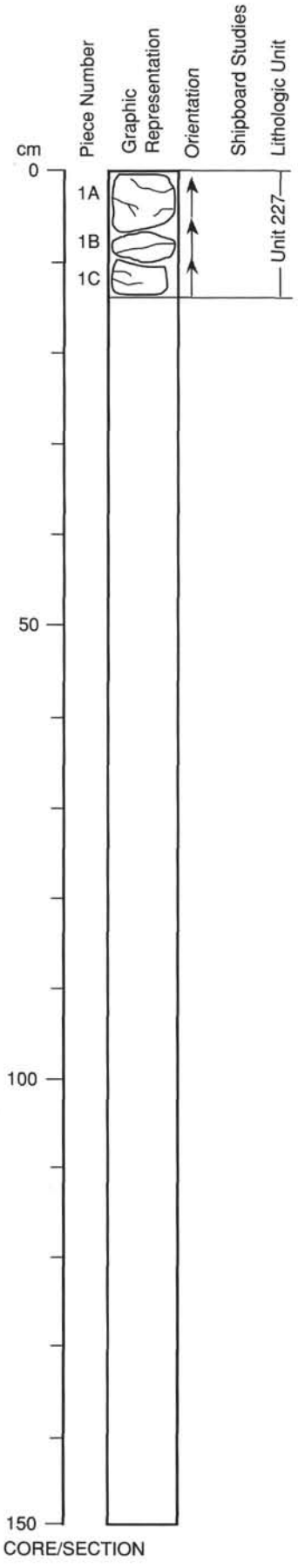
Pieces 2–22

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 3.0%; 2.0 mm; euhedral.
Augite - 1.5%; 1.5 mm; subhedral.
Olivine - 1.0%; 1.5 mm; euhedral.
Cr-Augite - 0.2%; 5.0 mm; euhedral.
GROUNDMASS: Texture: Seriate porphyritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Dark bluish gray to light bluish gray (5B 4/1 to 5B 7/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (15%) to actinolite, chlorite, albite, and titanite. Olivine phenocrysts are completely replaced by chlorite, mixed-layer clay, pyrite, and iron oxide minerals. Disseminated pyrite is present in the groundmass.
VEINS/FRACTURES: <1%; <0.15–1.5 mm; 5% in Piece 5, 6% in Piece 7. Fractures variably dipping, but dominantly shallow. One light/dark green vein (shallowly dipping), one dark green vein (steeply dipping).
ADDITIONAL COMMENTS: Moderate color variability within the unit.

UNIT 227: MODERATELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

Pieces 23–31

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 3.0%; 2.5 mm; euhedral.
Olivine - 3.0%; 1.3 mm; euhedral.
Augite - 0.5%; 1.5 mm; subhedral.
Cr-Augite - 2.0%; 2.5 mm; euhedral.
GROUNDMASS: Texture: Seriate porphyritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide mineral.
VESICLES: Non-vesicular.
COLOR: Dark bluish gray to light bluish gray (5B 4/1 to 5B 7/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (15%) to actinolite, chlorite, albite, and titanite. Chlorite, mixed-layer clay, talc, pyrite, and iron oxide minerals completely replace olivine. Iron oxide replace ment of olivine is abundant in Pieces 23–26.
VEINS/FRACTURES: <1%; <0.5–0.5 mm; 7 chlorite-pyrite veins, dominantly steeply dipping, in Pieces 25, 26, and 31. Three shallowly dipping fractures.

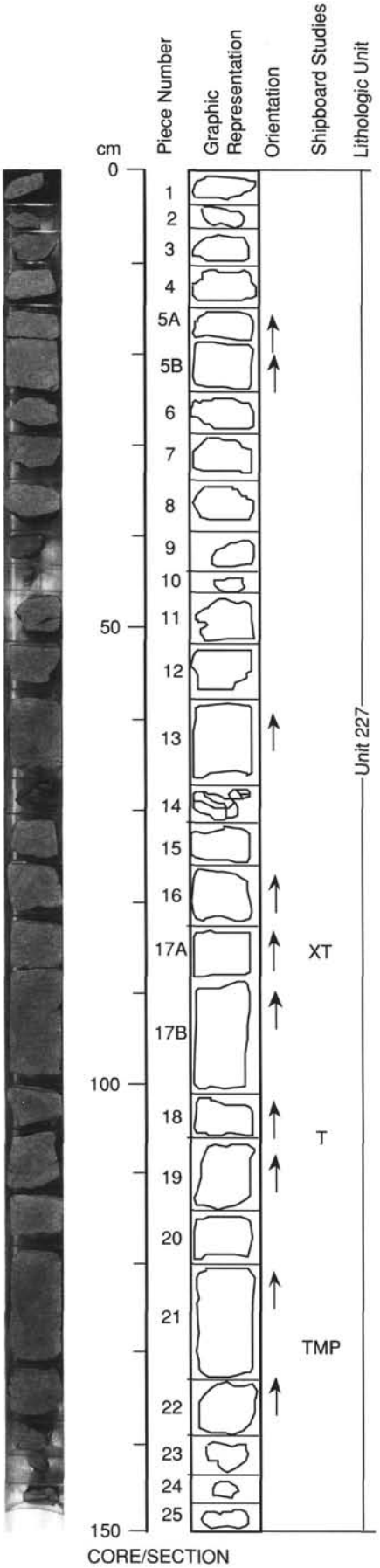


140-504B-199R-2

UNIT 227: MODERATELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

Pieces 1A–1C

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 3.0%; 2.5 mm; euhedral.
Olivine - 3.0%; 1.3 mm; euhedral.
Augite - 0.5%; 1.5 mm; subhedral.
Cr-Augite - 2.0%; 2.5 mm; euhedral.
GROUNDMASS: Texture: Seriate porphyritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Dark bluish gray to light bluish gray (5B 4/1 to 5B 7/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (15%) to actinolite, chlorite, albite, and titanite. Olivine is completely replaced by chlorite, mixed-layer clay, talc, and pyrite.
VEINS/FRACTURES: <1%; <0.5–1.5 mm; light/dark green veins (steeply dipping), fracture (moderately dipping).

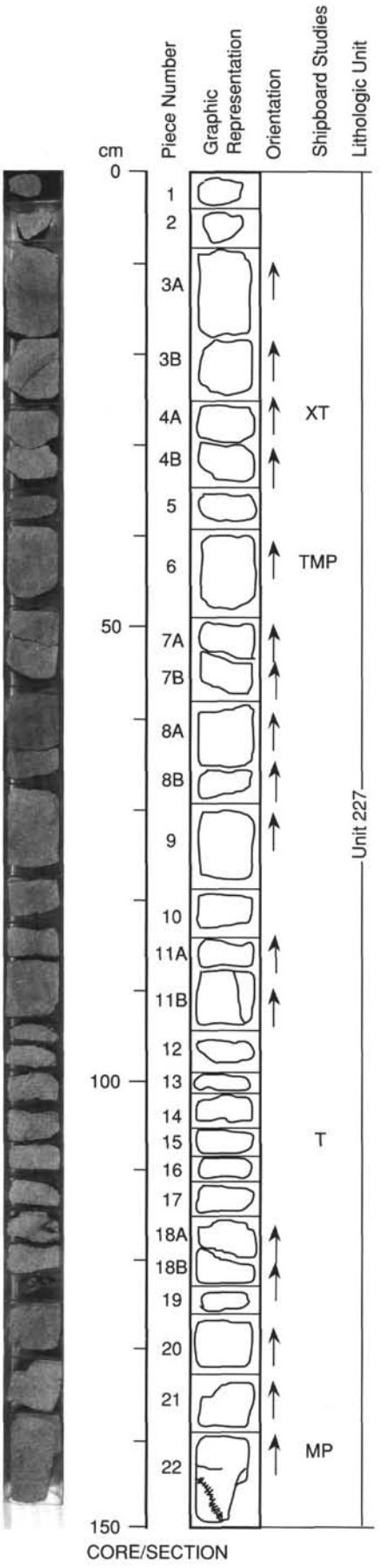


140-504B-200R-1

UNIT 227: MODERATELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

Pieces 1–25

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 3.0%; 2.5 mm; euhedral.
Olivine - 3.0%; 1.3 mm; euhedral.
Augite - 0.5%; 1.5 mm; subhedral.
Cr-Augite - 2.0%; 2.5 mm; euhedral.
GROUNDMASS: *Texture: Seriate porphyritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide* minerals.
VESICLES: Non-vesicular.
COLOR: Dark bluish gray to light bluish gray (5B 4/1 to 5B 7/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (15%) to actinolite, chlorite, albite, and titanite, and contains disseminated pyrite. Olivine is completely replaced by chlorite, actinolite, and pyrite.
VEINS/FRACTURES: <1%–1%; <0.5 mm; 5 dark green veins of shallow to moderate dip in Pieces 13, 16, 19, 21, 23. Bimodal distribution in 7 oriented fractures: shallow (<30°) and steep (>70°) dips.

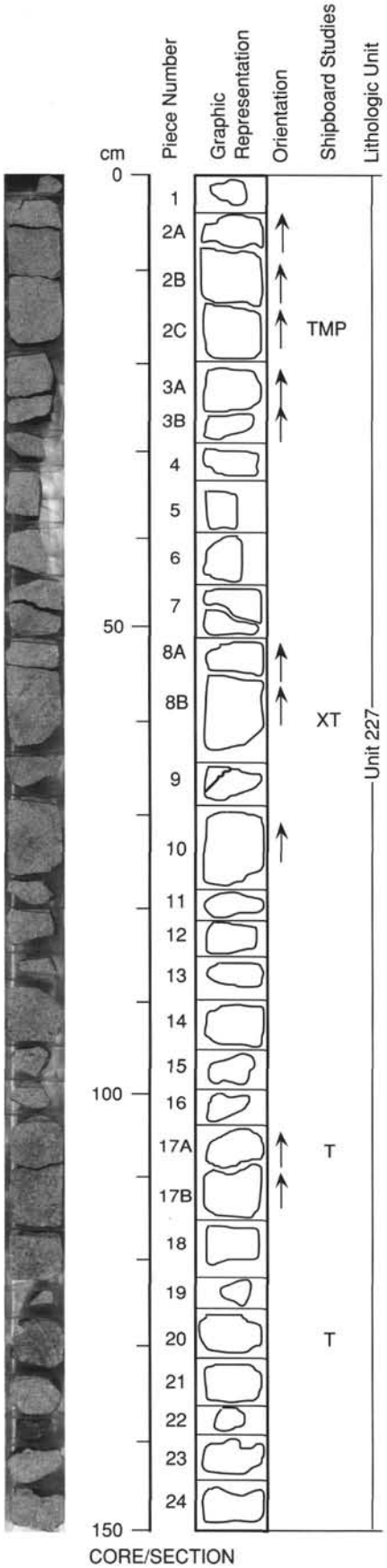


140-504B-200R-2

UNIT 227: MODERATELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

Pieces 1–22

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 3.0%; 2.5 mm; euhedral.
Olivine - 3.0%; 1.3 mm; euhedral.
Augite - 0.5%; 1.5 mm; subhedral.
Cr-Augite - 2.0%; 2.5 mm; euhedral.
GROUNDMASS: Texture: Seriate porphyritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Dark bluish gray to light bluish gray (5B 4/1 to 5B 7/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (15%) to actinolite, chlorite, albite, and titanite, and contains disseminated pyrite. Olivine phenocrysts are completely replaced by chlorite, actinolite, and pyrite, with trace amounts of iron oxide minerals.
VEINS/FRACTURES: <1%–1%; <0.5 mm; 10 oriented fractures. Dips are bimodally distributed: dominantly shallow set (<30°), minor steep set. Ten dark green veins exhibit dips from 3°–68°, 2 chlorite-pyrite veins (Pieces 11B and 22) dip steeply.

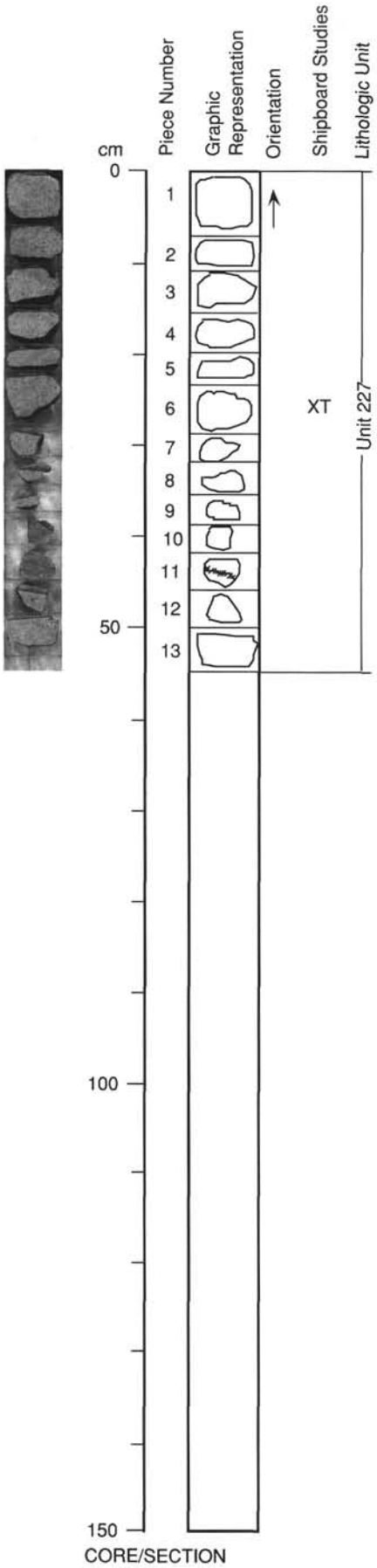


140-504B-200R-3

UNIT 227: MODERATELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

Pieces 1–24

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 3.0%; 2.5 mm; euhedral.
Olivine - 3.0%; 1.3 mm; euhedral.
Augite - 0.5%; 1.5 mm; subhedral.
Cr-Augite - 2.0%; 2.5 mm; euhedral.
GROUNDMASS: Texture: Seriate porphyritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Dark bluish gray to light bluish gray (5B 4/1 to 5B 7/1).
STRUCTURE: Massive.
ALTERATION: Groundmass in Pieces 1–6 is slightly altered (15%) to actinolite, chlorite, albite, and titanite. In Pieces 7–24, groundmass is moderately altered (40%) to same phases as in Pieces 1–6. Chlorite and actinolite form fine-grained patches in Pieces 7–24. Throughout the section, olivine phenocrysts are completely replaced by actinolite, chlorite, pyrite, and iron oxide minerals.
VEINS/FRACTURES: <1%–1%; <0.5 mm; 21 dark green oriented veins: dominantly steeply dipping, some shallowly dipping; 2 steeply dipping chlorite-pyrite veins (Pieces 3A and 8B); 4 oriented fractures, all shallowly dipping (Pieces 2A, 3A, 7, 20).

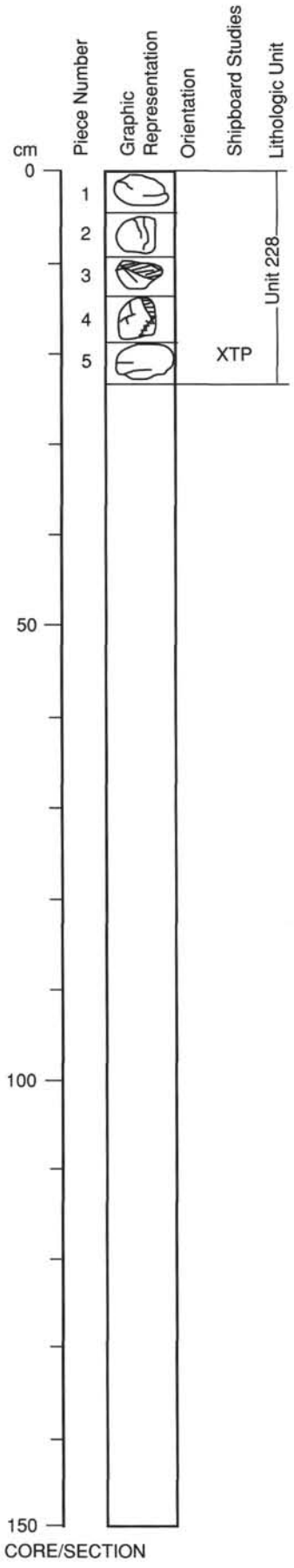


140-504B-200R-4

UNIT 227: MODERATELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

Pieces 1–13

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 3.0%; 2.5 mm; euhedral.
Olivine - 3.0%; 1.3 mm; euhedral.
Augite - 0.5%; 1.5 mm; subhedral.
Cr-Augite - 2.0%; 2.5 mm; euhedral.
GROUNDMASS: Texture: Seriate porphyritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Dark bluish gray to light bluish gray (5B 4/1 to 5B 7/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is moderately altered (30%). Extensively altered fine-grained patches (2–5 mm), 80% recrystallized, form after groundmass. Groundmass is altered to actinolite, chlorite, albite, and titanite. Olivine is completely replaced by chlorite, mixed-layer clay, talc, pyrite, and iron oxide minerals.
VEINS/FRACTURES: <1%–1%; <0.5 mm; 3 oriented shallowly dipping fractures (Pieces 2, 6, 12); 2 oriented dark green veins (Pieces 2, 3); 1 steeply dipping oriented chlorite-pyrite vein (Piece 13).
ADDITIONAL COMMENTS: Olivine is more abundant than in overlying unit. Top of unit is finer grained. Intra-unit, grain-size variation is noticeable. Color variability within the unit is moderate.

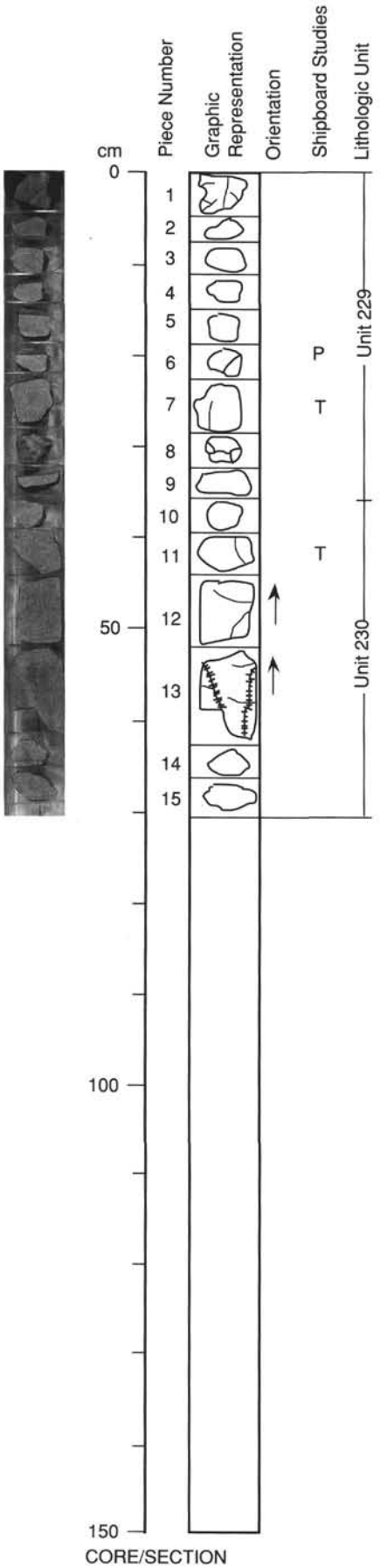


140-504B-201R-1

UNIT 228: APHYRIC DIABASE

Pieces 1–5

CONTACTS: Lower contact.
PHENOCRYSTS:
Plagioclase - 0.5%; 1.0 mm; euhedral.
Augite - 0.05%; 0.7 mm; subhedral.
Olivine - 0.3%; 1.1 mm; euhedral.
Cr-Augite - 0.1%; 2.5 mm; euhedral.
GROUNDMASS: Texture: Fine-grained aphanitic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 6/1).
STRUCTURE: Massive, Piece 3 cut by 1-cm wide dike.
ALTERATION: Groundmass is moderately altered (30%) to actinolite, chlorite, albite, and titanite. Olivine phenocrysts are completely replaced by chlorite, mixed-layer clay, talc, and pyrite. Piece 2 contains a 2-cm oriented halo of actinolite, chlorite, albite, and titanite that is 60% recrystallized and makes up 90% of the sample.
VEINS/FRACTURES: <1%–2%; <0.5–1 mm; moderately dipping dark green veins (Piece 1), shallowly dipping fracture (Piece 5).



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UNIT 229: SPARSELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

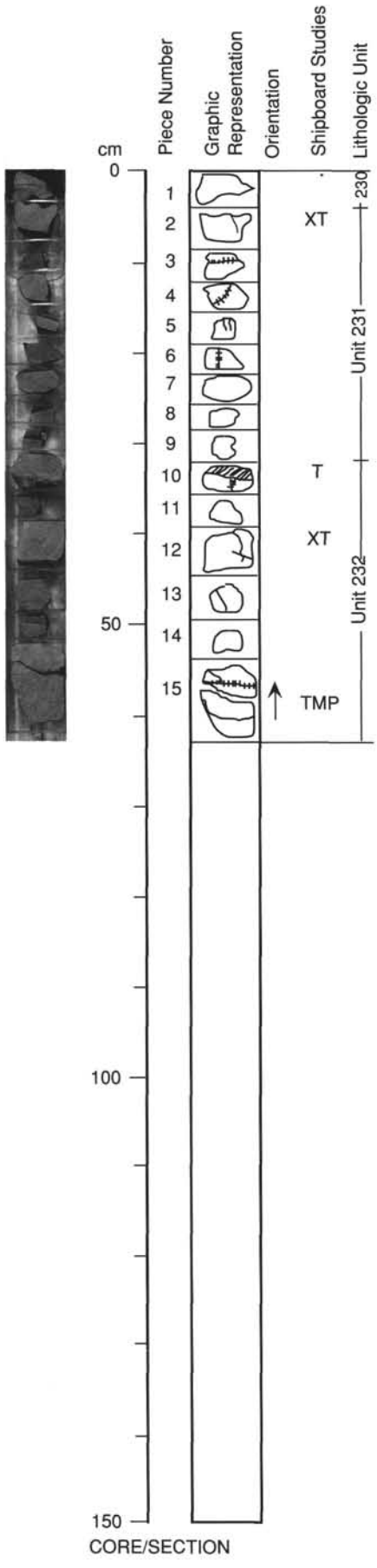
Pieces 1–9

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.5%; 2.5 mm; euhedral.
Augite - 0.1%; 1.2 mm; subhedral.
Olivine - 0.5%; 1.5 mm; euhedral.
GROUNDMASS: Texture: Fine-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Dark bluish gray to bluish gray (5B 4/1 to 5B 6/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (15%) to actinolite, chlorite, albite, and titanite, and contains disseminated pyrite. Olivine is completely replaced by chlorite, mixed-layer clay, talc, and pyrite, with minor iron oxide minerals.
VEINS/FRACTURES: <1%-1%; <0.5–1 mm; 1 shallowly dipping dark green vein (Piece 1).
ADDITIONAL COMMENTS: Pieces 1 and 9 are finer grained than unit as a whole.

UNIT 230: MODERATELY OLIVINE-PLAGIOCLASE- CLINOPYROXENE PHYRIC DIABASE

Pieces 10–15

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 1.0%; 1.5 mm; euhedral.
Augite - 0.1%; 0.8 mm; subhedral.
Olivine - 3.0%; 2.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1 to 5B 6/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (15%) to actinolite, chlorite, albite, and titanite, and contains disseminated pyrite. Olivine is completely replaced by chlorite, mixed-layer clay, talc, and pyrite, with minor iron oxide minerals.
VEINS/FRACTURES: <1%–1%; <0.5 mm; 1 shallowly dipping fracture in Piece 12; 2 steeply dipping chlorite-pyrite veins; 1 steeply dipping light/dark green vein (Piece 13).
ADDITIONAL COMMENTS: Pieces 10, 14, and 15 are finer grained than rest of unit.



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UNIT 230: MODERATELY OLIVINE-PLAGIOCLASE- CLINOPYROXENE PHYRIC DIABASE

Piece 1

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 1.0%; 1.5 mm; euhedral.
Augite - 0.1%; 0.8 mm; subhedral.
Olivine - 3.0%; 2.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1 to 5B 6/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (15%) to actinolite, chlorite, albite, and titanite, and contains disseminated pyrite. Olivine is completely replaced by chlorite, pyrite, and talc(?).
VEINS/FRACTURES: <1%–3%; <0.5–1 mm; no oriented structures.
ADDITIONAL COMMENTS: Piece 1 is finer grained than rest of unit.

UNIT 231: APHYRIC DIABASE

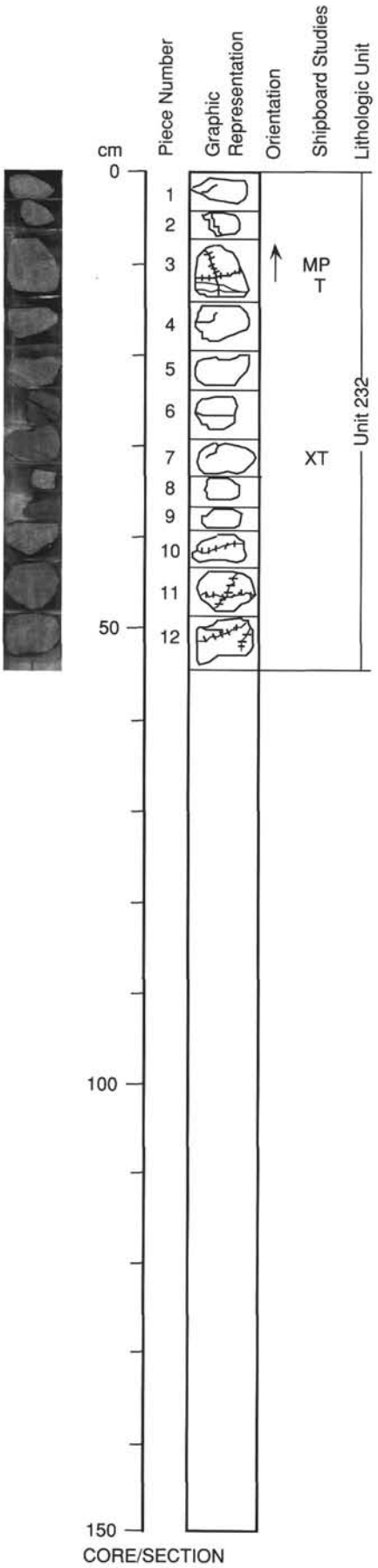
Pieces 2–9

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.1%; 1.0 mm; euhedral.
Augite - 0.1%; 0.6 mm; subhedral.
Olivine - 0.1%; 1.2 mm; euhedral.
GROUNDMASS: Texture: Microcrystalline aphanitic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass slightly altered (15%) to actinolite, chlorite, albite, and titanite, with disseminated pyrite. Olivine phenocrysts are completely replaced by chlorite, pyrite, and talc(?).
VEINS/FRACTURES: <1%–3%; <0.5–1 mm; no oriented structures.
ADDITIONAL COMMENTS: Piece 8 is coarser grained than rest of unit and probably belongs in Unit 232.

UNIT 232: MODERATELY PLAGIOCLASE-CLINOPYROXENE-OLIVINE PHYRIC DIABASE

Pieces 10–15

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.5%; 2.5 mm; euhedral.
Augite - 0.2%; 1 mm; subhedral.
Olivine - 0.2%; 1.0 mm; euhedral.
Cr-Augite - 0.1%; 1.0 mm; euhedral.
GROUNDMASS: Texture: Microcrystalline to fine-grained aphanitic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive. Piece 10 contains a chilled margin.
ALTERATION: Groundmass is highly altered (60%–75%) to actinolite, chlorite, albite, and titanite. Pieces 12–15 contain fine coalescing mats of actinolite rimmed by chlorite as well as chlorite-rich pods replacing groundmass. Disseminated pyrite is also present in groundmass.
VEINS/FRACTURES: <1%–3%; <0.5–0.5 mm; dips variable. Two oriented chlorite veins, 1 steeply dipping and 1 shallowly dipping, occur in Pieces 15A and 15B. One oriented fracture in Piece 15B dips shallowly.
ADDITIONAL COMMENTS: Chilled margin on Piece 10 probably belongs to Unit 231.



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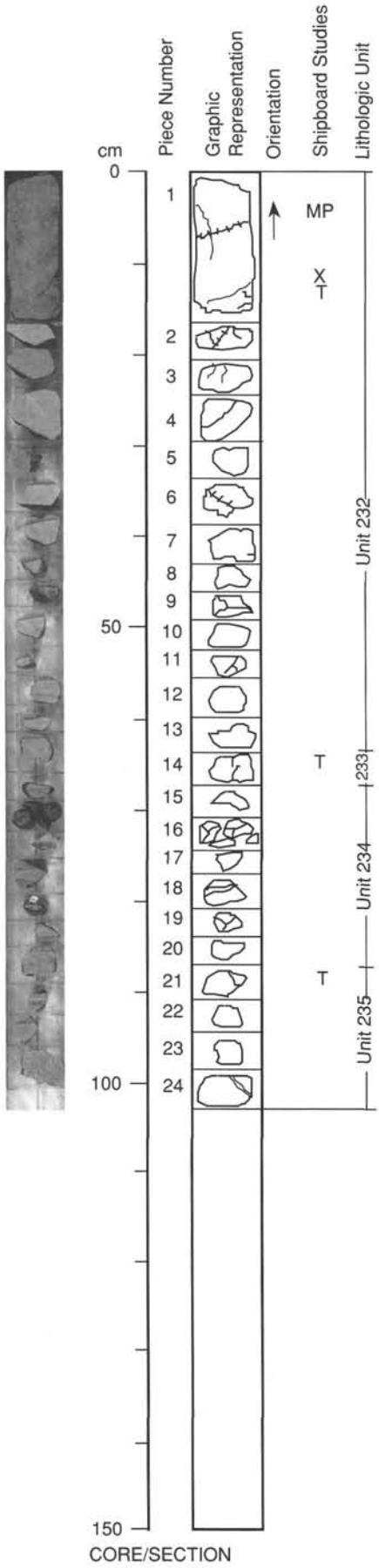
UNIT 232: SPARSELY PLAGIOCLASE-CLINOPYROXENE-OLIVINE PHYRIC DIABASE

Pieces 1–12

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.5%; 2.5 mm; euhedral.
Augite - 0.2%; 1.0 mm; subhedral.
Olivine - 0.2%; 1.0 mm; euhedral.
Cr-Augite - 0.1%; 1.0 mm; euhedral.
GROUNDMASS: Texture: Microcrystalline to fine-grained aphanitic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is highly altered (60%) to actinolite, chlorite, albite, and titanite. Alteration is the same as that in Pieces 12–15 in Section 203R-1. Pyrite forms aggregates in groundmass.
VEINS/FRACTURES: <1%–1%; <0.5–0.5 mm; dips variable. Two oriented fractures (Pieces 6, 11) exhibit shallow dips. Three light green veins (Pieces 3, 10) have shallow dips; the dips of 5 light/dark green veins measured vary from shallow to steep (Pieces 3, 10, 12). On Piece 3, both dark and light green veins intersect a light/dark green vein with no apparent offset. In Piece 11, a steeply dipping light/dark green vein terminates a shallowly dipping vein of equivalent composition.



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UNIT 232: SPARSELY PLAGIOCLASE-CLINOPYROXENE-OLIVINE PHYRIC DIABASE

Pieces 1–13

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.5%; 2.5 mm; euhedral.
Augite - 0.2%; 1.0 mm; subhedral.
Olivine - 0.2%; 1.0 mm; euhedral.
Cr-Augite - 0.1%; 1.0 mm; euhedral.
GROUNDMASS: Texture: Microcrystalline to fine-grained aphanitic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is highly altered (60%) to actinolite, albite, chlorite, and titanite, with disseminated pyrite. Rare olivine is completely replaced to actinolite, chlorite, talc, and pyrite.
VEINS/FRACTURES: <1%–1%; <0.5–1 mm; steeply dipping. Two steeply dipping fractures occur in Piece 1; Pieces 1 and 3 contain 2 steeply dipping light green veins.
ADDITIONAL COMMENTS: Sulfide minerals are locally abundant in fractures. Grain size decreases toward bottom of unit; Pieces 2–13 are finer grained than the rest of the unit.

UNIT 233: MODERATELY PLAGIOCLASE-CLINOPYROXENE-OLIVINE PHYRIC DIABASE

Piece 14

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 2.0%; 2.5 mm; euhedral.
Augite - 0.1%; 1.0 mm; subhedral.
Olivine - 1.0%; 2.0 mm; euhedral.
Cr-Augite - 1.0%; 2.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 6/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (10%) to actinolite, chlorite, albite, and titanite. Olivine is completely altered to chlorite, talc, pyrite, and iron oxide minerals.
VEINS/FRACTURES: <1%; <0.5 mm. Piece 14 contains 1 shallowly dipping oriented fracture.

UNIT 234: APHYRIC DIABASE

Pieces 15–20

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.1%; 1.0 mm; euhedral.
Augite - 0.1%; 0.5 mm; subhedral.
Olivine - 0.1%; 0.5 mm; euhedral.
GROUNDMASS: Texture: Microcrystalline to very fine-grained aphanitic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Gray (N/).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (20%) to actinolite, chlorite, albite, and titanite.
VEINS/FRACTURES: <1%; <0.5 mm; no oriented structures.

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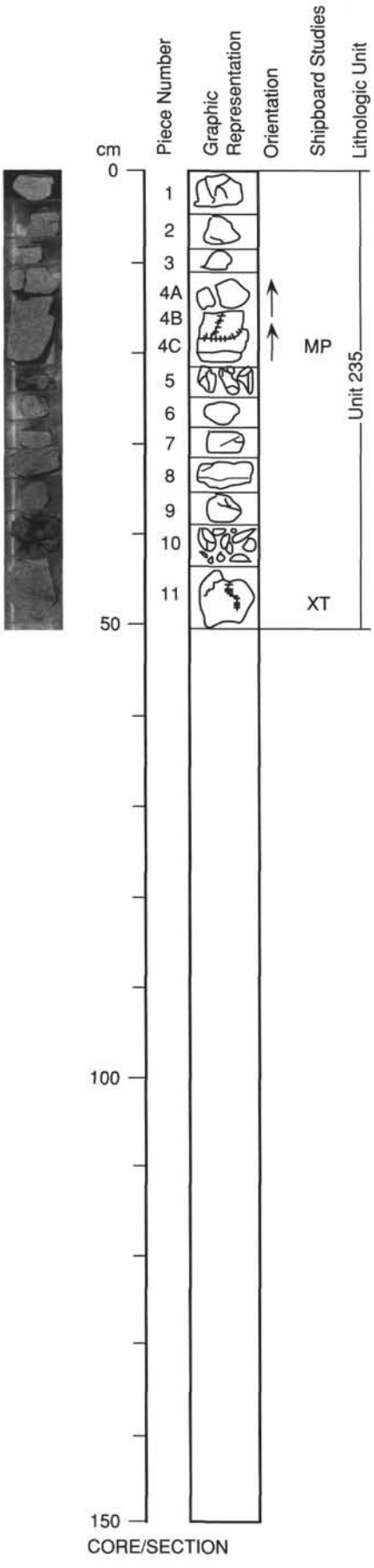
UNIT 235: MODERATELY CLINOPYROXENE-OLIVINE-PLAGIOCLASE PHYRIC DIABASE

Pieces 21–24

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 1.0%; 2.0 mm; euhedral.
Augite - 0.1%; 1.2 mm; subhedral.
Olivine - 2.0%; 2.5 mm; euhedral.
Cr-Augite - 3.0%; 5.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained aphanitic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 6/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (10%) to actinolite, chlorite, albite, and titanite. Olivine is completely altered to chlorite, talc, pyrite, and iron oxide minerals.
VEINS/FRACTURES: <1%–1%; <0.5–0.5 mm; variable dips. Moderately dipping fracture occurs in Piece 21, and Piece 24 contains a steeply dipping dark green vein.



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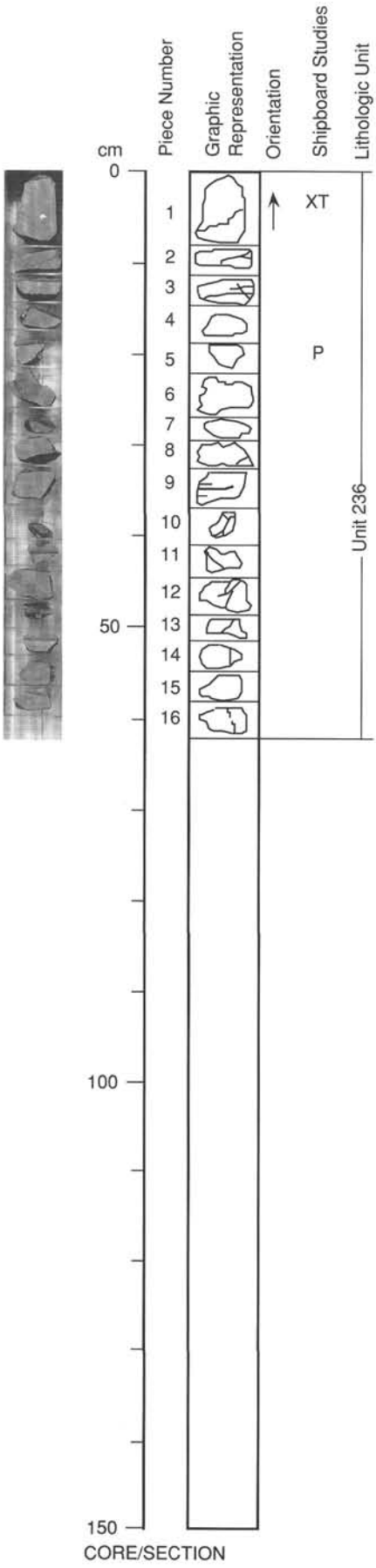
UNIT 235: MODERATELY CLINOPYROXENE-OLIVINE-PLAGIOCLASE PHYRIC DIABASE

Pieces 1–11

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 1.0%; 2.0 mm; euhedral.
Augite - 0.1%; 1.2 mm; subhedral.
Olivine - 2.0%; 2.5 mm; euhedral.
Cr-Augite - 3.0%; 5.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 6/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (20%) to actinolite, chlorite, albite, and titanite. Locally the groundmass is highly altered to these minerals, forming alteration halos in Pieces 1, 4, 7–9, that are 0.3 cm in diameter, comprising 5% of the rocks. Olivine phenocrysts are completely altered to actinolite, chlorite, talc, pyrite, and iron oxide minerals. Groundmass contains disseminated pyrite aggregates. Olivine in Piece 2 also contains magnetite, smectite, and mixed layer clay.
VEINS/FRACTURES: <1%; <0.5 mm; variable dips. Three steeply dipping and 1 shallowly dipping fractures occur in Pieces 4C and 11. One shallowly dipping, oriented light green vein was observed in Piece 8.



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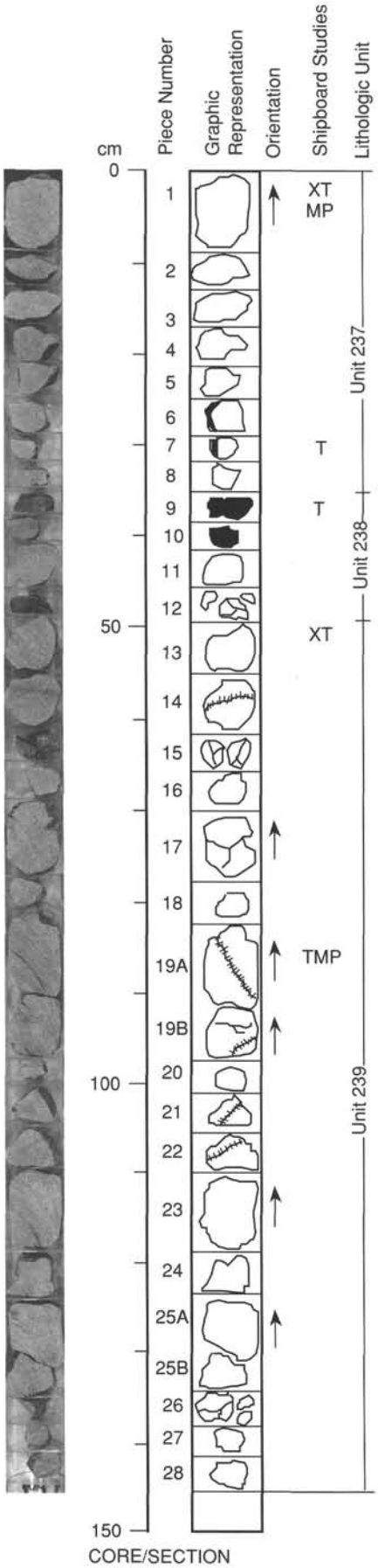
UNIT 236: APHYRIC DIABASE

Pieces 1–16

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.1%; 1.5 mm; euhedral.
Augite - 0.1%; 1.0 mm; subhedral.
Olivine - 0.3%; 1.5 mm; euhedral.
Cr-Augite - 0.1%; 2.5 mm; euhedral.
GROUNDMASS: Texture: Fine-grained aphanitic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is highly altered (60%) to actinolite, chlorite, albite, and titanite, and contains disseminated pyrite.
VEINS/FRACTURES: <1%–2%; <0.5–0.5 mm; variable dips. Three oriented dark green veins (Pieces 1, 9) all dip steeply, as does a light green vein in Piece 6. Two oriented fractures exhibit shallow dips in Pieces 2 and 9.



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UNIT 237: MODERATELY CLINOPYROXENE-OLIVINE-PLAGIOCLASE PHYRIC DIABASE

Pieces 1–8

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 1.0%; 2.5 mm; euhedral.
Augite - 0.2%; 1.0 mm; subhedral.
Olivine - 2.0%; 1.5 mm; euhedral.
Cr-Augite - 3.0%; 4.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass in Pieces 1–4 is slightly altered (10%) and, in Pieces 5–8, groundmass is very highly altered (80%). In both zones, groundmass minerals are replaced by actinolite, chlorite, albite, and titanite. Olivine phenocrysts are completely altered to chlorite, talc, mixed-layer clay, pyrite, and iron oxide minerals. Disseminated pyrite is present in the groundmass.
VEINS/FRACTURES: <1%–2%; <0.5–1.0 mm; variable dips. Pieces 3 and 4 contain 2 shallowly dipping dark green veins and one steeply dipping oriented chlorite-pyrite vein. The chlorite-pyrite vein in Piece 4 is fractured and forms the edge of the sample.
ADDITIONAL COMMENTS: Pieces 5–8 are finer grained. Piece 7 contains a contact with a glassy chilled margin.

UNIT 238: SPARSELY PLAGIOCLASE-CLINOPYROXENE-OLIVINE PHYRIC DIABASE

Pieces 9–12

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 1.0%; 1.5 mm; euhedral.
Augite - 0.1%; 0.5 mm; subhedral.
Olivine - 0.3%; 1.5 mm; euhedral.
Cr-Augite - 0.5%; 2.5 mm; euhedral.
GROUNDMASS: Texture: Microcrystalline to fine-grained. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray to dark gray (5B 6/1 to N4/).
STRUCTURE: Massive.
ALTERATION: Groundmass slightly altered (10%) to actinolite, chlorite, albite, and titanite, with disseminated pyrite. Olivine is completely altered to chlorite, talc, mixed-layer clay, pyrite, and minor iron oxide minerals.
VEINS/FRACTURES: <1%–1%; <0.5–0.5 mm; no oriented structures.
ADDITIONAL COMMENTS: Piece 9 has a very fine-grained groundmass.

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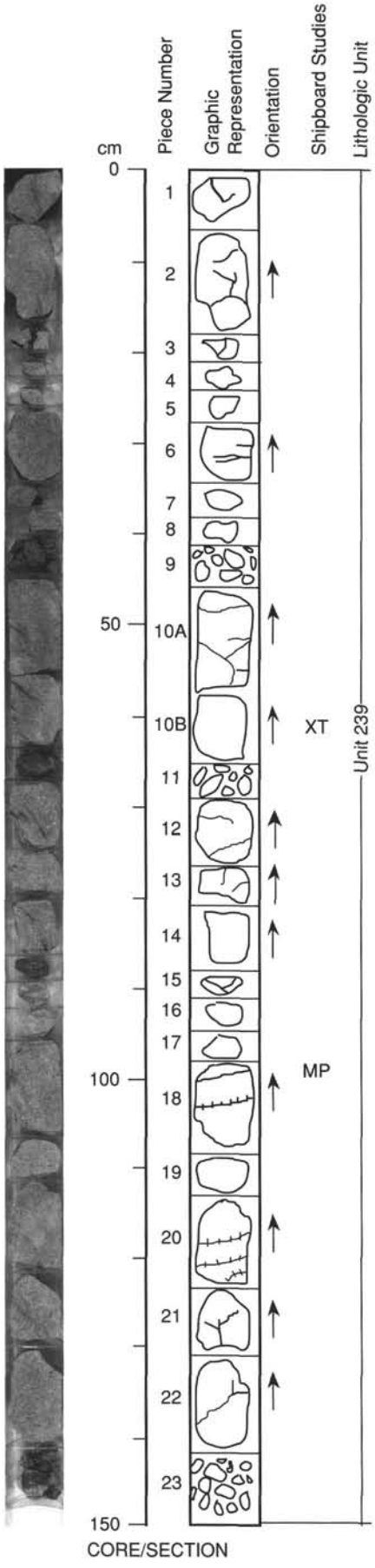
UNIT 239: MODERATELY OLIVINE-PLAGIOCLASE-CLINOPYROXENE PHYRIC DIABASE

Pieces 13–28

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 3.0%; 2.5 mm; euhedral.
Augite - 0.5%; 1.5 mm; subhedral.
Olivine - 4.0%; 1.2 mm; euhedral.
Cr-Augite - 0.7%; 5.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained equigranular doleritic; holocrystalline. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (10%) to actinolite, chlorite, albite, and titanite, with disseminated pyrite. Olivine is completely altered to chlorite, talc, mixed-layer clay, pyrite, and minor iron oxide minerals.
VEINS/FRACTURES: <0.5; <1–3 mm; variable dips. Three shallowly and one moderately dipping fractures are in Pieces 14, 17, 19B, and 23. Five dark green veins exhibit variable dips in Pieces 19B, 21, 22, and 23. Two oriented chlorite-pyrite veins dip steeply in Pieces 19A and 19B. Chlorite and pyrite veins form fractures on the edge of the core.
ADDITIONAL COMMENTS: Piece 13 contains very small troctolite-like (plagioclase+olivine) clots.

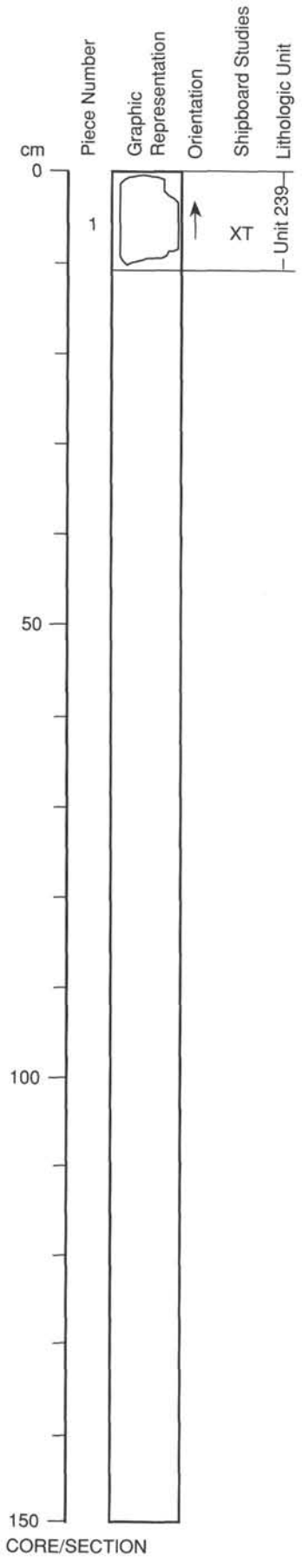


140-504B-208R-2

UNIT 239: MODERATELY OLIVINE-PLAGIOCLASE-CLINOPYROXENE PHYRIC DIABASE

Pieces 1–23

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 3.0%; 2.5 mm; euhedral.
Augite - 0.5%; 1.5 mm; subhedral.
Olivine - 4.0%; 1.2 mm; euhedral.
Cr-Augite - 0.7%; 5.0 mm; euhedral.
GROUNDMASS: *Texture*: Fine-grained equigranular doleritic; holocrystalline. *Composition*: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Slightly altered groundmass (15%) with local intense alteration patches (90%) up to 4–8 cm in Pieces 1, 2, 5, 6, 10, 13, 14, 17–22. Patches comprise 15% of the sample and have an average diameter of 4 cm. Groundmass alteration and patches are composed of actinolite, chlorite, albite, and titanite, with trace amounts of epidote in highly altered zones. Olivine is replaced by chlorite, mixed-layer clay, talc, pyrite, and minor iron oxide minerals. Disseminated pyrite is present in the groundmass.
VEINS/FRACTURES: <1%–1%; <0.5–0.5 mm; variable dips. One oriented fracture dips shallowly in Piece 10. Two oriented chlorite-pyrite veins dip steeply in Piece 14. Two dark green veins dip shallowly in Piece 18 and 3 light/dark green veins dip shallowly in Piece 20.

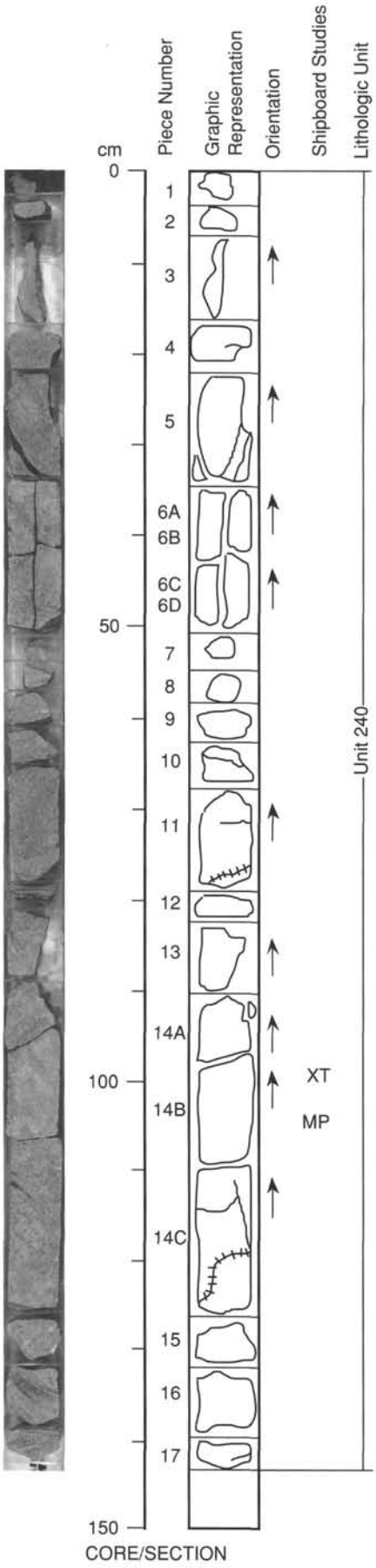


140-504B-208R-3

UNIT 239: MODERATELY OLIVINE-PLAGIOCLASE-CLINOPYROXENE PHYRIC DIABASE

Piece 1

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 3.0%; 2.5 mm; euhedral.
Augite - 0.5%; 1.5 mm; subhedral.
Olivine - 4.0%; 1.2 mm; euhedral.
Cr-Augite - 0.7%; 5.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained equigranular doleritic; holocrystalline. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (15%) with locally intense alteration near halos (80%) with rim actinolite amygdules (0.7 cm in diameter) that comprise 5% of the sample. Groundmass and halo alteration phases include chlorite, actinolite, albite, and titanite, with trace epidote found only in halos. Groundmass also contains disseminated pyrite. Olivine phenocrysts are replaced (100%) by chlorite, talc, mixed-layer clay, and pyrite.
VEINS/FRACTURES: <1%; <0.5 mm; no oriented structures.

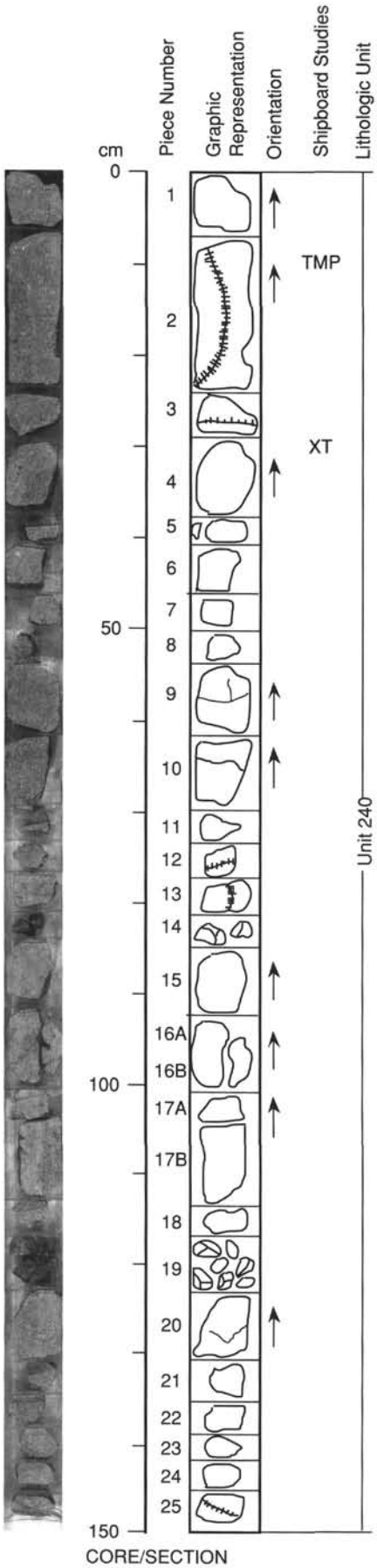


140-504B-209R-1

UNIT 240: MODERATELY OLIVINE-PLAGIOCLASE-CLINOPYROXENE PHYRIC DIABASE

Pieces 1–17

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 2.0%; 2.5 mm; euhedral.
Augite - 0.5%; 0.8 mm; subhedral.
Olivine - 4.0%; 1.8 mm; euhedral.
Cr-Augite - 1.0%; 3.0 mm; euhedral.
Dark emerald green pyroxene - 0.05%; 1.3 mm; anhedral.
GROUNDMASS: Texture: Glomeroporphyritic doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray to greenish gray in alteration zones (5B 5/1 to 5BG 6/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (15%) with local zones of very high alteration (90% recrystallized) near alteration halos (up to 4x10 cm in Pieces 3, 5, 6, 14, 16) which comprise 20% of the sample. Groundmass and halo secondary minerals include actinolite, chlorite, albite, and titanite, with minor epidote in the halos. Olivine phenocrysts are completely altered to actinolite, talc, mixed-layer clay, pyrite, and iron oxide minerals.
VEINS/FRACTURES: <1%–1%; <0.5–1 mm; variable dips. Shallow and steep dips of oriented fractures are bimodally distributed in Pieces 5, 9, 13, 14A, and 14C. One chlorite-pyrite vein dips steeply in Piece 5 and one light/dark green vein dips shallowly in Piece 11.
ADDITIONAL COMMENTS: Piece 1 is finer grained. Piece 13 contains a dark emerald green pyroxene phenocryst.

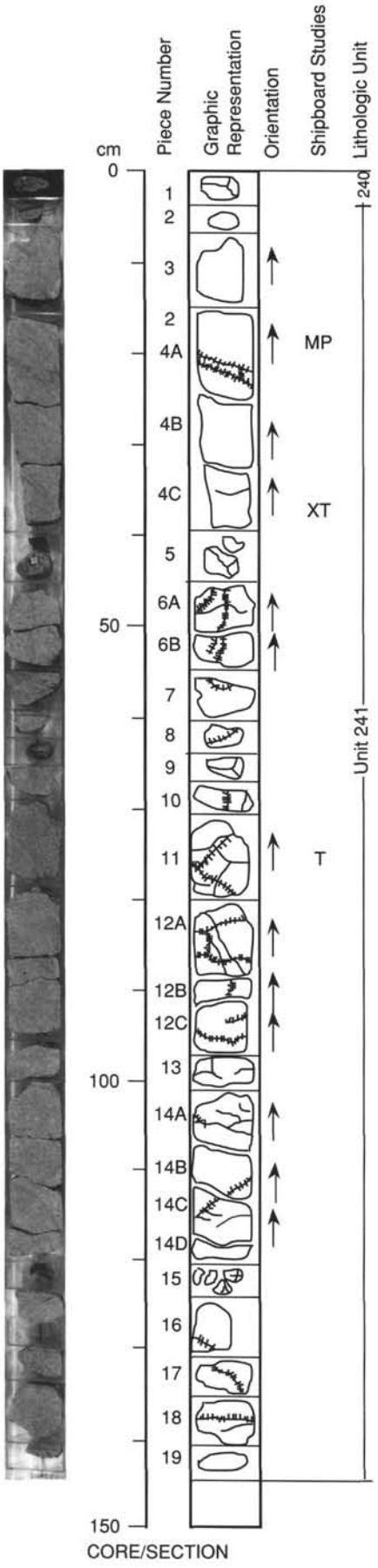


140-504B-209R-2

UNIT 240: MODERATELY OLIVINE-PLAGIOCLASE-CLINOPYROXENE PHYRIC DIABASE

Pieces 1–25

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 2.0%; 2.5 mm; euhedral.
Augite - 0.5%; 0.8 mm; subhedral.
Olivine - 4.0%; 1.8 mm; euhedral.
Dark emerald green pyroxene - 0.05%; 1.3 mm; anhedral.
GROUNDMASS: Texture: Glomeroporphyritic doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray to greenish gray in alteration zones (5B 5/1 to 5BG 6/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (15%) with zones of local intense alteration near halos in Pieces 1–4,11,18–24, and halos and actinolite amygdules in Pieces 15–17 (2% of sample). Groundmass and halos include actinolite, chlorite, albite, and titanite (and epidote in halo) as secondary phases. Alteration halos comprise 20%–60% of the samples and average 1–15 cm in width. Olivine phenocrysts are completely altered to talc, mixed-layer clay, iron oxide minerals, and pyrite. Halos in Pieces 1–4 are 90% recrystallized.
VEINS/FRACTURES: <1%–3%; <0.5–1.0 mm; variable dips. Oriented structures comprise 1 shallowly dipping fracture in Piece 3, 4 light/dark green veins of variable dip (10°–74°) in Pieces 2, 3, 24, 25, one steeply dipping chlorite-pyrite vein that forms the face of Piece 6, and one steeply dipping dark green vein in Piece 10.



140-504B-210R-1

UNIT 240: MODERATELY OLIVINE-PLAGIOCLASE-CLINOPYROXENE PHYRIC DIABASE

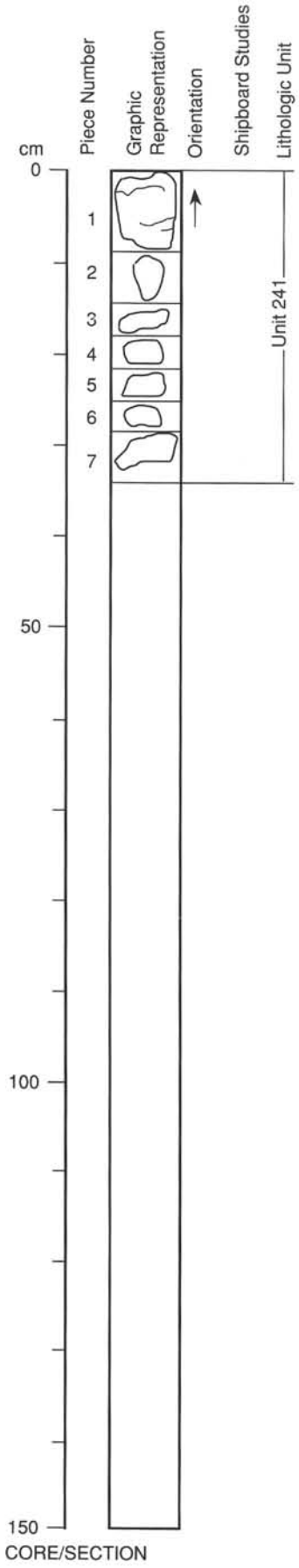
Piece 1

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 2.0%; 2.5 mm; euhedral.
Augite - 0.5%; 0.8 mm; subhedral.
Olivine - 4.0%; 1.8 mm; euhedral.
Cr-Augite - 1.0%; 3.0 mm; euhedral.
Dark emerald green pyroxene - 0.05%; 1.3 mm; anhedral.
GROUNDMASS: Texture: Glomeroporphyritic doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray to greenish gray in alteration zones (5B 5/1 to 5BG 6/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (10%) to actinolite, chlorite, albite, and titanite with disseminated pyrite. Olivine phenocrysts are completely altered to actinolite, mixed-layer clay, pyrite, and minor iron oxide minerals.
VEINS/FRACTURES: 1%; <0.5 mm; no oriented structures.

UNIT 241: SPARSELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

Pieces 2–19

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.5%; 2.0 mm; euhedral.
Augite - 0.15%; 1.0 mm; subhedral.
Olivine - 0.5%; 1.0 mm; euhedral.
Cr-Augite - 0.2%; 2.5 mm; euhedral.
GROUNDMASS: Texture: Fine-grained equigranular doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1 to 5B 6/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (10%) to actinolite, chlorite, albite, and titanite, with disseminated pyrite. Olivine phenocrysts are completely altered to actinolite, mixed-layer clay, and pyrite with minor iron oxide minerals.
VEINS/FRACTURES: <1%–3%; <0.5–1 mm; variable dips. The interval exhibits the following oriented structures: 5 shallowly dipping fractures (Pieces 3, 6A, 11, 14A, 14C), 4 moderately dipping (44°–56°) light green veins (Pieces 11, 12A), 3 shallowly to moderately dipping light/dark green veins (Pieces 14C, 17, 18), 4 steeply dipping (Pieces 4C, 6A, 6B, 10) and 1 shallowly dipping (Piece 4A) dark green veins. In Piece 11, a vein dipping at 49° is apparently offset approximately 10 mm by a vein dipping 56°.
ADDITIONAL COMMENTS: Piece 2 is finer grained.

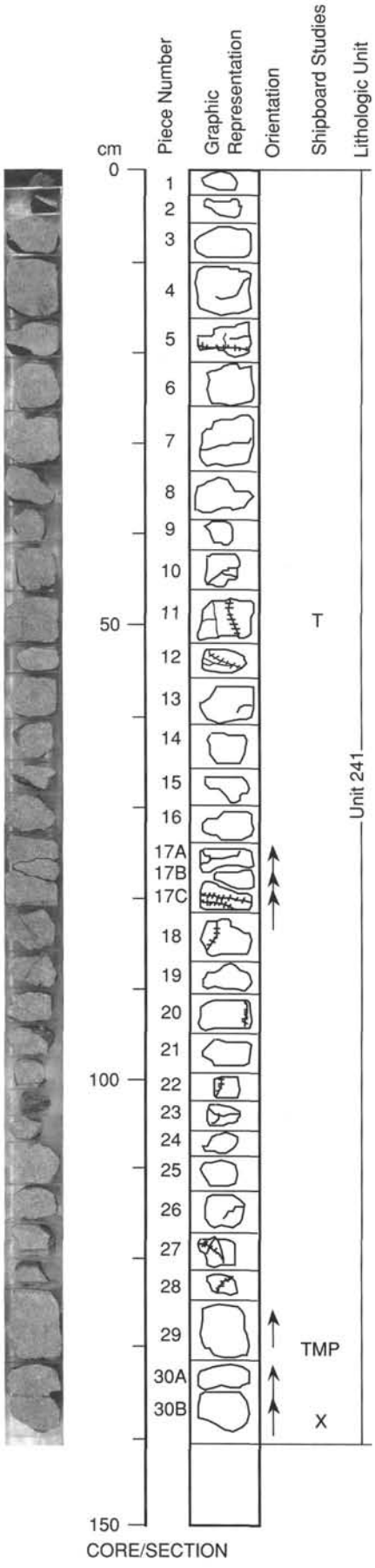


140-504B-210R-2

UNIT 241: SPARSELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

Pieces 1–7

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.5%; 2.0 mm; euhedral.
Augite - 0.15%; 1.0 mm; subhedral.
Olivine - 0.5%; 1.0 mm; euhedral.
Cr-Augite - 0.2%; 2.5 mm; euhedral.
GROUNDMASS: Texture: Fine-grained equigranular doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Blush gray (5B 5/1 to 5B 6/1 in alteration zones).
STRUCTURE: Massive.
ALTERATION: Groundmass slightly altered (10%) to actinolite, chlorite, albite, and titanite. Olivine phenocrysts are completely altered to actinolite, mixed-layer clay, pyrite, and iron oxide minerals. Alteration patches of actinolite(?) and chlorite (1 cm in diameter) in Pieces 1 and 2 represent 10% of the core.
VEINS/FRACTURES: <1%–3%; <0.5–1 mm; steeply dipping. Two steeply dipping dark green veins (Pieces 1, 5) are expressed as a fracture surface on the edge of the core.

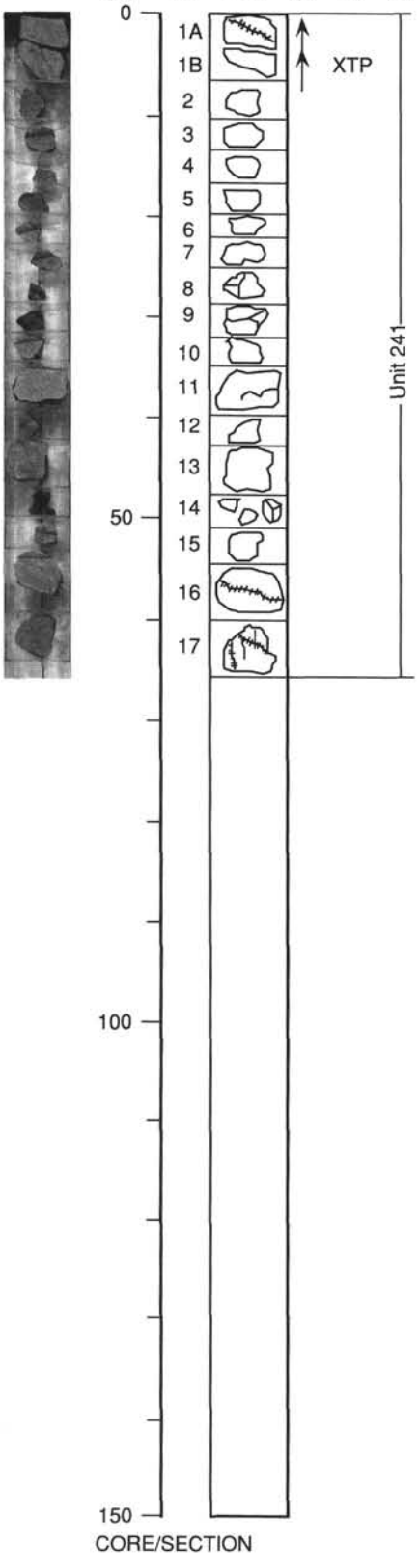


140-504B-211R-1

UNIT 241: SPARSELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

Pieces 1–30B

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.5%; 2.0 mm; euhedral.
Augite - 0.15%; 1.0 mm; subhedral.
Olivine - 0.5%; 1.0 mm; euhedral.
Cr-Augite - 0.2%; 2.5 mm; euhedral.
GROUNDMASS: Texture: Fine-grained equigranular doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1 to 5B 6/1 in alteration zones).
STRUCTURE: Massive.
ALTERATION: Groundmass slightly altered (15%) to actinolite, chlorite, albite, and titanite. Pieces 3, 4, 7, 13, 14, 20, 21 contain bluish green actinolite-rich patches (1 cm in diameter) that comprise 3% of the 141-cm core. Olivine phenocrysts are completely altered to chlorite, talc, mixed-layer clay, iron oxide minerals, and quartz (?), with trace pyrite.
VEINS/FRACTURES: <1%–8%; <0.5–2 mm; variable dips. Eight oriented fractures in Pieces 5, 7, 10, 11, 12, 17A, 27 are bimodally distributed between steep (>77°) and shallow (<25°) sets. A steeply dipping fracture terminates a shallowly dipping fracture in Piece 11. Five light green veins (Pieces 11, 17C, 27) exhibit variable dips (4°–64°), 3 dark green veins dip steeply (Pieces 6, 19, 29), 2 dark/light green veins (Pieces 5, 12) dip shallowly to moderately.

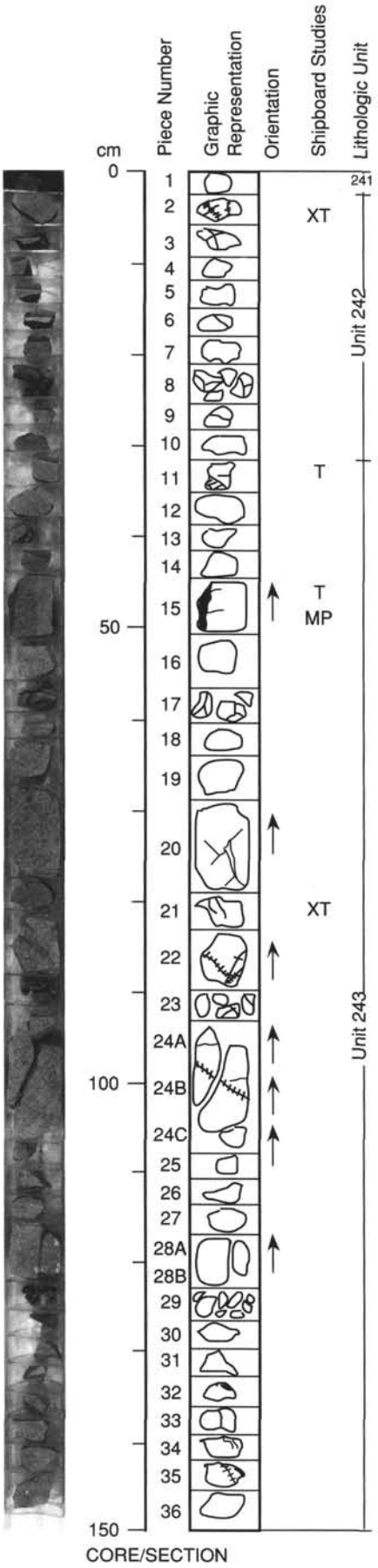


140-504B-212R-1

UNIT 241: SPARSELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

Pieces 1A–17

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.5%; 2.0 mm; euhedral.
Augite - 0.15%; 1.0 mm; subhedral.
Olivine - 0.5%; 1.0 mm; euhedral.
Cr-Augite - 0.2%; 2.5 mm; euhedral.
GROUNDMASS: Texture: Fine-grained equigranular doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1 to 5B 6/1 in alteration zones).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly to moderately altered (20%) to actinolite, chlorite, albite, and titanite. Olivine phenocrysts are completely altered to chlorite, trace pyrite, and trace amounts of a white mineral.
VEINS/FRACTURES: <1%–3%; <0.5–1 mm; variable dips. Pieces 11 and 13 contain 2 shallowly dipping fractures. Pieces 16 and 17 contain 3 shallowly dipping light green veins. One dark green vein dips steeply and forms the fractured face of Piece 17. One light/dark green vein dips moderately in Piece 1A.



140-504B-213R-1

UNIT 241: SPARSELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

Piece 1

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.5%; 2.0 mm; euhedral.
Augite - 0.15%; 1.0 mm; subhedral.
Olivine - 0.5%; 1.0 mm; euhedral.
Cr-Augite - 0.2%; 2.5 mm; euhedral.
GROUNDMASS: Texture: Fine-grained equigranular doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1 to 5B 6/1 in alteration zones).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly to moderately altered (30%) to actinolite, chlorite, albite, and titanite. Olivine phenocrysts are completely altered to chlorite, pyrite, iron oxide minerals, and quartz.
VEINS/FRACTURES: 3%; <0.5 mm; no oriented structures.

UNIT 242: APHYRIC DIABASE

Pieces 2–10

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.3%; 1.5 mm; euhedral.
Olivine - 0.1%; 1.2 mm; euhedral.
Cr-Augite - 0.1%; 4.0 mm; euhedral.
GROUNDMASS: Microcrystalline. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly to moderately altered (30%) to actinolite, chlorite, albite, and titanite. Olivine phenocrysts are completely altered to chlorite, pyrite, iron oxide minerals, and quartz.
VEINS/FRACTURES: <1%–1%; <0.5–0.5 mm; no oriented structures.
ADDITIONAL COMMENTS: Piece 7 is much coarser than the others (out of place?) Piece 9 is finer grained than others.

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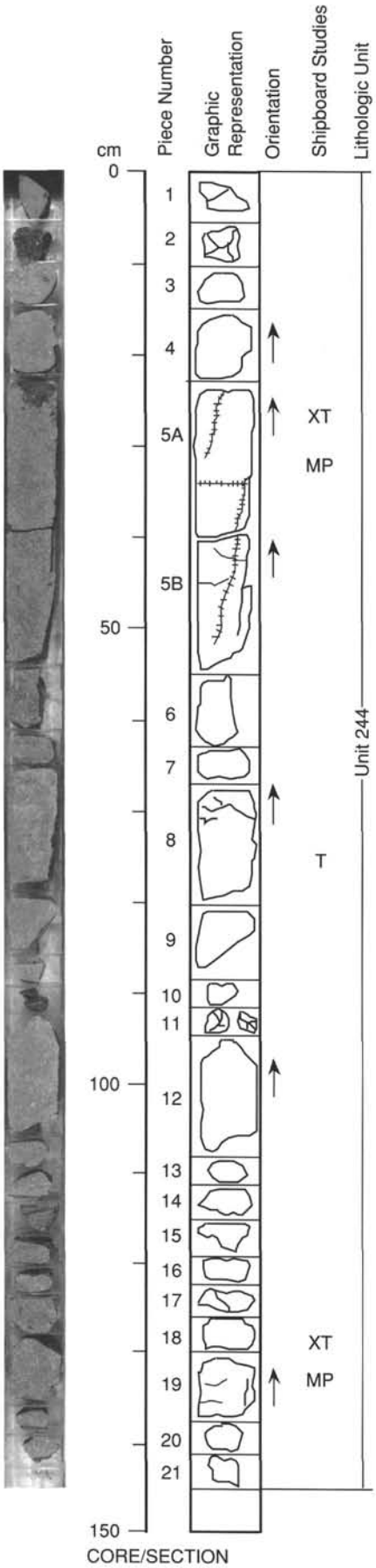
UNIT 243: SPARSELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

Pieces 11–36

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.5%; 1.7 mm; euhedral.
Augite - 0.15%; 1.5 mm; subhedral.
Olivine - 0.5%; 1.2 mm; euhedral.
Cr-Augite - 0.2%; 3.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained glomeroporphyritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray to light gray in alteration zones (5B 6/1 to 5Y 8/1).
STRUCTURE: Massive. Thin (3 mm) very fine-grained dikelet in Piece 11. Chilled margin in Piece 15.
ALTERATION: Pieces 11–26 are moderately altered (30%) to actinolite, chlorite, albite, and titanite. Olivine phenocrysts are completely altered to chlorite, pyrite, and iron oxide minerals. Pieces 27–36 are very highly altered (90%) to actinolite, chlorite, albite, and titanite with pale green fragments of glassy margin in Pieces 28, 35, and 36. Olivine phenocrysts in Pieces 27–36 are completely altered to chlorite and talc.
VEINS/FRACTURES: <1%–3%; <0.5–1.5 mm; variable dips. Five oriented fractures in Pieces 15, 20, and 22 exhibit shallow (<10°) and steep (>65°) dips. Two light/dark green veins dip at 38° and 69° in Pieces 22 and 24 respectively. One dark green vein and one light green vein dip steeply in Pieces 15 and 22 respectively. The chilled margin in Piece 15 dips at 79°. A steeply dipping light green vein in Piece 22 cuts and offsets(?) a moderately dipping light/dark green vein.
ADDITIONAL COMMENTS: Piece 21 is much finer than others (chilled margin fragment?)

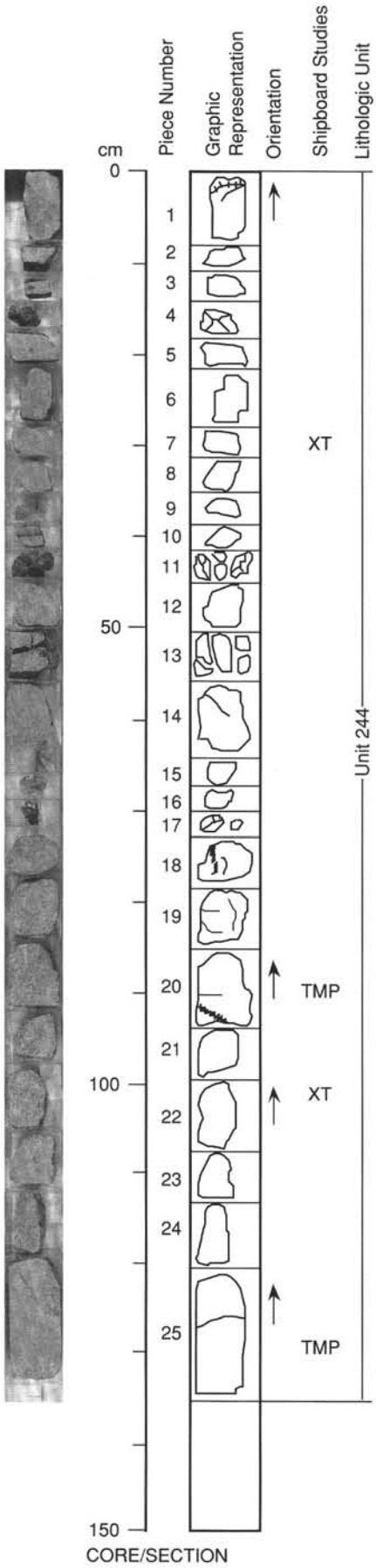


140-504B-214R-1

UNIT 244: MODERATELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

Pieces 1–21

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 2.5%; 3.0 mm; euhedral.
Augite - 0.4%; 1.2 mm; subhedral.
Olivine - 1.2%; 1.6 mm; euhedral.
Cr-Augite - 0.5%; 3.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained glomeroporphyritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray to light bluish gray (5B 6/1 to 5B 7/1).
STRUCTURE: Massive.
ALTERATION: Groundmass in Pieces 1–13 is very highly altered (90%) to actinolite, chlorite, albite, titanite, and epidote. Patches of fine-grained actinolite (2–12 mm in diameter) occur in Pieces 5, 7–9. Olivine is completely altered to actinolite, chlorite, and talc. Groundmass in Pieces 14–21 is slightly to moderately altered (20%) to actinolite, chlorite, epidote, albite, and titanite. Olivine phenocrysts are completely altered to mixed-layer clay and iron oxide minerals.
VEINS/FRACTURES: <1%–2%; <0.5–1 mm; variable dips. Two oriented fractures in Piece 8 have shallow dips. Of 4 light green veins in Pieces 4 and 15, 3 are steeply dipping (>75°), and 1 is shallowly dipping (34°). The shallow vein is cut by a steep light green vein. Two dark green veins in Pieces 5B and 8 dip at 84° and 28° respectively. One epidote-quartz vein in Piece 9 dips at 48°.
ADDITIONAL COMMENTS: Piece1 is very fine-grained.

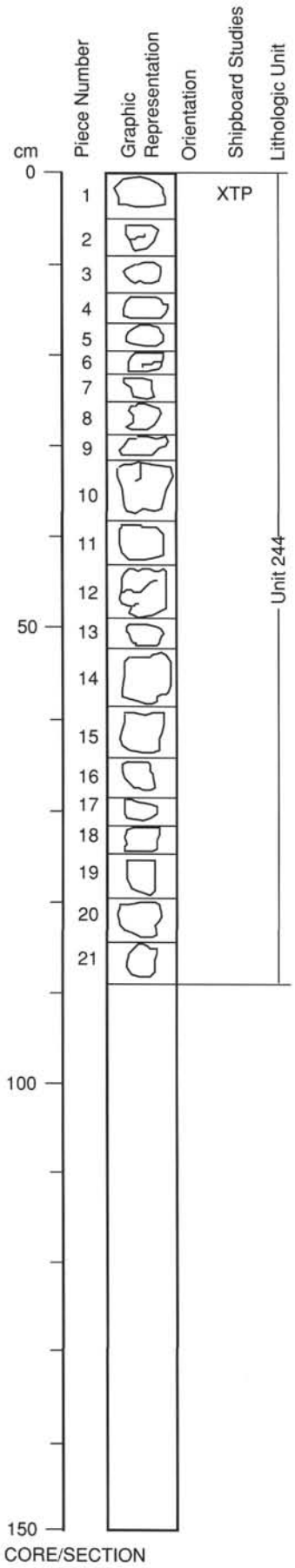


140-504B-214R-2

UNIT 244: MODERATELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

Pieces 1–25

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 2.5%; 3.0 mm; euhedral.
Augite - 0.4%; 1.2 mm; subhedral.
Olivine - 1.2%; 1.6 mm; euhedral.
Cr-Augite - 0.5%; 3.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained glomeroporphyritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray to light bluish gray (5B 6/1 to 5B 7/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly to moderately altered (20%) to actinolite, chlorite, albite, and titanite. Pieces 3, 5, 8, 14, 21–25 contain patchy alteration in which zones are 90% recrystallized, forming patches up to 5x14 mm in Piece 25. Patches comprise up to 30% of the sample. Olivine phenocrysts are altered to chlorite, talc, mixed-layer clay, and iron oxide minerals.
VEINS/FRACTURES: <1%–1%; <0.5–1 mm; variable dips. Three oriented fractures in Pieces 1,13, and 20 exhibit both steep and shallow dips.Two light green veins dip shallowly in Pieces 1 and 12. One dark green vein (Piece 12) and one light/dark green vein (Piece 20) dip shallowly.

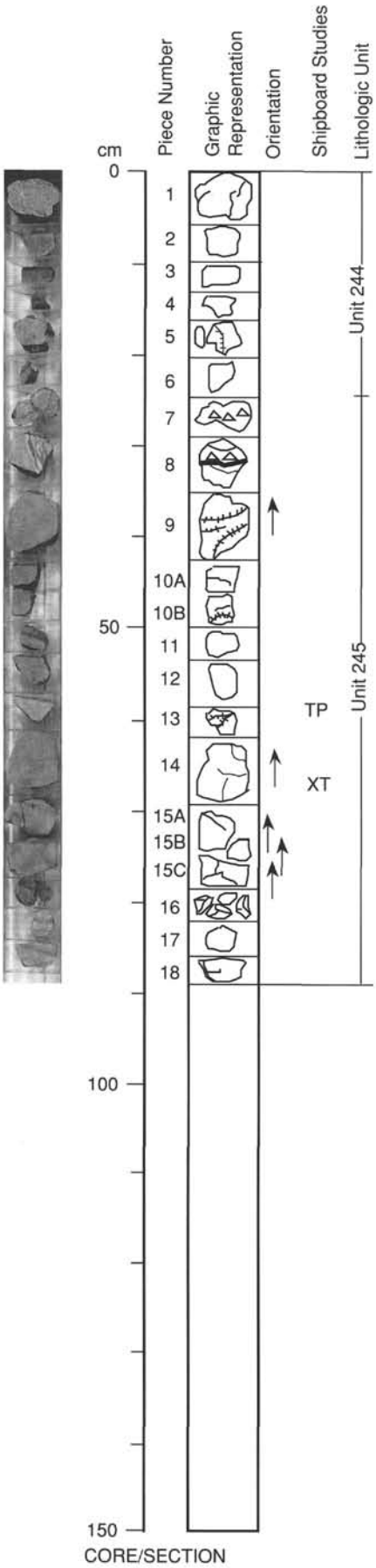


140-504B-215R-1

UNIT 244: MODERATELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

Pieces 1–21

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 2.5%; 3.0 mm; euhedral.
Augite - 0.4%; 1.2 mm; subhedral.
Olivine - 1.2%; 1.6 mm; euhedral.
Cr-Augite - 0.5%; 3.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained glomeroporphyritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray to light bluish gray (5B 6/1 to 5B 7/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly to moderately altered (20%) to actinolite, chlorite, albite, and titanite. Patches of fine-grained actinolite (1 cm in diameter) occur in Pieces 4, 12, and 20. Olivine phenocrysts are completely altered to chlorite, mixed-layer clay, pyrite, and iron oxide minerals. Groundmass contains trace amounts of disseminated pyrite.
VEINS/FRACTURES: <1%–1%; <0.5–0.5 mm; variable dips.Two oriented fractures dip at 64° and 12° in Pieces 1 and 12 respectively. Three dark green veins (Pieces 11, 12, 15) all dip steeply (>80°) and form fractured edges of cores.



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UNIT 244: MODERATELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

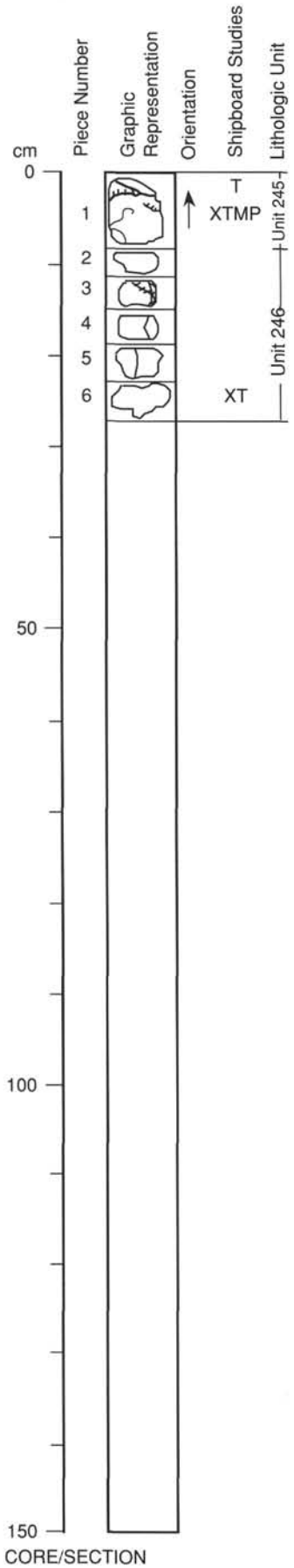
Pieces 1–6

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 2.5%; 3.0 mm; euhedral.
Augite - 0.4%; 1.2 mm; subhedral.
Olivine - 1.2%; 1.6 mm; euhedral.
Cr-Augite - 0.5%; 3.0 mm; euhedral.
GROUNDMASS: *Texture: Fine-grained glomeroporphyritic. Composition:* Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray to light bluish gray (5B 6/1 to 5B 7/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (15%) to actinolite, chlorite, albite, and titanite, with disseminated pyrite. Olivine phenocrysts are altered to chlorite, abundant pyrite, and trace iron oxide minerals.
VEINS/FRACTURES: <1%; <0.5 mm; no oriented structures.
ADDITIONAL COMMENTS: Unit is finer grained toward base.

UNIT 245: MODERATELY CLINOPYROXENE-OLIVINE-PLAGIOCLASE PHYRIC DIABASE

Pieces 7–18

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.8%; 0.8 mm; euhedral.
Augite - 0.2%; 0.5 mm; subhedral.
Olivine - 1.0%; 1.2 mm; euhedral.
Cr-Augite - 1.0%; 4.0 mm; euhedral.
Dark emerald green pyroxene - 0.05%; 1.0 mm; anhedral.
GROUNDMASS: Texture: Fine-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray; dark gray to light bluish gray in alteration zones (5B 5/1; N4 to 5B 7/1).
STRUCTURE: Massive. Brecciated and strongly veined in Pieces 7 and 8.
ALTERATION: Pieces 7 and 8 are highly altered (80%) to actinolite, chlorite, albite and titanite, with 0.1-cm epidote-quartz-rich pseudomorphs in fine-grained host rock. Olivine phenocrysts are completely altered to chlorite and pyrite; plagioclase is 50% altered to epidote, albite, and quartz. Pieces 9–18 are moderately altered to same groundmass secondary phases (40%) and olivine phenocrysts are completely altered to chlorite with abundant pyrite.
VEINS/FRACTURES: <1%–4%, 20% in Piece 7, 15% in Piece 8; <0.5–2.0 mm; variable dips. Two oriented fractures dip shallowly in Piece 14. Four chlorite-epidote-quartz+/-pyrite veins (Pieces 13–15A) exhibit variable dips (16°–84°) Four dark green veins (Pieces 9, 10, 15A) have shallow to moderate dips (40°). In Piece 13, a shallowly dipping chlorite-quartz-epidote vein is cut by a steeply dipping vein of same type. In Piece 15A, a dark green vein is cut by a chlorite-epidote-quartz vein with no apparent offset.
ADDITIONAL COMMENTS: Sulfide is locally abundant in Piece 7.



140-504B-217R-1

UNIT 245: MODERATELY CLINOPYROXENE-OLIVINE-PLAGIOCLASE PHYRIC DIABASE

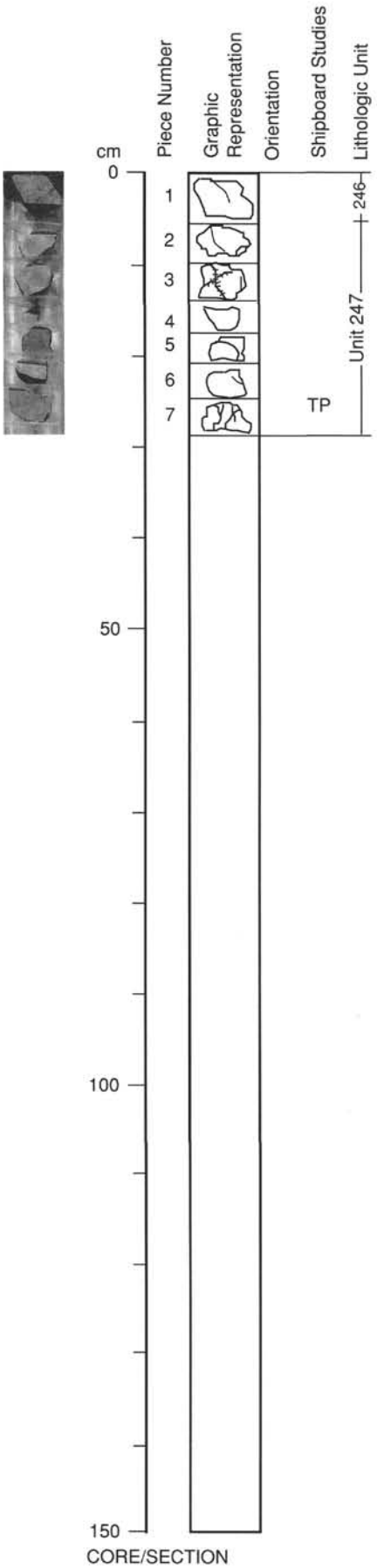
Piece 1

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.8%; 0.8 mm; euhedral.
Augite - 0.2%; 0.5 mm; subhedral.
Olivine - 1.0%; 1.2 mm; euhedral.
Cr-Augite - 1.0%; 4.0 mm; euhedral.
Dark emerald green pyroxene - 0.05%; 1.0 mm; anhedral.
GROUNDMASS: Texture: Fine-grained doleritic. Composition: Plagioclase, clinopyroxene, and Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray; dark gray to light bluish gray in alteration zones (5B 5/1; N4/ to 5B 7/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is highly altered (50%) to actinolite, chlorite, epidote, albite, and titanite with abundant epidote and quartz(?). Olivine phenocrysts are altered to chlorite and abundant pyrite and plagioclase is 50% altered to epidote and albite.
VEINS/FRACTURES: <1%–1%; <0.5–0.5 mm; variable dips. Two oriented chlorite veins are moderately dipping. One shallow-dipping chlorite-epidote-quartz vein and one shallow-dipping epidote(?) vein. The epidote vein cuts the chlorite-epidote-quartz vein.

UNIT 246: MODERATELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

Pieces 2–6

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 1.5%; 1.5 mm; euhedral.
Augite - 0.1%; 1.5 mm; subhedral.
Olivine - 1.0%; 1.5 mm; euhedral.
Cr-Augite - 0.75%; 4.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Slightly altered (15%). Olivine is extensively altered (100%) to chlorite and pyrite. Groundmass is altered to actinolite, chlorite, albite, and titanite, and contains disseminated pyrite.
VEINS/FRACTURES: <1%–1%; <0.5–0.5 mm; no oriented fractures.



140-504B-218R-1

UNIT 246: MODERATELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

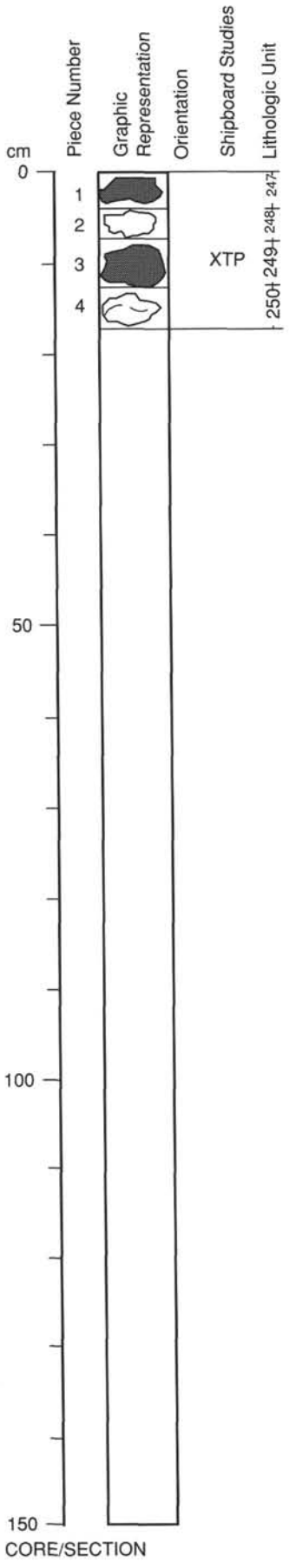
Piece 1

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 1.5%; 1.5 mm; euhedral.
Augite - 0.1%; 1.5 mm; subhedral.
Olivine - 1.0%; 1.5 mm; euhedral.
Cr-Augite - 0.75%; 4.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (15%) to actinolite, chlorite, albite, and titanite. Chlorite, pyrite, talc, and mixed-layer clay completely replace olivine.
VEINS/FRACTURES: <1%; <0.5 mm; no oriented structures.
ADDITIONAL COMMENTS: 3% oxide minerals.

UNIT 247: APHYRIC DIABASE

Pieces 2–7

CONTACTS: Lower chilled margin.
PHENOCRYSTS:
Plagioclase - 0.1%; 1.5 mm; euhedral.
Augite - 0.1%; 0.5 mm; subhedral.
Olivine - 0.1%; 0.5 mm; euhedral.
GROUNDMASS: Texture: Microcrystalline aphanitic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is highly altered (75%) to actinolite, chlorite, albite, and titanite.
VEINS/FRACTURES: <1%; <0.5 mm; no oriented structures.



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UNIT 247: APHYRIC DIABASE

Piece 1

CONTACTS: Lower chilled margin.
PHENOCRYSTS:
Plagioclase - 0.1%; 1.5 mm; euhedral.
Augite - 0.1%; 0.5 mm; subhedral.
Olivine - 0.1%; 0.5 mm; euhedral.
GROUNDMASS: Texture: Microcrystalline aphanitic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is moderately altered (50%) to actinolite, chlorite, albite, and titanite. Disseminated pyrite is present.
VEINS/FRACTURES: 4%–7%; 2–4 mm; no oriented structures.

UNIT 248: MODERATELY OLIVINE-CLINOPYROXENE-PLAGIOCLASE PHYRIC DIABASE

Piece 2

CONTACTS: None.
PHENOCRYSTS
Plagioclase - 0.5%; 1.6 mm; euhedral.
Augite - 0.2%; 0.8 mm; subhedral.
Olivine - 1.0%; 1.6 mm; euhedral.
Cr-Augite - 0.5%; 2.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 6/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (15%) to actinolite, chlorite, albite, and titanite. Chlorite, talc, and pyrite completely replace olivine phenocrysts.
VEINS/FRACTURES: <1%; <0.5 mm; no oriented structures.

UNIT 249: APHYRIC BASALT

Piece 3

CONTACTS: None.
PHENOCRYSTS:
Olivine - 0.1%; 0.3 mm; euhedral.
Cr-Augite - 0.05%; 0.3 mm; euhedral.
GROUNDMASS: Texture: microcrystalline aphanitic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Dark bluish gray (5B 4/1).
STRUCTURE: Massive, with laminar flow structure.
ALTERATION: Groundmass is moderately altered (50%) to actinolite, chlorite, albite, and titanite, and contains disseminated pyrite.
VEINS/FRACTURES: 4%–7%; 2–4 mm; no oriented structures.

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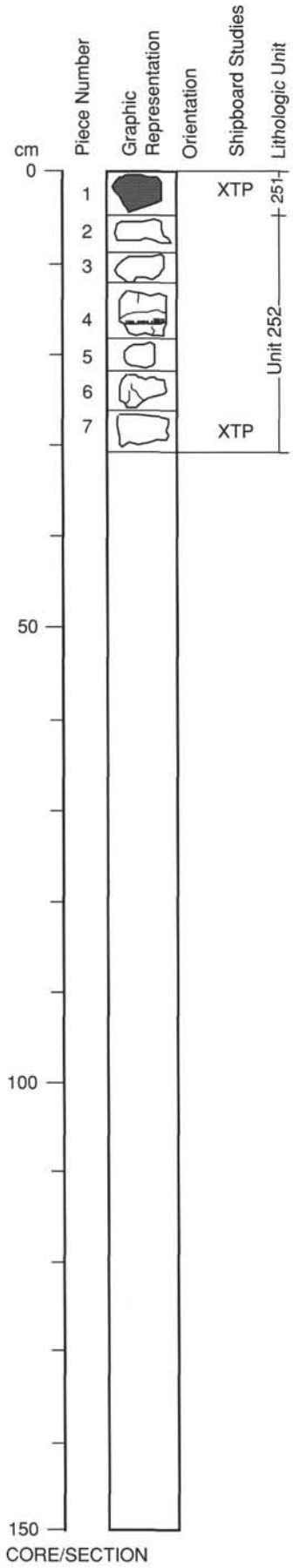
UNIT 250: SPARSELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

Piece 4

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.5%; 1.5 mm; euhedral.
Olivine - 0.5%; 1.5 mm; euhedral.
Cr-Augite - 0.5%; 2.5 mm; euhedral.
GROUNDMASS: Texture: Microcrystalline aphanitic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass moderately altered (50%) to actinolite, chlorite, albite, and titanite. Chlorite, talc, and pyrite completely replace olivine phenocrysts.
VEINS/FRACTURES: <1%; <0.5 mm; no oriented structures.



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UNIT 251: APHYRIC BASALT

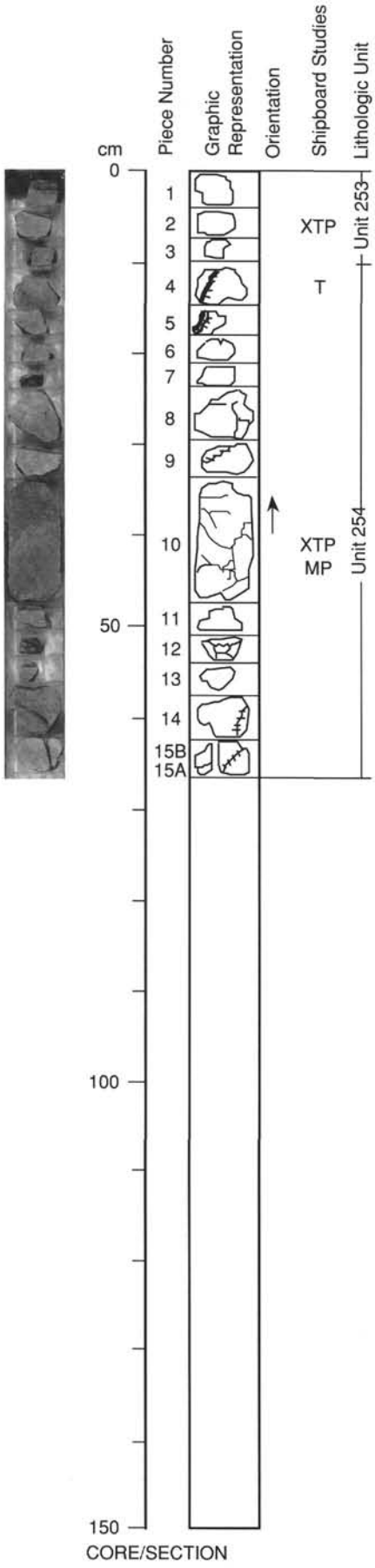
Piece 1

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.1%; 1.5 mm; euhedral.
Augite - 0.2%; 0.5 mm; anhedral.
Olivine - 0.1%; 0.8 mm; subhedral.
Cr-Augite - 0.05%; 1.2 mm; euhedral.
GROUNDMASS: Texture: Microcrystalline aphanitic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is moderately altered (30%) to actinolite, chlorite, albite, and titanite.
VEINS/FRACTURES: <1%; <0.5–0.5 mm; no oriented structures.

UNIT 252: SPARSELY CLINOPYROXENE-OLIVINE-PLAGIOCLASE PHYRIC DIABASE

Pieces 2–7

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.3%; 1.6 mm; euhedral.
Augite - 0.5%; 1.5 mm; subhedral.
Olivine - 0.5%; 1.3 mm; subhedral.
Cr-Augite - 0.1%; 4.0 mm; euhedral.
GROUNDMASS: Texture: Microcrystalline aphanitic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 6/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (15%) to actinolite, chlorite, albite, and titanite. Chlorite, talc, and pyrite completely replace olivine phenocrysts.
VEINS/FRACTURES: <1%; <0.5–0.5 mm; variable; 2 shallowly dipping dark green veins (Piece 4), veins intersect, but no crosscutting relationships are apparent. Pieces 4 and 7 contain 5 dominantly steeply dipping fractures. Piece 7 contains one shallowly dipping fracture.



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UNIT 253: MODERATELY CLINOPYROXENE-OLIVINE-PLAGIOCLASE PHYRIC DIABASE

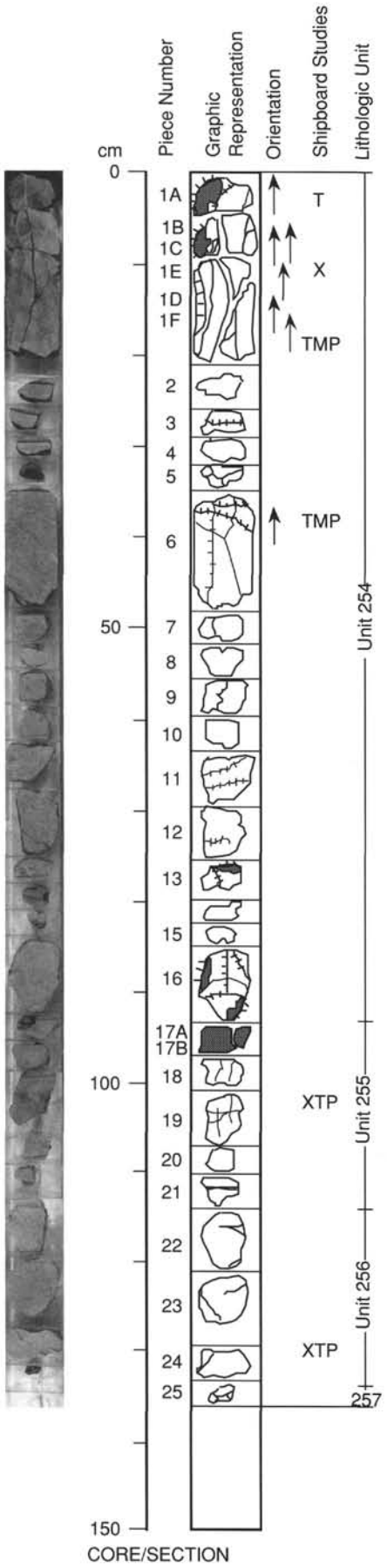
Pieces 1–3

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.3%; 2.0 mm; euhedral.
Olivine - 1.5%; 1.6 mm; subhedral.
Cr-Augite - 2.0%; 2.5 mm; euhedral.
GROUNDMASS: Texture: Medium-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (15%) to actinolite, chlorite, albite, and titanite. Olivine is extensively altered to pyrite, chlorite, and talc.
VEINS/FRACTURES: <1.0%; <0.5 mm; no oriented structures.

UNIT 254: MODERATELY CLINOPYROXENE-OLIVINE PLAGIOCLASE PHYRIC DIABASE

Pieces 4–15B

CONTACTS: Unit 255 is chilled against Unit 254.
PHENOCRYSTS:
Plagioclase - 0.5%; 1.6 mm; euhedral.
Augite - 0.5%; 1.5 mm; subhedral.
Olivine - 1.0%; 1.5 mm; euhedral.
Cr-Augite - 0.7%; 4.0 mm; euhedral.
GROUNDMASS: Texture: Medium-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Dark bluish gray to bluish gray (5B 4/1 to 5B 5/1).
STRUCTURE: Massive. Chilled margin on Pieces 4 and 5.
ALTERATION: Groundmass is very highly altered (80%) to actinolite, chlorite, albite, and titanite. Olivine phenocrysts are completely altered to chlorite, actinolite, and pyrite.
VEINS/FRACTURES: <1%–1%; <0.5–0.5 mm; variable dips. Chilled margin (Piece 4) dips at 85°. Discontinuous pyrite vein follows chilled margin. Five oriented fractures in Pieces 10, 14 and 15 exhibit moderate to steep dips (33°–75°). Pieces 14 and 15 contain 3 light green veins of moderate to shallow dip. On Piece 15, shallow (29°) light green vein cuts steeper (42°) vein. Well-developed saddle-shaped disk fracture in Piece 14.



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UNIT 254: MODERATELY CLINOPYROXENE-OLIVINE-PLAGIOCLASE PHYRIC DIABASE

Pieces 1A–16

CONTACTS: Unit 255 is chilled against Unit 254.
PHENOCRYSTS:
Plagioclase - 0.5%; 1.6 mm; euhedral.
Augite - 0.5%; 1.5 mm; subhedral.
Olivine - 1.0%; 1.5 mm; euhedral.
Cr-Augite - 0.7%; 4.0 mm; euhedral.
GROUNDMASS: Texture: Medium-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Dark bluish gray to bluish gray (5B 4/1 to 5B 5/1).
STRUCTURE: Massive. Chilled margin in Piece 1. Dikelets/chilled margin in Pieces 13 and 16.
ALTERATION: Groundmass is highly altered (70%) to actinolite, chlorite, albite, and titanite. Actinolite-chlorite-rich mats are common. Olivine phenocrysts are completely altered to actinolite-talc-rich cores that are rimmed by chlorite. Olivine in chilled zone in Piece 1 is extensively altered to iron oxide.
VEINS/FRACTURES: <1%–1%, 3% in Piece 14; <0.5–1.0 mm; variable dips. Pieces 1A–1F comprise an irregular chilled margin with apophyses into coarser diabase. The margin, which dips at 84°, appears to post-date a steeply dipping (65°) quartz-chlorite vein. Piece 16 contains a steep (65°) fracture and Piece 1D contains a shallow fracture. Five light green veins (Pieces 1D, 6, 11) dip variably, from 11°–82° Three light/dark green veins (Pieces 1, 6, 16) exhibit shallow and steep dips. Piece 16 contains a steeply dipping dark green vein and a quartz-chlorite vein, dipping 40°.

UNIT 255: SPARSELY OLIVINE-CLINOPYROXENE-PLAGIOCLASE PHYRIC DIABASE

Pieces 17A–21

CONTACTS: Unit 255 chilled against Unit 254.
PHENOCRYSTS:
Plagioclase - 0.3%; 1.5 mm; euhedral.
Augite - 0.1%; 0.8 mm; subhedral
Olivine - 0.5%; 2.0 mm; euhedral.
Cr-Augite - 0.3%; 2.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained phaneritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is highly altered (60%) to albite, actinolite, chlorite, and titanite. Olivine phenocrysts are completely altered to chlorite and pyrite.
VEINS/FRACTURES: <11%; <0.5–0.5 mm; variable dips. Two oriented fractures on Piece 19 exhibit shallow (6°) and steep (85°) dips. Fractures are well developed and closely spaced, and may be cooling joints.

UNIT 256: APHYRIC DIABASE

Pieces 22–24

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.2%; 1.6 mm; euhedral.
Augite - 0.5%; 2.0 mm; subhedral.
Cr-Augite - 0.1%; 3.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained aphanitic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is highly altered (70%) to actinolite, chlorite, albite, and titanite. Chlorite-actinolite-rich mats are common. Epidote intergrown with chlorite and actinolite occurs in Piece 22. Olivine phenocrysts are completely altered to actinolite and talc and are rimmed by chlorite.
VEINS/FRACTURES: <1%–2%; <0.5–0.5 mm; no oriented structures.

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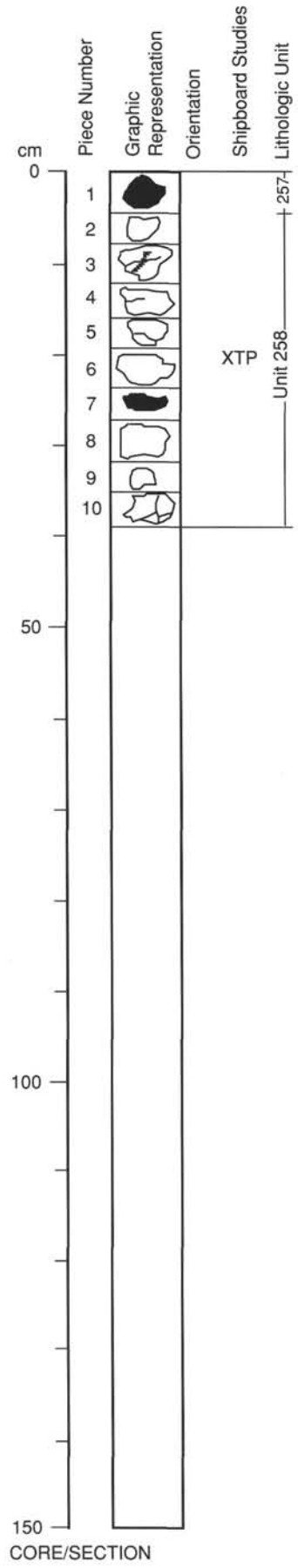
UNIT 257: APHYRIC DIABASE

Piece 25

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.1%; 0.8 mm; euhedral.
Augite - 0.2%; 0.5 mm; subhedral.
Olivine - 0.1%; 0.7 mm; euhedral.
Cr-Augite - 0.1%; 2.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained aphanitic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: No comments.
VEINS/FRACTURES: 1(?); 0.5(?) mm; no oriented structures.



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UNIT 257: APHYRIC DIABASE

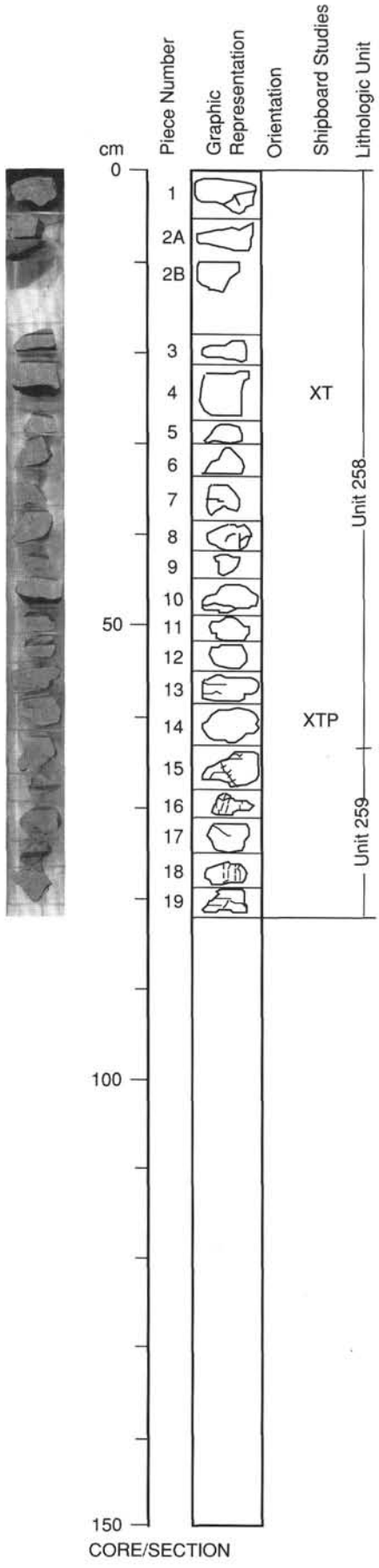
Piece 1

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.1%; 0.8; euhedral.
Augite - 0.2%; 0.5 mm; subhedral.
Olivine - 0.1%; 0.7 mm; euhedral.
Cr-Augite - 0.1%; 2.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained aphanitic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is moderately to highly altered (50%) to actinolite, chlorite, albite, and titanite. Olivine phenocrysts are completely replaced by chlorite and pyrite.
VEINS/FRACTURES: 1%; <0.5 mm; no oriented structures.

UNIT 258: MODERATELY CLINOPYROXENE-PLAGIOCLASE OLIVINE PHYRIC DIABASE

Pieces 2–10

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.75%; 1.5 mm; euhedral.
Augite - 0.3%; 0.8 mm; subhedral.
Olivine - 1.5%; 2.0 mm; euhedral.
Cr-Augite - 2.0%; 3.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (15%) to actinolite, chlorite, albite, and titanite. Olivine phenocrysts are completely altered to chlorite, talc, mixed-layer clay, and pyrite.
VEINS/FRACTURES: <1%–1%; <0.5–0.5 mm; no oriented structures.



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UNIT 258: MODERATELY CLINOPYROXENE-PLAGIOCLASE-OLIVINE PHYRIC DIABASE

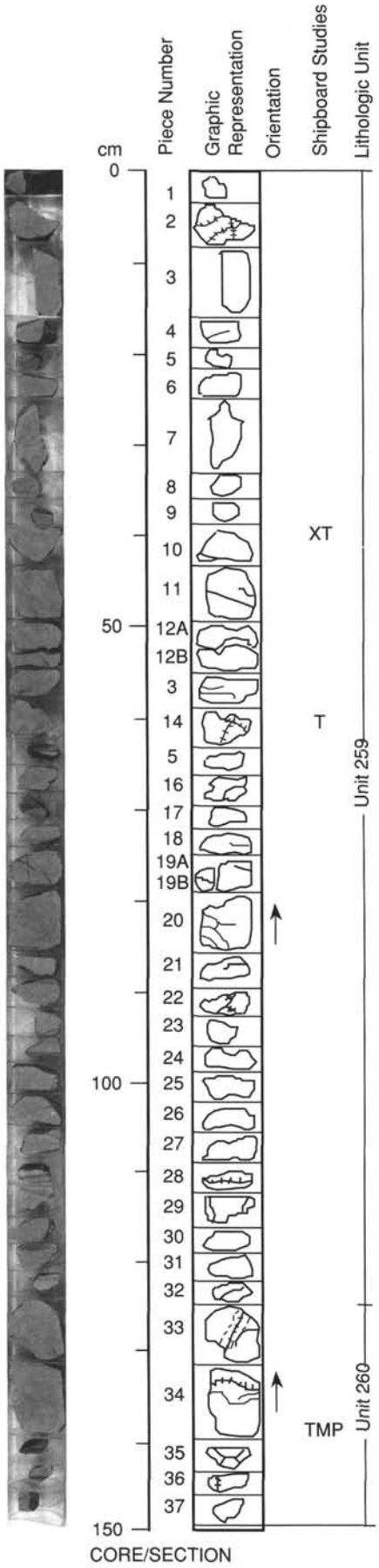
Pieces 1–14

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.75%; 1.5 mm; euhedral.
Augite - 0.2%; 0.8 mm; subhedral.
Olivine - 0.5%; 2.0 mm; euhedral pseudomorph.
Cr-Augite - 1.5%; 3.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: In Pieces 1–9 groundmass is slightly altered (15%), in Pieces 10–14 groundmass is moderately altered (30%) to actinolite, chlorite, albite, and titanite. Olivine phenocrysts throughout the interval are completely replaced by chlorite, mixed-layer clays, and pyrite.
VEINS/FRACTURES: <0.5%; <1.0 mm; shallow dips. Pieces 1 and 13 have two shallow-dipping fractures.

UNIT 259: APHYRIC DIABASE

Pieces 15–19

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.1%; 1.2 mm; euhedral.
Augite - 0.1%; 0.8 mm; subhedral.
Olivine - 0.1%; 2.5 mm; euhedral pseudomorph.
GROUNDMASS: Texture: Microcrystalline aphanitic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is moderately altered (30%) to actinolite, chlorite, albite, and pyrite. Olivine phenocrysts are completely replaced by chlorite, mixed-layer clay, and pyrite.
VEINS/FRACTURES: <1%–1%; <3.0–3.0 mm. No oriented structures.



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UNIT 259: APHYRIC DIABASE

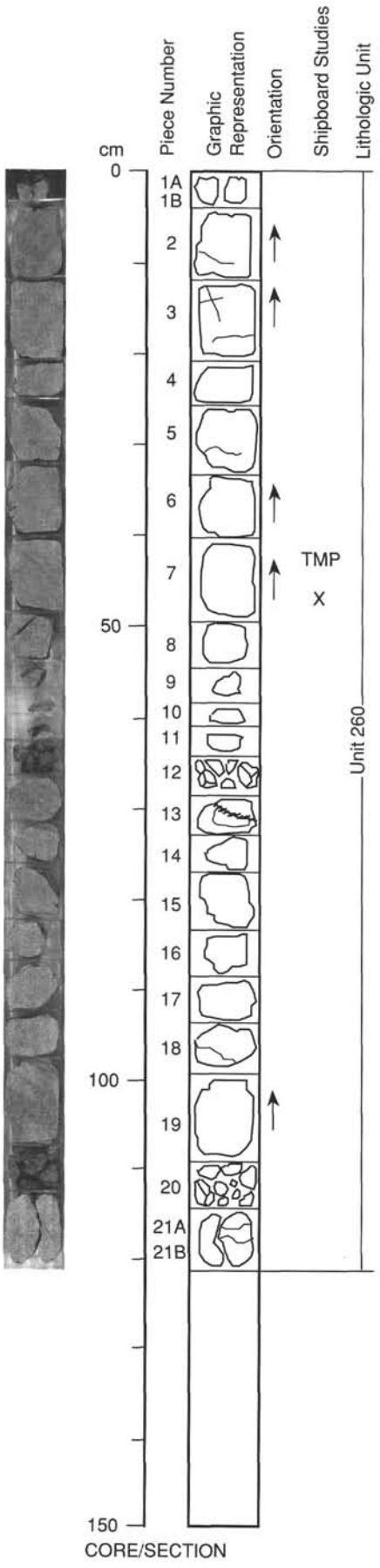
Pieces 1–32

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.1%; 1.2 mm; euhedral.
Augite - 0.1%; 0.8 mm; subhedral.
Olivine - 0.1%; 2.5 mm; euhedral pseudomorph.
GROUNDMASS: Texture: Microcrystalline aphanitic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (15%) to highly altered (60%); actinolite, chlorite, albite, and titanite decrease with depth. Olivine phenocrysts are completely replaced by chlorite and pyrite. Disseminated pyrite is present in groundmass.
VEINS/FRACTURES: <2%–2%; <3.0–3.0 mm; variable dips. Two steep (>80) and one shallow (<10) fractures are present in Pieces 3, 16 and 19A, and Piece 12 contains a well-developed discing fracture. Pieces 2, 3, 14, 16, 20, 22, and 23 have eight light green veins dipping 30°–89°. Two shallow-dipping veins present on *Piece 2 (dark green) and Piece 11 (light/dark green).* On Piece 14 a light green vein dipping at 66° is offset by a light green vein dipping at 34°.

UNIT 260: MODERATELY CLINOPYROXENE-OLIVINE-PLAGIOCLASE PHYRIC DIABASE

Pieces 33–37

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.5%; 2.5 mm; euhedral.
Olivine - 3.0%; 1.5 mm; euhedral pseudomorph.
Cr-Augite - 3.0%; 2.5 mm; euhedral.
GROUNDMASS: Texture: Medium-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Light gray to medium bluish gray (N7/ to 5B 5/1).
STRUCTURE: Massive.
ALTERATION: Moderately altered groundmass (30%) to actinolite, chlorite, albite, and titanite. Alteration varies down section from 60% at top to 15% at bottom. Olivine phenocrysts present in Pieces 33, 34, and 37 are pervasively altered to chlorite and pyrite. Actinolite-chlorite-rich patches exhibit an intergrown "feathery" texture.
VEINS/FRACTURES: <4%–4%; <3.0–3.0 mm; steeply dipping. Piece 33 has one oriented light/dark green vein dipping at 79°.

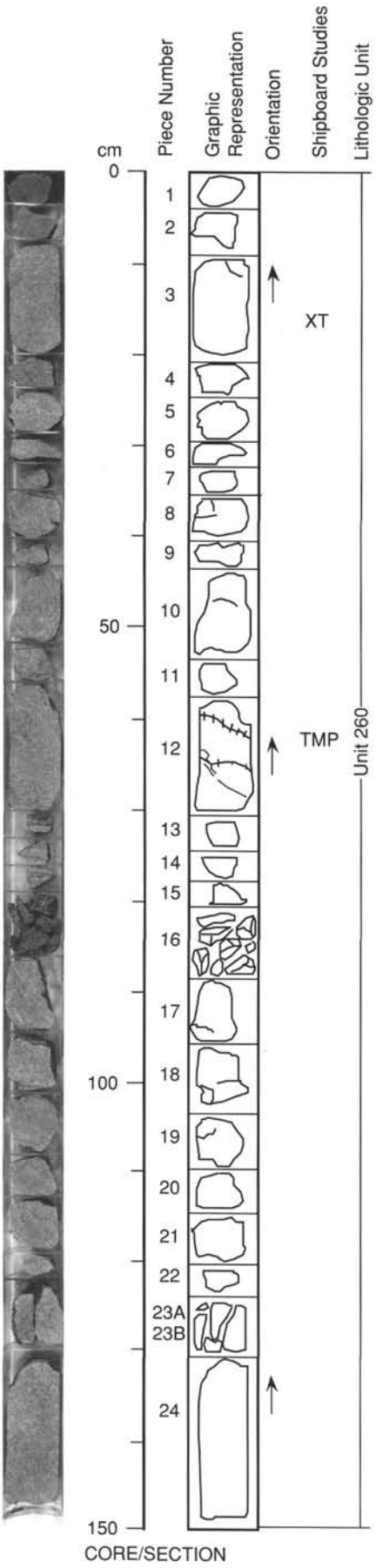


140-504B-225R-2

UNIT 260: MODERATELY CLINOPYROXENE-OLIVINE-PLAGIOCLASE PHYRIC DIABASE

Pieces 1A–21B

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.5%; 2.5 mm; euhedral.
Olivine - 3.0%; 1.5 mm; euhedral pseudomorph.
Cr-Augite - 3.0%; 2.5 mm; euhedral.
GROUNDMASS: Texture: Medium-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Light gray to medium bluish gray (N7/ to 5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is moderately altered (25%) to actinolite, chlorite, albite, and titanite, with disseminated pyrite. Olivine phenocrysts are completely replaced by chlorite, talc, and pyrite.
VEINS/FRACTURES: <4%–4%; <2.0–2.0 mm. No oriented structures.



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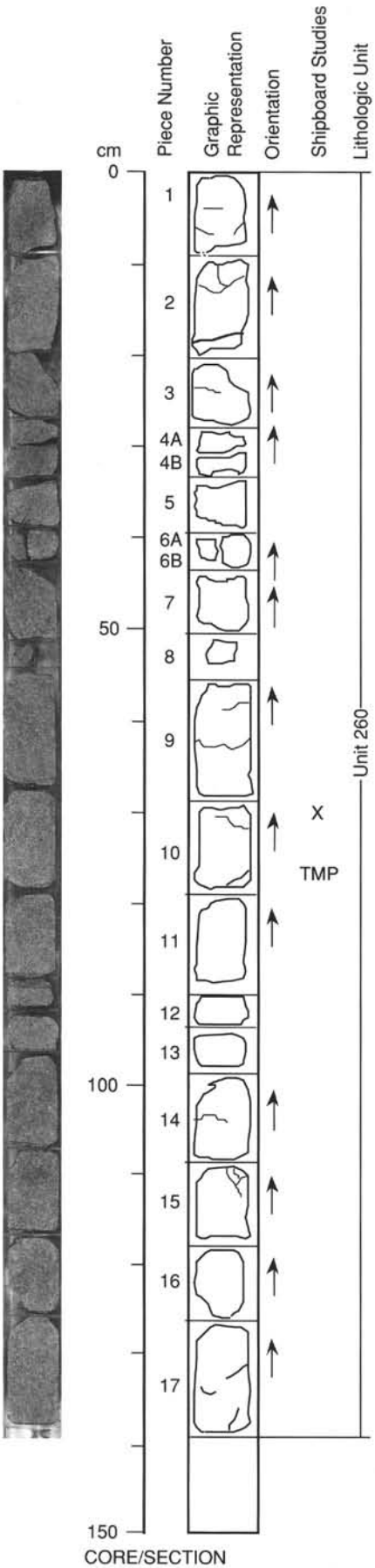
UNIT 260: MODERATELY CLINOPYROXENE-OLIVINE-PLAGIOCLASE PHYRIC DIABASE

Pieces 1–24

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.5%; 2.5 mm; euhedral.
Olivine - 3.0%; 1.5 mm; euhedral pseudomorph.
Cr-Augite - 3.0%; 2.5 mm; euhedral.
GROUNDMASS: Texture: Medium-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Light gray to medium bluish gray (N7/ to 5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (20%) with local intense alteration patches (1.0–2.0 cm diameter) in Pieces 8–11, 17, 19–21, and 24. Alteration patches comprise 7% of the core. Alteration minerals in groundmass include actinolite, chlorite, albite, and titanite. Olivine phenocrysts are completely altered to iron oxide minerals, mixed-layer clay, chlorite, talc, and pyrite. Disseminated pyrite in groundmass.
VEINS/FRACTURES: <2%–2%; <1.0–1.0 mm; variable dips. Six oriented fractures in Pieces 9, 11, 12, 17, 20, and 23A are all steeply dipping (>60°). Piece 12 has one light green vein dipping at 42°.

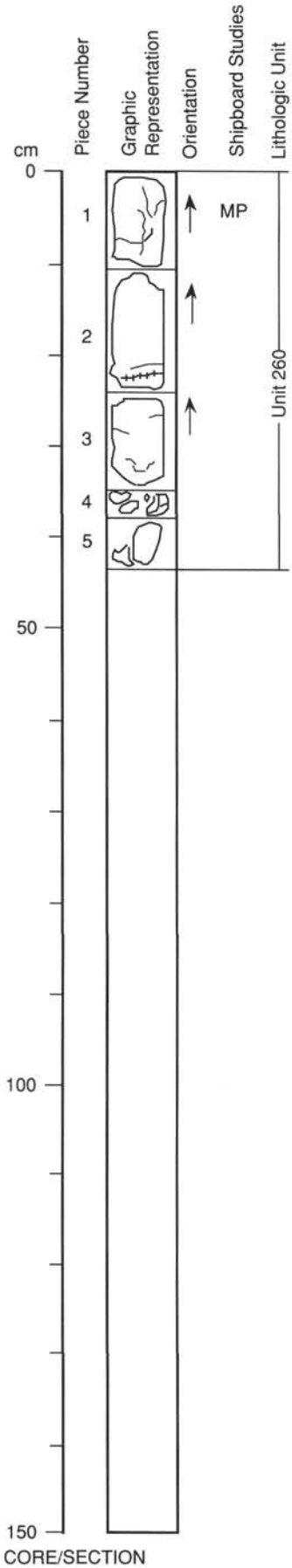


140-504B-226R-2

UNIT 260: MODERATELY CLINOPYROXENE-OLIVINE-PLAGIOCLASE PHYRIC DIABASE

Pieces 1–17

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.5%; 2.5 mm; euhedral.
Olivine - 3.0%; 1.5 mm; euhedral pseudomorph.
Cr-Augite - 3.0%; 2.5 mm; euhedral.
GROUNDMASS: Texture: Medium-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Light gray to medium bluish gray (N7/ to 5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly to moderately altered (20%) with local intensely altered patches (1.0–2.0 cm diameter; 12% of the core) in Pieces 1–5, 7–9, 11–14, 16, and 17. Groundmass is altered to actinolite, chlorite, albite, and titanite. Olivine phenocrysts are completely replaced by chlorite, talc, mixed-layer clay, iron oxide minerals, and pyrite.
VEINS/FRACTURES: <1%–1%; <0.5–0.5 mm; variable dips. Three oriented fractures in Pieces 1, 3, and 11 with variable dips (17° to 82°). One light green vein in Piece 12 dipping at 11°.

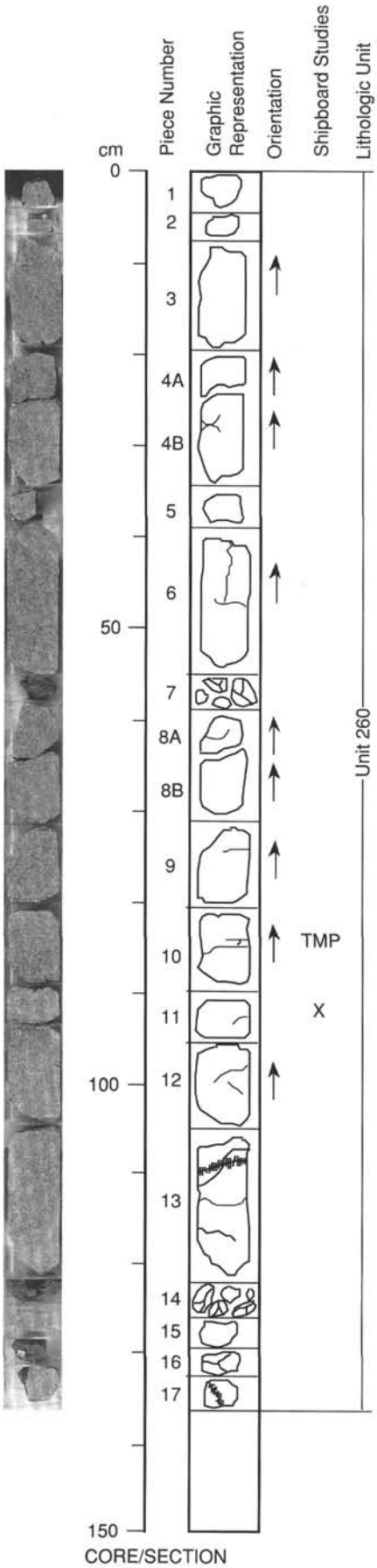


140-504B-226R-3

UNIT 260: MODERATELY CLINOPYROXENE-OLIVINE-PLAGIOCLASE PHYRIC DIABASE

Pieces 1–5

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.5%; 2.5 mm; euhedral.
Olivine - 3.0%; 1.5 mm; euhedral pseudomorph.
Cr-Augite - 3.0%; 2.5 mm; euhedral.
GROUNDMASS: Texture: Medium-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Light gray to medium bluish gray (N7/ to 5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly to moderately altered (20%) with local intense alteration patches (1.0–2.0 cm diameter; 10% of the core) in Pieces 1and 3. Groundmass is altered to actinolite, chlorite, albite, and titanite. Olivine phenocrysts are completely replaced by chlorite, talc, mixed-layer clay, and iron oxide minerals.
VEINS/FRACTURES: <1.0%; <0.5 mm. No oriented structures.

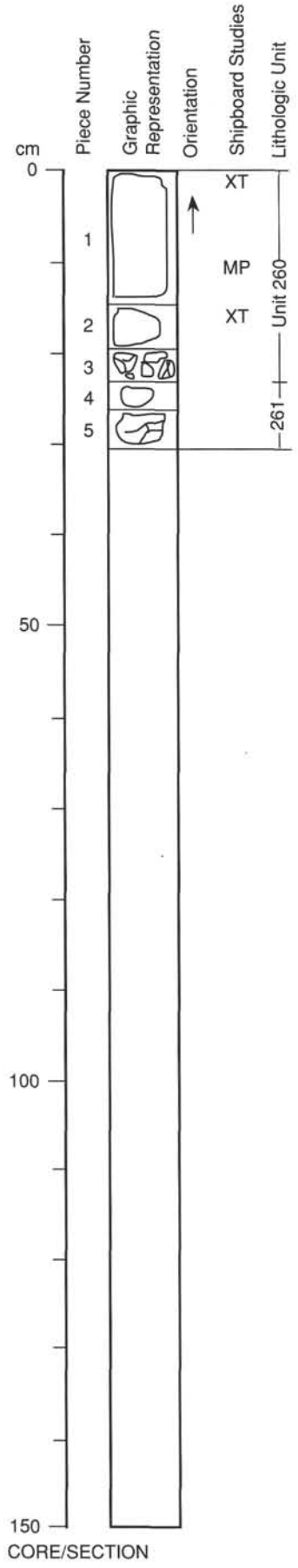


140-504B-227R-1

UNIT 260: MODERATELY CLINOPYROXENE-OLIVINE-PLAGIOCLASE PHYRIC DIABASE

Pieces 1–17

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.5%; 2.5 mm; euhedral.
Olivine - 3.0%; 1.5 mm; euhedral pseudomorph.
Cr-Augite - 3.0%; 2.5 mm; euhedral.
GROUNDMASS: Texture: Medium-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Light gray to medium bluish gray (N7/ to 5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is moderately altered (30%) with local intense alteration patches (10% of core) in Pieces 3, 4, 6, 8, 10–12, 13, and 15. Groundmass is altered to actinolite, chlorite, albite, and titanite. Olivine phenocrysts are completely replaced by chlorite, talc, mixed-layer clay, and iron oxide minerals.
VEINS/FRACTURES: <2%–2%; <1.0–1.0 mm; variable dips. Two oriented fractures in Pieces 8B and 13, dipping at 14° and 54°, respectively. Two dark green veins in Pieces 3 and 8A and one light green vein all dip at 47°.



140-504B-227R-2

UNIT 260: MODERATELY CLINOPYROXENE-OLIVINE-PLAGIOCLASE PHYRIC DIABASE

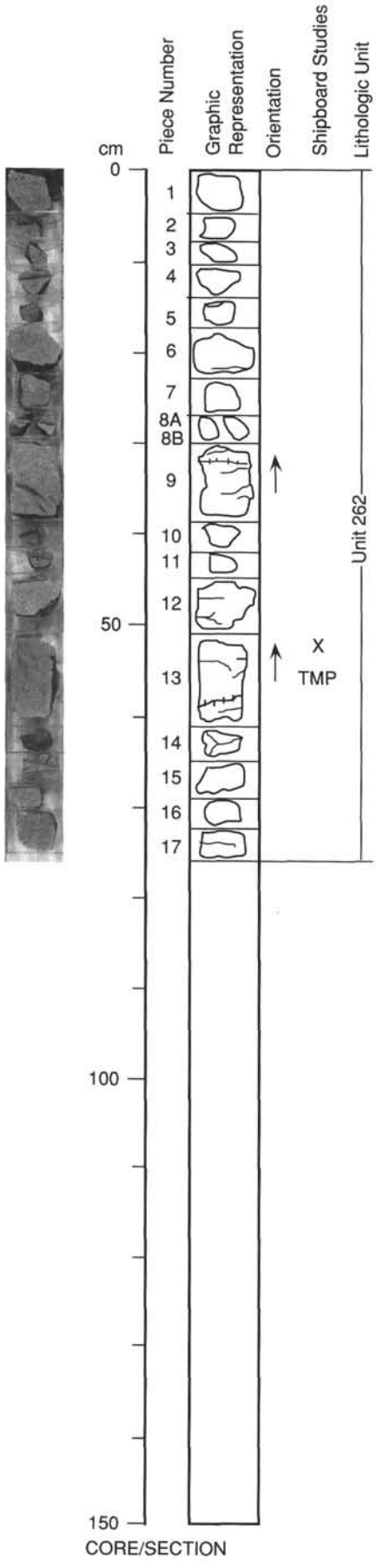
Pieces 1–3

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.5%; 2.5 mm; euhedral.
Olivine - 3.0%; 1.5 mm; euhedral pseudomorph.
Cr-Augite - 3.0%; 2.5 mm; euhedral.
GROUNDMASS: Texture: Medium-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Light gray to medium bluish gray (N7/ to 5B 5/1).
STRUCTURE: Massive.
ALTERATION: Slightly altered groundmass (20%) with local intense alteration patches (60% of core) in Pieces 1 and 2. Groundmass is altered to actinolite, chlorite, albite, and titanite with epidote after plagioclase in patches. Olivine phenocrysts are completely replaced by chlorite, talc, mixed-layer clay, and iron oxide minerals.
VEINS/FRACTURES: <1.0%; <0.5–0.5 mm; steeply dipping. One epidote-quartz vein dips at 74° in Piece 2.

UNIT 261: MODERATELY OLIVINE-CLINOPYROXENE-PLAGIOCLASE PHYRIC DIABASE

Pieces 4–5

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.5%; 2.5 mm; euhedral.
Augite - 0.1%; 1.0 mm; subhedral.
Olivine - 3.0%; 1.1 mm; euhedral.
Cr-Augite - 1.5%; 2.5 mm; euhedral.
GROUNDMASS: Texture: Fine-grained phaneritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Medium bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is moderately altered (30%) to actinolite, chlorite, albite, and titanite. Olivine phenocrysts are completely altered to chlorite and pyrite.
VEINS/FRACTURES: <1.0%; <0.5 mm. No oriented structures.



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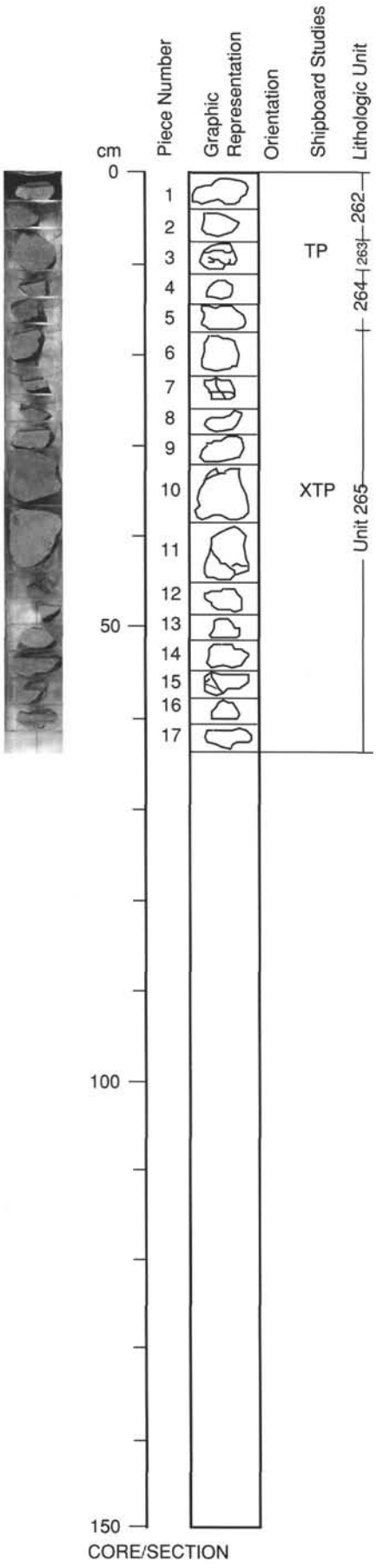
UNIT 262: MODERATELY OLIVINE-PLAGIOCLASE-CLINOPYROXENE PHYRIC DIABASE

Pieces 1–17

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 1.0%; 2.5 mm; euhedral.
Augite - 0.5%; 1.3 mm; subhedral.
Olivine - 1.5%; 1.5 mm; euhedral.
Cr-Augite - 0.5%; 1.5 mm; subhedral.
GROUNDMASS: Texture: Fine-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Greenish gray to light gray (5B 6/1 to N7/).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly to moderately altered (20%) to actinolite, chlorite, albite, and titanite. Olivine phenocrysts are pervasively replaced by chlorite, talc, and mixed-layer clay, with trace iron oxide minerals.
VEINS/FRACTURES: <1.0%; <0.5 mm; variable dips. Piece 6 has one oriented fracture dipping at 85° and one chlorite-pyrite vein dipping at 55°. Piece 9 has one light green vein dipping at 42°, and Piece 13 has two dark green veins dipping at 83° and 35°.



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UNIT 262: MODERATELY OLIVINE-PLAGIOCLASE-CLINOPYROXENE PHYRIC DIABASE

Pieces 1–2

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 1.0%; 2.5 mm; euhedral.
Augite - 0.5%; 1.3 mm; subhedral.
Olivine - 1.5%; 1.5 mm; euhedral.
Cr-Augite - 0.5%; 1.5 mm; subhedral.
GROUNDMASS: Texture: Fine-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxides.
VESICLES: Non-vesicular.
COLOR: Greenish gray to light gray (5B 6/1 to N7/).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (10%) to actinolite, chlorite, albite, and titanite. Olivine is completely replaced by chlorite, talc, mixed-layer clay, and iron oxide minerals.
VEINS/FRACTURES: <1.0%; <0.5 mm. No oriented structures.

UNIT 263: MODERATELY CLINOPYROXENE-OLIVINE-PLAGIOCLASE PHYRIC DIABASE

Piece 3

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.5%; 1.5 mm; euhedral.
Augite - 0.2%; 0.8 mm; subhedral.
Olivine - 1.0%; 0.8 mm; euhedral.
Cr-Augite - 2.0%; 4.0 mm; euhedral.
GROUNDMASS: Texture: Fine-grained phaneritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Medium bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (10%) to actinolite, chlorite, albite, and titanite. Olivine is unaltered in Piece 3, but is otherwise completely replaced by chlorite, talc, mixed-layer clay, and iron oxide minerals.
VEINS/FRACTURES: <1.0%; <0.5 mm; steeply dipping. One oriented fracture dips at 79°.

UNIT 264: SPARSELY OLIVINE-PLAGIOCLASE-CLINOPYROXENE PHYRIC DIABASE

Pieces 4–5

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.5%; 2.0 mm; euhedral.
Olivine - 0.75%; 1.2 mm; euhedral.
Cr-Augite - 0.2%; 1.8 mm; subhedral.
GROUNDMASS: Texture: Fine-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Greenish gray (5B 6/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is slightly altered (10%) to actinolite, chlorite, albite, and titanite. Olivine is completely replaced by chlorite, mixed-layer clay, talc, and iron oxide minerals.
VEINS/FRACTURES: No oriented structures.

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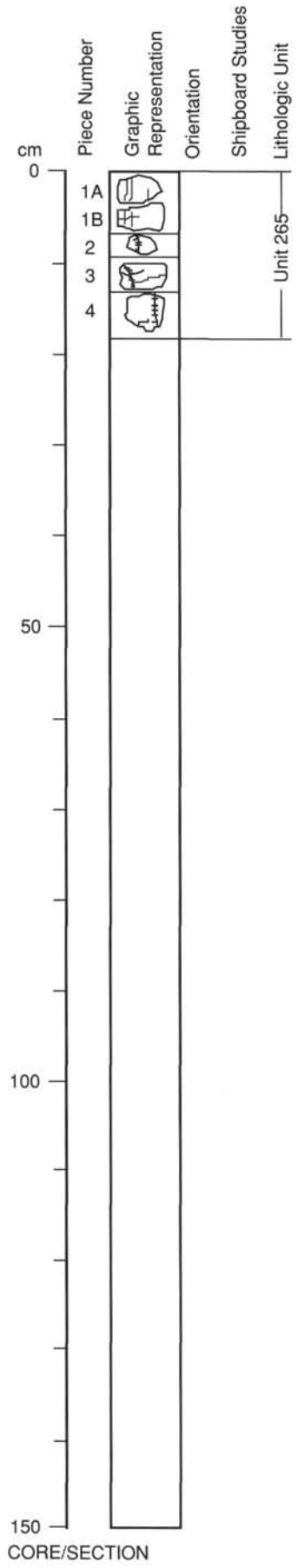
UNIT 265: SPARSELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

Pieces 6–17

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 1.0%; 1.5 mm; euhedral.
Augite - 0.1%; 1.0 mm; subhedral.
Olivine - 0.5%; 1.1 mm; euhedral pseudomorph.
Cr-Augite - 0.3%; 1.5 mm; euhedral.
GROUNDMASS: Texture: Fine-grained aphanitic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Medium to light bluish gray (5B 6/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is very highly altered (90%) to actinolite, chlorite, and titanite. Olivine phenocrysts are completely replaced by actinolite. Plagioclase is 90% altered to albite.
VEINS/FRACTURES: <1.0%; <0.5 mm. No oriented structures.



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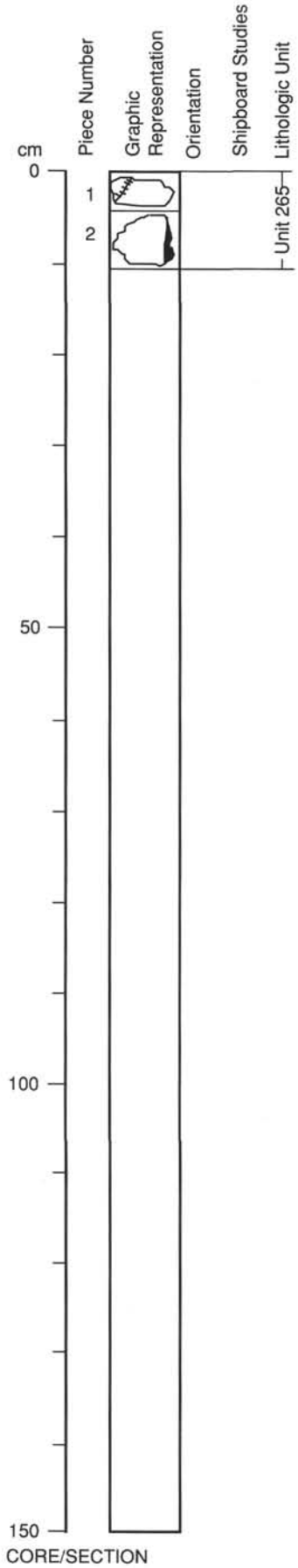
UNIT 265: SPARSELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE.

Pieces 1A–4

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 1.0%; 1.5 mm; euhedral.
Augite - 0.1%; 1.0 mm; subhedral.
Olivine - 0.5%; 1.1 mm; euhedral pseudomorph.
Cr-Augite - 0.3%; 1.5 mm; euhedral.
GROUNDMASS: Textural: Fine-grained aphanitic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Medium to light bluish gray (5B 6/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is very highly altered (90%) to actinolite, chlorite, albite, and titanite. Olivine phenocrysts are completely altered to actinolite and chlorite. Plagioclase is 90% altered to albite.
VEINS/FRACTURES: <2%–2%; <0.5–0.5 mm; steeply dipping. One dark green vein dips 72° in Piece 3.



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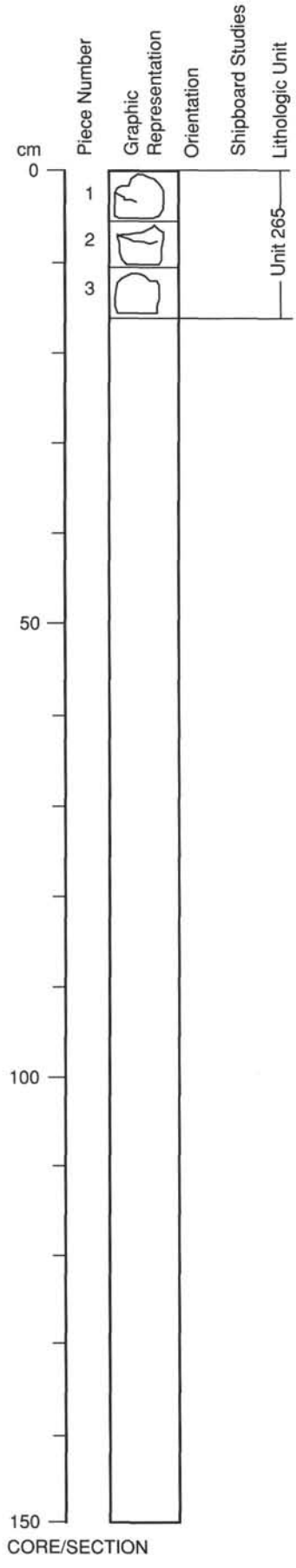
UNIT 265: SPARSELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE.

Pieces 1–2

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 1.0%; 1.5 mm; euhedral.
Augite - 0.1%; 1.0 mm; subhedral.
Olivine - 0.5%; 1.1 mm; euhedral pseudomorph.
Cr-Augite - 0.3%; 1.5 mm; euhedral.
GROUNDMASS: Texture: Fine-grained aphanitic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Medium to light bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is highly altered (80%) to actinolite, chlorite, albite, and titanite.
VEINS/FRACTURES: <1.0%; <0.5 mm. No oriented structures.



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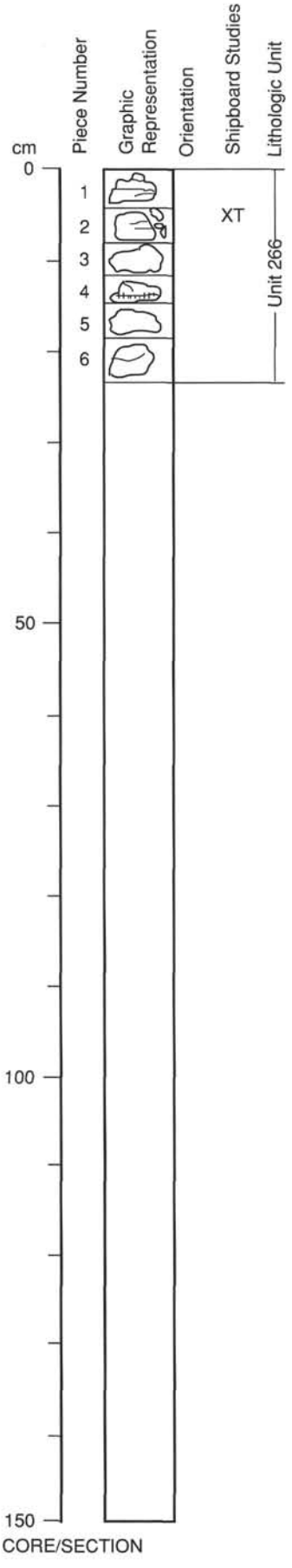
UNIT 265: SPARSELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE.

Pieces 1–3

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 1.0%; 1.5 mm; euhedral.
Augite - 0.1%; 1.0 mm; subhedral.
Olivine - 0.5%; 1.1 mm; euhedral pseudomorph.
Cr-Augite - 0.3%; 1.5 mm; euhedral.
GROUNDMASS: Texture: Fine-grained aphanitic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Medium to light bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Piece 1 is slightly altered (5%) to albite, actinolite, chlorite, and titanite as groundmass secondary phases. Olivine phenocrysts are completely replaced by chlorite. Pieces 2 and 3 exhibit the same secondary groundmass alteration phases but at 90% alteration.
VEINS/FRACTURES: <1.0%; <0.5–0.5 mm. No oriented structures.



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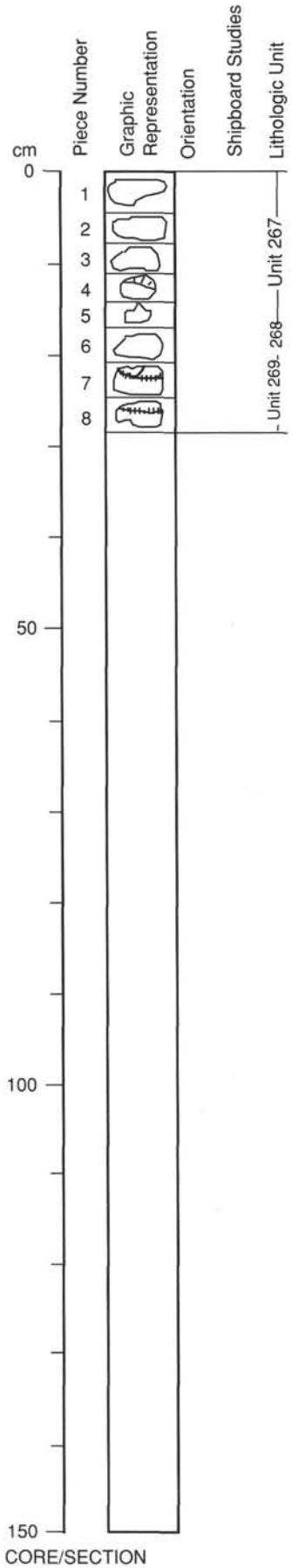
UNIT 266: APHYRIC DIABASE

Pieces 1–6

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 0.5%; 0.6 mm; euhedral.
GROUNDMASS: Texture: Fine-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Medium bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is highly altered (60%) to actinolite, chlorite, albite, and titanite.
VEINS/FRACTURES: <3%–3%; <0.5–0.5 mm. No oriented structures.

504B-234R NO RECOVERY



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UNIT 267: MODERATELY PLAGIOCLASE-CLINOPYROXENE-OLIVINE PHYRIC DIABASE

Pieces 1–5

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 2.0%; 1.2 mm; euhedral.
Augite - 0.5%; 0.8 mm; subhedral.
Olivine - 1.0%; 1.0 mm; subhedral pseudomorph.
Cr-Augite - 1.0%; 1.2 mm; euhedral.
GROUNDMASS: Texture: Fine-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Light to medium bluish gray (5B 6/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is moderately altered (40%) to actinolite, chlorite, albite, and titanite, with local intense alteration patches in Piece 1 comprising 10% of the sample. Piece 3 contains minor olivine phenocrysts which are completely replaced by chlorite and pyrite.
VEINS/FRACTURES: <2%–2%; <1.0–1.0 mm. No oriented structures.

UNIT 268: SPARSELY PLAGIOCLASE-CLINOPYROXENE PHYRIC DIABASE

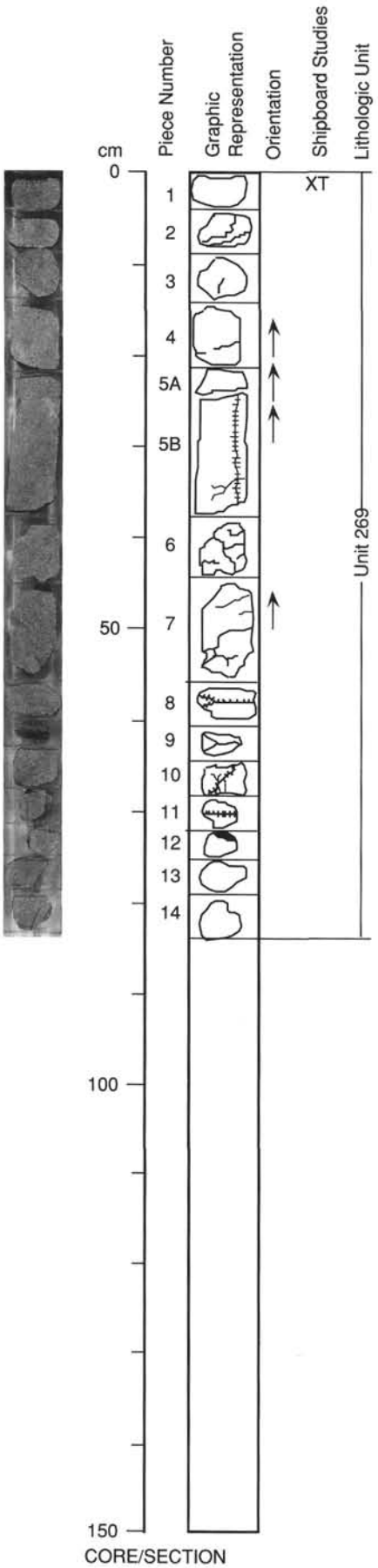
Piece 6

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 1.0%; 0.8 mm; euhedral.
Augite - 0.5%; 0.8 mm; subhedral.
GROUNDMASS: Texture: Fine-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Medium bluish gray (5B 5/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is moderately altered (40%) to actinolite, chlorite, albite, and titanite.
VEINS/FRACTURES: No oriented structures.

UNIT 269: MODERATELY PLAGIOCLASE-OLIVINE-CLINOPLYROXENE PHYRIC DIABASE

Pieces 7–8

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 3.0%; 1.8 mm; euhedral.
Augite - 0.7%; 1.2 mm; subhedral.
Olivine - 3.0%; 1.0 mm; subhedral pseudomorph.
Cr-Augite - 2.0%; 1.6 mm; euhedral.
GROUNDMASS: Texture: Fine-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Medium bluish gray to medium light bluish gray (5B 5/1 to 5B 6/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is highly altered (40%) to actinolite, chlorite, albite, and titanite. Minor olivine phenocrysts are completely altered to chlorite and pyrite.
VEINS/FRACTURES: <2%–2%; <1.0–1.0 mm. One shallowly dipping (5°) fracture is present in Piece 7 and shallowly dipping light/dark green and light green veins occur in Pieces 7 and 8, respectively.



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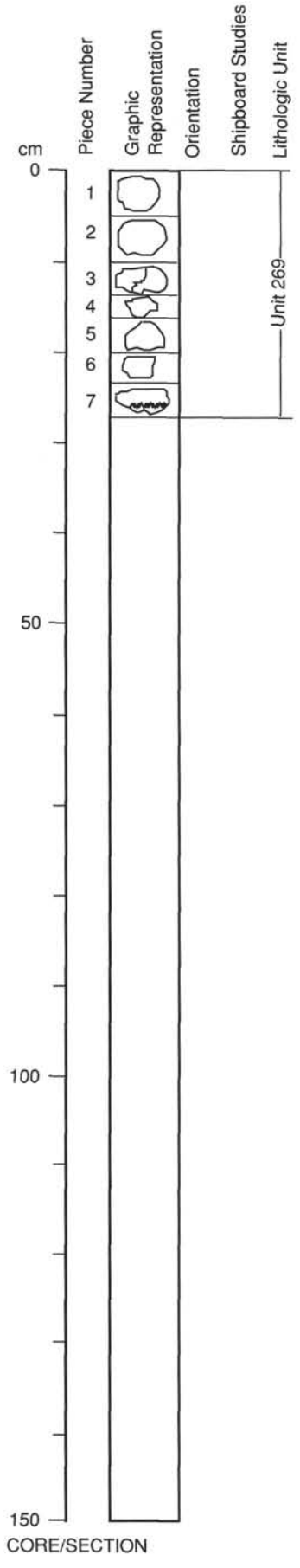
UNIT 269: MODERATELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

Pieces 1–14

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 3.0%; 1.8 mm; euhedral.
Augite - 0.7%; 1.2 mm; subhedral.
Olivine - 3.0%; 1.0 mm; subhedral pseudomorph.
Cr-Augite - 2.0%; 1.6 mm; euhedral.
GROUNDMASS: Texture: Fine-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Medium bluish to medium light bluish gray (5B 5/1 to 5B 6/1).
STRUCTURE: Massive.
ALTERATION: Groundmass in Piece 1 is moderately altered (30%) and in Pieces 2–14 groundmass is highly altered (50%). Secondary minerals include actinolite, chlorite, albite, and titanite. Olivine phenocrysts in Pieces 1 to 14 are completely altered to chlorite, pyrite, and trace iron oxide minerals. Fine amygdules of actinolite are present in Pieces 4, 5, and 10.
VEINS/FRACTURES: <3%–3%; <0.5–0.5 mm; variable dips. Four oriented fractures dip shallowly and steeply in Pieces 6, 7, and 10. Four light green veins in Pieces 2, 8, and 10 are of variable dip. One steeply dipping (89°) light/dark green vein is present in Pieces 5A and 5B.



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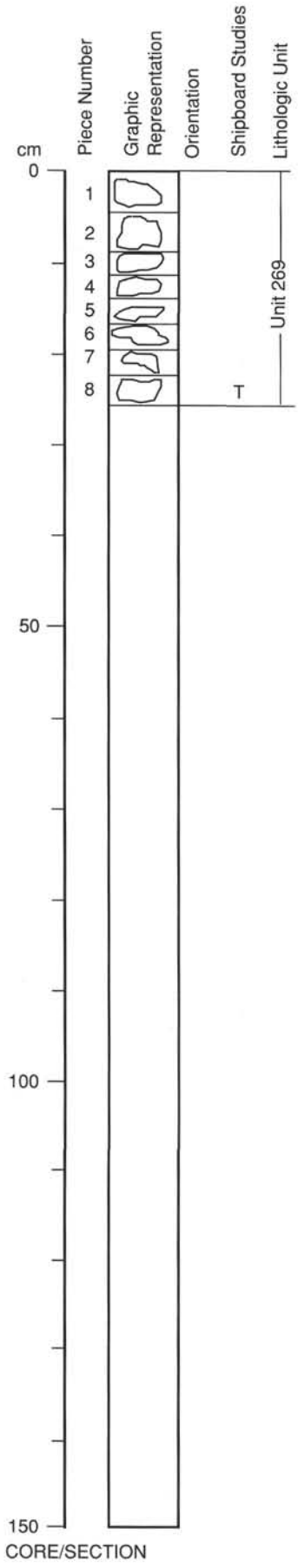
UNIT 269: MODERATELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

Pieces 1–7

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 3.0%; 1.8 mm; euhedral.
Augite - 0.7%; 1.2 mm; subhedral.
Olivine - 3.0%; 1.0 mm; subhedral pseudomorph.
Cr-Augite - 2.0%; 1.6 mm; euhedral.
GROUNDMASS: Texture: Fine-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Medium bluish to medium to light bluish gray (5B 5/1 to 5B 6/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is moderately altered (40%) to albite, titanite, chlorite, and actinolite, with local intense alteration patches in Pieces 1 and 2 comprising 1% of the core interval. Olivine phenocrysts are completely replaced by chlorite.
VEINS/FRACTURES: <1.0%; <0.5–0.5 mm; variable dips. Piece 7 contains one oriented light green vein that dips at 34°.



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UNIT 269: MODERATELY PLAGIOCLASE-OLIVINE-CLINOPYROXENE PHYRIC DIABASE

Pieces 1–8

CONTACTS: None.
PHENOCRYSTS:
Plagioclase - 3.0%; 1.8 mm; euhedral.
Augite - 0.7%; 1.2 mm; subhedral.
Olivine - 3.0%; 1.0 mm; subhedral pseudomorph.
Cr-Augite - 2.0%; 1.6 mm; euhedral.
GROUNDMASS: Texture: Fine-grained doleritic. Composition: Plagioclase, clinopyroxene, Fe-Ti oxide minerals.
VESICLES: Non-vesicular.
COLOR: Medium bluish to light medium bluish gray (5B 5/1 to 5B 6/1).
STRUCTURE: Massive.
ALTERATION: Groundmass is moderately altered (30%) to actinolite, chlorite, albite, and titanite. Olivine phenocrysts are completely replaced by chlorite and pyrite.
VEINS/FRACTURES: <1.0%; <0.5 mm. No oriented structures.