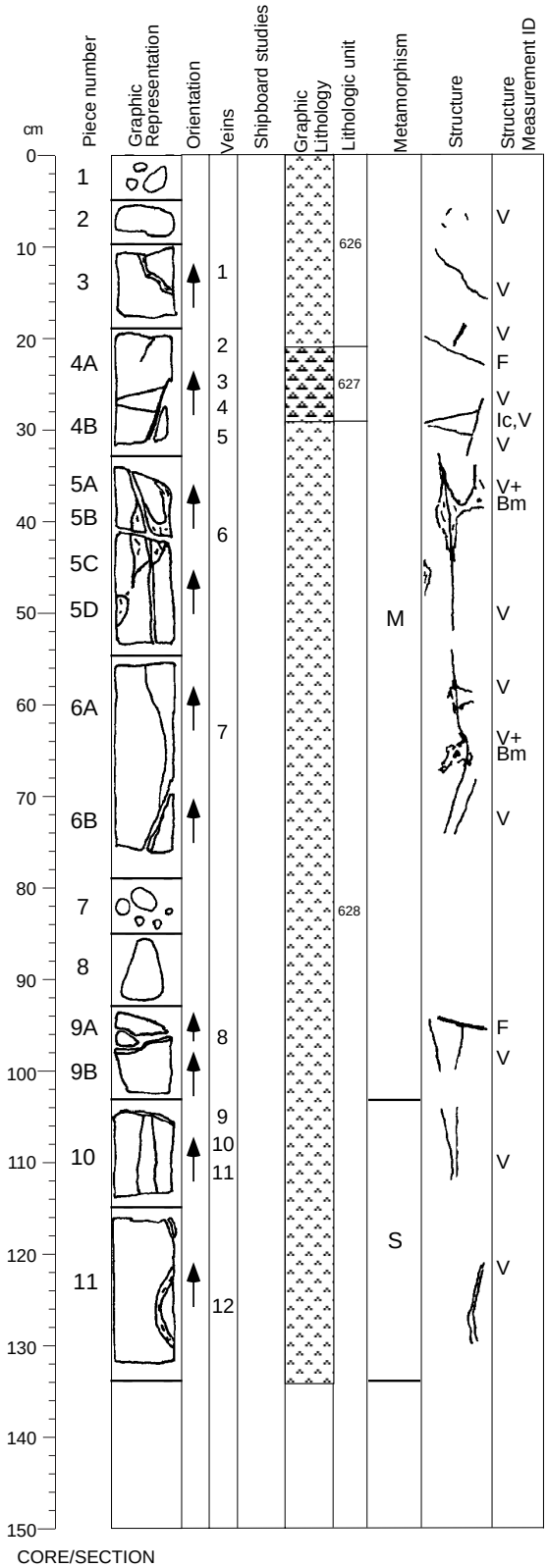
Core Image



176-735B-127R-1

Interval 626: OLIVINE GABBRO
(see Section 176-735B-126R-5)
Interval 627: OLIVINE MICROGABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	127	1	21	4	765.11
Lower contact:	127	1	29	4	765.19

Thickness (m): 0.08

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	55	3	0.5	fine	tabular/ subhedral anhedral
Clinopyroxene	25	2	0.3	medium	equant/ anhedral
Olivine	20	1	1	fine	equant/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	100.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Fine
Modal IUGS Name (calculated): Olivine Microgabbro

	Type	Distribution
Texture:	equigranular	N/A

Interval 628: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	127	1	29	4	765.19
Lower contact:	128	2	70	5	776.61

Thickness (m): 11.42

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	15	5	coarse	tabular/ subhedral euhedral
Clinopyroxene	35	20	2	coarse	equant/ anhedral subhedral
Olivine	9	7	1	medium	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	104.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	variable texture	N/A

Comments: Mostly granular, locally equigranular (due to compaction?) and subophitic with many coarse clinopyroxene grains oikocrystic; locally clinopyroxene pegmatitic at 16-26 cm in 128R-1 and at the base of the interval. Locally microgabbroic at 30-35 cm in 128R-1. Oxide 5% at 90-95 cm in 127R-1; 3% at 48-49 cm in 128R-1. Sulfide abundant at 31 cm in 127R-6.

Continued next page

Core Image

176-735B-127R-1 (cont'd)

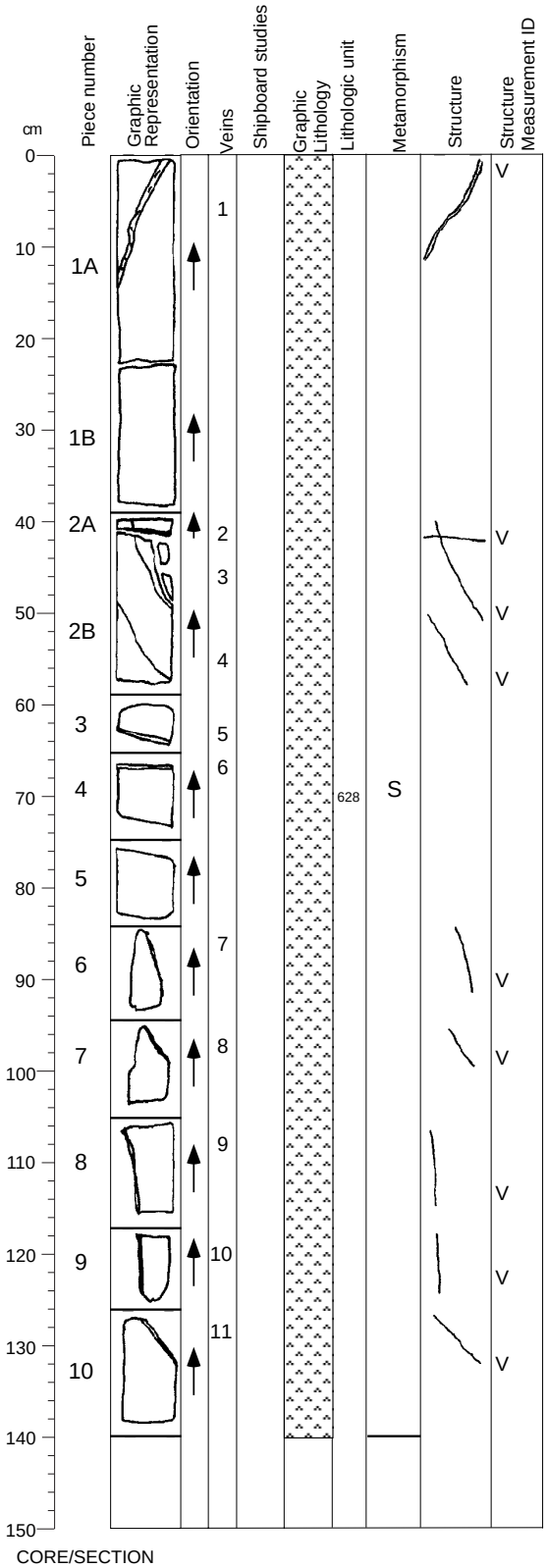
Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: After olivine, along pyroxene cleavages and as rims.
Comments: Near a vein of quartz diorite.
Secondary plagioclase:
Total Percent: <4
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, mainly near the felsic vein.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Dark green smectite:
Total Percent: <8
Mode of occurrence: Replacing olivine and partly pyroxene.
Comments: Near veins and cracks.

Background Alteration:
Degree of alteration: slight to moderate (5 to 20%). Pieces 1 to 9: Olivine is highly altered (80%) to amphibole, talc, and abundant smectite. Clinopyroxene is partly replaced by amphibole and smectite (6%). Around 10% of the plagioclase is secondary. The alteration is increased along the plagioclase+ amphibole veins. Pieces 10 and 11 are slightly altered, with 35% of the olivine replaced by amphibole, talc and some smectite, a nd plagioclase and clinopyroxene altered negligibly.

Vein/Fracture Filling:
0.5 amphibole veins in Piece 4; 0.1-0.2 mm smectite veins in Pieces 4, 9, and 10; 1.5 mm smectite+calcite vein in Piece 10; 1-5 mm plagioclase+amphibole vein in Pieces 3-5, and 11.

Structures:
Mf>Ic>V>; Mf>V=Bm, Mf>V>F
Most of the section displays a coarse-grained igneous texture, with no or a weak magmatic foliation, cut by a series of veins, and by a few faults. In Piece 2A, a zone of fine-grained material is present, bounded at the top by a fault, and overprinted at the bottom by a small vein. The magmatic veins in Pieces 5A to 6B are associated with incipient brecciation.

Core Image



176-735B-127R-2

Interval 628: OLIVINE GABBRO
(see previous section)

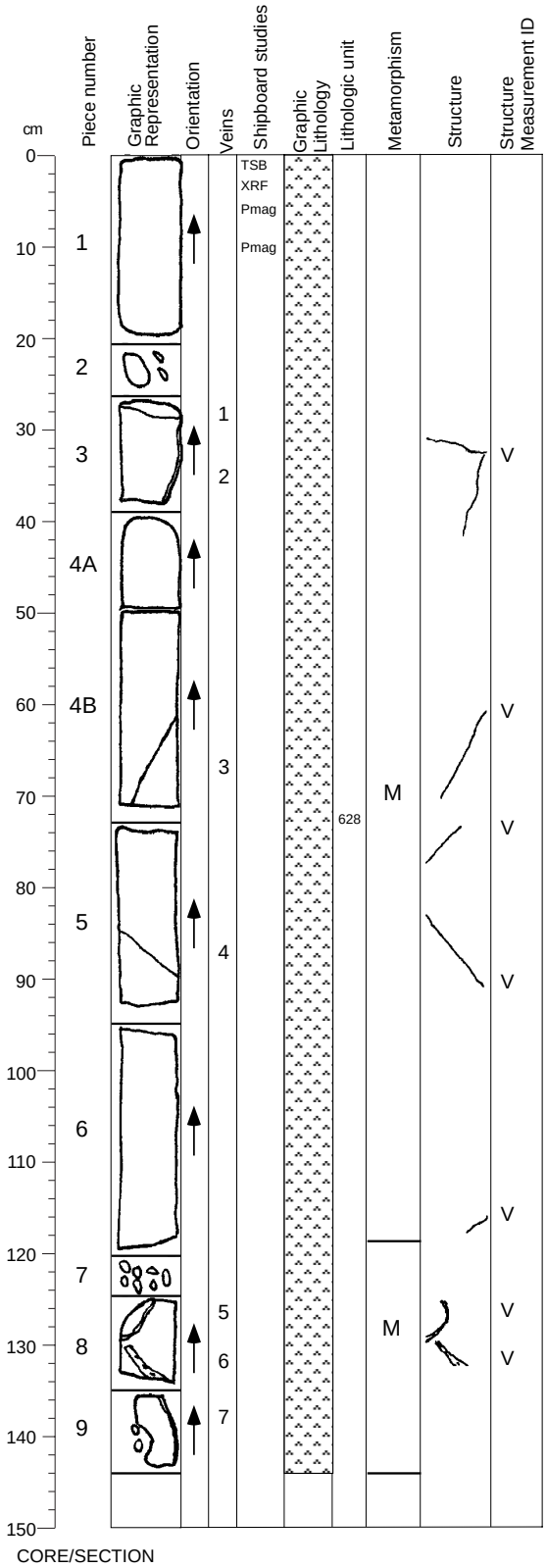
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: After olivine, along pyroxene cleavages and as rims.
Comments: Near felsic veins.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, mainly near felsic veins.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Dark green smectite:
Total Percent: <1
Mode of occurrence: Dark green smectite replacing olivine.
Comments: Near veins and cracks.

Background Alteration:
Degree of alteration: slight (7%). 40% of the olivine are altered to amphibole, talc and smectite. 3% of the clinopyroxene is altered to amphibole and rare smectite. 2% of the plagioclase is recrystallized.

Vein/Fracture Filling:
Plagioclase veins in Pieces 1 and 6; smectite veins in Pieces 2, 3, 4, 8, and 9; amphibole veins in Piece 2; calcite vein in Piece 7.

Structures:
Mf>V
This section displays a coarse-grained igneous texture, with no magmatic foliation, cut by a series of veins over the entire section.

Core Image



176-735B-127R-3

Interval 628: OLIVINE GABBRO
(see Section 176-735B-127R-1)

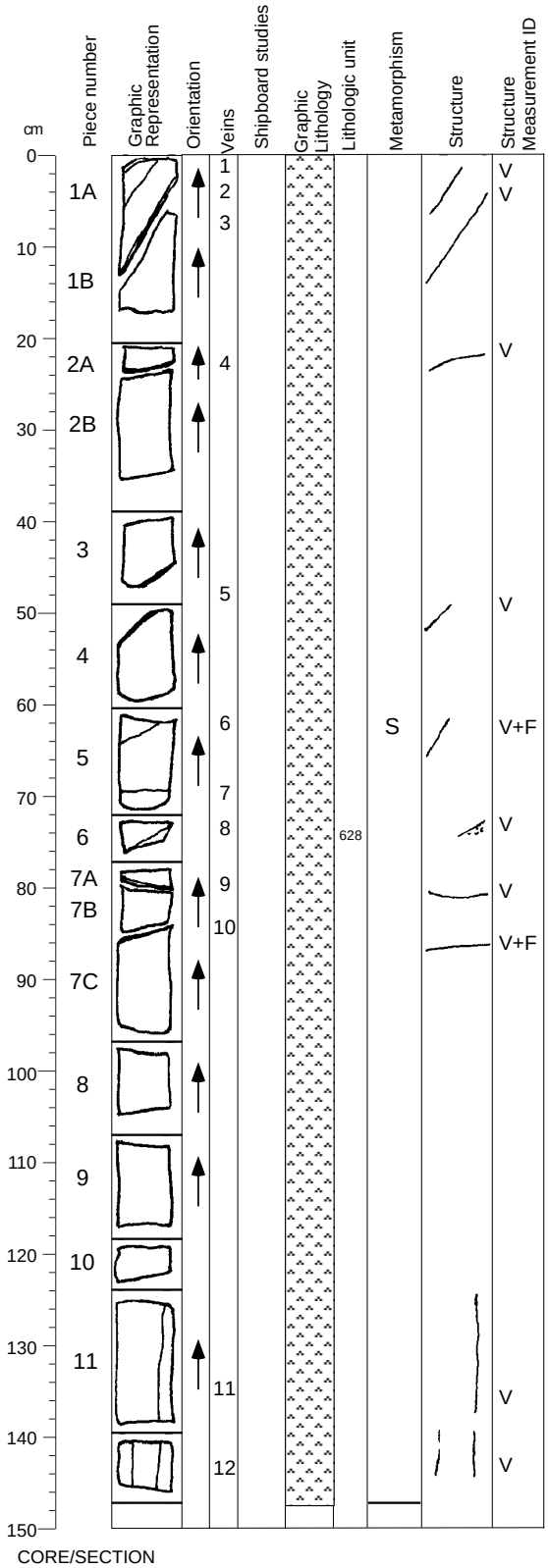
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: After olivine, along pyroxene cleavages and as rims.
Comments: Near felsic veins.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, mainly near felsic veins.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Dark green smectite:
Total Percent: <3
Mode of occurrence: Dark green to pale green smectite replacing olivine.
Comments: Near veins and cracks.

Background Alteration:
Degree of alteration: slight to moderate (6 to 30%). Pieces 1 to 6: 35% of the olivine is altered to amphibole, talc and smectite. 4% of the clinopyroxene is altered to amphibole and rare smectite. 1% of the plagioclase is altered.
Pieces 6 to 9: Olivine is completely altered to amphibole, talc and abundant smectite. 10% of the clinopyroxene is altered to amphibole and smectite. 5% of the plagioclase is secondary.

Vein/Fracture Filling:
0.3-1 mm smectite veins in Pieces 3-5, 8, and 9; 3 mm plagioclase+amphibole vein in Piece 8.

Structures:
Mf>V
This section displays a coarse-grained igneous texture, with no magmatic foliation, cut by a series of veins over the entire section.

Core Image



176-735B-127R-4

Interval 628: OLIVINE GABBRO
(see Section 176-735B-127R-1)

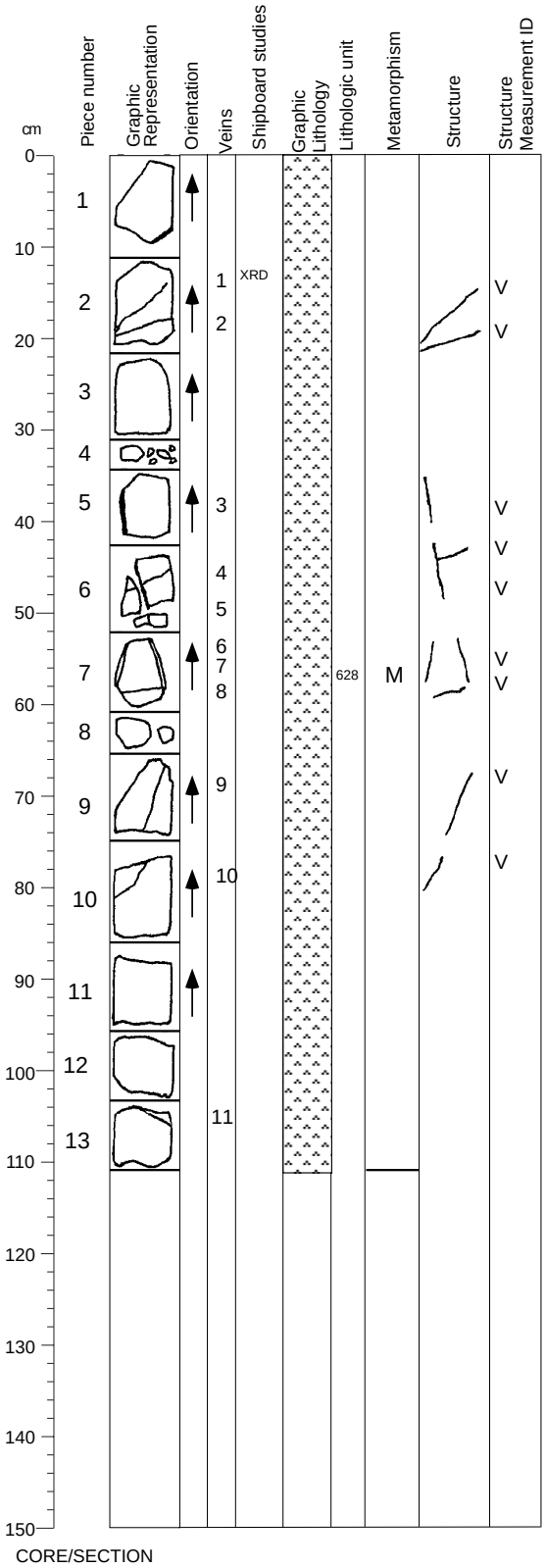
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: After olivine, along pyroxene cleavages and as rims.
Comments: Near felsic veins.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, mainly near felsic veins.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Dark green smectite:
Total Percent: <2
Mode of occurrence: Dark green-blue smectite replacing olivine.
Comments: Near veins and cracks.

Background Alteration:
Degree of alteration: slight (6%). Pieces 1 to 6: 35% of the olivine is altered to amphibole, talc and smectite. 4% of the clinopyroxene is altered to amphibole and rare smectite. 1% of the plagioclase is altered.

Vein/Fracture Filling:
0.3-1 mm smectite veins in Pieces 1-5,7, and 11-12; 4 mm plagioclase vein in Piece 6.

Structures:
Mf>V>F
This section displays a coarse-grained igneous texture, with no or a weak magmatic foliation, cut by a series of veins over the entire section. Some of the veins grade into faults (Pieces 5 and 7C).

Core Image



176-735B-127R-5

Interval 628: OLIVINE GABBRO
(see Section 176-735B-127R-1)

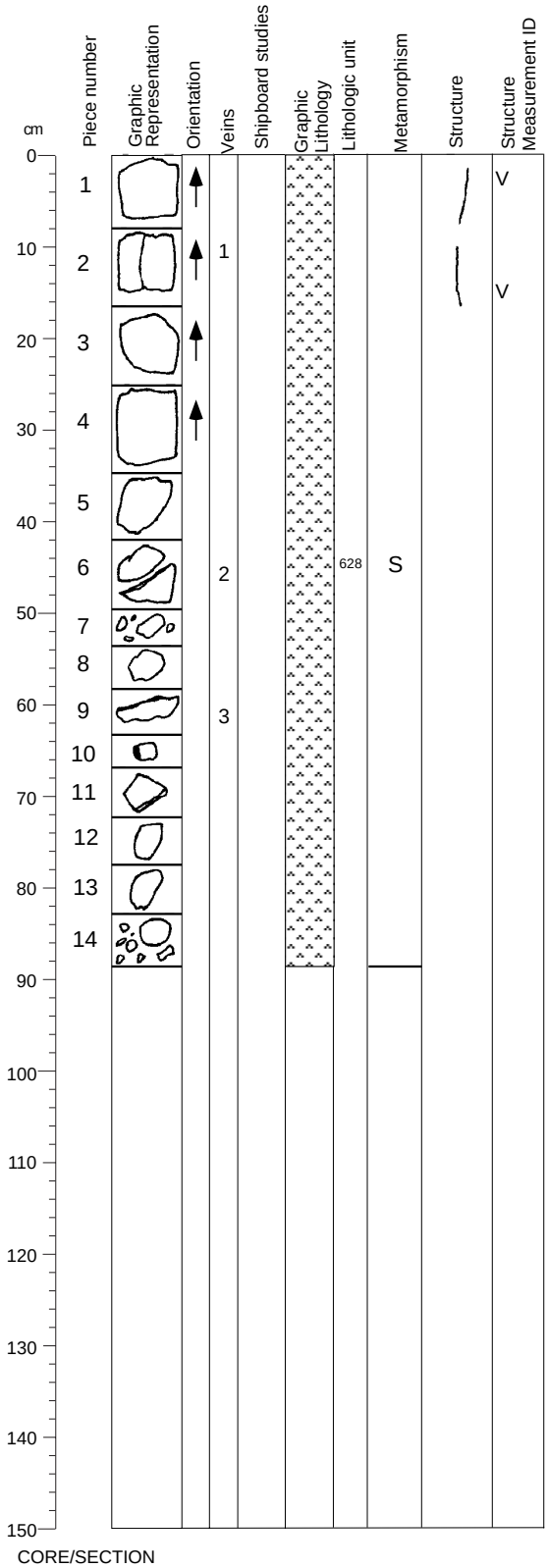
Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: After olivine, along pyroxene cleavages and as rims.
Comments: Near felsic veins.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, mainly near felsic veins.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Dark green smectite:
Total Percent: <5
Mode of occurrence: Dark green-blue smectite replacing olivine.
Comments: Near veins and cracks.

Background Alteration:
Degree of alteration: moderate (12%). 60% of the olivine is altered to amphibole, talc and smectite. 8% of the clinopyroxene is altered to amphibole and smectite. Plagioclase is negligibly altered.

Vein/Fracture Filling:
0.4-1 mm smectite veins in Pieces 2, 5, 6, 7, 9, 10, and 13.

Structures:
Mf>V
This section displays a coarse-grained igneous texture, with no magmatic foliation, cut by a series of veins.

Core Image



176-735B-127R-6

Interval 628: OLIVINE GABBRO
(see Section 176-735B-127R-1)

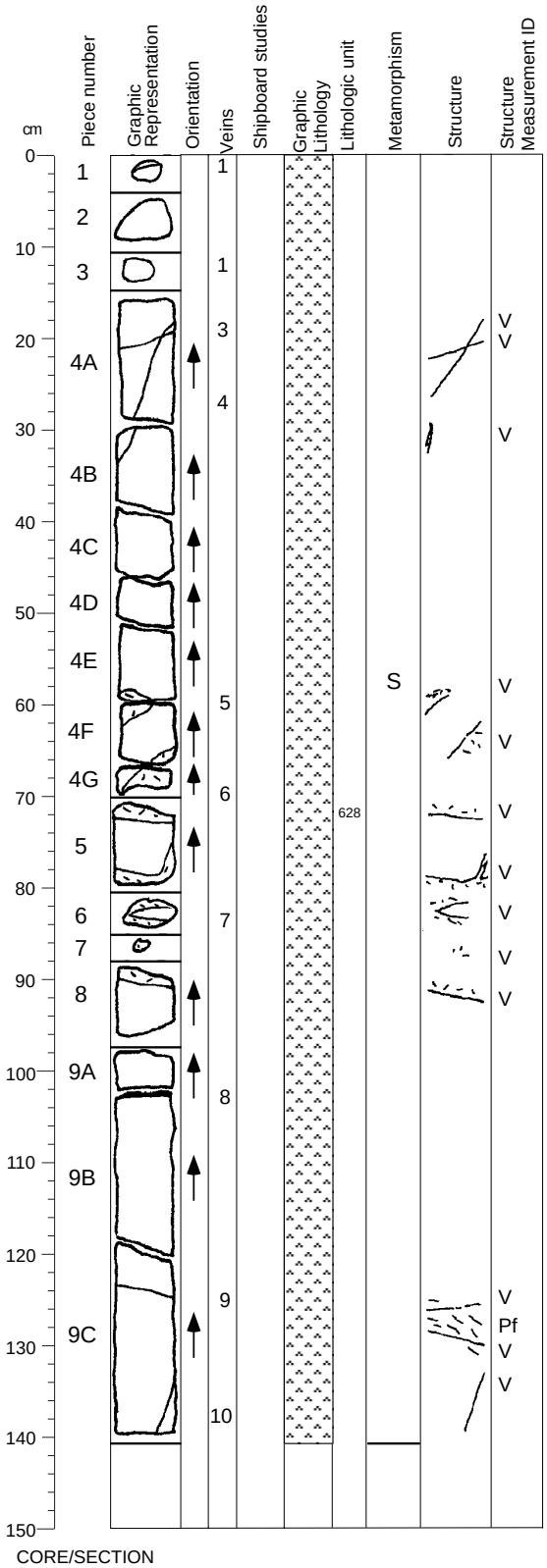
Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: After olivine, along pyroxene cleavages and as rims.
Comments: Near felsic veins.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, mainly near felsic veins.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Dark green smectite:
Total Percent: <3
Mode of occurrence: Dark green-blue smectite replacing olivine.
Comments: Near veins and cracks.

Background Alteration:
Degree of alteration: slight (8%). 45% of the olivine is altered to amphibole, talc and smectite. 5% of the clinopyroxene is altered to amphibole and smectite. Plagioclase is negligibly altered.

Vein/Fracture Filling:
0.4 mm smectite veins in Pieces 2, 6, and 9 to 11.

Structures:
Mf>V
This section displays a coarse-grained igneous texture, with no magmatic foliation, cut by veins.

Core Image



176-735B-128R-1

Interval 628: OLIVINE GABBRO
(see Section 176-735B-127R-1)

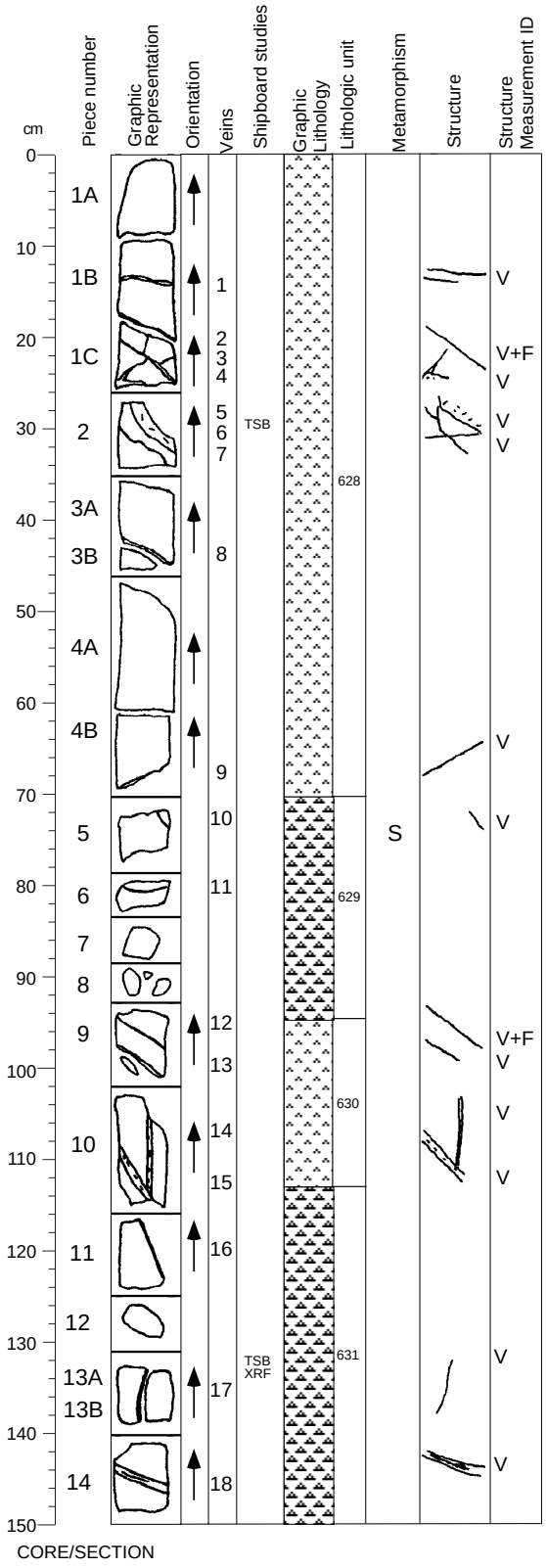
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: After olivine, along pyroxene cleavages and as rims.
Comments: Near felsic veins.
Green amphibole:
Total Percent: <1
Mode of occurrence: After brown amphibole.
Comments: Near and in felsic veins.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, mainly near felsic veins.
Talc and oxides:
Total Percent: tr.
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Dark green smectite:
Total Percent: <1
Mode of occurrence: Dark green-blue smectite replacing olivine.
Comments: Near veins and cracks.

Background Alteration:
Degree of alteration: slight (5%). 30% of the olivine is altered to amphibole, talc and smectite. 3% of the clinopyroxene is altered to amphibole and smectite. Plagioclase is negligibly altered.

Vein/Fracture Filling:
0.3 mm smectite veins in Pieces 1, 3, 4, and 9; plagioclase+amphibole veins in Pieces 4 to 8; 0.2 mm amphibole vein in Piece 9C.

Structures:
Mf>V; Mf>Pf>V
Most of the section displays a coarse-grained igneous texture, with no or a weak magmatic foliation, cut by a series of veins. In Piece 9C, the igneous texture is locally overprinted by a strong crystal-plastic, curved foliation (from 124 to 127 cm), later cut by veins.

Core Image



176-735B-128R-2

Interval 628: OLIVINE GABBRO
(see Section 176-735B-127R-1)
Interval 629: OLIVINE MICROGABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	128	2	70	5	776.61
Lower contact:	128	2	95	9	776.86

Thickness (m): 0.25

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	1	N/A	fine	tabular/ anhedral subhedral
Clinopyroxene	30	1	0.3	fine	equant/ anhedral
Olivine	12	2	1	fine	elongate/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	107.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Fine
Modal IUGS Name (calculated): Olivine Gabbro
Type Distribution
Texture: equigranular N/A
Comments: Patchy pegmatitic plagioclase present. Fragmented. Lower contact sharp with greenish/whitish alteration stringers.

Interval 630: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	128	2	95	9	776.86
Lower contact:	128	2	113	10	777.04

Thickness (m): 0.18

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	55	12	5	medium	tabular/ subhedral euhedral
Clinopyroxene	35	15	2	coarse	equant/ anhedral
Olivine	7	5	1	medium	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	97.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Medium
Modal IUGS Name (calculated): Olivine Gabbro
Type Distribution
Texture: granular N/A
Comments: Coarse-grained gabbro. Sulfide abundant at 31 cm in 127R-6.

Continued next page

Core Image

176-735B-128R-2 (cont'd)

Interval 631: OLIVINE MICROGABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	128	2	113	10	777.04
Lower contact:	128	3	25	2C	777.66

Thickness (m): 0.62

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase		65	2	N/A	21 tabular/ subhedral anhedral
Clinopyroxene	30	1	0.2	fine	equant/ anhedral
Olivine	14	1	1	fine	equant/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	109.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Fine
Modal IUGS Name (calculated): Olivine Microgabbro

	Type	Distribution
Texture:	equigranular	uniform

Comments: Locally coarser-grained.Felsic/amphibole vein at 142 cm in 128R-2. Zones of altered olivine probably present adjacent to the vein.

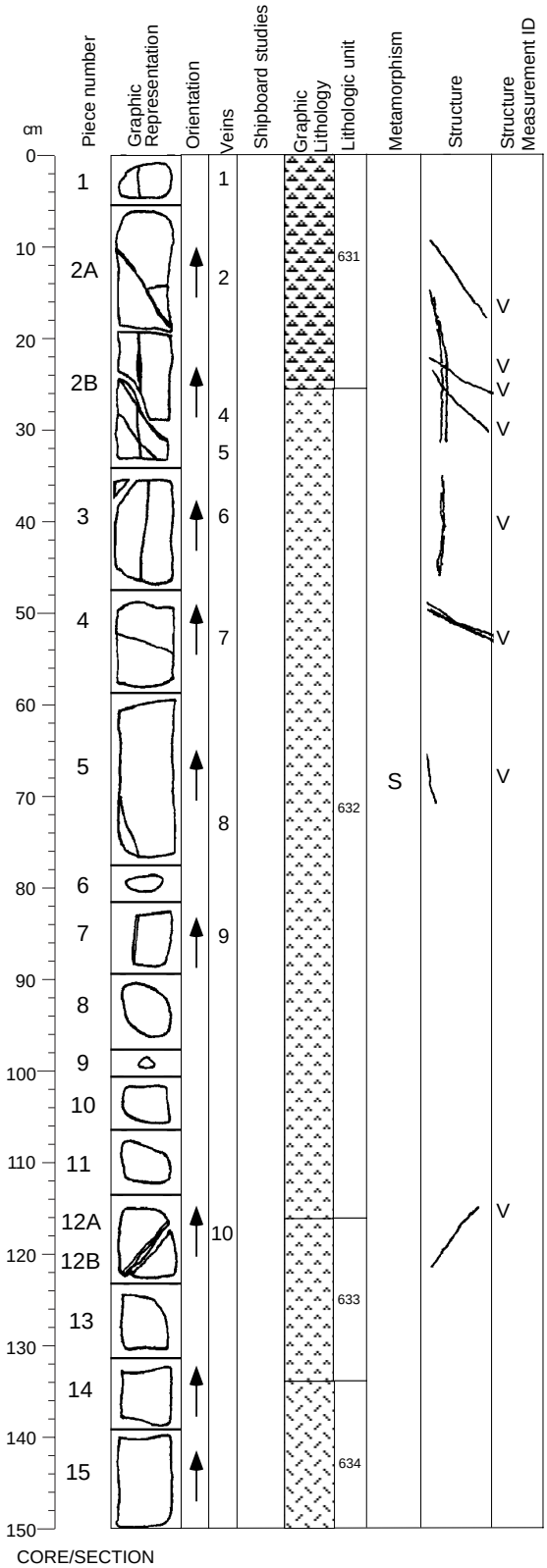
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: After olivine, along pyroxene cleavages and as rims.
Comments: Near felsic veins.
Green amphibole:
Total Percent: <1
Mode of occurrence: After brown amphibole.
Comments: Near and in felsic veins.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, mainly near felsic veins.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Dark green smectite:
Total Percent: <1
Mode of occurrence: Dark green-blue smectite replacing olivine.
Comments: Near veins and cracks.

Background Alteration:
Degree of alteration: slight (5%). Same as previous section.

Vein/Fracture Filling:
0.3-1 mm smectite veins in Piece 1; 0.3-7 mm plagioclase+amphibole veins in Pieces 1, 2, 4B, 10, and 14; 0.2-1 mm smectite veins in Pieces 2, 3, 5, 6, 9, 11, and 13; 1 mm amphibole vein in Piece 9.

Structures:
Mf>V>F
This section displays a coarse-grained igneous texture, with no or a weak magmatic foliation, cut by veins. Some of these veins grade into faults (Pieces 1C and 9).

Core Image



176-735B-128R-3

Interval 631: OLIVINE MICROGABBRO
(see previous section)

Interval 632: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	128	3	25	2C	777.66
Lower contact:	128	3	116	2A	778.57

Thickness (m): 0.91

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	15	4	coarse	tabular/ euhedral subhedral
Clinopyroxene	30	20	2	coarse	equant/ anhedral oikocrystic
Olivine	8	7	2	coarse	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	103.5*				(see explanatory notes)

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro
Type Distribution
Texture: granular variable
Comments: Coarse-grained gabbro. Overall granular with many clinopyroxene grains oikocrystic.

Interval 633: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	128	3	116	2A	778.57
Lower contact:	128	3	134	14	778.75

Thickness (m): 0.18

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	8	0.5	medium	tabular/ subhedral anhedral
Clinopyroxene	30	4	0.3	fine	equant/ anhedral
Olivine	10	1	1	fine	elongate/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	105.5*				(see explanatory notes)

*Major phases estimated to ± 5%
Grain Size: Medium
Modal IUGS Name (calculated): Olivine Gabbro
Type Distribution
Texture: granular N/A
Comments: Troctolitic microgabbro gradational to medium-grained gabbro.

Continued next page

Core Image

176-735B-128R-3 (cont'd)

Interval 634: GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	128	3	134	14	778.75
Lower contact:	129	1	79	5	784.99

Thickness (m): 6.24

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	20	5	coarse	tabular/ subhedral euhedral
Clinopyroxene	35	25	2	coarse	equant/ anhedral
Olivine	3	3	1	medium	elongate/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	98.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Gabbro

	Type	Distribution
Texture:	variable texture	N/A

Comments: Composite interval of microgabbro and coarser-grained gabbro. Mostly granular; subophitic common. Many clinopyroxene grains oikocrystic. Equigranular in fine-grained portions at 95-110 cm in 128R-4 and 25-35 cm in 129R-1. Orthopyroxene may be present.

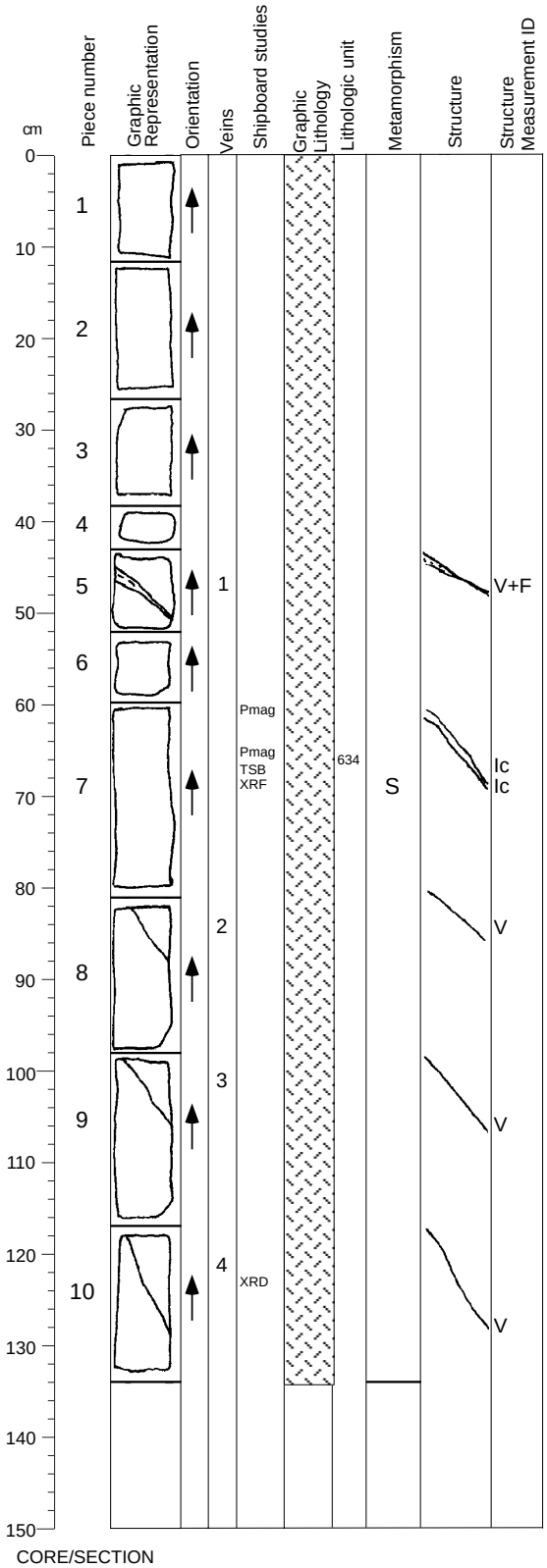
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: After olivine, along pyroxene cleavages and as rims.
Comments: Near felsic veins.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, mainly near felsic veins.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Dark green smectite:
Total Percent: <1
Mode of occurrence: Dark green-blue smectite replacing olivine.
Comments: Near veins and cracks.

Background Alteration:
Degree of alteration: slight (5%). Same as previous section.

Vein/Fracture Filling:
0.3-1 mm smectite veins in Pieces 1 and 2; 2 mm plagioclase+amphibole veins in Piece 2B; amphibole veins in Pieces 3 and 4.

Structures:
Mf>V
This section displays a coarse-grained igneous texture, with no or a weak magmatic foliation, cut by a series of veins.

Core Image



176-735B-128R-4

Interval 634: GABBRO
(see previous section)

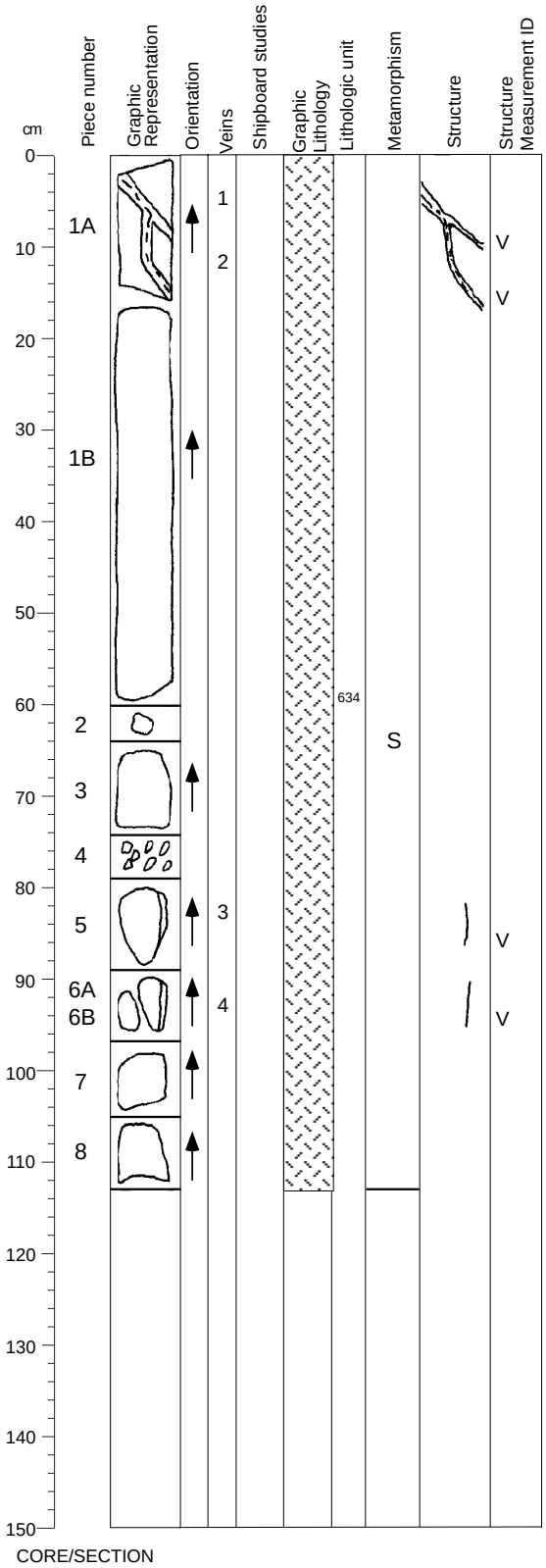
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: After olivine, along pyroxene cleavages and as rims.
Comments: Near felsic veins.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Comments: Near and in felsic veins.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, mainly near felsic veins.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Dark green smectite:
Total Percent: trace
Mode of occurrence: Dark green-blue smectite replacing olivine.
Comments: Near veins and cracks.

Background Alteration:
Degree of alteration: slight (3%). 20% of the olivine is replaced by amphibole and rare smectite. Clinopyroxene and plagioclase are negligibly altered.

Vein/Fracture Filling:
3 mm plagioclase+amphibole vein in Piece 5; 0.3 mm amphibole vein in Piece 8; 0.5-1 mm smectite veins in Pieces 9 and 10.

Structures:
Mf>Ic, Mf>V>F
This section mostly displays a coarse-grained igneous texture, with no or a weak magmatic foliation, cut by a few veins. The vein in Piece 5 is overprinted by a fault. Piece 7 displays a narrow layer (approximately 1 cm) of intrusive, fine-grained material.

Core Image



176-735B-128R-5

Interval 634: GABBRO
(see Section 176-735B-128R-3)

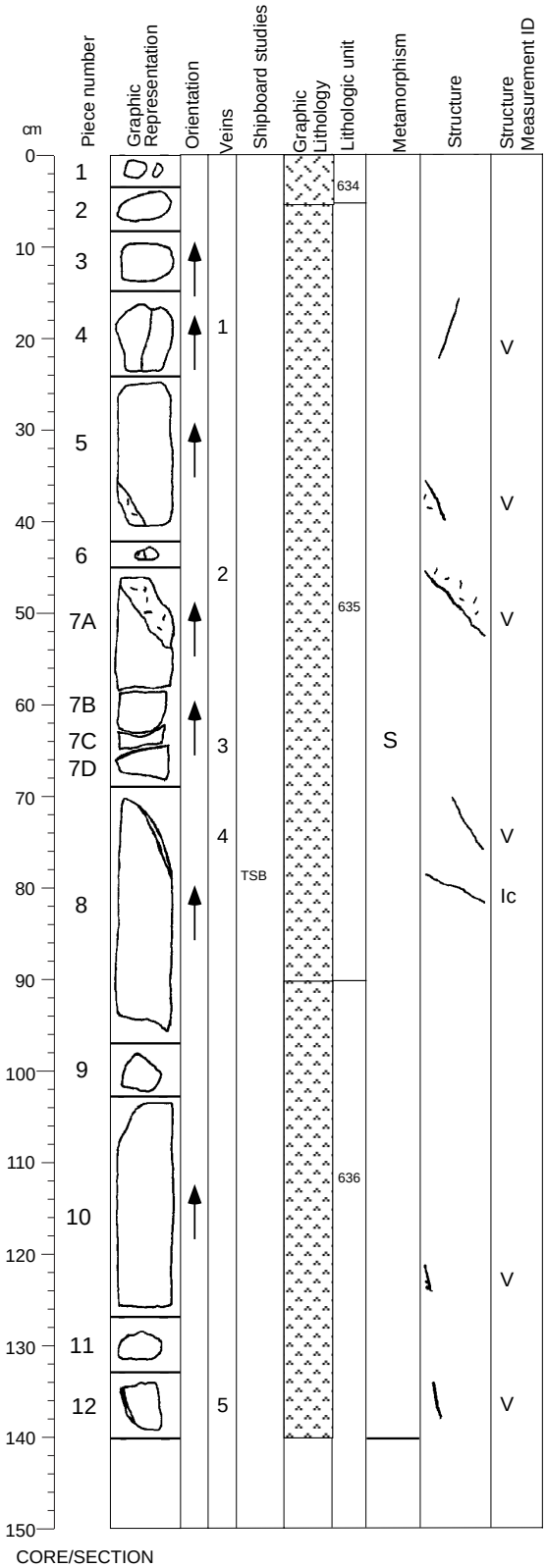
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: After olivine, along pyroxene cleavages and as rims.
Comments: Near felsic veins.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Comments: Near and in felsic veins.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, mainly near felsic veins.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: associated with green amphibole.
Dark green smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite replacing olivine.
Comments: Near veins and cracks.

Background Alteration:
Degree of alteration: slight (3%). Same as previous section.

Vein/Fracture Filling:
0.3-3 mm plagioclase+amphibole veins in Pieces 5, and 8; 0.5-1 mm smectite veins in Pieces 5 and 6.

Structures:
Mf>V
This section displays a coarse-grained igneous texture, with no magmatic foliation, cut by a few veins.

Core Image



176-735B-129R-1

Interval 634: GABBRO
(see Section 176-735B-128R-3)
Interval 635: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	129	1	79	5	784.99
Lower contact:	129	1	90	11	785.10

Thickness (m): 0.11

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	25	0.5	medium	tabular/ subhedral euhedral
Clinopyroxene	35	2	0.5	medium	equant/ anhedral
Olivine	12	1	1	fine	equant/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	107.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Medium
Modal IUGS Name (calculated): Olivine Gabbro
Type Distribution
Texture: equigranular N/A

Comments: Locally granular troctolitic microgabbro gradational to coarser olivine gabbro.

Interval 636: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	129	1	90	11	785.10
Lower contact:	129	3	99	4A	787.98

Thickness (m): 2.88

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	15	5	coarse	tabular/ subhedral euhedral
Clinopyroxene	40	30	1	coarse	equant/ oikocrystic anhedral
Olivine	7	6	2	medium	amoeboidal/ anhedral subhedral
Opaques	0.7				angular aggregates/ disseminated
Total	107.7*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro
Type Distribution
Texture: variable texture N/A

Comments: Mostly granular, subophitic/ophitic common. Locally equigranular. Mode and grain size variable. Many large clinopyroxene grains at 4 cm in 129R-3, oikocrystic from 0-40 cm in 129R-3.

Continued next page

Core Image

176-735B-129R-1 (cont'd)

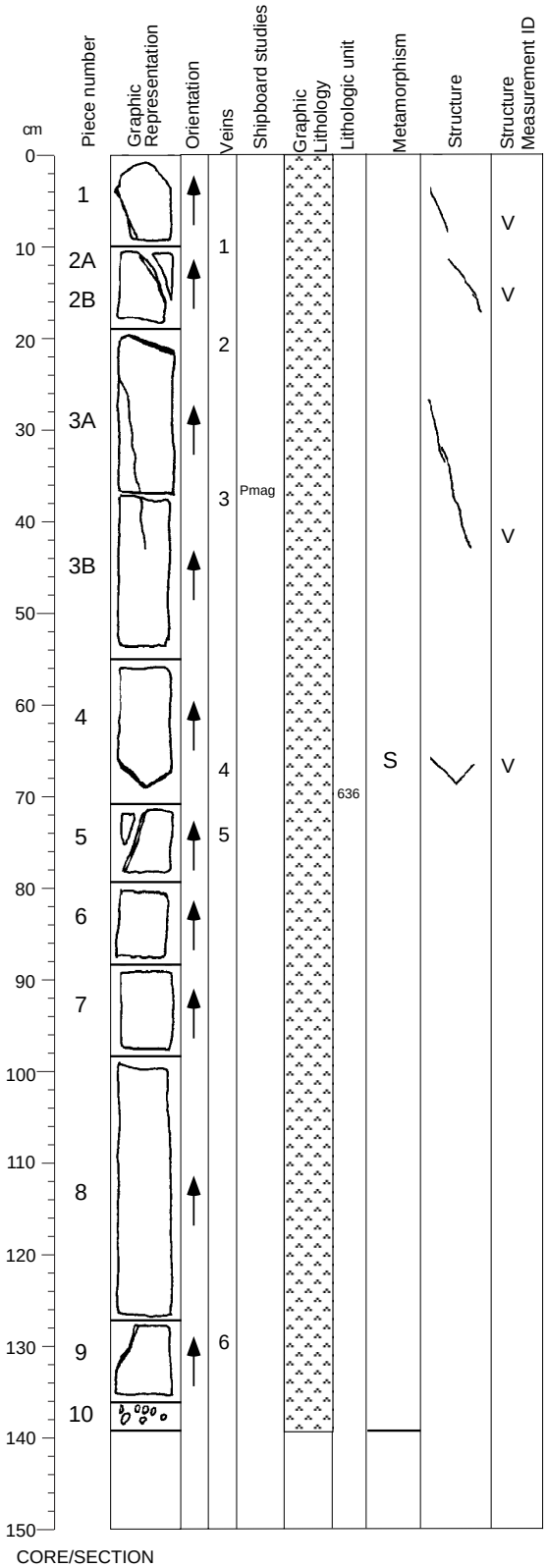
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: After olivine, along pyroxene cleavages and as rims.
Comments: Near felsic veins.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Comments: Near and in felsic veins.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, mainly near felsic veins.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Dark green smectite:
Total Percent: trace
Mode of occurrence: Dark green-blue smectite replacing olivine.
Comments: Near veins and cracks.

Background Alteration:
Degree of alteration: negligible (2%).

Vein/Fracture Filling:
0.1 mm amphibole vein in Piece 4; 1-25 mm plagioclase+amphibole veins in Pieces 5-7 and 12; 0.3-0.5 mm smectite veins in Pieces 7 and 8.

Structures:
Mf>Ic>Mf; Mf>V
In this section, the texture is dominantly coarse-grained igneous. Piece 8 displays an 8 cm thick zone of finer grained material, probably intrusive into the coarse-grained gabbro. The upper contact of this intrusion is clearly visible, while the lower contact is more diffuse. A few 2-3 cm long plagioclases have grown from, and perpendicular to the upper contact zone toward the intrusive fine-grained rock (incipient comb structure). The igneous textures are cut by a few veins.

Core Image



176-735B-129R-2

Interval 636: OLIVINE GABBRO
(see previous section)

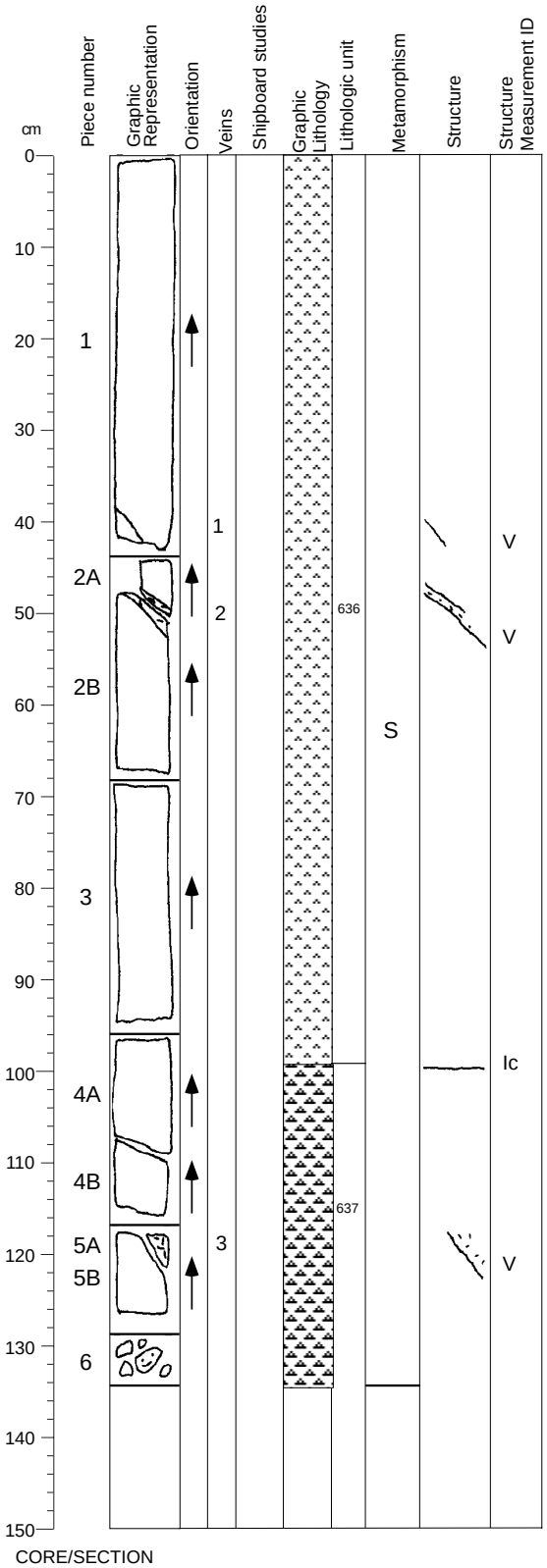
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: After olivine, along pyroxene cleavages and as rims.
Comments: Near felsic veins.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Comments: Near and in felsic veins.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, mainly near felsic veins.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Dark green smectite:
Total Percent: trace
Mode of occurrence: Dark green-blue smectite replacing olivine.
Comments: Near veins and cracks.

Background Alteration:
Degree of alteration: negligible (2%).

Vein/Fracture Filling:
0.2-0.5 mm smectite veins in Pieces 1 to 5 and 9.

Structures:
Mf>V
This section displays a coarse-grained igneous texture, with no magmatic foliation, cut by a few veins.

Core Image



176-735B-129R-3

Interval 636: OLIVINE GABBRO
(see Section 176-735B-129R-1)
Interval 637: OLIVINE MICROGABBRO

			Depth in		Depth
Interval Location:	Core	Section	Section	Piece	mbsf
Upper contact:	129	3	99	4A	787.98
Lower contact:	129	4	14	2	788.47

Thickness (m): 0.49

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	1.5	N/A	fine	tabular/ subhedral anhedral
Clinopyroxene	30	1	0.2	fine	equant/ anhedral
Olivine	15	1	1	fine	elongate/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	105.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Fine
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	equigranular	uniform

Comments: Grades locally to medium-grained olivine gabbro. Felsic vein at 120 cm in 129R-3.

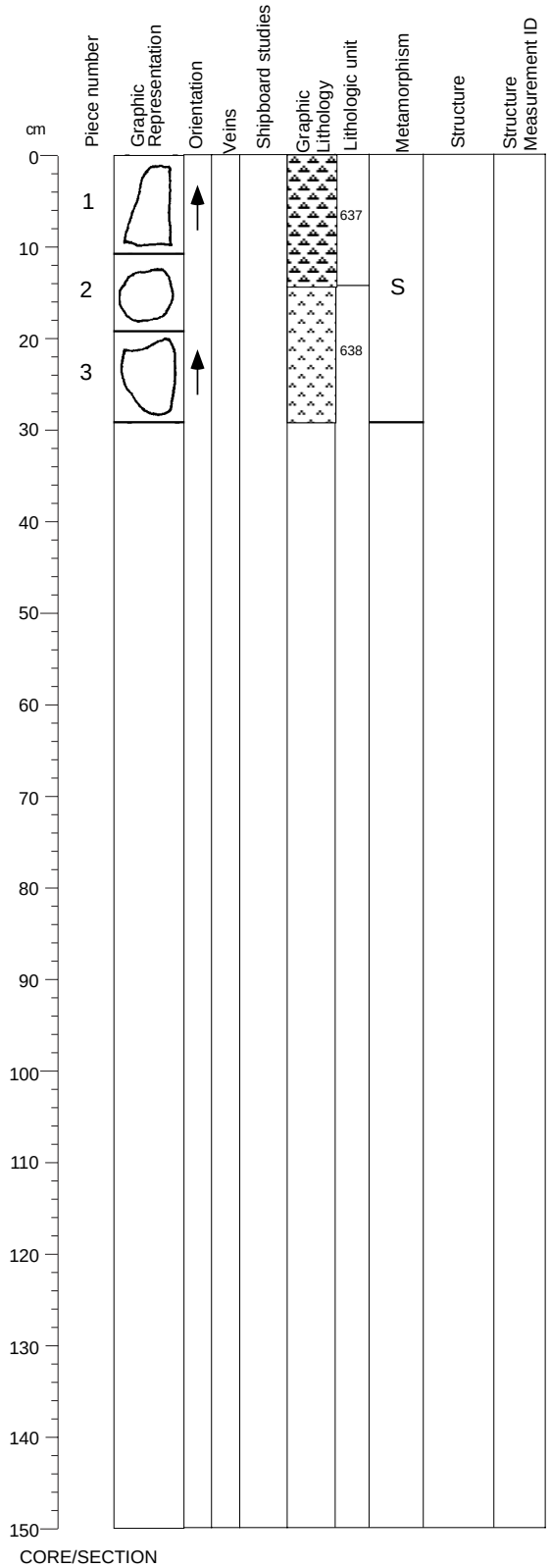
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: After olivine, along pyroxene cleavages and as rims.
Comments: Near felsic veins.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Comments: Near and in felsic veins.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, mainly near felsic veins.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Dark green smectite:
Total Percent: trace
Mode of occurrence: Dark green-blue smectite replacing olivine.
Comments: Near veins and cracks.

Background Alteration:
Degree of alteration: slight (3%). 20% of the olivine is replaced by amphibole and rare smectite. Clinopyroxene and plagioclase are negligibly altered.

Vein/Fracture Filling:
1-15 mm plagioclase+amphibole veins in Pieces 1, 2, and 5.

Structures:
Mf>V
From 0 to 100 cm, the section displays a coarse-grained igneous texture, with no or a weak magmatic foliation, cut by a few veins. From 100 cm to the bottom of the section, the texture is fine-grained igneous, with no magmatic foliation, cut by a thick magmatic vein in Piece 3. The contact between these two units is shallow.

Core Image



176-735B-129R-4

Interval 637: OLIVINE MICROGABBRO
(see previous section)
Interval 638: OLIVINE GABBRO

			Depth in		Depth
Interval Location:	Core	Section	Section	Piece	mbsf
Upper contact:	129	4	14	2	788.47
Lower contact:	130	1	14	2	794.04

Thickness (m): 5.57

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	50	20	5	coarse	tabular/ subhedral euhedral
Clinopyroxene	35	20	2	coarse	equant/ anhedral
Olivine	5	3	1	medium	equant/ anhedral
Opaques	0.6				amoeboidal aggregates/ disseminated
Total	90.6*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	variable texture	N/A

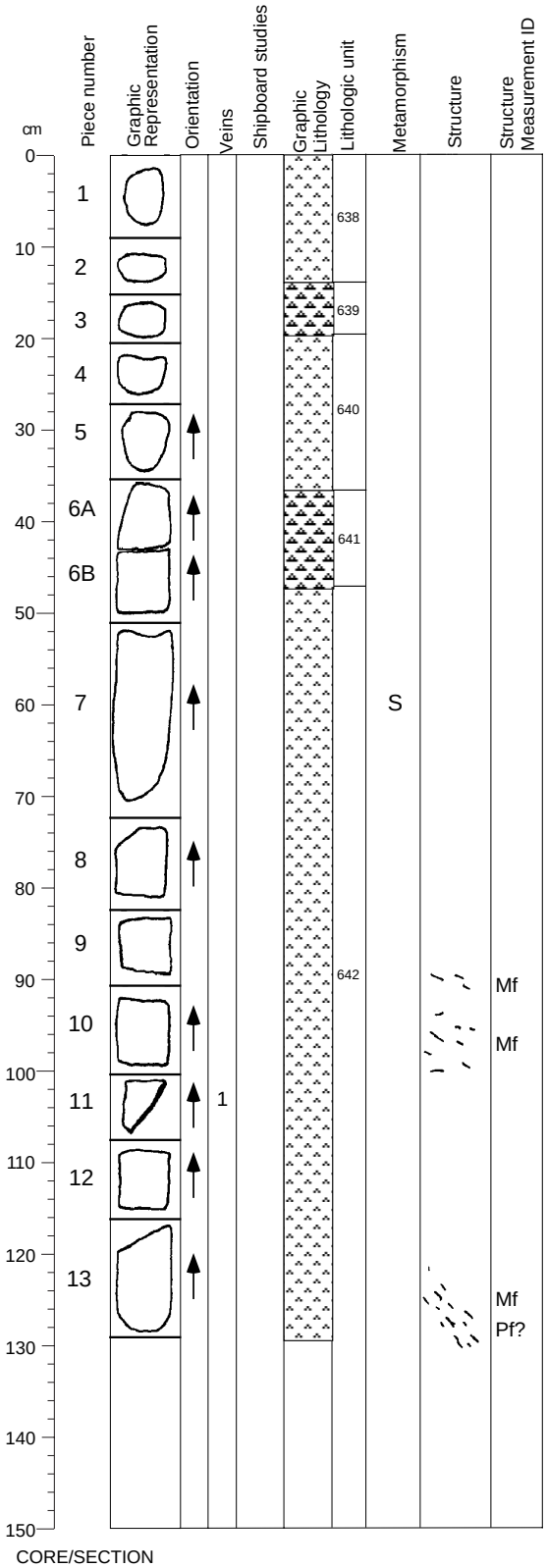
Comments: Granular, subophitic to locally (rarely) ophitic.

Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: After olivine, along pyroxene cleavages and as rims.
Comments: Near felsic veins.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Comments: Near and in felsic veins.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, mainly near felsic veins.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Dark green smectite:
Total Percent: trace
Mode of occurrence: Dark green-blue smectite replacing olivine.
Comments: Near veins and cracks.

Background Alteration:
Degree of alteration: slight (3%). Same as previous section.

Structures:
Mf
This section displays an igneous texture, with no magmatic foliation.
Piece 1 is fine-grained; Pieces 2 and 3 are coarse-grained.

Core Image



176-735B-130R-1

Interval 638: OLIVINE GABBRO
(see previous section)

Interval 639: OLIVINE MICROGABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	130	1	14	2	794.04
Lower contact:	130	1	19	3	794.09

Thickness (m): 0.05

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	2	N/A	fine	tabular/ subhedral anhedral
Clinopyroxene	30	5	0.2	fine	equant/ anhedral
Olivine	6	1	1	fine	elongate/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	101.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Fine
Modal IUGS Name (calculated): Olivine Gabbro
Type Distribution
Texture: equigranular uniform
Comments: Fine to medium-grained olivine gabbro.

Interval 640: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	130	1	19	3	794.09
Lower contact:	130	1	37	6A	794.27

Thickness (m): 0.18

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	50	30	7	coarse	tabular/ subhedral euhedral
Clinopyroxene	35	40	20	pegmatitic	elongate/ subhedral anhedral
Olivine	7	20	2	medium	elongate/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	92.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Pegmatitic
Modal IUGS Name (calculated): Olivine Gabbro
Type Distribution
Texture: variable texture N/A
Comments: Coarse-grained gabbro. Mostly granular, locally pegmatitic (30-34 cm in 130R-1) and subophitic (22 cm in 130R-1). In contact with medium-grained olivine gabbro (27-33 cm in 130R-1).

Continued next page

Core Image

176-735B-130R-1 (cont'd)

Interval 641: OLIVINE MICROGABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	130	1	37	6A	794.27
Lower contact:	130	1	47	6B	794.37

Thickness (m): 0.10

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	5	N/A	fine	tabular/ anhedral subhedral
Clinopyroxene	35	2	0.1	fine	equant/ anhedral
Olivine	10	1	1	fine	elongate/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	105.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Fine
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	equigranular	uniform

Comments: Fine to medium-grained olivine gabbro.

Interval 642: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	130	1	47	6B	794.37
Lower contact:	130	3	12	3	796.76

Thickness (m): 2.39

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	25	5	coarse	tabular/ subhedral
Clinopyroxene	40	20	3	coarse	equant/ anhedral
Olivine	5	3	1	medium	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	105.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	uniform

Comments: Locally coarser clinopyroxene oikocrystic.

Continued next page

Core Image

176-735B-130R-1 (cont'd)

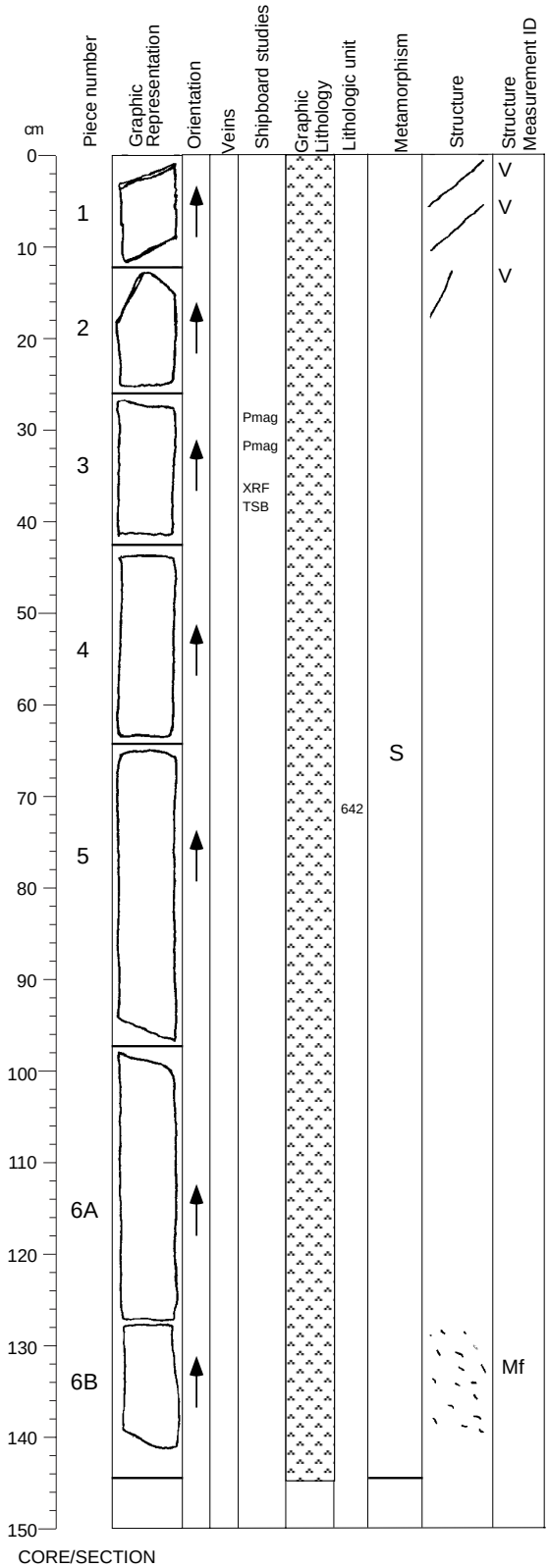
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages and as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: negligible.

Vein/Fracture Filling:
1 mm smectite vein in Piece 11.

Structures:
Mf>Pf?
From Pieces 1 to 5, the texture is igneous, coarse grained except for Piece 3 which is fine grained. A fine-grained layer is present from 35 to 49 cm, bounded by two shallow diffuse contacts (top of Piece 6A and bottom of Piece 6B). The rest of the section is coarse grained; from Piece 8 (72 cm) to the bottom of the section, it tends to be equilibrated (anhedral, more or less circular crystals, triple junctions). A moderate magmatic foliation is observed locally (in Pieces 9, 10, and 13), possibly overprinted by some very high-temperature crystal-plastic deformation at the bottom of the section (Piece 13).

Core Image



176-735B-130R-2

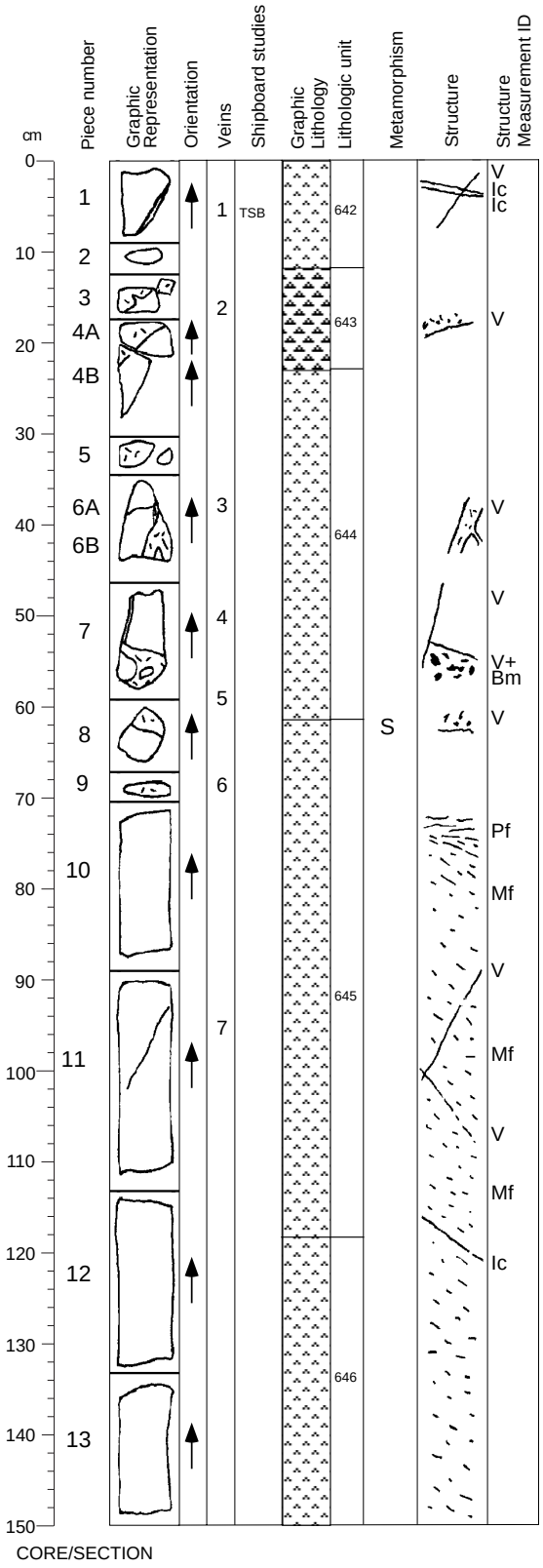
Interval 642: OLIVINE GABBRO
(see previous section)

Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: After olivine and along pyroxene cleavages and as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Dark green smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite replacing olivine near cracks.

Vein/Fracture Filling:
0.2-1 mm smectite veins in Pieces 1 and 2.

Structures:
Mf>V
Most of the section displays a coarse-grained igneous texture with a moderate magmatic foliation at the bottom of the section (Piece 6B). A few veins cut the igneous texture at the top of the section (Pieces 1 and 2). In continuity with the previous section (130R-1), the texture tends to be equilibrated, with anhedral, more or less circular crystals, triple junctions, and very few poikilitic pyroxenes.

Core Image



176-735B-130R-3

Interval 642: OLIVINE GABBRO
(see Section 176-735B-130R-1)

Interval 643: OLIVINE MICROGABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	130	3	12	3	796.76
Lower contact:	130	3	23	4B	796.87

Thickness (m): 0.11

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	55	4	0.5	fine	tabular/ subhedral anhedral
Clinopyroxene	30	1	N/A	fine	equant/ anhedral
Olivine	12	2	1	fine	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	97.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Fine
Modal IUGS Name (calculated): Olivine Gabbro
Type Distribution
Texture: granular N/A
Comments: Microgabbro with a felsic vein.

Interval 644: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	130	3	23	4B	796.87
Lower contact:	130	3	62	8	797.26

Thickness (m): 0.39

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	10	3	coarse	tabular/ subhedral
Clinopyroxene	20	18	2	coarse	tabular/ subhedral anhedral
Olivine	8	10	2	medium	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	93.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro
Type Distribution
Texture: granular N/A
Comments: Coarser-grained olivine gabbro with a penetrative trondhjemitic vein.

Interval 645: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	130	3	62	8	797.26
Lower contact:	130	3	118	12	797.82

Thickness (m): 0.56

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	13	0.5	medium	tabular/ subhedral
Clinopyroxene	35	3	0.3	medium	equant/ anhedral
Olivine	7	1	1	fine	elongate/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	107.5*		(see explanatory notes)		

*Major phases estimated to ± 5%

Continued next page

Core Image

176-735B-130R-3 (cont'd)

Grain Size: Medium
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Relatively fine-grained interval with coarser-grained troctolitic patches. Clinopyroxene mode is based on medium-grained portion.

Interval 646: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	130	3	118	12	797.82
Lower contact:	130	4	67	6B	798.81

Thickness (m): 0.99

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	20	5	coarse	tabular/ subhedral euhedral
Clinopyroxene	35	20	2	coarse	equant/ anhedral
Olivine	6	7	1	medium	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	106.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	uniform

Comments: Many coarse oikocrystic clinopyroxene grains, locally coarse-grained equigranular textures. Sulfide abundant at 9 cm in 130R-4.

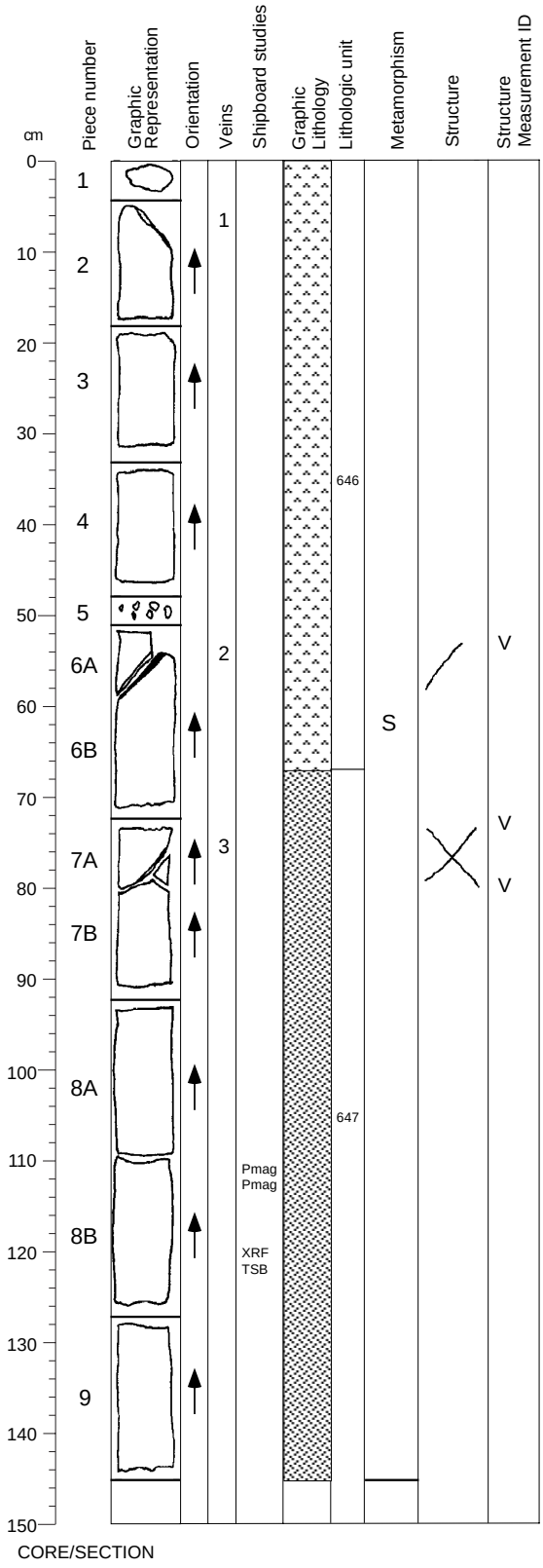
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: After olivine, along pyroxene cleavages and as rims.
Comments: Near and in a sheared felsic vein.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, mainly near the felsic vein.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Dark green smectite:
Total Percent: trace
Mode of occurrence: Dark green-blue smectite replacing olivine.
Comments: Near the felsic vein.

Background Alteration:
Degree of alteration: negligible.

Vein/Fracture Filling:
0.3 mm smectite veins in Piece 1; 1 mm plagioclase vein in Piece 7; 10-11 mm plagioclase+amphibole veins in Pieces 3 to 9.

Structures:
Mf=Ic?; Mf>V
From 0 to 70 cm, the different pieces display either a coarse-grained or a fine-grained igneous texture, with no magmatic foliation, overprinted by veins and associated incipient magmatic brecciation. In the bottom half of the section, a thick layer of intrusive fine-grained rock is present (from 91 to 118 cm). The lower contact is sharper than the upper contact. A moderate magmatic foliation is observed (dipping 25°), parallel to the igneous contact. At the top of Piece 10, the magmatic foliation is overprinted by a weak, shallower crystal-plastic foliation. The igneous texture is cut by a few veins; beneath the fine-grained layer, it tends to be equilibrated, as in the two previous sections (130R-1 and 2).

Core Image



176-735B-130R-4

Interval 646: OLIVINE GABBRO
(see previous section)
Interval 647: DISSEMINATED OXIDE OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	130	4	67	6B	798.81
Lower contact:	130	5	40	5	800.00

Thickness (m): 1.19

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	5	N/A	fine	tabular/ subhedral anhedral
Clinopyroxene	35	2	0.4	fine	equant/ anhedral
Olivine	6	1	1	fine	elongate/ anhedral
Opaque	s1.5				interstitial lenses/ interstitial network
Total	107.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Fine
Modal IUGS Name (calculated): Disseminated FeTi Oxide Olivine Gabbro

	Type	Distribution
Texture:	equigranular	uniform

Comments: Microgabbro with troctolitic patches. Locally coarse clinopyroxene present at 82-86 in 30R-4. Oxide 4% at 89-96 cm in 130R-4, 21-40 cm and 125-129 cm in 130R-5; 3% at 104-105 cm in 130R-4; and 1% elsewhere.

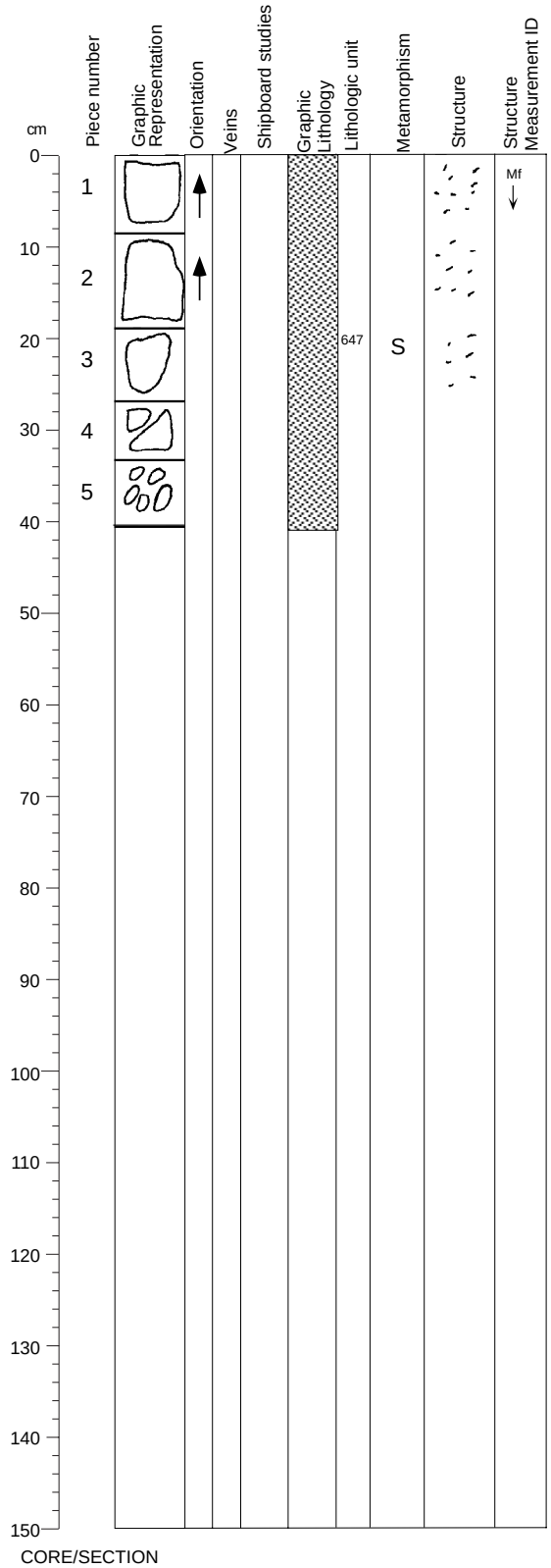
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: After olivine, along pyroxene cleavages and as rims.
Secondary plagioclase:
Total Percent: trace
Mode of occurrence: Replacing primary plagioclase.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Dark green smectite:
Total Percent: trace
Mode of occurrence: Dark blue-green smectite replacing olivine.
Comments: Near veins and cracks, associated with sulfides.

Background Alteration:
Degree of alteration: negligible.

Vein/Fracture Filling:
0.4 to 1.5 mm smectite veins in Pieces 2, 6, and 7.

Structures:
Mf>V
This section dispays an igneous texture, with no or a weak magmatic foliation, cut by a few veins (Pieces 2 and 3). From 0 to 70 cm, the texture is coarse-grained; from 74 cm to the bottom of the section, it is fine-grained.

Core Image



176-735B-130R-5

Interval 647: DISSEMINATED OXIDE OLIVINE GABBRO
(see previous section)

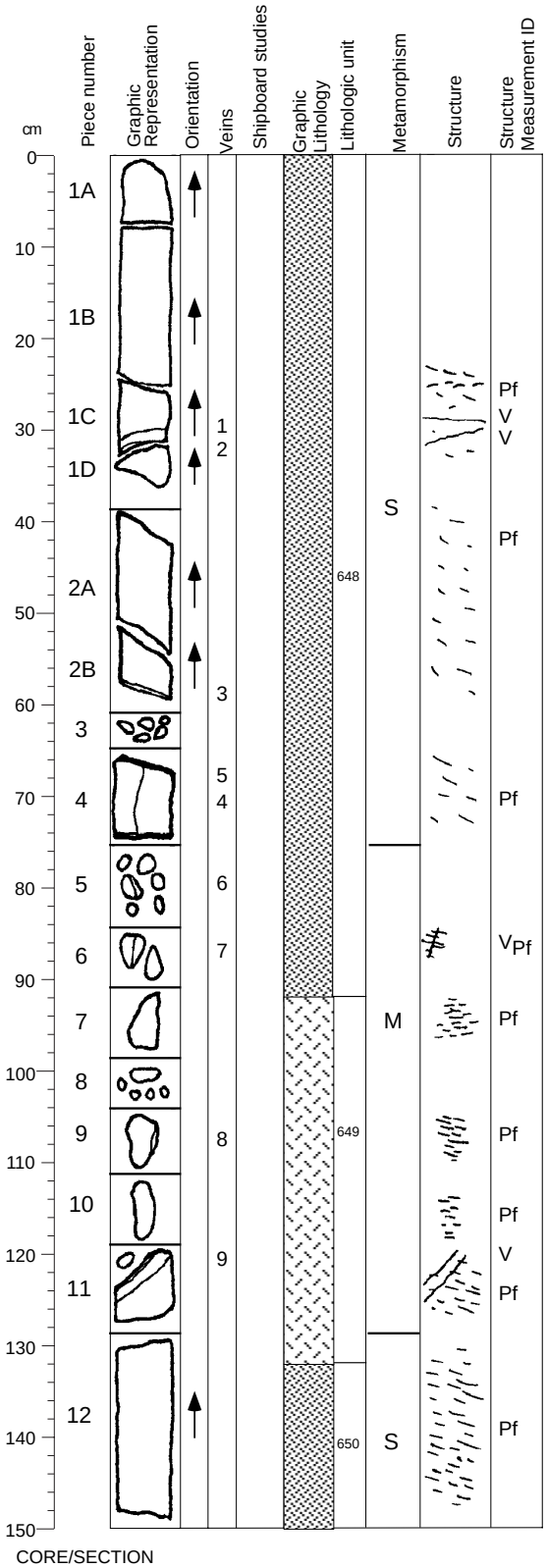
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: negligible.

Vein/Fracture Filling:
No veins.

Structures:
Mf
This section displays a fine-grained igneous texture, with a moderate, shallow magmatic foliation.

Core Image



176-735B-131R-1

Interval 648: OXIDE OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	130	5	40	5	800.00
Lower contact:	131	1	92	7	804.42

Thickness (m): 4.42

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	30	0.5	coarse	tabular/ anhedral subhedral
Clinopyroxene	35	50	5	coarse	tabular/ subhedral anhedral
Olivine	7	5	1	medium	prismatic/ subhedral anhedral
Opaques	6				interstitial lenses/ interstitial network
Total	108*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): FeTi Oxide Olivine Gabbro
Type Distribution
Texture: granular N/A
Comments: Coarse-grained oxide-rich interval. Olivine fresh. Sulfide abundant in oxide rich patches. Fragmented towards base; highly deformed/foliated near lower contact. Oxide 10% at 0-30 cm, 5% at 30-74 cm, and 2% 75-90 cm in 131R-1.

Interval 649: LEUCOCRATIC GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	131	1	92	7	804.42
Lower contact:	131	1	132	12	804.82

Thickness (m): 0.40

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	70	5	N/A	fine	tabular/ subhedral anhedral
Clinopyroxene	30	2	0.4	medium	equant/ anhedral
Olivine	4	2	1	fine	elongate/ anhedral subhedral
Opaques	0.7				amoeboidal aggregates/ disseminated
Total	104.7*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Fine
Modal IUGS Name (calculated): Gabbro
Type Distribution
Texture: equigranular N/A
Comments: Locally granular.

Continued next page

Core Image

176-735B-131R-1 (cont'd)

Interval 650: LEUCOCRATIC DISSEMINATED OXIDE OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	131	1	132	12	804.82
Lower contact:	131	2	135	17	806.35

Thickness (m): 1.53

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	70	10	2	medium	tabular/ subhedral
Clinopyroxene	30	15	2	coarse	elongate/ subhedral rounded
Olivine	5	4	1	medium	elongate/ anhedral subhedral
Opaques	1				interstitial lenses/ interstitial network
Total	106*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Medium
Modal IUGS Name (calculated): Leucocratic Disseminated Oxide Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Medium-grained. Locally fragmented. Alteration apparent along some microfractures. Olivine with black alteration rims. Oxide 0.5% at 130-134 cm in 131R-1, 1% at 0-135 cm in 131R-2, and 3% at 134-146 cm in 131R-1.

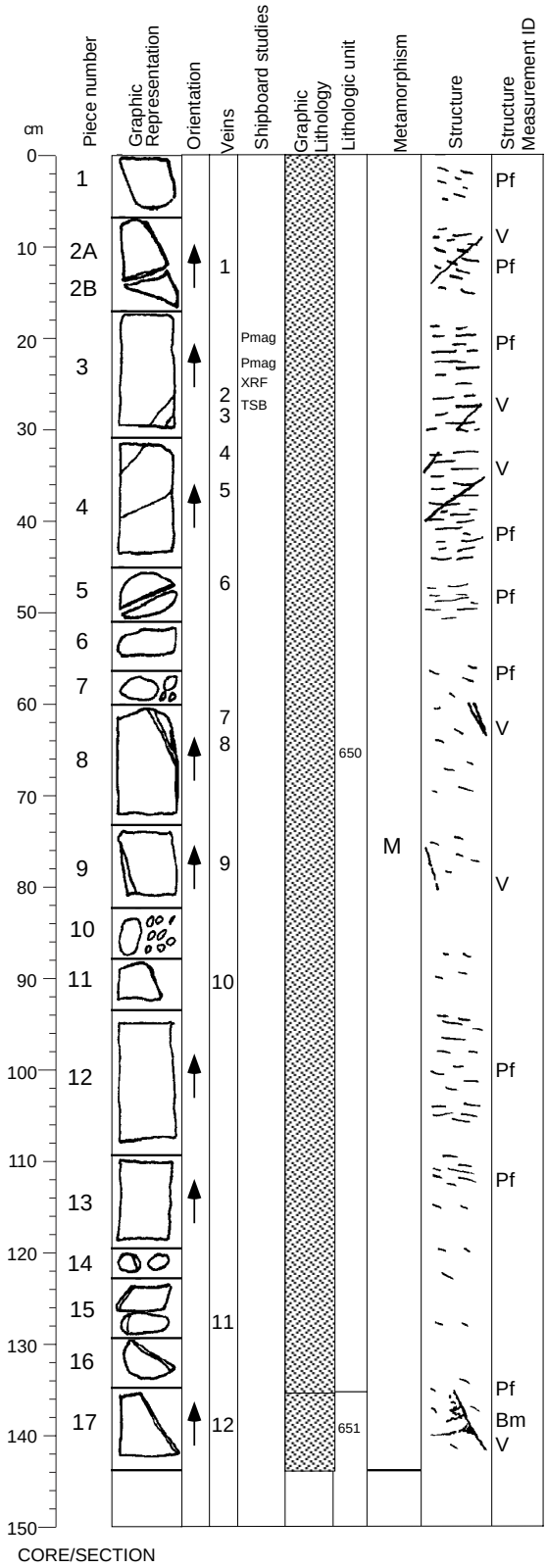
Alteration:
Dark green amphibole:
Total Percent: <8
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Secondary plagioclase:
Total Percent: <10
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, mainly near felsic veins.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Dark green smectite:
Total Percent: <3
Mode of occurrence: Dark green-blue smectite replacing olivine.
Comments: Near sheared zones and in a vein associated with sulfides.

Background Alteration:
Degree of alteration: slight to moderate (4 to 35%). Pieces 1 to 4: 20% of the olivine is altered to amphibole, oxide and smectite. Around 3% of the clinopyroxene and plagioclase is altered. Pieces 5 to 11: olivine is completely replaced by amphibole, smectite, and abundant sulfide. Sulfide occurs along smectite veins and is most pronounced in Pieces 4 and 5 which are strongly deformed and have abundant secondary plagioclase. Clinopyroxene is significantly replaced by smectite and amphibole (10%). The total amount of plagioclase recrystallized is 30%. Piece 12: 30% of the olivine is replaced by amphibole and rare smectite. 2% of the clinopyroxene and 8% of the plagioclase are altered.

Vein/Fracture Filling:
0.2-1 mm smectite veins in Pieces 1, 2, 4 to 6, 9, and 11.

Structures:
Mf>Pf>V
Most of the section displays a weak to moderate crystal-plastic foliation, except for Piece A and for the top half of Piece 1B which have a coarse-grained igneous texture, with no magmatic foliation. From Piece 3 to the bottom, the pre-existing magmatic texture has a grain size much finer than the top of the section. A few veins cut the plastic foliation.

Core Image



176-735B-131R-2

Interval 650: LEUCOCRATIC DISSEMINATED OXIDE OLIVINE GABBRO
(see previous section)

Interval 651: DISSEMINATED OXIDE OLIVINE GABBRO

			Depth in		Depth
Interval Location:	Core	Section	Section	Piece	mbsf
Upper contact:	131	2	135	17	806.35
Lower contact:	131	3	17	2B	806.60

Thickness (m): 0.25

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	50	15	5	coarse	tabular/ subhedral anhedral
Clinopyroxene	35	12	3	coarse	tabular/ anhedral
Olivine	5	3	1	medium	elongate/ anhedral
Opaques	1.5				interstitial lenses/ interstitial network
Total	91.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Medium
Modal IUGS Name (calculated): Disseminated FeTi Oxide Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Oxide-bearing interval. Locally deformed and veined. Sulfide present.

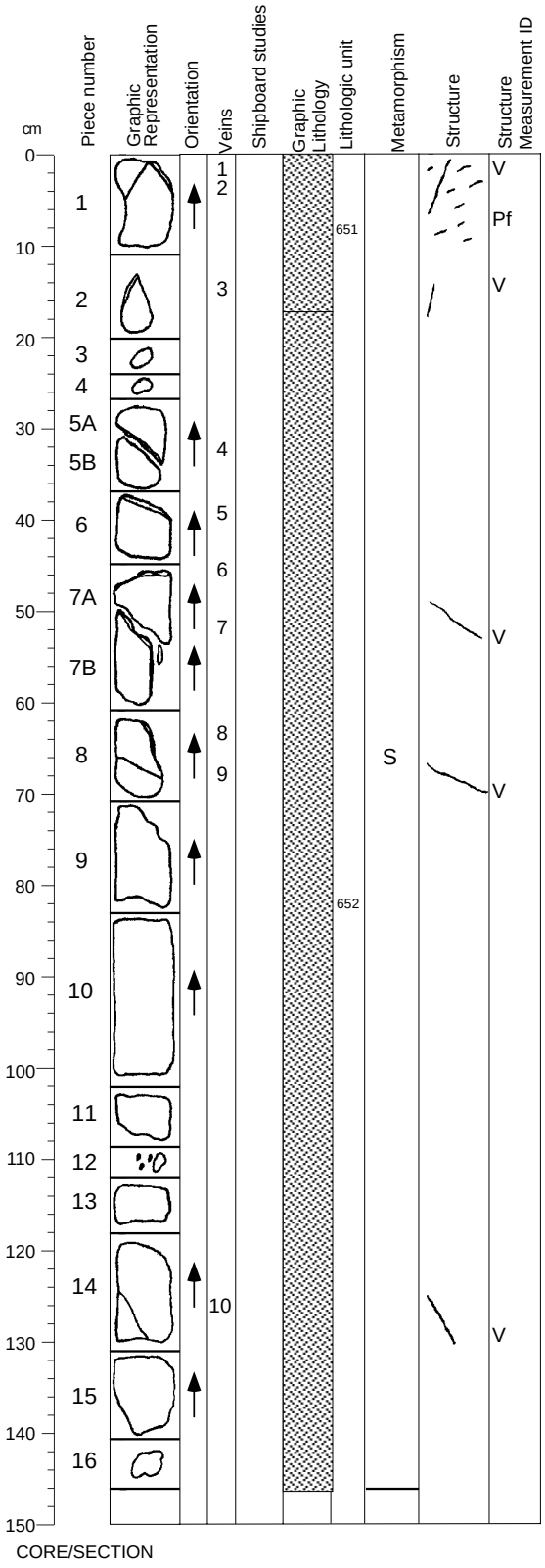
Alteration:
Dark green amphibole:
Total Percent: <8
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1.
Mode of occurrence: After olivine, along pyroxene cleavages and as rims.
Comments: Near felsic veins.
Secondary plagioclase:
Total Percent: <10
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, mainly near felsic veins.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Dark green smectite:
Total Percent: <3
Mode of occurrence: Dark green smectite replacing olivine.
Comments: Near veins, cracks, and near felsic areas.

Background Alteration:
Degree of alteration: moderate (12-35%). Pieces 1 to 13: 40% of the olivine is replaced by amphibole, smectite and some sulfide. 3% of the clinopyroxene is altered to amphibole. 8% of the plagioclase is secondary. Pieces 14 to 17: olivine is completely replaced by amphibole, talc, smectite, and abundant sulfide. 20% of the clinopyroxene is replaced by amphibole and smectite. 20% of the plagioclase is secondary.

Vein/Fracture Filling:
0.2-0.5 mm smectite veins in Pieces 2-5, 8, 9, 11, and 14-17; 1-2 mm amphibole+plagioclase vein in Pieces 3 and 8.

Structures:
Pf>V; Pf>V=Bm
The entire section displays a crystal-plastic foliation, with a variable intensity (weak from 0 to 16 cm, strong from 17 to 49 cm, and weak to poorly defined from 49 cm to the bottom). The plastic foliation is cut by a few veins, and overprinted by a vein and associated breccia in Piece 17.

Core Image



176-735B-131R-3

Interval 651: DISSEMINATED OXIDE OLIVINE GABBRO (see previous section)
Interval 652: DISSEMINATED OXIDE OLIVINE GABBRO

			Depth in		Depth
Interval Location:	Core	Section	Section	Piece	mbsf
Upper contact:	131	3	17	2B	806.60
Lower contact:	131	4	93	9	808.82

Thickness (m): 2.22

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	20	6	coarse	tabular/ subhedral euhedral
Clinopyroxene	35	20	2	coarse	equant/ subhedral anhedral
Olivine	7	15	2	medium	amoeboidal/ anhedral
Opaques	1.5				interstitial lenses/ interstitial network
Total	103.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Disseminated FeTi Oxide Olivine Gabbro

	Type	Distribution
Texture:	variable texture	N/A

Comments: Mostly granular, subophitic/ophitic common. Locally intergranular. Many clinopyroxene grains oikocrystic. Olivine fresh. Oxide 0.5% at 18-43 cm in 131R-3; 2% at 43-86 cm in 131R-3; 1% at 86-143 cm in 131R-3, 0-11 cm, 14-65 cm, and 68-94 cm in 131R-4; 3% at 11-14 cm in 131R-4; and 15% at 65-68 cm in 131R-4.

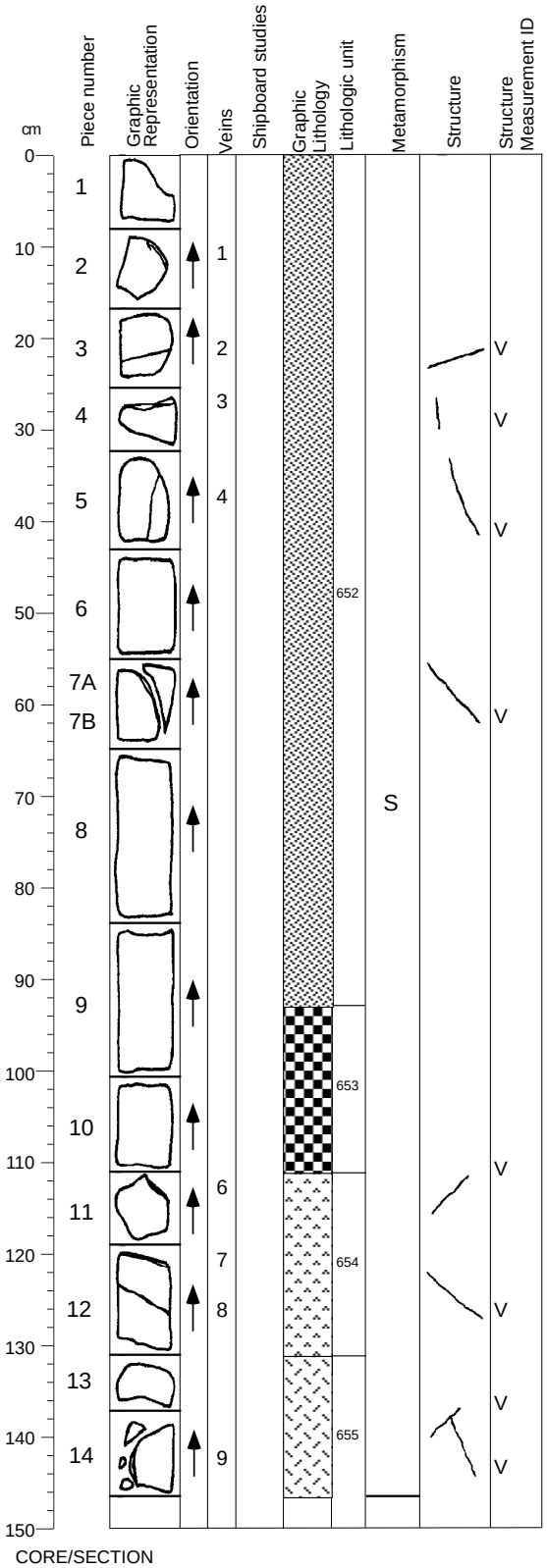
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages and as rims.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Dark green smectite:
Total Percent: <3
Mode of occurrence: Dark green smectite replacing olivine.

Background Alteration:
Degree of alteration: slight (8%). 70% of the olivine is altered to amphibole and smectite. 2% of the clinopyroxene and 5% of the plagioclase are altered.

Vein/Fracture Filling:
0.2-1 mm smectite veins in Pieces 5 to 8, and 14; 0.3-3 mm amphibole+ plagioclase vein in Pieces 1 and 2.

Structures:
Mf>Pf>V; Mf>V
Most of this section displays a coarse-grained igneous texture, with no magmatic foliation, except for Pieces 1 to 4 in which the igneous texture is overprinted by a weak crystal-plastic foliation. The previous fabrics are cut by a few veins.

Core Image



176-735B-131R-4

Interval 652: DISSEMINATED OXIDE OLIVINE GABBRO
(see previous section)
Interval 653: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	131	4	93	9	808.82
Lower contact:	131	4	112	11	809.01

Thickness (m): 0.19

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	55	30	8	coarse	tabular/ subhedral euhedral
Clinopyroxene	35	30	2	coarse	equant/ anhedral
Olivine	1	3	1	medium	amoeboidal/ anhedral
Opaques	5				interstitial lenses/ interstitial network
Total	96*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): FeTi Oxide Gabbro
Type Distribution
Texture: granular N/A
Comments: Oxide-rich interval. Locally subophitic. Oxide 8% at 94-96 cm, 1% at 96-99 cm, and 6% at 101-109 cm (131R-4).

Interval 654: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	131	4	112	11	809.01
Lower contact:	131	4	132	1	809.21

Thickness (m): 0.20

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	55	10	5	coarse	tabular/ subhedral
Clinopyroxene	35	30	2	coarse	equant/ anhedral subhedral
Olivine	6	6	1	medium	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	96.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro
Type Distribution
Texture: granular N/A
Comments: Locally clinopyroxene oikocrystic. Much of the interval fragmented. Fractures/fragment surfaces filled with greenish/whitish alteration materials (60 cm in 132R-1).

Continued next page

Core Image

176-735B-131R-4 (cont'd)

Interval 655: GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	131	4	132	1	809.21
Lower contact:	132	1	110	12	814.30

Thickness (m): 5.09

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	50	50	10	pegmatitic	tabular/ anhedral
Clinopyroxene	50	60	5	pegmatitic	tabular/ subhedral anhedral
Olivine	3	10	2	medium	amoeboidal/ anhedral
Opaques	0.5				angular aggregates/ subhedral
Total	103.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Pegmatitic
Modal IUGS Name (calculated): Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Interval of pegmatitic clinopyroxene.

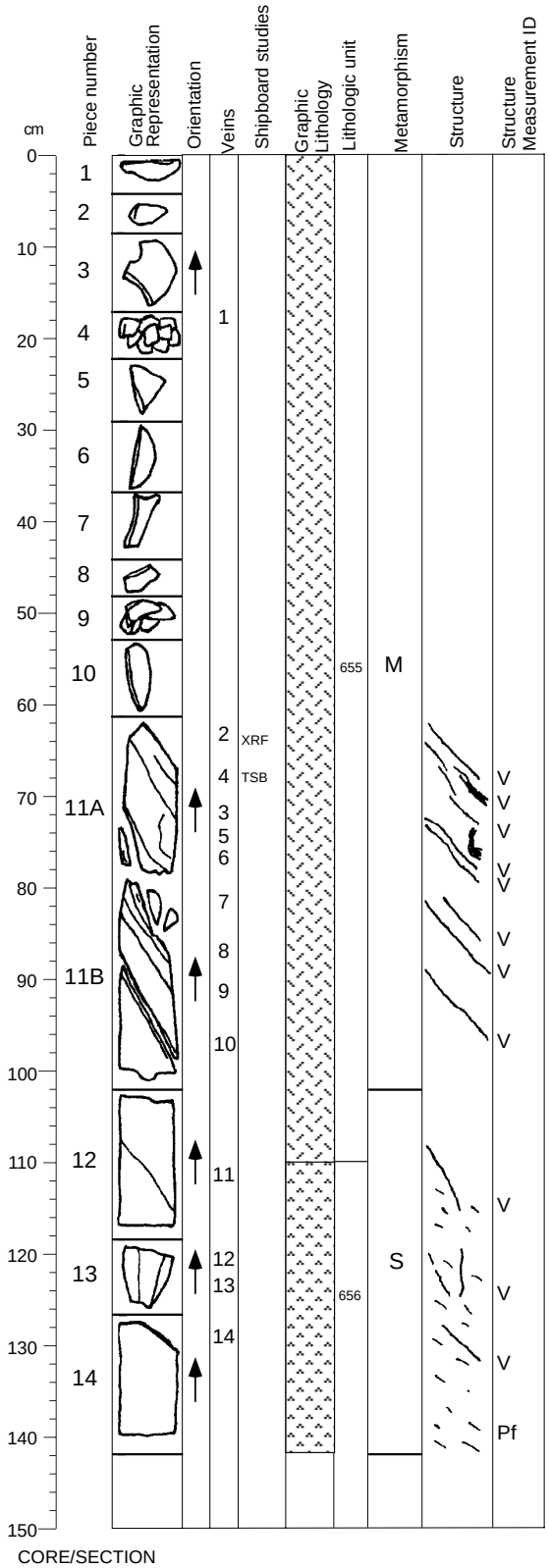
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Dark green smectite:
Total Percent: <1
Mode of occurrence: Dark green smectite replacing olivine.

Background Alteration:
Degree of alteration: slight (5%). 30% of the olivine is altered to amphibole and rare smectite. 2% of the clinopyroxene and plagioclase is altered.

Vein/Fracture Filling:
0.1-0.6 mm smectite veins in Pieces 1, 2, 7, 11, 12, and 14; amphibole vein in Piece 5; epidote(?) vein in Piece 4.

Structures:
Mf>V
The entire section displays a coarse-grained igneous texture, with no magmatic foliation, cut by a series of veins.

Core Image



176-735B-132R-1

Interval 655: GABBRO
(see previous section)
Interval 656: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	132	1	110	12	814.30
Lower contact:	132	1	140	14	814.60

Thickness (m): 0.30

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	20	5	coarse	tabular/ subhedral
Clinopyroxene	35	20	3	coarse	tabular/ subhedral
Olivine	7	10	1	medium	amoeboidal/ anhedral
Opaques	0.6				amoeboidal aggregates/ disseminated
Total	102.6*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Sulfide present at 130 cm in 132R-1.

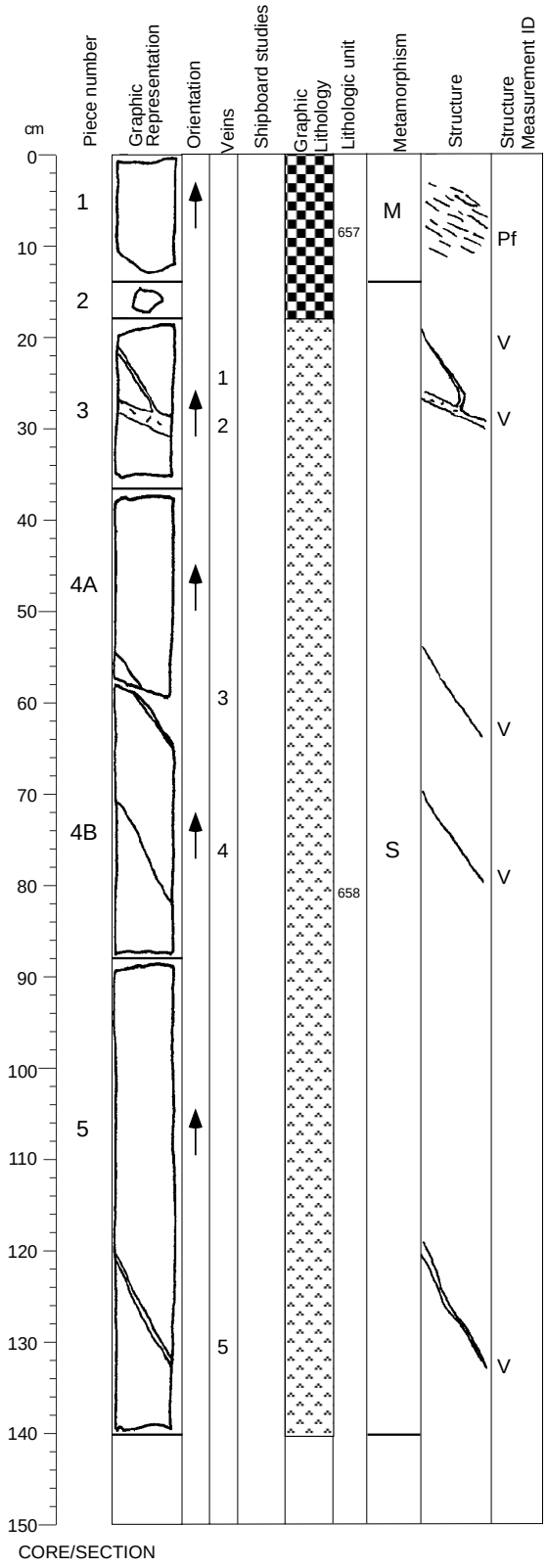
Alteration:
Dark green amphibole:
Total Percent: <8
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: After olivine, along pyroxene cleavages and as rims.
Comments: Near felsic veins and in sheared gabbros.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, mainly near felsic veins and in sheared gabboic zones.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Dark green smectite:
Total Percent: <1
Mode of occurrence: Dark to pale green smectite replacing olivine, pyroxene and plagioclase.
Comments: Near veins and cracks and in felsic areas.
Sulfides:
Total Percent: trace
Comments: Concentrated in felsic material, associated with smectite.

Background Alteration:
Degree of alteration: slight to moderate (5 to 30%). Pieces 1 to 11: olivine is completely replaced by amphibole, smectite, and abundant sulfide. Clinopyroxene is highly replaced by smectite in addition to amphibole (10%). Plagioclase is also altered to smectite (10%) along smectite veins. Pieces 12 to 14: 30% of the olivine is altered to amphibole and smectite. 2% of the clinopyroxene and plagioclase is altered.

Vein/Fracture Filling:
0.2-2 mm smectite veins in Pieces 1 to 7, and 11 to 14; plagioclase vein in Pieces 11.

Structures:
Pf>V; Mf>Pf>V
Pieces 1 to 10 are small nonoriented samples; they appear to be similar to the rock in Pieces 11A and 11B, which contain a dense array of parallel veins, overprinting a crystal-plastic fabric. From 92 cm to the bottom of the section, the texture is coarse-grained igneous, overprinted from 110 by a weak crystal-plastic foliation, and later cut by few veins.

Core Image



176-735B-132R-2

Interval 657: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	132	1	140	14	814.60
Lower contact:	132	2	17	2	814.79

Thickness (m): 0.19

	Grain Size (mm): Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	50	10	N/A	medium	tabular/ anhedral deformed
Clinopyroxene	40	50	3	coarse	tabular/ anhedral
Olivine	1	3	1	medium	amoeboidal/ anhedral deformed
Opaques	4				interstitial lenses/ interstitial network
Total	95*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): FeTi Oxide Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Oxide-rich interval. Oxide as "interstitial" matrix (foliated) surrounding major silicate minerals (porphyroclastic) in oxide rich portion, and disseminated elsewhere.

Interval 658: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	132	2	17	2	814.79
Lower contact:	132	5	71	1	819.07

Thickness (m): 4.28

	Grain Size (mm): Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	25	7	coarse	tabular/ subhedral euhedral
Clinopyroxene	40	40	2	coarse	elongate/ anhedral oikocrystic
Olivine	8	15	2	medium	elongate/ anhedral
Opaques	0.6				amoeboidal aggregates/ disseminated
Total	108.6*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	variable texture	N/A

Comments: Coarse-grained. Mostly granular; locally subophitic with large clinopyroxene grains oikocrystic. Locally veined at 125 cm in 132R-3, 95 cm in 132R-3, and 110 cm in 132R-4.

Continued next page

Core Image

176-735B-132R-2 (cont'd)

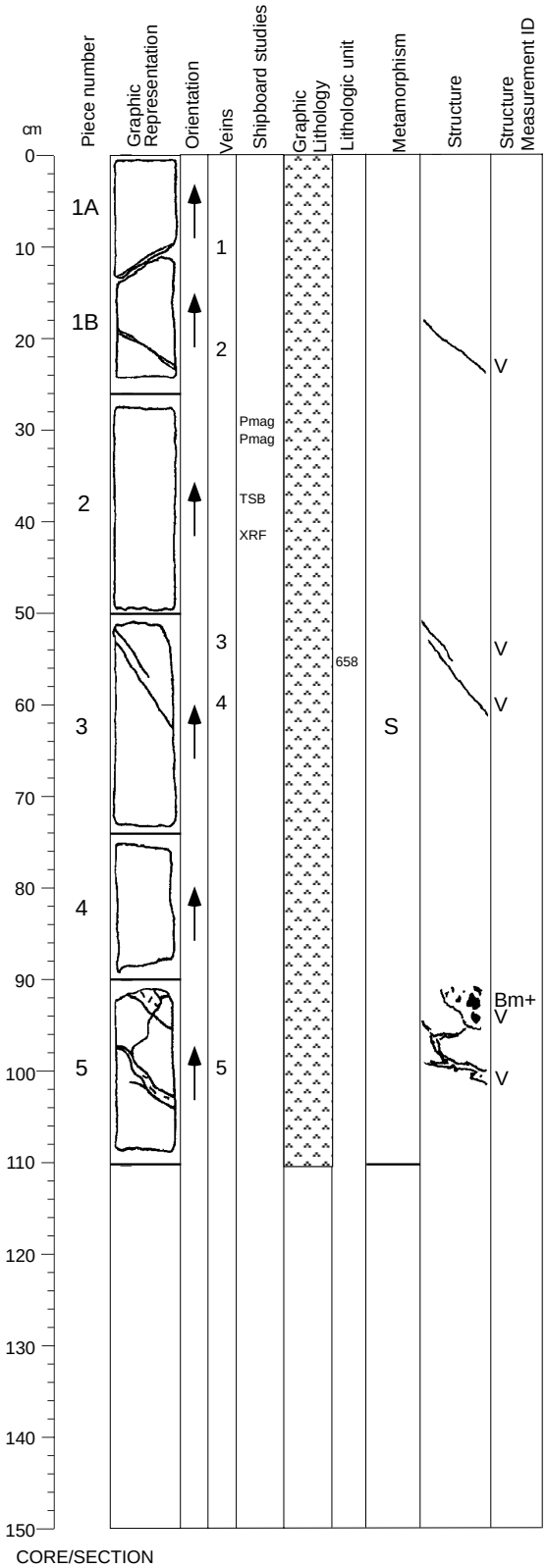
Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages and as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: <1
Mode of occurrence: In the pyroxene rims and as halo of a chlorite veinlet.
Dark green smectite:
Total Percent: <1
Mode of occurrence: Dark green smectite replacing olivine and pale green after plagioclase.
Comments: Near veins and cracks.

Background Alteration:
Degree of alteration: slight (6 to 20%). Piece 1 is a deformed oxide-rich gabbro, which shows abundant recrystallized plagioclase (30%) and some amphibole replacing clinopyroxene (10%). Pieces 2 to 5: 25% of the olivine is altered to amphibole and rare smectite. 3% of the clinopyroxene is replaced by amphibole. 5% of the plagioclase is secondary.

Vein/Fracture Filling:
Plagioclase+amphibole veins in Pieces 3 and 5; smectite veins in Pieces 3 and 4.

Structures:
Mf>Pf; Mf>V
This section displays a coarse-grained igneous texture, with no magmatic foliation, except for Pieces 1 and 2 which contains a strong, porphyroclastic crystal-plastic foliation. The igneous texture is cut by a few veins.

Core Image



176-735B-132R-3

Interval 658: OLIVINE GABBRO
(see previous section)

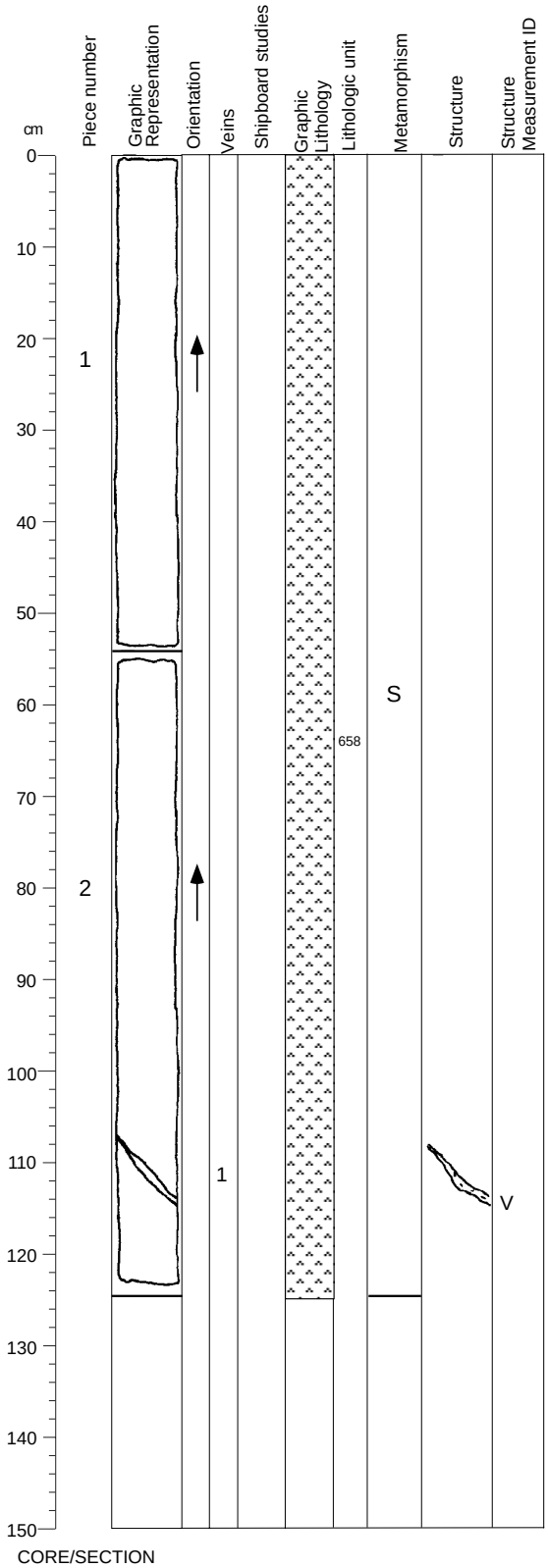
Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages and as rims.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: <1
Mode of occurrence: In the pyroxene rims.
Dark green smectite:
Total Percent: <1
Mode of occurrence: Dark green smectite replacing olivine and pale green after plagioclase.
Comments: Alteration of olivine near felsic veins and cracks and alteration of feldspar bordering a smectite vein.

Background Alteration:
Degree of alteration: slight (8%). Olivine is partly replaced by amphibole and smectite (40%). Some of the clinopyroxene is replaced by amphibole (5%). 3% of the plagioclase is secondary.

Vein/Fracture Filling:
Smectite veins in Pieces 1 and 3; compound felsic veins in Piece 5; plagioclase+ amphibole vein in Piece 1; plagioclase vein in Piece 3.

Structures:
Mf>V; Mf>V=Bm
The entire section displays a coarse-grained igneous texture, with no magmatic foliation, cut by a few veins (Pieces 1B and 3), and overprinted by a vein and associated magmatic breccia in Piece 5.

Core Image



176-735B-132R-4

Interval 658: OLIVINE GABBRO
(see Section 176-735B-132R-2)

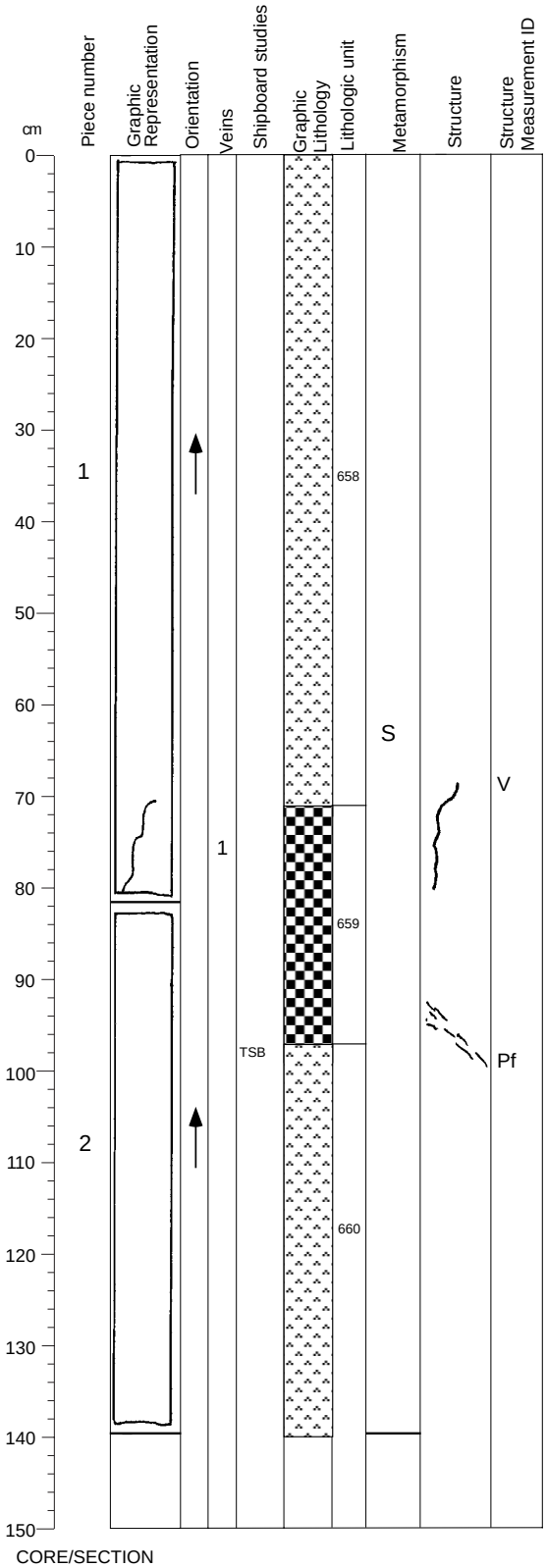
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages and as rims.
Comments: Near felsic veins.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, near felsic veins.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: In the pyroxene rims.
Dark green smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite replacing olivine

Background Alteration:
Degree of alteration: slight (6%). Olivine is partly replaced by amphibole and rare smectite (30%). Some of the clinopyroxene is replaced by amphibole (3%). 3% of the plagioclase is secondary.

Vein/Fracture Filling:
4 mm plagioclase vein in Piece 2.

Structures:
Mf>V
The entire section displays a coarse-grained igneous texture, with no magmatic foliation, cut by a vein in Piece 2.

Core Image



176-735B-132R-5

Interval 658: OLIVINE GABBRO
(see Section 176-735B-132R-2)
Interval 659: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	132	5	71	1	819.07
Lower contact:	132	5	97	2	819.33

Thickness (m): 0.26

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	15	5	coarse	tabular/ subhedral euhedral
Clinopyroxene	35	15	3	coarse	equant/ anhedral
Olivine	1	2	1	fine	equant/ anhedral
Opaques	5				interstitial lenses/ interstitial network
Total	101*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): FeTi Oxide Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Oxide-rich interval. Grain size variable. Oxide abundance increases downward, as "intergranular" network at base.

Interval 660: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	132	5	97	2	819.33
Lower contact:	133	1	27	3	823.17

Thickness (m): 3.84

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	30	5	coarse	tabular/ subhedral euhedral
Clinopyroxene	35	55	5	coarse	equant/ oikocrystic anhedral
Olivine	5	4	1	medium	amoeboidal/ anhedral
Opaques	0.6				amoeboidal aggregates/ disseminated
Total	100.6*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	variable texture	N/A

Comments: Mostly granular, subophitic common. Clinopyroxene pegmatitic/oikocrystic at 12-17 cm, 29-42 cm, 80 cm, and 113 cm in 132R-7; 18-29 cm in 132R-8. Oxide concentrated at 2 cm in 132R-6, and as seam at 93 cm in 132R-6.

Continued next page

Core Image

176-735B-132R-5 (cont'd)

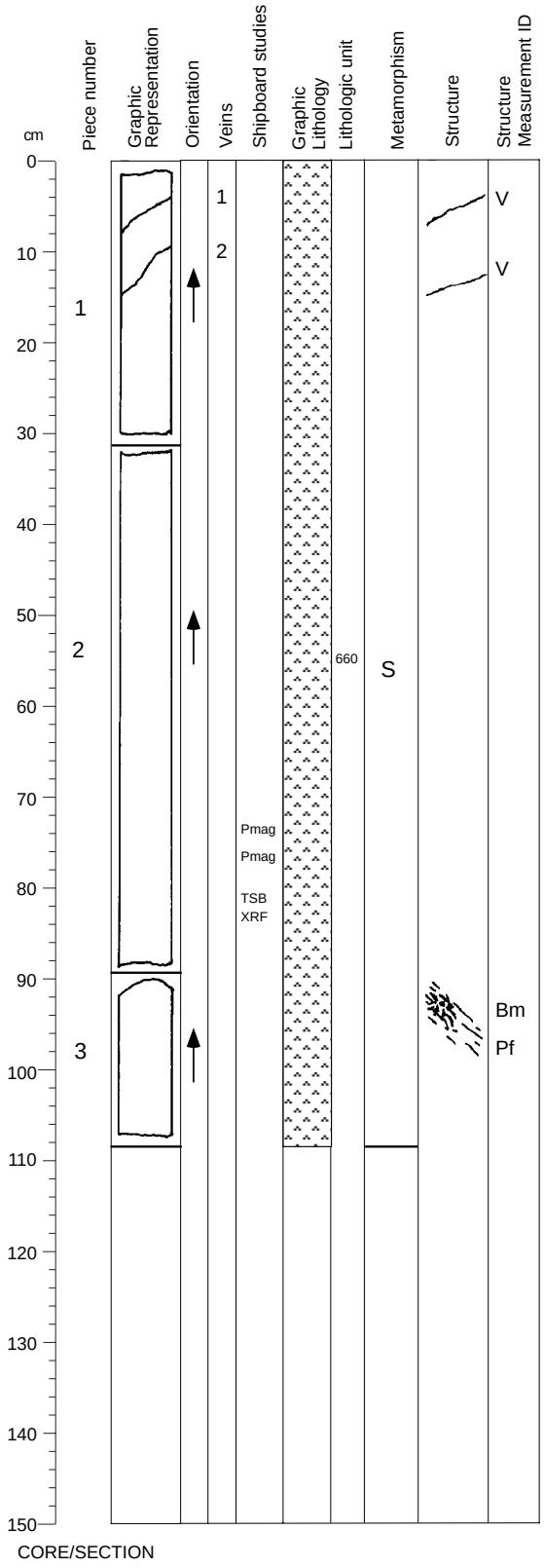
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages and as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Rimming pyroxene.
Dark green smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite replacing olivine.

Background Alteration:
Degree of alteration: slight (4%). Olivine is partly replaced by amphibole (25%). Clinopyroxene and plagioclase are negligibly altered (2%).

Vein/Fracture Filling:
0.2 mm plagioclase+amphibole vein in Piece 1.

Structures:
Mf>V; Mf>Pf
The entire section displays a coarse-grained igneous texture, with no magmatic foliation, cut by a vein at the bottom of Piece 1, and overprinted in Piece 2 by a narrow crystal-plastic shear zone (3 cm thick, porphyroclastic foliation) associated with a concentration of oxides.

Core Image



176-735B-132R-6

Interval 660: OLIVINE GABBRO
(see previous section)

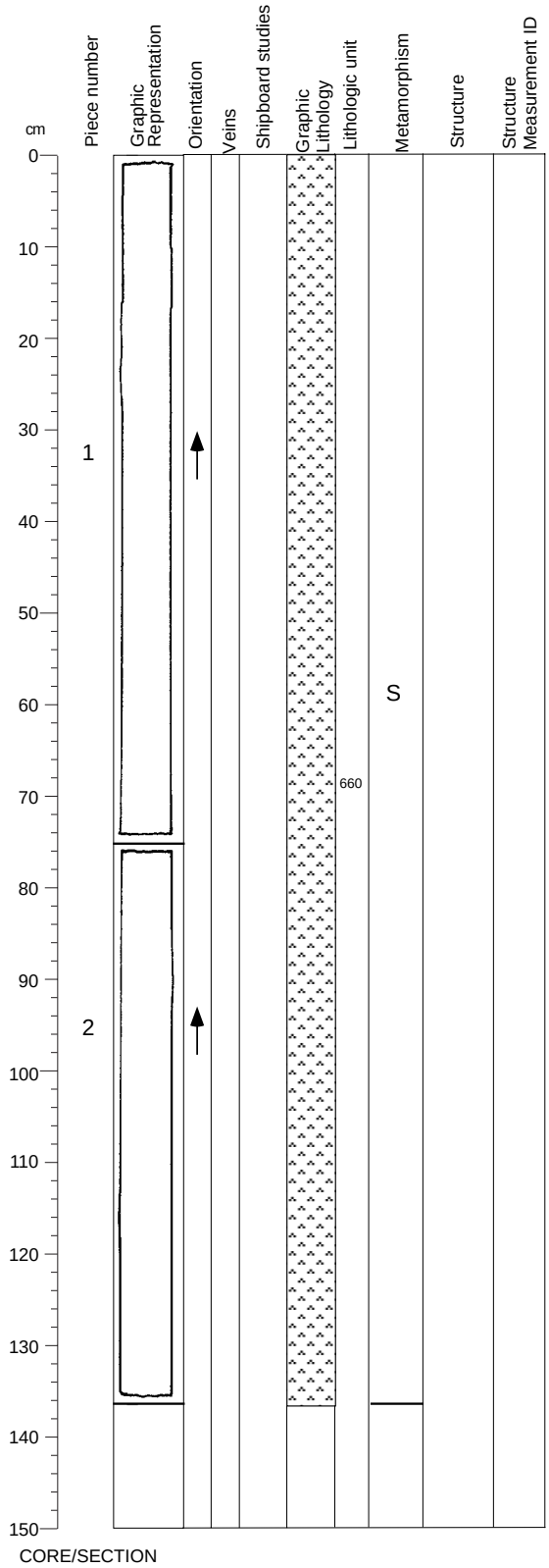
Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages and as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: In the pyroxene rims.
Dark green smectite:
Total Percent: trace
Mode of occurrence: Green-blue smectite after plagioclase near a vein.

Background Alteration:
Degree of alteration: slight (3%). Olivine is partly replaced by amphibole and smectite (25%). Clinopyroxene and plagioclase are negligibly altered (1 to 2%).

Vein/Fracture Filling:
0.5 mm smectite veins in Piece 1.

Structures:
Mf>V; Mf>Bm>Pf
The entire section displays a coarse-grained igneous texture, with no magmatic foliation, cut by two veins in Piece 1, and overprinted in Piece 3 by a narrow zone of crystal-plastic foliation (3 cm thick), overprinting a magmatic breccia.

Core Image



176-735B-132R-7

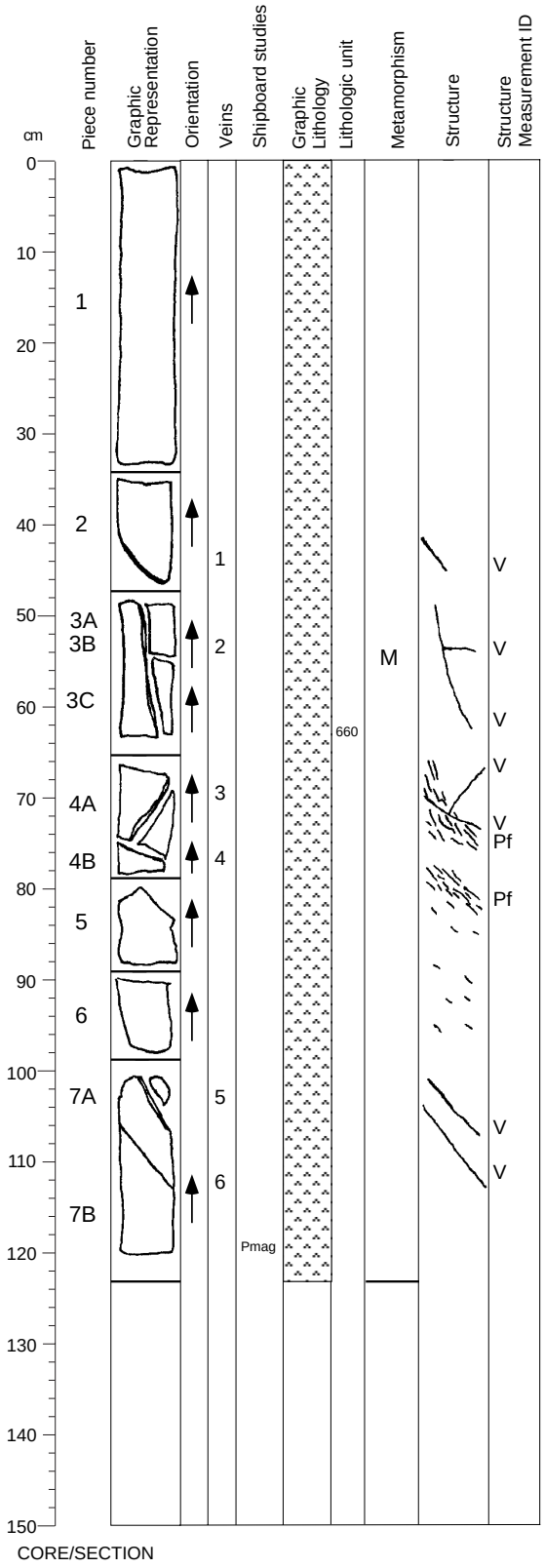
Interval 660: OLIVINE GABBRO
(see Section 176-735B-132R-5)

Alteration:
Dark green amphibole:
Total Percent: <1
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages and as rims.
Secondary plagioclase:
Total Percent: <1
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (3%). Same as previous section.

Structures:
Mf
The entire section displays a coarse-grained igneous texture, with no magmatic foliation.

Core Image



176-735B-132R-8

Interval 660: OLIVINE GABBRO
(see Section 176-735B-132R-5)

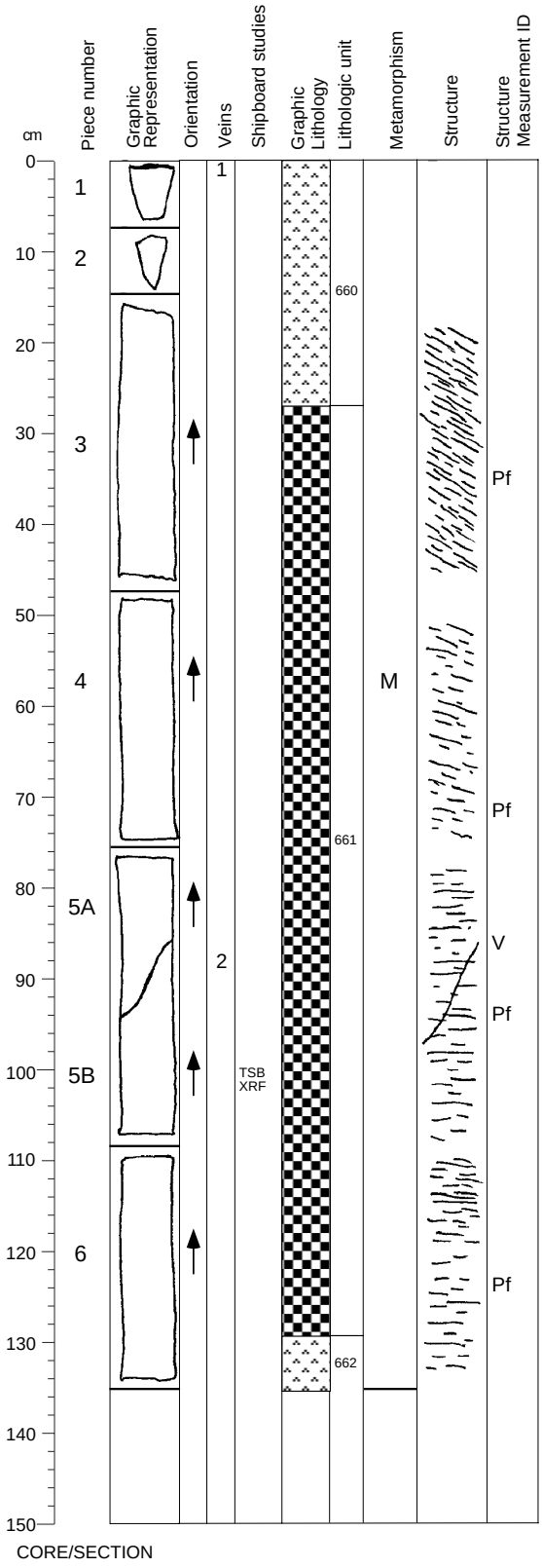
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages and as rims.
Secondary plagioclase:
Total Percent: <4
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Dark green smectite:
Total Percent: trace
Mode of occurrence: Pale green smectite after plagioclase, dark green replacing olivine.

Background Alteration:
Degree of alteration: moderate (12%). Olivine is altered to amphibole and smectite (50%). 4% of the clinopyroxene is replaced by amphibole. 8% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.2-1 mm smectite veins in Pieces 2 to 4, and 7.

Structures:
Mf>V; Mf>Pf>V
Most of this section displays a coarse-grained igneous texture, with no magmatic foliation, except in Pieces 4A to 5, where the igneous texture is overprinted by a 12 cm thick crystal-plastic shear zone (porphyroclastic foliation, dipping 40˚), overlying a zone of weak crystal-plastic foliation (from 81 to 98 cm). The previous fabrics are cut by a few veins.

Core Image



176-735B-133R-1

Interval 660: OLIVINE GABBRO
(see Section 176-735B-132R-5)
Interval 661: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	133	1	27	3	823.17
Lower contact:	133	1	129	6	824.19

Thickness (m): 1.02

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	5	3	coarse	tabular/ anhedral deformed
Clinopyroxene	30	20	3	coarse	equant/ anhedral fractured
Olivine	3	4	2	medium	equant/ anhedral
Opaques	7				interstitial lenses/ interstitial network
Total	100*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): FeTi Oxide Gabbro
Type Distribution
Texture: granular N/A
Comments: Oxide-rich interval. Mode and size variable. Oxide as "interstitial" network surrounding major silicate minerals (porphyroclastic) in oxide-rich portions. Olivine with black reaction rims common in gneissic zones.

Interval 662: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	133	1	129	6	824.19
Lower contact:	133	3	116	3B	826.79

Thickness (m): 2.60

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	30	5	coarse	tabular/ subhedral euhedral
Clinopyroxene	35	25	2	coarse	elongate/ anhedral rounded
Olivine	6	3	1	medium	equant/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	106.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro
Type Distribution
Texture: granular N/A
Comments: Locally subophitic/ophitic. Locally semi-equigranular at 0-60 cm in 133R-3, fine-grained, and 12-33 cm in 133R-2 coarse-grained. Locally foliated. Pegmatitic/oikocrystic clinopyroxene present at 55-75 cm, 88-114 cm in 133R-3.

Continued next page

Core Image

176-735B-133R-1 (cont'd)

Alteration:
Dark green amphibole:
- Total Percent: <15
- Mode of occurrence: After pyroxene and olivine.
- Comments: As alteration rims.

Brown amphibole:
- Total Percent: <3
- Mode of occurrence: Along pyroxene cleavages and as rims.
- Comments: Particularly in foliated Fe-Ti gabbroic zones.

Secondary plagioclase:
- Total Percent: <20
- Mode of occurrence: Replacing primary plagioclase.
- Comments: More abundant in foliated Fe-Ti gabbro.

Talc and oxides:
- Total Percent: <1
- Mode of occurrence: Replacing olivine.
- Comments: As mixtures in the crystal crack network.

Chlorite:
- Total Percent: trace
- Mode of occurrence: Rimming pyroxene.

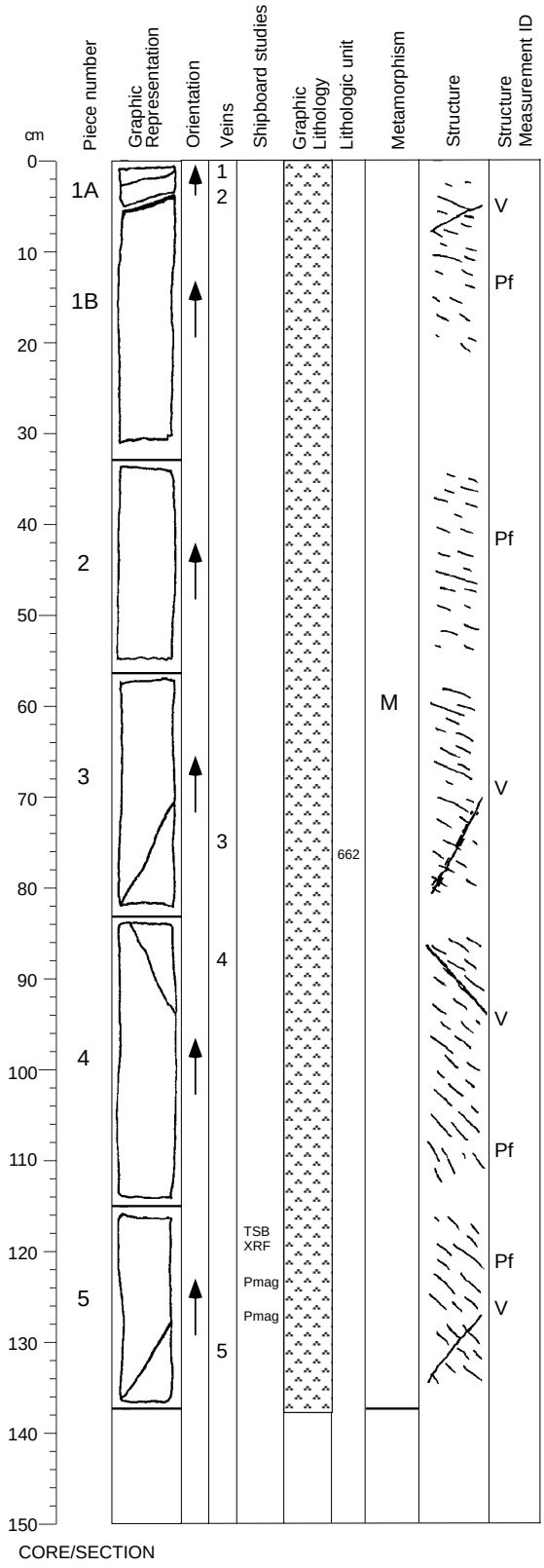
Dark green smectite:
- Total Percent: trace
- Mode of occurrence: Dark green smectite replacing olivine.

Background Alteration:
Degree of alteration: moderate (40%). 60% of the olivine is altered to amphibole and rare smectite. 10% of the clinopyroxene is replaced by amphibole. 60% of the plagioclase is recrystallized. Alteration is locally very high where foliation is extremely strong.

Vein/Fracture Filling:
0.2-0.5 mm smectite veins in Pieces 1 and 5.

Structures:
Pf>V
Most of this section displays a strong to porphyroclastic crystal-plastic foliation (defined partly by thin oxide layers), except for Pieces 1 and 2 (coarse-grained igneous texture) and for the bottom of Piece 6 which has a weak crystal-plastic foliation (from 120 t o 133 cm). The plastic foliation is cut by a vein in Piece 5A to 5B.

Core Image



176-735B-133R-2

Interval 662: OLIVINE GABBRO
(see previous section)

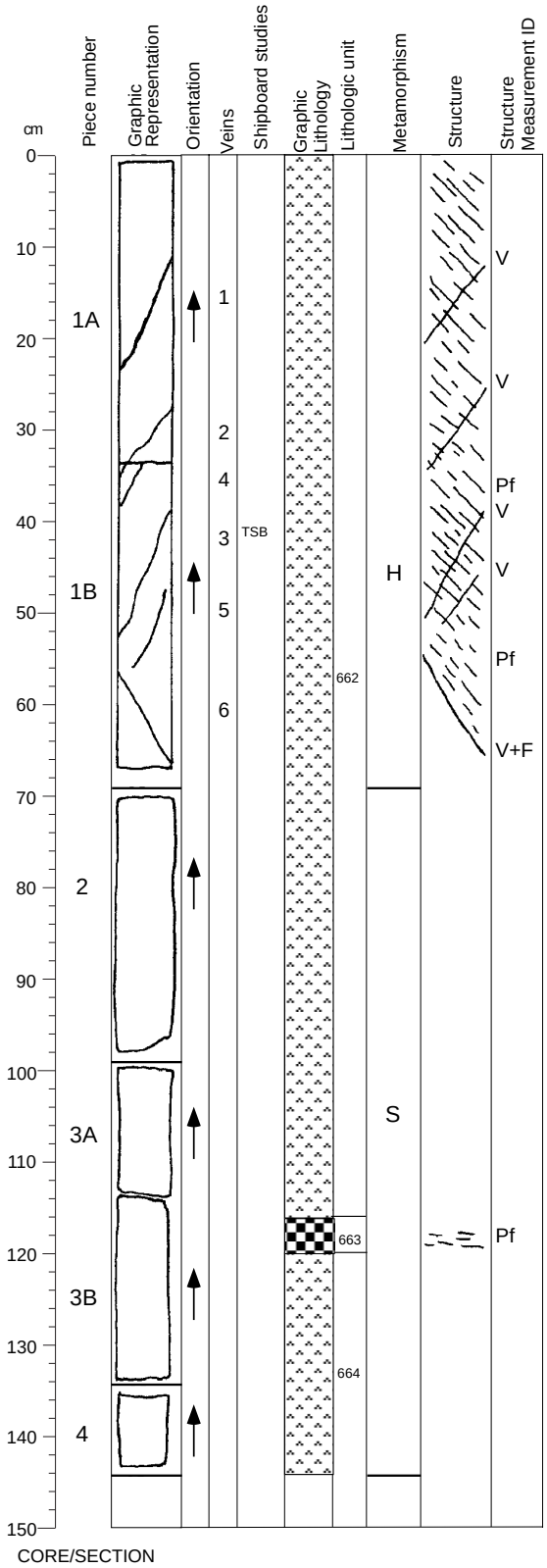
Alteration:
Dark green amphibole:
Total Percent: <20
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims and in the halo of an amphibole vein.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages and as rims.
Secondary plagioclase:
Total Percent: <20
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: In the pyroxene rims and the halo of an amphibole vein.
Dark green smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite replacing olivine

Background Alteration:
Degree of alteration: moderate (40%). Same as previous section.

Vein/Fracture Filling:
0.2 mm smectite veins in Pieces 1 and 4; 0.3 mm amphibole veins in Pieces 3 and 5.

Structures:
Pf>V
From 0 to 32 cm, this section displays a weak to moderate crystal-plastic foliation; from 35 cm to the bottom, the crystal-plastic foliation is strong. The plastic fabric is cut by a few veins.

Core Image



176-735B-133R-3

Interval 662: OLIVINE GABBRO
(see Section 176-735B-133R-1)
Interval 663: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	133	3	116	3B	826.79
Lower contact:	133	3	120	3B	826.83

Thickness (m): 0.04

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	50	20	6	coarse	tabular/ anhedral
Clinopyroxene	30	6	1	medium	tabular/ anhedral
Opaques	10				interstitial lenses/ interstitial network
Total	90*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): FeTi Oxide Gabbro
Type Distribution
Texture: granular N/A
Comments: Oxide-rich interval.

Interval 664: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	133	3	120	3B	826.83
Lower contact:	133	4	33	2A	827.40

Thickness (m): 0.57

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	20	3	coarse	tabular/ subhedral anhedral
Clinopyroxene	30	25	1	coarse	tabular/ anhedral oikocrystic
Olivine	7	8	1	medium	amoeboidal/ anhedral subhedral
Opaque	0.7				amoeboidal aggregates/ disseminated
Total	102.7*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Medium
Modal IUGS Name (calculated): Olivine Gabbro
Type Distribution
Texture: granular N/A
Comments: Medium- to coarse-grained, locally finer grained. Mostly granular, locally subophitic/ophitic. Oxide present at 43 cm and 56-64 cm in 134R-3, and 68-72 cm in 134R-5.

Continued next page

Core Image

176-735B-133R-3 (cont'd)

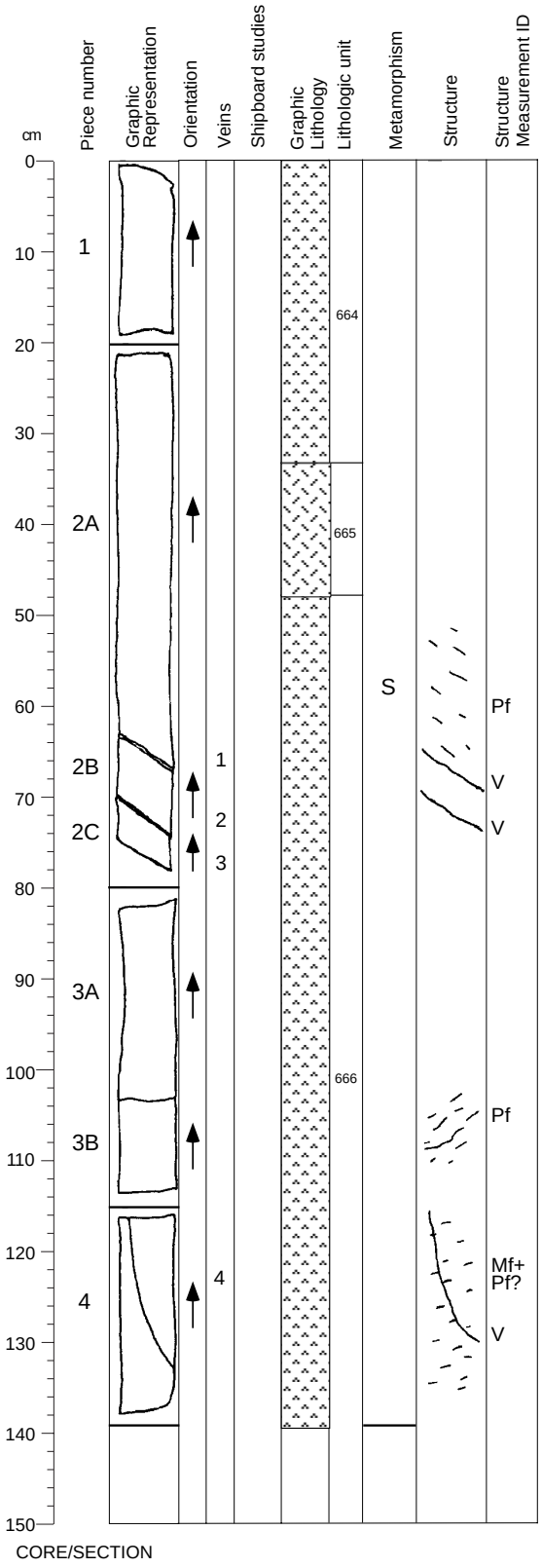
Alteration:
Dark green amphibole:
Total Percent: <15
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims and in vein halos.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages and as rims.
Secondary plagioclase:
Total Percent: <15
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, but more abundant near the veins.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Rimming pyroxene and in vein halos.
Dark green smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite replacing olivine

Background Alteration:
Degree of alteration: slight to high (5-60%). Piece 1 is strongly foliated and highly altered. 100% is completely replaced by amphibole and smectite. 30% of the clinopyroxene is altered to amphibole. 80% of the plagioclase is recrystallized. In Pieces 2 to 4, 30% of the olivine, 2% of the clinopyroxene and 4% of the plagioclase is altered.

Vein/Fracture Filling:
0.2-1 mm amphibole veins in Piece 1.

Structures:
Pf>V>F; Mf>Pf
The upper half of the section displays a strong crystal-plastic foliation, dipping 45°, from 0 to 61 cm; it is bounded at the bottom by a fault overprinting a vein and possibly a pre-existing igneous contact. The fault is parallel to the plastic foliation. Beneath the fault, the texture is coarse-grained igneous, with no magmatic foliation except for a narrow, shallow plastic shear zone in Piece 3B. A series of veins cut the high-temperature crystal-plastic foliation in the upper part of the section.

Core Image



176-735B-133R-4

Interval 664: OLIVINE GABBRO
(see previous section)
Interval 665: GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	133	4	33	2A	827.40
Lower contact:	133	4	48	2A	827.55

Thickness (m): 0.15

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	30	5	coarse	tabular/ anhedral subhedral
Clinopyroxene	45	25	1	coarse	equant/ anhedral subhedral
Olivine	4	6	1	medium	equant/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	109.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Gabbro
Texture: Type granular; Distribution N/A

Interval 666: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	133	4	48	2A	827.55
Lower contact:	133	5	73	2F	829.19

Thickness (m): 1.64

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	25	2	coarse	tabular/ subhedral anhedral
Clinopyroxene	30	20	1	coarse	equant/ anhedral
Olivine	10	4	1	medium	amoeboidal/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	105.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Medium
Modal IUGS Name (calculated): Olivine Gabbro
Texture: Type granular; Distribution N/A
Comments: Grain size variable; coarse at top, coarse-medium to fine-medium downward in lower part of interval. Gabbroic layering or "layered" gabbro (interpretation) appears to start from Section 133R-5 downward.

Continued next page

Core Image

176-735B-133R-4 (cont'd)

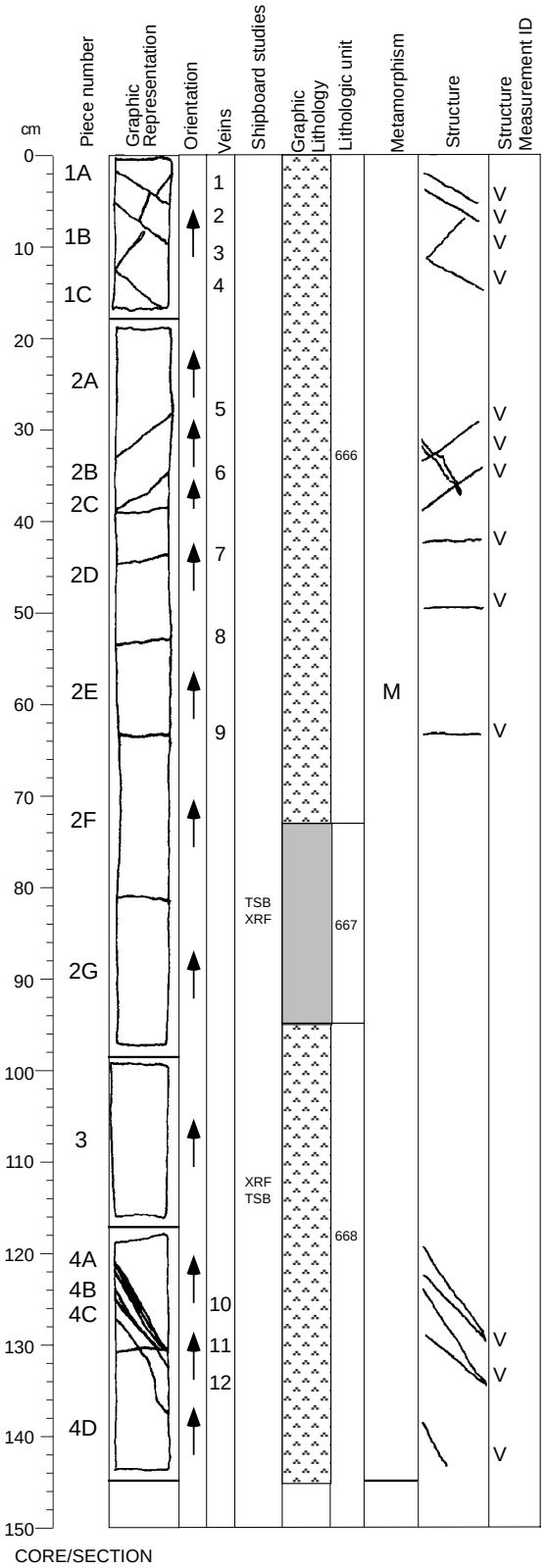
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims and near veins.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, rimming pyroxene or replacing olivine.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Dark green smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite replacing olivine near cracks.

Background Alteration:
Degree of alteration: slight (4%). 20% of the olivine is altered to amphibole, talc, and smectite. 2% of the clinopyroxene is altered to amphibole. 4% of the plagioclase is secondary.

Vein/Fracture Filling:
0.2-1 mm smectite veins in Piece 2; 0.2 mm amphibole vein in Piece 4.

Structures:
Mf>Pf; Mf>V; Mf>Pf>V
Most of this core displays a coarse-grained igneous texture, with a moderate magmatic foliation in Piece 4. This magmatic foliation is overprinted by some crystal-plastic deformation. A weak plastic foliation is also present locally in Pieces 3B and 2A. The previous fabrics are cut by a few veins.

Core Image



176-735B-133R-5

Interval 666: OLIVINE GABBRO
(see previous section)

Interval 667: CLINOPYROXENITE

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	133	5	73	2F	829.19
Lower contact:	133	5	95	2E	829.41

Thickness (m): 0.22

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	7	5	1	medium	amoeboidal/ anhedral
Clinopyroxene	85	25	3	coarse	equant/ subhedral
Olivine	9	5	1	medium	prismatic/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	101.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Clinopyroxenite
Type: granular
Distribution: N/A
Comments: Coarse-grained, more mafic interval.

Interval 668: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	133	5	95	2E	829.41
Lower contact:	134	7	138	2	842.16

Thickness (m): 12.75

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	25	3	coarse	tabular/ subhedral euhedral
Clinopyroxene	30	20	1	coarse	equant/ anhedral
Olivine	10	4	1	medium	amoeboidal/ anhedral
Opaques	0.6				amoeboidal aggregates/ disseminated
Total	100.6*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Graded
Modal IUGS Name (calculated): Olivine Gabbro
Type: granular
Distribution: uniform
Comments: Locally subophitic. Medium-grained.

Continued next page

Core Image

176-735B-133R-5 (cont'd)

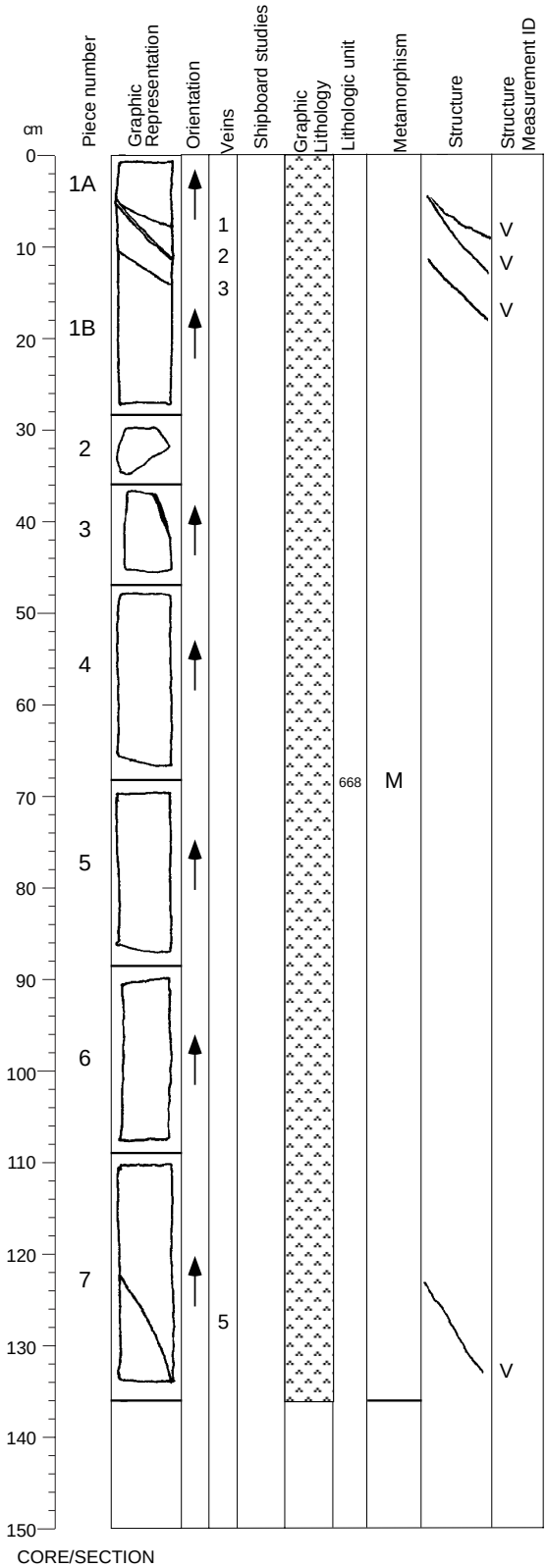
Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages and as rims.
Comments: Near felsic veins.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, near felsic veins.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Dark green smectite:
Total Percent: <5
Mode of occurrence: Dark to pale green smectites replacing olivine near a crack and veins.

Background Alteration:
Degree of alteration: moderate (12 to 15%). 40-50% of the olivine is altered to amphibole,talc, and smectite. 2-5% of the clinopyroxene is replaced by amphibole. 15% of the plagioclase is recrystallized and altered to smectite.

Vein/Fracture Filling:
0.3-3 mm smectite veins in Pieces 1, 2, and 4.

Structures:
Mf>V
The entire section displays an igneous texture, with no or weak magmatic foliation, cut by a series of veins in Pieces 1A to 2E, and 4A to 4D.

Core Image



176-735B-133R-6

Interval 668: OLIVINE GABBRO
(see previous section)

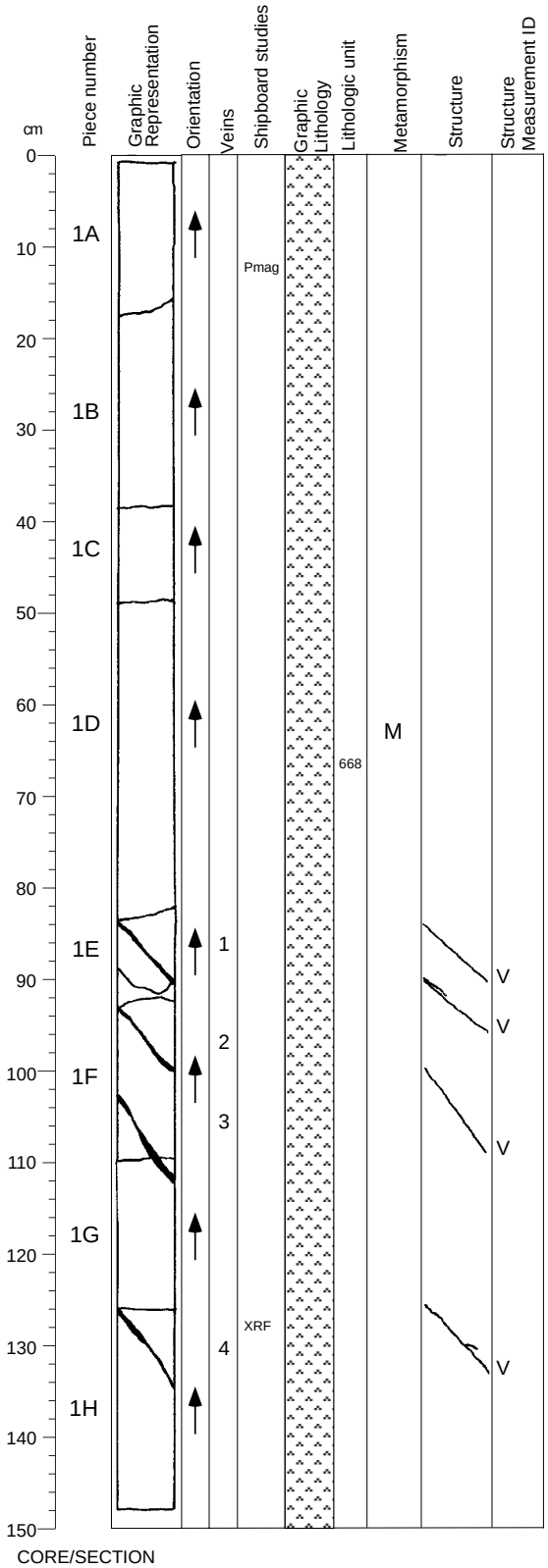
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages and as rims after olivine and pyroxene.
Secondary plagioclase:
Total Percent: <8
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Dark green smectite:
Total Percent: <2
Mode of occurrence: Dark green smectite replacing olivine, and pale green after plagioclase near smectite veins.

Background Alteration:
Degree of alteration: moderate (15%). 50% of the olivine is altered to amphibole, talc, and smectite. 3% of the clinopyroxene is replaced by amphibole. 15% of the plagioclase is secondary.

Vein/Fracture Filling:
0.2-3 mm smectite veins in Pieces1, 3, and 7.

Structures:
Mf>V
The entire section displays a coarse-grained igneous texture, with no magmatic foliation, cut by a few veins in Pieces 1A and 7.

Core Image



176-735B-133R-7

Interval 668: OLIVINE GABBRO
(see Section 176-735B-133R-5)

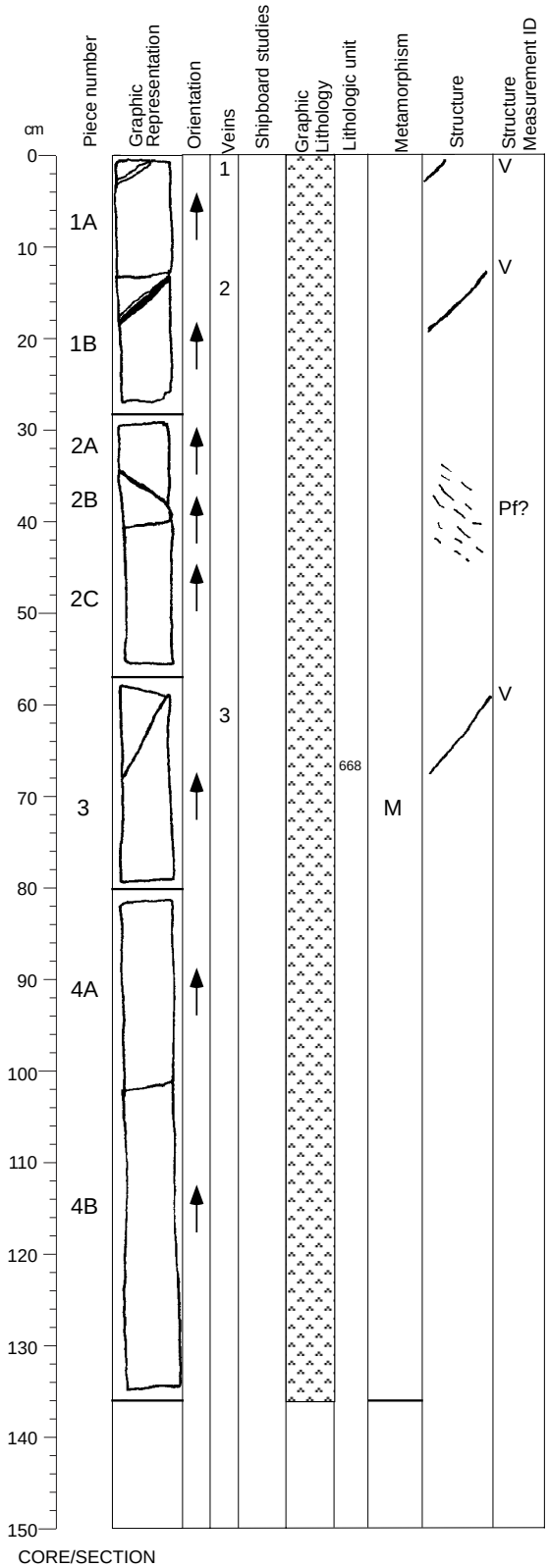
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages and as rims after olivine and pyroxene.
Secondary plagioclase:
Total Percent: <8
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Dark green smectite:
Total Percent: <3
Mode of occurrence: Some red-orange smectite in olivine, dark green smectite replacing olivine, and pale green smectite in cracks and after plagioclase

Background Alteration:
Degree of alteration: moderate (12%). 50% of the olivine is altered to amphibole and smectite, and a trace of hematite. 3% of the clinopyroxene is replaced by amphibole. 10% of the plagioclase is secondary.

Vein/Fracture Filling:
2-3 mm smectite veins in Pieces 1E to 1H.

Structures:
Mf>V
The entire section displays a coarse-grained igneous texture, with no magmatic foliation, cut by a few veins in Pieces 1E to 1H.

Core Image



176-735B-134R-1

Interval 668: OLIVINE GABBRO
(see Section 176-735B-133R-5)

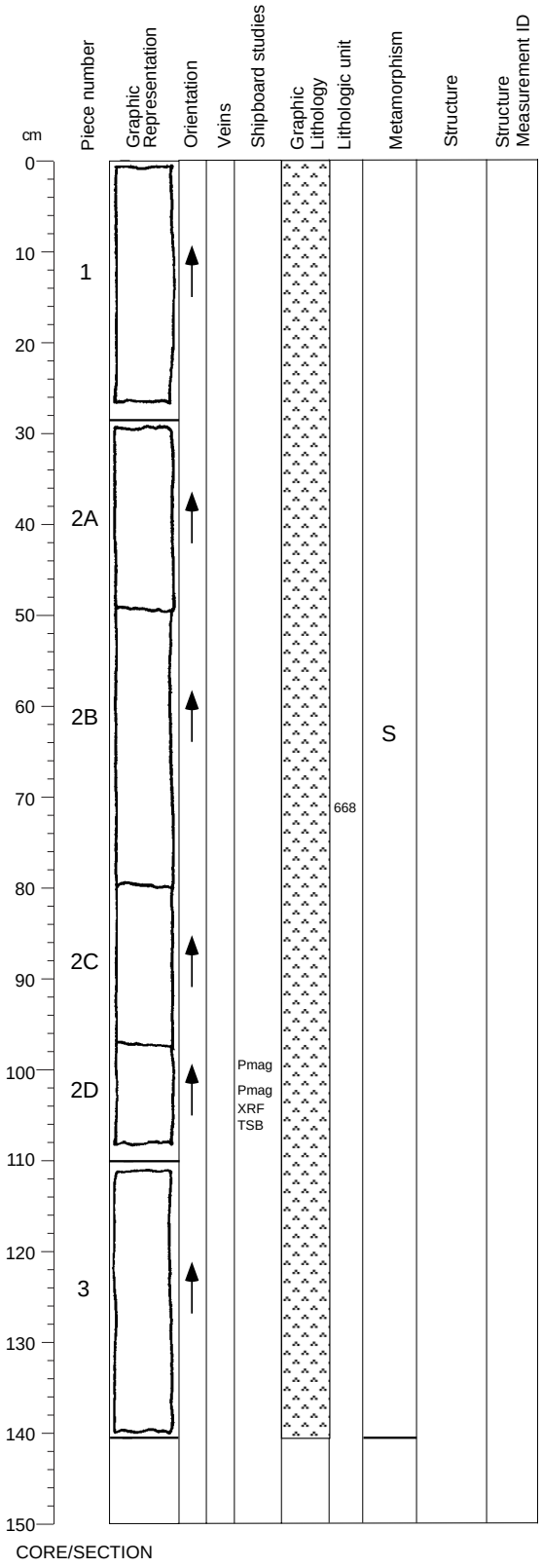
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages and as rims after olivine and pyroxene.
Comments: Near felsic veins.
Secondary plagioclase:
Total Percent: <8
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Dark green smectite:
Total Percent: <1
Mode of occurrence: Dark green in olivine and pale green in veins and after plagioclase.

Background Alteration:
Degree of alteration: moderate (15%). 50% of the olivine is altered to amphibole, talc, and smectite. 3% of the clinopyroxene is replaced by amphibole. 15% of the plagioclase is secondary.

Vein/Fracture Filling:
2 mm smectite veins in Pieces 1 and 3.

Structures:
Mf>V; Mf>Pf
This section displays a coarse-grained igneous texture with no magmatic foliation, except for a strong crystal-plastic foliation present in Pieces 2A to 2C (33 to 39 cm). The igneous texture is cut by a few veins in Pieces 1A to 1B and 3.

Core Image



176-735B-134R-2

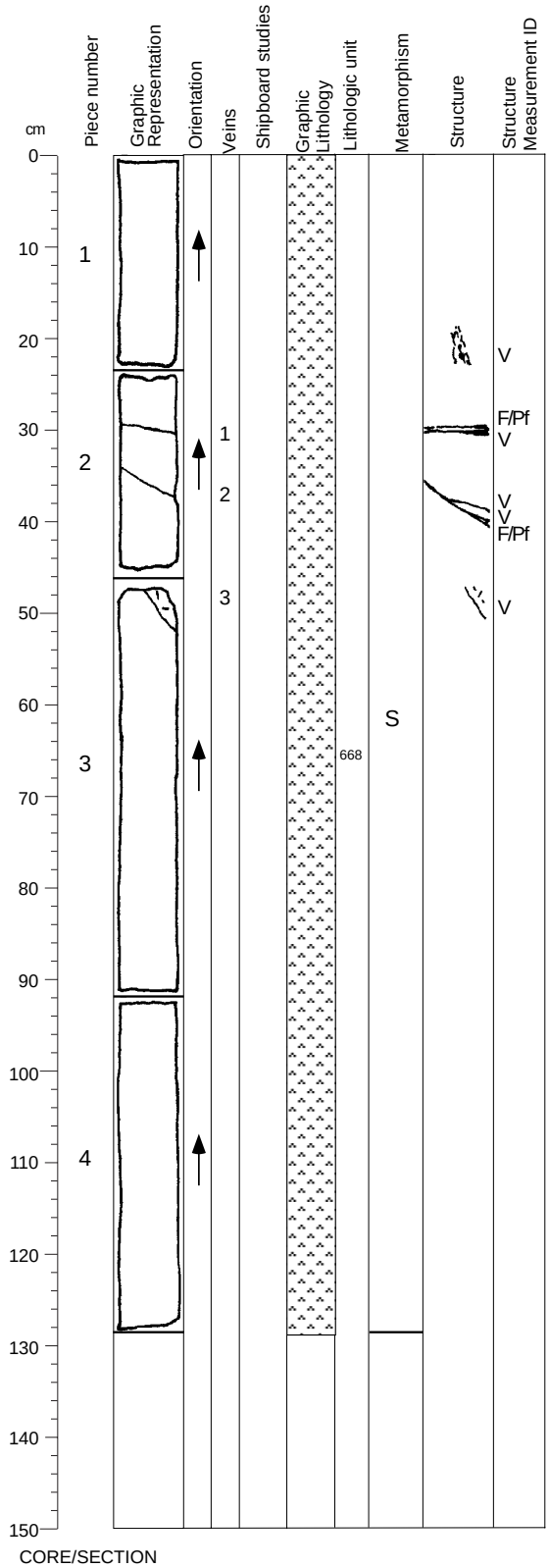
Interval 668: OLIVINE GABBRO
(see Section 176-735B-133R-5)

Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages and as rims after olivine and pyroxene.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (7%). Olivine is partly replaced by amphibole and talc (20%). 3% of the clinopyroxene is replaced by amphibole. 10% of the plagioclase is recrystallized.

Structures:
Mf
This section displays a coarse-grained igneous texture, with no magmatic foliation.

Core Image



176-735B-134R-3

Interval 668: OLIVINE GABBRO
(see Section 176-735B-133R-5)

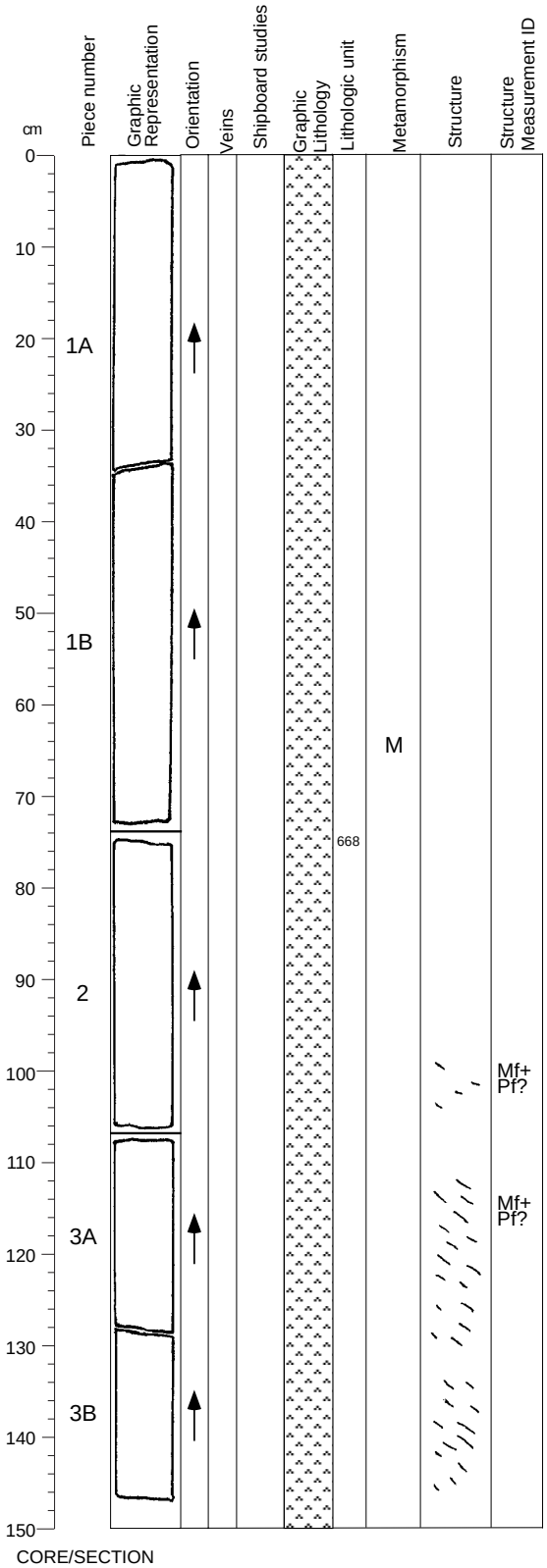
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages and as rims after olivine and pyroxene.
Comments: Particularly near felsic patches.
Secondary plagioclase:
Total Percent: <8
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, near the felsic area.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Dark green smectite:
Total Percent: <3
Mode of occurrence: Dark green after olivine, and in the felsic zone.

Background Alteration:
Degree of alteration: slight (10%). Olivine is partly replaced by amphibole and smectite(30%). 3% of the clinopyroxene is replaced by amphibole. 12% of the plagioclase is recrystallized.

Vein/Fracture Filling:
1-7 mm plagioclase + amphibole veins in Pieces 2 and 3.

Structures:
Mf>V>F/Pf
This section displays a coarse-grained igneous texture with no magmatic foliation, overprinted by a few veins in Pieces 1, 2 and 3. The veins in Piece 2 are overprinted by semi-brittle shear zones.

Core Image



176-735B-134R-4

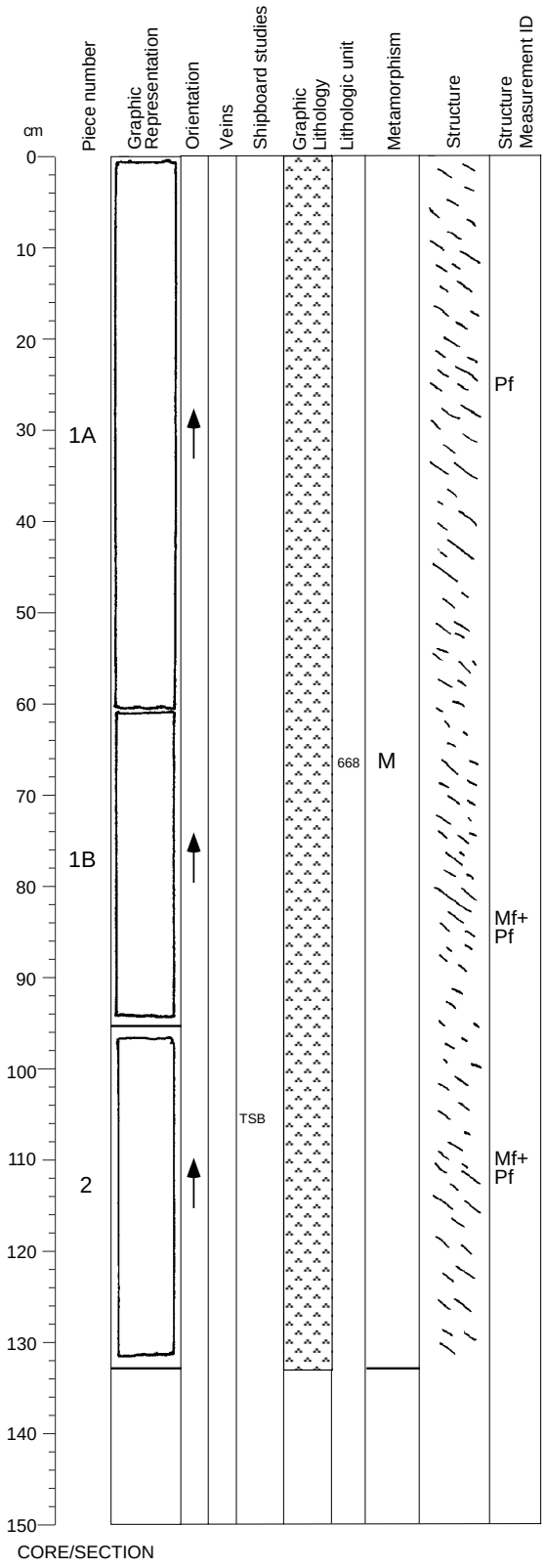
Interval 668: OLIVINE GABBRO
(see Section 176-735B-133R-5)

Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Secondary plagioclase:
Total Percent: <8
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: moderate (15%). 35% of the olivine is replaced by amphibole and smectite. Amphibole partly replaces clinopyroxene (8%). 15% of the plagioclase is recrystallized.

Structures:
Mf>Pf?
From 0 to 100 cm, the section displays a coarse-grained igneous texture with no magmatic foliation. From 100 to the bottom of the section, the grain size is smaller (1 mm to 1 cm); a weak to moderate magmatic foliation is present possibly overprinted by some weak crystal-plastic deformation.

Core Image



176-735B-134R-5

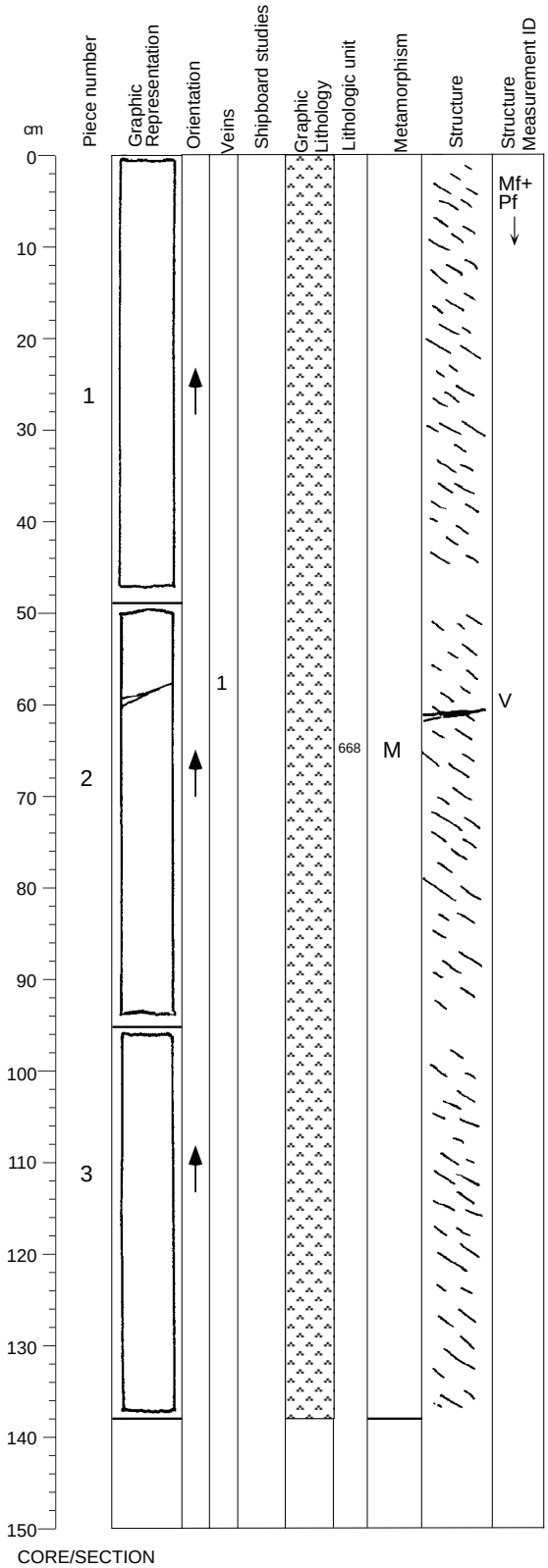
Interval 668: OLIVINE GABBRO
(see Section 176-735B-133R-5)

Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene of cleavages.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: moderate (15%). Same as previous section.

Structures:
Mf>Pf
The entire section displays a moderate magmatic foliation overprinted by a weak, parallel crystal-plastic foliation. The structure is identical to the one in the last piece of the previous section (134R-4). The pre-existing magmatic foliation is mostly visible from 48 cm to the bottom of the s ection.

Core Image



176-735B-134R-6

Interval 668: OLIVINE GABBRO
(see Section 176-735B-133R-5)

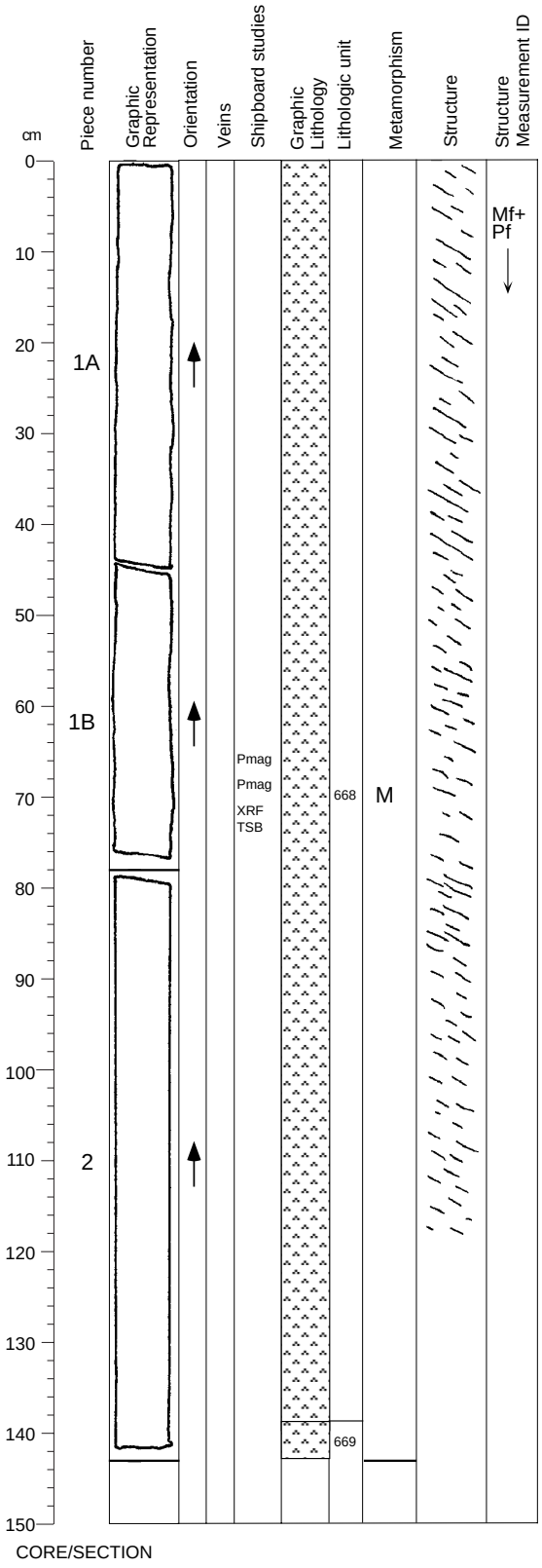
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages of pyroxene.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Dark green smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine.

Background Alteration:
Degree of alteration: moderate (15%). Same as previous section.

Vein/Fracture Filling:
2 mm plagioclase + amphibole vein in Piece 2.

Structures:
Mf>Pf
The entire section displays a moderate magmatic foliation overprinted by a weak, parallel crystal-plastic foliation. This structure is identical to, and continuous with the previous section (134R-5); it is cut by a vein in Piece 2.

Core Image



176-735B-134R-7

Interval 668: OLIVINE GABBRO
(see Section 176-735B-133R-5)
Interval 669: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	134	7	138	2	842.16
Lower contact:	135	1	47	2A-B	842.67

Thickness (m): 0.51

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	25	5	coarse	tabular/ subhedral anhedral
Clinopyroxene	25	30	2	coarse	tabular/ anhedral rounded
Olivine	15	10	2	medium	elongate/ anhedral deformed
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	105.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	uniform

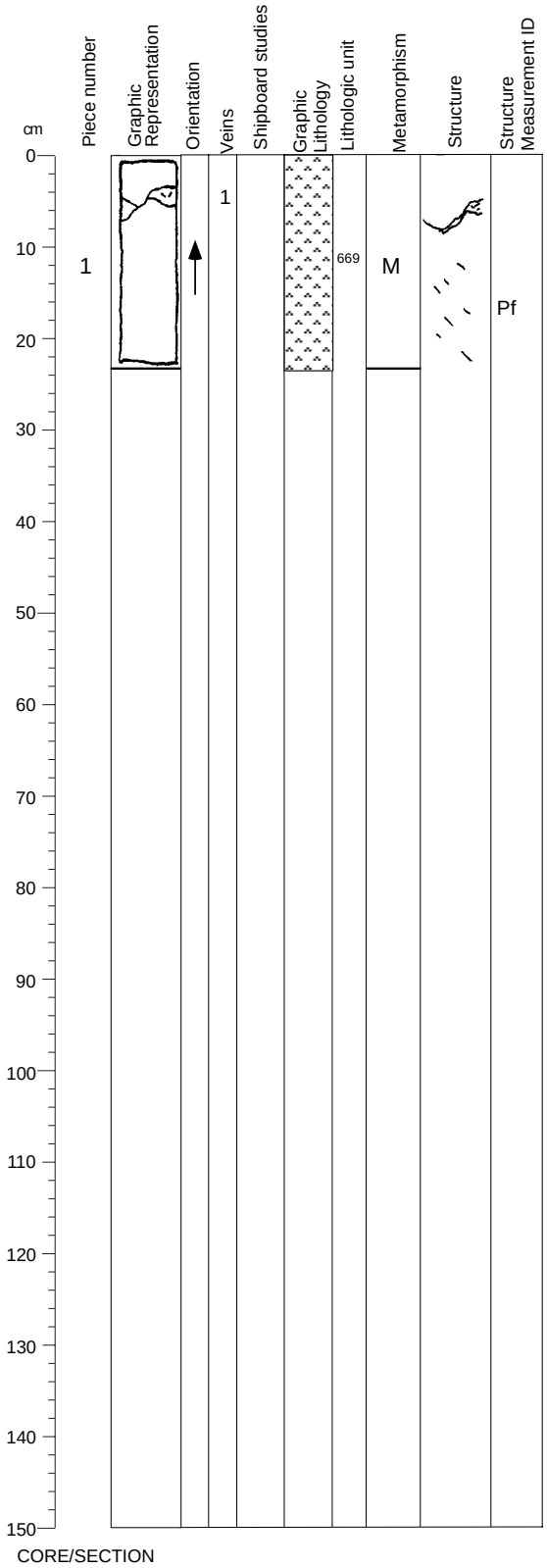
Comments: Locally pegmatitic. Foliated towards base. Clinopyroxene mode variable.

Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: moderate (15%). Same as previous section.

Structures:
Mf>Pf
Most of the section displays a moderate magmatic foliation overprinted by a weak, parallel crystal-plastic foliation. This structure is identical to, and continuous with the two previous sections (134R-5 and 134R-6). From 122 cm to the bottom of the section, the magmatic foliation is not evident. Some crystal-plastic deformation may be locally present.

Core Image



176-735B-134R-8

Interval 669: OLIVINE GABBRO
(see previous section)

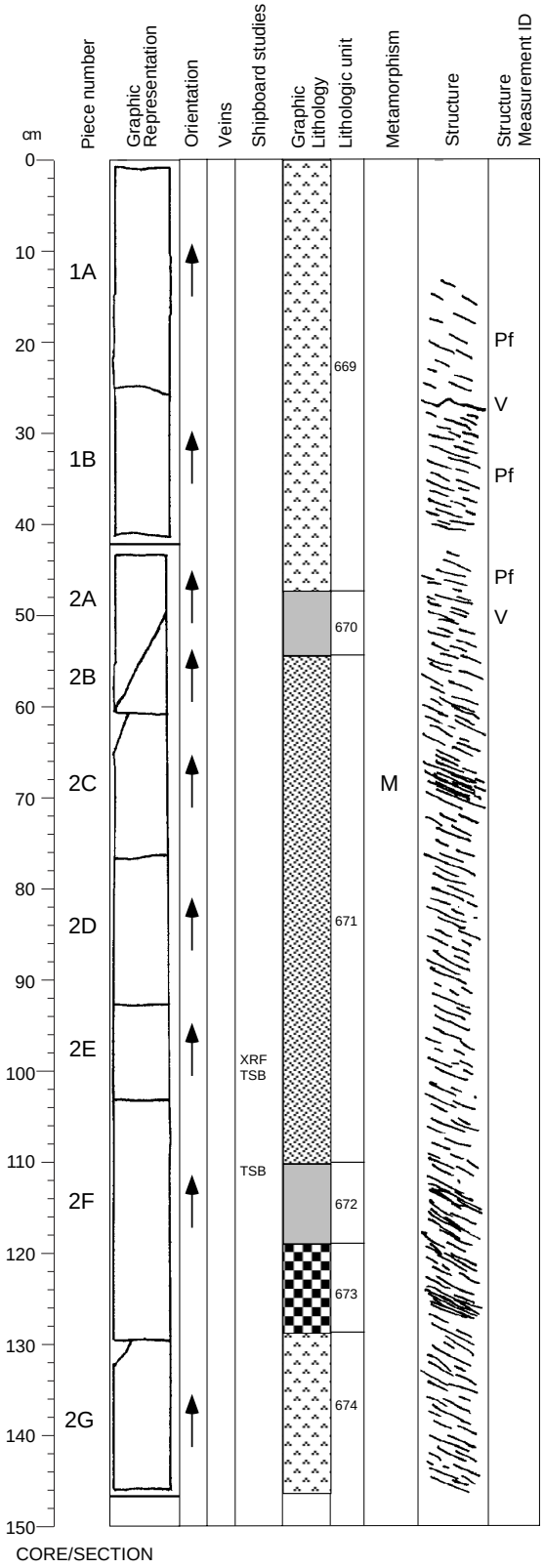
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages.
Comments: Near felsic zones.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, near felsic zones.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: moderate (15%). Same as previous section.

Vein/Fracture Filling:
3 mm compound felsic vein in Piece 8.

Structures:
Mf>V; Mf>Pf
This piece displays a coarse-grained igneous texture with no magmatic foliation, cut by a vein, and overprinted by a weak, poorly defined crystal-plastic foliation at the bottom of the piece.

Core Image



176-735B-135R-1

Interval 669: OLIVINE GABBRO
(see Section 176-735B-134R-7)
Interval 670: OXIDE CLINOPYROXENITE

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	135	1	47	2A-B	842.67
Lower contact:	135	1	54	2B	842.74

Thickness (m): 0.07

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	10	10	4	coarse	amoeboidal/ anhedral
Clinopyroxene	85	15	3	coarse	equant/ anhedral
Olivine	8	2	1	fine	equant/ anhedral
Opaques	3				interstitial lenses disseminated
Total	106*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): FeTi Oxide Clinopyroxenite
Type: granular; Distribution: uniform
Texture: granular
Comments: Oxide-rich interval.

Interval 671: DISSEMINATED OXIDE OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	135	1	54	2D	842.74
Lower contact:	135	1	110	2F	843.30

Thickness (m): 0.56

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	10	n/a	coarse	tabular/ anhedral deformed
Clinopyroxene	25	30	2	coarse	tabular / anhedral rounded
Olivine	7	4	1	medium	elongate/ anhedral deformed
Opaque	1.5				interstitial lenses/ disseminated
Total	98.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Disseminated FeTi Oxide Olivine Gabbro
Type: granular; Distribution: N/A
Texture: granular
Fabric: layering; N/A
Comments: Grain size decreases downward from coarse to coarse-medium, and to fine-medium. All foliated.

Continued next page

Core Image

176-735B-135R-1 (cont'd)

Interval 672: OXIDE CLINOPYROXENITE

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	135	1	110	2F	843.30
Lower contact:	135	1	118	2F	843.38

Thickness (m): 0.08

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	5	10	5	medium	amoeboidal/ anhedral
Clinopyroxene	87	30	5	pegmatitic	elongate/ subhedral anhedral
Olivine	8	2	1	fine	equant/ anhedral
Opaques	10				interstitial lenses/ interstitial network
Total	110*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): FeTi Oxide Clinopyroxenite

	Type	Distribution
Texture:	granular	N/A
Fabric:	layering	N/A

Comments: Oxide rich pegmatitic zone.

Interval 673: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	135	1	118	2F	843.38
Lower contact:	135	1	128	2F	843.48

Thickness (m): 0.10

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	10	N/A	medium	tabular/ anhedral deformed
Clinopyroxene	25	15	2	coarse	elongate/ anhedral
Olivine	2	2	1	fine	elongate/ anhedral deformed
Opaques	8				interstitial lenses/ interstitial network
Total	100*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: N/A
Modal IUGS Name (calculated): FeTi Oxide Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Zone of high foliation with clear deformational segregation. Thick maficbands ("pyroxenite"), and thinner felsic "veinlets". Locally brecciated.

Continued next page

Core Image

176-735B-135R-1 (cont'd)

Interval 674: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	135	1	128	2F	843.48
Lower contact:	135	2	60	2B	844.27

Thickness (m): 0.79

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	55	15	5	coarse	tabular/ subhedral anhedral
Clinopyroxene	35	35	2	coarse	tabular/ anhedral
Olivine	10	15	2	coarse	N/A anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	100.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

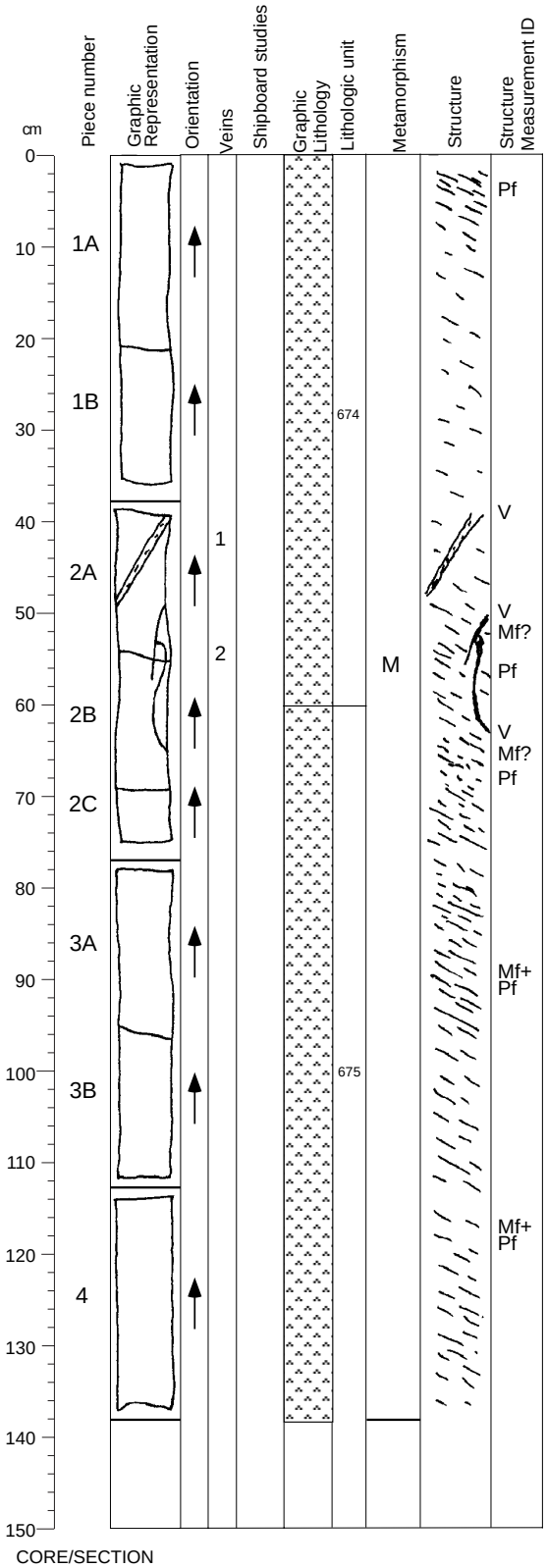
Comments: Gneissic/mylonitic at top, less deformed downward.

Alteration:
Dark green amphibole:
Total Percent: <30
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages.
Secondary plagioclase:
Total Percent: <35
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, near sheared zones in the oxide gabbros.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: <1
Mode of occurrence: Near amphiboles in foliated areas.
Smectites:
Total Percent: trace
Mode of occurrence: Dark- to pale-green smectite near foliated areas.
Sulfides:
Total Percent: trace
Mode of occurrence: Near foliated areas.

Background Alteration:
Degree of alteration: high (70%). Olivine is completely replaced by amphibole and smectite. 50% of the clinopyroxene is altered to amphibole. 90% of the plagioclase is recrystallized.

Structures:
Pf>V
From 0 to 24 cm, this section displays a weak crystal-plastic foliation cut by a vein. From 24 cm to the bottom of the section, the foliation is alternating between porphyroclastic (24-63 cm, 67.5-126 cm, 127-145.5 cm) and mylonitic (63-67.5 cm, 126-127 cm). Piece 2F is particularly representative of the composite nature of this highly deformed section; the foliation is defined by highly deformed mineral grains (ribbons of olivine; recrystallized plagioclase), thin felsic veins, oxide layers and mylonitic bands.

Core Image



176-735B-135R-2

Interval 674: OLIVINE GABBRO
(see previous section)
Interval 675: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	135	2	60	2B	844.27
Lower contact:	136	4	87	2B	851.71

Thickness (m): 7.44

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	25	3	coarse	tabular/ subhedral euhedral
Clinopyroxene	30	15	0.3	coarse	equant/ anhedral
Olivine	7	4	1	fine	amoeboidal/ anhedral
Opaques	0.6				amoeboidal aggregates/ disseminated
Total	97.6*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Graded
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Grain size variable.

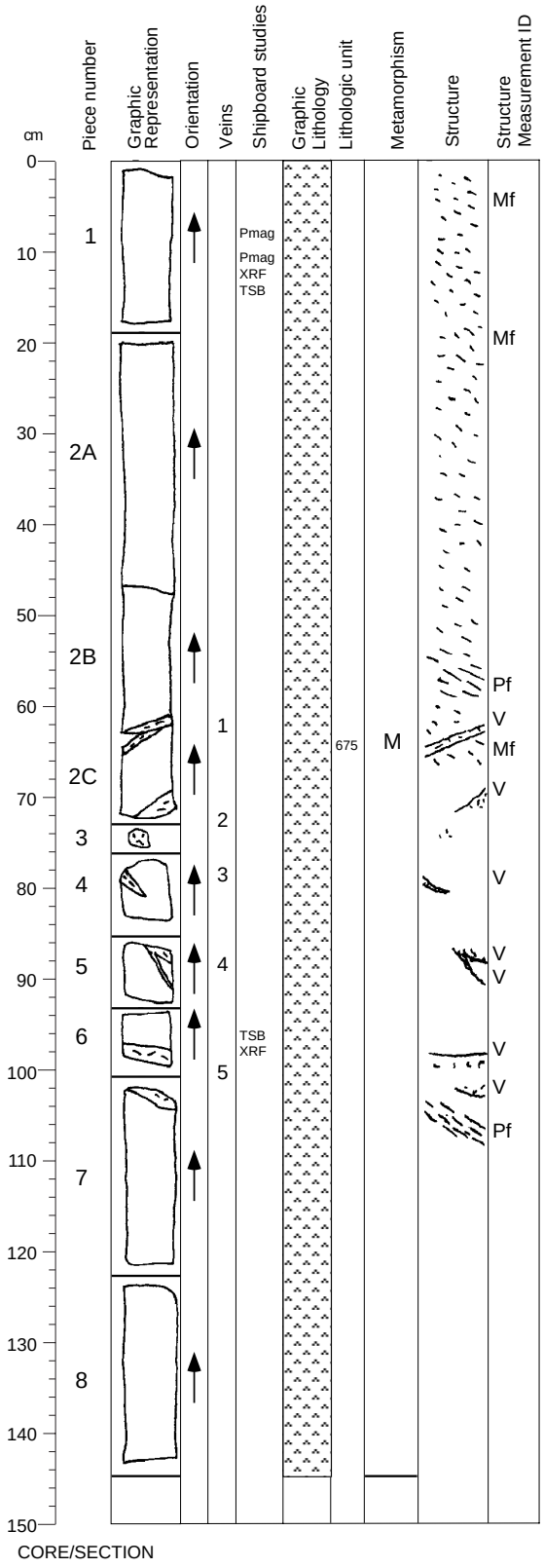
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages.
Comments: Near felsic zones.
Secondary plagioclase:
Total Percent: <10
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, near felsic zones.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Smectites:
Total Percent: trace
Mode of occurrence: Dark green smectite after olivine.

Background Alteration:
Degree of alteration: moderate (15 to 30%). Piece 1: 60% of the olivine is replaced by amphibole and talc. 15% of the clinopyroxene is altered to amphibole. 45% of the plagioclase is recrystallized. Pieces 2 to 4 are less altered (olivine 30%, clinopyroxene 8%, and plagioclase 15%).

Vein/Fracture Filling:
2-5 mm compound felsic veins in Piece 2.

Structures:
Mf>Pf>V
The entire section displays a crystal-plastic foliation; weak to moderate from 0 to 67 cm, strong from 67 to 95 cm, and weak from 95 cm to the bottom of the section. From approximately 50 cm, the plastic foliation possibly overprints a pre-existing, parallel, moderate to strong magmatic foliation. The previous fabrics are cut by veins in Pieces 2A and 2B.

Core Image



176-735B-135R-3

Interval 675: OLIVINE GABBRO
(see previous section)

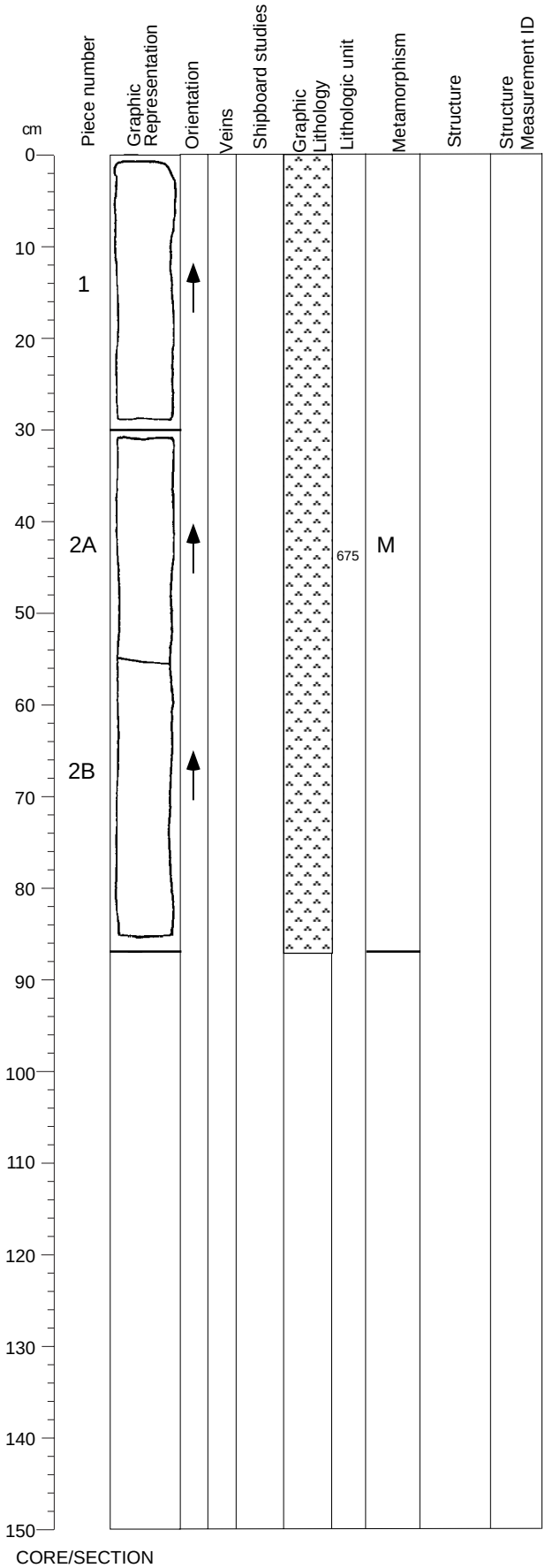
Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages.
Comments: Near felsic zones.
Secondary plagioclase:
Total Percent: <8
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, near felsic zones.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: moderate (15%). 35% of the olivine is replaced by amphibole and smectite. Amphibole partly replaces clinopyroxene (8%). 15% of the plagioclase is recrystallized.

Vein/Fracture Filling:
2-15 mm plagioclase+amphibole veins in Pieces 2 and 4 to 7.

Structures:
Mf>Pf; Mf>V
The entire section displays a coarse-grained igneous texture with a moderate magmatic foliation from 0 to 68 cm. The ignous texture is overprinted in Pieces 2B and 7 by two narrow (a few cm thick) zones of strong crystal-plastic foliation. The previous fabrics are cut by a series of veins.

Core Image



176-735B-135R-4

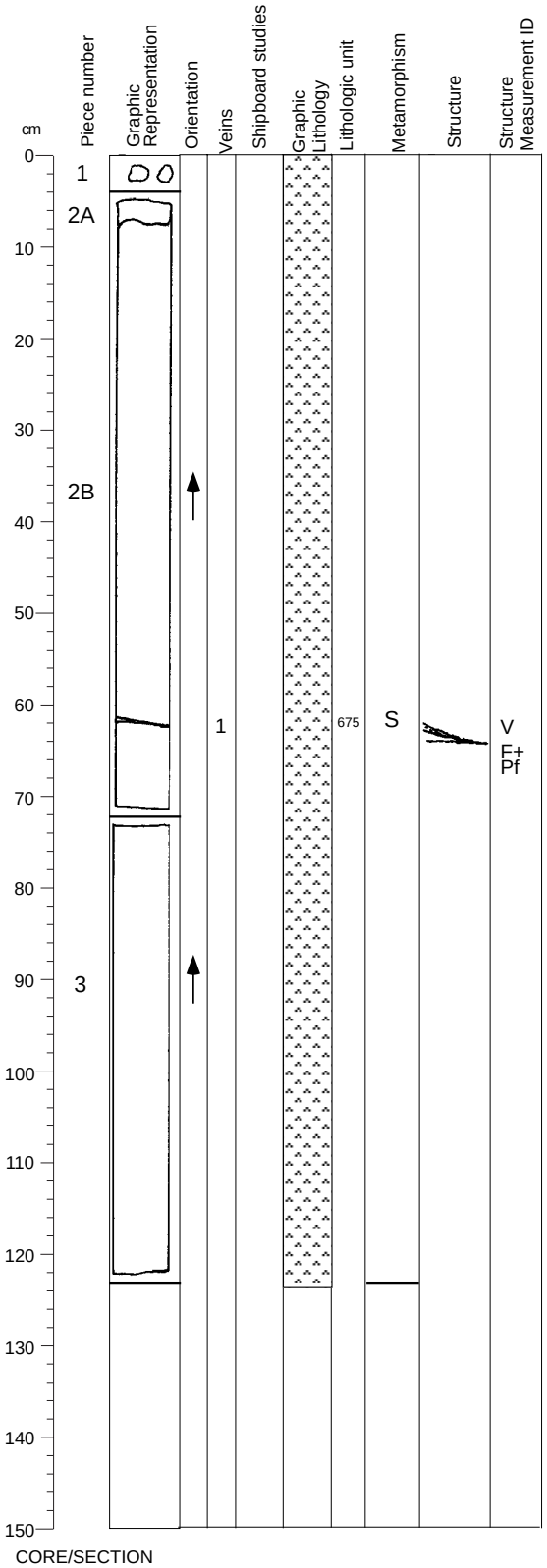
Interval 675: OLIVINE GABBRO
(see Section 176-735B-135R-2)

Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Smectites:
Total Percent: trace
Mode of occurrence: Green-blue smectite in patches.
Sulfides:
Total Percent: trace
Mode of occurrence: Associated with green-blue smectite in patches.

Background Alteration:
Degree of alteration: moderate (15%). Same as previous section.

Structures:
Mf
The entire section displays a coarse-grained igneous texture, with no or a weak magmatic foliation.

Core Image



176-735B-136R-1

Interval 675: OLIVINE GABBRO
(see Section 176-735B-135R-2)

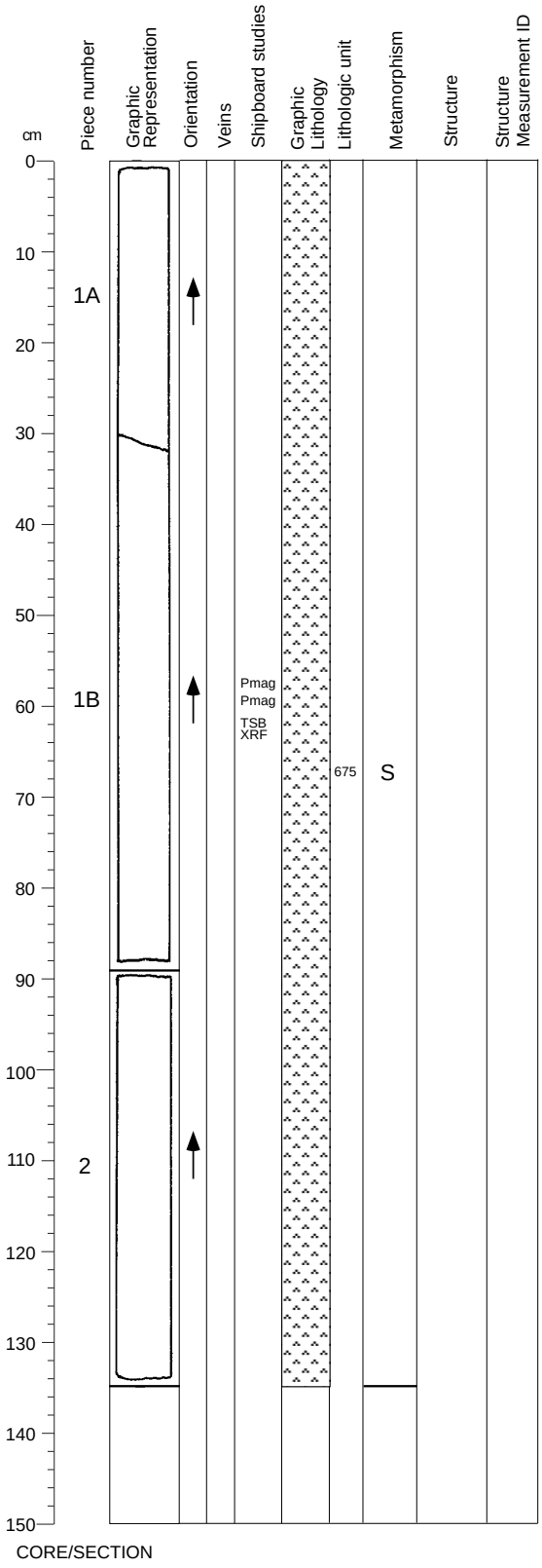
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <4
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: In the rims of olivine and pyroxene.

Background Alteration:
Degree of alteration: slight (10%). 30% of the olivine is altered to amphibole. 4% of the clinopyroxene is replaced by amphibole. 8% of the plagioclase is secondary.

Vein/Fracture Filling:
1 mm plagioclase+amphibole vein in Piece 2B.

Structures:
Mf>V>F/Pf
The entire section displays a coarse-grained igneous texture, with no magmatic foliation, cut at 62 cm by a vein, which is bounded by a semi-brittle fault.

Core Image



176-735B-136R-2

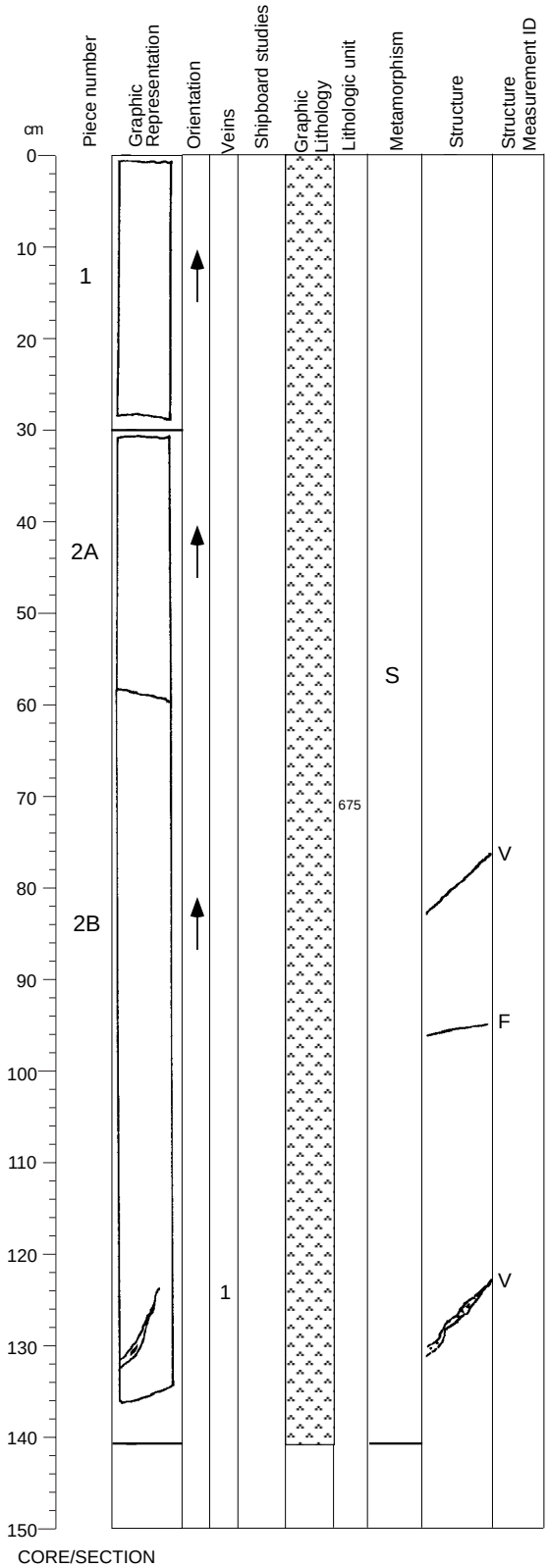
Interval 675: OLIVINE GABBRO
(see Section 176-735B-135R-2)

Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <4
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (10%). Same as previous section.

Structures:
Mf
The entire section displays a coarse-grained igneous texture, with no magmatic foliation.

Core Image



176-735B-136R-3

Interval 675: OLIVINE GABBRO
(see Section 176-735B-135R-2)

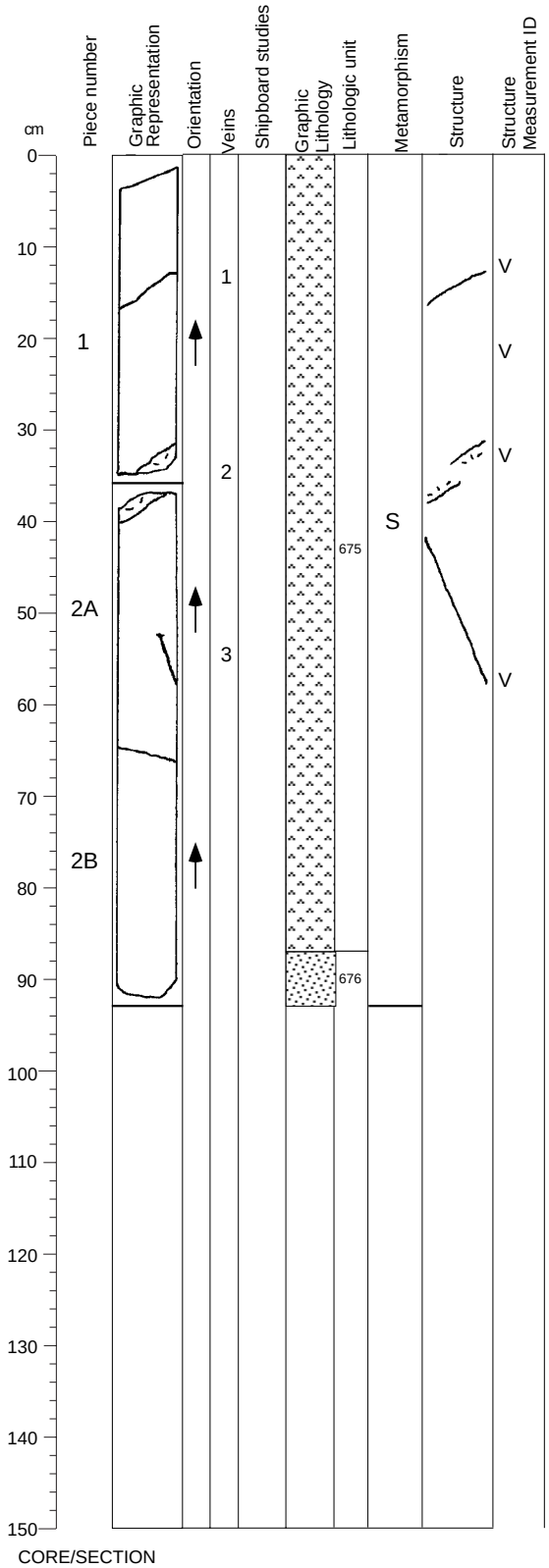
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic veins.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant near felsic veins.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (10%). Same as previous section.

Vein/Fracture Filling:
2 mm plagioclase + amphibole vein in Piece 2B.

Structures:
Mf>V; Mf>F
The entire section displays a coarse-grained igneous texture, with no magmatic foliation, cut by two veins and a fault in Piece 2B.

Core Image



176-735B-136R-4

Interval 675: OLIVINE GABBRO
(see Section 176-735B-135R-2)

Interval 676: OXIDE DIORITE

			Depth in		Depth
Interval Location:	Core	Section	Section	Piece	mbsf
Upper contact:	136	4	87	2B	851.71
Lower contact:	137	1	4	11	851.84

Thickness (m): 0.13

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	20	5	coarse	tabular/ subhedral euhedral
Clinopyroxene	5	5	1	medium	equant/ subhedral
Opaques	8				angular aggregates/ euhedral
Total	73*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Medium
Modal IUGS Name (calculated): Not Calculated

Comments: Felsic vein with biotite, amphibole, quartz, and probably alkali feldspar. Oxide 1% at 1-2 cm in 137R-1; 10% at 86-92 cm in 136R-4 and 2-4 cm in 137R-1.

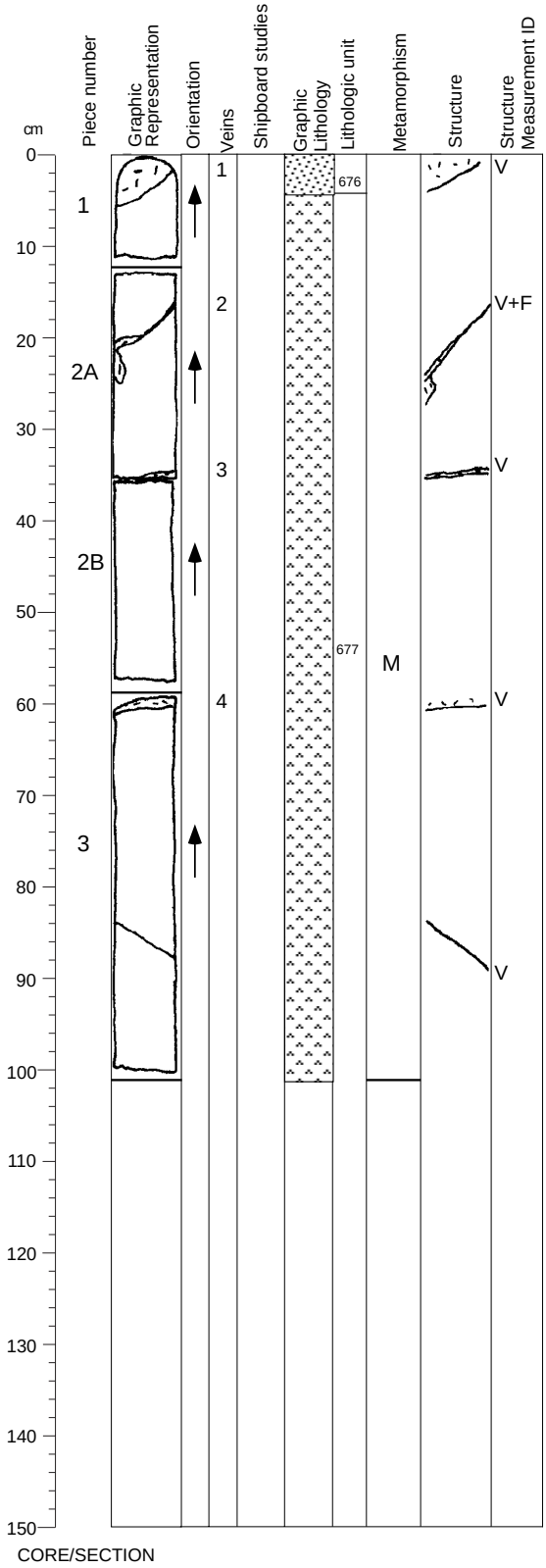
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic veins.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant near felsic veins.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Rimming olivine and pyroxene.
Smectite:
Total Percent: trace
Mode of occurrence: Dark green smectite near cracks.

Background Alteration:
Degree of alteration: slight (10%). Same as previous section.

Vein/Fracture Filling:
6 mm plagioclase+amphibole veins in Pieces 1 to 2.

Structures:
Mf>V
The entire section displays a coarse-grained igneous texture, with no magmatic foliation, cut by a few veins.

Core Image



176-735B-137R-1

Interval 676: OXIDE DIORITE
(see previous section)
Interval 677: OLIVINE GABBRO

			Depth in		Depth
Interval Location:	Core	Section	Section	Piece	mbsf
Upper contact:	137	1	4	11	851.84
Lower contact:	137	2	68	2	853.49

Thickness (m): 1.65

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	55	20	3	coarse	tabular/ subhedral euhedral
Clinopyroxene	35	15	1	coarse	equant/ anhedral
Olivine	6	4	1	medium	equant/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	96.5*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Graded
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Grain size variable, less pronounced than in Intervals 675 and 668. Olivine intergrowth with clinopyroxene and oxide at 30 cm in 137R-2. Oxide 3% at 22-32 cm in 137R-1.

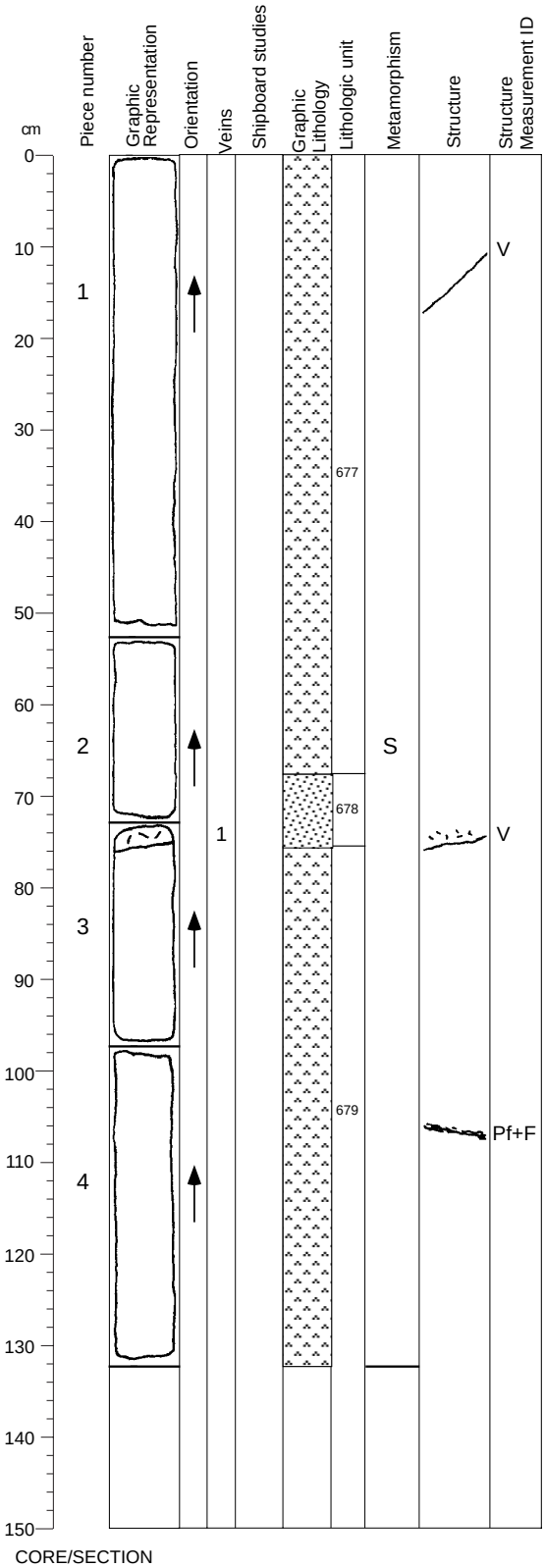
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic veins.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Comments: More abundant near felsic veins.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant near felsic veins.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: In the rims of olivine and pyroxene and near veins.

Background Alteration:
Degree of alteration: moderate (12%). 40% of the olivine is altered to amphibole. 5% of the clinopyroxene is replaced by amphibole. 10% of the plagioclase is secondary.

Vein/Fracture Filling:
15 mm compound felsic vein (diorite) in Piece 1; 0.2-3 mm plagioclase+ amphibole veins in Pieces 2, 3, and 4; 0.2 mm amphibole vein in Piece 2.

Structures:
Mf>V>F
The entire section displays a coarse-grained igneous texture, with no or a weak magmatic foliation, cut by a few veins. The vein in Piece 2A tapers upward into a semi-brittle fault.

Core Image



176-735B-137R-2

Interval 677: OLIVINE GABBRO
(see previous section)

Interval 678: OXIDE DIORITE

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	137	2	68	2	853.49
Lower contact:	137	2	76	3	853.57

Thickness (m): 0.08

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	55	20	5	coarse	tabular/ subhedral
Opaques	3				angular aggregates/ euhedral
Total	58*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Medium
Modal IUGS Name (calculated): Not Calculated
Comments: Felsic vein with plagioclase, amphibole, biotite and oxide present. Oxide 1% at 72-74 cm; 3% at 74-76 cm, and 6% at 69-70 cm in 137R-2.

Interval 679: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	137	2	76	3	853.57
Lower contact:	137	6	104	5A	859.36

Thickness (m): 5.79w

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	55	15	5	coarse	tabular/ subhedral euhedral
Clinopyroxene	30	20	2	coarse	equant/ anhedral
Olivine	8	5	1	fine	amoeboidal/ anhedral
Opaques	0.6				amoeboidal aggregates/ concordant seams
Total	93.6*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	uniform

Comments: Subtle grain size variation (gradational) interpreted as being consistent with the "layering" of the "layered gabbro". Finer at 45-50 cm in 137R-5, and coarser at 109-113 cm in 137R-3. Diffusive/patchy felsic veinlets in places surrounding rounded clinopyroxene fragments. Oxide in 137R-3: 6% at 67-73 cm, 2% at 81-82 cm and 110-115 cm, 1% at 133-135 cm; in 137R-4: 1% at 109-113 cm and 138-139 cm; in 137R-5: 1% at 11-14 cm, 92-95 cm, and 117-119 cm, 4% at 33-38 cm and 87-92 cm; in 137R-6:1% at 83-85 cm, 2% at 60-74 cm, 3% at 50-56 cm and 100-104 cm. Sulfide present locally.

Continued next page

Core Image

176-735B-137R-2 (cont'd)

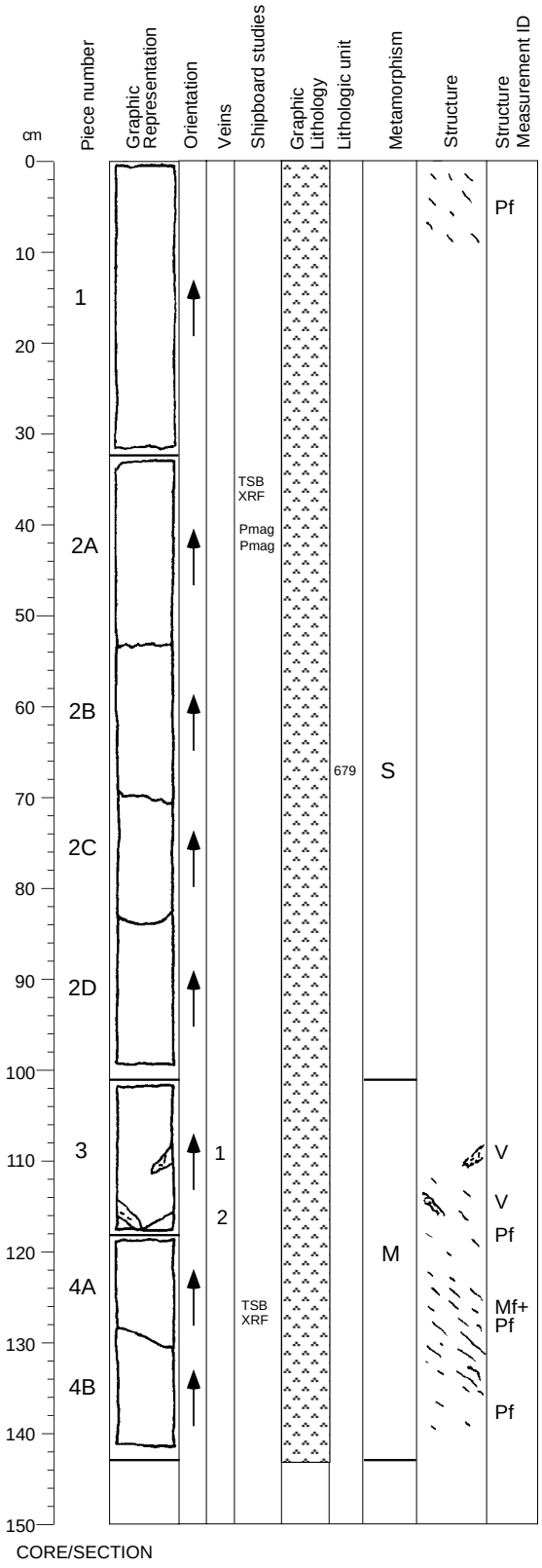
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic vein.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant near felsic vein.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: In the rims of olivine and pyroxene and near veins.

Background Alteration:
Degree of alteration: slight (10%). 30% of the olivine is altered to amphibole. 4% of the clinopyroxene is replaced by amphibole. 8% of the plagioclase is secondary.

Vein/Fracture Filling:
12 mm compound felsic vein (diorite) in Piece 3.

Structures:
Mf>V; Mf>Pf/F
The entire section displays a coarse-grained igneous texture, with no or a weak magmatic foliation, cut by two veins in Pieces 1 and 2, and a thin semi-brittle shear zone in Piece 4 (at 109 cm).

Core Image



176-735B-137R-3

Interval 679: OLIVINE GABBRO
(see previous section)

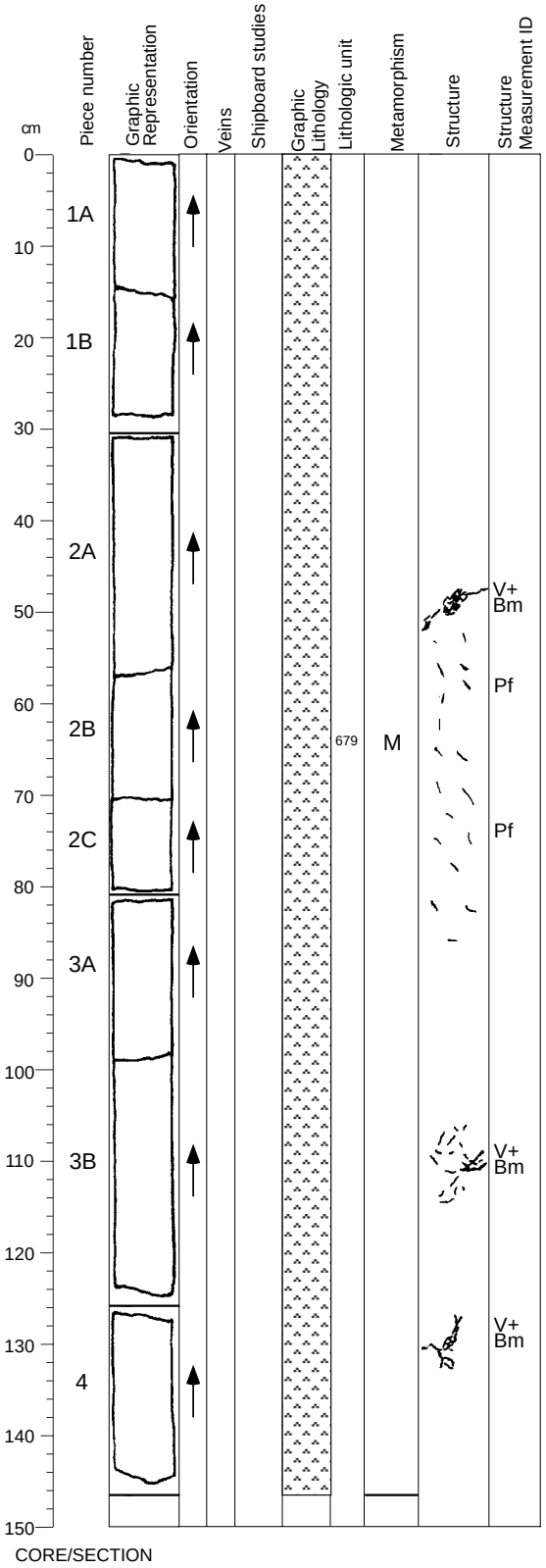
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic veins.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Comments: More abundant near felsic veins.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: More abundant near felsic veins and deformed areas.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Rimming olivine and pyroxene, and near veins.

Background Alteration:
Degree of alteration: slight to moderate (10 to 20%). Pieces 1 to 2: 30% of the olivine is altered to amphibole. 4% of the clinopyroxene is replaced by amphibole. 8% of the plagioclase is secondary. Pieces 3 to 4: alteration is increased along felsic veins in Piece 3 and due to deformation in Piece 4.

Vein/Fracture Filling:
4-8 mm plagioclase+amphibole veins in Pieces 2 and 3.

Structures:
Mf>Pf; Mf>V
Most of the section displays a coarse-grained igneous texture, with no or a weak magmatic foliation, except for the top of Piece 1 (0 to 12 cm) which has a weak crystal-plastic foliation, and for the bottom of the section (110 to 141 cm) which has a weak to locally strong crystal-plastic foliation. Between 117 and 137, the plastic foliation probably overprints a moderate to strong magmatic foliation. Two veins are present in Piece 3; their timing relative to the plastic foliation is unclear.

Core Image



176-735B-137R-4

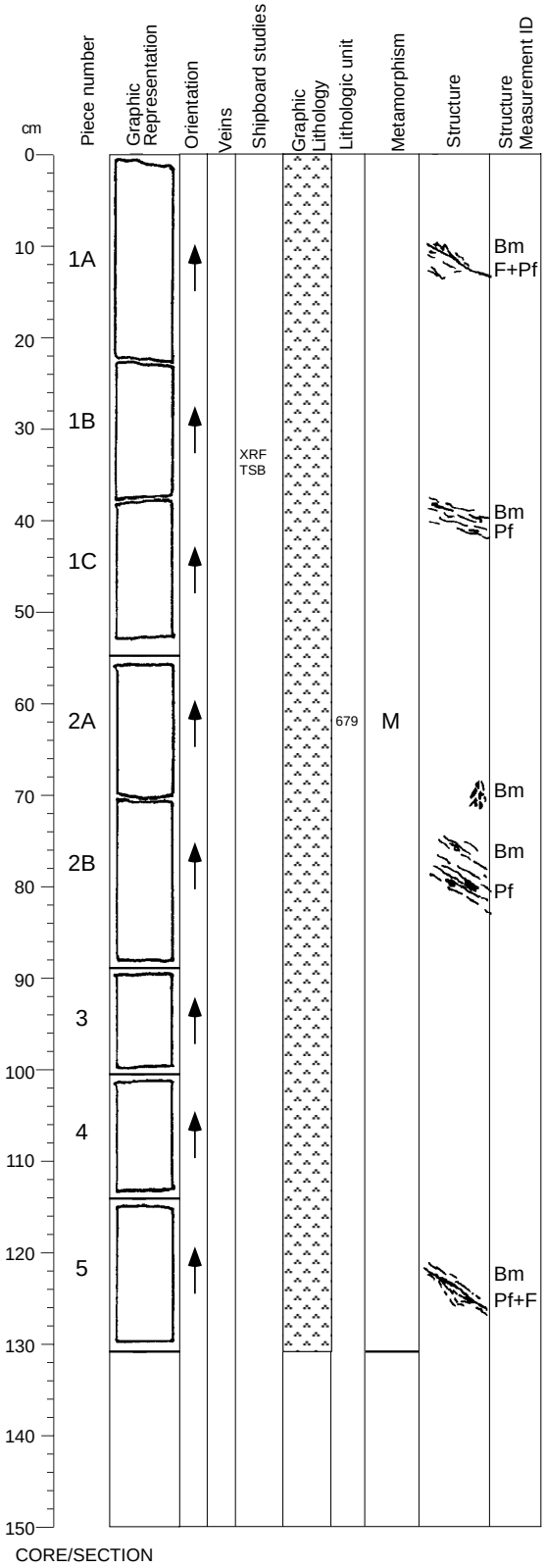
Interval 679: OLIVINE GABBRO
(see Section 176-735B-137R-2)

Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Rimming olivine and pyroxene, and near veins.

Background Alteration:
Degree of alteration: moderate (12%). 40% of the olivine is altered to amphibole. 5% of the clinopyroxene is replaced by amphibole. 10% of the plagioclase is secondary.

Structures:
Mf>V=Bm; Mf>Pf
Most of the section displays a coarse-grained igneous texture, with no magmatic foliation, overprinted in Pieces 2A, 3B and 4 by veins associated with incipient brecciation. A weak, variably oriented crystal-plastic foliation is present from 53 to 90 cm.

Core Image



176-735B-137R-5

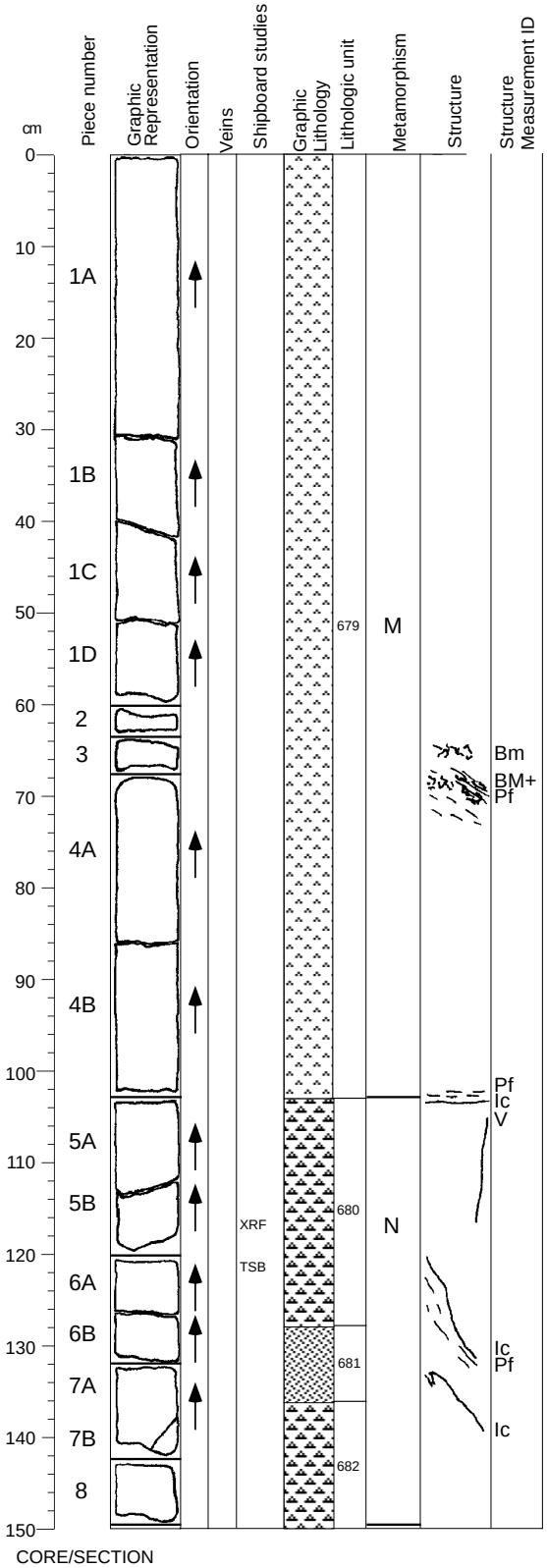
Interval 679: OLIVINE GABBRO
(see Section 176-735B-137R-2)

Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Comments: More abundant near deformed areas.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: More abundant near deformed areas.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Rimming olivine and pyroxene.
Comments: More abundant near deformed areas, associated with green amphibole.

Background Alteration:
Degree of alteration: moderate (12 to 40%). Pieces 1 to 4: 40% of the olivine is altered to amphibole. 5% of the clinopyroxene is replaced by amphibole. 10% of the plagioclase is altered. Piece 5 is deformed and more intensively altered (olivine 80%, clinopyroxene 30%, plagioclase 30%).

Structures:
Mf>Bm>Pf/F
Most of the section displays a coarse-grained igneous texture, with no magmatic foliation, overprinted by five, regularly spaced narrow zones of magmatic breccias, rich in oxide. Four of these zones are clearly overprinted by a strong to porphyroclastic crystal-plastic deformation (1 to 5 cm thick shear zones). The plastic deformation may have occurred before the brecciation and the crystallization of oxides, although this cannot be determined from macroscopic observation alone.

Core Image



176-735B-137R-6

Interval 679: OLIVINE GABBRO
(see Section 176-735B-137R-2)
Interval 680: LEUCOCRATIC TROCTOLITIC MICROGABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	137	6	104	5A	859.36
Lower contact:	137	6	128	6B	859.60

Thickness (m): 0.24

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	75	0.5	n/a	fine	tabular/ anhedral subhedral
Clinopyroxene	10	0.5	n/a	fine	equant/ anhedral
Olivine	20	1	1	fine	elongate/ anhedral subhedral
Opaques aggregates/	0.3				amoeboidal disseminated
Total	105.3*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Fine
Modal IUGS Name (calculated): Troctolitic Gabbro
Type Distribution
Texture: equigranular uniform
Comments: Very fine-grained (<< 0.5 mm) microgabbro or diabase (interpreted by some as troctolite). In contact with, and intruded into, oxide-rich (sulfide-bearing) gabbro. Upper contact has a thinner (3 mm) layer of oxide.

Interval 681: OXIDE OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	137	6	128	6B	859.60
Lower contact:	137	6	136	2A	859.68

Thickness (m): 0.08

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	50	8	3	medium	tabular/ subhedral euhedral
Clinopyroxene	30	30	2	coarse	equant/ anhedral subhedral
Olivine	7	2	1	medium	amoeboidal/ anhedral
Opaques	7				interstitial lenses/ concordant seams
Total	94*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Medium
Modal IUGS Name (calculated): FeTi Oxide Olivine Gabbro
Comments: Medium-grained oxide-rich gabbro. Olivine intergrowth with clinopyroxene. Oxide 4% at 125-133 cm, 10% at 123-125 cm, and 15% in 133-135 in 136R-6.

Continued next page

Core Image

176-735B-137R-6 (cont'd)

Interval 682: LEUCOCRATIC TROCTOLITIC MICROGABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	137	6	136	2A	859.68
Lower contact:	137	7	3	1	859.85

Thickness (m): 0.17

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	75	0.5	N/A	fine	tabular/ anhedral subhedral
Clinopyroxene	10	0.5	N/A	fine	equant/ anhedral
Olivine	20	1	1	fine	elongate/ anhedral subhedral
Opaques	0.3				amoeboidal aggregates/ disseminated
Total	105.3*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Fine
Modal IUGS Name (calculated): Troctolitic Gabbro

	Type	Distribution
Texture:	equigranular	uniform

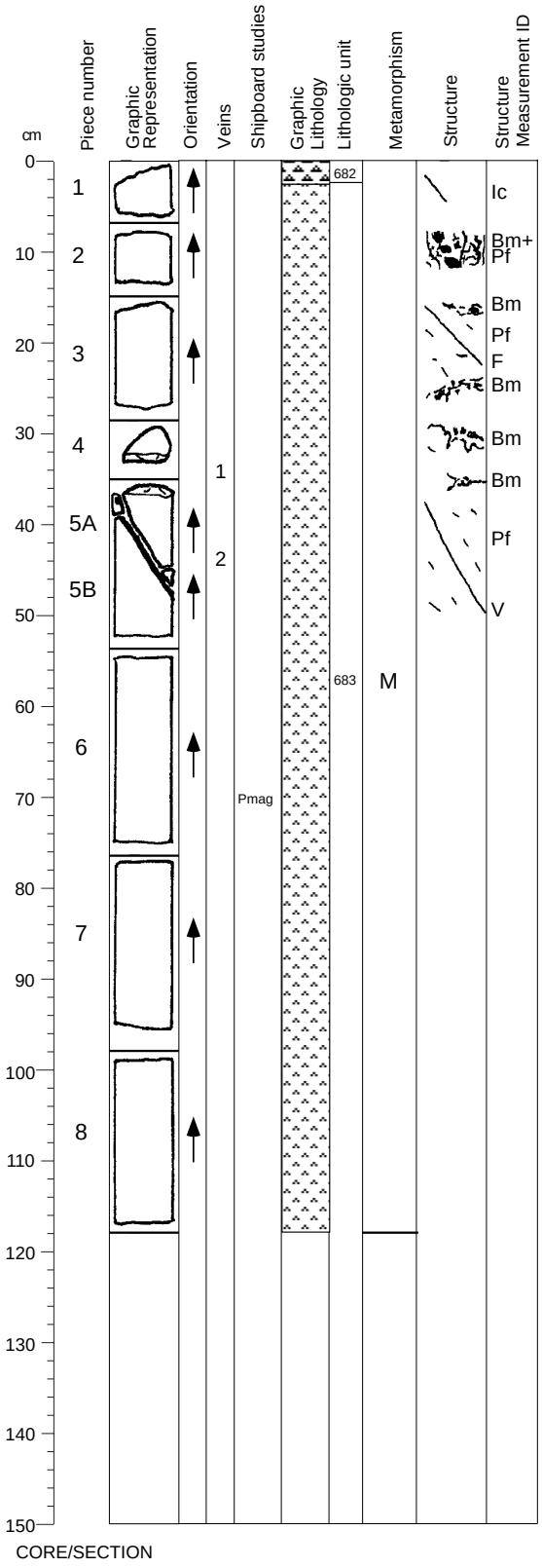
Comments: Similar to Interval 680. Apparently Interval 681 is an "island" of coarse-grained oxide (sulfide) rich lithology, which may have been a zone of weakness for the later intrusion.

Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Comments: More abundant near deformed areas.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: More abundant in deformed areas.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Rimming olivine and pyroxene, and near deformed areas.

Background Alteration:
Degree of alteration: negligible to moderate (2 to 12%). Pieces 1 to 4B: 40% of the olivine is altered to amphibole and talc. 5% of the clinopyroxene is replaced by amphibole. 12% of the plagioclase is secondary. Piece 4B: very fine grained and extremely fresh material (alteration <2%). Associated coarse-grained gabbro is also fresh.

Structures:
Mf>Bm>Pf; Mf>Ic=?Pf
Most of the section displays a coarse-grained igneous texture, with no magmatic foliation. In Pieces 3 and 4A, the igneous texture is overprinted by incipient brecciation and associated local crystal-plastic foliation, similar to the previous section (137R-5). From Piece 5A, the bottom of the section displays two zones of very fine-grained material, probably intrusive into the coarse-grained oxide gabbro. The latter is locally plastically deformed along the upper and lower sharp contacts with the first fine-grained zone. The fine grained gabbro is cut by a vein in Pieces 5A and 5B.

Core Image



176-735B-137R-7

Interval 682: LEUCOCRATIC TROCTOLITIC MICROGABBRO (see previous section)
Interval 683: OLIVINE GABBRO

			Depth in		Depth
Interval Location:	Core	Section	Section	Piece	mbsf
Upper contact:	137	7	3	1	859.85
Lower contact:	139	1	49	3	871.59

Thickness (m): 11.74

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	25	5	coarse	tabular/ euhedral subhedral
Clinopyroxene	35	35	3	coarse	equant/ anhedral oikocrystic
Olivine	7	6	1	medium	amoeboidal/ anhedral
Opaques	0.6				angular aggregates/ disseminated
Total	102.6*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Graded
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Locally subophitic; locally pegmatitic at 87 cm in 137R-7, 48 cm in 137R-8, 72-80 cm in 138R-3, 17.5 cm in 138R-5, and 96 cm in 138R-5. Large felsic/dioritic vein (vertical) at 23-77 cm in 138R-4 with irregular but sharp contacts. Oxide in 137R-7: 2% at 18-20 cm, 3% 11-14 cm; in 138R-4: 5% at 130-134 cm; in 138R-5: 4% at 132-133 cm; in 138R-6: 3% at 42-44 cm and 118-122 cm; 0.5% elsewhere.

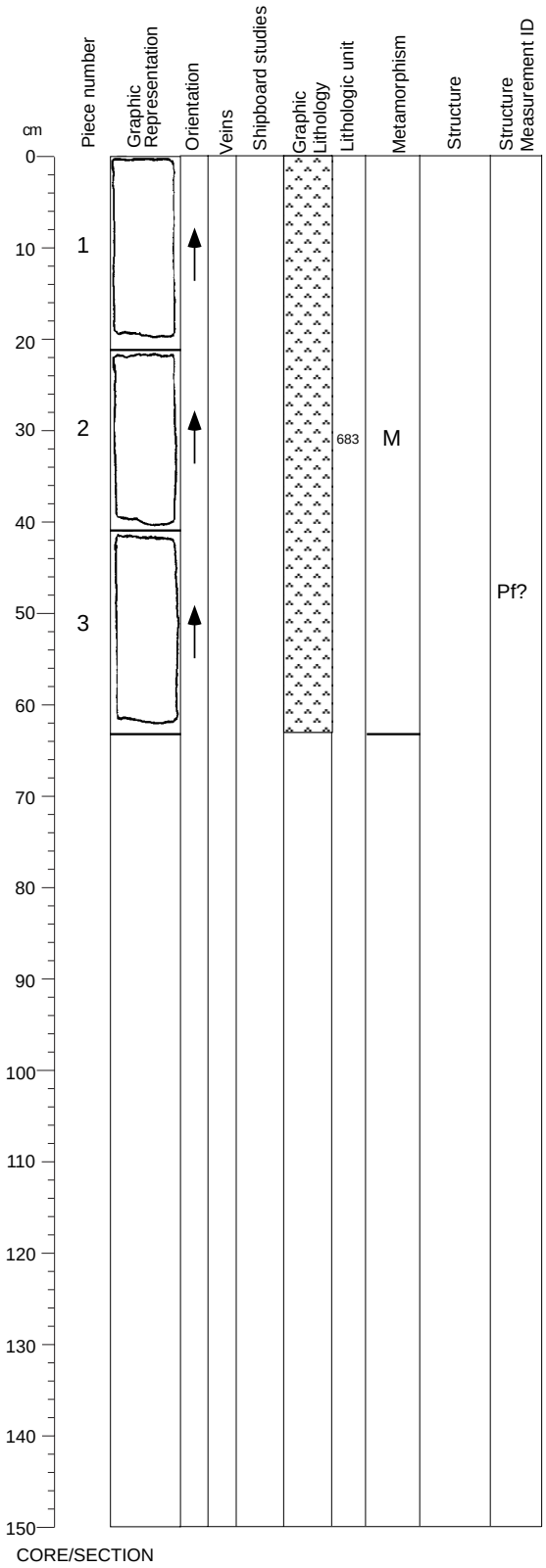
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near deformed and felsic areas.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Secondary plagioclase:
Total Percent: <8
Mode of occurrence: Replacing primary plagioclase.
Comments: More abundant in deformed areas.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Rimming olivine and pyroxene.

Background Alteration:
Degree of alteration: moderate (15%). 60% of the olivine is altered to amphibole. 8% of the clinopyroxene is replaced by amphibole. 20% of the plagioclase is altered.

Vein/Fracture Filling:
5 mm plagioclase+amphibole vein in Pieces 4 and 5; 0.3 mm smectite vein in Piece 5.

Structures:
Mf>Bm>Pf; Mf>Pf>F; Mf>Pf>V
Piece 1 is the same fine-grained material as in the bottom of the previous section (137R-6). The rest of the section displays a coarse-grained igneous texture, with no magmatic foliation, overprinted in Pieces 2 to 5B by incipient brecciation, a vein and a fault. The breccia in Piece 2 is overprinted by a strong vertical crystal-plastic foliation. A very weak crystal-plastic foliation is present in Pieces 3 to 5B.

Core Image



176-735B-137R-8

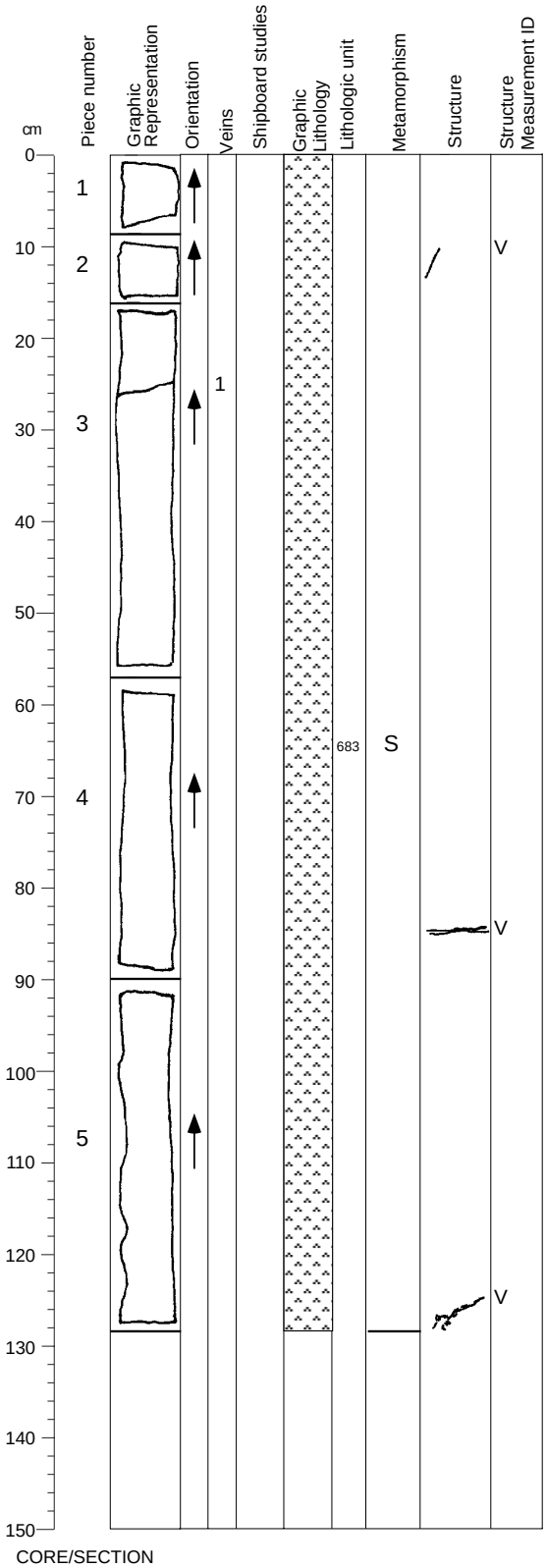
Interval 683: OLIVINE GABBRO
(see previous section)

Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <8
Mode of occurrence: Replacing primary plagioclase.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: moderate (15%). Same as previous section.

Structures:
Mf>Pf
This section displays a coarse-grained igneous texture, with no magmatic foliation, overprinted by some weak crystal-plastic deformation in Piece 3 (difficult to measure).

Core Image



176-735B-138R-1

Interval 683: OLIVINE GABBRO
(see Section 176-735B-137R-7)

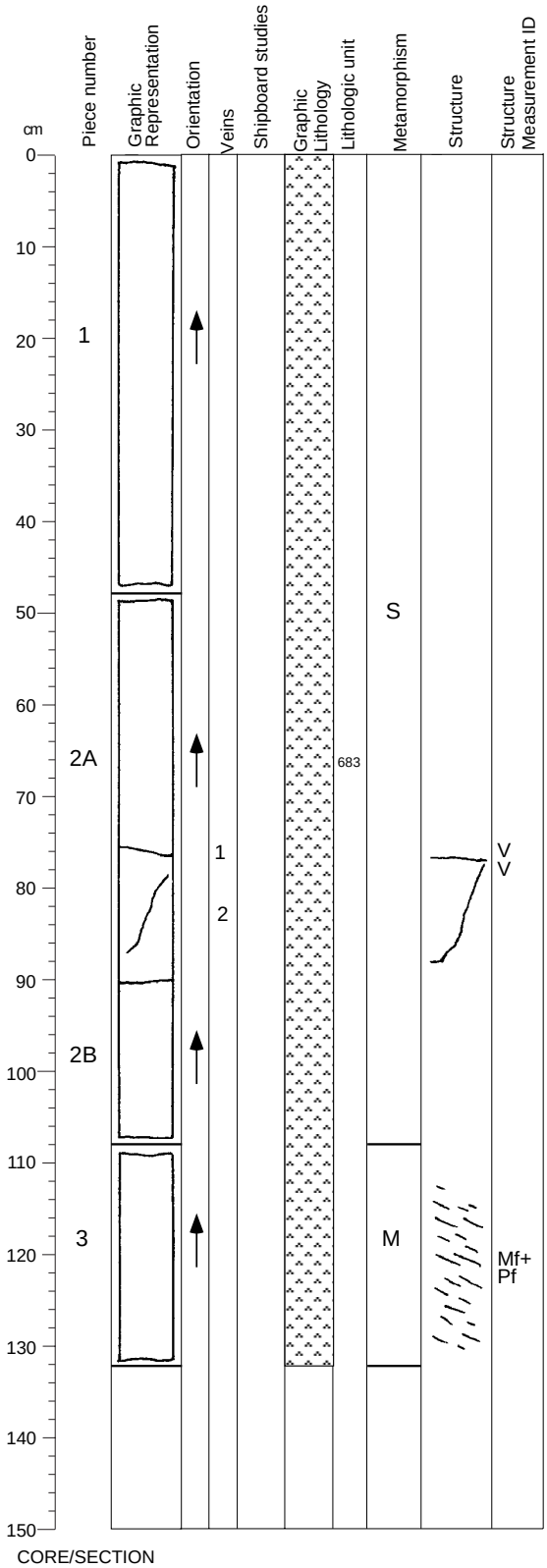
Alteration:
Dark green amphibole:
Total Percent: <7
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <7
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Rimming olivine and pyroxene.

Background Alteration:
Degree of alteration: moderate (15%). 60% of the olivine is altered to amphibole. 8% of the clinopyroxene is replaced by amphibole. 20% of the plagioclase is altered.

Vein/Fracture Filling:
0.2 mm amphibole vein in Piece 3.

Structures:
Mf>V
This section displays a coarse-grained igneous texture, with no magmatic foliation, cut by a few veins.

Core Image



176-735B-138R-2

Interval 683: OLIVINE GABBRO
(see Section 176-735B-137R-7)

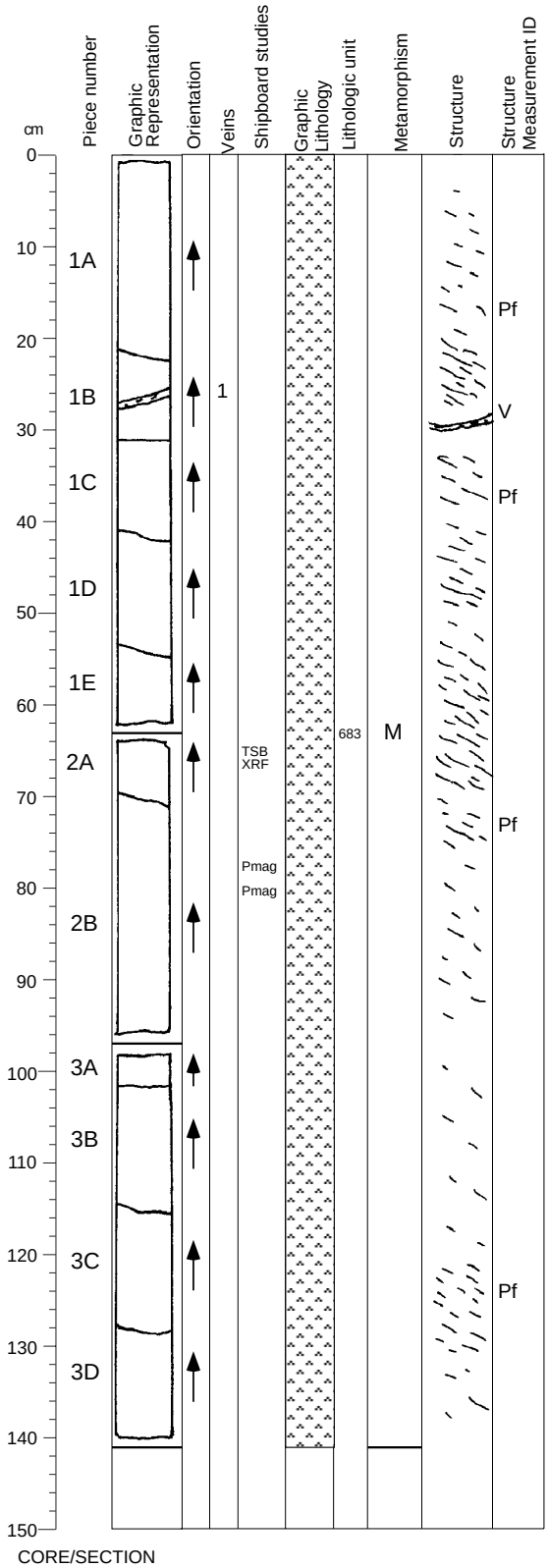
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Rimming olivine and pyroxene.
Comments: Near an amphibole veinlet.

Background Alteration:
Degree of alteration: moderate (15 to 30%). Pieces 1 to 2: 60% of the olivine is altered to amphibole and talc. 8% of the clinopyroxene is replaced by amphibole. 20% of the plagioclase is altered. Piece 3: alteration is increased due to deformation.

Vein/Fracture Filling:
0.3 mm plagioclase vein in Piece 2; 0.2 mm amphibole vein in Piece 2.

Structures:
Mf>V; Mf>Pf
Most of this section (from 0 to 110) displays a coarse-grained igneous texture, with no magmatic foliation, cut by two veins in Piece 2A. Piece 3 displays a moderately strong magmatic foliation, overprinted by a moderate crystal-plastic foliation. It is important to note that there is not a big difference between this piece and the upper part of the section, except for the good shape preferred orientation. The foliation is not seen in Pieces 1 to 2B, however crystal-plastic deformation is indicated by recrystallized rims around almost all plagioclases (visible macroscopically). The presence of a pre-existing magmatic foliation may i) help to visualize the plastic foliation, and ii) create a rheological anisotropy, favorable to plastic flow. This comment applies to several sections seen before and after this one.

Core Image



176-735B-138R-3

Interval 683: OLIVINE GABBRO
(see Section 176-735B-137R-7)

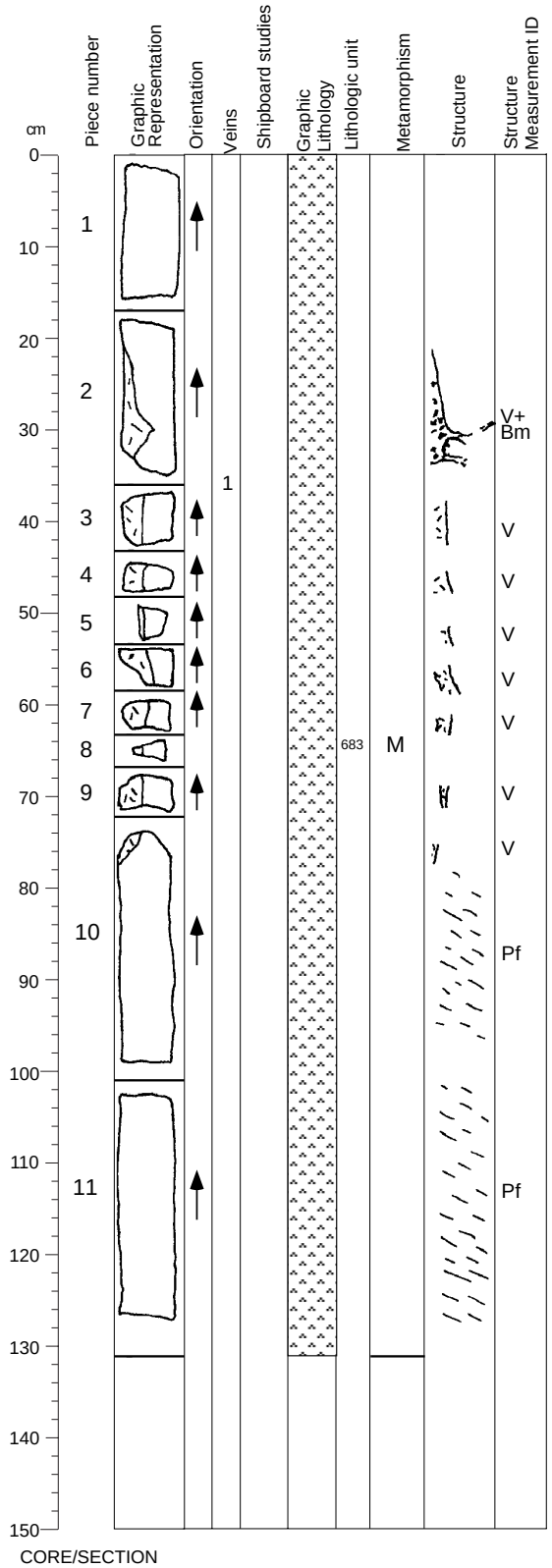
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic vein.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Secondary plagioclase:
Total Percent: <6
Mode of occurrence: Replacing primary plagioclase.
Comments: More abundant near felsic vein.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: In the rims of olivine and pyroxene and near felsic vein.

Background Alteration:
Degree of alteration: moderate (15%). 60% of the olivine is altered to amphibole. 8% of the clinopyroxene is replaced by amphibole. 20% of the plagioclase is altered.

Vein/Fracture Filling:
2 mm plagioclase+amphibole vein in Piece 1B.

Structures:
Mf>Pf>V
The entire section displays a weak to strong crystal-plastic foliation, cut in Piece 1B by a vein.

Core Image



176-735B-138R-4

Interval 683: OLIVINE GABBRO
(see Section 176-735B-137R-7)

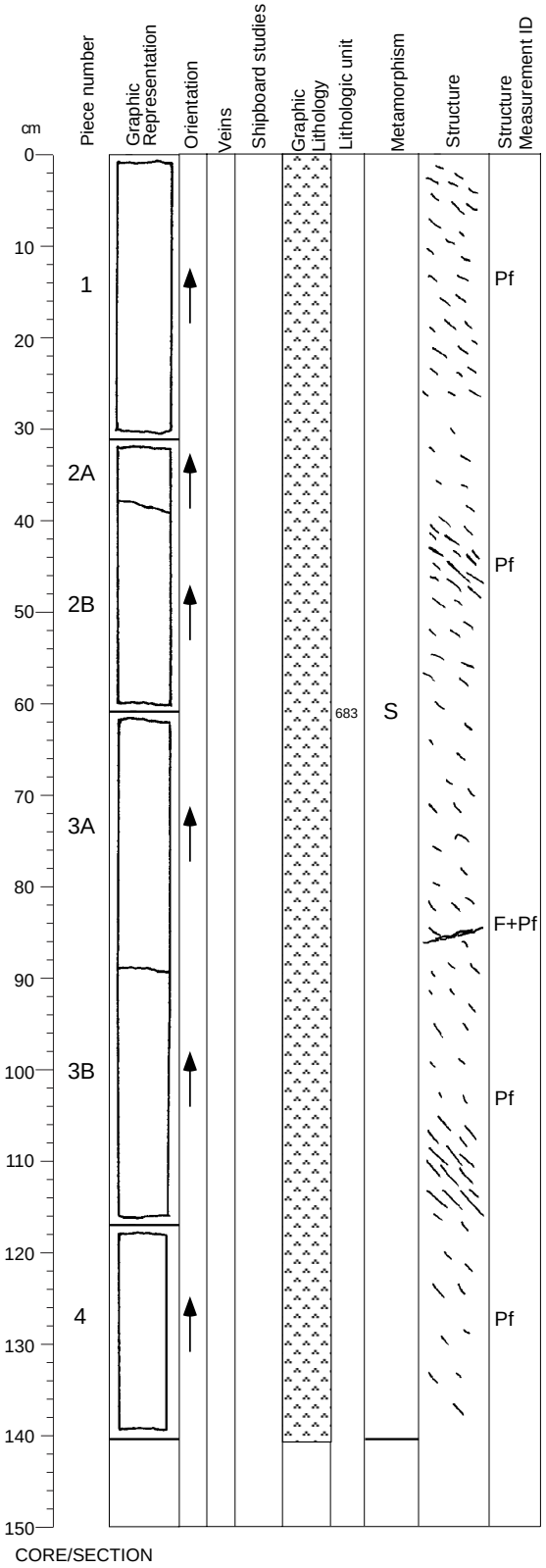
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <2
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic vein.
Green amphibole:
Total Percent: <1
Mode of occurrence: After brown amphibole and in felsic vein.
Secondary plagioclase:
Total Percent: <7
Mode of occurrence: Replacing primary plagioclase.
Comments: More abundant near felsic vein.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: tr.
Mode of occurrence: In the rims of olivine and pyroxene and near felsic vein.

Background Alteration:
Degree of alteration: moderate (18%). 60% of the olivine is altered to amphibole. 8% of the clinopyroxene is replaced by amphibole. 20% of the plagioclase is altered.

Vein/Fracture Filling:
15 mm compound felsic vein n Piece 2-9.

Structures:
Mf>V=Bm; Mf>Pf
Most of this section displays an igneous texture with no or a weak magmatic foliation, overprinted in Pieces 2 to 9 by a large vein (associated in Piece 2 with incipient brecciation). In Pieces 10 and 11 the igneous texture has a weak magmatic foliation, overprinted by a weak crystal-plastic foliation.

Core Image



176-735B-138R-5

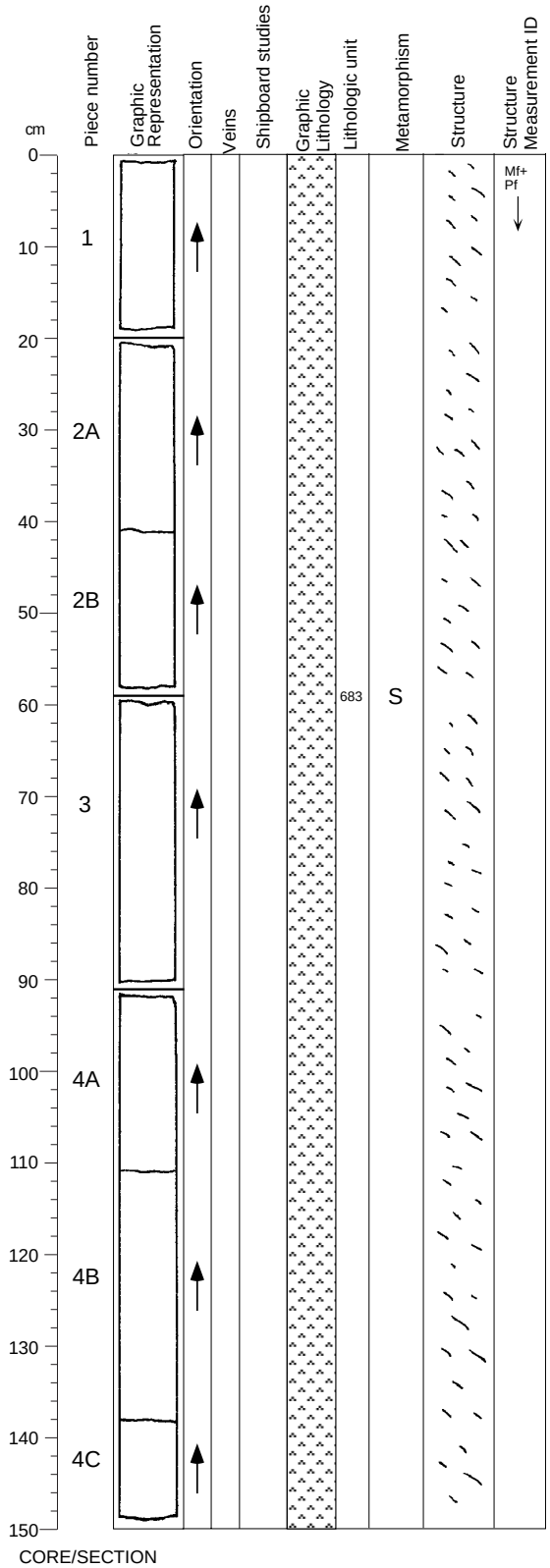
Interval 683: OLIVINE GABBRO
(see Section 176-735B-137R-7)

Alteration:
Dark green amphibole:
Total Percent: <4
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <4
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (8%). 30% of the olivine is altered to amphibole. 5% of the clinopyroxene is replaced by amphibole. 10% of the plagioclase is altered.

Structures:
Mf>Pf>F/Pf
The entire section displays a weak, to locally strong crystal-plastic foliation, overprinting in several places a weak magmatic foliation, and cut in Piece 3A by a shallow semi-brittle shear zone.

Core Image



176-735B-138R-6

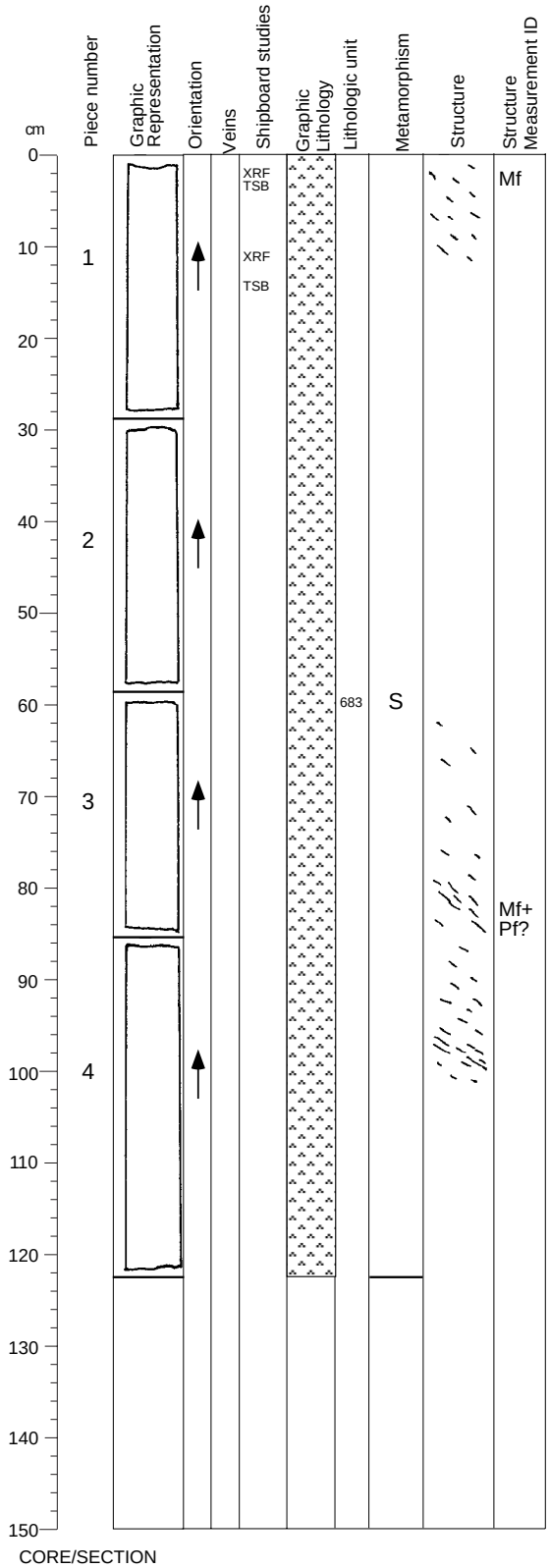
Interval 683: OLIVINE GABBRO
(see Section 176-735B-137R-7)

Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: <1
Mode of occurrence: After brown amphibole.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Rimming olivine and pyroxene.

Background Alteration:
Degree of alteration: slight (8%). Same as previous section.

Structures:
Mf>Pf
The entire section displays a weak, to locally strong crystal-plastic foliation, which overprints in several places a weak magmatic foliation.

Core Image



176-735B-138R-7

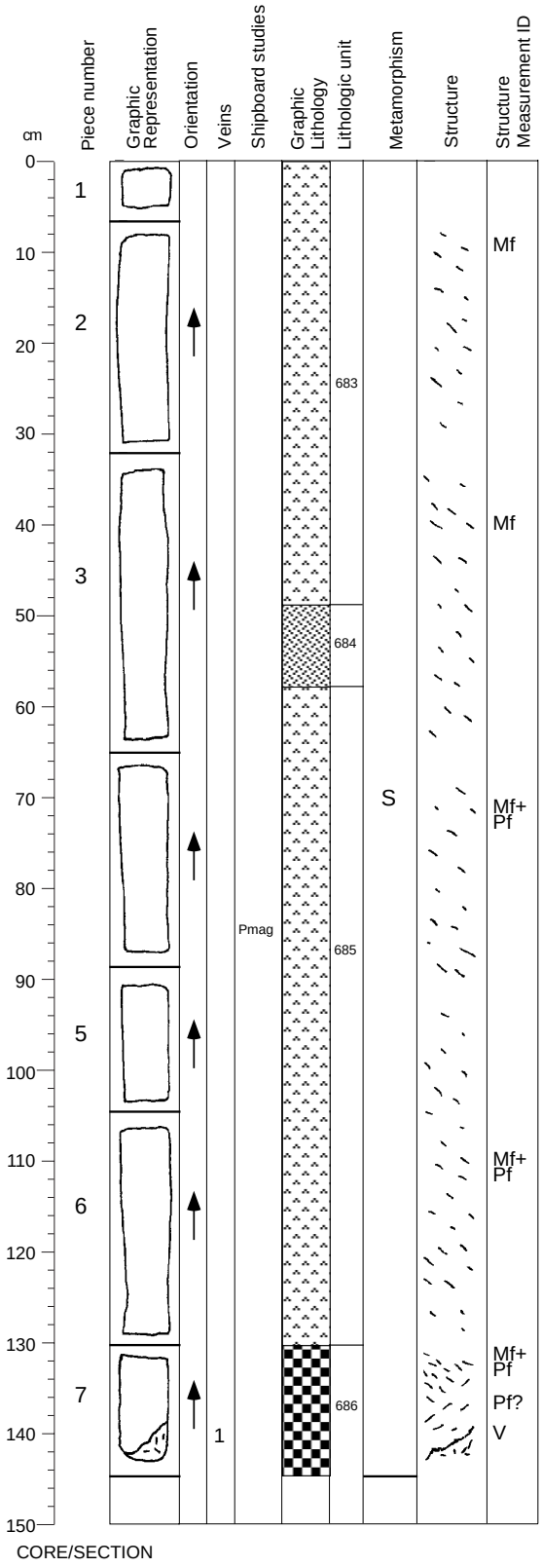
Interval 683: OLIVINE GABBRO
(see Section 176-735B-137R-7)

Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: <1
Mode of occurrence: After brown amphibole.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (8%). Same as previous section.

Structures:
Mf>Pf?
The entire section displays a coarse-grained igneous texture, with locally a weak to moderate magmatic foliation. Some crystal-plastic deformation possibly overprints the igneous texture, with no clear foliation (see comment for Section 138R-2).

Core Image



176-735B-139R-1

Interval 683: OLIVINE GABBRO
(see Section 176-735B-137R-7)

Interval 684: DISSEMINATED OXIDE OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	139	1	49	3	871.59
Lower contact:	139	1	58	3	871.68

Thickness (m):0.09

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	20	5	coarse	tabular/ subhedral
Clinopyroxene	35	15	3	coarse	equant/ anhedral subhedral
Olivine	5	5	1	medium	elongate/ anhedral subhedral
Opaques	1				amoeboidal aggregates/ disseminated
Total	106*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Medium
Modal IUGS Name (calculated): Disseminated Oxide Olivine Gabbro
Type Distribution
Texture: granular N/A
Comments: Coarse-grained, mafic material rich interval. Clinopyroxene mode variable.

Interval 685: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	139	1	58	3	871.68
Lower contact:	139	1	130	7	872.40

Thickness (m): 0.72

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	20	5	coarse	tabular/ subhedral euhedral
Clinopyroxene	35	15	3	coarse	equant/ anhedral fractured
Olivine	5	5	1	medium	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	105.5*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Medium
Modal IUGS Name (calculated): Olivine Gabbro
Type Distribution
Texture: granular N/A
Comments: Sulfide abundant at 112 cm in 139R-1.

Continued next page

Core Image

176-735B-139R-1 (cont'd)

Interval 686: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	139	1	130	7	872.40
Lower contact:	139	2	7	1	872.62

Thickness (m): 0.22

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	15	3	medium	tabular/ subhedral
Clinopyroxene	35	15	1	coarse	equant/ anhedral
Olivine	2	3	1	medium	amoeboidal/ anhedral
Opaques	3				interstitial lenses/ concordant seams
Total	105*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Medium
Modal IUGS Name (calculated): FeTi Oxide Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Oxide-rich interval. Felsic veins at 7 cm and 140 cm in 139R-2. Oxide 3% at 132-144 cm in 139R-1, 2% at 0-9 cm in 139R-2.

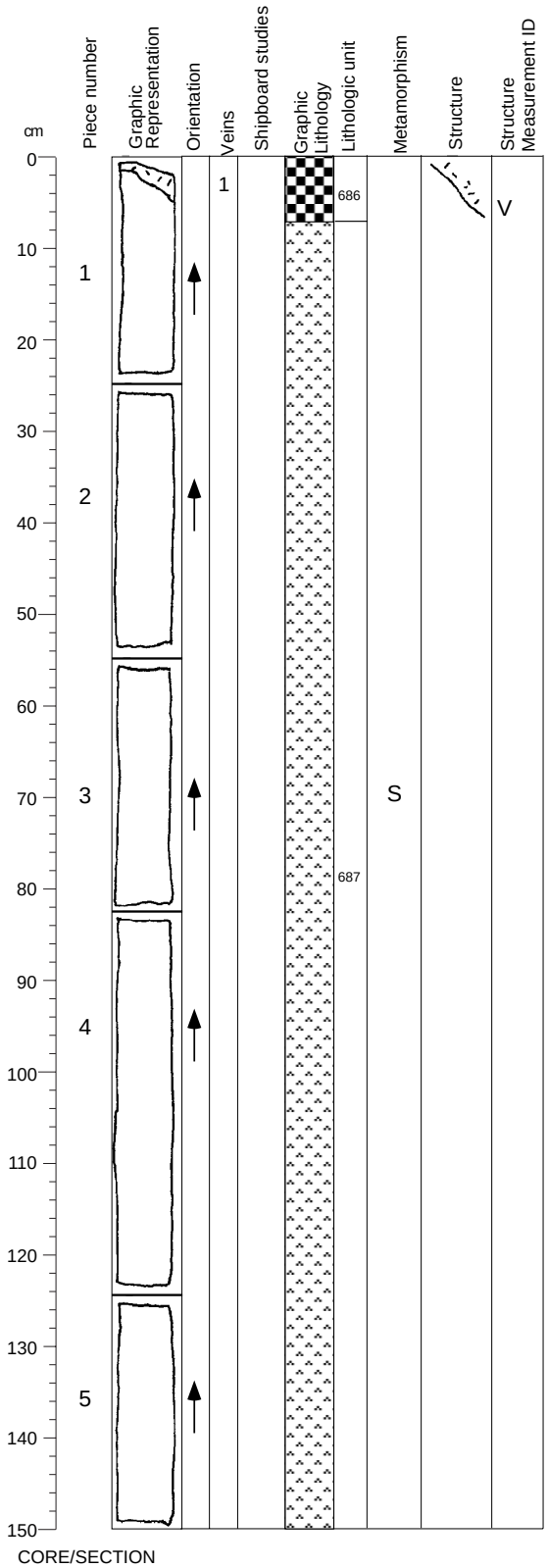
Alteration:
Dark green amphibole:
Total Percent: <4
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic vein.
Green amphibole:
Total Percent: <1
Mode of occurrence: After brown amphibole and in the halo of felsic vein.
Secondary plagioclase:
Total Percent: <4
Mode of occurrence: Replacing primary plagioclase.
Comments: More abundant near felsic vein.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Rimming olivine and pyroxene, and near felsic vein.

Background Alteration:
Degree of alteration: slight (10%). 30% of the olivine is altered to amphibole. 5% of the clinopyroxene is replaced by amphibole. 12% of the plagioclase is altered.

Vein/Fracture Filling:
10 mm compound felsic vein in Piece 7.

Structures:
Mf>Pf>V>Pf?
From 0 to 67 cm, the section displays a coarse-grained igneous texture, with a moderately strong magmatic foliation (except for Piece 1 which is isotropic). From 67 cm downward, a magmatic foliation is present, and overprinted by a weak crystal-plastic foliation. At the bottom of the section (Piece 7), a vein overprints the previous fabrics; it is bounded by a few, cm thick zones of oxide-rich gabbro, itself probably slightly deformed by a crystal-plastic foliation, which cross-cuts the previous one at high angle.

Core Image



176-735B-139R-2

Interval 686: OXIDE GABBRO
(see previous section)
Interval 687: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	139	2	7	1	872.62
Lower contact:	141	2	71	1B	891.46

Thickness (m): 18.84

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	20	5	coarse	tabular/ subhedral euhedral
Clinopyroxene	35	15	3	coarse	equant/ anhedral fractured
Olivine	5	5	1	medium	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	105.5*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Locally subophitic. A long interval of olivine gabbro with variable grain size and mode. Oxide 1% at 28-29 cm in 139R-2, 30-31 cm in 139R-7, 94-96 cm in 140R-3, 129-131 cm in 140R-4, and 42-43 cm in 141R-2; 2% at 16-17 cm in 140R-3, and 17-18 cm in 141R-2; 3% at 63-68 cm in 140R-4. Pegmatitic (> 6 cm) clinopyroxene present.Felsic microveinlets (deformational segregations) seem to be associated with oxide. Sulfide abundant at 37 cm in 139R-7, 60-64 cm in 140R-2, and 35 cm in 140R-4.

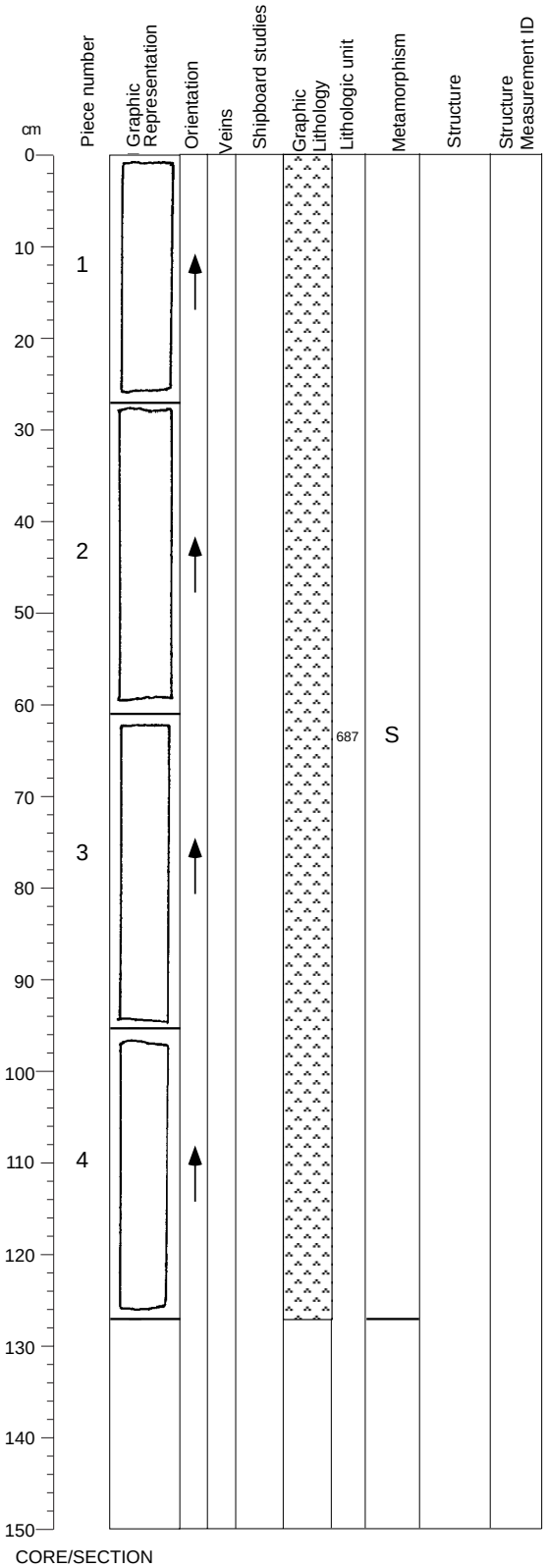
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic vein.
Green amphibole:
Total Percent: <1
Mode of occurrence: After brown amphibole and in the halo of felsic vein.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: More abundant near felsic areas.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Rimming olivine and pyroxene, and near felsic vein.

Background Alteration:
Degree of alteration: slight (8%). 25% of the olivine is altered to amphibole. 4% of the clinopyroxene is replaced by amphibole. 10% of the plagioclase is altered.

Vein/Fracture Filling:
12 mm compound felsic vein in Piece 1.

Structures:
Mf>V
The entire section displays a coarse-grained igneous texture, with no magmatic foliation, cut by a vein in Piece 1 (probably the same vein present in the last piece of the previous section).

Core Image



176-735B-139R-3

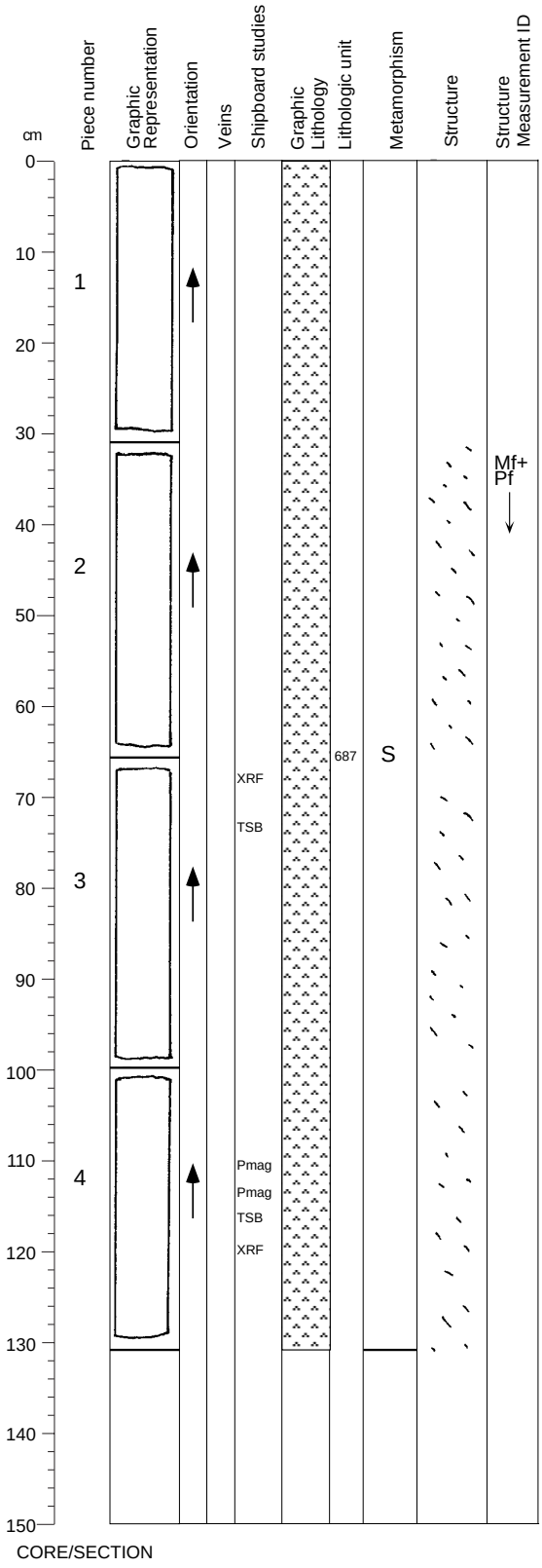
Interval 687: OLIVINE GABBRO
(see previous section)

Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <4
Mode of occurrence: Replacing primary plagioclase.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (8%). Same as previous section.

Structures:
Mf
The entire section displays a coarse-grained igneous texture, with no magmatic foliation.

Core Image



176-735B-139R-4

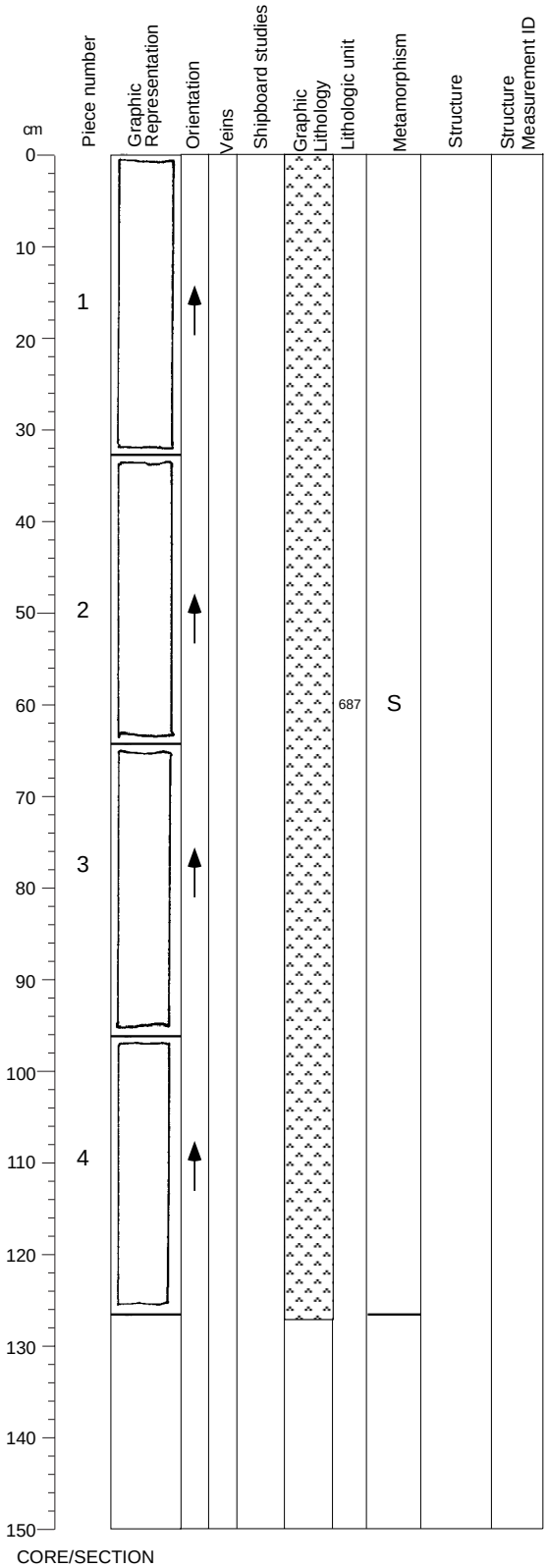
Interval 687: OLIVINE GABBRO
(see Section 176-735B-139R-2)

Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (8%). Same as previous section.

Structures:
Mf>Pf
From 0 to 28 cm, the section displays a coarse-grained igneous texture, with no magmatic foliation. From 28 cm to the bottom of the section, it displays a moderate magmatic foliation, overprinted by a weak crystal-plastic foliation. The absence of crystal-plastic foliation in Piece 1 does not necessarily mean that crystal-plastic deformation is absent (see comment of section 138R-2).

Core Image



176-735B-139R-5

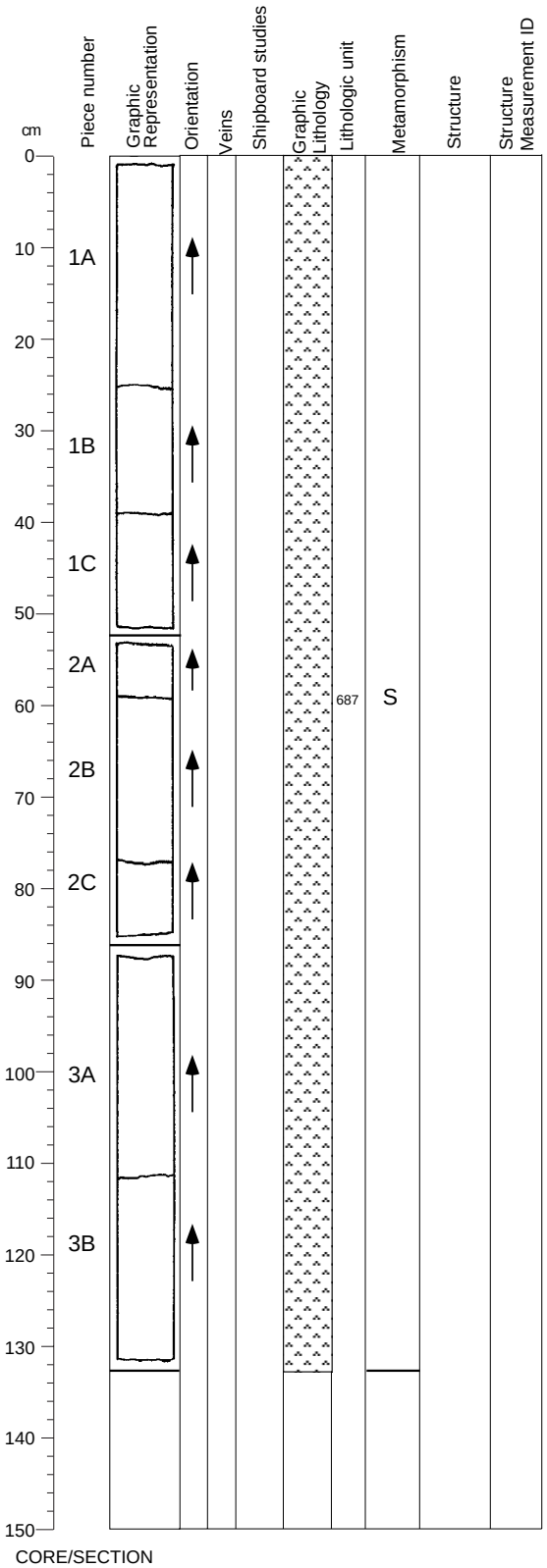
Interval 687: OLIVINE GABBRO
(see Section 176-735B-139R-2)

Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (6%). 20% of the olivine is altered to amphibole. 3% of the clinopyroxene is replaced by amphibole. 8% of the plagioclase is altered.

Structures:
Mf
The entire section displays a coarse-grained igneous texture, with no or a weak magmatic foliation.

Core Image



176-735B-139R-6

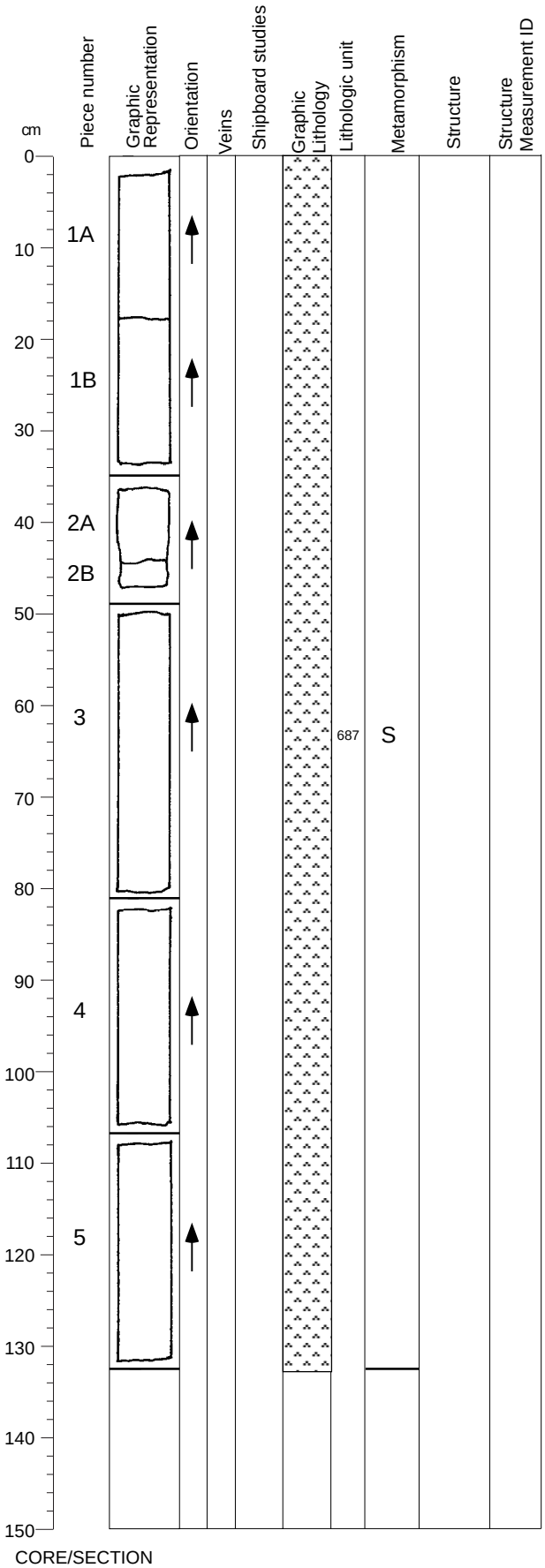
Interval 687: OLIVINE GABBRO
(see Section 176-735B-139R-2)

Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: Irregularly distributed, after brown amphibole.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (5%). 20% of the olivine is altered to amphibole. 3% of the clinopyroxene is replaced by amphibole. 6% of the plagioclase is altered.

Structures:
Mf
The entire section displays a coarse-grained igneous texture, with no magmatic foliation.

Core Image



176-735B-139R-7

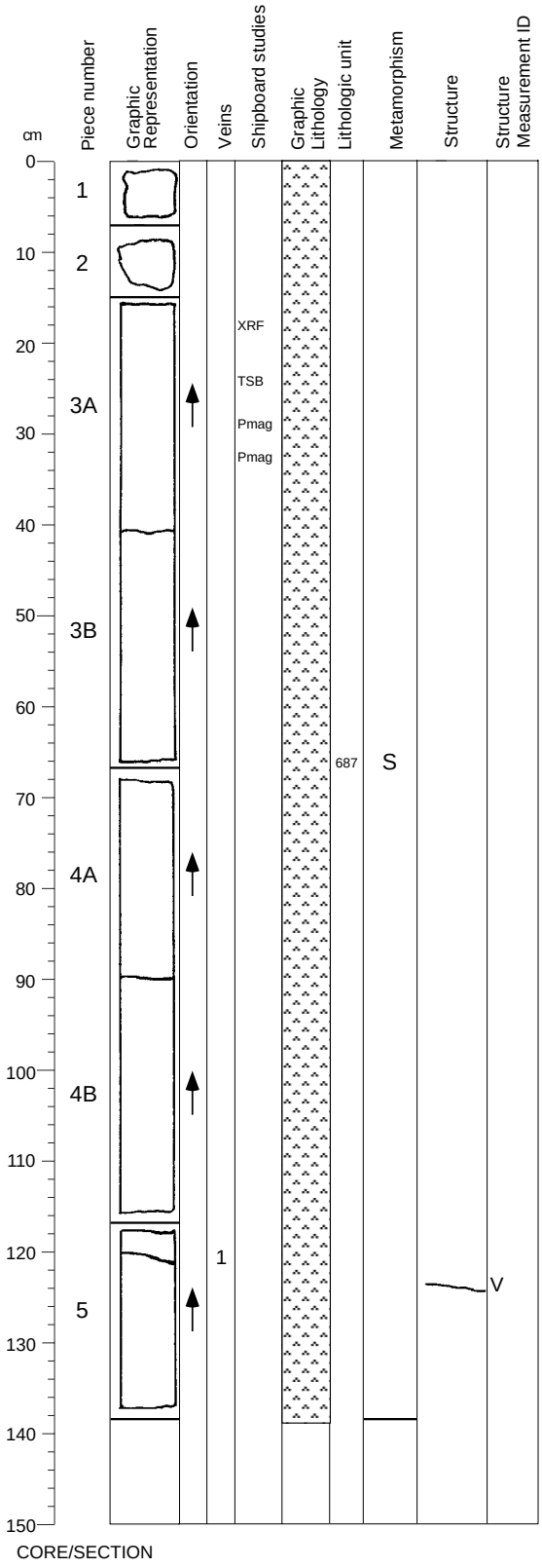
Interval 687: OLIVINE GABBRO
(see Section 176-735B-139R-2)

Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (5%). Same as previous section.

Structures:
Mf
The entire section displays a coarse-grained igneous texture, with no or a weak magmatic foliation.

Core Image



176-735B-140R-1

Interval 687: OLIVINE GABBRO
(see Section 176-735B-139R-2)

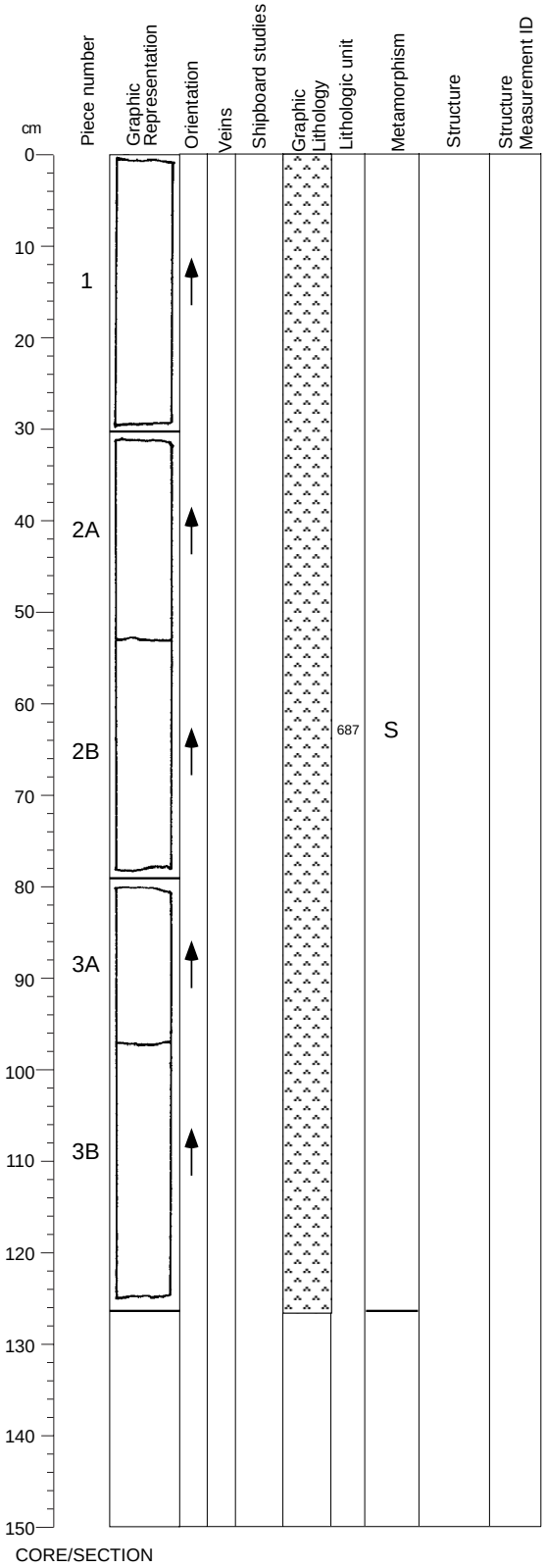
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (4%). 20% of the olivine is altered to amphibole. 3% of the clinopyroxene is replaced by amphibole. 4% of the plagioclase is altered to secondary plagioclase and rare smectite.

Vein/Fracture Filling:
0.4 mm calcite vein in Piece 5.

Structures:
Mf>V
The entire section displays a coarse-grained igneous texture, with no magmatic foliation, cut by a vein in Piece 5.

Core Image



176-735B-140R-2

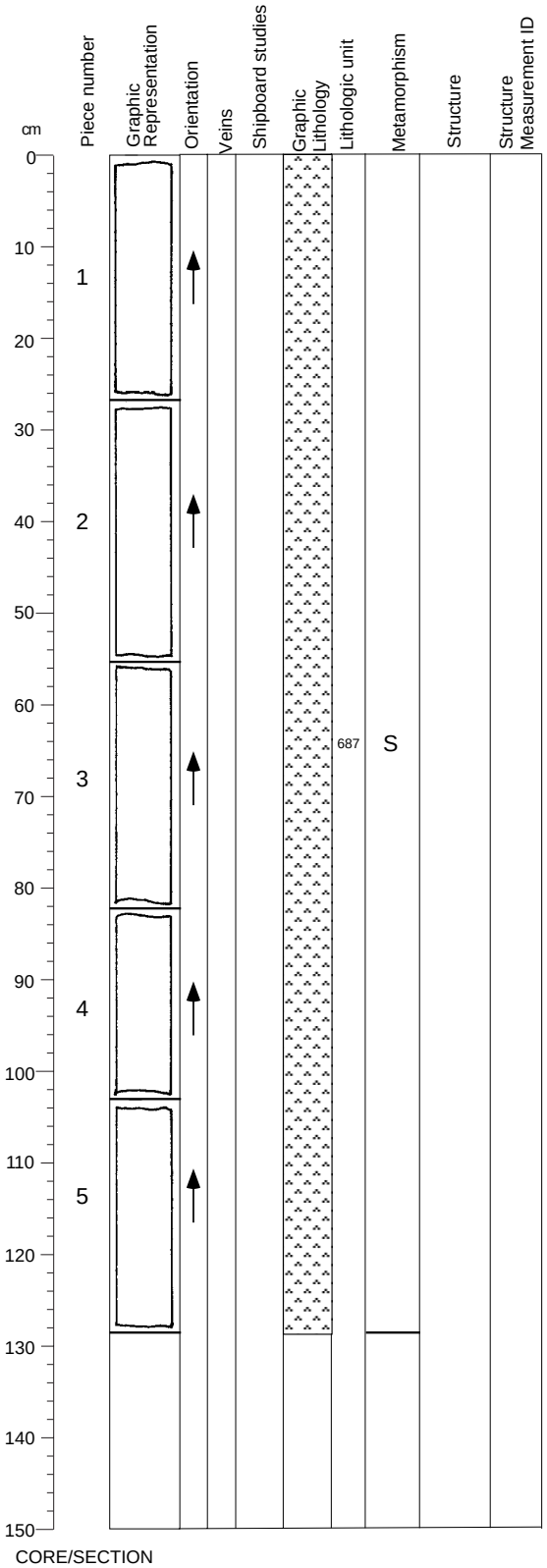
Interval 687: OLIVINE GABBRO
(see Section 176-735B-139R-2)

Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (4%). Same as previous section.

Structures:
Mf
The entire section displays a coarse-grained igneous texture, with no magmatic foliation.

Core Image



176-735B-140R-3

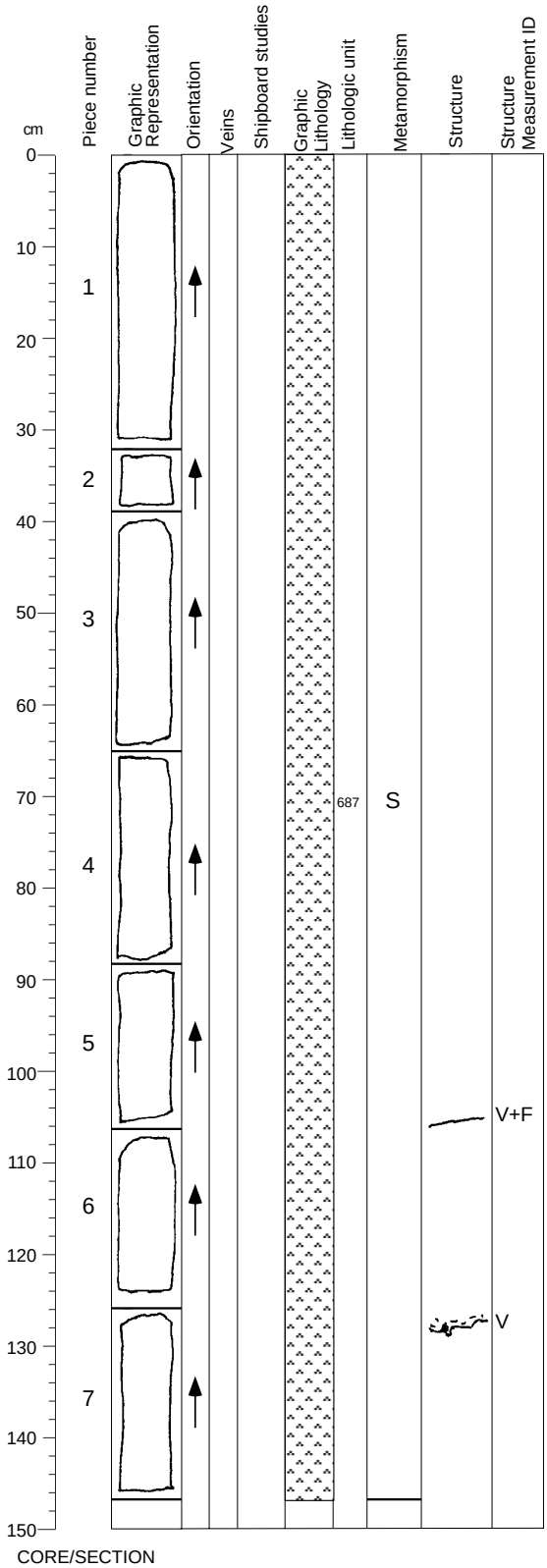
Interval 687: OLIVINE GABBRO
(see Section 176-735B-139R-2)

Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Smectites:
Total Percent: trace
Mode of occurrence: Pale green smectite replacing plagioclase.
Comments:isolated patches.

Background Alteration:
Degree of alteration: slight (4%). Same as previous section.

Structures:
Mf
The entire section displays a coarse-grained igneous texture, with no magmatic foliation.

Core Image



176-735B-140R-4

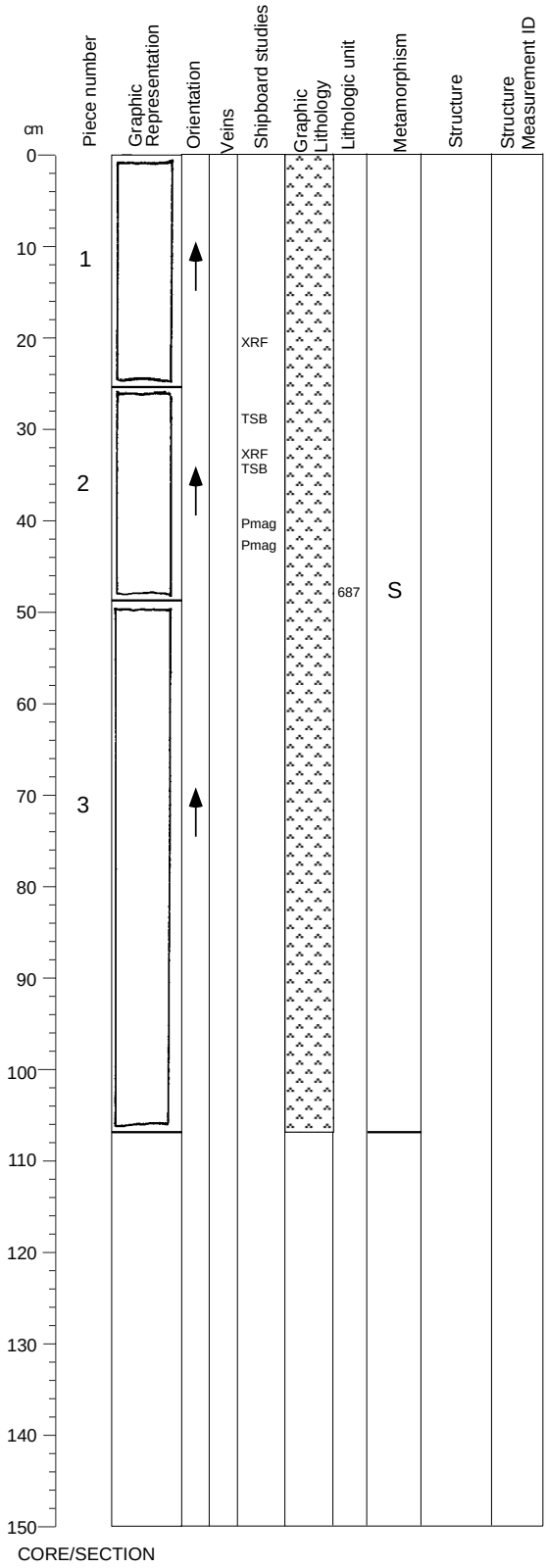
Interval 687: OLIVINE GABBRO
(see Section 176-735B-139R-2)

Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (4%). Same as previous section.

Structures:
Mf>V>F
The entire section displays a coarse-grained igneous texture, with no magmatic foliation, cut by two veins (Pieces 5 and 7). The vein at the bottom of Piece 5 grades into a fault.

Core Image



176-735B-140R-5

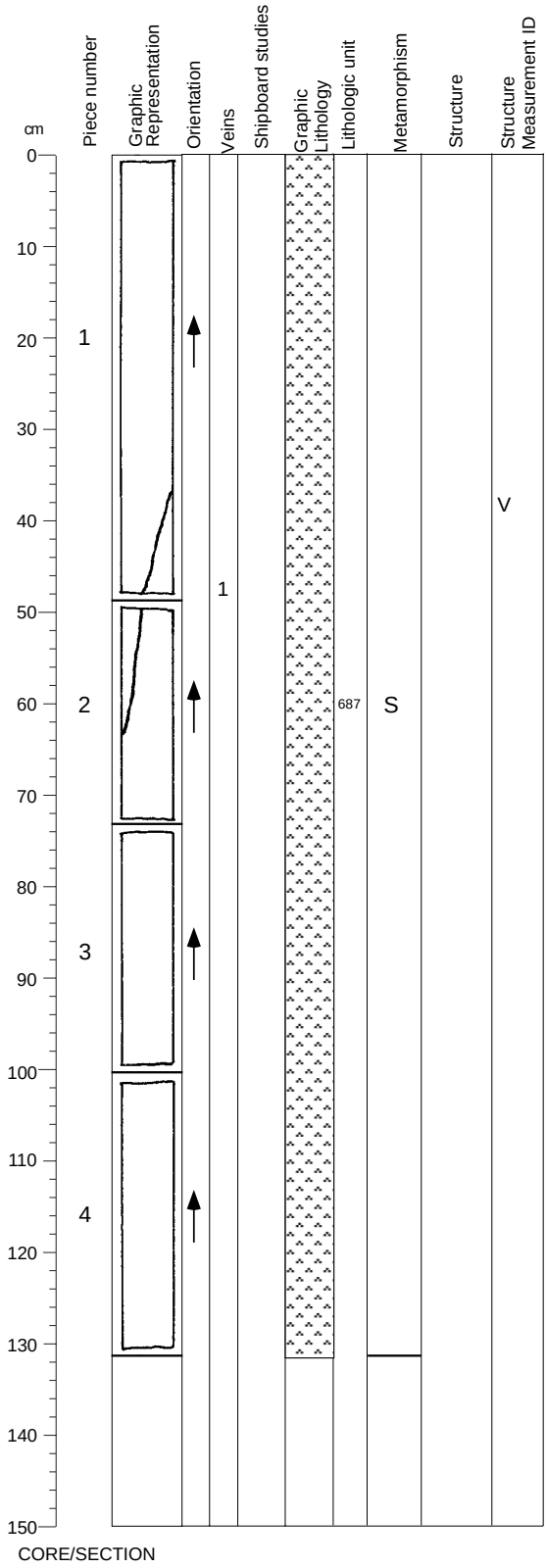
Interval 687: OLIVINE GABBRO
(see Section 176-735B-139R-2)

Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (4%). Same as previous section.

Structures:
Mf
The entire section displays a coarse-grained igneous texture, with no magmatic foliation.

Core Image



176-735B-140R-6

Interval 687: OLIVINE GABBRO
(see Section 176-735B-139R-2)

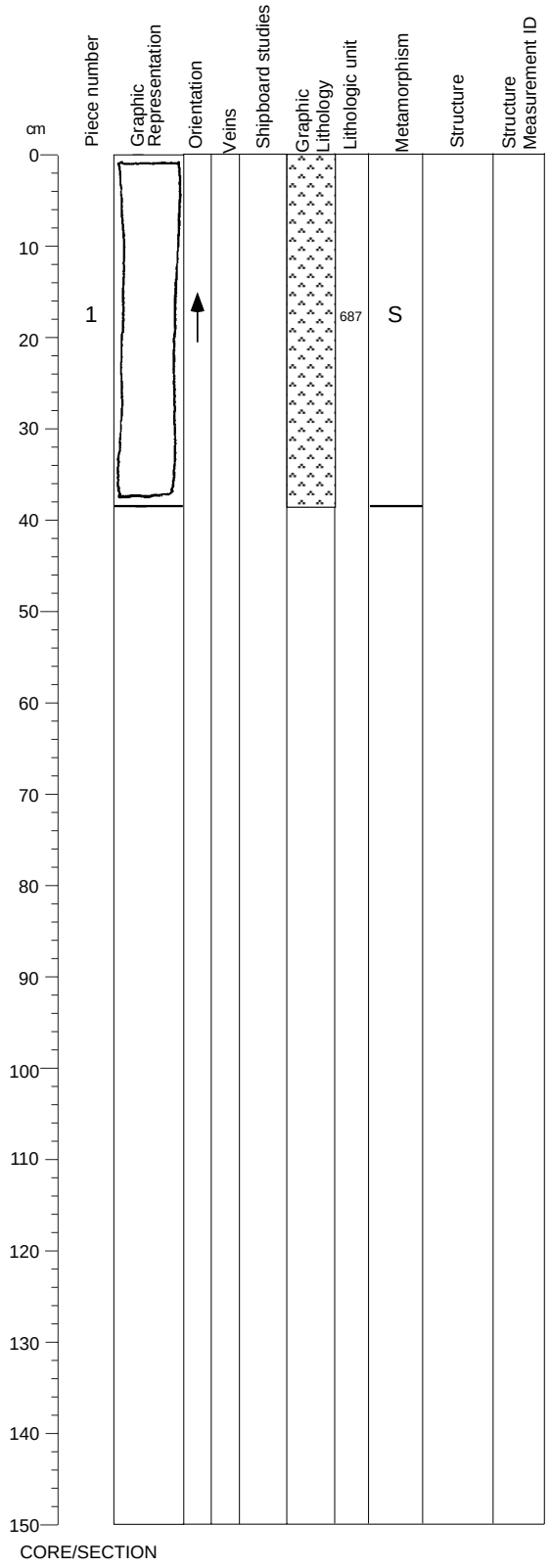
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Rimming olivine and pyroxene.

Background Alteration:
Degree of alteration: slight (4%). Same as previous section.

Vein/Fracture Filling:
0.8 mm amphibole vein in Pieces 1 and 2.

Structures:
Mf>V
The entire section displays a coarse-grained igneous texture, with no magmatic foliation, cut in Pieces 1 and 2 by a vein.

Core Image



176-735B-140R-7

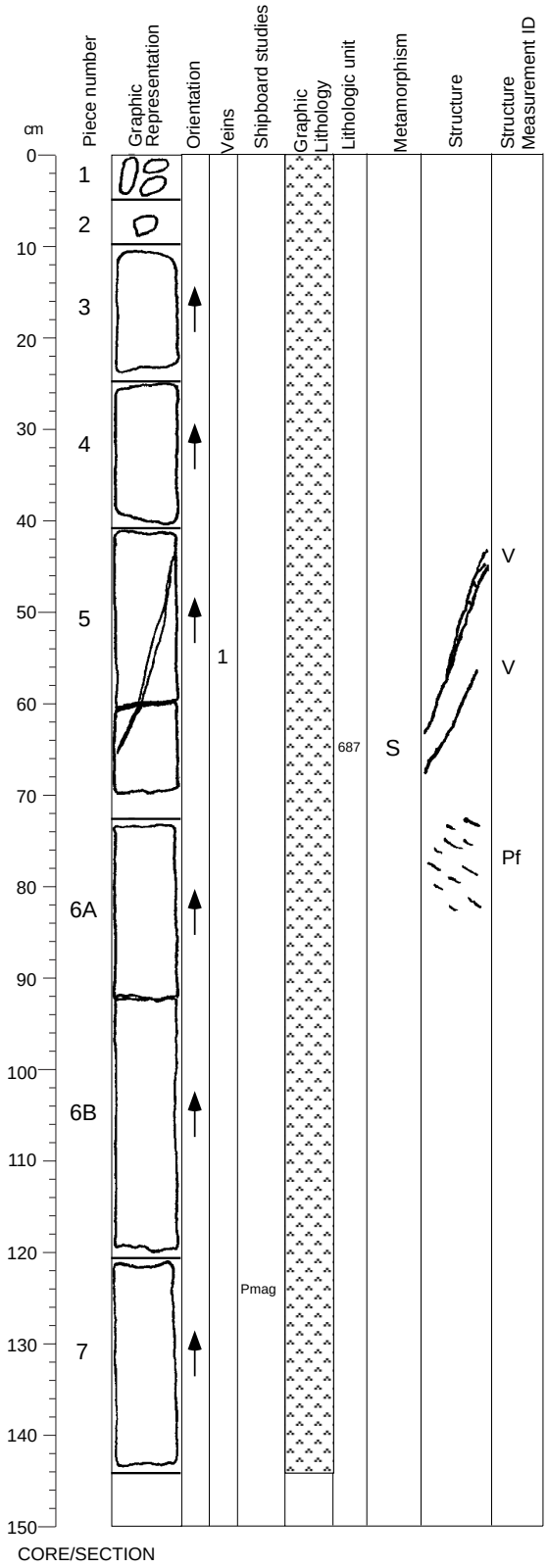
Interval 687: OLIVINE GABBRO
(see Section 176-735B-139R-2)

Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: In the rims of olivine and pyroxene.

Background Alteration:
Degree of alteration: slight (4%). Same as previous section.

Structures:
Mf
This piece displays a coarse-grained igneous texture, with no magmatic foliation.

Core Image



176-735B-141R-1

Interval 687: OLIVINE GABBRO
(see Section 176-735B-139R-2)

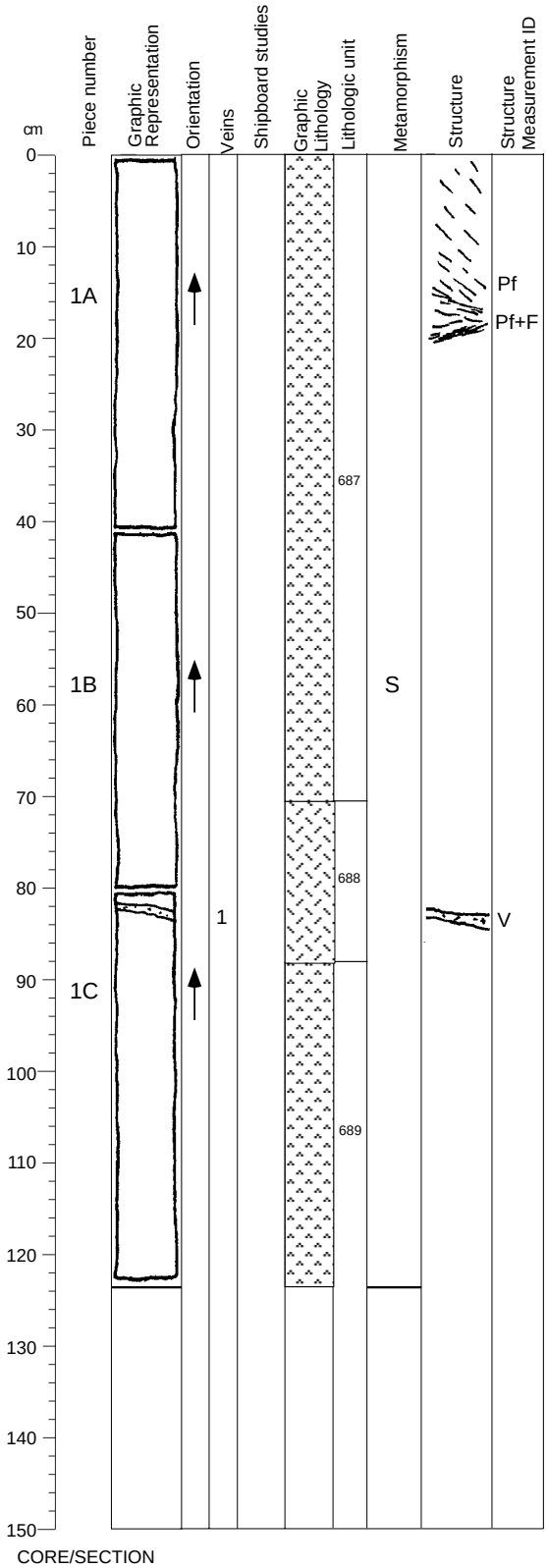
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic vein.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (5%). 30% of the olivine is altered to amphibole. 2% of the clinopyroxene is replaced by amphibole. 6% of the plagioclase is altered to secondary plagioclase.

Vein/Fracture Filling:
2.5 mm compound felsic vein in Piece 5.

Structures:
Mf>V; Mf>Pf
Most of this section displays a coarse-grained igneous texture, with no or a weak magmatic foliation, except for the small Pieces from 0 to 9 cm, and for the top of Piece 6A (from 73 to 83 cm) which have a strong crystal-plastic foliation. The igneous texture is cut by two en-echelon veins in Piece 5.

Core Image



176-735B-141R-2

Interval 687: OLIVINE GABBRO
(see Section 176-735B-139R-2)
Interval 688: GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	141	2	71	1B	891.46
Lower contact:	141	2	88	1C	891.63

Thickness (m): 0.17

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	15	5	coarse	tabular/ subhedral euhedral
Clinopyroxene	35	25	2	coarse	equant/ anhedral
Olivine	4	10	1	medium	amoeboidal/ anhedral
Opaques	0.8				angular aggregates/ subhedral
Total	104.8*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Gabbro
Texture: granular (Type) N/A (Distribution)
Comments: Sulfide present. Felsic vein at 79 cm in 141R-2.

Interval 689: OLIVINE GABBRO

Interval Location:	Core	Depth in Section	Section	Depth Piece	mbsf
Upper contact:	141	2	88	1C	891.63
Lower contact:	142	1	63	5	893.53

Thickness (m): 1.90

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	15	5	coarse	tabular subhedral euhedral
Clinopyroxene	35	30	2	coarse	equant/ anhedral
Olivine	7	8	2	medium	amoeboidal/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	107.5*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro
Texture: granular (Type) N/A (Distribution)
Comments: Locally subophitic. Clinopyroxene locally pegmatitic at 104 cm in 141R-2, and 4 cm in 142R-1. Oxide present at 91 cm in 141R-2. Sulfide abundant at 9 cm in 142R-1.

Continued next page

Core Image

176-735B-141R-2 (cont'd)

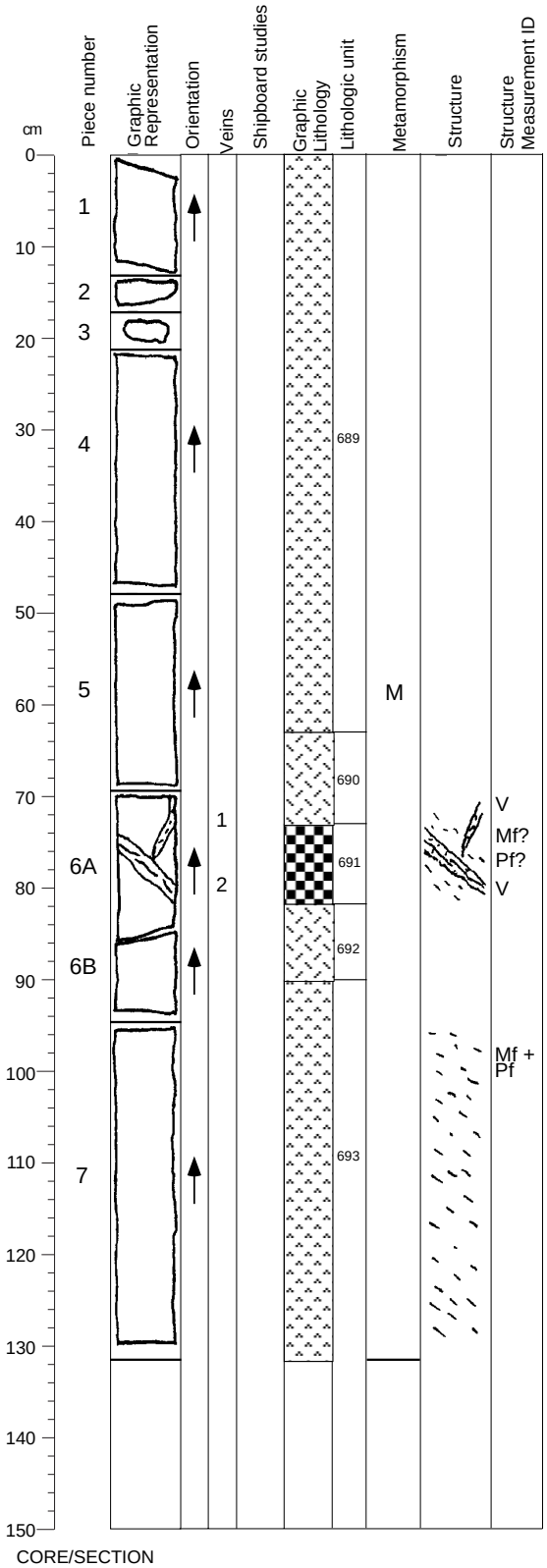
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic vein.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Comments: Particularly in felsic vein.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Associated with green amphibole.

Background Alteration:
Degree of alteration: slight (10%). 40% of the olivine is altered to amphibole. 4% of the clinopyroxene is replaced by amphibole. 12% of the plagioclase is altered to secondary plagioclase.

Vein/Fracture Filling:
5 mm compound felsic vein in Piece 1C.

Structures:
Pf>Pf/F; Mf>V
Most of this section displays a coarse-grained igneous texture, with no magmatic foliation, except for Piece 1A (from 0 to 18 cm), which displays a weak crystal-plastic foliation, becoming stronger downwards, and overprinted at 18 cm by a thin mylonitic to semi-brittle shear zone rich in oxides. The igneous texture is cut at the top of Piece 1C by a vein.

Core Image



176-735B-142R-1

Interval 689: OLIVINE GABBRO
(see previous section)

Interval 690: GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	142	1	63	5	893.53
Lower contact:	142	1	73	6A	893.63

Thickness (m): 0.10

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	3	1	medium	tabular/ subhedral
Clinopyroxene	30	2	N/A	fine	equant/ anhedral
Olivine	4	1	1	fine	platy/ anhedral
Opaques	0.6				amoeboidal aggregates/ disseminated
Total	94.6*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Fine
Modal IUGS Name (calculated): Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: See also Interval 692. A felsic vein with abundant oxide (see Interval 691) in middle of the microgabbro.

Interval 691: LEUCOCRATIC OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	142	1	73	6A	893.63
Lower contact:	142	1	82	6A	893.72

Thickness (m): 0.09

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	75	8	1	medium	tabular/ subhedral euhedral
Clinopyroxene	25	8	2	coarse	tabular/ subhedral
				anhedral	
Olivine	1	N/A	N/A	N/A	N/A
Opaques	3				interstitial lenses/ interstitial network
Total	104*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Medium
Modal IUGS Name (calculated): FeTi Oxide Gabbro
Comments: Oxide-rich interval associated with a felsic vein.

Continued next page

Core Image

176-735B-142R-1 (cont'd)

Interval 692: GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	142	1	82	6A	893.72
Lower contact:	142	1	90	6B	893.80

Thickness (m): 0.08

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	3	1	medium	tabular/ subhedral
Clinopyroxene	30	2	N/A	fine	equant/ anhedral
Olivine	4	1	1	fine	platy/ anhedral
Opaques	0.7				amoeboidal aggregates/ disseminated
Total	99.7*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Fine
Modal IUGS Name (calculated): Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Visually identical to Interval 690, may be contiguous.

Interval 693: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	142	1	90	6B	893.80
Lower contact:	144	1	131	3E	913.61

Thickness (m): 19.81

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	30	5	coarse	tabular/ subhedral euhedral
Clinopyroxene	35	25	2	coarse	equant/ oikocrystic anhedral
Olivine	8	10	1	medium	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	108.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Graded
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Locally subophitic, locally pegmatitic at 113 cm in 142R-1, 132-138 cm in 142R-2, 135 cm in 142R-3, 39 cm in 142R-5, and 44 cm and 90 cm in 142R-6. Mode and grain size variable. Alternating medium- and coarse-grained "layers"; grading not apparent. Clinopyroxene pegmatitic locally at 127-138 cm in 142R-3. Olivine grain size varying between 8 and 10 mm. Oxide 1% at 40-41 cm in 142R-2, 28-30 cm in 142R-1, 47-48 cm, 89-95 cm, and 120-122 cm in 143R-1, 87-93 cm in 143R-3, 55-56 cm in 143R-5, 11-12 cm in 143R-6, and 107-111 cm in 144R-1; 2% at 44-45 in 142R-1, 114-121 cm in 143R-2, 107-108 cm in 143R-4, and 73-77 cm in 144R-1; 3% at 138-139 cm in 142R-7, and 69-71 cm in 143R-4. Sulfide abundant at 119 cm in 142R-4, 43 cm in 142R-6, and 55 cm in 143R-5.

Continued next page

Core Image

176-735B-142R-1 (cont'd)

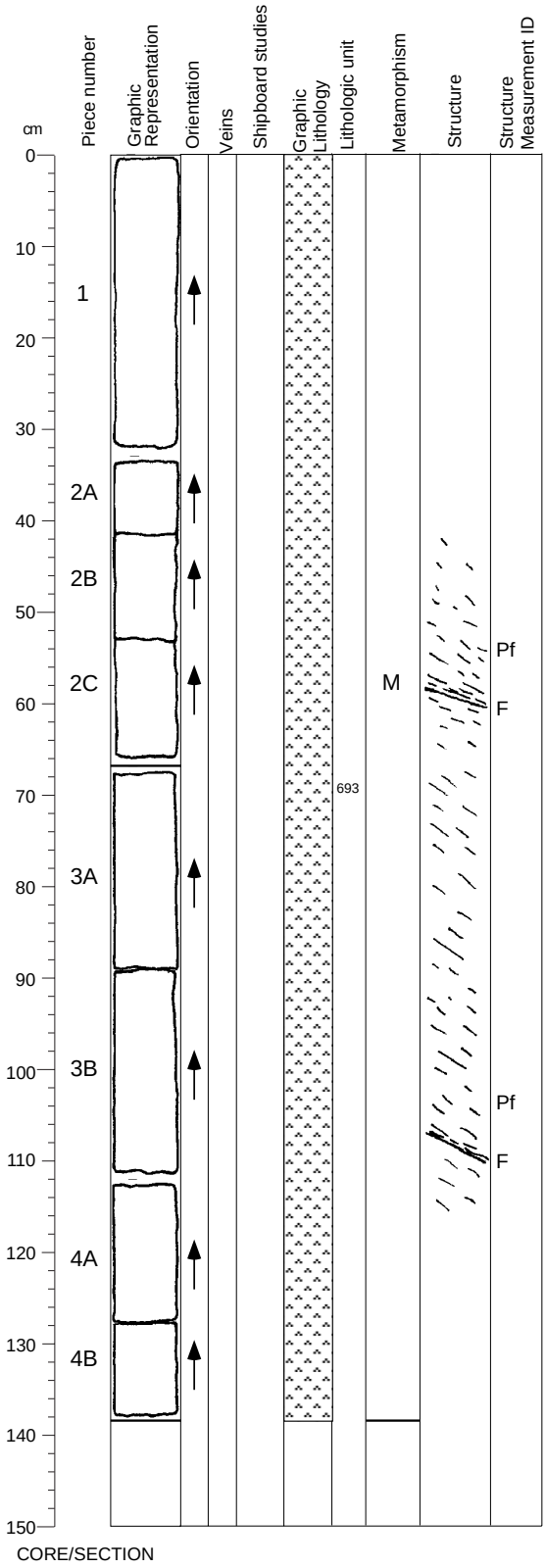
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic vein.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Comments: Particularly in felsic vein.
Secondary plagioclase:
Total Percent: <10
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: tr.
Mode of occurrence: Associated with green amphibole.

Background Alteration:
Degree of alteration: moderate (15%). 50% of the olivine is altered to amphibole. 6% of the clinopyroxene is replaced by amphibole. 15% of the plagioclase is altered to secondary plagioclase.

Vein/Fracture Filling:
6-2 mm plagioclase + amphibole veins in Piece 6.

Structures:
Mf>V; Mf>Pf
From 0 to 69 cm, the section displays a coarse-grained igneous texture, with no magmatic foliation. In Piece 6A, two veins are present; the host-rock is rich in oxides within a few cm of the veins. A weak foliation (magmatic or plastic?) is locally parallel to the larger vein. Piece 7 displays a moderately strong magmatic foliation, overprinted by a weak, parallel crystal-plastic foliation.

Core Image



176-735B-142R-2

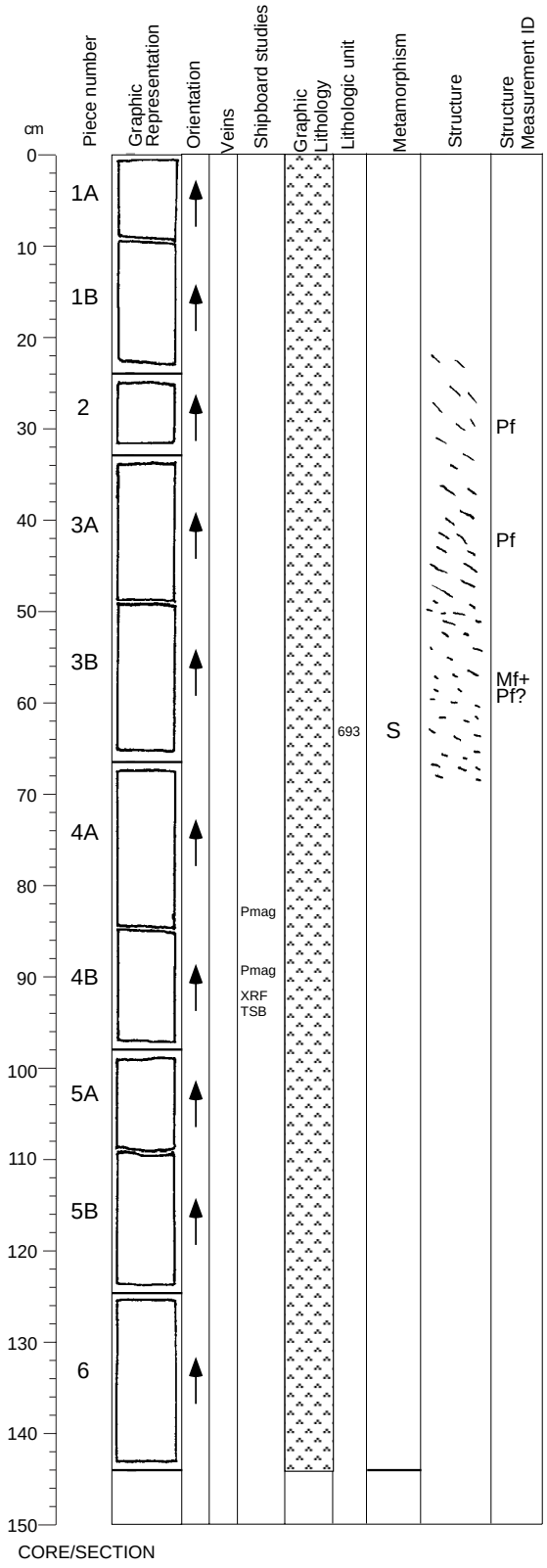
Interval 693: OLIVINE GABBRO
(see previous section)

Alteration:
Dark green amphibole:
Total Percent: <15
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <2
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic areas.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Comments: Particularly in felsic areas.
Secondary plagioclase:
Total Percent: <20
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant near felsic zones.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Associated with green amphibole.

Background Alteration:
Degree of alteration: moderate (35%). 50% of the olivine is altered to amphibole. 20% of the clinopyroxene is replaced by amphibole. 45% of the plagioclase is altered to secondary plagioclase.

Structures:
Mf>Pf>F
From 0 to 37 cm and from 118 to 137 cm, the section displays a coarse-grained igneous texture, with no magmatic foliation. In the middle part of the section, from 37 to 118 cm, a weak crystal-plastic foliation is present, and cut by two faults (Pieces 2C and 3B). The foliation is stronger around the fault in Piece 2C (semi-brittle fault?).

Core Image



176-735B-142R-3

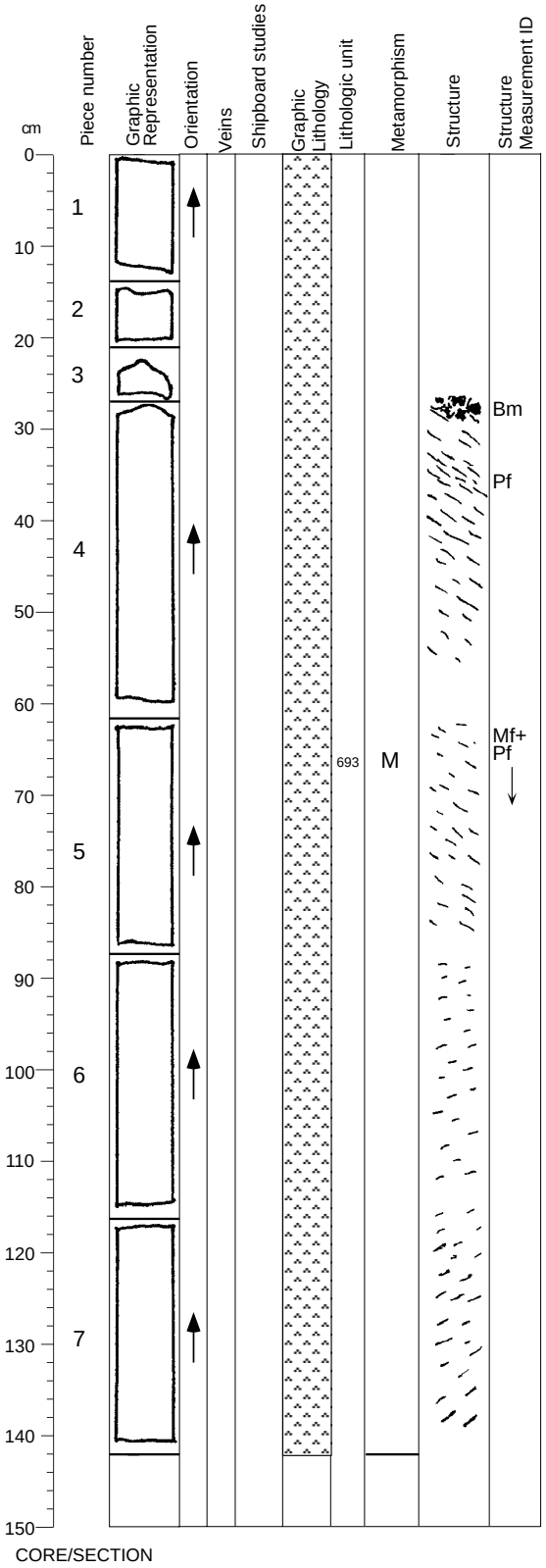
Interval 693: OLIVINE GABBRO
(see Section 176-735B-142R-1)

Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: As small patches.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Associated with green amphibole.

Background Alteration:
Degree of alteration: slight (10%). 30% of the olivine is altered to amphibole. 4% of the clinopyroxene is replaced by amphibole. 10% of the plagioclase is altered to secondary plagioclase.

Structures:
Mf>Pf
Most of the section displays a coarse-grained igneous texture, with no or a weak magmatic foliation. From 17 to 51 cm, the igneous texture is overprinted by a weak crystal-plastic foliation. Piece 3B and the top of Piece 4A display a finer grained material (a few mm on average), which has a strong magmatic foliation, possibly overprinted by some crystal-plastic deformation.

Core Image



176-735B-142R-4

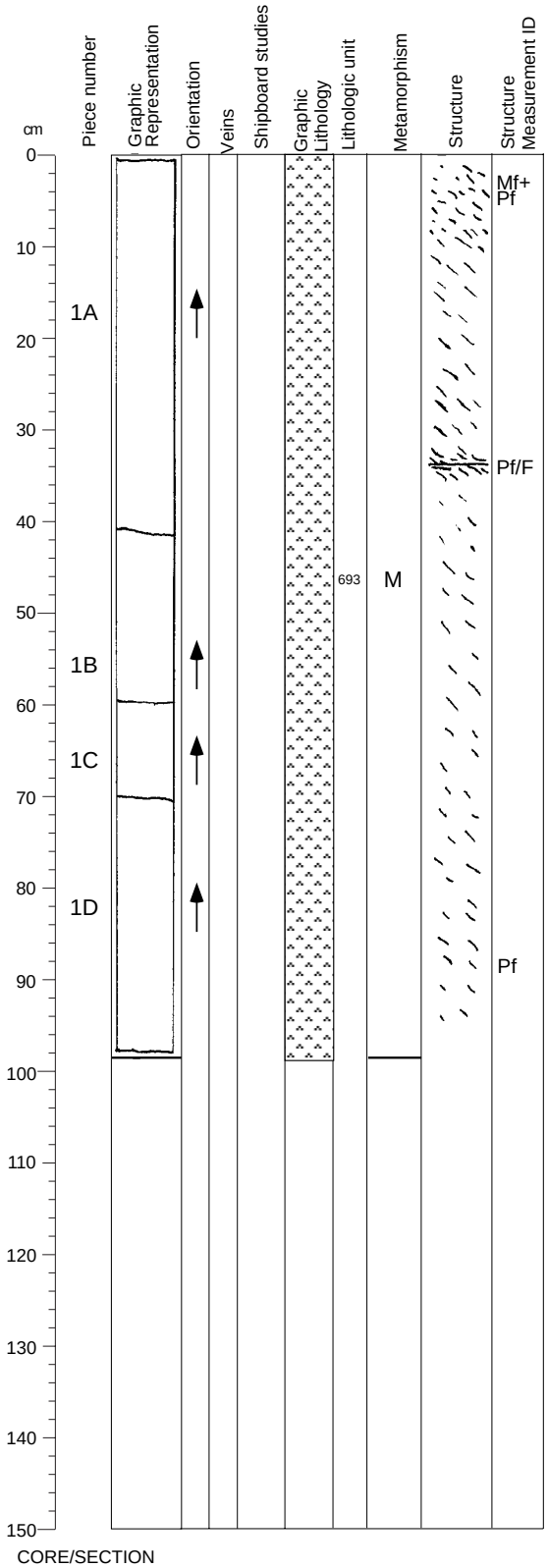
Interval 693: OLIVINE GABBRO
(see Section 176-735B-142R-1)

Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic areas.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Comments: Particularly in felsic areas.
Secondary plagioclase:
Total Percent: <10
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant near felsic zones.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Associated with green amphibole.

Background Alteration:
Degree of alteration: moderate (15%). 30% of the olivine is altered to amphibole. 5% of the clinopyroxene is replaced by amphibole. 18% of the plagioclase is altered to secondary plagioclase.

Structures:
Mf>Pf>?Bm; Mf>Pf
Pieces 1 to 3 display a coarse-grained igneous texture, with no magmatic foliation. At the top of Piece 4, a small zone of magmatic breccia is present. Below Piece 4, the section displays a weak to moderate crystal-plastic foliation, probably overprinting a moderate magmatic foliation from Piece 5. The relationships between the brecciated zone and the crystal-plastic foliation are unclear; the breccia appears not to be deformed and may post-date the plastic foliation.

Core Image



176-735B-142R-5

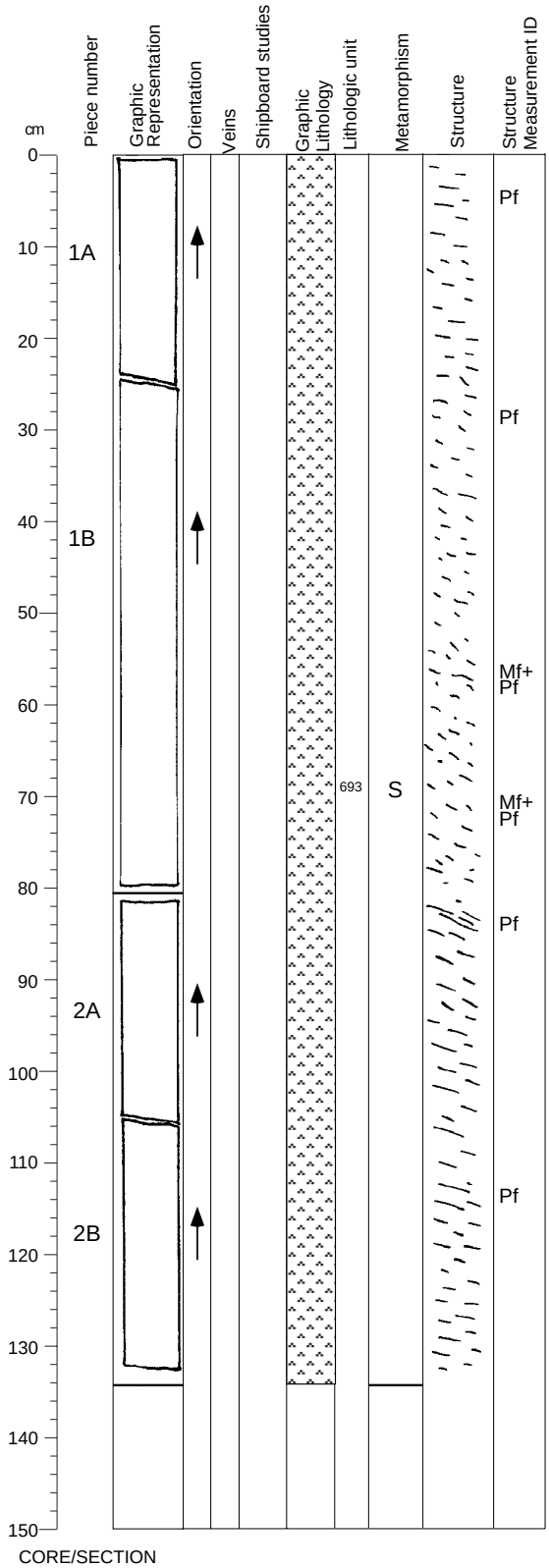
Interval 693: OLIVINE GABBRO
(see Section 176-735B-142R-1)

Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <8
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: moderate (12%). 30% of the olivine is altered to amphibole. 5% of the clinopyroxene is replaced by amphibole. 15% of the plagioclase is altered to secondary plagioclase.

Structures:
Mf>Pf>Pf/F
The entire section displays a weak crystal-plastic foliation, which overprints a moderate magmatic foliation in the first 10 cm. At 34 cm, the foliation is locally stronger and cut by a semi-brittle, sinistral, shallow shear zone.

Core Image



176-735B-142R-6

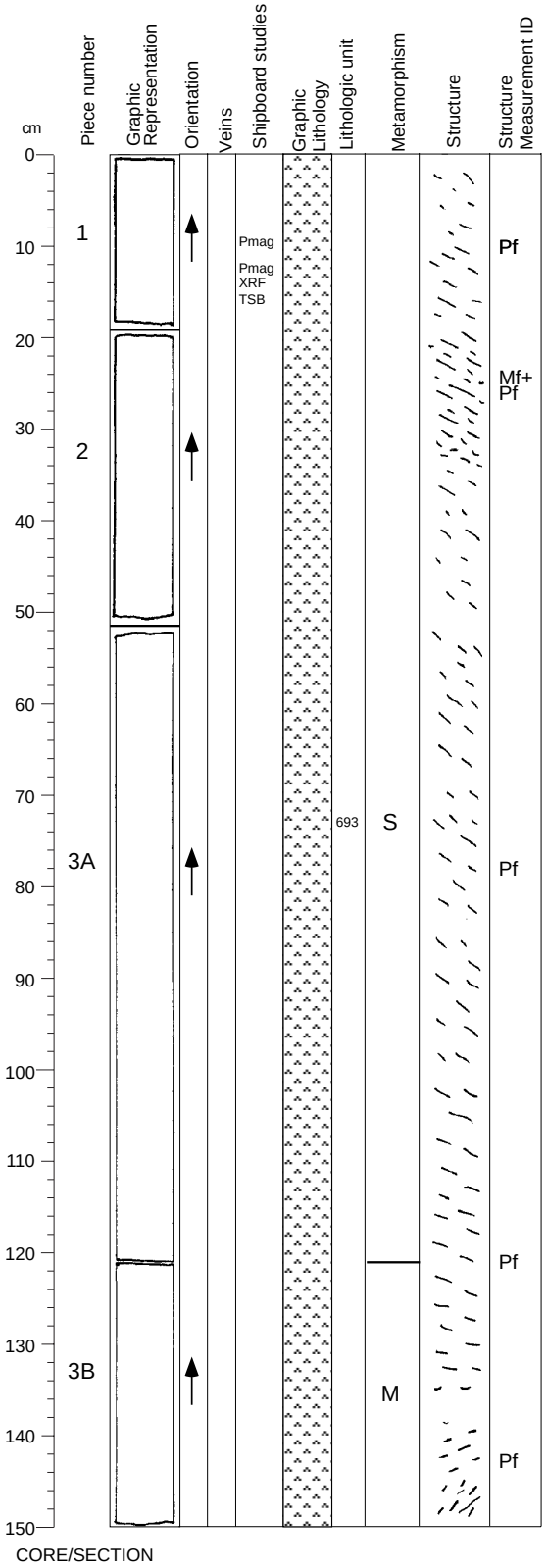
Interval 693: OLIVINE GABBRO
(see Section 176-735B-142R-1)

Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant near felsic zones.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (10%). 30% of the olivine is altered to amphibole. 4% of the clinopyroxene is replaced by amphibole. 10% of the plagioclase is altered to secondary plagioclase.

Structures:
Mf>Pf
The entire section displays a weak crystal-plastic foliation, locally overprinting a weak to moderate (from 40 to 80 cm) magmatic foliation.

Core Image



176-735B-142R-7

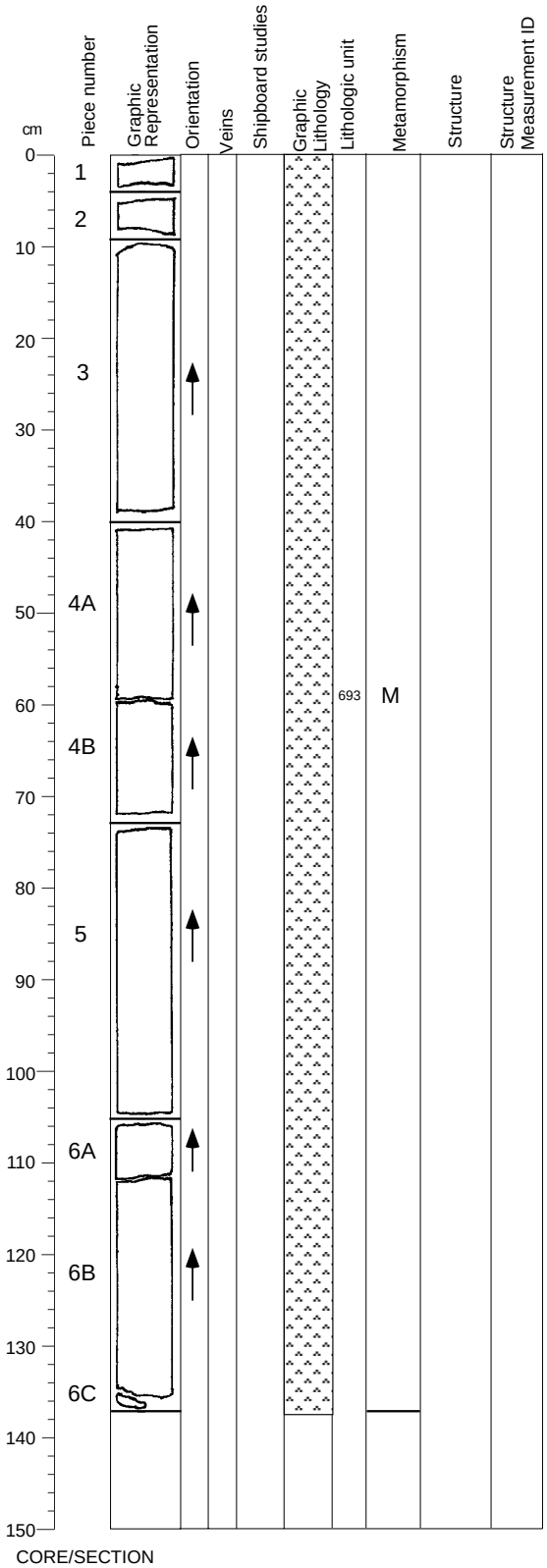
Interval 693: OLIVINE GABBRO
(see Section 176-735B-142R-1)

Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant in deformed areas.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Secondary plagioclase:
Total Percent: <10
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant in deformed areas.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Associated with green amphibole.

Background Alteration:
Degree of alteration: slight to moderate (10 to 30%). Pieces 1 to 3A: Same as previous section. Piece 3B: deformed and higher percentage of recrystallized plagioclase (40%) and clinopyroxene (15%).

Structures:
Mf>Pf
The entire section displays a weak crystal-plastic foliation, locally overprinting a moderate magmatic foliation in Piece 2. At the bottom of the section, the plastic foliation wraps around a zone (between 135 and 140 cm) of very large crystals; it becomes stronger downwards, in the last 10 cm, with a progressively changing orientation.

Core Image



176-735B-143R-1

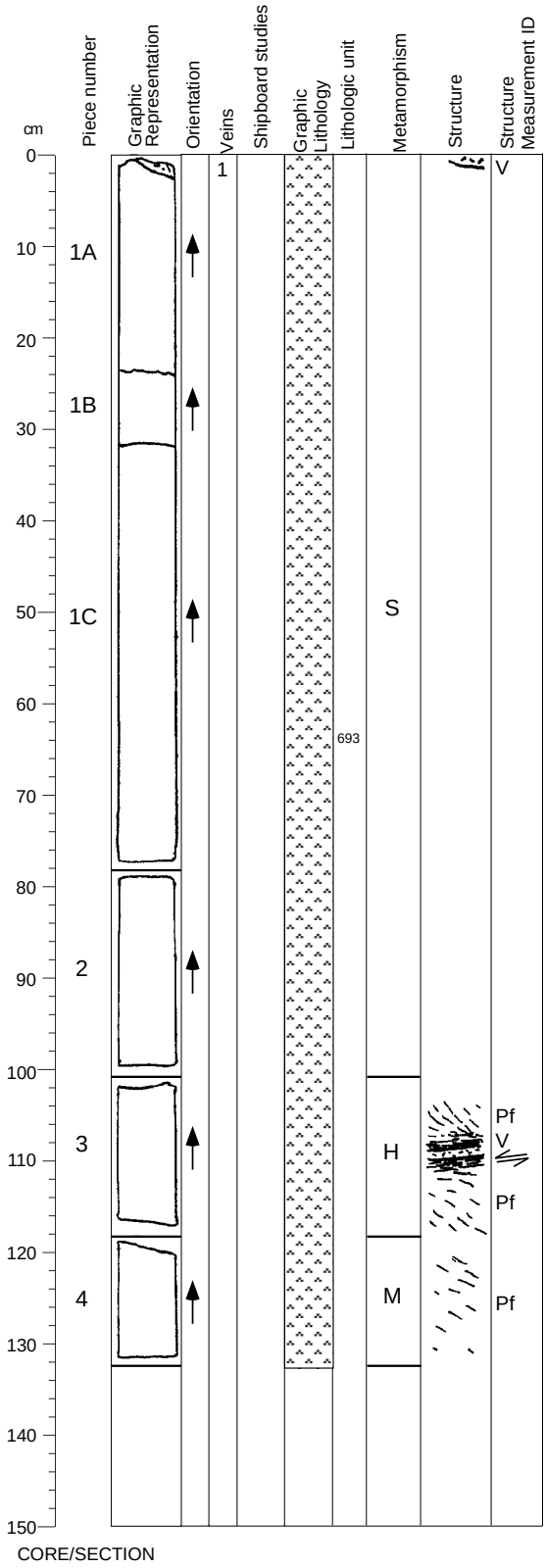
Interval 693: OLIVINE GABBRO
(see Section 176-735B-142R-1)

Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: As patches.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Associated with green amphibole.

Background Alteration:
Degree of alteration: moderate (12%). 30% of the olivine is altered to amphibole. 5% of the clinopyroxene is replaced by amphibole. 15% of the plagioclase is altered to secondary plagioclase.

Structures:
Mf
The entire section displays a coarse-grained igneous texture, with no magmatic foliation.

Core Image



176-735B-143R-2

Interval 693: OLIVINE GABBRO
(see Section 176-735B-142R-1)

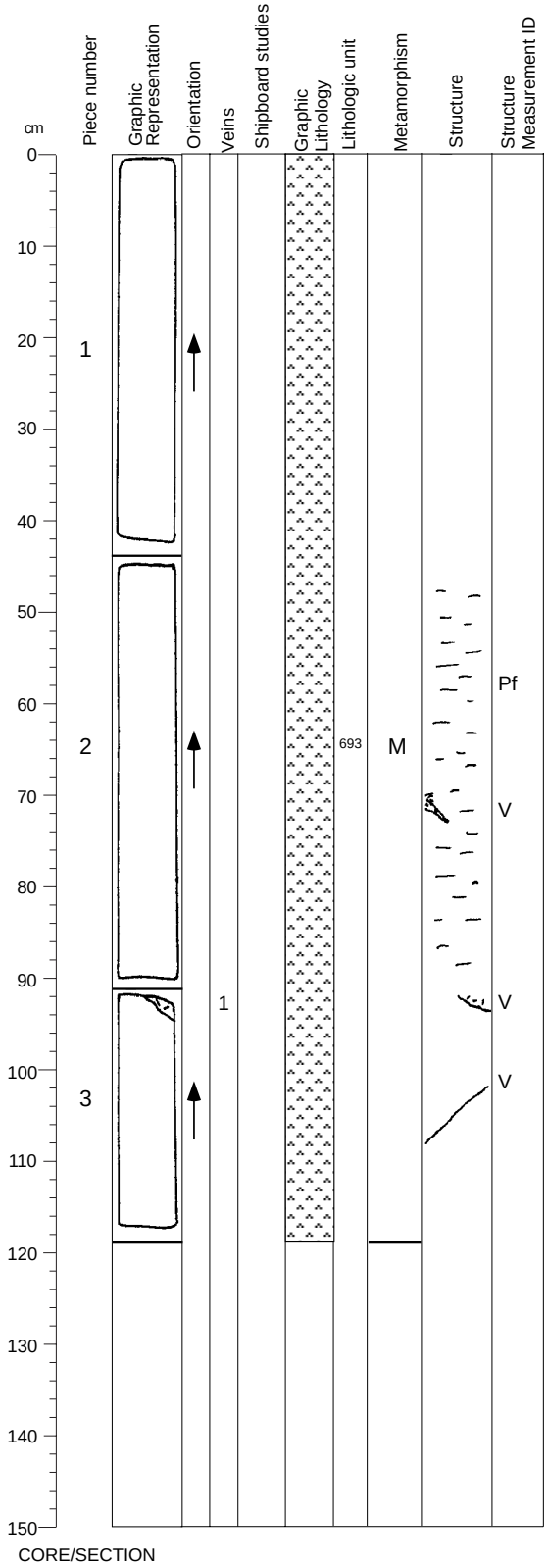
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: Particularly in deformed felsic zones.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Comments: In and near deformed felsic zones.
Secondary plagioclase:
Total Percent: <8
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant in deformed areas.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Associated with green amphibole.
Sulfides:
Total Percent: trace
Mode of occurrence: Associated with green amphibole and chlorite.

Background Alteration:
Degree of alteration: slight to high (10 to 70%). Pieces 1 to 2: 30% of the olivine is altered to amphibole. 4% of the clinopyroxene is replaced by amphibole. 10% of the plagioclase is altered to secondary plagioclase. Piece 3: highly deformed and heavily recrystallized (70%). Piece 4: moderately altered (15%).

Vein/Fracture Filling:
8 mm plagioclase + amphibole vein in Piece 1A.

Structures:
Mf>Pf
From 0 to 98 cm, the section displays a coarse-grained igneous texture, with no or a weak magmatic foliation. In Piece 3, a 4-5 cm thick, sinistral, shallow mylonitic shear zone is present ; it contains a 1 cm vein apparently overprinting the mylonitic foliation (the vein is parallel to the foliation but appears not deformed). The rest of the section downwards displays a weak crystal-plastic foliation.

Core Image



176-735B-143R-3

Interval 693: OLIVINE GABBRO
(see Section 176-735B-142R-1)

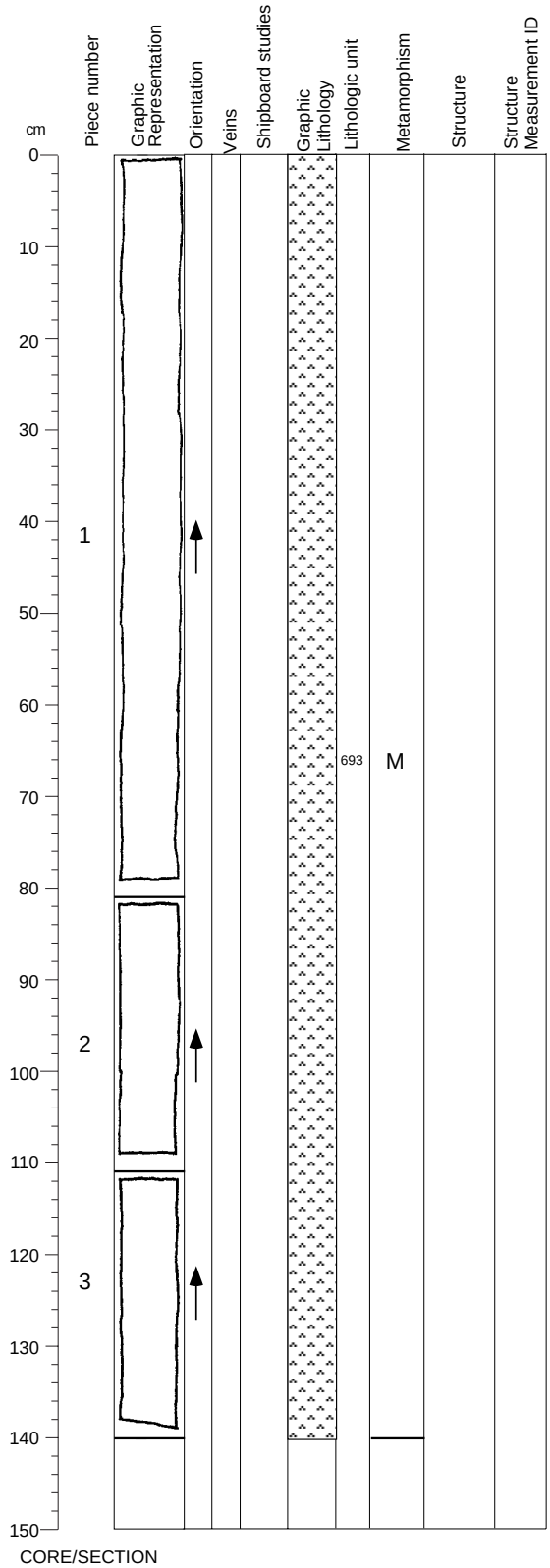
Dark green amphibole:
Total Percent: <8
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: Particularly in felsic zones.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Comments: In and near felsic zones.
Secondary plagioclase:
Total Percent: <12
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant in felsic areas.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Associated with green amphibole.

Background Alteration:
Degree of alteration: moderate (20%). 50% of the olivine is altered to amphibole. 8% of the clinopyroxene is replaced by amphibole. 35% of the plagioclase is altered to secondary plagioclase.

Vein/Fracture Filling:
4 mm plagioclase + amphibole vein in Piece 3.

Structures:
Mf>Pf>V; Mf>V
Most of this section displays a coarse-grained igneous texture, with no or a weak magmatic foliation. The igneous texture is overprinted in Piece 2 by a very weak crystal-plastic foliation. A few veins cut the previous fabrics in Pieces 2 and 3.

Core Image



176-735B-143R-4

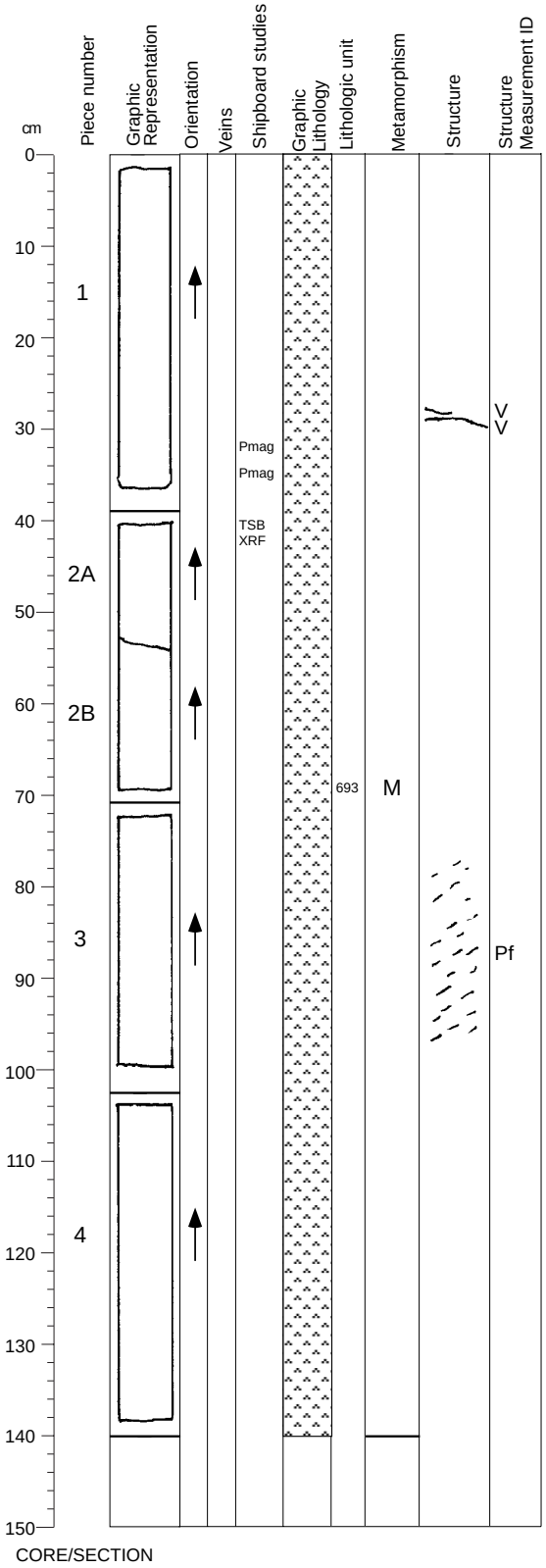
Interval 693: OLIVINE GABBRO
(see Section 176-735B-142R-1)

Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole in alteration patches.
Secondary plagioclase:
Total Percent: <10
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Associated with green amphibole.

Background Alteration:
Degree of alteration: moderate (15%). 40% of the olivine is altered to amphibole. 6% of the clinopyroxene is replaced by amphibole. 12% of the plagioclase is altered to secondary plagioclase.

Structures:
Mf>Pf
The entire section displays a coarse-grained igneous texture, with no magmatic foliation. Locally, crystal-plastic deformation appears as recrystallization in plagioclase-rich zones, and as some very weak foliations.

Core Image



176-735B-143R-5

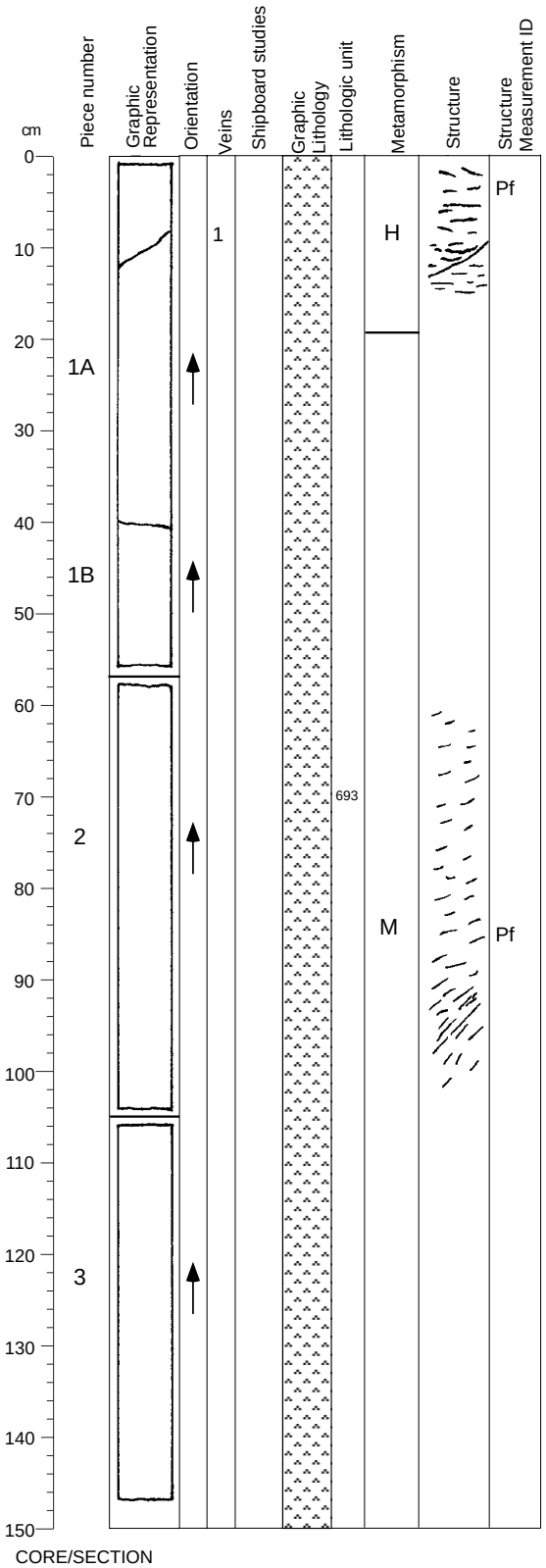
Interval 693: OLIVINE GABBRO
(see Section 176-735B-142R-1)

Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: tr.
Mode of occurrence: After brown amphibole, in alteration patches.
Secondary plagioclase:
Total Percent: <7
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: tr.
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: tr.
Mode of occurrence: Associated with green amphibole.

Background Alteration:
Degree of alteration: moderate (15%). Same as previous section.

Structures:
Mf>V; Mf>Pf
From 0 to 81 cm and 96 to 137.5 cm, the section displays a coarse-grained igneous texture, with no magmatic foliation, cut by two small veins in Piece 1. In Piece 3, the magmatic foliation is weak, and overprinted by a weak crystal-plastic foliation.

Core Image



176-735B-143R-6

Interval 693: OLIVINE GABBRO
(see Section 176-735B-142R-1)

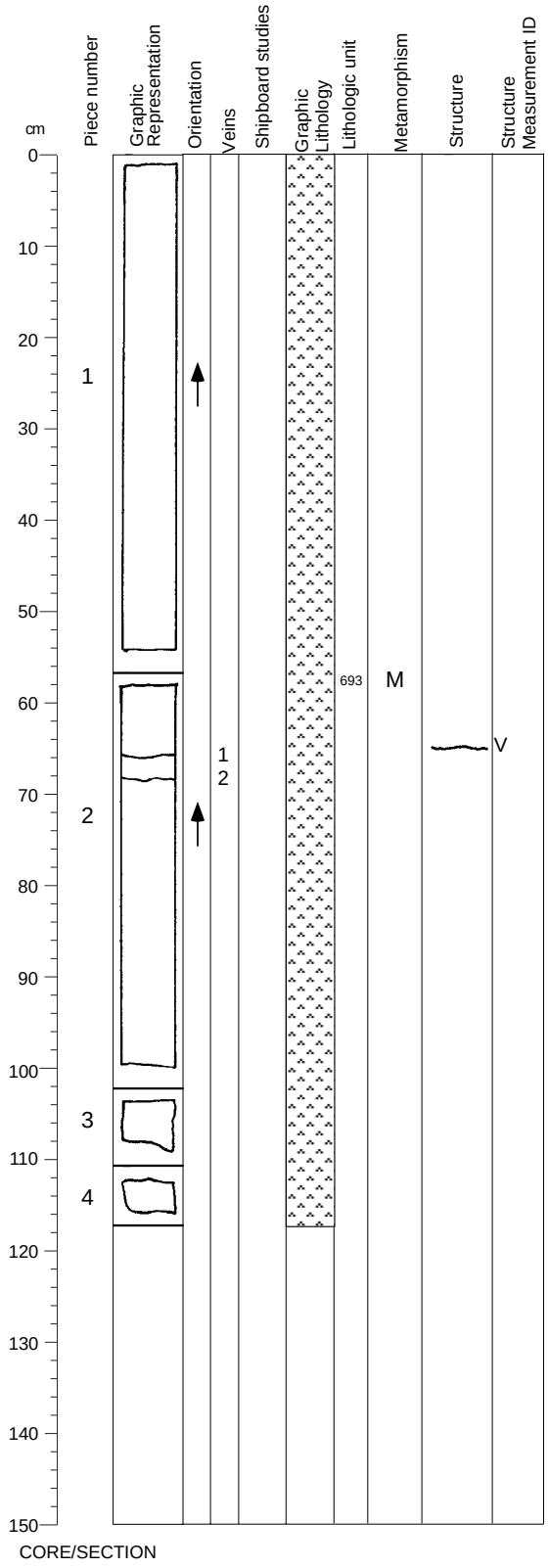
Alteration:
Dark green amphibole:
Total Percent: <10
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: In deformed areas.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole, in alteration patches.
Secondary plagioclase:
Total Percent: <15
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Associated with green amphibole.

Background Alteration:
Degree of alteration: moderate to high (25 to 60%). Piece 1: highly sheared and recrystallized, with 90% of the olivine, 50% of the clinopyroxene and 80% of the plagioclase recrystallized. Piece 1 to 3: 50% of the olivine is altered to amphibole. 10% of the clinopyroxene is replaced by amphibole. 35% of the plagioclase is altered to secondary plagioclase.

Vein/Fracture Filling:
0.3 mm amphibole vein in Piece 1.

Structures:
Pf>F
At the top of Piece 1 (from 0 to 14 cm), a strong crystal-pastic foliation is present, cut by a vein. From 14 cm, the rest of the section displays a coarse-grained igneous texture, with little or no magmatic foliation, overprinted in Piece 2 by a weak crystal-plastic foliation (locally strong between 91 and 93 cm).

Core Image



176-735B-143R-7

Interval 693: OLIVINE GABBRO
(see Section 176-735B-142R-1)

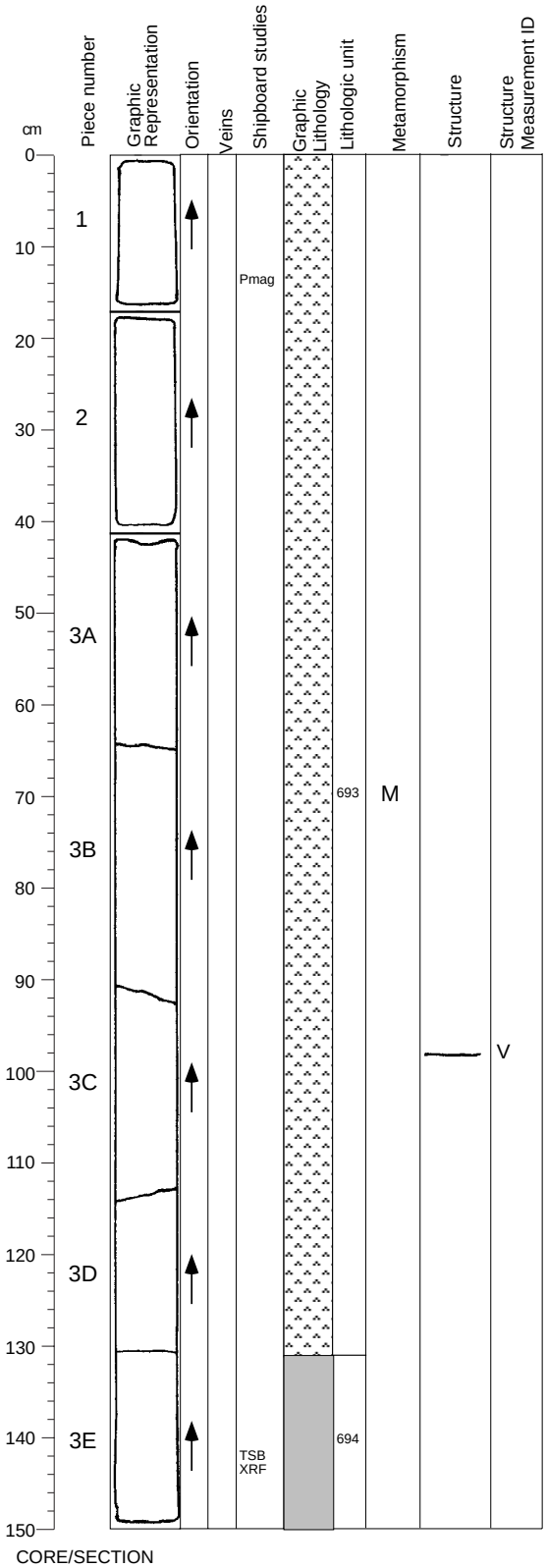
Alteration:
Dark green amphibole:
Total Percent: <8
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: In deformed areas.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole, in alteration patches.
Secondary plagioclase:
Total Percent: <12
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Associated with green amphibole.

Background Alteration:
Degree of alteration: moderate (15%). 40% of the olivine is altered to amphibole. 6% of the clinopyroxene is replaced by amphibole. 18% of the plagioclase is altered to secondary plagioclase.

Vein/Fracture Filling:
0.2-0.6 mm amphibole veins in Piece 2.

Structures:
Mf>Pf; Mf>V
This section displays a coarse-grained igneous texture, with no or a weak magmatic foliation, overprinted in the first 10 cm by a very weak crystal-plastic foliation, and in Piece 2 by a vein.

Core Image



176-735B-144R-1

Interval 693: OLIVINE GABBRO
(see Section 176-735B-142R-1)
Interval 694: ALTERED OXIDE CLINOPYROXENITE

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	144	1	131	3E	913.61
Lower contact:	144	1	149	3E	913.79

Thickness (m): 0.18

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	5	10	3	coarse	tabular/ anhedral subhedral
Clinopyroxene	70	30	2	coarse	equant/ subhedral anhedral
Olivine	3	4	1	medium	equant/ anhedral
Opaques	4				interstitial lenses/ interstitial network
Total	82*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Not Calculated

Texture:	Type	Distribution
	granular	uniform

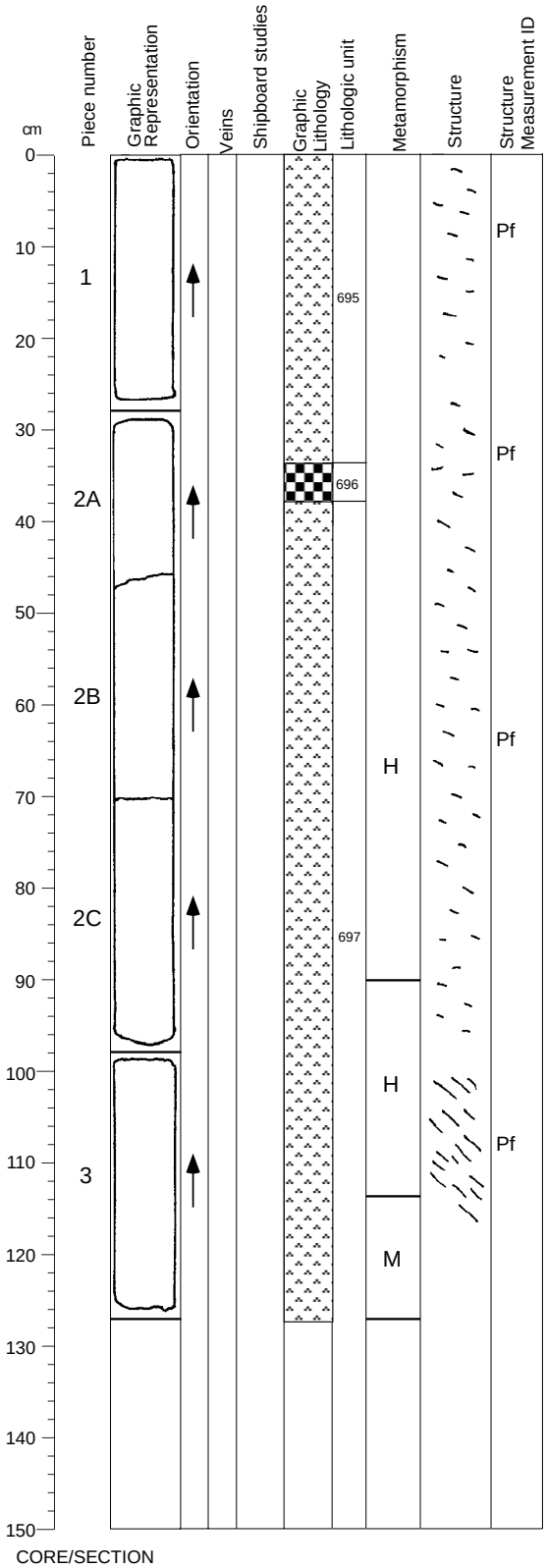
Comments: Clinopyroxene (unevenly distributed) rich interval. Coarse-grained, and apparently "equigranular". Oxide 3% at 130-137 cm and 5% at 137-150 cm in 144R-1. Sulfide present. Greenish alteration material present.

Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: <1
Mode of occurrence: In alteration patches.
Secondary plagioclase:
Total Percent: <10
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Associated with green amphibole.

Background Alteration:
Degree of alteration: moderate (15%). 30% of the olivine is altered to amphibole. 10% of the clinopyroxene is replaced by amphibole. 20% of the plagioclase is altered to secondary plagioclase and traces of prehnite (?).

Structures:
Mf>V
This section displays a coarse-grained igneous texture, with no or a weak magmatic foliation, overprinted in Piece 3C by a vein.

Core Image



176-735B-144R-2

Interval 695: LEUCOCRATIC OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	144	1	149	3E	913.79
Lower contact:	144	2	33	2A	914.13

Thickness (m): 0.34

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	70	15	3	coarse	tabular/ subhedral euhedral
Clinopyroxene	30	20	2	coarse	equant/ anhedral
Olivine	5	5	1	medium	amoeboidal/ anhedral
Opaques	0.7				amoeboidal aggregates/ disseminated
Total	105.7*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Localy subophitic. Mode and grain size variable. Plagioclase recrystallized.

Interval 696: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	144	2	33	2A	914.13
Lower contact:	144	2	38	2A	914.18

Thickness (m): 0.05

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	10	3	coarse	tabular/ subhedral deformed
Clinopyroxene	45	25	2	coarse	elongate / subhedral anhedral
Olivine	1	N/A	N/A	N/A	N/A
Opaques	4				amoeboidal aggregates/ disseminated
Total	110*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): FeTi Oxide Gabbro
Comments: Oxide-rich interval. Sheared.

Continued next page

Core Image

176-735B-144R-2 (cont'd)

Interval 697: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	144	2	38	2A	914.18
Lower contact:	144	4	20	1A	916.63

Thickness (m): 2.45

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	20	4	coarse	tabular/ subhedral euhedral
Clinopyroxene	35	30	3	coarse	equant/ anhedral oikocrystic
Olivine	5	4	1	medium	elongate/ anhedral subhedral
Opaques	0.8				amoeboidal aggregates/ disseminated
Total	105.8*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

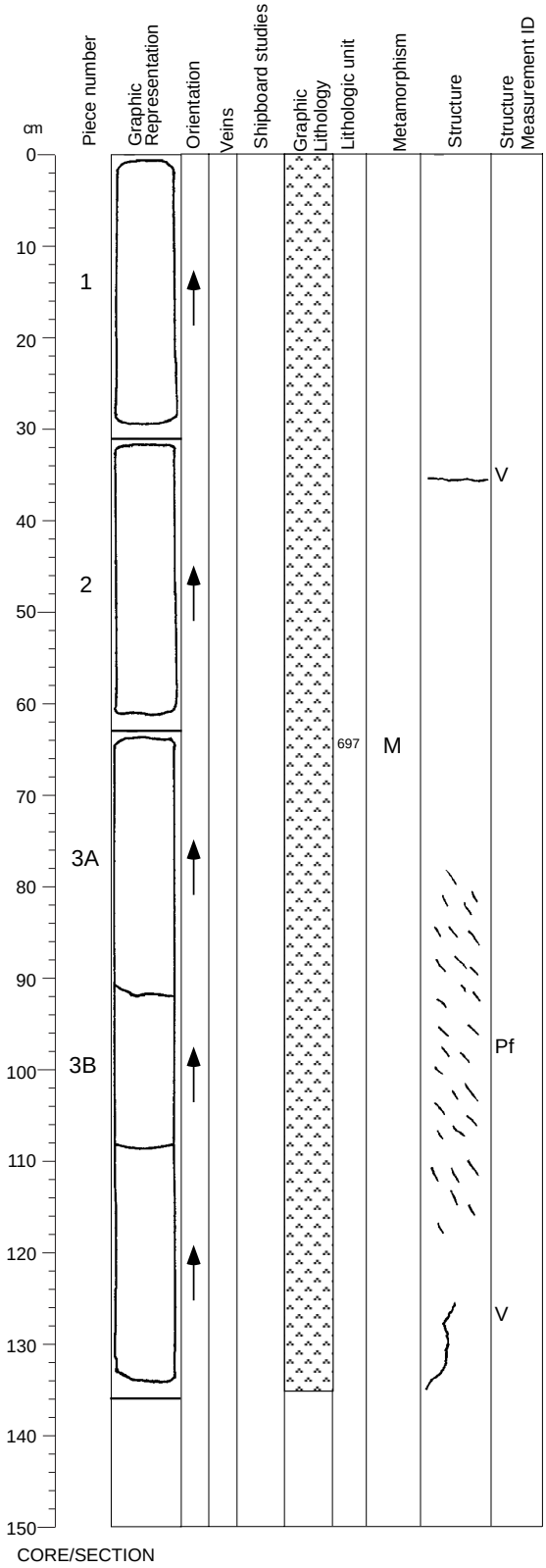
Comments: Localy subophitic. Mode and grain size variable. Locally foliated at 94-112 cm in 144R-2. Clinopyroxene pegmatitic/oikocrystic (white plagioclase as chadacrysts) at 28 cm, 65 cm, and 78 cm in 144R-3. Sulfide present at 100-107 cm in 144R-4.

Alteration:
Dark green amphibole:
Total Percent: <8
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: tr.
Mode of occurrence: In alteration patches.
Secondary plagioclase:
Total Percent: <12
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Associated with green amphibole.

Background Alteration:
Degree of alteration: moderate to high (15% to 60%). Pieces 1 to 2C and lower part of Piece 3: Same as previous section. Pieces 2C to 3: Highly recrystallized shear zone.

Structures:
Mf>Pf
Most of the section displays a weak crystal-plastic foliation. At the top of Piece 3, the foliation is stronger and steeper (40°). The last 12 cm display a coarse-grained igneous texture, with no magmatic foliation.

Core Image



176-735B-144R-3

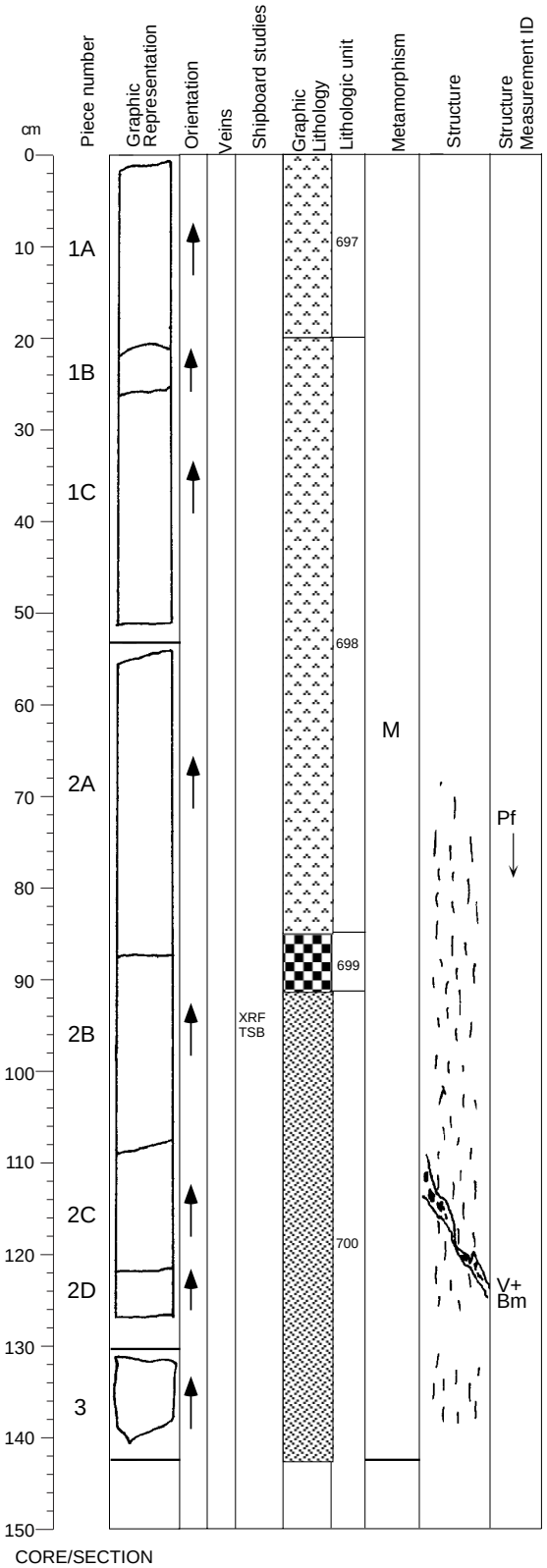
Interval 697: OLIVINE GABBRO
(see previous section)

Alteration:
Dark green amphibole:
Total Percent: <8
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: In alteration patches.
Secondary plagioclase:
Total Percent: <12
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Associated with green amphibole.

Background Alteration:
Degree of alteration: moderate (25%). 10% of the olivine is replaced by amphibole. Clinopyroxene is partly replaced by amphibole (18%). 30% of the plagioclase is recrystallized.

Structures:
Mf>V; Mf>Pf
Most of this section displays a coarse-grained igneous texture, with no or a weak magmatic foliation, overprinted in Pieces 3A to C (from 78 to 120 cm) by a weak crystal-plastic foliation, and cut by two veins in Pieces 2 and 3C.

Core Image



176-735B-144R-4

Interval 697: OLIVINE GABBRO
(see Section 176-735B-144R-2)

Interval 698: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	144	4	20	1A	916.63
Lower contact:	144	4	85	2A	917.28

Thickness (m): 0.65

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	20	1	coarse	tabular/ subhedral euhedral
Clinopyroxene	35	25	3	coarse	equant/ oikocrystic anhedral
Olivine	8	5	1	medium	elongate/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	108.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Localy subophitic. Mode and grain size variable. Coarse in upper two thirds, finer downward. Clinopyroxene (locally oikocrystic) grain up to 3.5 cm. Fine-grained recrystallized plagioclase present.

Interval 699: LEUCOCRATIC OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	144	4	85	2A	917.28
Lower contact:	144	4	91	2B	917.34

Thickness (m): 0.06

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	70	10	N/A	medium	tabular/ anhedral subhedral
Clinopyroxene	30	15	1	coarse	tabular subhedral anhedral
Olivine	1	N/A	N/A	N/A	N/A
Opaques	5				amoeboidal aggregates/ disseminated
Total	106*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Medium
Modal IUGS Name (calculated): FeTi Oxide Gabbro
Comments: Oxide rich interval. Clinopyroxene distribution uneven. Fine-grained recrystallized plagioclase present. Oxide 0.8% at 89-100 cm and 1.1% at 100-140 cm in 144R-4.

Continued next page

Core Image

176-735B-144R-4 (cont'd)

Interval 700: DISSEMINATED OXIDE OLIVINE GABBRO

			Depth in		Depth
Interval Location:	Core	Section	Section	Piece	mbsf
Upper contact:	144	4	91	2B	917.34
Lower contact:	144	4	139	3	917.82

Thickness (m): 0.48

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	3	N/A	medium	tabular/ anhedral subhedral
Clinopyroxene	35	12	1	coarse	equant/ subhedral anhedral
Olivine	5	8	1	medium	amoeboidal/ anhedral deformed
Opaques	1				amoeboidal aggregates/ disseminated
Total	106*		(see explanatory notes)		

*Major phases estimated to ± 5%)
Grain Size: Medium
Modal IUGS Name (calculated): Disseminated FeTi Oxide Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

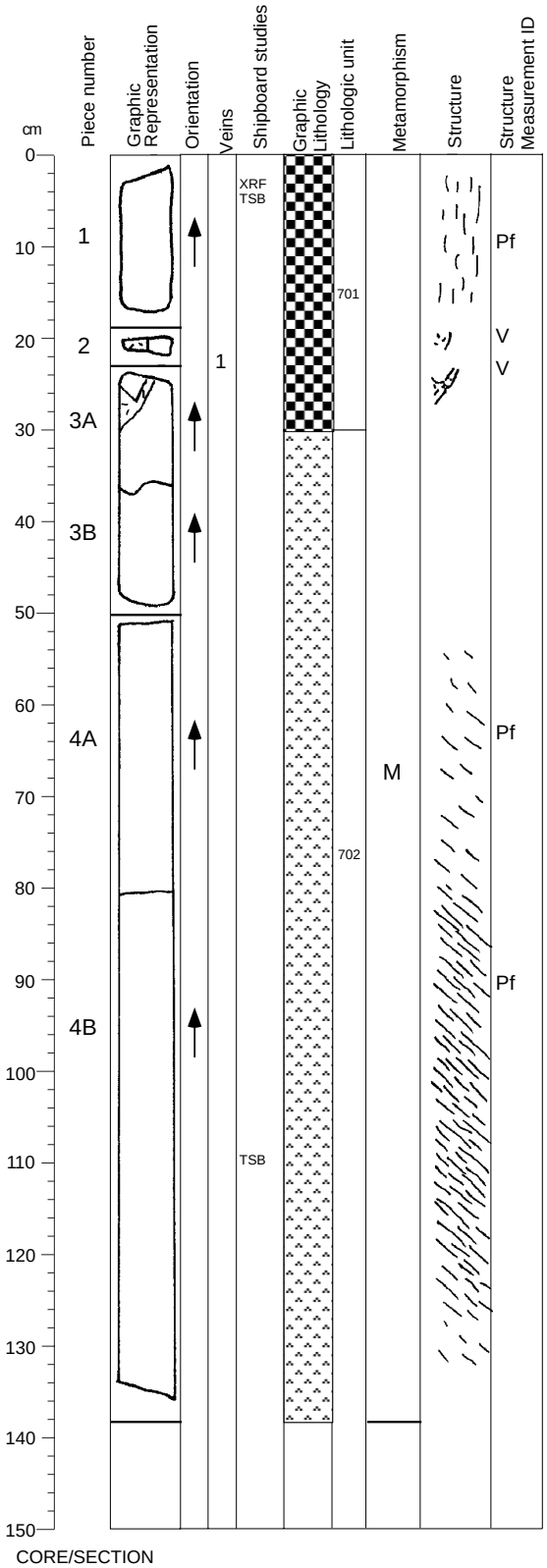
Comments: Felsic/mafic ratio decrease gradationally downward. A felsic diffusive "vein" (vertical) at 110-126 cm in 144R-4. Fine-grained clinopyroxene (dark granular)as bands.

Alteration:
Dark green amphibole:
Total Percent: <10
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic areas.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole, in alteration patches and felsic areas.
Secondary plagioclase:
Total Percent: <15
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant near felsic areas.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Associated with green amphibole.

Background Alteration:
Degree of alteration: moderate (25%). Same as previous section.

Structures:
Mf>Pf>V=Bm
From 0 to 65 cm, the section displays a coarse-grained igneous texture, with no magmatic foliation. From 65 cm to the bottom, a vertical crystal-plastic foliation is present, possibly overprinting a weak magmatic foliation. In Piece 2C, the vertical plastic foliation is overprinted by a vein with diffuse boundaries, locally brecciating the host-rock.

Core Image



176-735B-144R-5

Interval 701: ANORTHOSITIC DISSEMINATED OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	144	4	139	3	917.82
Lower contact:	144	5	30	2A	918.15

Thickness (m): 0.33

	Grain Size (mm): Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	85	8	1	medium	tabular/ subhedral anhedral
Clinopyroxene	15	15	1	coarse	equant/ subhedral anhedral
Olivine	1	3	1	medium	amoeboidal/ anhedral
Opaques	1.5				amoeboidal aggregates/ disseminated
Total	102.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Medium
Modal IUGS Name (calculated): Leucocratic Gabbro
Type Distribution
Texture: granular N/A
Comments: Interval with excessively more felsic material (interpreted as metasomatized gabbro). Mostly medium-grained. Coarse/pegmatitic clinopyroxene present as "porphyroclasts" in felsic "matrix".

Interval 702: LEUCOCRATIC OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	144	5	30	2A	918.15
Lower contact:	144	7	100	11	921.63

Thickness (m): 3.48

	Grain Size (mm): Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	75	20	N/A	coarse	tabular/ subhedral euhedral
Clinopyroxene	25	35	1	coarse	equant/ subhedral anhedral
Olivine	6	10	2	medium	elongate/ anhedral deformed
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	106.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro
Type Distribution
Texture: variable texture N/A
Comments: Mostly granular; subophitic at top. Locally intergranular with finer clinopyroxene filling intersticies of plagioclase grains (110-120 cm in 144R-6). Mode and grain size variable. Locally foliated with "infiltration" of abundant felsic material. Fine-grained recrystallized plagioclase present. Oxide 1% at 70-72 cm in 144R-5 and 114-118 cm in 144R-5; and 2% at 133-137 cm in 144R-6.

Continued next page

Core Image

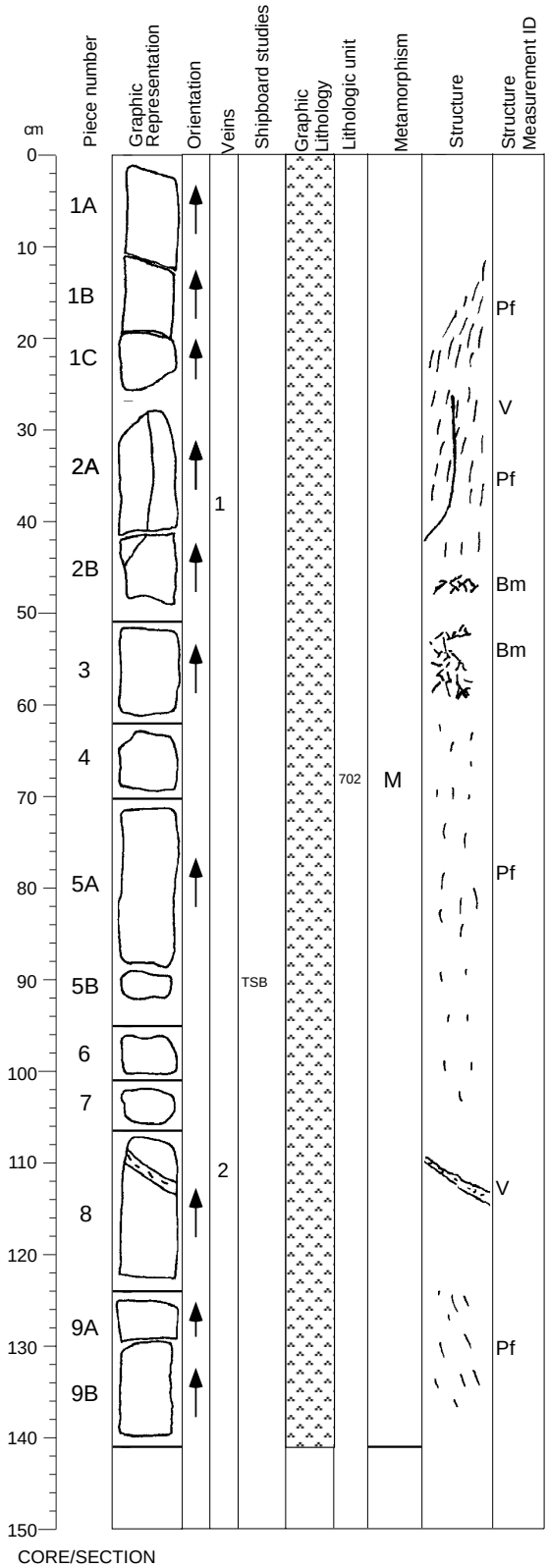
176-735B-144R-5 (cont'd)

Alteration:
Dark green amphibole:
Total Percent: <15
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic and deformed areas.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Comments: More abundant near felsic and deformed areas.
Secondary plagioclase:
Total Percent: <20
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant near felsic and deformed areas.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Associated with green amphibole.

Background Alteration:
Degree of alteration: moderate (40%). 30% of the olivine is replaced by amphibole. Clinopyroxene is partly replaced by amphibole (30%). 45% of the plagioclase is recrystallized. The high abundance of secondary plagioclase is in part due to impregnation of the core with felsic material.

Structures:
Mf>Pf; Mf>V
Piece 1 displays a vertical crystal-plastic foliation, possibly overprinting a weak magmatic foliation. Pieces 2 and 3A to 3B display a coarse-grained igneous texture, with no magmatic foliation, overprinted by veins in Pieces 2 and 3A. In Pieces 4A and B, a crystal-plastic foliation is present, weak from 55 to 82 cm and from 129 to 135 cm, strong from 82 to 129 cm.

Core Image



176-735B-144R-6

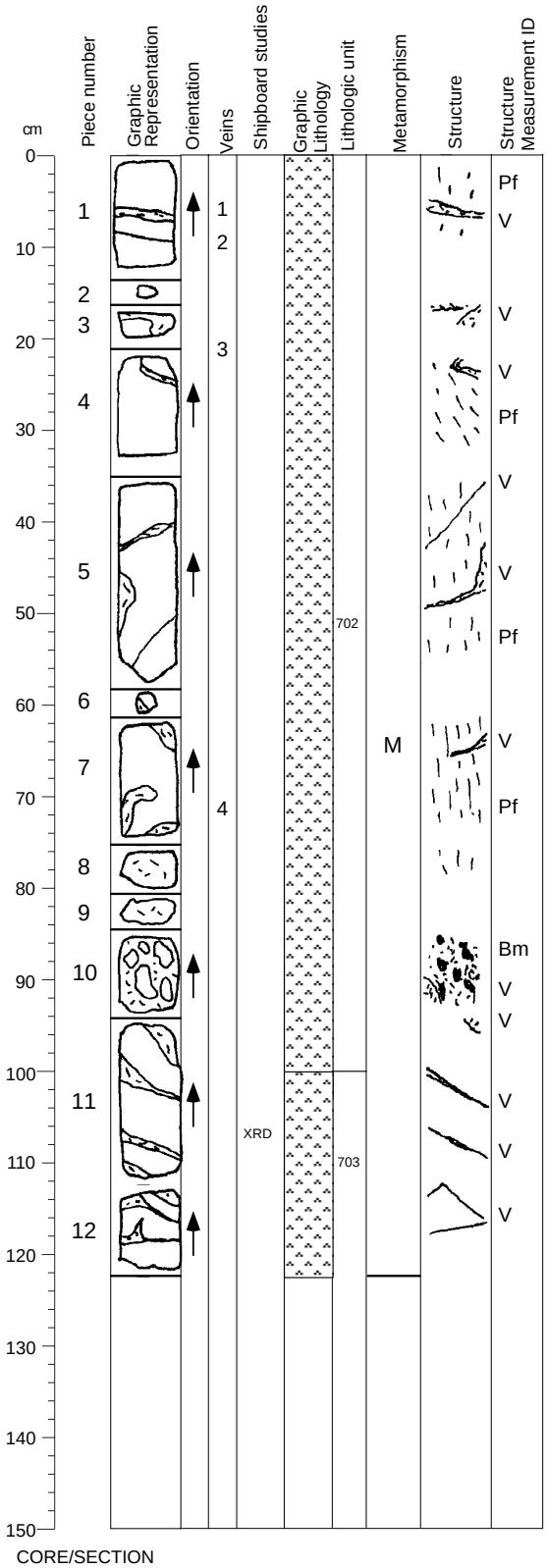
Interval 702: LEUCOCRATIC OLIVINE GABBRO
(see previous section)

Alteration:
Dark green amphibole:
Total Percent: <15
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic.
Secondary plagioclase:
Total Percent: <20
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, more abundant near felsic.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: <5
Mode of occurrence: In patches.

Background Alteration:
Degree of alteration: moderate (35%). 30% of the olivine is replaced by amphibole. Clinopyroxene is partly replaced by amphibole (40%). Alteration of clinopyroxene is increased along felsic veins. 30% of the plagioclase is recrystallized.

Structures:
Mf>Pf>V; Mf>B; Mf>V
From 0 to 20 cm, the section displays a coarse-grained igneous texture, with no magmatic foliation. From 20 to 40 cm, the igneous texture is overprinted by a strong, steep crystal-plastic foliation, cut by a vein in Pieces 2A and 2B. The bottom of Piece 2A and Piece 2B display a brecciated zone, probably magmatic. From 40 cm to the bottom, the section displays mostly a weak crystal-plastic steep foliation, except for Piece 8, in which the igneous texture, with a weak magmatic foliation, is cut by a vein.

Core Image



176-735B-144R-7

Interval 702: LEUCOCRATIC OLIVINE GABBRO (see Section 176-735B-144R-5)

Interval 703: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	144	7	100	11	921.63
Lower contact:	145	5	20	1	927.35

Thickness (m): 5.72

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	20	5	coarse	tabular/ subhedral euhedral
Clinopyroxene	35	25	3	coarse	tabular/ anhedral
Olivine	8	15	2	medium	prismatic/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	108.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Graded
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	variable texture	N/A

Comments: Interval of pervasive intergranular felsic infiltration (veins?). Grain size and mode variable. Mostly granular, locally subophitic. Mostly medium/coarse-grained; locally fine/medium-grained. Clinopyroxene locally pegmatitic at 85-92 cm in 145R-2. Oxide in 145R-1: 3% at 132-135 cm; in 145R-2: 1% at 114-118 cm, 4% at 108-116 cm; in 145R-3: 4% at 0-4 cm; in 145R-4: 3% at 50-53 cm, 2% at 62-66 cm, 1% at 82-83 cm; in 145R-1: 2% at 68-73 cm. Sulfide abundant at 64 cm in 145R-4 and 2 cm 145R-3.

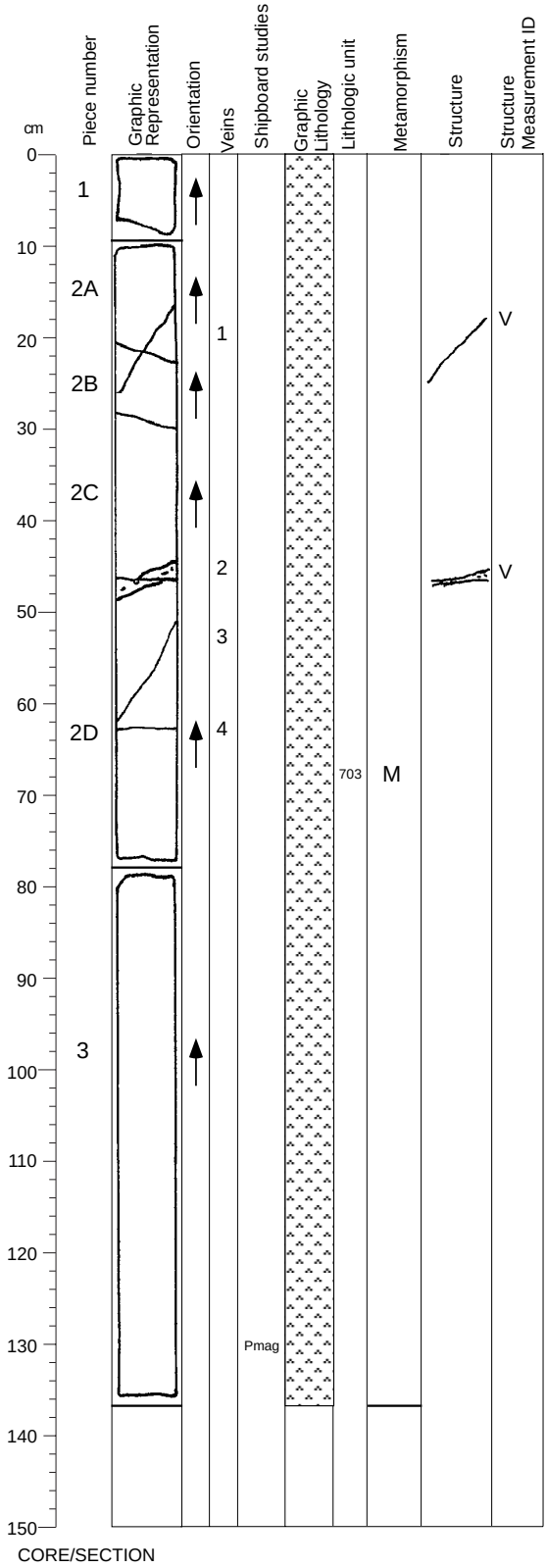
Alteration:
Dark green amphibole:
Total Percent: <15
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Comments: In patches.
Secondary plagioclase:
Total Percent: <20
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: <2
Mode of occurrence: Associated with green and dark green amphibole.

Background Alteration:
Degree of alteration: moderate (35%). Same as previous section.

Vein/Fracture Filling:
4-8 mm plagioclase+amphibole veins in Pieces 1, and 4 to 12; 0.3 mm smectite vein in Piece 1.

Structures:
Pf>V; Mf>V=Bm
From 0 to 80 cm, the section displays a weak to moderate, steep crystal-plastic foliation, cut by a series of veins. From 80 cm to the bottom, the section displays a coarse-grained igneous texture, with no magmatic foliation, overprinted by a series of veins, and by associated magmatic brecciation in Piece 10.

Core Image



176-735B-145R-1

Interval 703: OLIVINE GABBRO
(see previous section)

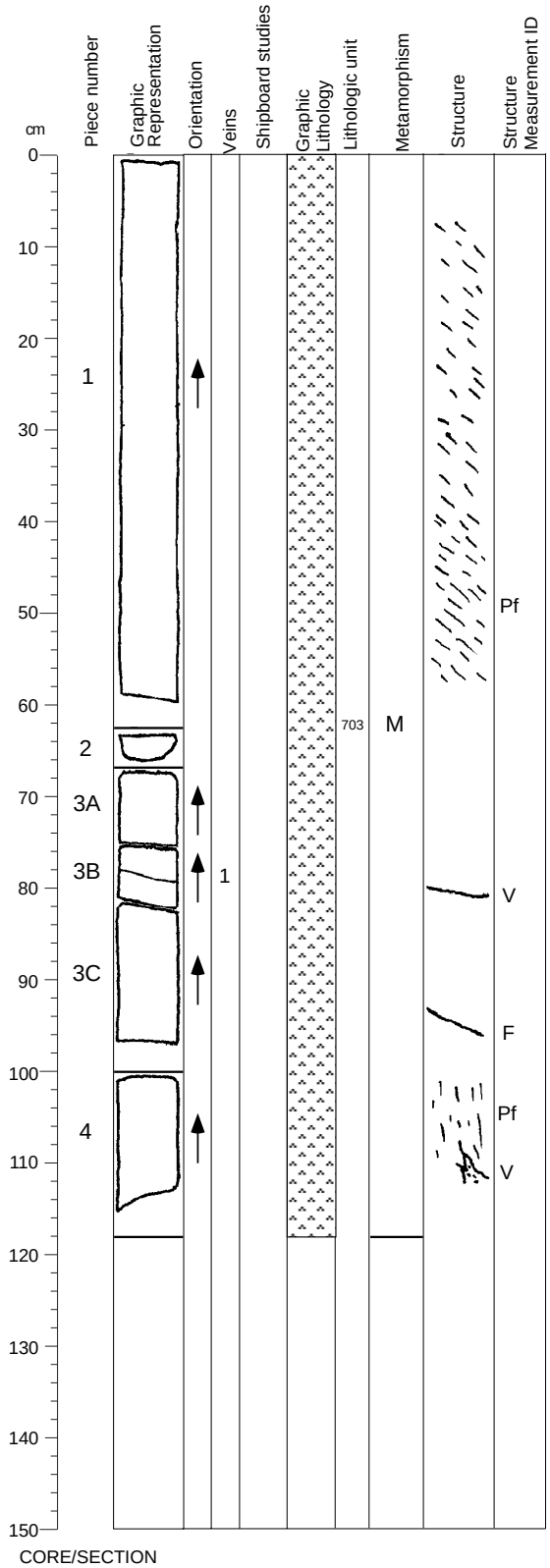
Alteration:
Dark green amphibole:
Total Percent: <10
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic veins.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Comments: In patches.
Secondary plagioclase:
Total Percent: <15
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: <1
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: <1
Mode of occurrence: Associated with green and dark green amphibole.

Background Alteration:
Degree of alteration: moderate (25%). Around 10% of the olivine is altered to amphibole. 18% of the clinopyroxene is replaced by amphibole. 30% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.5-2 mm plagioclase veins in Piece 2; 8 mm plagioclase+amphibole veins in Piece 2; 0.5 mm amphibole vein in Piece 2.

Structures:
Mf>V
The entire section displays a coarse-grained igneous texture, with no or a weak magmatic foliation, cut by two veins in Pieces 2A to 2D.

Core Image



176-735B-145R-2

Interval 703: OLIVINE GABBRO
(see Section 176-735B-144R-7)

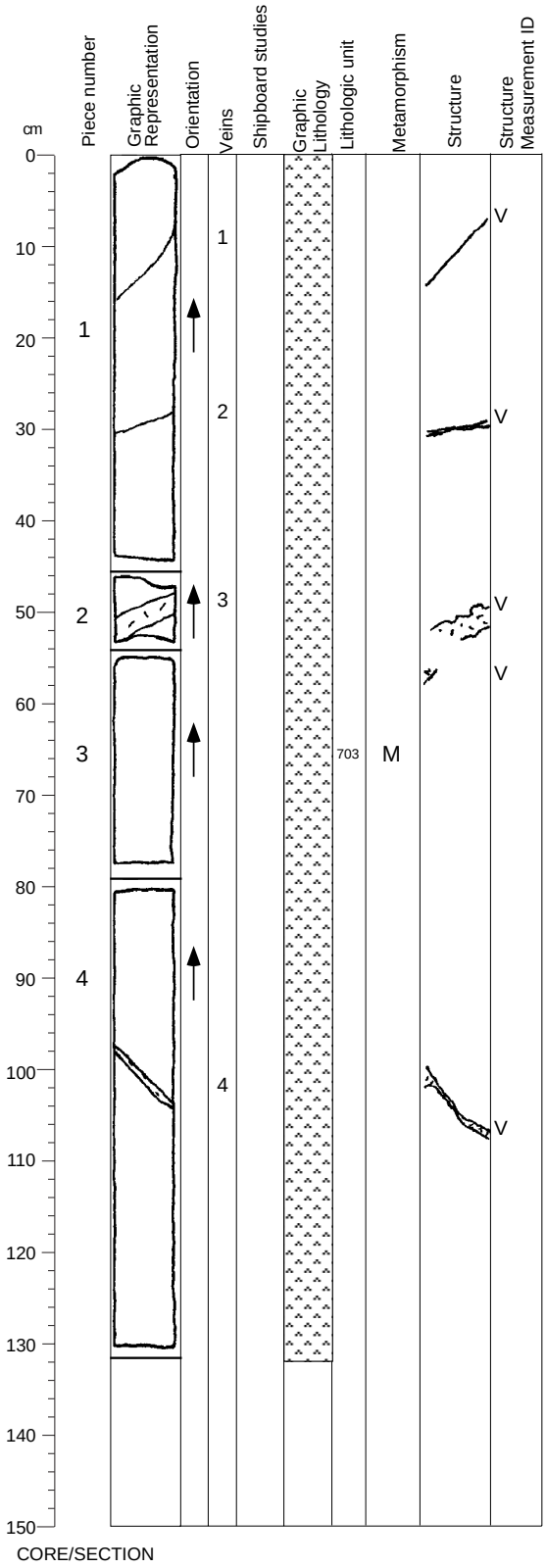
Alteration:
Dark green amphibole:
Total Percent: <10
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Comments: In patches.
Secondary plagioclase:
Total Percent: <15
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Associated with green and dark green amphibole.

Background Alteration:
Degree of alteration: moderate (25%). Same as previous section.

Vein/Fracture Filling:
0.4 mm amphibole vein in Piece 3.

Structures:
Mf>Pf; Mf>V; Mf>F; Mf>V>Pf?
Most of the section displays a coarse-grained igneous texture, with little or no magmatic foliation. The igneous texture is overprinted by a weak crystal-plastic foliation in Piece 1, by a vein in Piece 3B, by a fault in Piece 3C, and by a vein and a subvertical crystal-plastic foliation, respectively, in Piece 4.

Core Image



176-735B-145R-3

Interval 703: OLIVINE GABBRO
(see Section 176-735B-144R-7)

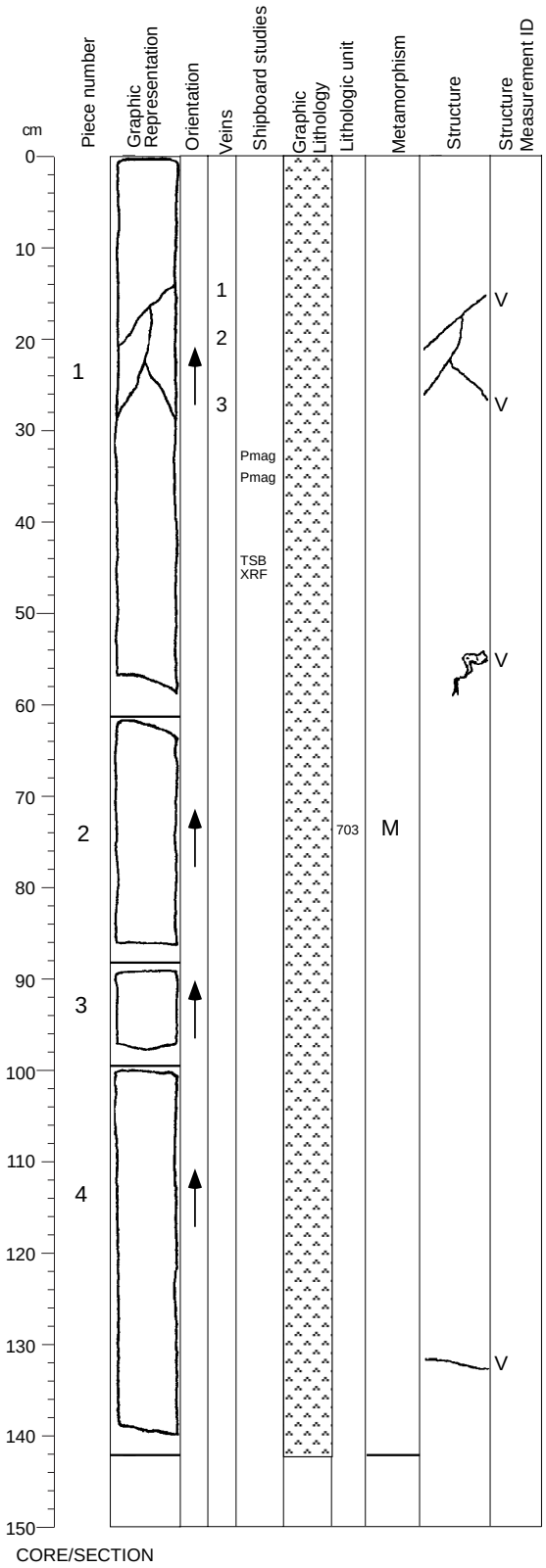
Alteration:
Dark green amphibole:
Total Percent: <8
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic veins.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Comments: In small patches.
Secondary plagioclase:
Total Percent: <10
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: moderate (20%). Around 10% of the olivine is altered to amphibole. 15% of the clinopyroxene is replaced by amphibole. 25% of the plagioclase is recrystallized.

Vein/Fracture Filling:
2-2.5 mm plagioclase + amphibole veins in Pieces 1, 2, and 4; 0.6 mm amphibole vein in Piece 1.

Structures:
Mf>V
The entire section displays a coarse-grained igneous texture, with no magmatic foliation, cut by veins in Pieces 1, 2, and 4.

Core Image



176-735B-145R-4

Interval 703: OLIVINE GABBRO
(see Section 176-735B-144R-7)

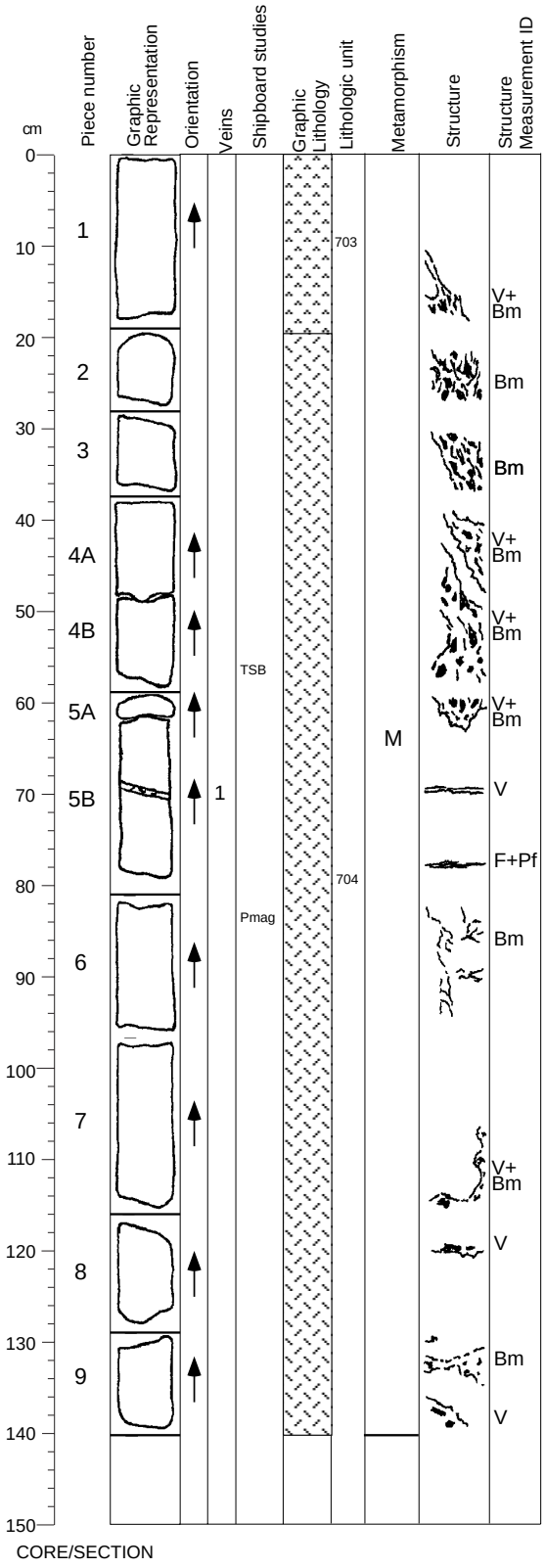
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Comments: In patches.
Secondary plagioclase:
Total Percent: <10
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: moderate (20%). Same as previous section.

Vein/Fracture Filling:
0.6-1 mm amphibole veins in Piece 1.

Structures:
Mf>V
The entire section displays a coarse-grained igneous texture, with no magmatic foliation, cut by veins in Pieces 1 and 4.

Core Image



176-735B-145R-5

Interval 703: OLIVINE GABBRO
(see Section 176-735B-144R-7)
Interval 704: GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	145	5	20	1	927.35
Lower contact:	146	1	55	3	932.05

Thickness (m): 4.70

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	20	5	coarse	tabular/ subhedral euhedral
Clinopyroxene	35	40	2	coarse	tabular/ subhedral anhedral
Olivine	4	7	1	medium	elongate/ anhedral
Opaques	0.9				amoeboidal aggregates/ disseminated
Total	104.9*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Gabbro

	Type	Distribution
Texture:	variable texture	N/A

Comments: Interval with pervasive infiltration of felsic material (interpreted as metasomatized gabbro); locally "granitized". Grain size and mode variable. Porphyroclasts at 18-138 cm in 145R-5 and 103-114 in 145R-6; granular/intergranular elsewhere. Variably deformed, locally pervasive with well-developed gneissic/mylonitic bands (10-20 cm and 50-60 cm in 146R-1). Fine-grained recrystallized plagioclase present. Olivine abundance variable (0-6%).

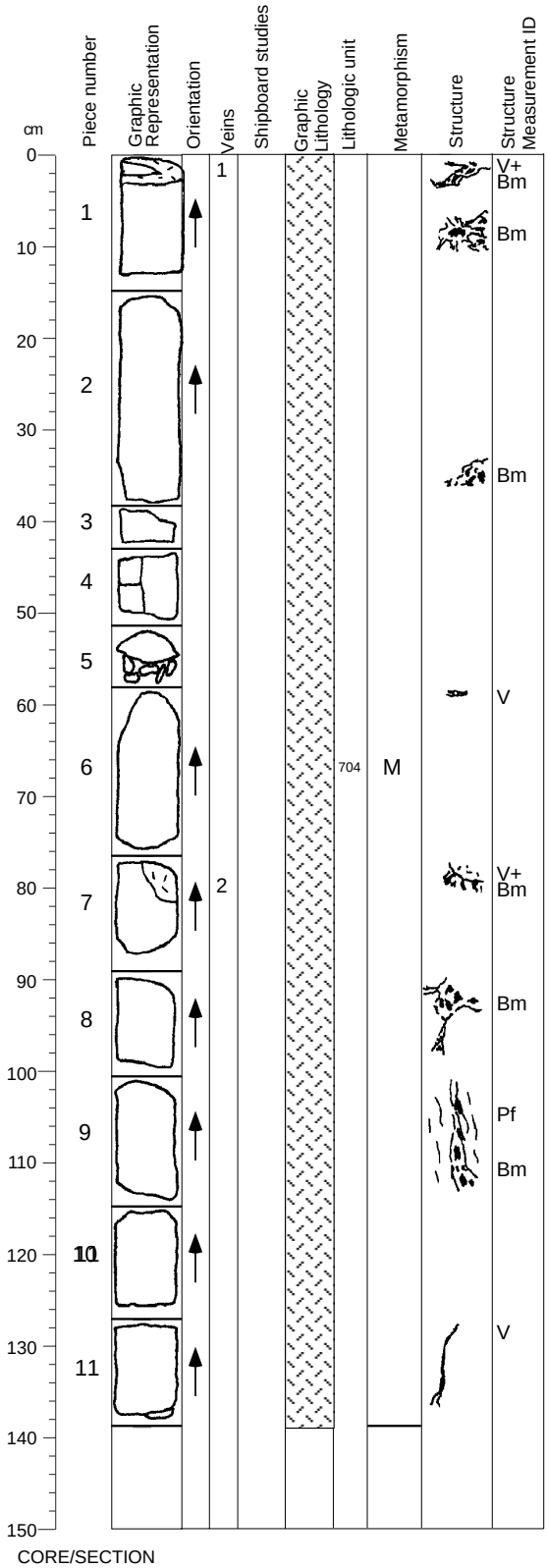
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <5
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <25
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: moderate (35%). Olivine is partly replaced by amphibole (30%). Clinopyroxene is altered to amphibole (20%). 50% of the plagioclase is recrystallized, part of it is possibly crystallized from a silica-rich liquid that impregnated the rock along the steep foliation(?).

Vein/Fracture Filling:
2 mm plagioclase+amphibole vein in Piece 5.

Structures:
Mf>V=Bm>Pf; Mf>Pf>F/Pf
Veins and associated magmatic breccias are observed over the entire section, overprinted by a weak crystal-plastic foliation, probably subvertical, but poorly defined. A narrow, shallow semi-brittle shear zone overprints the weak plastic foliation at the bottom of Piece 5B.

Core Image



176-735B-145R-6

Interval 704: GABBRO
(see previous section)

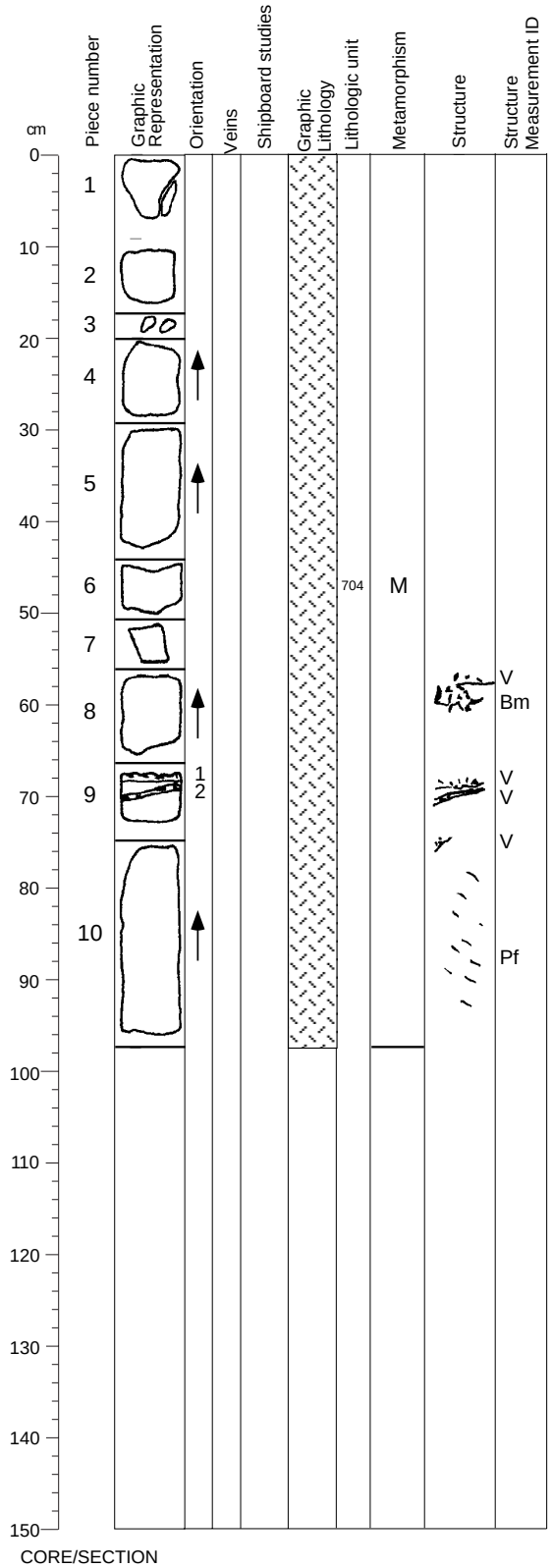
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <3
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <20
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: moderate (30%). Same as previous section, but alteration slightly lower.

Vein/Fracture Filling:
5 mm plagioclase + amphibole vein in Piece 1; 12 mm plagioclase vein in Piece 7.

Structures:
Mf>V=Bm; Mf>Bm>Pf
Most of the section displays a coarse-grained igneous texture, with no magmatic foliation, overprinted in several places by veins and associated magmatic breccias. The breccia is overprinted by a nearly vertical, strong crystal-plastic foliation in Piece 9.

Core Image



176-735B-145R-7

Interval 704: GABBRO
(see Section 176-735B-145R-5)

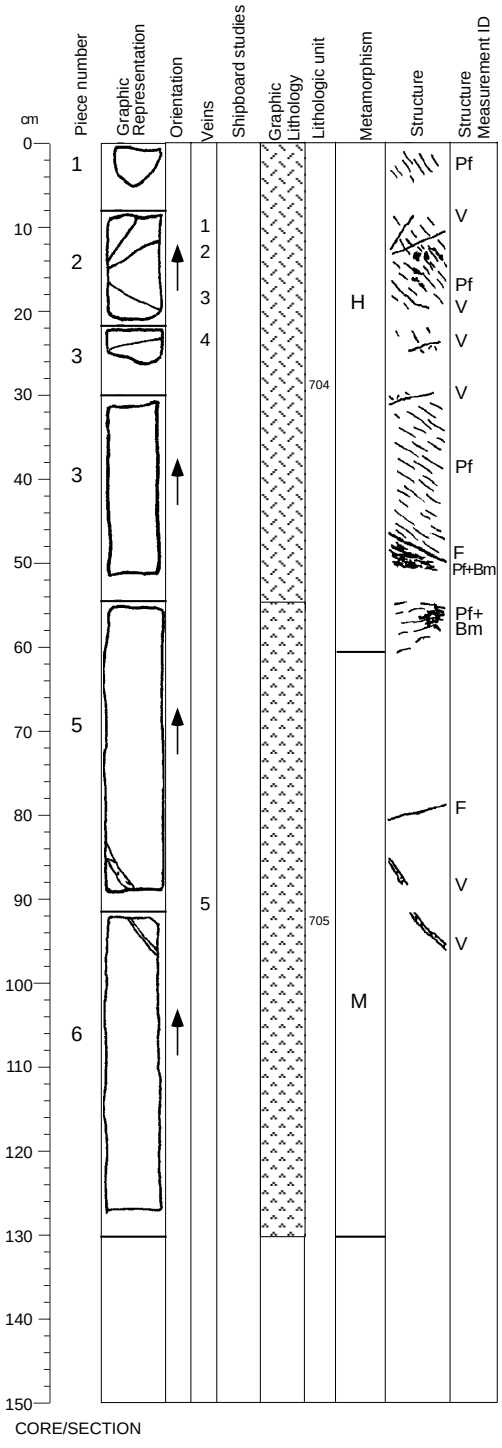
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <3
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Comments: In patches.
Secondary plagioclase:
Total Percent: <20
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: moderate (30%). Same as previous section.

Vein/Fracture Filling:
1.5 mm plagioclase vein in Piece 9.

Structures:
Mf>V=Bm; Mf>Pf
Most of the section displays a coarse-grained igneous texture, with no magmatic foliation. The igneous texture is overprinted in Pieces 8 and 9 by veins (and associated magmatic breccia in Piece 8), and by a weak, poorly defined, crystal-plastic foliation in Piece 10.

Core Image



176-735B-146R-1

Interval 704: GABBRO
(see Section 176-735B-145R-5)
Interval 705: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	146	1	55	3	932.05
Lower contact:	147	2	1	1	942.62

Thickness (m): 10.57

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	20	5	coarse	tabular/ subhedral euhedral
Clinopyroxene	35	30	3	coarse	equant/ oikocrystic anhedral
Olivine	7	6	1	medium	elongate/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	107.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro

Texture:	Type	Distribution
	granular	N/A

Comments: Locally subophitic/pegmatitic at 110 cm in 146R-1; 56 cm, 84 cm, and 92-101 cm in 146R-3; 36 cm and 52 cm in 146R-4; 14-29 cm and 67 cm in 1 46R-7; 42 cm and 91 cm in 147R-1; 2-116 cm in 147R-1; 0-4 cm in 147R-2. Clinopyroxene mode and size variable. Some Cr-rich augite and green olivine present at 80 cm in 146R-4.

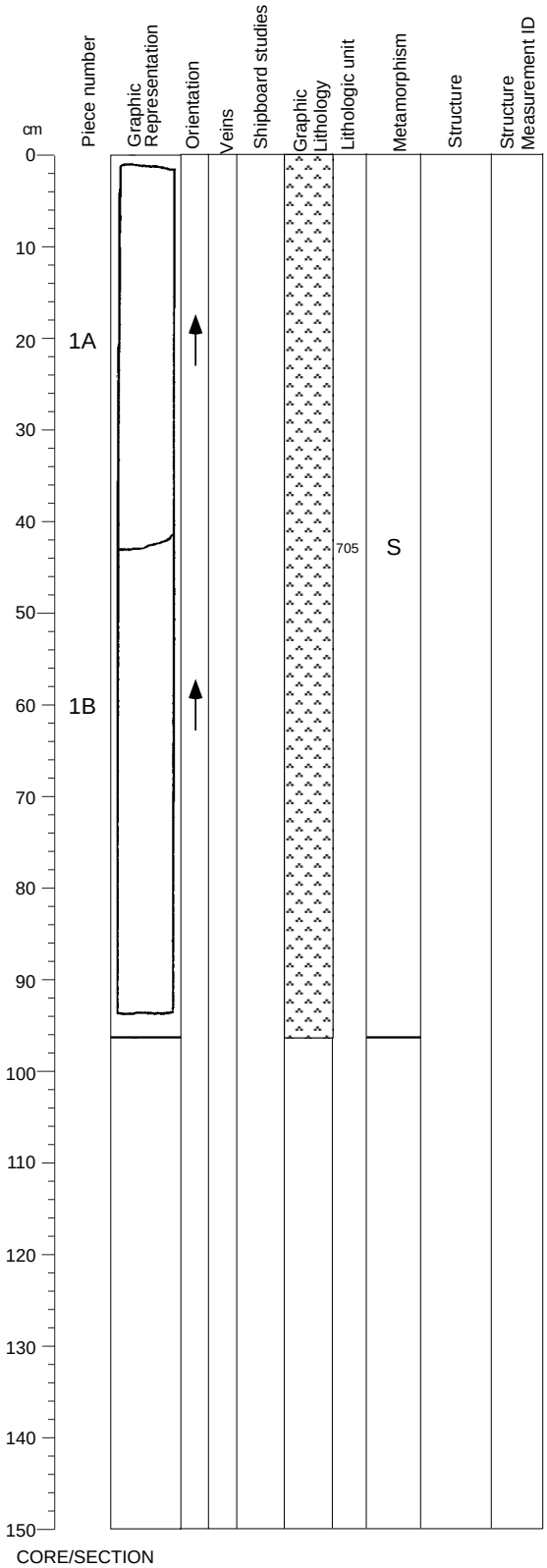
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic areas.
Secondary plagioclase:
Total Percent: <10
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight to high (10 to 60%). Pieces 1 to 5: highly foliated rock with 70% of the plagioclase recrystallized and around 50% of the clinopyroxene altered to amphibole. Pieces 5 to 6: Significantly less deformed and recrystallized (10%).

Vein/Fracture Filling:
0.5-2 mm plagioclase+amphibole veins in Pieces 3, 5, and 6; 0.2 mm smectite vein in Piece 2; 0.5 mm amphibole vein in Piece 2; 0.3 mm plagioclase vein in Piece 2.

Structures:
Bm?>Pf>V; Pf>V; Pf>F/Pf; Mf>Pf; Mf>F; Mf>V
From 0 to 59 cm, the section displays a crystal-plastic foliation with a variable intensity (strong: 0-20 cm; weak: 10-49 cm; porphyroclastic: 49-59 cm). The plastic foliation overprints magmatic breccias in Piece 2, at the bottom of Piece 4, and at the top of Piece 5; it is cut by a fault at the bottom of Piece 4. From 59 cm to the bottom, the texture is igneous, with little or no magmatic foliation, cut by a fault and a vein.

Core Image



176-735B-146R-2

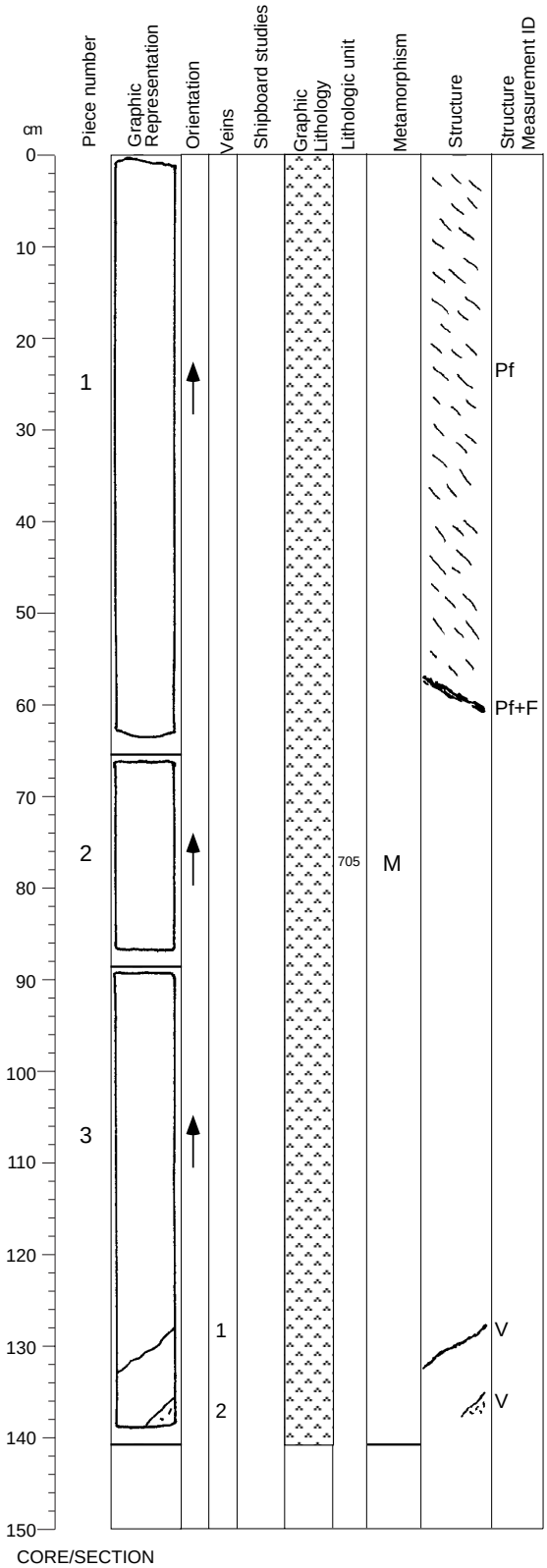
Interval 705: OLIVINE GABBRO
(see previous section)

Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (10%). 5% of the olivine is altered to amphibole. 8% of the clinopyroxene is replaced by amphibole. 12% of the plagioclase is recrystallized.

Structures:
Mf
This section displays a coarse-grained igneous texture, with no magmatic foliation.

Core Image



176-735B-146R-3

Interval 705: OLIVINE GABBRO
(see Section 176-735B-146R-1)

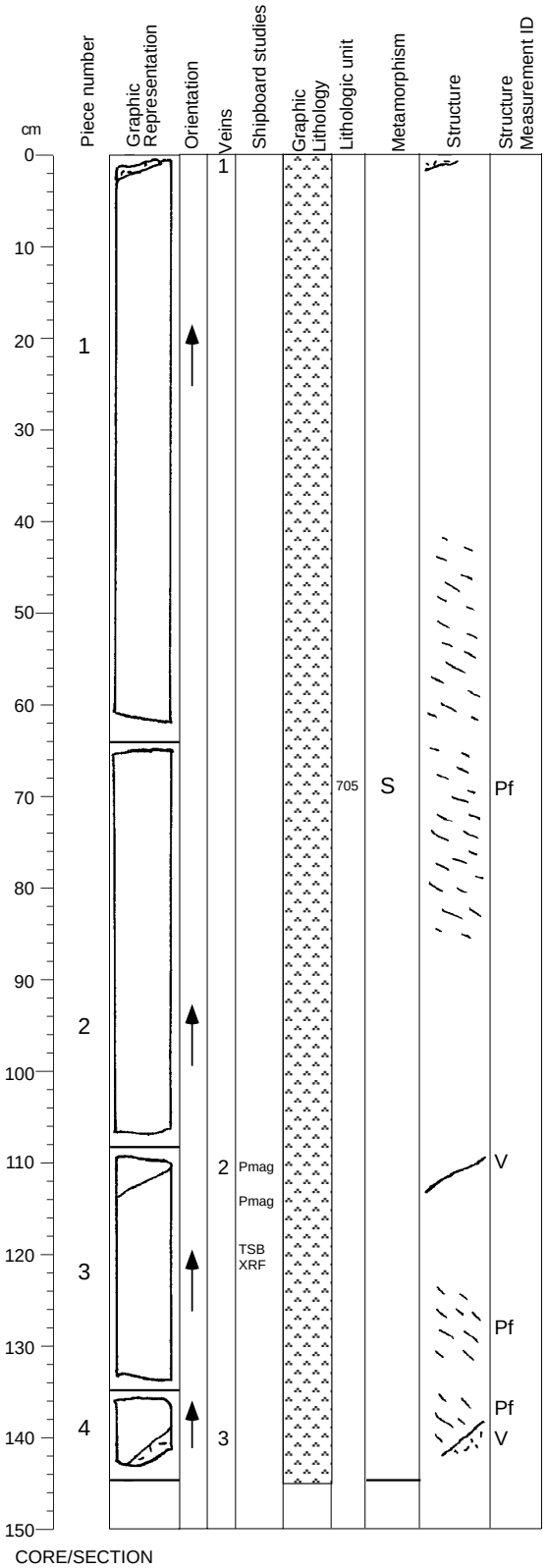
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: moderate (15%). 10% of the olivine is altered to amphibole. 10% of the clinopyroxene is replaced by amphibole. 20% of the plagioclase is recrystallized.

Vein/Fracture Filling:
1-7 mm plagioclase veins in Piece 3.

Structures:
Pf>Pf/F; Mf>V
From 0 to 58 cm, the section displays a weak crystal-plastic foliation. This plastically deformed zone is bounded at its lower boundary by a narrow (0.5 cm thick), semi-brittle shear zone. From the latter to the bottom, the section displays a coarse-grained igneous texture, with no magmatic foliation, cut by two veins at the bottom of Piece 3.

Core Image



176-735B-146R-4

Interval 705: OLIVINE GABBRO
(see Section 176-735B-146R-1)

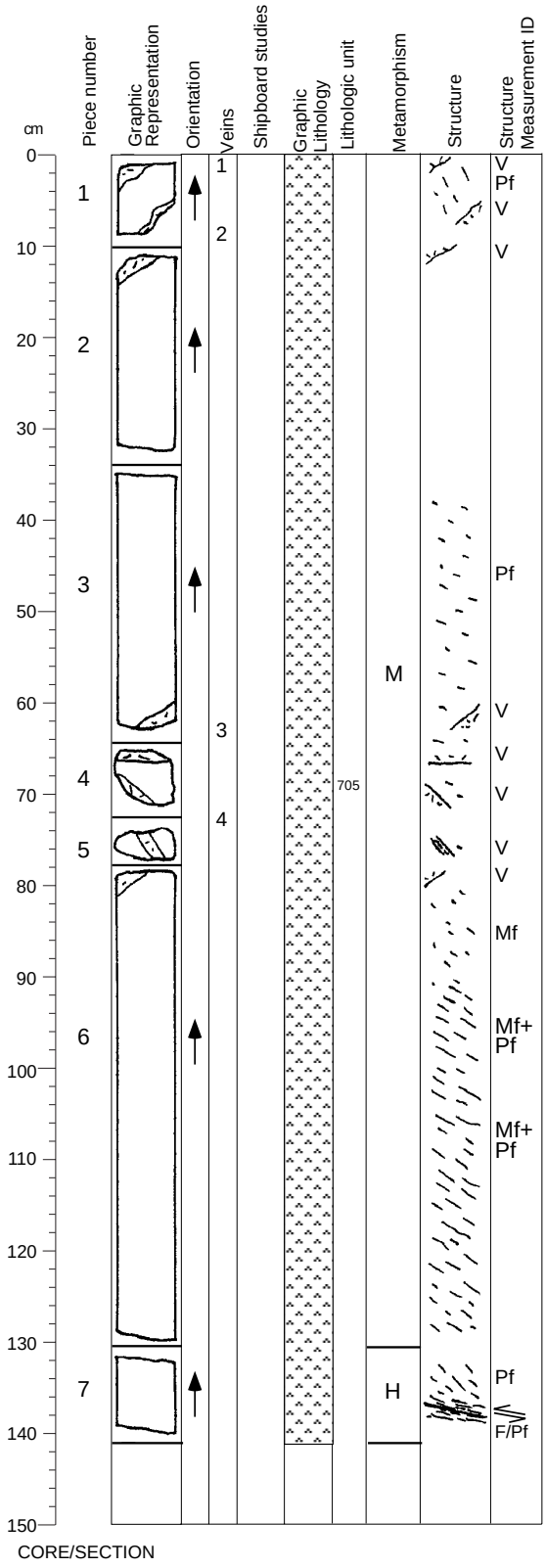
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole and around pyroxene.
Secondary plagioclase:
Total Percent: <10
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Chlorite:
Total Percent: trace
Mode of occurrence: Associated with green amphibole.

Background Alteration:
Degree of alteration: slight (10%). 5% of the olivine is altered to amphibole. 8% of the clinopyroxene is replaced by amphibole. 12% of the plagioclase is recrystallized.

Vein/Fracture Filling:
6 mm plagioclase + amphibole vein in Piece 4; amphibole vein in Piece 3; plagioclase vein in Piece 1.

Structures:
Mf>Pf>V
This section alternates intervals with an igneous texture (little or no magmatic deformation; 0 to 42 cm, 88 to 125 cm) and intervals that display a weak crystal-plastic foliation (42 to 88 cm, 125 to 141 cm). These fabrics are cut by veins in Pieces 1, 3 and 4.

Core Image



176-735B-146R-5

Interval 705: OLIVINE GABBRO (see Section 176-735B-146R-1)

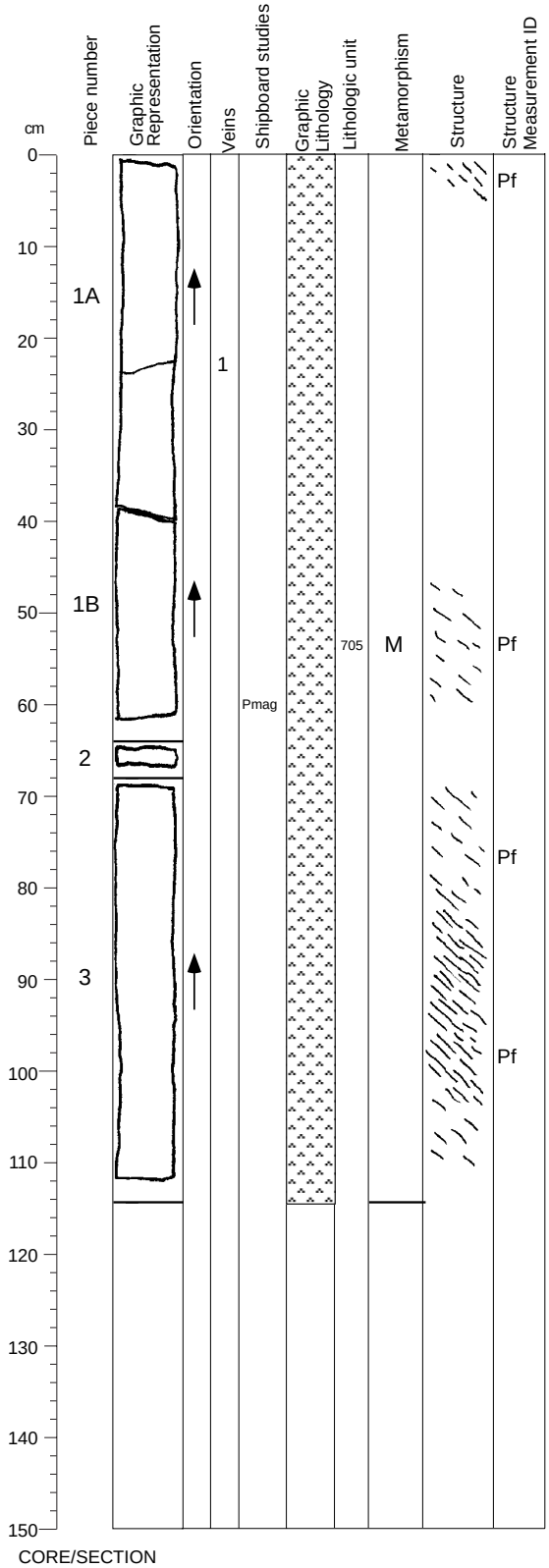
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic zones.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Secondary plagioclase:
Total Percent: <10
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight to high (15 to 50%). Pieces 1 to 6: 10% of the olivine is altered to amphibole. 12% of the clinopyroxene is replaced by amphibole. 15% of the plagioclase is recrystallized. Piece 7: highly foliated rock with 70% of the plagioclase recrystallized and around 30% of the clinopyroxene altered to amphibole.

Vein/Fracture Filling:
5-10 mm plagioclase + amphibole veins in Pieces 1-6.

Structures:
Mf>Pf>V; Mf>V; Pf>F/Pf
In Pieces 1 and 2 (0 to 33 cm), the section displays mostly an igneous texture, with little or no magmatic foliation, overprinted by a weak crystal-plastic foliation in Piece 1, and cut by two veins. In Pieces 3 to 6 (from 34 to 130 cm), a moderate magmatic foliation is present, cut by a few veins from the bottom of Piece 3 to the top of Piece 6, and overprinted by a weak crystal-plastic foliation from 88 cm. Piece 7 displays a weak crystal-plastic foliation cut by a semi-brittle mylonitic zone (136-139 cm).

Core Image



176-735B-146R-6

Interval 705: OLIVINE GABBRO
(see Section 176-735B-146R-1)

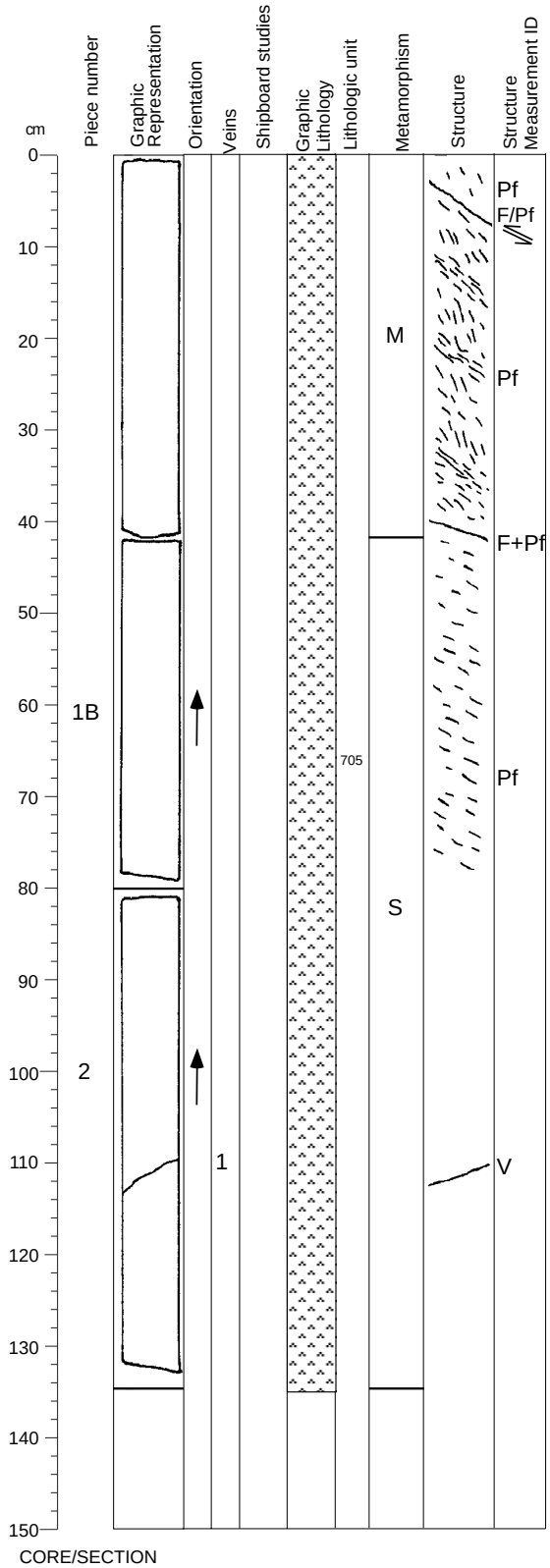
Alteration:
Dark green amphibole:
Total Percent: <8
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <12
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: moderate (20%). 20% of the olivine is altered to amphibole. 10% of the clinopyroxene is replaced by amphibole. 30% of the plagioclase is recrystallized.

Vein/Fracture Filling:
1 mm amphibole veins in Pieces 1, and 2.

Structures:
Mf>Pf
Pieces 1A and 1B display mostly a coarse-grained igneous texture with little or no magmatic foliation, overprinted by a weak crystal-plastic foliation at the top of Piece 1A (0 to 3 cm) and in Piece 1B (from 45 cm). Pieces 2 and 3 displays a weak to strong crystal-plastic foliation (strong from 80 to 104 cm).

Core Image



176-735B-146R-7

Interval 705: OLIVINE GABBRO
(see Section 176-735B-146R-1)

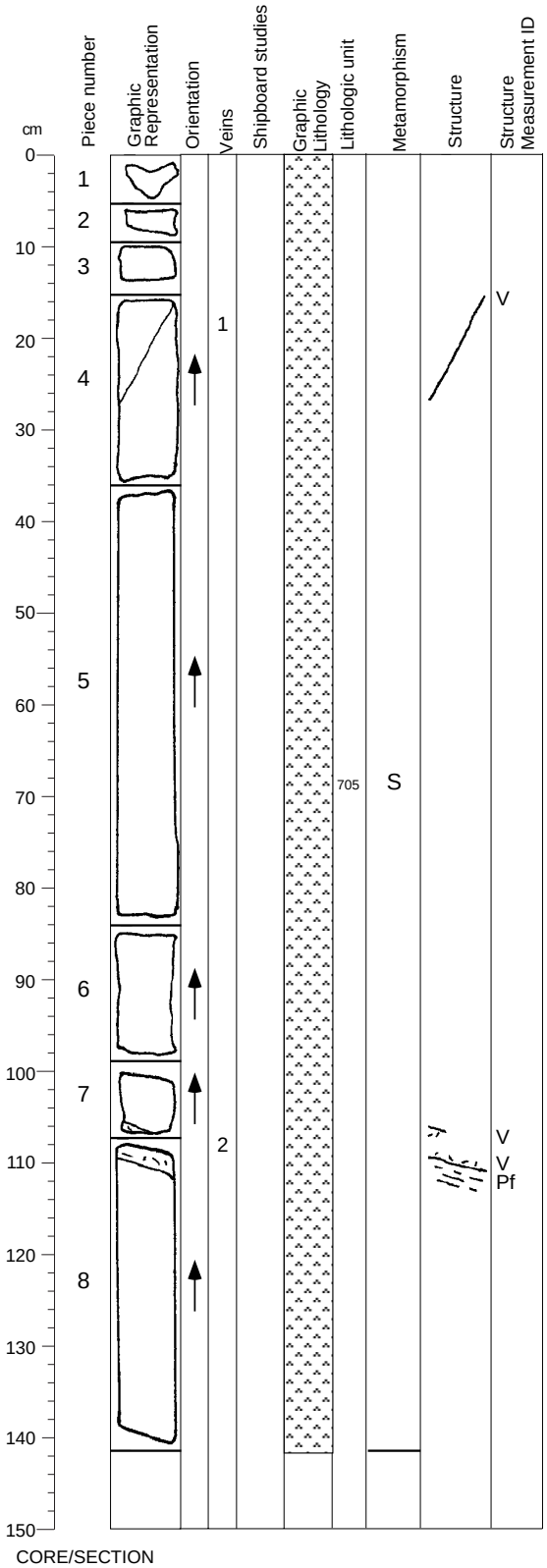
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight to moderate (8 to 25%). Piece 1A deformed and significantly recrystallized (olivine 30% altered, clinopyroxene 10% altered, plagioclase 30% recrystallized). Pieces 1B to 2: slightly altered 8% (olivine 10%, clinopyroxene 8%, plagioclase 8%).

Vein/Fracture Filling:
1 mm amphibole vein in Piece 2.

Structures:
Pf>F/Pf; Mf>Pf; Mf>V
From 0 to 77 cm, the section displays a weak crystal-plastic foliation, overprinted at 6 cm and 41 cm by two narrow, reverse, semi-brittle shear zones. In the interval bounded by these two faults, the foliation has a variable orientation, probably related to strain localization in shallow shear zones. From 77 cm to the bottom of the section, the core displays a coarse-grained igneous texture with no magmatic foliation, cut by a vein in Piece 2.

Core Image



176-735B-147R-1

Interval 705: OLIVINE GABBRO
(see Section 176-735B-146R-1)

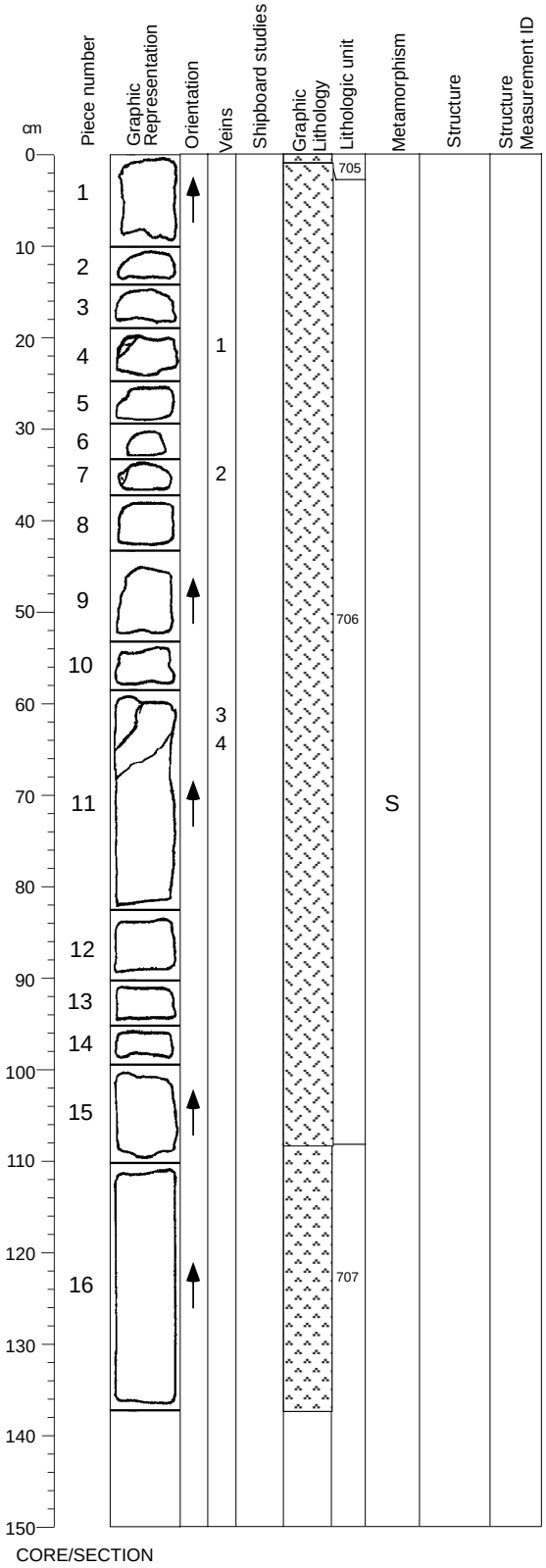
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (5%). 5% of the olivine is altered to amphibole. 5% of the clinopyroxene is replaced by amphibole. 5% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.2 mm amphibole vein in Piece 4; 8 mm compound felsic vein in Pieces 7,8.

Structures:
Mf>V; Mf>Pf//(>?)V
Most of the section displays a coarse-grained igneous texture, with no magmatic foliation, cut by two veins, in Pieces 4 and 7 to 8. A narrow (2 cm thick) zone of strong crystal-plastic foliation is present immediately beneath the vein at top of Piece 8; it is parallel to the vein, and the latter does not appear to be deformed.

Core Image



176-735B-147R-2

Interval 705: OLIVINE GABBRO
(see Section 176-735B-146R-1)
Interval 706: GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	147	2	1	1	942.62
Lower contact:	147	2	108	16	943.69

Thickness (m): 1.07

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	30	10	coarse	tabular/ subhedral anhedral
Clinopyroxene	35	70	3	pegmatitic	equant/ anhedral subhedral
Olivine	3	5	1	medium	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	98.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Pegmatitic
Modal IUGS Name (calculated): Gabbro
Type Distribution
Texture: granular N/A
Comments: Pegmatitic interval.

Interval 707: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	147	2	108	16	943.69
Lower contact:	147	3	33	1A	944.31

Thickness (m): 0.62

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	20	5	coarse	tabular/ subhedral anhedral
Clinopyroxene	35	40	2	coarse	tabular/ subhedral anhedral
Olivine	8	7	2	medium	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	103.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro
Type Distribution
Texture: granular N/A
Comments: Pegmatitic from top to 13 cm in 147R-3, medium/coarse-grained downward.

.

Continued next page

Core Image

176-735B-147R-2 (cont'd)

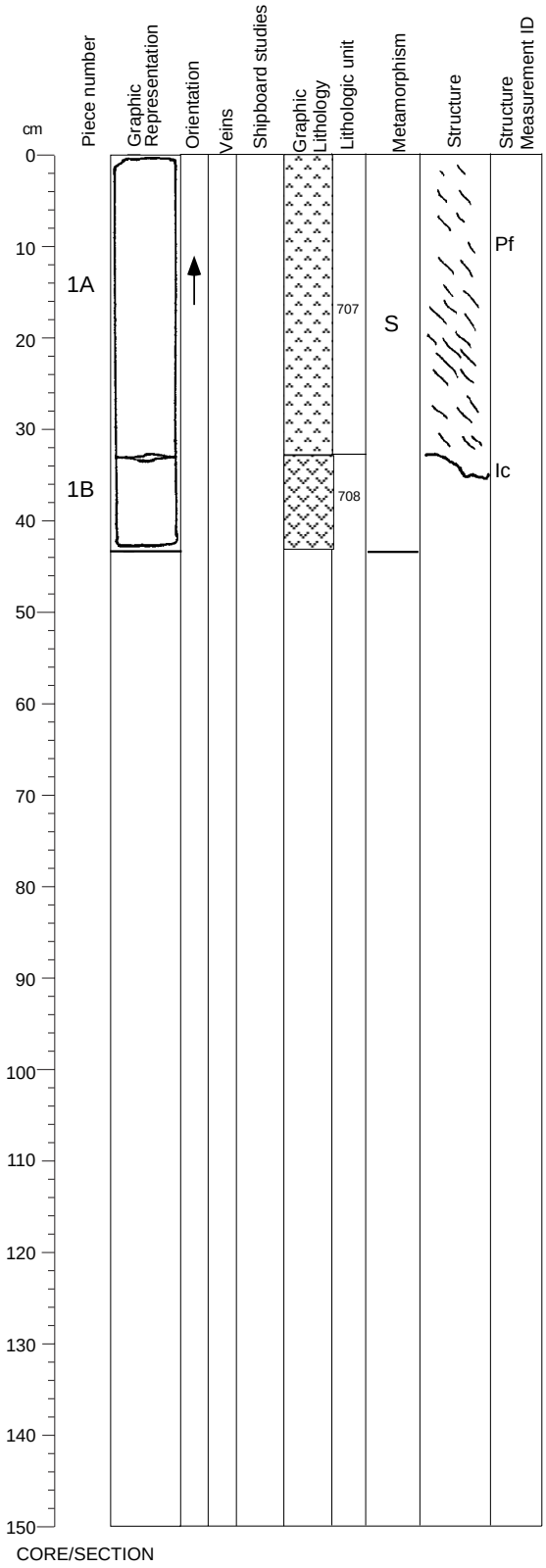
Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (8%). 10% of the olivine is altered to amphibole. 8% of the clinopyroxene is replaced by amphibole. 8% of the plagioclase is recrystallized.

Vein/Fracture Filling:
3 mm plagioclase+amphibole veins in Pieces 4 and 7; 0.4 mm amphibole veins in Piece 11.

Structures:
Mf
The entire section displays a very coarse-grained (several cm) igneous texture, with no magmatic foliation. Numerous cracks appear in the crystals, with no apparent consistent pattern (semi-brittle deformation?).

Core Image



176-735B-147R-3

Interval 707: OLIVINE GABBRO
(see previous section)
Interval 708: LEUCOCRATIC DISSEMINATED OXIDE TROCTOLITE

			Depth in		Depth
Interval Location:	Core	Section	Section	Piece	mbsf
Upper contact:	147	3	33	1A	944.31
Lower contact:	147	4	2	1A	944.42

Thickness (m): 0.11

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	70	3	n/a	fine	tabular/ subhedral anhedral
Olivine	25	1	1	fine	elongate/ anhedral subhedral
Opaques	1.5				amoeboidal aggregates/ disseminated
Total	96.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Fine
Modal IUGS Name (calculated): Troctolite

	Type	Distribution
Texture:	equigranular	uniform

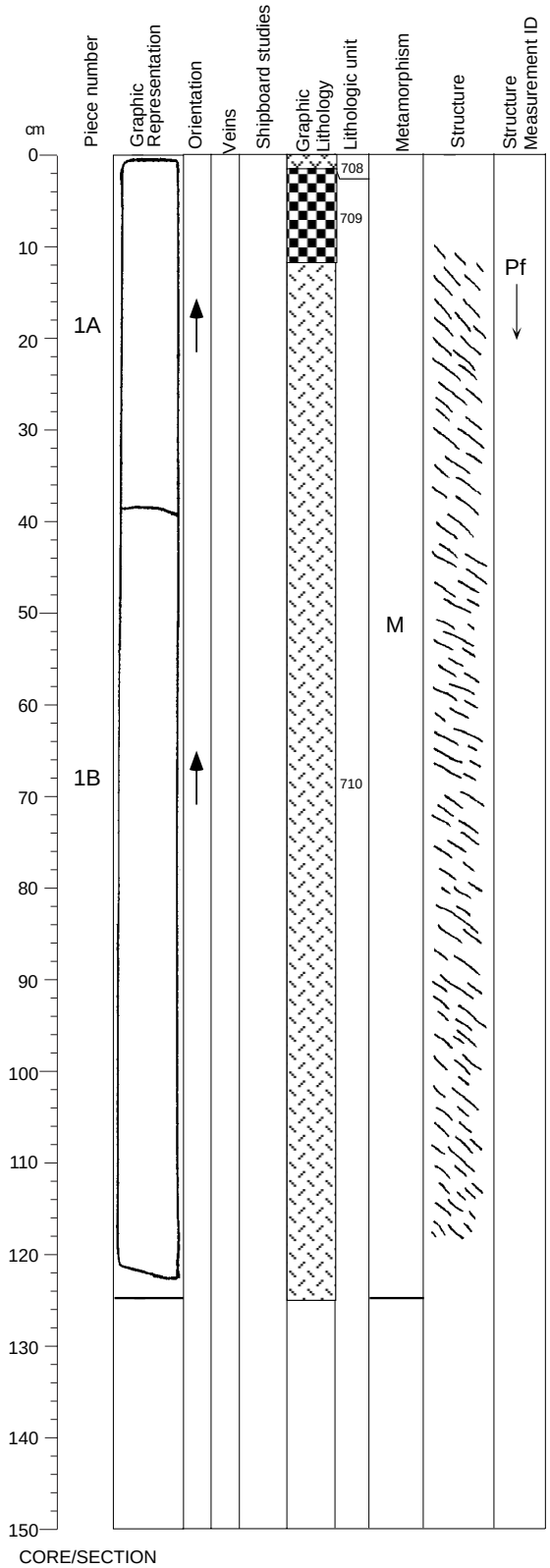
Comments: Extremely fine-grained gabbro (diabasic?) with local coarse-grained clinopyroxene patches (xenolithic?).

Alteration:
Dark green amphibole:
Total Percent: <10
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <10
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: moderate (20%). Same as previous section.

Structures:
Ic>Pf?
Piece 1A displays a weak crystal-plastic foliation. The boundary between Pieces 1A and 1B approximately corresponds to the contact between the coarse-grained material (on top) and a very fine-grained material. This contact is sharp, although irregular in orientation because of a large pyroxene crystal impinging the fine-grained material. A weak foliation is present at the top of the fine-grained interval, beneath the contact; the crystal-plastic deformation probably post-dates the igneous contact.

Core Image



176-735B-147R-4

Interval 708: LEUCOCRATIC DISSEMINATED OXIDE TROCTOLITE (see previous section)

Interval 709: MELANOCRATIC OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	147	4	2	1A	944.42
Lower contact:	147	4	12	1A	944.52

Thickness (m): 0.10

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	15	15	5	coarse	tabular/ anhedral subhedral
Clinopyroxene	80	50	10	pegmatitic	tabular/ subhedral anhedral
Olivine	1	2	1	medium	amoeboidal/ anhedral
Opaques	3				interstitial lenses/ disseminated
Total	99*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Pegmatitic
Modal IUGS Name (calculated): Melanocratic Oxide Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Porphyroclastic/pegmatitic interval, the contact between fine-grained (Interval 708) and coarse-grained olivine gabbro (Interval 710).

Interval 710: GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	147	4	12	1A	944.52
Lower contact:	147	7	70	4	948.87

Thickness (m): 4.35

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	55	20	3	coarse	tabular/ subhedral deformed
Clinopyroxene	30	40	2	coarse	elongate/ anhedral
Olivine	2	3	1	medium	amoeboidal/ anhedral deformed
Opaques	0.6				
Total	87.6*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Medium
Modal IUGS Name (calculated): Not Calculated

	Type	Distribution
Texture:	granular	N/A
Fabric:	layering	uniform

Comments: Nicely foliated (gneissic), medium-grained gabbro. Grain size gradational from top to base: Coarse/medium - fine/medium. Very locally, coarse-grained clinopyroxene as porphyroclasts in much finer-grained matrix at 2 cm and 22-34 cm in 147R-5; 23-42 cm in 147R-7.

Continued next page

Core Image

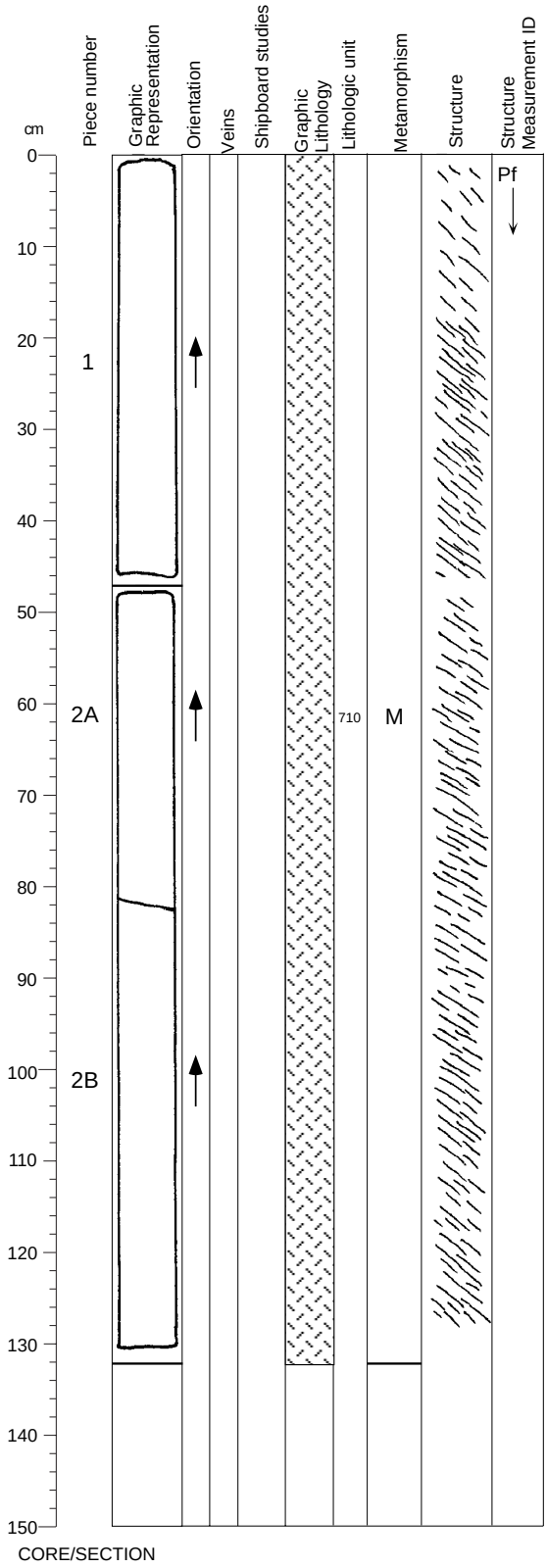
176-735B-147R-4 (cont'd)

Alteration:
Dark green amphibole:
Total Percent: <15
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: In small patches.
Secondary plagioclase:
Total Percent: <25
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: moderate (40%). 30% of the olivine is altered to amphibole. 10% of the clinopyroxene is replaced by amphibole. 30% of the plagioclase is recrystallized.

Structures:
Mf>Pf
From 0 to 10 cm, the texture is igneous, with no magmatic foliation. The first 3 or 4 cm are very fine grained, in continuation with the bottom of the previous section (147R-4). Beneath the contact with the fine-grained material, the upper part of the coarse-grained gabbro is a 4-5 cm thick, irregular zone rich in pyroxenes. From 10 cm to the bottom, the rest of the section displays a strong crystal-plastic foliation, regularly dipping 45°.

Core Image



176-735B-147R-5

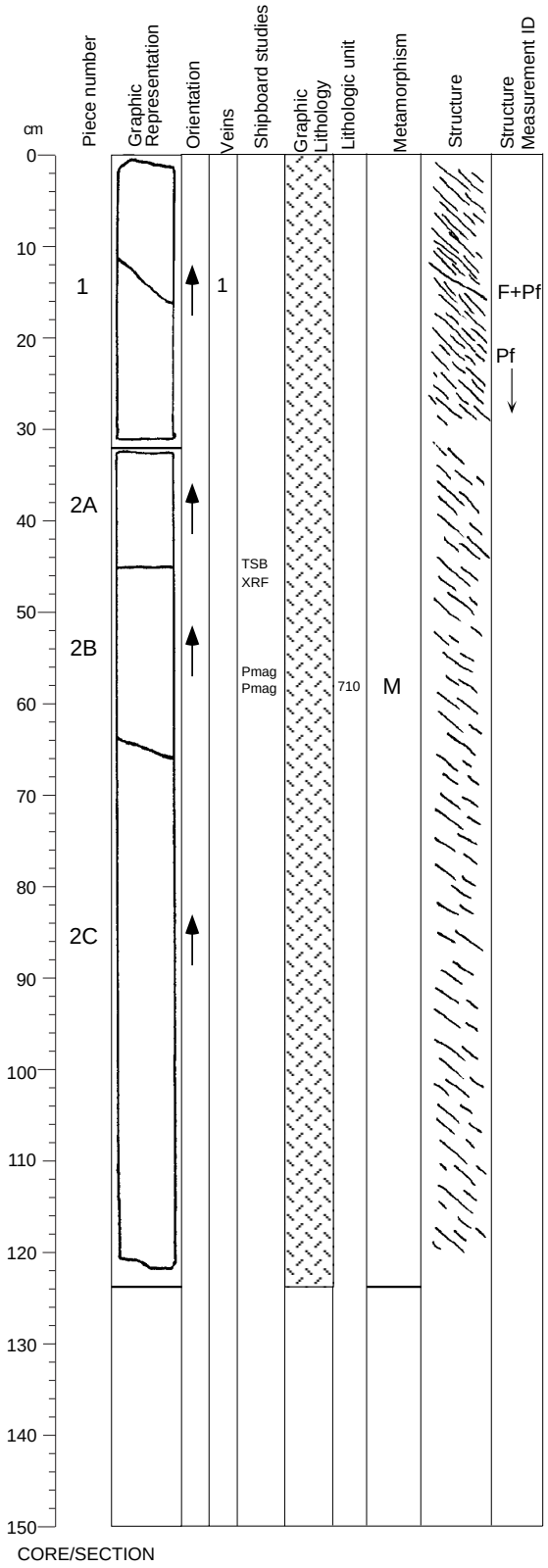
Interval 710: GABBRO
(see previous section)

Alteration:
Dark green amphibole:
Total Percent: <15
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: In small patches.
Secondary plagioclase:
Total Percent: <25
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: moderate (40%). Same as previous section.

Structures:
Pf
The entire section displays a crystal-plastic foliation, regularly dipping 45-50°. The foliation is strong from 0 to 17 cm, and porphyroclastic from 17 cm to the bottom.

Core Image



176-735B-147R-6

Interval 710: GABBRO
(see Section 176-735B-147R-4)

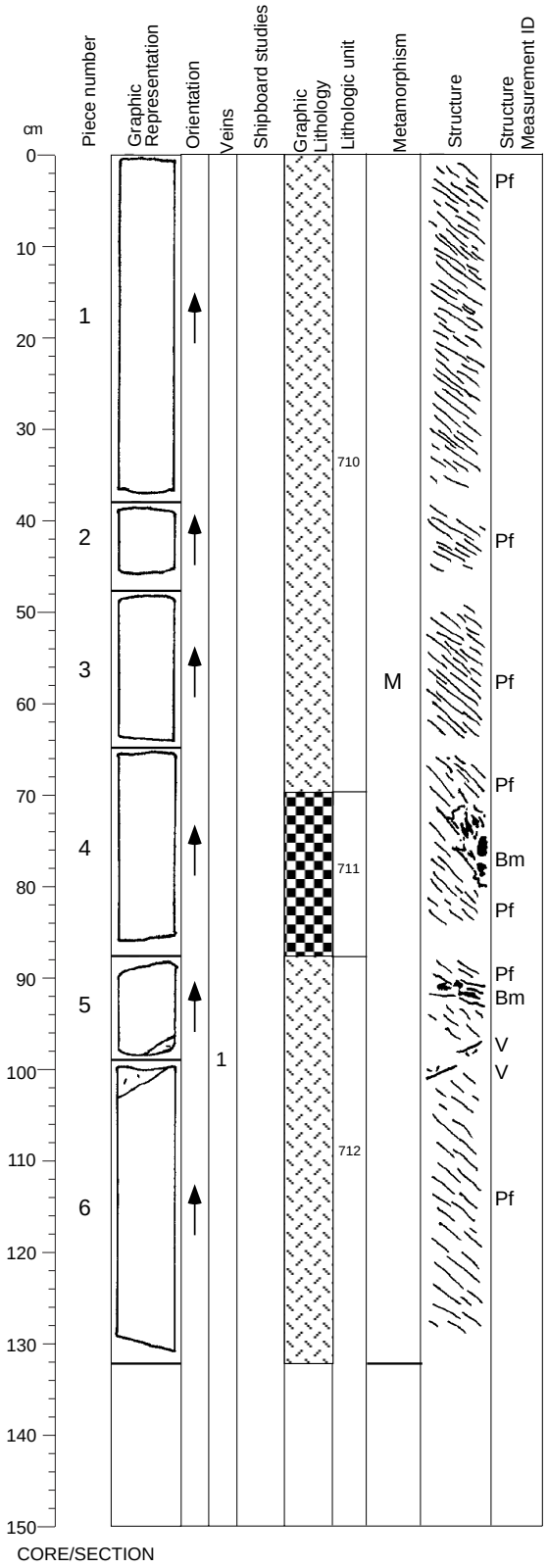
Alteration:
Dark green amphibole:
Total Percent: <15
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: In small patches.
Secondary plagioclase:
Total Percent: <25
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: moderate (40%). Same as previous section.

Vein/Fracture Filling:
0.2 mm amphibole vein in Piece 1.

Structures:
Pf>F/Pf
The entire section displays a crystal-plastic foliation, regularly dipping 50°. The foliation is porphyroclastic from 0 to 16 cm, and strong from 16 cm to the bottom of the section. A narrow, semi-brittle fault cuts the plastic foliation in Piece 1.

Core Image



176-735B-147R-7

Interval 710: GABBRO
(see Section 176-735B-147R-4)
Interval 711: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	147	7	70	4	948.87
Lower contact:	147	7	87	4	949.04

Thickness (m): 0.17

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	50	30	3	coarse	tabular/ anhedral deformed
Clinopyroxene	40	50	4	pegmatitic	tabular/ subhedral
Olivine	1	3	1	medium	amoeboidal/ anhedral deformed
Opaques	8				interstitial lenses/ interstitial network
Total	99*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Pegmatitic
Modal IUGS Name (calculated): Gabbro

	Type	Distribution
Texture:	porphyritic	N/A

Comments: Pegmatitic interval. Clinopyroxene porphyroclasts surrounded by diffusive/penetrative/ felsic matrix. Shear contact. Oxide and sulfide present.

Interval 712: GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	147	7	87	4	949.04
Lower contact:	148	1	87	2F	951.77

Thickness (m): 2.73

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	15	4	coarse	tabular/ subhedral deformed
Clinopyroxene	35	20	2	coarse	equant/ anhedral
Olivine	3	2	1	medium	amoeboida/ anhedral deformed
Opaques	0.6				amoeboidal aggregates/ disseminated
Total	103.6*		(see explanatory notes)		

*Major phases estimated to ± 5%)
Grain Size: Coarse
Modal IUGS Name (calculated): Gabbro

	Type	Distribution
Texture:	granular	N/A
Fabric:	layering	uniform

Comments: Similar to Interval 710. Medium-grained; foliated. Locally diffusive patches of felsic material present at 70-80 cm in 147R-8. Grain size somewhat variable.

Continued next page

Core Image

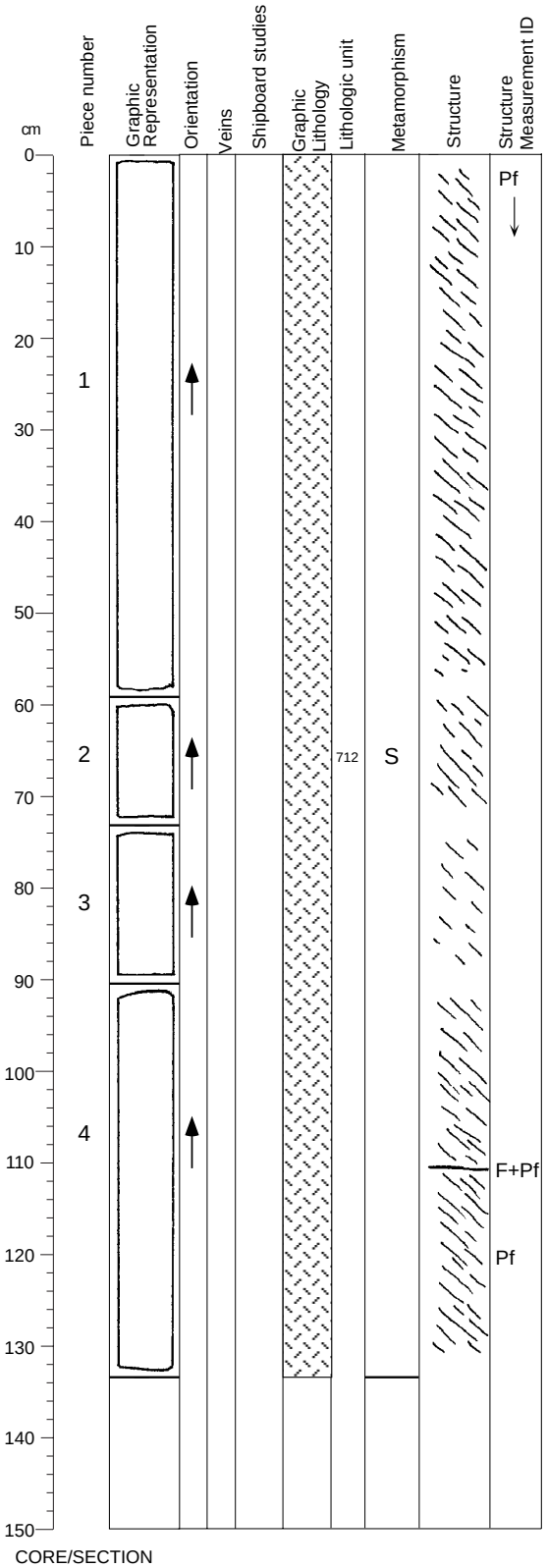
176-735B-147R-7 (cont'd)

Alteration:
Dark green amphibole:
Total Percent: <10
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: In small patches.
Secondary plagioclase:
Total Percent: <20
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: moderate (25 to 40%). Pieces 1 to 3: Same as previous section. Piece 4: olivine is partly replaced by smectite and sulfide. Clinopyroxene is also replaced by sulfides along grain boundaries. Sulfide impregnation appears to be related to a hairline crack with smectite. The lower part of the section (Piece 5 to 6) is less deformed and recrystallized.
Vein/Fracture Filling:
6 mm compound felsic vein in Pieces 5, and 6.

Structures:
Bm>Pf>V
The entire section displays a crystal-plastic foliation, regularly dipping 40 to 50°. The foliation grades from porphyroclastic at the top (from 0 to 71 cm) to strong downwards; it overprints magmatic breccias in Pieces 4 and 5, and is cut by a vein at the boundary between Pieces 5 and 6. The S/C fabric indicates a reverse sense of shear over the entire section, and probably over the entire zone of strong plastic foliation.

Core Image



176-735B-147R-8

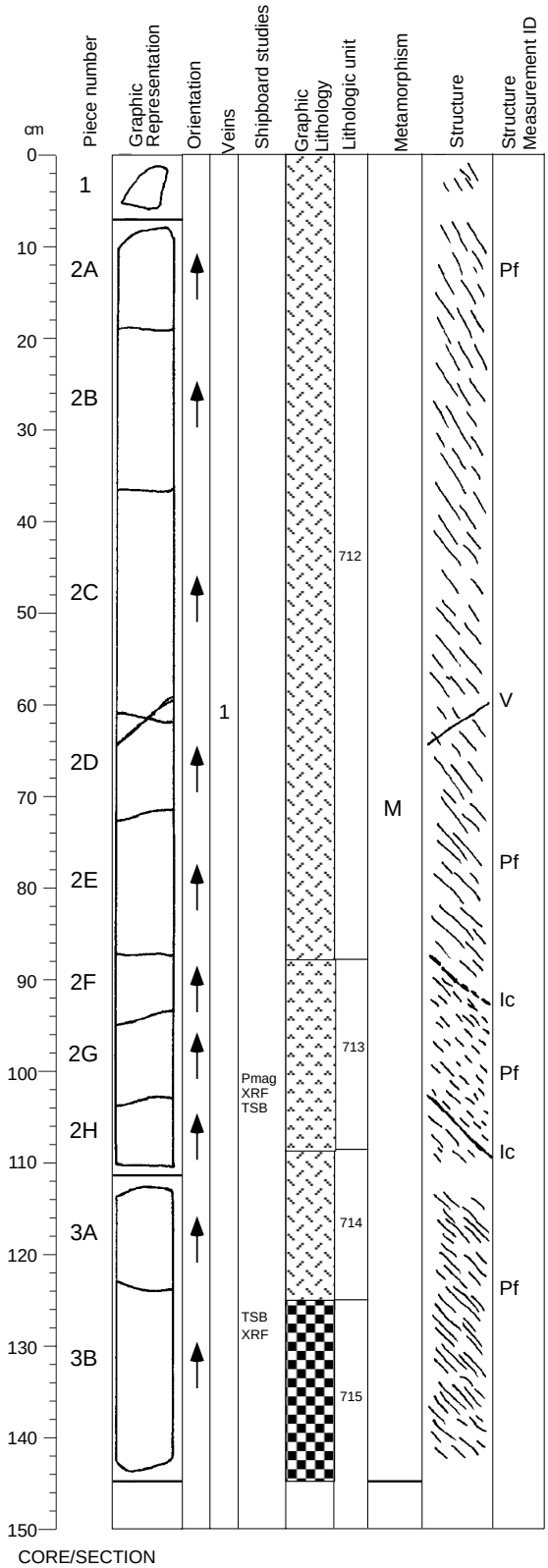
Interval 712: GABBRO
(see previous section)

Alteration:
Dark green amphibole:
Total Percent: <4
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <8
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (10%). 10% of the olivine is altered to amphibole. 5% of the clinopyroxene is replaced by amphibole. 15% of the plagioclase is recrystallized.

Structures:
Pf>F
The entire section displays a strong crystal-plastic foliation, regularly dipping 45-50°, except for Pieces 2 and 3 in which the plastic foliation is weaker. A semi-brittle fault cuts the plastic foliation in Piece 4 (at 109 cm).

Core Image



176-735B-148R-1

Interval 712: GABBRO
(see Section 176-735B-147R-7)
Interval 713: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	148	1	87	2F	951.77
Lower contact:	148	1	108	2H	951.98

Thickness (m): 0.21

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	2	N/A	fine	tabular/ anhedral subhedral
Clinopyroxene	30	2	N/A	fine	equant/ anhedral
Olivine	15	1	1	fine	elongate/ anhedral subhedral
Opaques	0.3				amoeboidal aggregates/ disseminated
Total	105.3*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Fine
Modal IUGS Name (calculated): Olivine Gabbro
Type: Distribution
Texture: equigranular uniform
Comments: Extremely fine-grained gabbro/diabase.

Interval 714: GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	148	1	108	2H	951.98
Lower contact:	148	1	125	2H	952.15

Thickness (m): 0.17

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	10	6	coarse	tabular/ subhedral deformed
Clinopyroxene	30	30	3	coarse	equant/ anhedral
Olivine	3	4	1	medium	elongate/ anhedral deformed
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	98.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Graded
Modal IUGS Name (calculated): Gabbro
Type: Distribution
Texture: porphyritic N/A
Comments: Zone of foliated porphyroclastic gabbro.

Continued next page

Core Image

176-735B-148R-1 (cont'd)

Interval 715: OXIDE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	148	1	125	2H	952.15
Lower contact:	148	2	4	2H	952.39

Thickness (m): 0.24

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	20	6	coarse	tabular/ subhedral deformed
Clinopyroxene	30	35	5	coarse	tabular/ anhedral subhedral
Olivine	4	6	1	medium	prismatic/ subhedral deformed
Opaques	4				interstitial lenses/ interstitial network
Total	103*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): FeTi Oxide Gabbro

	Type	Distribution
Texture:	porphyritic	N/A

Comments: Zone of foliated porphyroclastic gabbro with abundant oxide.

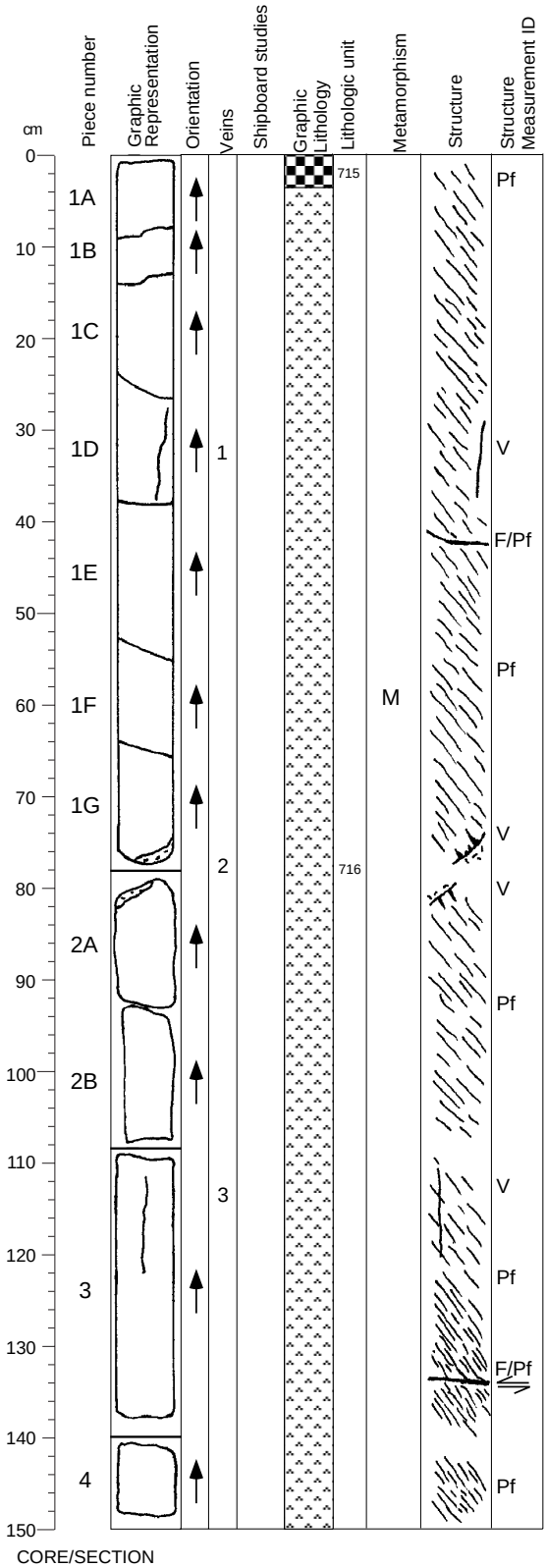
Alteration:
Dark green amphibole:
Total Percent: <15
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <20
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: moderate (35%). 20% of the olivine is altered to amphibole. 30% of the clinopyroxene is replaced by amphibole. 40% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.8 mm amphibole+plagioclase vein in Pieces 2C and 2D.

Structures:
Pf>V; Ic>Pf
The entire section displays a crystal-plastic foliation, regularly dipping 50°, grading from strong to porphyroclastic, in Pieces 3A-3B. In Pieces 2E to 2H, a pre-existing fine-grained intrusion has a plastic foliation; its lower contact is sharp, the upper contact is diffuse. Both contacts are parallel to the plastic foliation. A vein cuts the plastic foliation in Pieces 2C and 2D.

Core Image



176-735B-148R-2

Interval 715: OXIDE GABBRO
(see previous section)
Interval 716: OLIVINE GABBRO

			Depth in		Depth
Interval Location:	Core	Section	Section	Piece	mbsf
Upper contact:	148	2	4	2H	952.39
Lower contact:	149	1	73	1B	961.23

Thickness (m): 8.84

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	20	1	coarse	tabular/ anhedral subhedral
Clinopyroxene	30	30	3	coarse	equant/ anhedral
Olivine	7	4	1	medium	elongate/ anhedral deformed
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	102.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Extensive interval of foliated (locally mylonitized) olivine gabbro. Gradational grain size variation; mostly medium-grained, locally coarse and fine-grained. Oxides locally apparent at 115-129 cm in 148R-5) and 69-78 cm in 148R-5. Oxide abundant from top of interval and disseminated elsewhere.

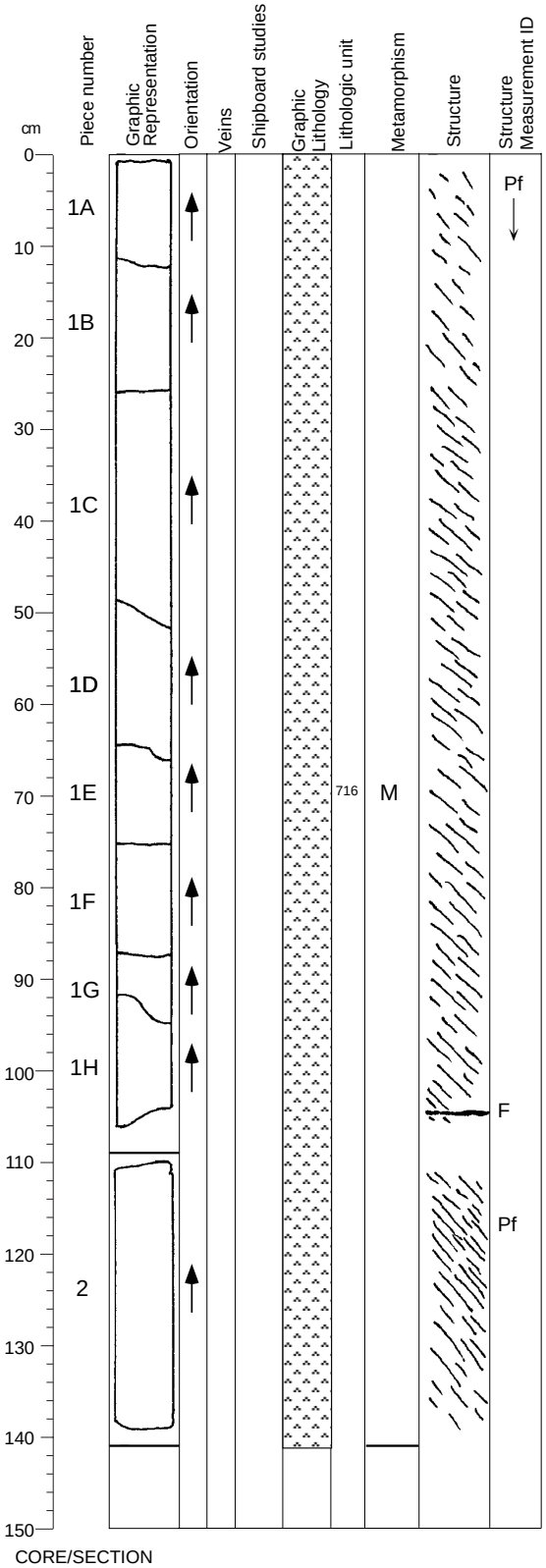
Alteration:
Dark green amphibole:
Total Percent: <15
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <20
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: moderate (35%). Same as previous section.

Vein/Fracture Filling:
0.2 mm amphibole vein in Piece 1D.

Structures:
Pf>V; Pf>Pf/F
The entire section displays a crystal-plastic foliation, regularly dipping 50-55°, and grading from strong to porphyroclastic (from 120 cm to the bottom). The plastic foliation is cut in Piece 1E by a narrow, semi-brittle mylonitic shear zone, and in Piece 3 by a narrow, ultra-mylonitic shear zone (semi-brittle?). A few veins cut the plastic foliation in Pieces 1D, 1G, 2A, and 3. A few veinlets splay off the vein at the boundary between Pieces 1G and 2A, parallel to the plastic foliation.

Core Image



176-735B-148R-3

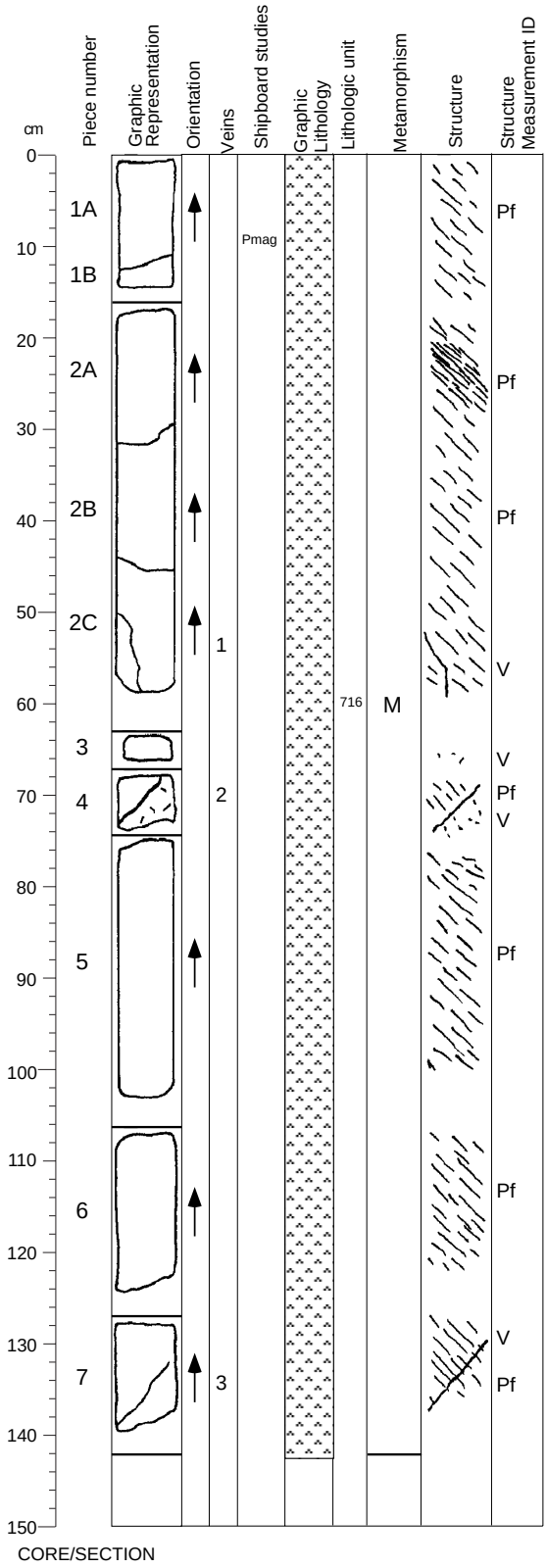
Interval 716: OLIVINE GABBRO
(see previous section)

Alteration:
Dark green amphibole:
Total Percent: <10
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <15
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: moderate (25%). 10% of the olivine is altered to amphibole. 20% of the clinopyroxene is replaced by amphibole. 30% of the plagioclase is recrystallized.

Structures:
Pf>F
The entire section displays a strong crystal-plastic foliation, regularly dipping 45°, and cut by a narrow cataclastic fault at the bottom of Piece 1H.

Core Image



176-735B-148R-4

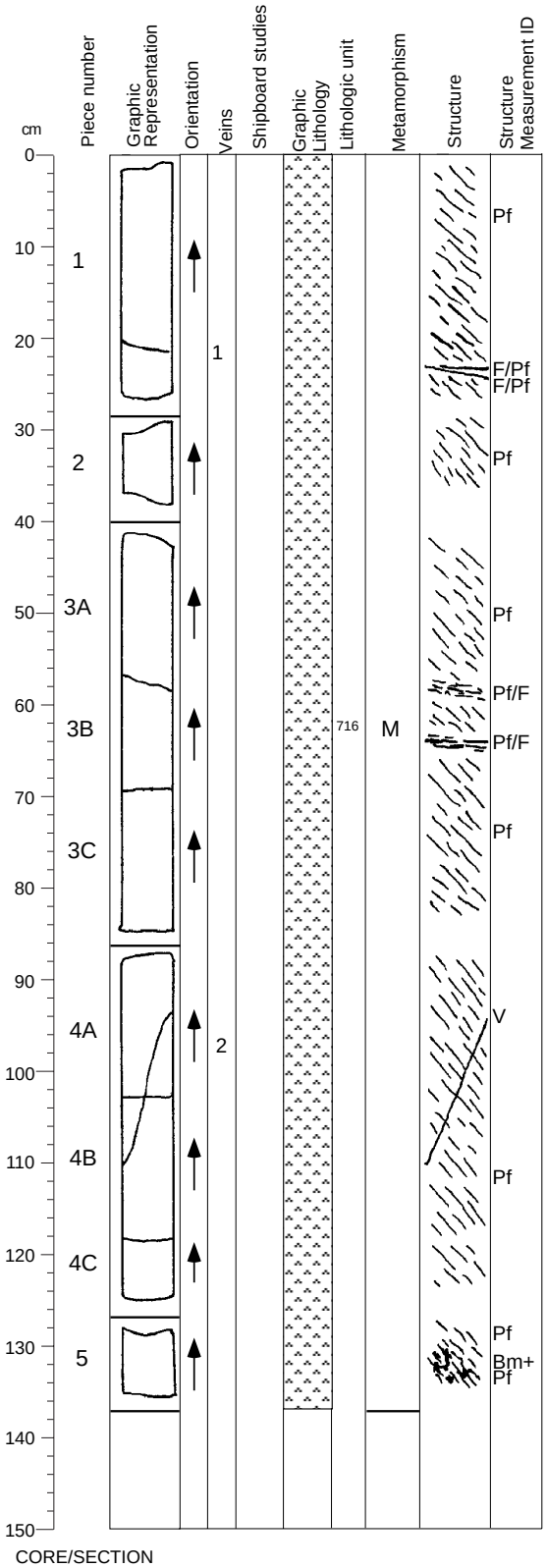
Interval 716: OLIVINE GABBRO
(see Section 176-735B-148R-2)

Alteration:
Dark green amphibole:
Total Percent: <15
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <25
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: moderate (35%). 20% of the olivine is altered to amphibole. 30% of the clinopyroxene is replaced by amphibole. 40% of the plagioclase is recrystallized.

Structures:
Pf>V
Most of the section displays a strong to porphyroclastic crystal-plastic foliation, regularly dipping 45°, except for a local mylonitic zone (20 to 25 cm), and for a zone of weaker foliation between 42 and 72 cm. A few veins cut the plastic foliation in Pieces 2C, 4, and 7.

Core Image



176-735B-148R-5

Interval 716: OLIVINE GABBRO
(see Section 176-735B-148R-2)

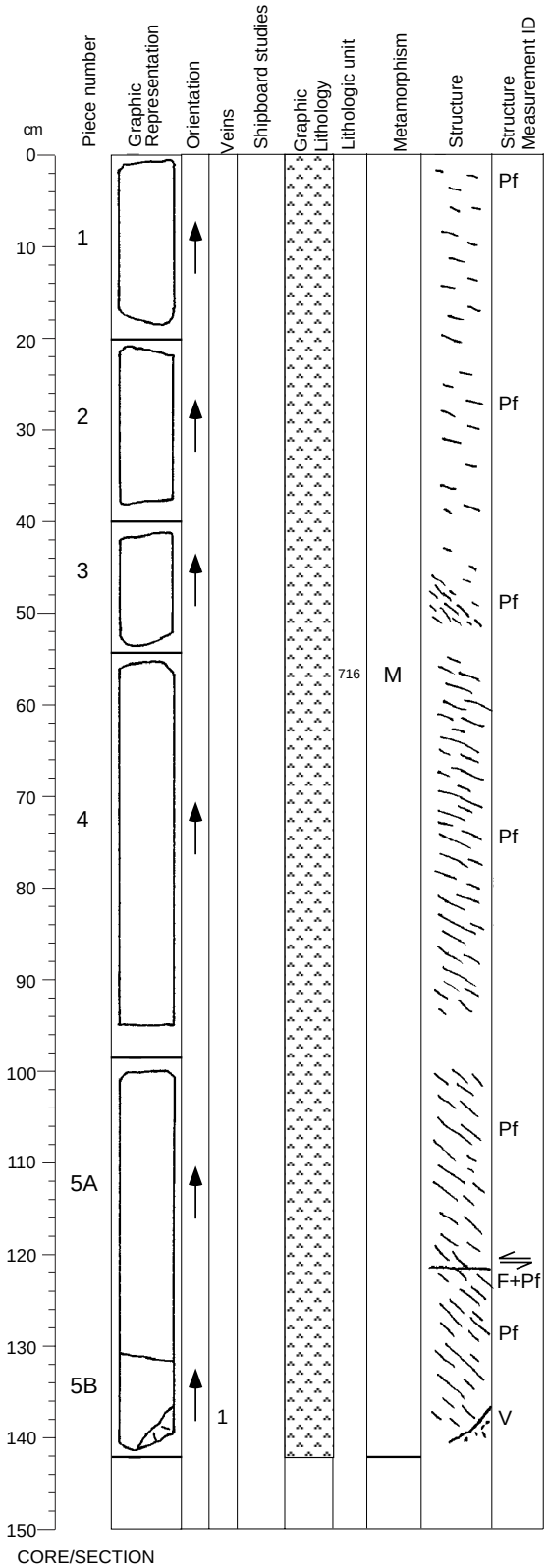
Alteration:
Dark green amphibole:
Total Percent: <10
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <15
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: moderate (25%). 10% of the olivine is altered to amphibole. 20% of the clinopyroxene is replaced by amphibole. 30% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.3-0.5 mm amphibole veins in Pieces 1 and 4.

Structures:
Pf>F/Pf; Pf>Pf/F; Pf>V; Bm>Pf
The entire section displays a crystal-plastic foliation, regularly dipping 40-50°, and variable in intensity (weak: 26-56 cm, 57-62 cm; strong: 63-135 cm; porphyroclastic: 0-22 cm). The plastic foliation is overprinted by narrow, shallow, semi-brittle mylonitic shear zones in Pieces 1, 3A and 3B, and cut by a vein in Pieces 4A and 4B; it overprints a pre-existing magmatic breccia in Piece 5.

Core Image



176-735B-148R-6

Interval 716: OLIVINE GABBRO
(see Section 176-735B-148R-2)

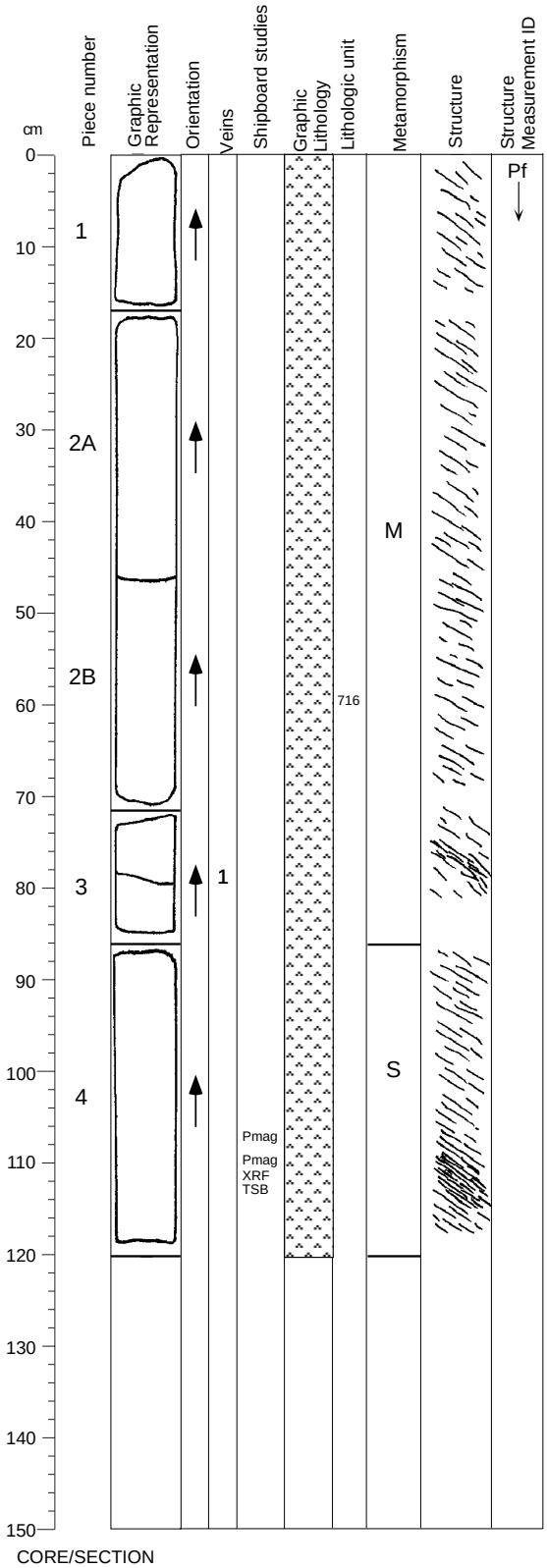
Alteration:
Dark green amphibole:
Total Percent: <10
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: In patches.
Secondary plagioclase:
Total Percent: <20
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: moderate (30%). 10% of the olivine is altered to amphibole. 25% of the clinopyroxene is replaced by amphibole. 35% of the plagioclase is recrystallized.

Vein/Fracture Filling:
9 mm plagioclase+amphibole vein in Piece 5B.

Structures:
Pf>F/Pf; Pf>V
From 0 to 45 cm, the section displays a weak crystal-plastic foliation, difficult to measure. From 45 cm to the bottom of the section, the crystal-plastic foliation is porphyroclastic and regularly dips around 35°. The transition from weak to porphyroclastic plastic foliation in Piece 3 corresponds to a contact between coarse-grained and fine-grained material; the grain size is coarse from the bottom of Piece 3 downwards. From 0 to 60 cm, the plastic foliation possibly overprints a moderate magmatic foliation. The plastic foliation is overprinted by a shallow, reverse, semi-brittle fault in Piece 5A, and is cut by a vein at the bottom of Piece 5B.

Core Image



176-735B-148R-7

Interval 716: OLIVINE GABBRO
(see Section 176-735B-148R-2)

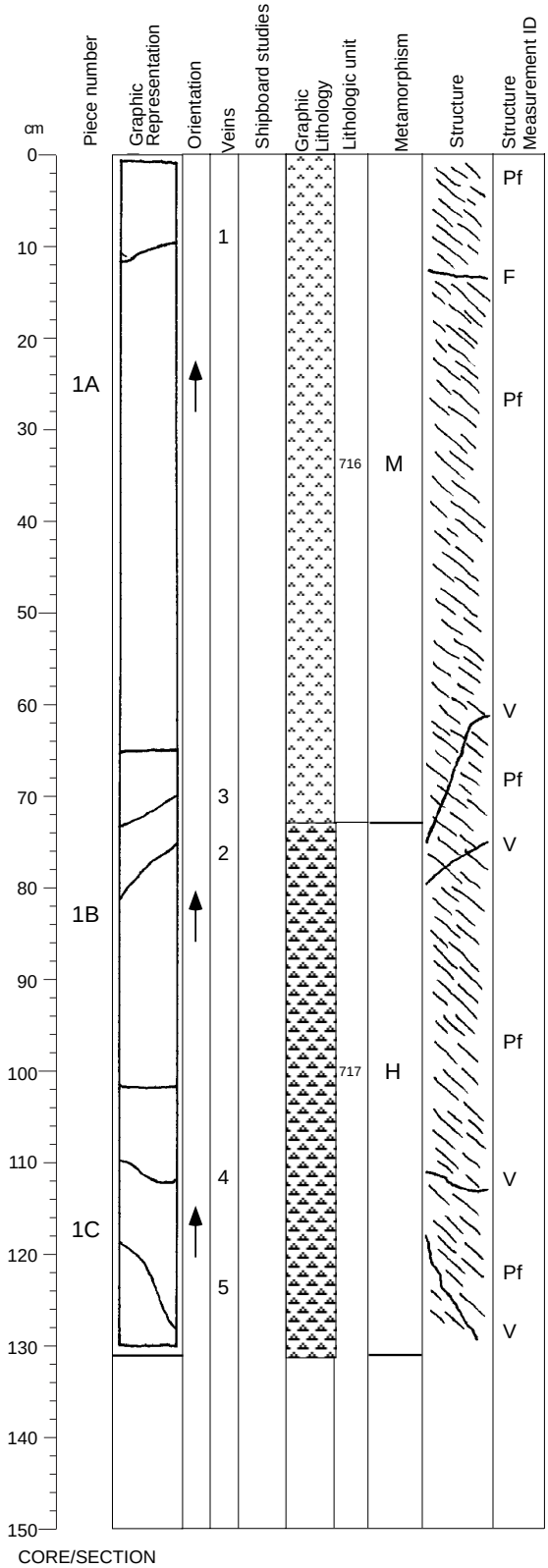
Alteration:
Dark green amphibole:
Total Percent: <10
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <15
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight to moderate (10 to 40%). Pieces 1 to 3: significantly deformed and recrystallized (olivine 20%, clinopyroxene 30%, and plagioclase 50%). Piece 4: 5% of the olivine is altered to amphibole. 10% of the clinopyroxene is replaced by amphibole. 12% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.3 mm amphibole vein in Piece 3.

Structures:
Pf
The entire section displays a porphyroclastic crystal-plastic foliation, regularly dipping around 45°, and grading into a mylonitic foliation from 108 to 115 cm.

Core Image



176-735B-149R-1

Interval 716: OLIVINE GABBRO
(see Section 176-735B-148R-2)
Interval 717: OLIVINE MICROGABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	149	1	73	1B	961.23
Lower contact:	149	2	59	2	962.40

Thickness (m): 1.17

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	3	N/A	fine	tabular/ anhedral subhedral
Clinopyroxene	20	3	N/A	fine	equant/ anhedral
Olivine	20	1	1	fine	elongate/ anhedral subhedral
Opaques	0.3				amoeboidal aggregates/ disseminated
Total	105.3*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size:Fine
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Fine grained; foliated, locally troctolitic.

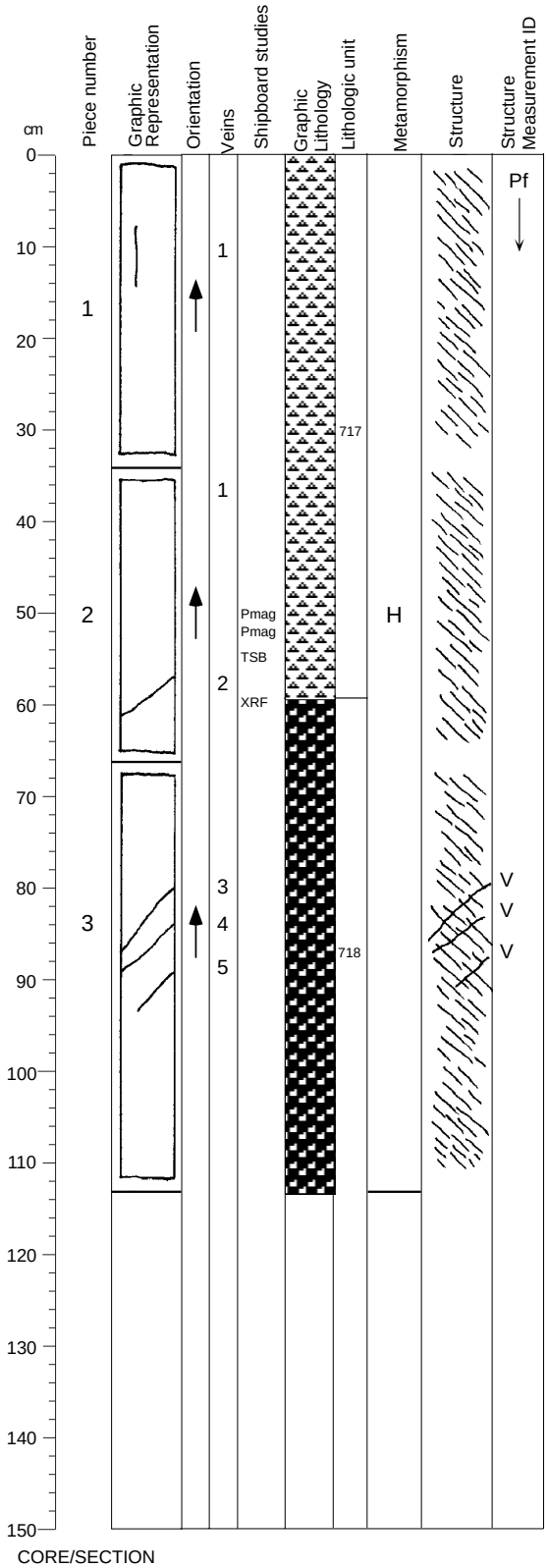
Alteration:
Dark green amphibole:
Total Percent: <15
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <25
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: moderate to high (25 to 50%). Pieces 1A to 1B: slightly deformed and recrystallized (olivine 20%, clinopyroxene 20%, and plagioclase 30%). Pieces 1B to 1C: highly sheared and granulated, extensively recrystallized.

Vein/Fracture Filling:
0.1-0.5 mm amphibole veins in Pieces 1A to 1C.

Structures:
Pf>F; Pf>V
The entire section displays a strong crystal-plastic foliation, regularly dipping 40°, cut by a few veins and a fault. From the top to the bottom of the section, the grain size progressively decreases (from up to 1 cm on top to less than 1 mm at the bottom), with no apparent correlated increase in finite strain.

Core Image



176-735B-149R-2

Interval 717: OLIVINE MICROGABBRO
(see previous section)
Interval 718: TROCTOLITE

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	149	2	59	2	962.40
Lower contact:	149	3	89	2B	963.83

Thickness (m): 1.43

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	7	1	medium	tabular/ anhedral subhedral
Clinopyroxene	3	15	N/A	medium	equant/ anhedral
Olivine	35	3	1	medium	elongate/ anhedral subhedral
Opaques	0.4				amoeboidal aggregates/ disseminated
Total	103.4*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Medium
Modal IUGS Name (calculated): Troctolite

	Type	Distribution
Texture:	granular	N/A
Fabric:	layering	N/A

Comments: Foliated; fine to medium grained. Coarser toward base. A mafic band with abundant oxide occurs at 78-84 cm in 149R-3. A porphyroclastic felsic veinlet is at 55 cm in 149R-3. Coarse clinopyroxene in foliated felsic "matrix". Oxide locally abundant at 77-81 cm in 149R-3.

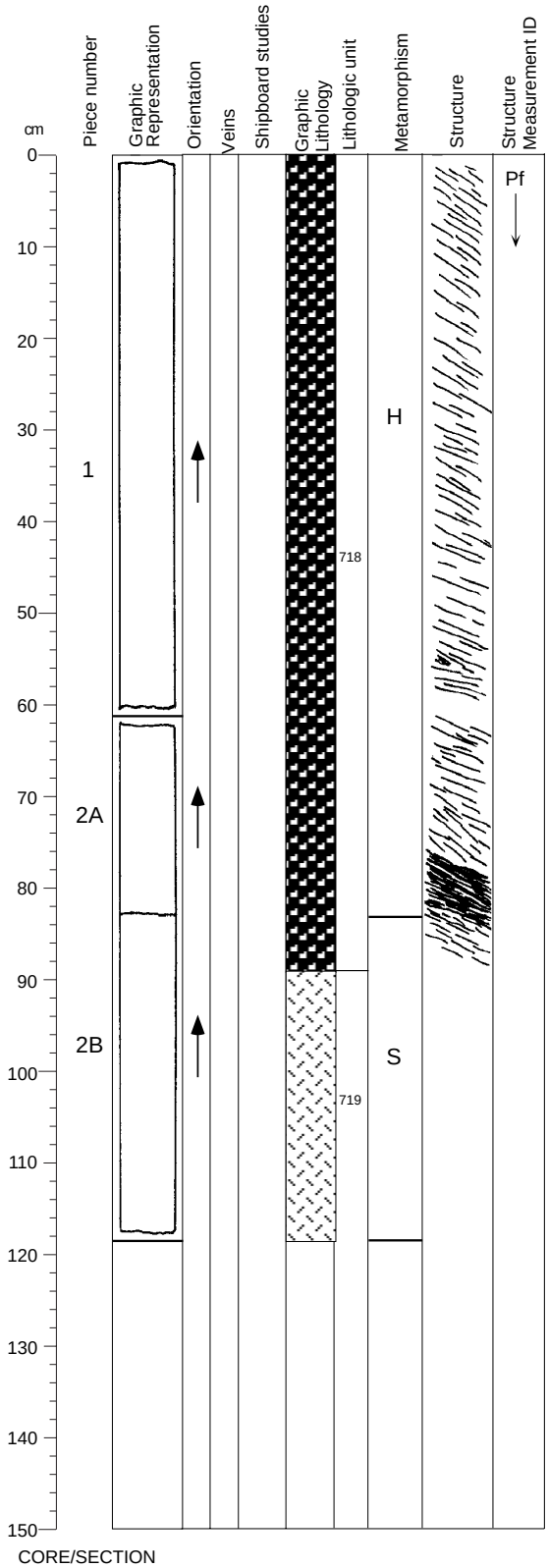
Alteration:
Dark green amphibole:
Total Percent: <22
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <28
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: high (50%). Fine-grained and highly recrystallized rock. Olivine is partly replaced by amphibole (30%). Clinopyroxene is partially altered to amphibole (30%), plagioclase is strongly recrystallized (70%).

Vein/Fracture Filling:
0.1-0.2 mm amphibole veins in Pieces 1 to 3.

Structures:
Pf>V
The entire section displays a strong crystal-plastic foliation, regularly dipping 45°, cut by a few veins.

Core Image



176-735B-149R-3

Interval 718: TROCTOLITE
(see previous section)
Interval 719: GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	149	3	89	2B	963.83
Lower contact:	153	1	12	2B	995.82

Thickness (m): 31.99

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	20	1	medium	tabular/ subhedral
Clinopyroxene	30	25	2	coarse	equant/ anhedral
Olivine	4	4	1	medium	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	94.5*		(see explanatory notes)		

*Major phases estimated to ± 5%)
Grain Size: Graded
Modal IUGS Name (calculated): Gabbro

	Type	Distribution
Texture:	variable texture	uniform

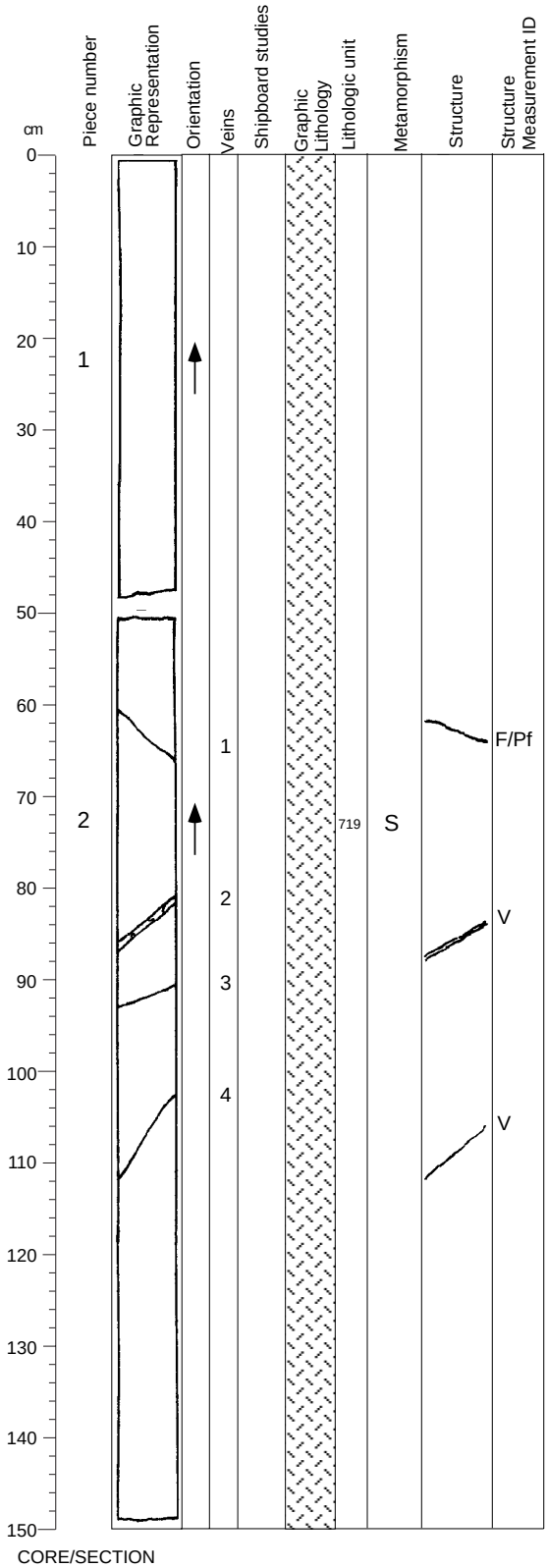
Comments: From top of interval to 50 cm in 152R-1: fine-grained with coarse patches locally present. From 50 cm in 152R-1 to 50 cm in 152R-4: medium grained with well developed cirrus texture. Locally coarse grained at 90-100 cm in 152R-2, 60-100 cm in 152R-3, and 0-50 cm in 152R-4. From 50 to 88 cm in 152R-4, nicely foliated, gradational from gneissic to less foliated granular. From 80 to 112 cm in 152R-4, pegmatitic (olivine < 5%) to granular. From 112 cm in 152R-4 to base, coarse-grained; mostly granular/intergranular, locally subophitic and rarely pegmatitic/very coarse-grained at 43-110 cm in 152R-5.

Alteration:
Dark green amphibole:
Total Percent: <15
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <25
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight to high (10 to 50%). Pieces 1 to 2A: same as previous section. Piece 2B: slightly deformed and recrystallized (10%).

Structures:
Mf>Pf
From 0 to 88 cm, the section displays a strong crystal-plastic foliation, regularly dipping 35°, overprinted from 78 to 86 cm by an intense, subparallel mylonitic shear zone. The rest of the section displays an igneous texture, with no magmatic foliation. The 8 cm mylonite ends an approximately 20-meter-thick shear zone (since Section 147R-4).

Core Image



176-735B-149R-4

Interval 719: GABBRO
(see previous section)

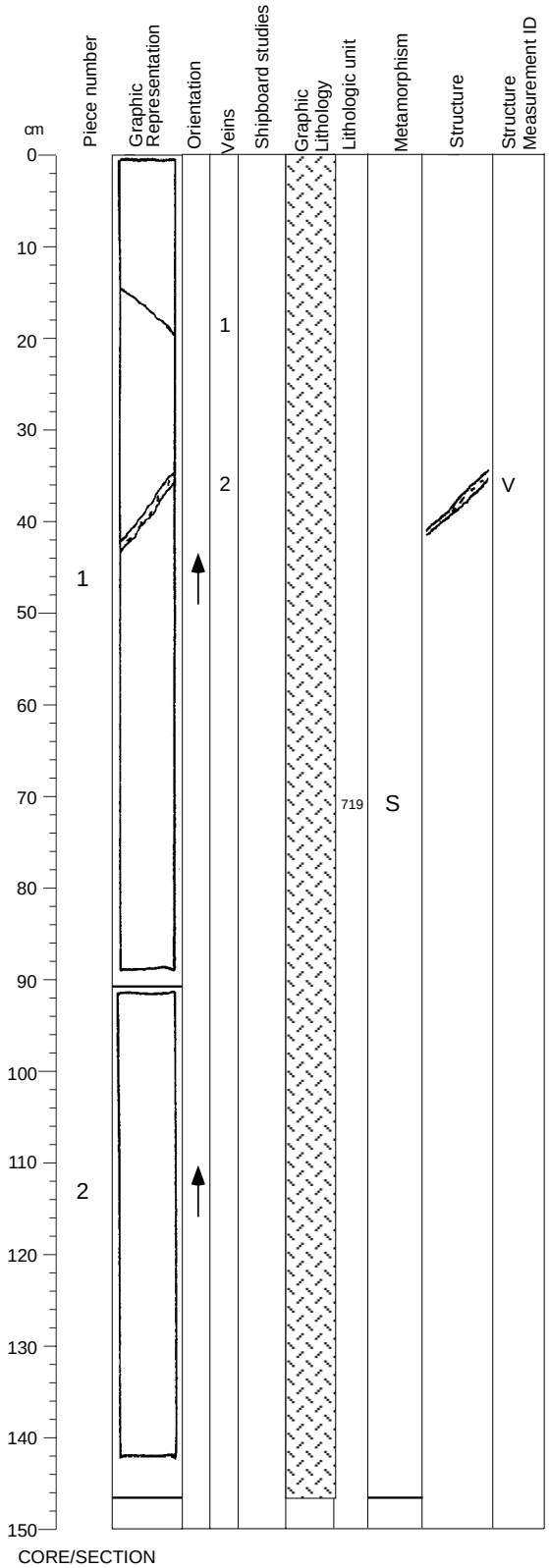
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant in felsic areas.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (4%). Olivine is partially altered to amphibole and smectite (10%). Clinopyroxene is replaced by amphibole to negligible extents (2%). 5% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.3-0.5 mm amphibole veins in Piece 2; 0.4-2.5 mm plagioclase+amphibole veins in Piece 2.

Structures:
Mf>F/Pf; Mf>V
The entire section displays an igneous texture, with no magmatic foliation, cut by a narrow, shallow semi-brittle shear zone (at 61 cm), and by two veins in Piece 2.

Core Image



176-735B-149R-5

Interval 719: GABBRO
(see Section 176-735B-149R-3)

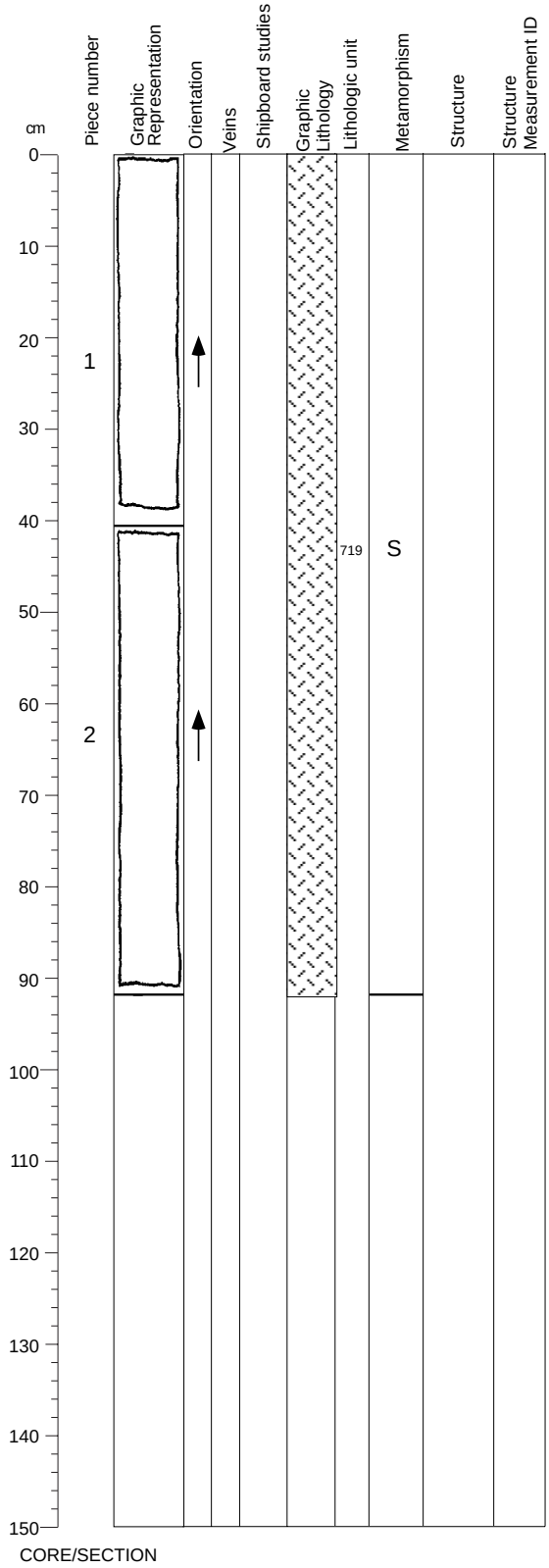
Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: tr.
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant in felsic areas.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: tr.
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (6%). Olivine is partially altered to amphibole and smectite (10%). Clinopyroxene is partly replaced by amphibole (3%). 8% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.4 mm plagioclase vein in Piece 1; 4 mm plagioclase+amphibole vein in Piece 1.

Structures:
Mf>V
The entire section displays an igneous texture, with little or no magmatic foliation, cut by a vein in Piece 1.

Core Image



176-735B-149R-6

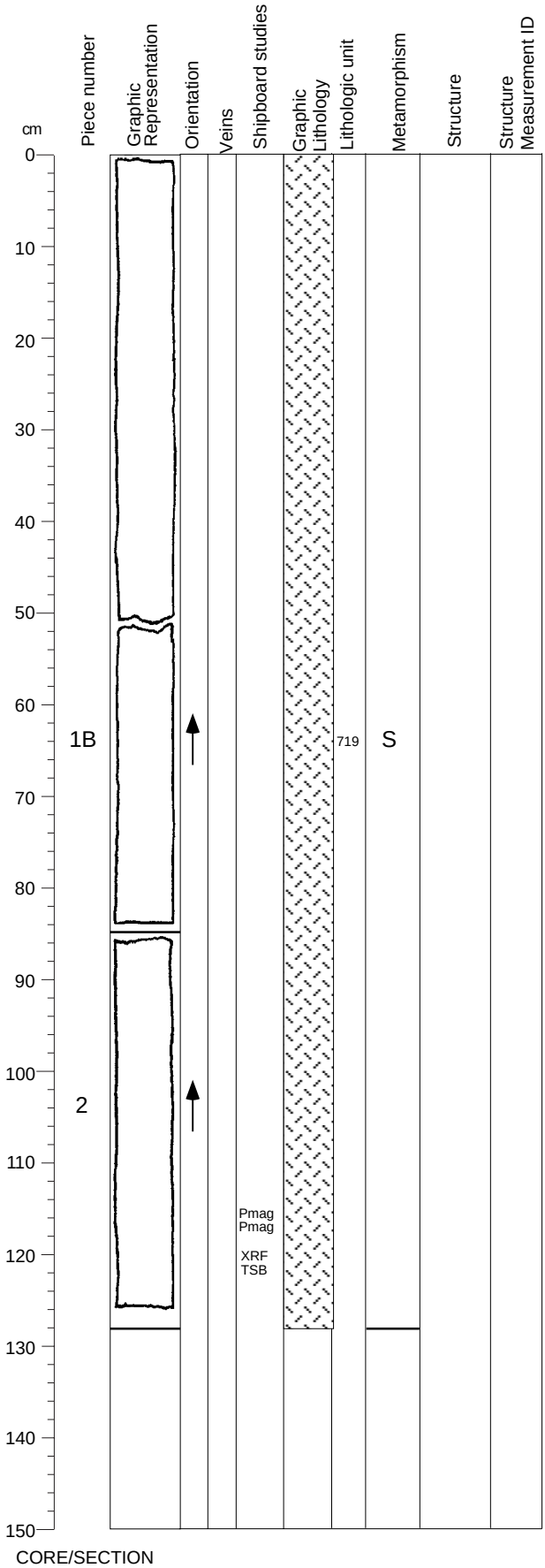
Interval 719: GABBRO
(see Section 176-735B-149R-3)

Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (6%). Same as previous section.

Structures:
Mf
The entire section displays an igneous texture, with a weak magmatic foliation.

Core Image



176-735B-149R-7

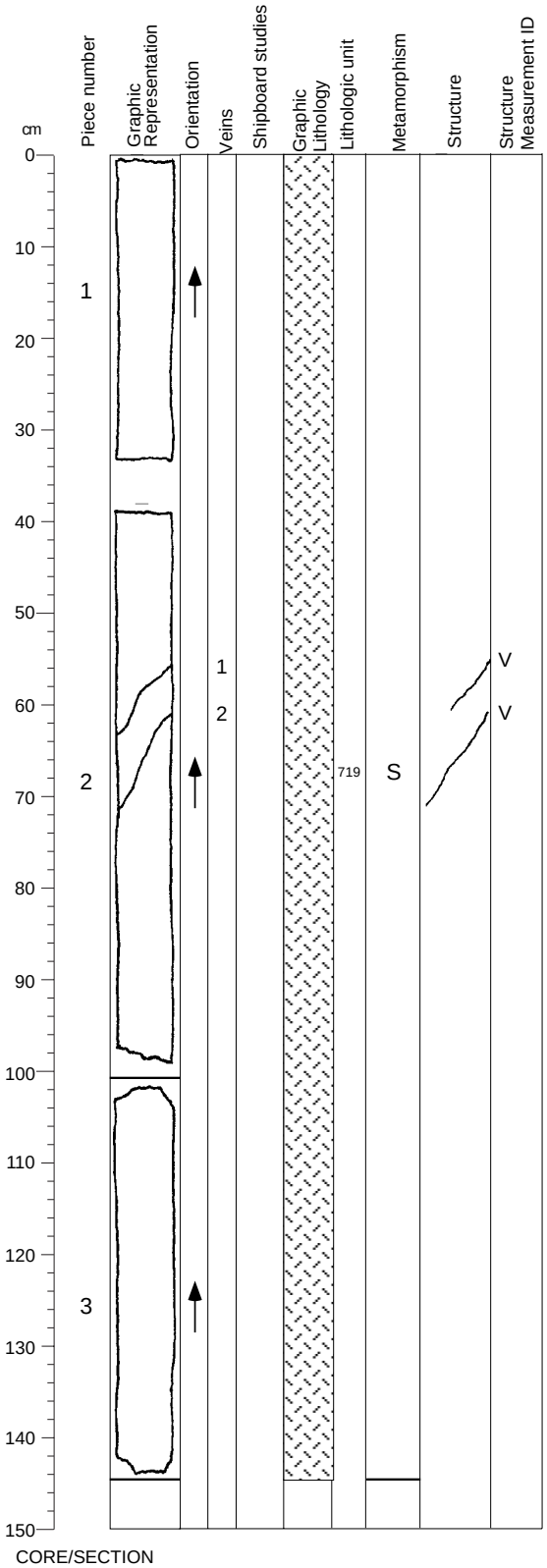
Interval 719: GABBRO
(see Section 176-735B-149R-3)

Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (4%). Olivine is partially altered to amphibole and smectite (10%). Clinopyroxene is replaced by amphibole to negligible extents (2%). 5% of the plagioclase is recrystallized.

Structures:
Mf
The entire section displays an igneous texture, with no or a weak magmatic foliation.

Core Image



176-735B-149R-8

Interval 719: GABBRO
(see Section 176-735B-149R-3)

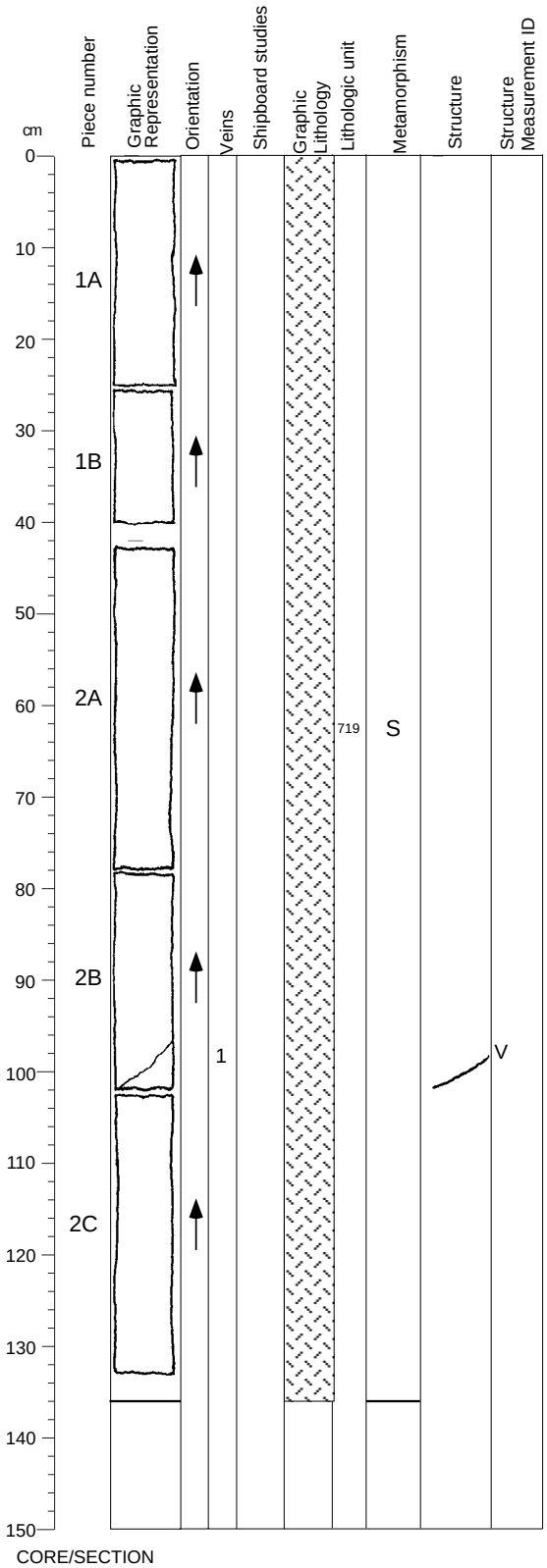
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: In the halo of an amphibole vein.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (4%). Same as previous section.

Vein/Fracture Filling:
0.4-0.5 mm amphibole veins in Piece 2.

Structures:
Mf
The entire section displays an igneous texture, with a weak magmatic foliation.

Core Image



176-735B-150R-1

Interval 719: GABBRO
(see Section 176-735B-149R-3)

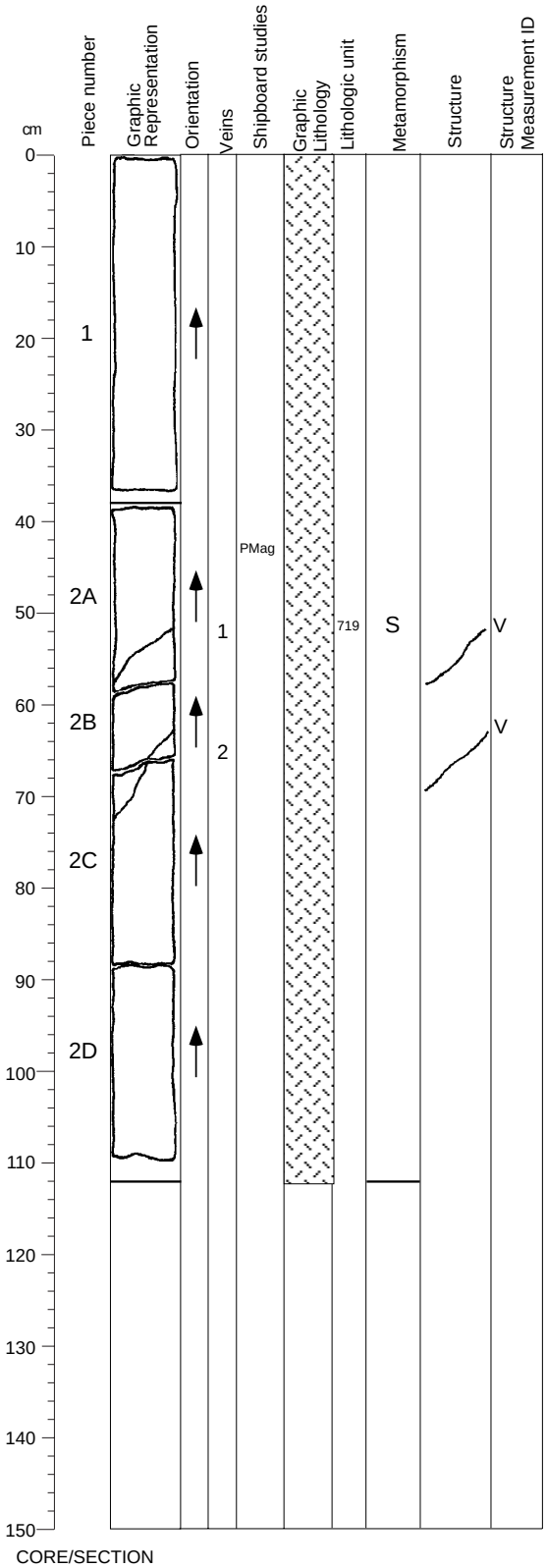
Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: In small patchy alteration zones.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (6%). Olivine is partially altered to amphibole and smectite (10%). Clinopyroxene is partly replaced by amphibole (6%). 4% of the plagioclase is altered.

Vein/Fracture Filling:
0.4 mm amphibole vein in Piece 2.

Structures:
Mf>V
The entire section displays an igneous texture, with a weak to moderate magmatic foliation, regularly dipping 40°, cut by a vein in Piece 2B.

Core Image



176-735B-150R-2

Interval 719: GABBRO
(see Section 176-735B-149R-3)

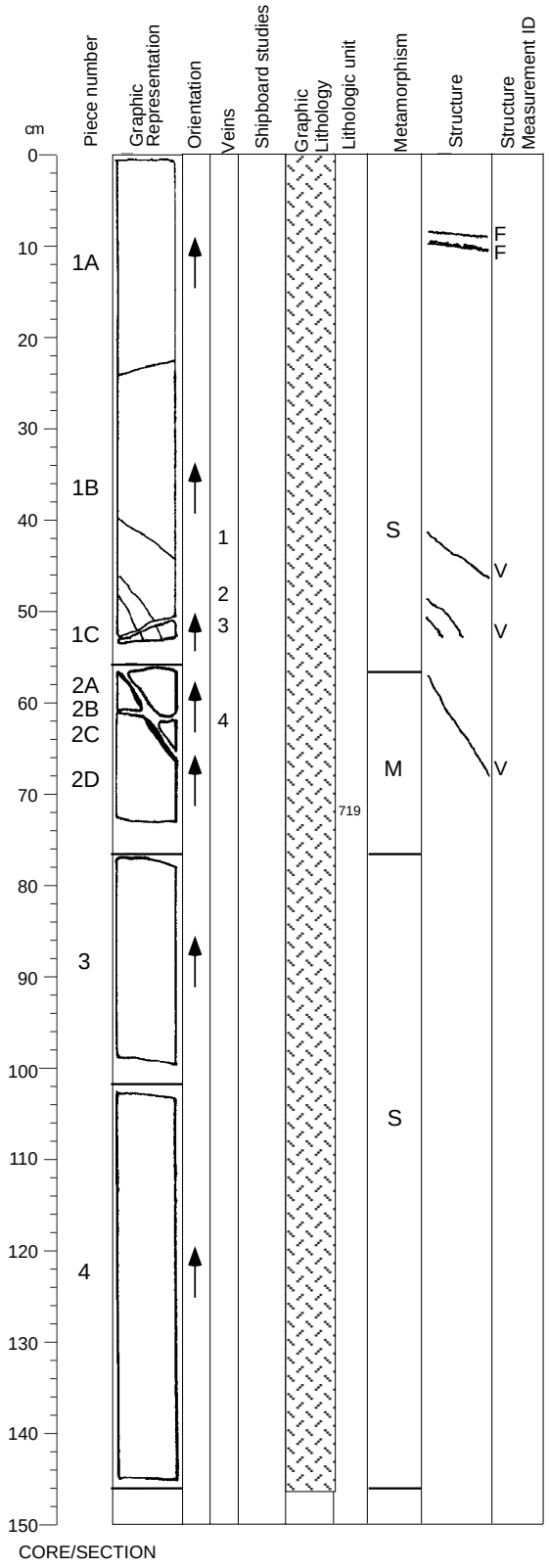
Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: In vein halos.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (6%). Same as previous section.

Vein/Fracture Filling:
0.3 mm amphibole vein in Piece 2A; smectite vein in Piece 2B and 2C.

Structures:
Mf>V
The entire section displays an igneous texture, with a weak to moderate magmatic foliation, regularly dipping 45°, cut by two veins in Pieces 2A to 2C.

Core Image



176-735B-150R-3

Interval 719: GABBRO
(see Section 176-735B-149R-3)

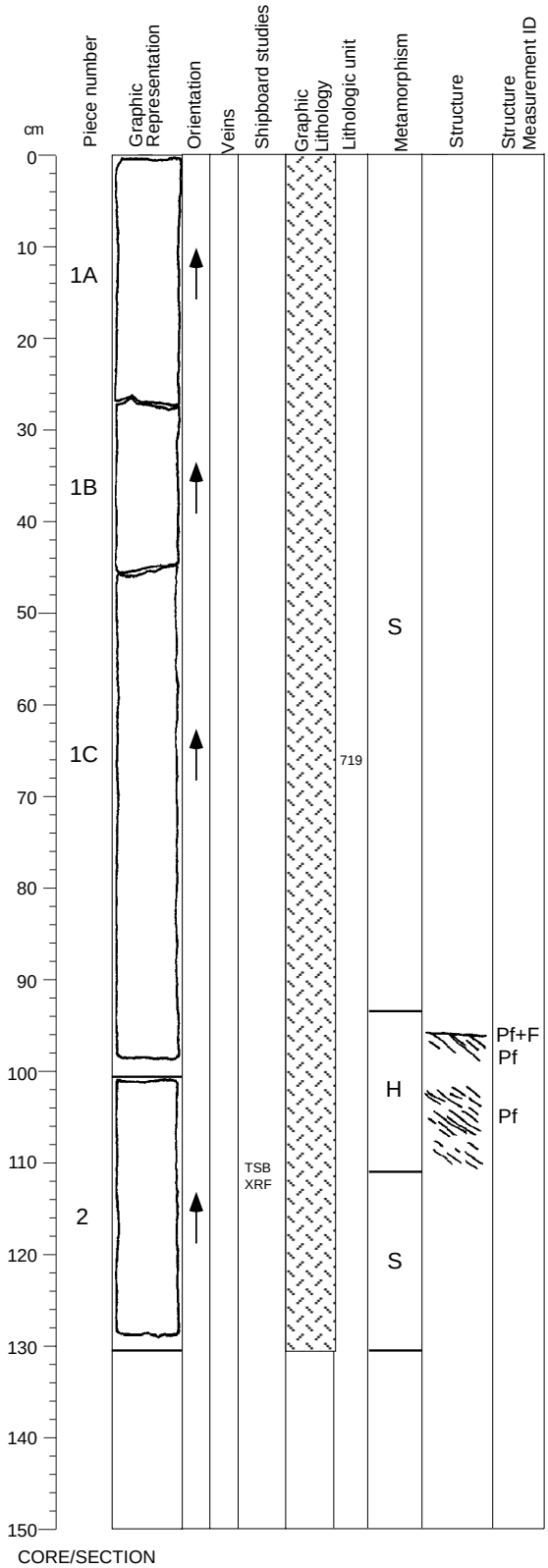
Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.
Smectite:
Total Percent: <1
Mode of occurrence: Pale green smectite replacing plagioclase.
Comments: around smectite veins.

Background Alteration:
Degree of alteration: slight to moderate (4 to 20%). Piece 1: Slight alteration (8%). Olivine is partially altered to amphibole and smectite (20%). Clinopyroxene is partly replaced by amphibole (6%). 10% of the plagioclase is altered to secondary plagioclase, amphibole and smectite (along smectite veins). Piece 2: Increased alteration of olivine (60%) along a smectite vein. Pieces 3 to 4: Slight alteration (4%). No visible smectite replacing olivine and plagioclase.

Vein/Fracture Filling:
0.6-2 mm smectite+calcite veins in Pieces 1B and 2.

Structures:
Mf>F; Mf>V
The entire section displays an igneous texture, with a weak magmatic foliation, cut by two small, parallel faults in Piece 1A and by a few veins in Pieces 1B to 2D.

Core Image



176-735B-150R-4

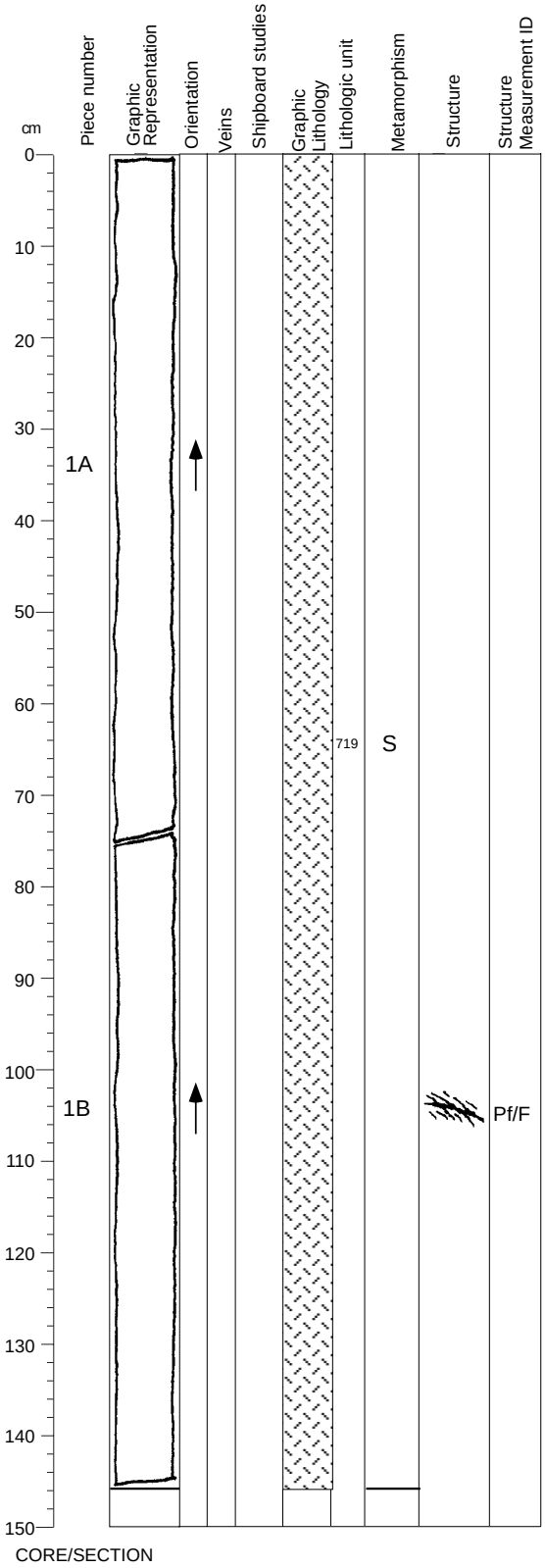
Interval 719: GABBRO
(see Section 176-735B-149R-3)

Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight to moderate (4 to 20%). Pieces 1A to 1C: Slight alteration (4%). Pieces 1C to 2: highly recrystallized shear zone (70% recrystallization). Lowermost part of Piece 2: Slight alteration (6%).

Structures:
Mf>Pf>Pf/F
Most of the section displays an igneous texture, with no or a weak magmatic foliation, except for the bottom of Piece 1C and the top of Piece 2 (95 to 112 cm) which display a strong crystal-plastic foliation, dipping 35°. This zone of plastic deformation is bounded at its upper boundary by a nearly horizontal, semi-brittle fault.

Core Image



176-735B-150R-5

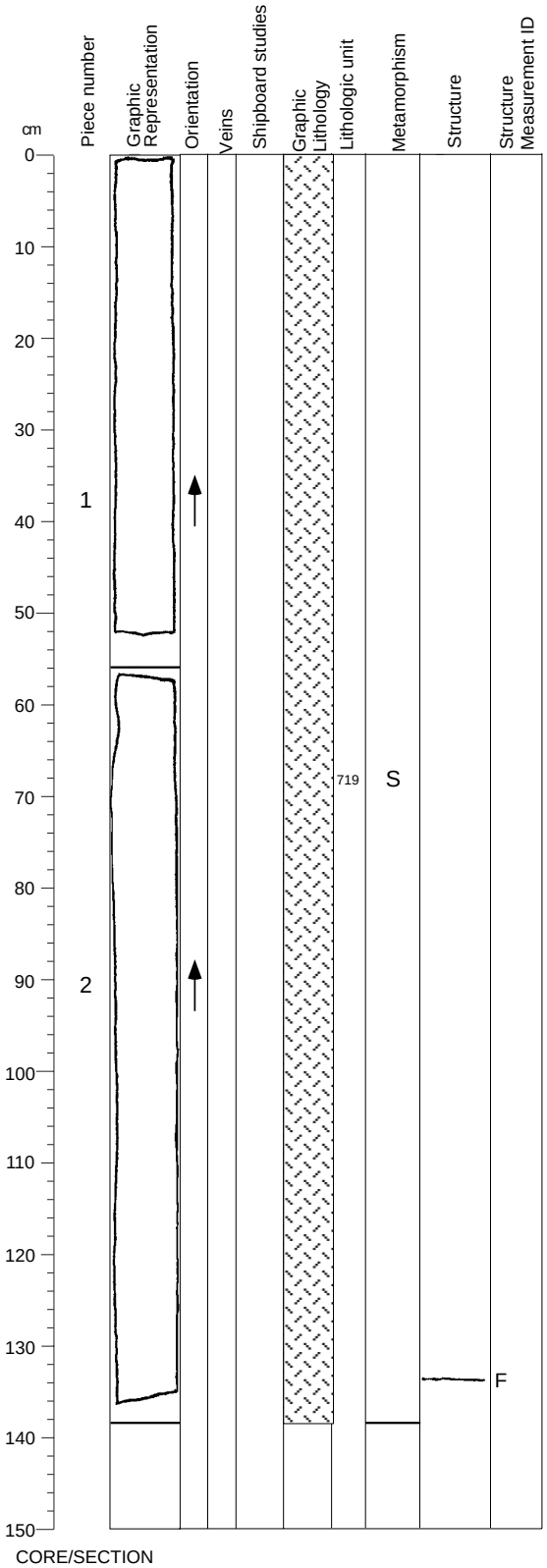
Interval 719: GABBRO
(see Section 176-735B-149R-3)

Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (6%). Olivine is partly altered to amphibole (10%). Clinopyroxene is weakly altered to amphibole (3%). 8% of the plagioclase is altered.

Structures:
Mf>Pf/F
Most of the section displays an igneous texture, with a weak magmatic foliation (dip 25°), overprinted in Piece 1B (102 cm) by a 1-2 cm thick, gently dipping, reverse semi-brittle shear zone.

Core Image



176-735B-150R-6

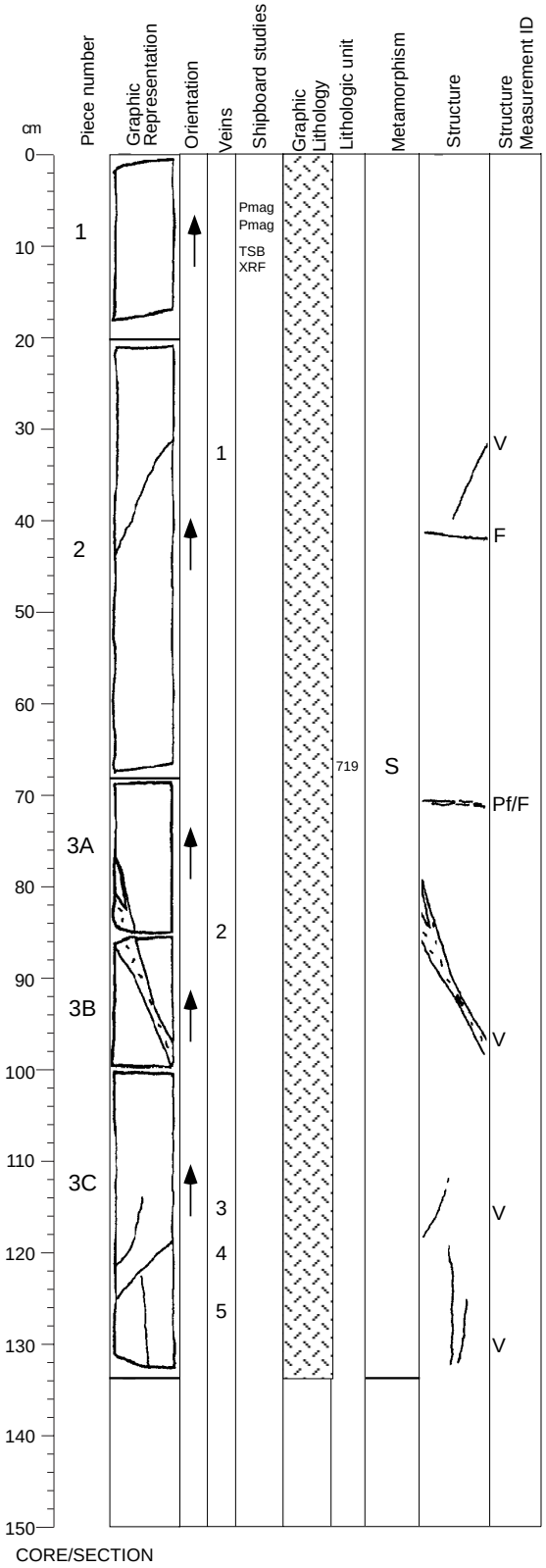
Interval 719: GABBRO
(see Section 176-735B-149R-3)

Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent:trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (6%). Same as previous section.

Structures:
Mf>F
Most of the section displays an igneous texture, with a weak magmatic foliation (dip 30°). The igneous texture is overprinted at the bottom of Piece 2 by a fault.

Core Image



176-735B-150R-7

Interval 719: GABBRO
(see Section 176-735B-149R-3)

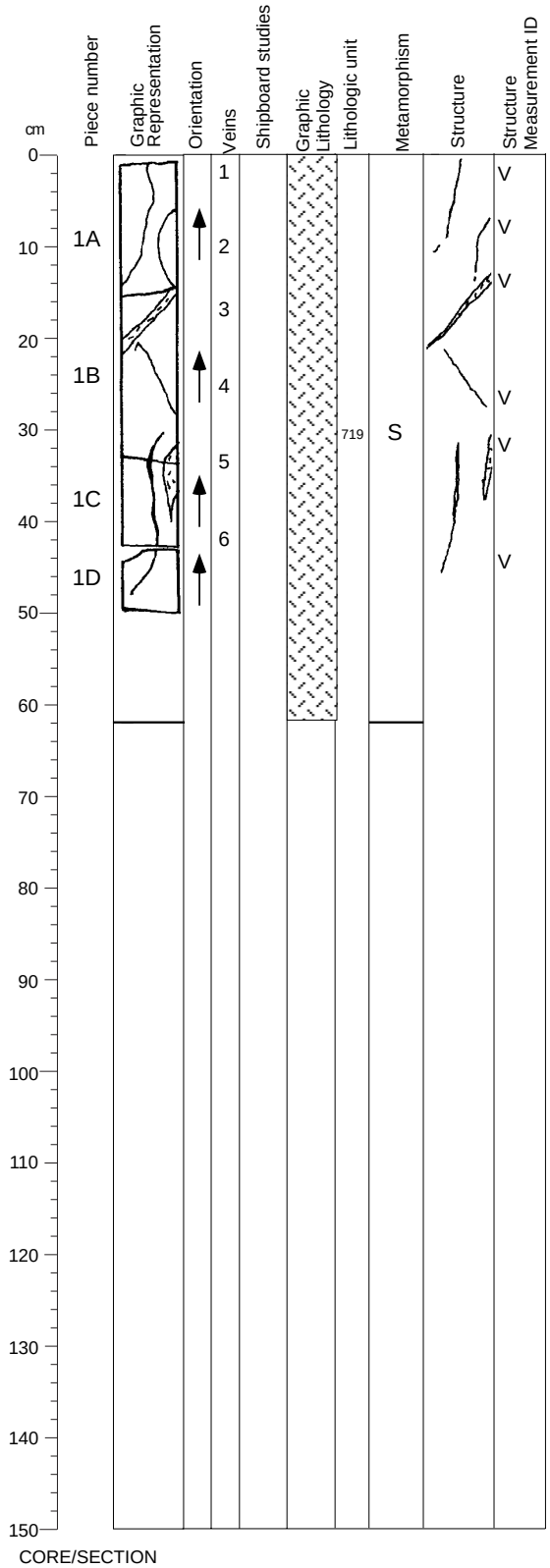
Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near a felsic vein.
Green amphibole:
Total Percent: trace
Mode of occurrence: Along an amphibole vein.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (6%). Olivine is partly altered to amphibole (10%). Clinopyroxene is weakly altered to amphibole (5%). 6% of the plagioclase is altered.

Vein/Fracture Filling:
1 mm plagioclase vein in Piece 2; 7 mm compound felsic vein in Pieces 3A and 3B; 0.2 mm amphibole veins in Piece 2.

Structures:
Mf>V; Mf>F; Mf>Pf/F
The entire section displays an igneous texture, with a weak magmatic foliation (dip 35°), cut by a series of veins, and a fault in Piece 1. A very narrow, subhorizontal, semi-brittle shear zone overprints the igneous texture at the top of Piece 3A.

Core Image



176-735B-150R-8

Interval 719: GABBRO
(see Section 176-735B-149R-3)

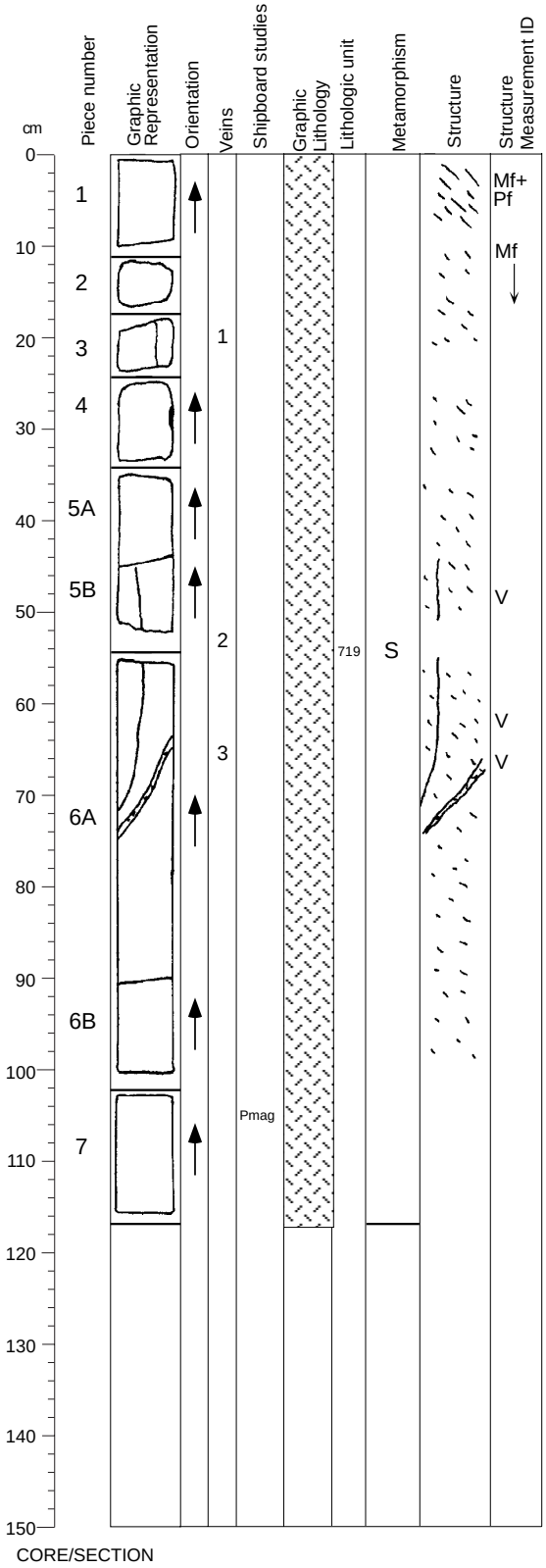
Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near a felsic vein.
Green amphibole:
Total Percent: <2
Mode of occurrence: In patchy alteration and in diffuse halos of an amphibole vein.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (6%). Same as previous section.

Vein/Fracture Filling:
0.4 mm amphibole veins in Piece 1A and 1B; 0.4-4 mm plagioclase+amphibole veins in Pieces 1A to 1C.

Structures:
Mf>V
The entire section displays an igneous texture, with a weak magmatic foliation, cut by a series of veins.

Core Image



176-735B-151R-1

Interval 719: GABBRO
(see Section 176-735B-149R-3)

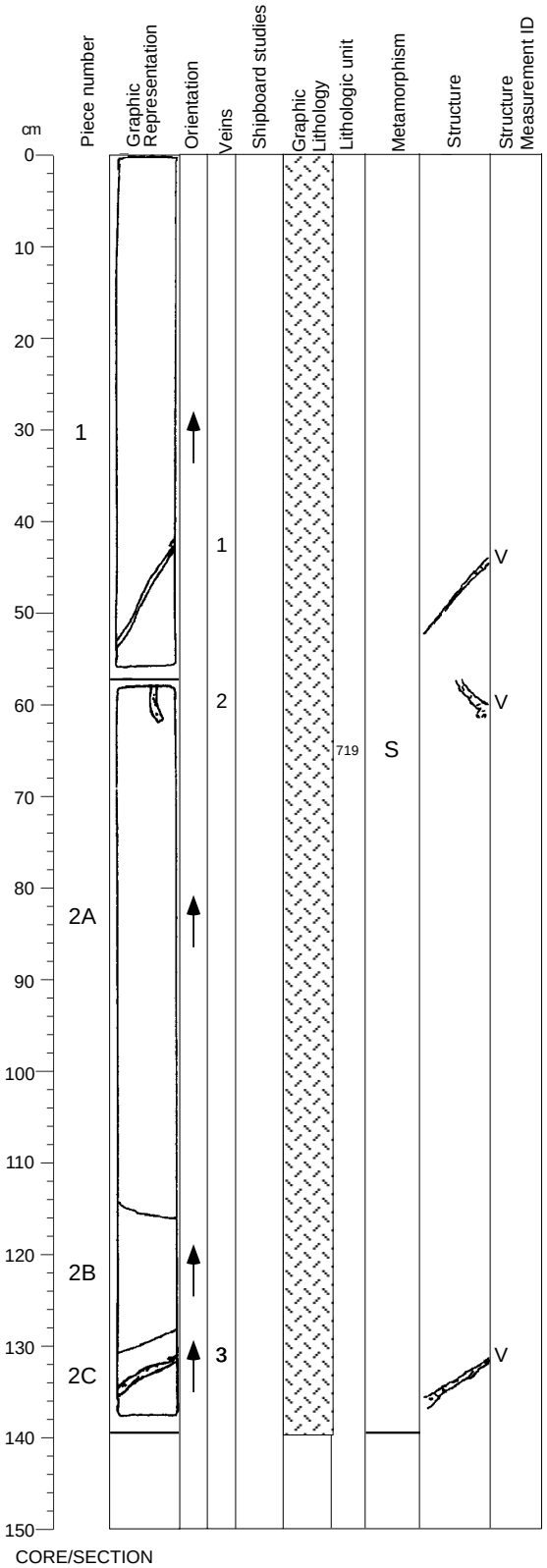
Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near a felsic vein.
Green amphibole:
Total Percent: <1
Mode of occurrence: In the diffuse halos of amphibole veins.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (6%). 5% of the olivine is altered. Around 6% of the clinopyroxene is replaced by amphibole. 5% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.1-0.6 mm amphibole veins in Pieces 3 and 5B to 6; 2.5 mm plagioclase+ amphibole vein in Pieces 5-6.

Structures:
Mf>Pf; Mf>V
Most of the section displays an igneous texture, with a moderate magmatic foliation, regularly dipping 30°. The magmatic foliation is overprinted in Piece 1 by a parallel, weak crystal-plastic foliation, and cut by two veins in Pieces 5B and 6A.

Core Image



176-735B-151R-2

Interval 719: GABBRO
(see Section 176-735B-149R-3)

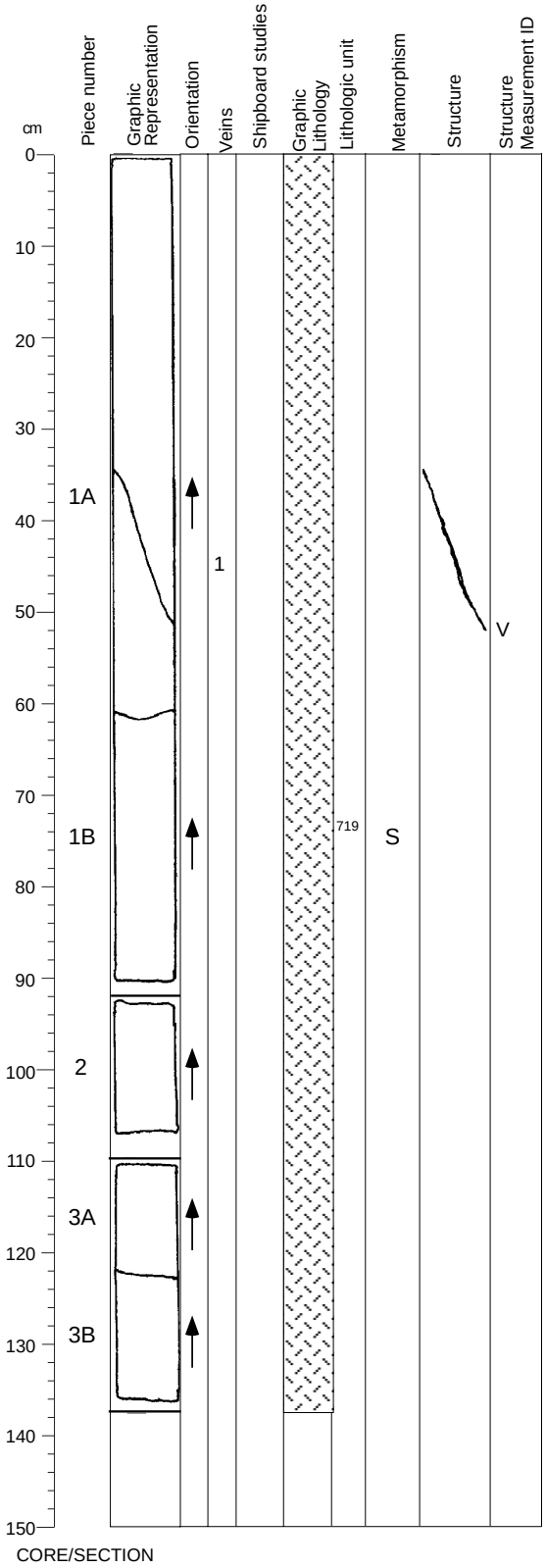
Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near felsic veins.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (6%). Same as previous section.

Vein/Fracture Filling:
1.5-2.5 mm plagioclase+amphibole veins in Pieces 1, 2A, and 2C.

Structures:
Mf>V
The entire section displays an igneous texture, with a weak to moderate magmatic foliation, regularly dipping 35°, cut by a few veins.

Core Image



176-735B-151R-3

Interval 719: GABBRO
(see Section 176-735B-149R-3)

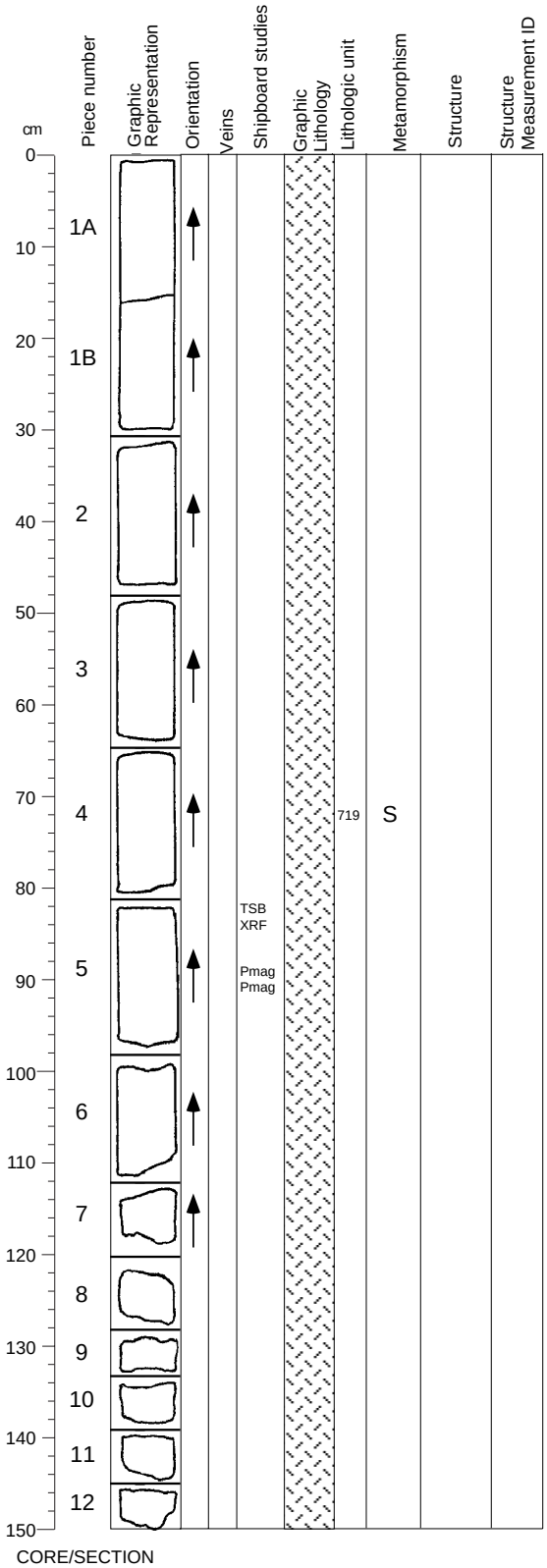
Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near a felsic vein.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (4%). 5% of the olivine is altered. Around 4% of the clinopyroxene is replaced by amphibole. 4% of the plagioclase is recrystallized.

Vein/Fracture Filling:
2 mm plagioclase+amphibole veins in Piece 1.

Structures:
Mf>V
The entire section displays an igneous texture, with no or a weak magmatic foliation, cut by a vein in Piece 1A.

Core Image



176-735B-151R-4

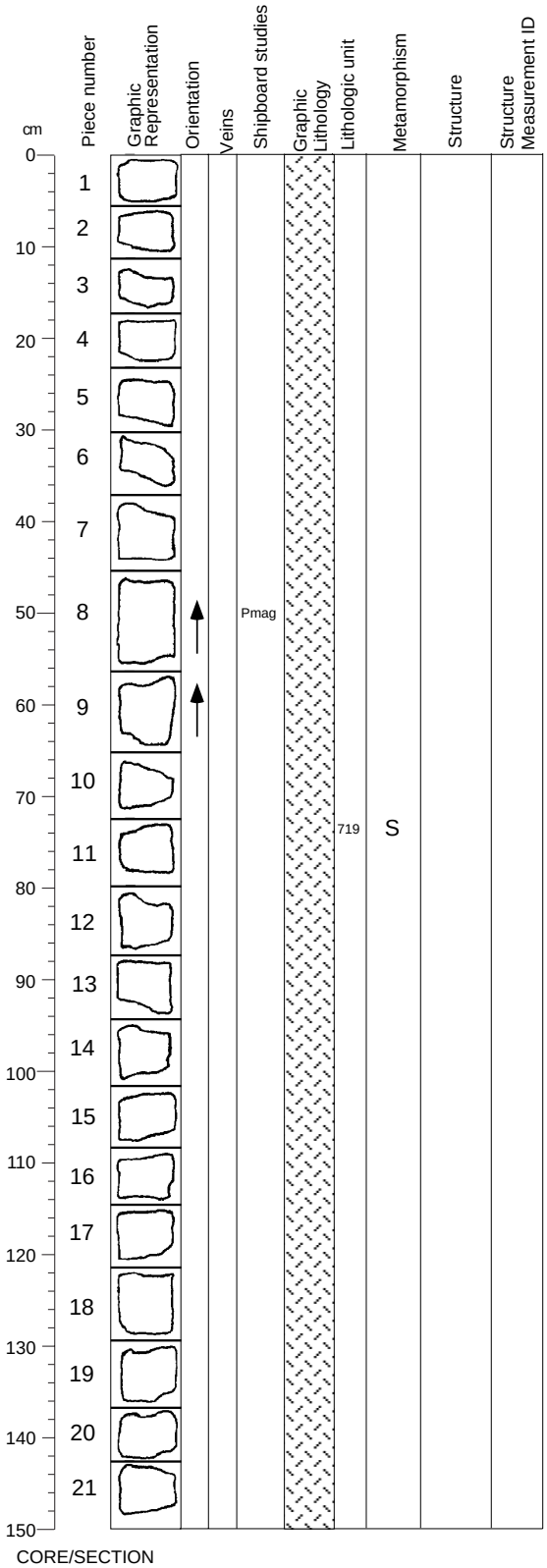
Interval 719: GABBRO
(see Section 176-735B-149R-3)

Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near a felsic vein.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (4%). Same as previous section.

Structures:
Mf
The entire section displays an igneous texture, with no or a weak magmatic foliation.

Core Image



176-735B-151R-5

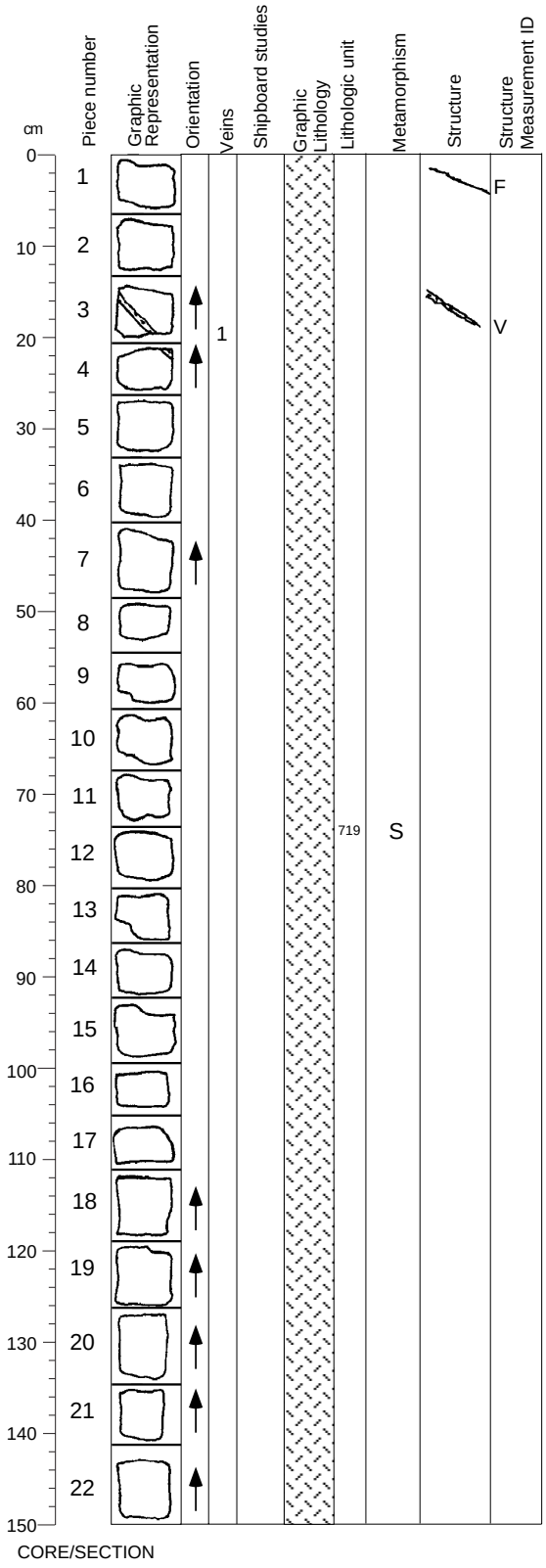
Interval 719: GABBRO
(see Section 176-735B-149R-3)

Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near a felsic vein.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (6%). 5% of the olivine is altered. Around 6% of the clinopyroxene is replaced by amphibole. 5% of the plagioclase is recrystallized.

Structures:
Mf
The entire section displays an igneous texture, with no or a weak magmatic foliation.

Core Image



176-735B-151R-6

Interval 719: GABBRO
(see Section 176-735B-149R-3)

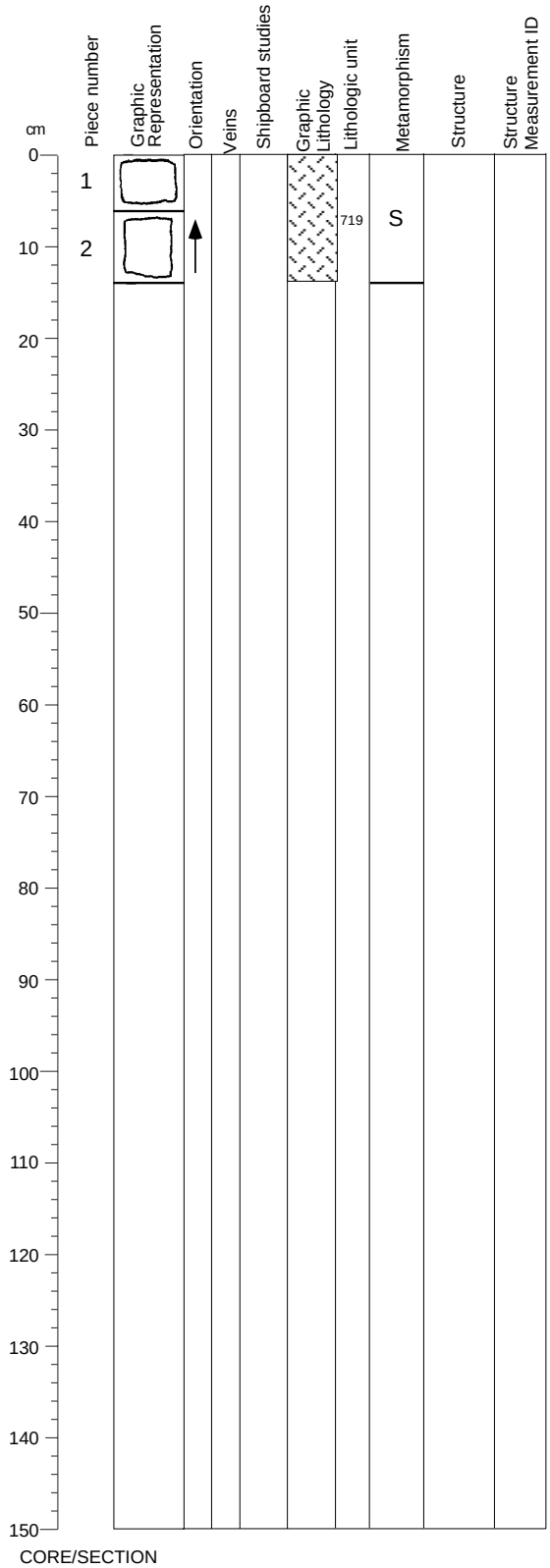
Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near a felsic vein.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (6%). Same as previous section.

Vein/Fracture Filling:
2 mm plagioclase+amphibole vein in Pieces 3 and 4.

Structures:
Mf>F; Mf>V
The entire section displays an igneous texture, with no or a weak magmatic foliation, cut by a fault in Piece 1, and a vein in Piece 3.

Core Image



176-735B-151R-7

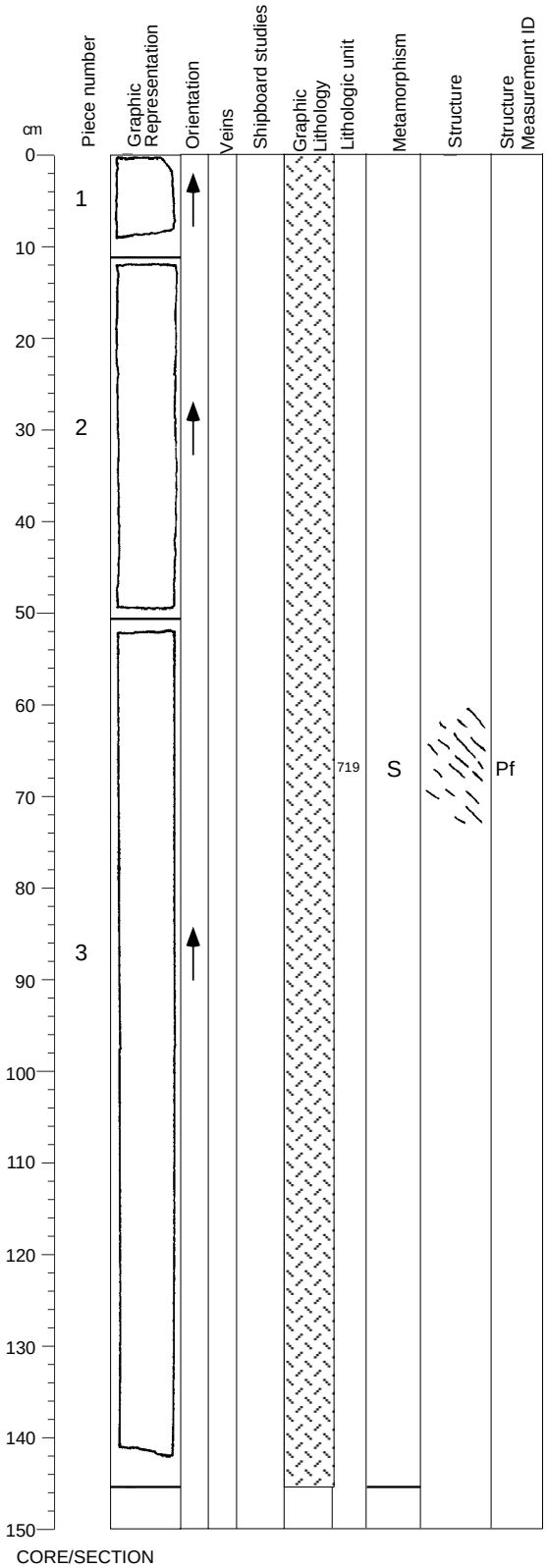
Interval 719: GABBRO
(see Section 176-735B-149R-3)

Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near a felsic vein.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (6%). Same as previous section.

Structures:
Mf
The entire section displays an igneous texture, with no or a weak magmatic foliation.

Core Image



176-735B-152R-1

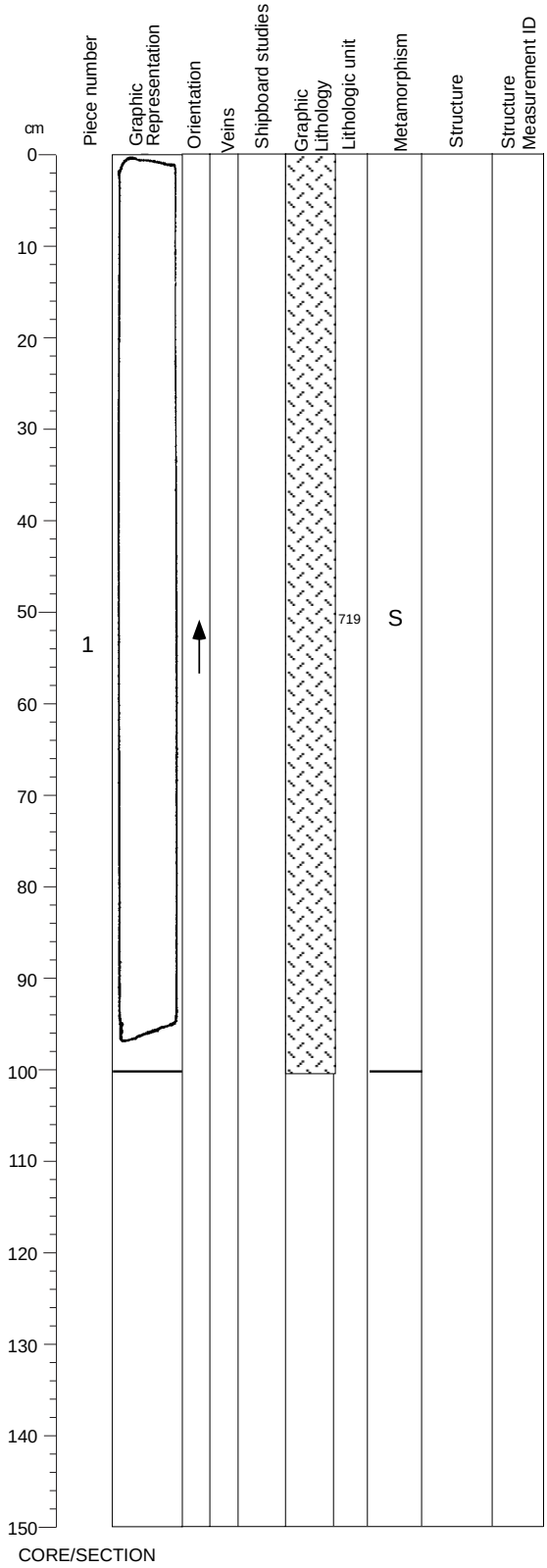
Interval 719: GABBRO
(see Section 176-735B-149R-3)

Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (6%). Olivine is weakly altered to amphibole and smectite. Clinopyroxene is marginally replaced by amphibole (4%). 7% of the plagioclase is recrystallized.

Structures:
Mf>Pf
Most of the section displays an igneous texture, with no magmatic foliation. The igneous texture is overprinted in Piece 3 (from 67 to 74 cm) by a weak crystal-plastic foliation, possibly overprinting a weak magmatic foliation.

Core Image



176-735B-152R-2

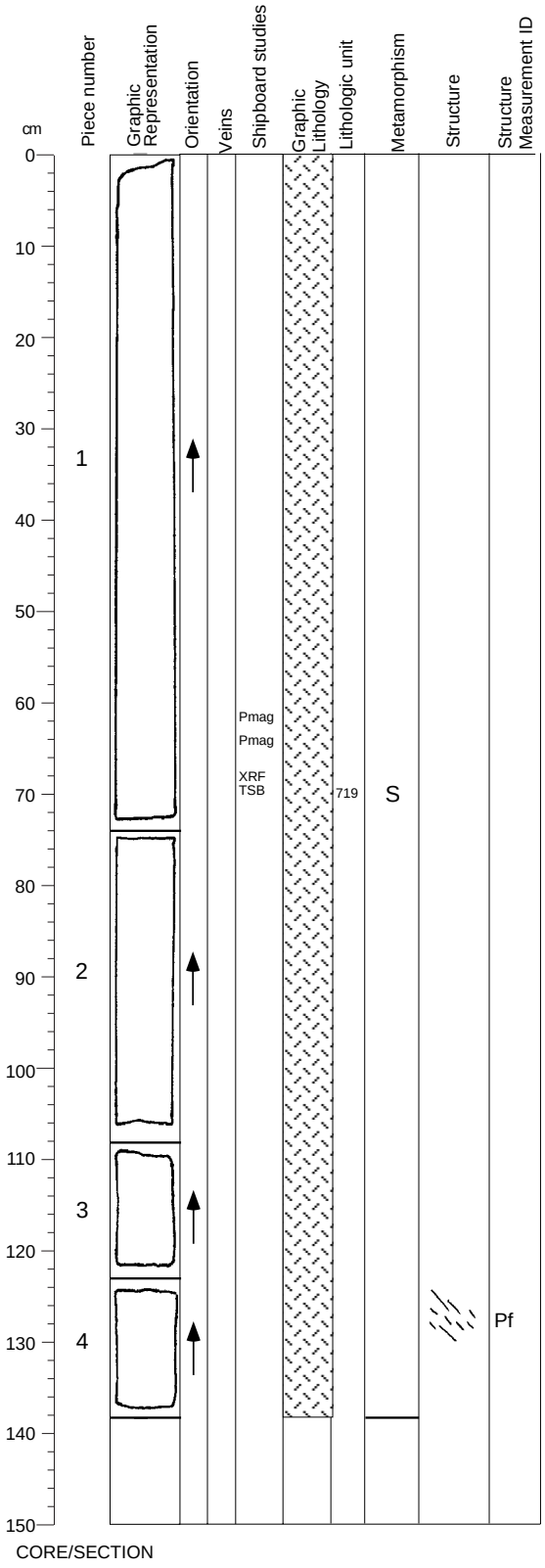
Interval 719: GABBRO
(see Section 176-735B-149R-3)

Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectites:
Total Percent: trace
Mode of occurrence: Small, millimeter-sized, disseminated dark green smectites.

Background Alteration:
Degree of alteration: slight (6%). Same as previous section.

Structures:
Mf
The entire section displays an igneous texture, with no or a weak magmatic foliation.

Core Image



176-735B-152R-3

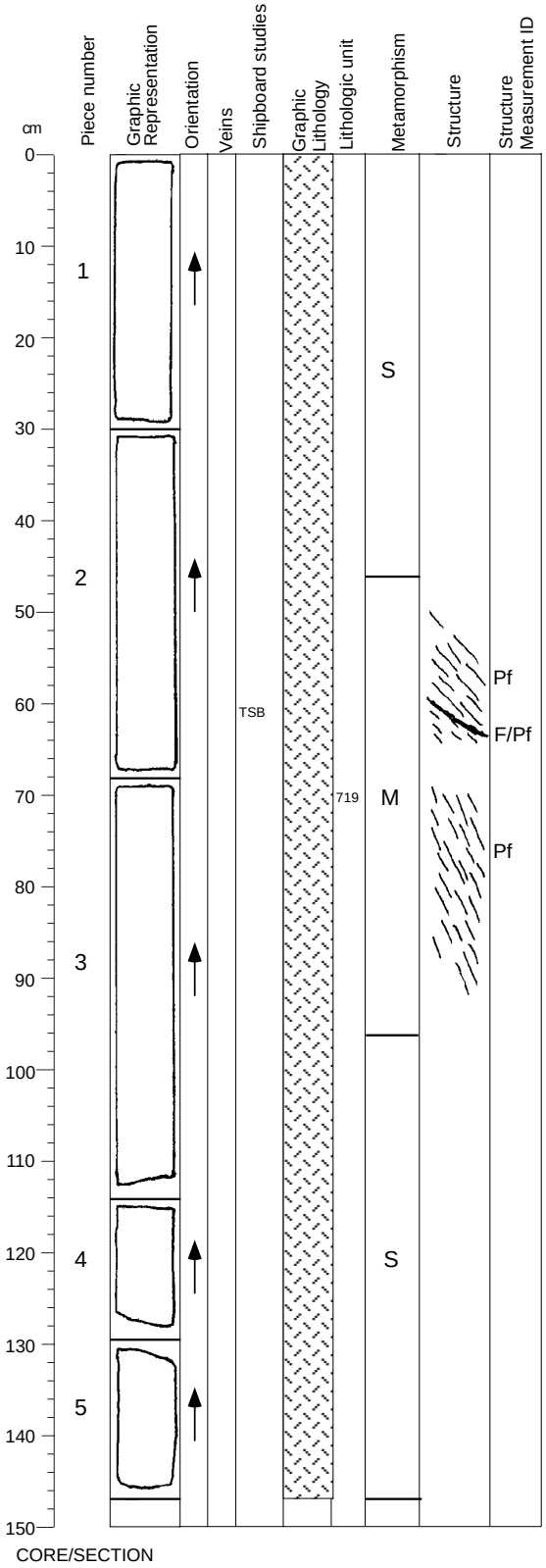
Interval 719: GABBRO
(see Section 176-735B-149R-3)

Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Talc and oxides:
Total Percent: trace
Mode of occurrence: Replacing olivine.
Comments: As mixtures in the crystal crack network.

Background Alteration:
Degree of alteration: slight (6%). Same as previous section.

Structures:
Mf>Pf
Most of the section displays an igneous texture, with no or a weak magmatic foliation. The igneous texture is overprinted at the bottom of Piece 4 by a weak crystal-plastic foliation.

Core Image



176-735B-152R-4

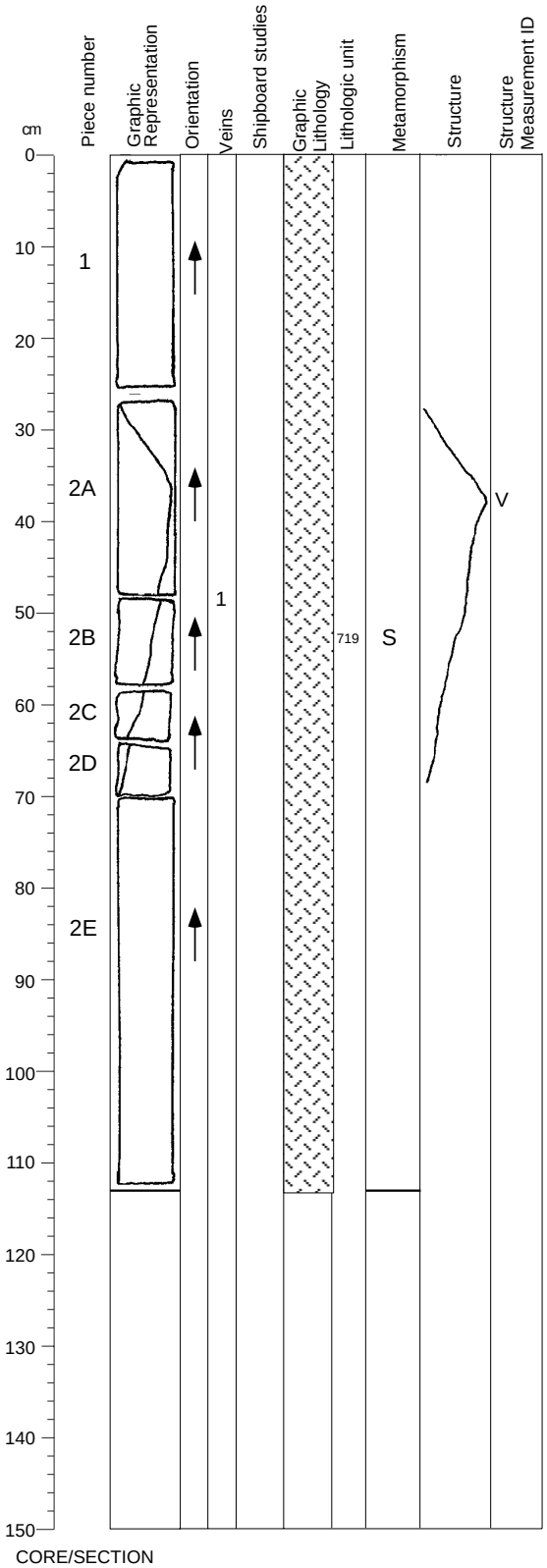
Interval 719: GABBRO
(see Section 176-735B-149R-3)

Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: Larger amount in deformed areas.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, larger amount in deformed areas.

Background Alteration:
Degree of alteration: slight to moderate (4 to 30%). Pieces 1 to 2: Olivine is weakly altered to amphibole and smectite. Clinopyroxene is marginally replaced by amphibole (4%). 10% of the plagioclase is recrystallized. Pieces 2 to 3A: significantly deformed and recrystallized (30%). Pieces 3B to 5: slightly altered (4%).

Structures:
Mf>Pf>Pf/F
From 0 to 52 cm, and from 91 to 147 cm, the section displays an igneous texture, with no magmatic foliation. From 52 to 91 cm, a weak crystal-plastic foliation is present, dipping 35° in Piece 2, and 70° in Piece 3. The crystal-plastic foliation is overprinted at 63 cm by a moderately dipping, narrow semi-brittle shear zone.

Core Image



176-735B-152R-5

Interval 719: GABBRO
(see Section 176-735B-149R-3)

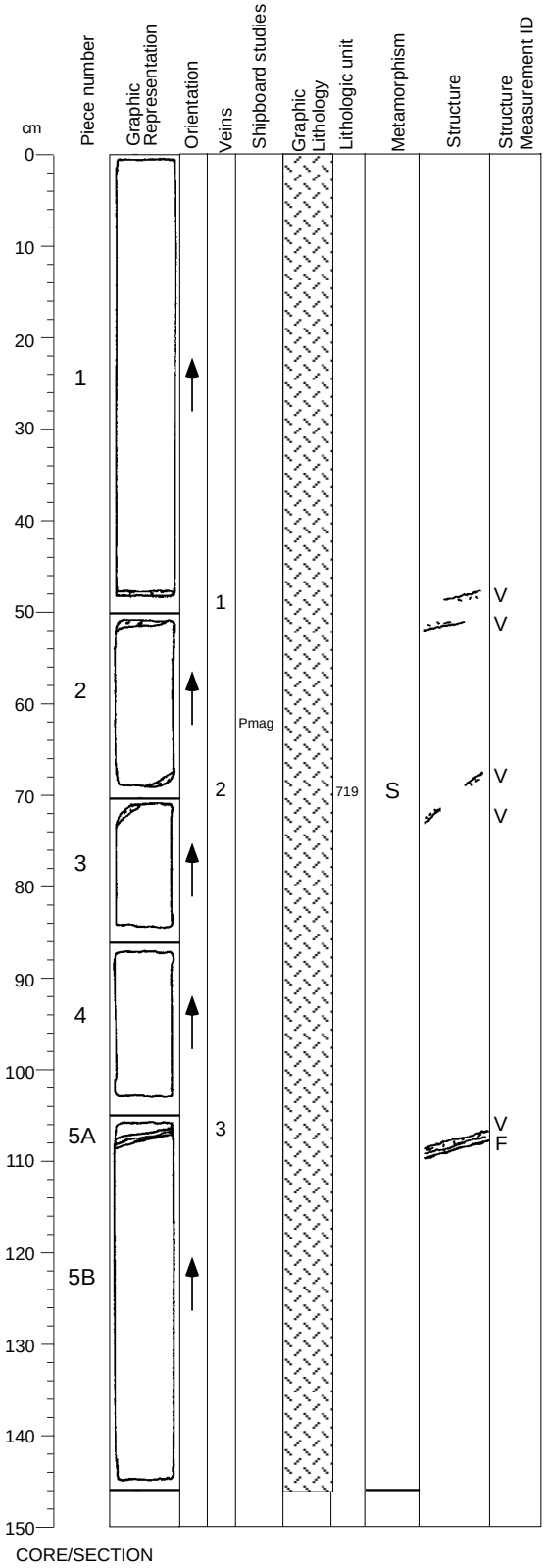
Alteration:
Dark green amphibole:
Total Percent: <4
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More developed near a felsic vein.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Comments: More abundant in and near the felsic vein.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, larger amount near the felsic vein.

Background Alteration:
Degree of alteration: slight (8%). Olivine is partly altered to amphibole and smectite (15%). Clinopyroxene is marginally replaced by amphibole (5%). 6% of the plagioclase is altered to secondary plagioclase and, in addition, smectite along veins.

Vein/Fracture Filling:
2 mm plagioclase+amphibole vein in Piece 2.

Structures:
Mf>V
The entire section displays an igneous texture, with no magmatic foliation, cut by a long vein in Pieces 2A to 2D.

Core Image



176-735B-152R-6

Interval 719: GABBRO
(see Section 176-735B-149R-3)

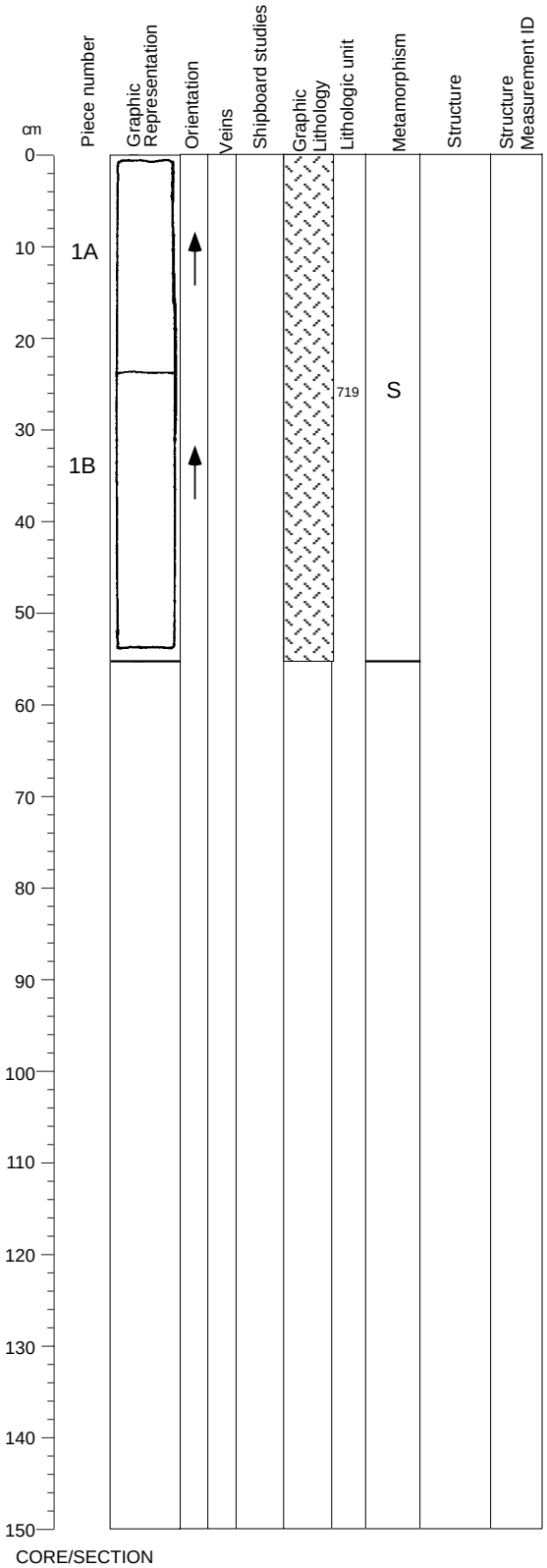
Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More developed near felsic veins.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Comments: More abundant in and near felsic veins.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed, larger amount near felsic veins.

Background Alteration:
Degree of alteration: slight (6%). Olivine is weakly altered to amphibole and smectite. Clinopyroxene is marginally replaced by amphibole (5%). 5% of the plagioclase is recrystallized.

Vein/Fracture Filling:
3-6 mm plagioclase+amphibole veins in Pieces 1 to 4.

Structures:
Mf>V; Mf>F
The entire section displays an igneous texture, with little or no magmatic foliation, cut by a few veins, and a small fault (adjacent and parallel to the vein at the top of Piece 3).

Core Image



176-735B-152R-7

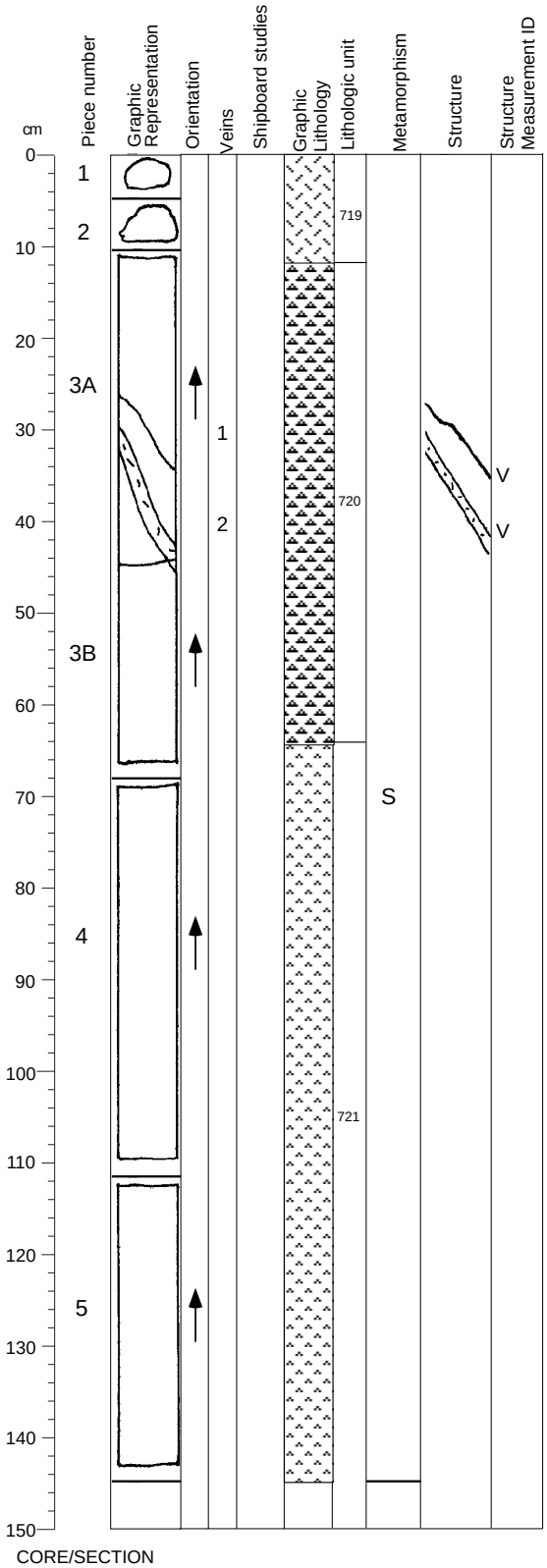
Interval 719: GABBRO
(see Section 176-735B-149R-3)

Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (6%). Same as previous section.

Structures:
Mf
The entire section displays an igneous texture, with no magmatic foliation.

Core Image



176-735B-153R-1

Interval 719: GABBRO
(see Section 176-735B-149R-3)
Interval 720: OLIVINE MICROGABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	153	1	12	2	995.82
Lower contact:	153	1	64	3B	996.34

Thickness (m): 0.52

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	55	3	N/A	fine	tabular/ subhedral
Clinopyroxene	30	2	N/A	fine	equant/ anhedral
Olivine	20	3	1	fine	elongate/ subhedral anhedral
Opaques	0.3				amoeboidal aggregates/ disseminated
Total	105.3*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Fine
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	equigranular	uniform

Comments: Cut by felsic vein. Clinopyroxene mode variable.

Interval 721: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	153	1	64	3B	996.34
Lower contact:	153	3	20	1	998.58

Thickness (m): 2.24

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	55	15	3	coarse	tabular/ subhedral
Clinopyroxene	30	20	2	coarse	equant/ anhedral
Olivine	7	6	1	medium	amoeboidal/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	92.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Variable
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	uniform

Comments: Fine to medium grained, locally coarser grained at 120 cm in 153R-2 to 7 cm in 153R-3. A clinopyroxene-rich veinlet (~ 1 cm) at 46 cm in 152R-2. Locally pegmatitic; locally foliated.

Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Continued next page

Core Image

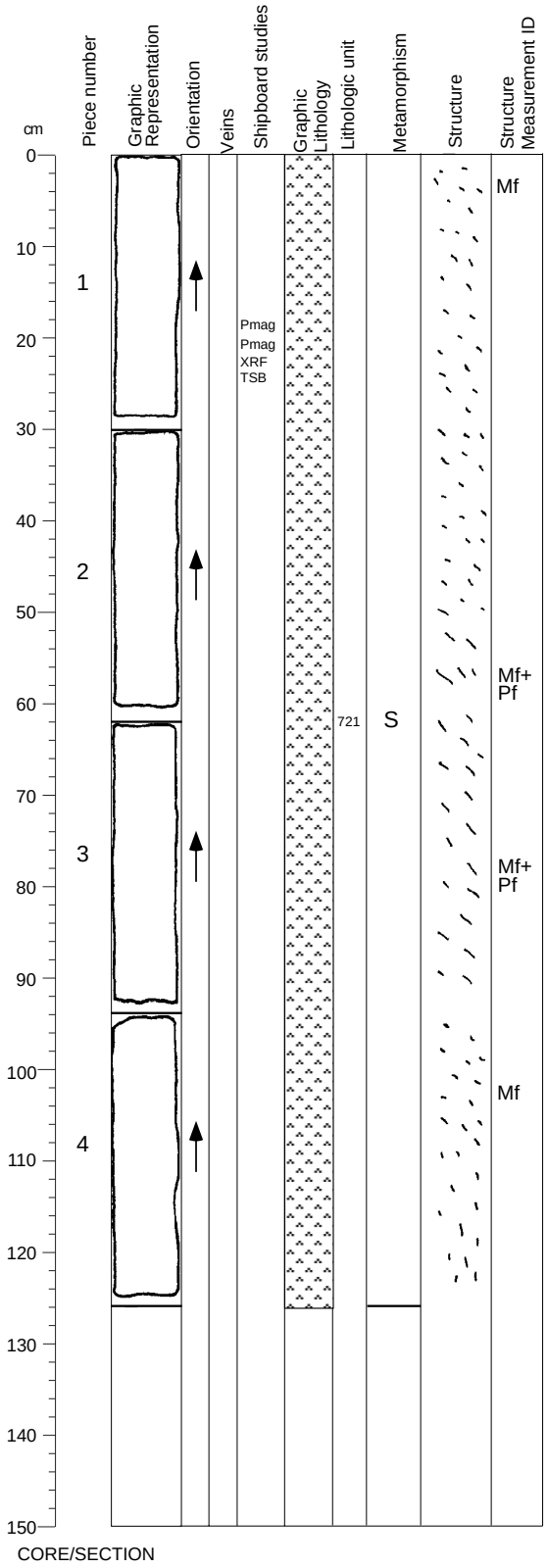
176-735B-153R-1 (cont'd)

Background Alteration:
Degree of alteration: slight (4%). Olivine is weakly altered to amphibole and smectite (5%). Clinopyroxene is marginally replaced by amphibole (4%). 4% of the plagioclase is recrystallized.

Vein/Fracture Filling:
2 mm plagioclase+amphibole vein in Piece 1A.

Structures:
Mf>V
The entire section displays an igneous texture, with no magmatic foliation, cut by two veins in Piece 3A.

Core Image



176-735B-153R-2

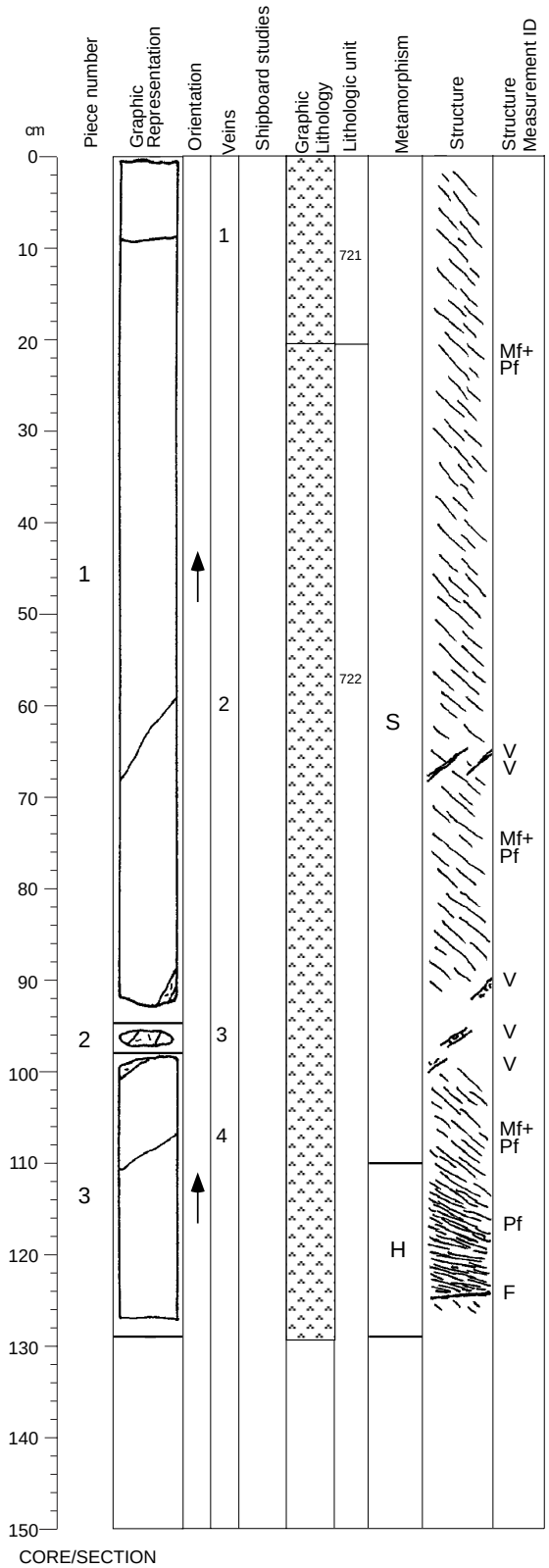
Interval 721: OLIVINE GABBRO
(see previous section)

Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (4%). Same as previous section.

Structures:
Mf>Pf
The entire section mostly displays an igneous texture, with a moderate to strong magmatic foliation, overprinted from 50 to 87 cm by a weak, parallel crystal-plastic foliation. The foliation regularly dips around 40° from to the middle of Piece 4, then rapidly steepens to nearly vertical at the bottom of the section.

Core Image



176-735B-153R-3

Interval 721: OLIVINE GABBRO
(see Section 176-735B-153R-1)
Interval 722: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	153	3	20	1	998.58
Lower contact:	153	5	50	2	1001.38

Thickness (m): 2.80

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	55	15	4	coarse	tabular/ subhedral
Clinopyroxene	30	35	2	coarse	tabular/ anhedral
Olivine	5	5	1	medium	amoeboidal/ anhedral
Opaques	0.8				interstitial lenses/ disseminated
Total	90.8*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Mode and grain size variable. Alternating between fine and coarse-grained, all gradational. Locally foliated at 113-127 cm in 153R-3, 116-120 cm in 153R-4 and 45-50 cm in 153R-5 with/without porphyroclastic texture. So-called cirrus texture well developed at 0-47 cm in 153R-5. Disseminated oxide throughout, locally abundant (up to 3%). Very fresh olivine in 153R-4.

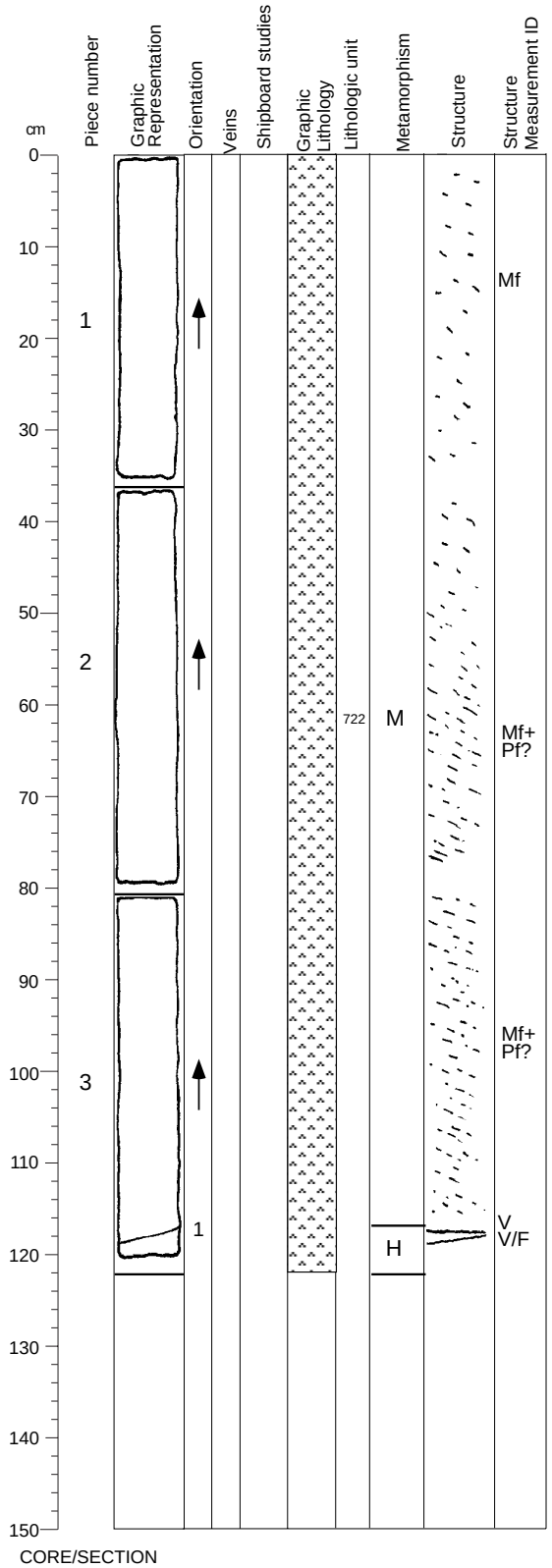
Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More developed near felsic veins.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Comments: More abundant in and near felsic veins.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight to high (6 to 60%). Pieces 1 to 2: Olivine is weakly altered to amphibole and smectite. Clinopyroxene is marginally replaced by amphibole (5%). 5% of the plagioclase is recrystallized. Lowermost part of Piece 2: highly deformed shear zones. 60% recrystallized.

Vein/Fracture Filling:
0.5 mm plagioclase veins in Pieces 1 and 3; 1 mm plagioclase+amphibole vein in Piece 1; 6 mm compound felsic vein in Pieces 1-3.

Structures:
Mf>Pf
The section displays a moderate to strong magmatic foliation overprinted by a weak, parallel crystal-plastic foliation, regularly dipping around 45°, except for the bottom of Piece 3, where the crystal-plastic foliation becomes progressively stronger and shallower (mylonitic from 119 to 125 cm). This reverse shear zone is bounded at its bottom by a fault (125 cm). The foliation is cut by a few veins (Piece 1 and Pieces 1 to 3).

Core Image



176-735B-153R-4

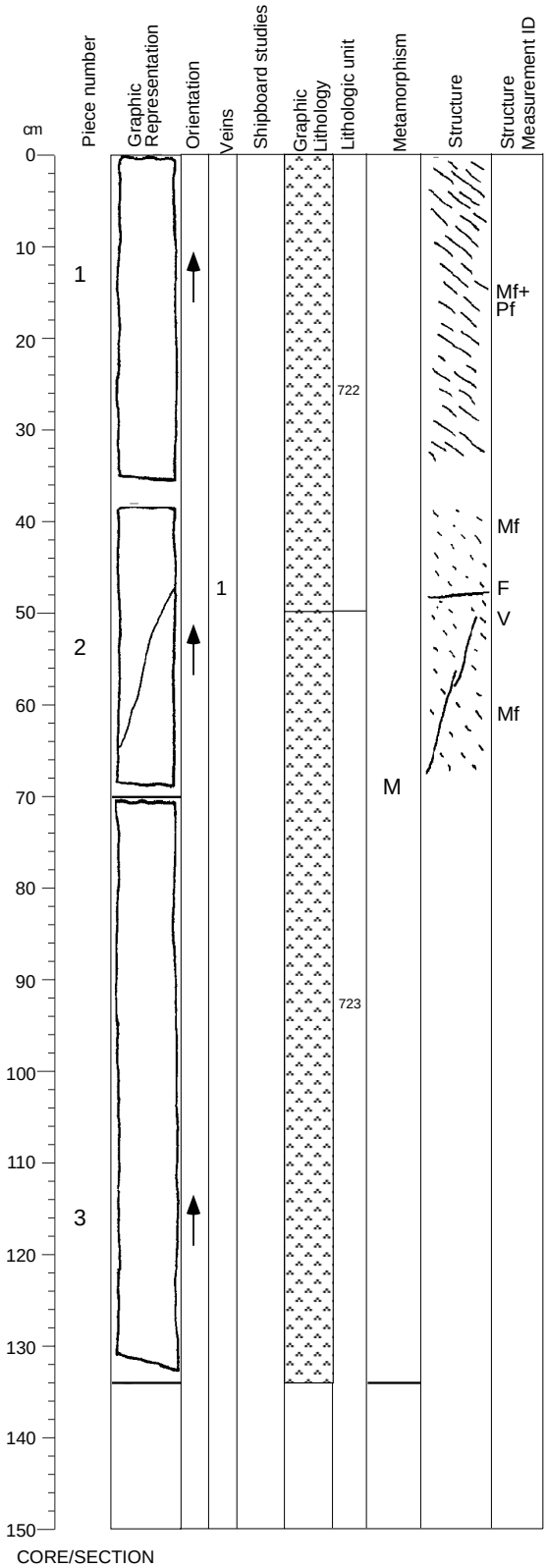
Interval 722: OLIVINE GABBRO
(see previous section)

Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Secondary plagioclase:
Total Percent: <10
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: moderate to high (15 to 60%). Pieces 1 to 3: Olivine is weakly altered to amphibole and smectite. Clinopyroxene is partly replaced by amphibole (8%). 20% of the plagioclase is recrystallized. Lowermost 3 cm of Piece 3: highly deformed shear zone. 60% recrystallized.

Structures:
Mf>Pf
The section displays a weak to moderate magmatic foliation, regularly dipping around 30°. It is possibly overprinted in Pieces 2 and 3 by a weak crystal-plastic foliation. The previous fabrics are cut at the bottom of Piece 3 by two veins; the lower vein grades into a fault.

Core Image



176-735B-153R-5

Interval 722: OLIVINE GABBRO
(see previous section)
Interval 723: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	153	5	50	2	1001.38
Lower contact:	153	6	30	2A	1002.51

Thickness (m): 1.13

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	15	1	coarse	tabular/ subhedral
Clinopyroxene	35	20	3	coarse	tabular/ anhedral
Olivine	12	7	1	medium	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	107.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Oxide-rich interval. Mostly granular, locally intergranular and porphyroclastic. Olivine fresh throughout. Oxide locally abundant (up to 3%).

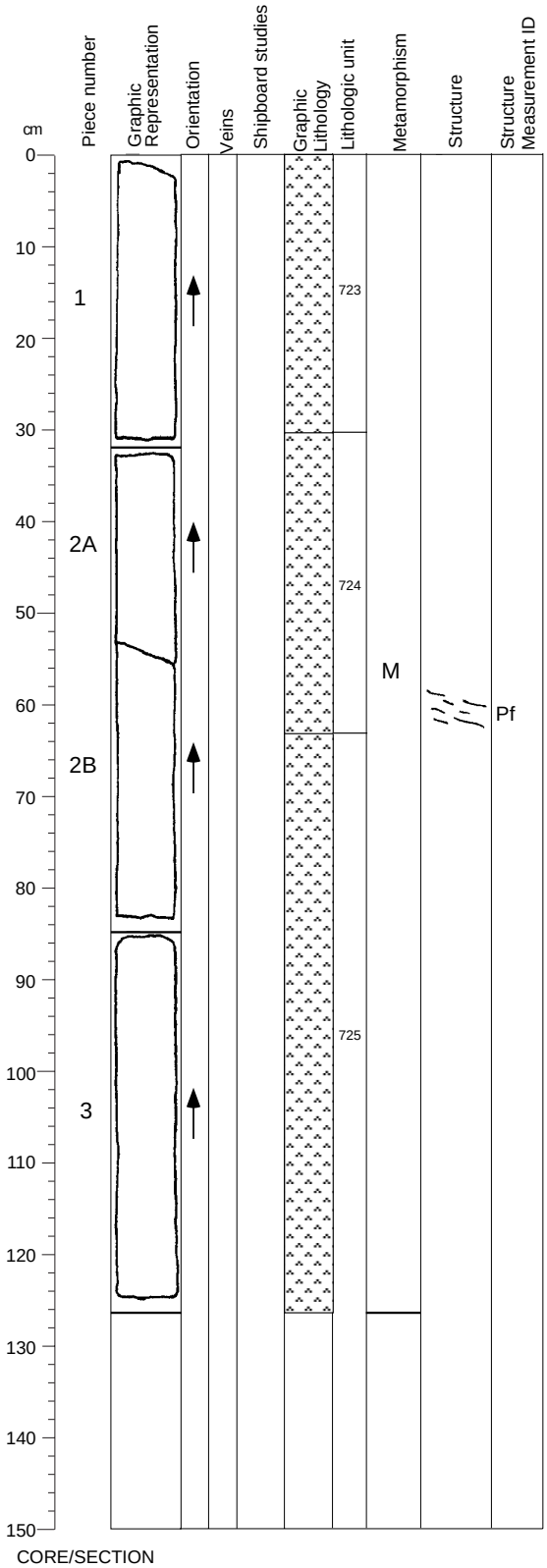
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Secondary plagioclase:
Total Percent: <10
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: moderate (15%). Olivine is weakly altered to amphibole and smectite. Clinopyroxene is partly replaced by amphibole (8%). 20% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.8 mm plagioclase vein in Piece 2.

Structures:
Mf>Pf; Mf>F; Mf>V
In Piece 1, a weak crystal-plastic foliation overprints a moderate to strong magmatic foliation. The rest of the section displays a magmatic foliation, moderate to strong in Piece 2, weak in Piece 3. The igneous texture is cut by a fault and a vein in Piece 2.

Core Image



176-735B-153R-6

Interval 723: OLIVINE GABBRO
(see previous section)
Interval 724: OLIVINE GABBRO

Interval Location:	Core	Depth in Section	Section	Piece	Depth mbsf
Upper contact:	153	6	30	2A	1002.51
Lower contact:	153	6	63	2B	1002.84

Thickness (m): 0.33

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	55	10	1	medium	tabular/ subhedral
Clinopyroxene	35	20	3	coarse	tabular/ anhedral subhedral
Olivine	5	4	1	medium	prismatic/ anhedral subhedral
Opaques	0.9				interstitial lenses/ disseminated
Total	95.9*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Medium
Modal IUGS Name (calculated): Olivine Gabbro
Type: granular
Distribution: N/A
Comments: Cirrus textures throughout.

Interval 725: OLIVINE GABBRO

Interval Location:	Core	Depth in Section	Section	Piece	Depth mbsf
Upper contact:	153	6	63	2B	1002.84
Lower contact:	153	7	18	1A	1003.66

Thickness (m): 0.82

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	15	2	medium	tabular/ subhedral
Clinopyroxene	30	30	2	coarse	equant/ anhedral
Olivine	10	8	1	medium	amoeboidal/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	100.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Variable
Modal IUGS Name (calculated): Olivine Gabbro
Type: granular
Distribution: N/A

Comments: Gradational grain size variation: fine-grained at 60-105 cm in 153R-6; medium-grained at 105-125 cm in 153R-6; fine-grained at 0-26 cm in 153R-7; medium-grained from 26 cm in 153R-7 to 85 cm in 154R-2; fine-grained from 85 in 154R-2 to 122 cm in 154R-2; medium-grained from 122 cm in 154R-2 to 46 cm in 154R-3 (sharp lower contact); coarse-grained at 46-91 cm in 154R-3; fine-grained at 91-130 cm in 154R-3; and medium-grained from 130 cm in 154R-3 to base of the interval in 154R-4. Oxide present locally. Clinopyroxene locally pegmatitic at 54, 87, and 121-130 cm in 153R-7.

Continued next page

Core Image

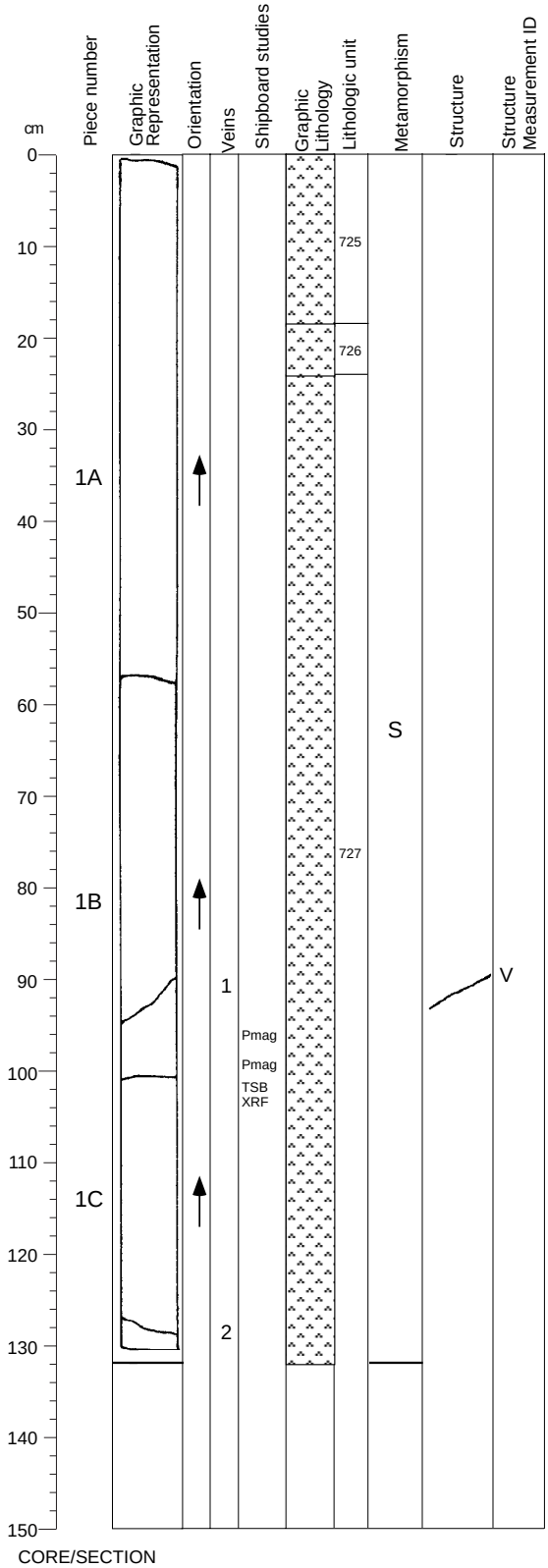
176-735B-153R-6 (cont'd)

Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Secondary plagioclase:
Total Percent: <10
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: moderate (15%). Same as previous section.

Structures:
Mf>Pf
The section displays an igneous texture, with no or a weak magmatic foliation, locally overprinted by a 3 cm thick zone of weak crystal-plastic foliation at the top of Piece 2B.

Core Image



176-735B-153R-7

Interval 725: OLIVINE GABBRO
(see previous section)

Interval 726: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	153	7	18	1A	1003.66
Lower contact:	153	7	24	1A	1003.72

Thickness (m): 0.06

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	3	1	medium	tabular/ subhedral
Clinopyroxene	30	2	0.3	fine	equant/ anhedral
Olivine	10	3	1	fine	elongate/ subhedral anhedral
Opaques	0.4				amoeboidal aggregates/ disseminated
Total	100.4*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Fine
Modal IUGS Name (calculated): Olivine Gabbro
Texture: Type: equigranular; Distribution: uniform

Interval 727: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	153	7	24	1A	1003.72
Lower contact:	154	1	8	1A	1005.38

Thickness (m): 1.66

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	15	5	coarse	tabular/ subhedral
Clinopyroxene	30	15	2	coarse	tabular/ anhedral subhedral
Olivine	8	4	1	medium	elongate/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	98.5*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Medium
Modal IUGS Name (calculated): Olivine Gabbro
Texture: Type: granular; Distribution: N/A
Comments: Gradational (mostly) grain size variation from coarse-, to medium-, and to fine-grained. Clinopyroxene very coarse-grained at 53-57 cm in 153R-7. Highly foliated at the very base (~ 4 cm).

Continued next page

Core Image

176-735B-153R-7 (cont'd)

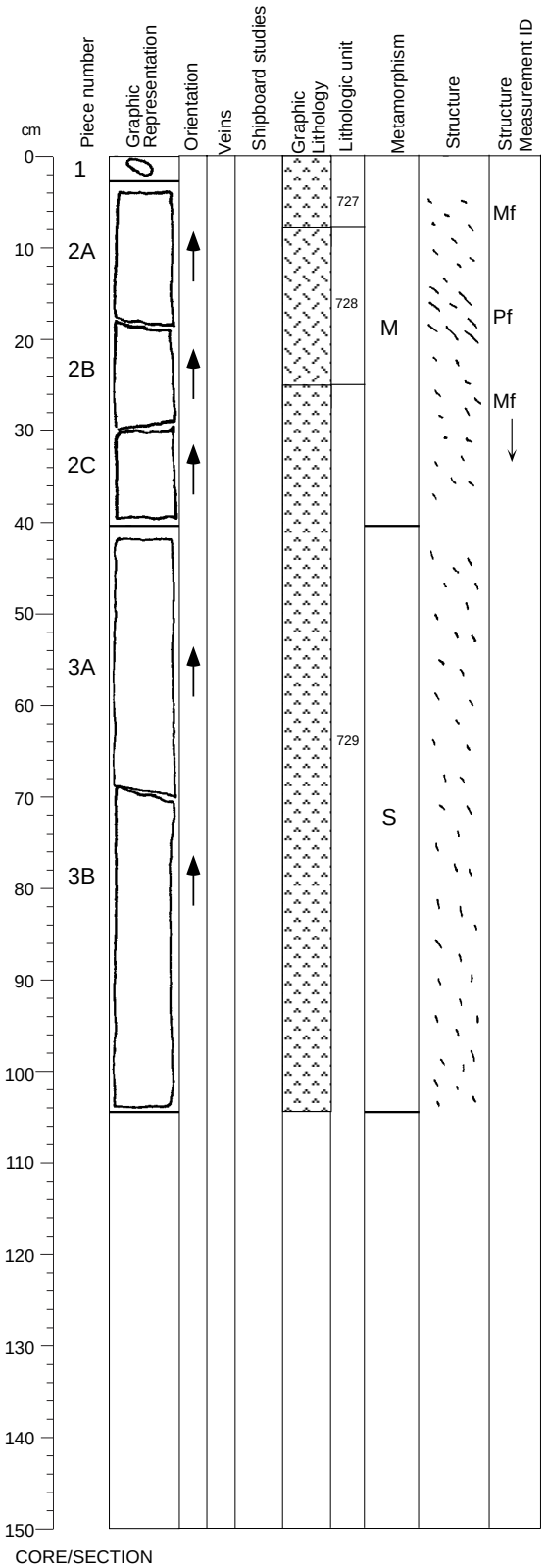
Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectites:
Total Percent: trace.
Mode of occurrence: Pale green smectite after plagioclase.
Comments: Near a smectite vein.

Background Alteration:
Degree of alteration: slight (5%). Olivine is weakly altered to amphibole and smectite (5%). Clinopyroxene is weakly altered to amphibole. 6% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.3 mm smectite veins in Piece 1.

Structures:
Mf>V
The entire section displays an igneous texture, with no or a weak magmatic foliation, cut by a vein in Piece 1B. The weak magmatic foliation is locally nearly vertical (from 23 to 51 cm).

Core Image



176-735B-154R-1

Interval 727: OLIVINE GABBRO
(see previous section)

Interval 728: GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	154	1	8	1A	1005.38
Lower contact:	154	1	25	1B	1005.55

Thickness (m): 0.17

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	8	N/A	medium	tabular/ subhedral
Clinopyroxene	30	20	2	coarse	tabular/ subhedral anhedral
Olivine	1	5	1	medium	equant/ anhedral fractured
Opaques	0.9				amoeboidal aggregates/ disseminated
Total	96.9*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Medium to coarse grained. Highly deformed with porphyroclastic texture.

Interval 729: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	154	1	25	1B	1005.55
Lower contact:	154	3	44	3A	1008.19

Thickness (m): 2.64

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	15	3	coarse	tabular/ subhedral
Clinopyroxene	30	20	3	coarse	tabular/ anhedral subhedral
Olivine	8	4	1	medium	elongate/ anhedral
Opaques	0.6				amoeboidal aggregates/ disseminated
Total	103.6*		(see explanatory notes)		

*Major phases estimated to ± 5%
Grain Size: Medium
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Locally subophitic. Gradational grain size variation. Top to 80 in 154R-1: medium-grained; from 80 cm in 154R-1 to 86 cm in 154R-2: coarse-grained; from 86 cm in 154R-2 to base: medium-grained with the so-called cirrus texture apparent. Oxide locally abundant (up to 2%). Amphibole present at 124 cm in 154R-2.

Continued next page

Core Image

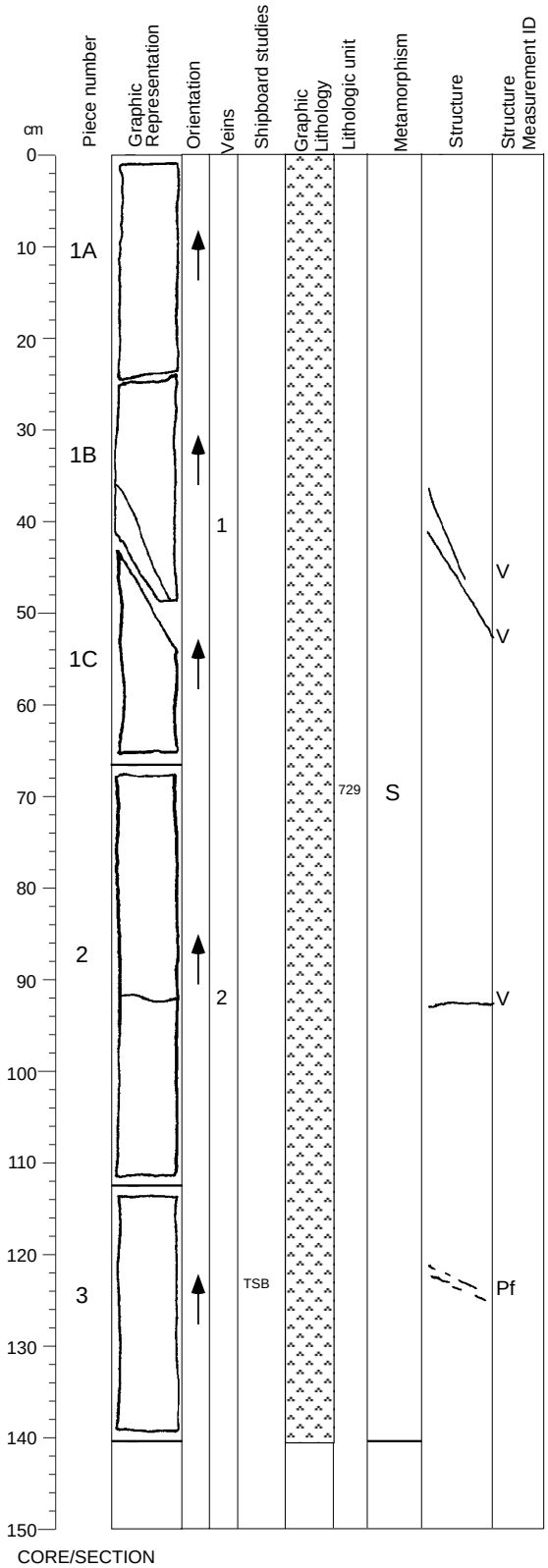
176-735B-154R-1 (cont'd)

Alteration:
Dark green amphibole:
Total Percent: <4
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Secondary plagioclase:
Total Percent: <6
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight to moderate (8 to 35%). Piece 1: Olivine is partly altered to amphibole and smectite (20%). Clinopyroxene is partly replaced by amphibole (20%). 50% of the plagioclase is recrystallized. Piece 2: alteration is slight in the undeformed lower part of the section.

Structures:
Mf>Pf
The entire section displays a moderate to strong magmatic fabric, overprinted locally (from 15 to 22 cm) by a weak crystal-plastic foliation.

Core Image



176-735B-154R-2

Interval 729: OLIVINE GABBRO
(see previous section)

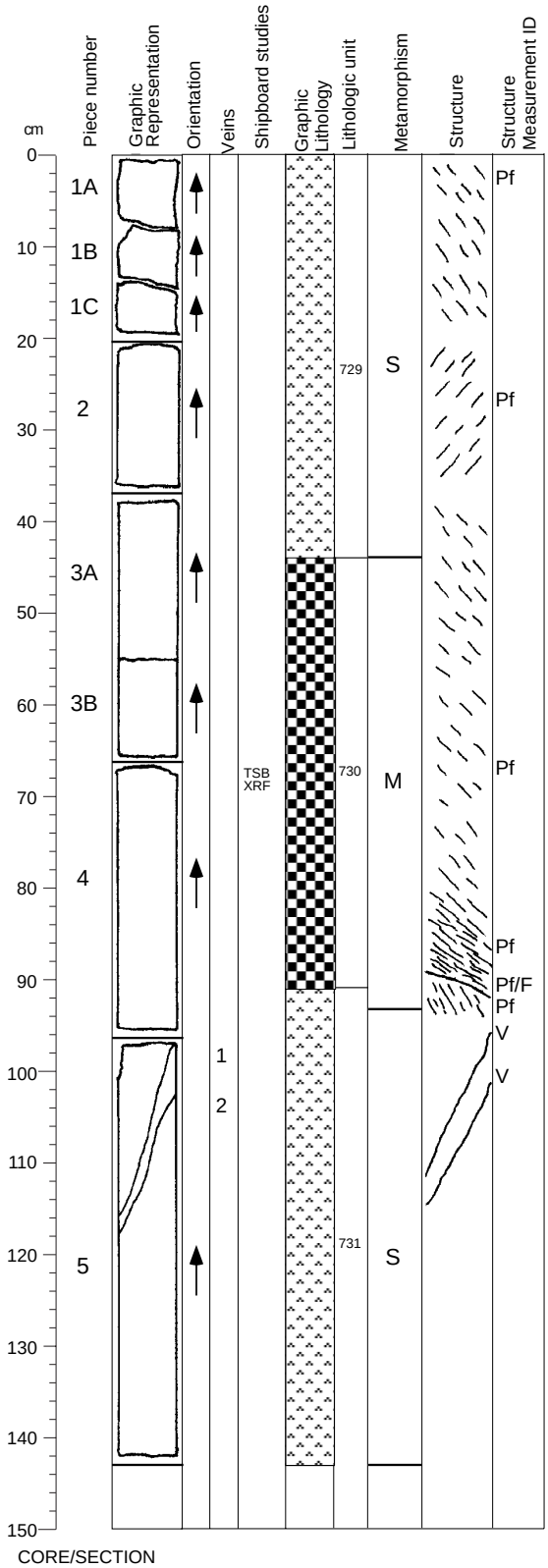
Alteration:
Dark green amphibole:
Total Percent: <4
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Secondary plagioclase:
Total Percent: <6
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.
Smectites:
Total Percent: trace
Mode of occurrence: Pale green smectite after plagioclase, and red-orange smectite after a pyroxene.
Comments: Green variety near a smectite vein.

Background Alteration:
Degree of alteration: slight (10%). Olivine is partly altered to amphibole and smectite (10%). Clinopyroxene is partly replaced by amphibole (8%). 12% of the plagioclase is recrystallized.

Vein/Fracture Filling:
1 mm smectite+calcite vein in Piece 1; 0.5 mm smectite vein in Piece 2.

Structures:
Mf>V; Mf>Pf
The section displays an igneous texture, with a weak, vertical magmatic foliation from 63 cm to the bottom, cut by a few veins in Pieces 1B to 2. A very narrow (1 cm thick) zone of weak crystal-plastic foliation (dip 40°) overprints the magmatic foliation in Piece 3.

Core Image



176-735B-154R-3

Interval 729: OLIVINE GABBRO
(see Section 176-735B-154R-1)
Interval 730: OXIDE OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	154	3	44	3A	1008.19
Lower contact:	154	3	91	4	1008.66

Thickness (m): 0.47

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	15	1	coarse	tabular/ subhedral
Clinopyroxene	25	20	2	coarse	tabular/ anhedral
Olivine	5	3	1	medium	equant anhedral
Opaques	4				interstitial lenses/ interstitial network
Total	99*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): FeTi Oxide Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Medium- to coarse-grained with apparent felsic material "infiltration". Locally porphyroclastic. Oxide abundant, locally up to 10% at 59-60 cm in 154R-3.

Interval 731: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	154	3	91	4	1008.66
Lower contact:	155	1	136	2F	1016.36

Thickness (m): 7.70

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	15	2	coarse	tabular/ subhedral
Clinopyroxene	35	25	0.2	coarse	equant/ anhedral subhedral
Olivine	8	4	1	medium	amoeboidal/ anhedral subhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	108.5*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Variable
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Gradational grain size variation: top to 134 cm in 154R-3: fine-grained(olivine rich); from 134 cm in 154R-3 to 59 cm in 154R-5: medium-grained. from 59 cm in 154R-5 to 20 cm in 154R-6: medium/coarse-grained; at 20-48 cm in 154R-6 to 48:fine-grained with a coarse patch at 40 cm in 154R-6; from 48 cm in 154R-6 to 80 cm in 154R-7: medium-grained; and from 80 cm in 154R-7 to base: medium/fine-grained with cirrus texture locally present.

Continued next page

Core Image

176-735B-154R-3 (cont'd)

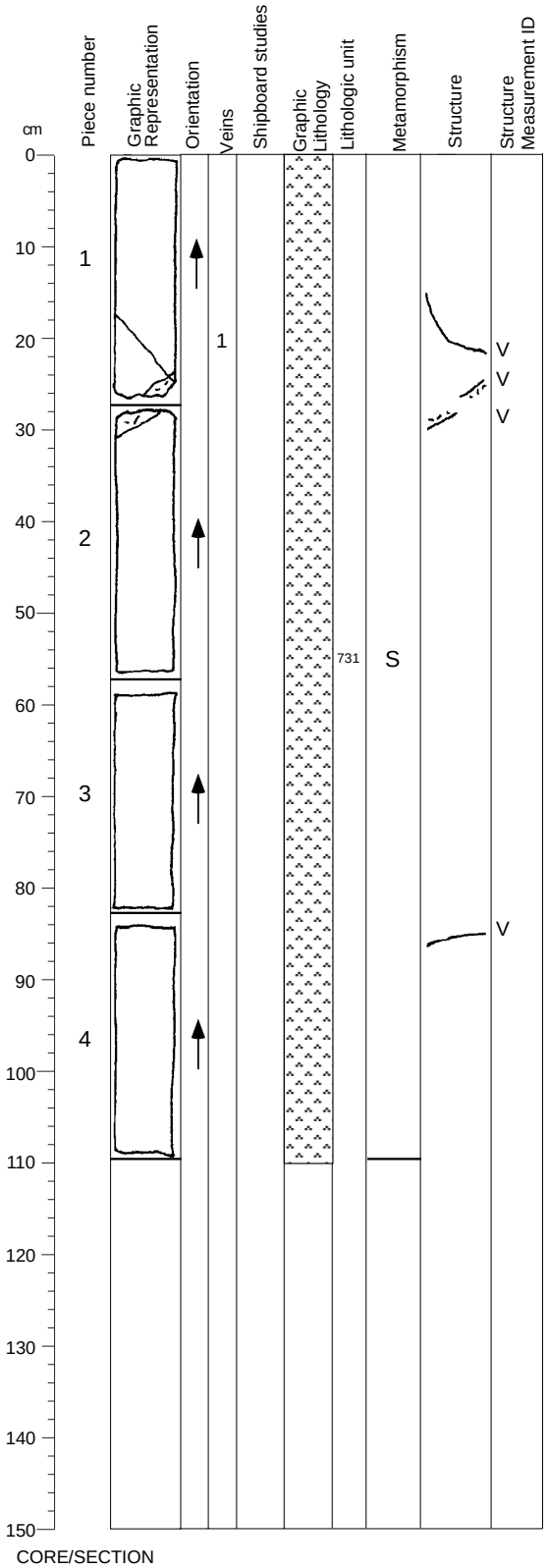
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: <1
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: Some are concentrated in patchy alteration areas.
Green amphibole:
Total Percent: <1
Mode of occurrence: After brown amphibole.
Comments: Same zones as brown amphibole and near an amphibole veinlet.
Secondary plagioclase:
Total Percent: <6
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight to moderate (10 to 30%). Pieces 1 to 2A and 3 to 4: Same as previous section. Pieces 2A to 3: foliated and impregnated with felsic material. 30% of the clinopyroxene has reacted to amphibole. 30% of the plagioclase is recrystallized. Olivine is mostly fresh.

Vein/Fracture Filling:
0.3 mm smectite veins in Piece 5.

Structures:
Pf>Pf/F; Mf>V
From 0 to 95 cm, the section displays a crystal-plastic foliation, weak above 80 cm (dipping around 40°), and porphyroclastic from 80 to 90 cm (dipping 15°). The porphyroclastic zone is bounded at its bottom by a narrow, reverse, semi-brittle shear zone. The bottom of Piece 4 has a strong crystal-plastic foliation, sweeping out of the semi-brittle shear zone. Piece 5 displays a fine-grained igneous texture, with no magmatic foliation, cut by two veins.

Core Image



176-735B-154R-4

Interval 731: OLIVINE GABBRO
(see previous section)

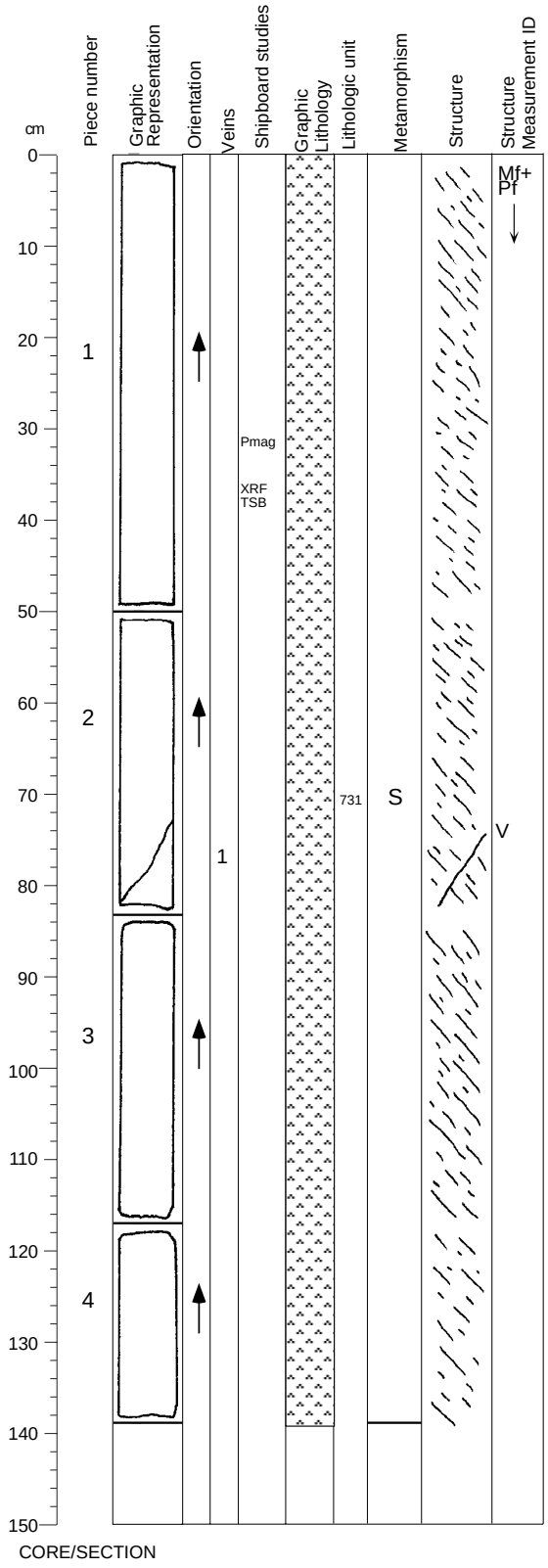
Alteration:
Dark green amphibole:
Total Percent: <4
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More abundant near a felsic vein.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Comments: In and near the felsic vein, and also near amphibole veinlets.
Secondary plagioclase:
Total Percent: <4
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (8%). Olivine is weakly altered to amphibole and smectite (10%). Clinopyroxene is weakly altered to amphibole (6%). 10% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.3 mm smectite vein in Piece 1; 5 mm plagioclase+amphibole vein in Pieces 1 and 2.

Structures:
Mf>V
The entire section displays a medium to coarse-grained igneous texture, with a weak magmatic foliation, cut by a few veins, in Pieces 1, 2, and 4.

Core Image



176-735B-154R-5

Interval 731: OLIVINE GABBRO
(see Section 176-735B-154R-3)

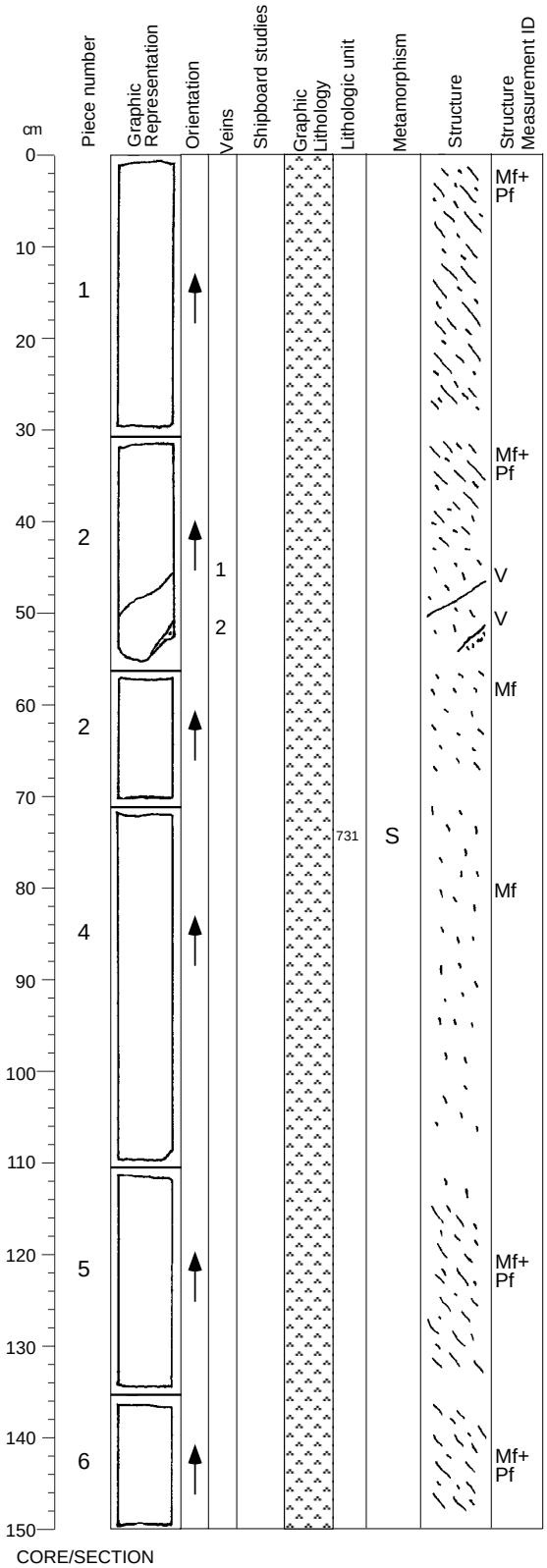
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Comments: As small patches and near an amphibole veinlet.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (8%). Same as previous section.

Vein/Fracture Filling:
0.5 mm amphibole vein in Piece 2.

Structures:
Mf>Pf>V
The entire section displays a moderate magmatic foliation, overprinted by a weak, parallel crystal-plastic foliation, regularly dipping 45 to 50°. The previous fabrics are cut by a vein in Piece 2.

Core Image



176-735B-154R-6

Interval 731: OLIVINE GABBRO
(see Section 176-735B-154R-3)

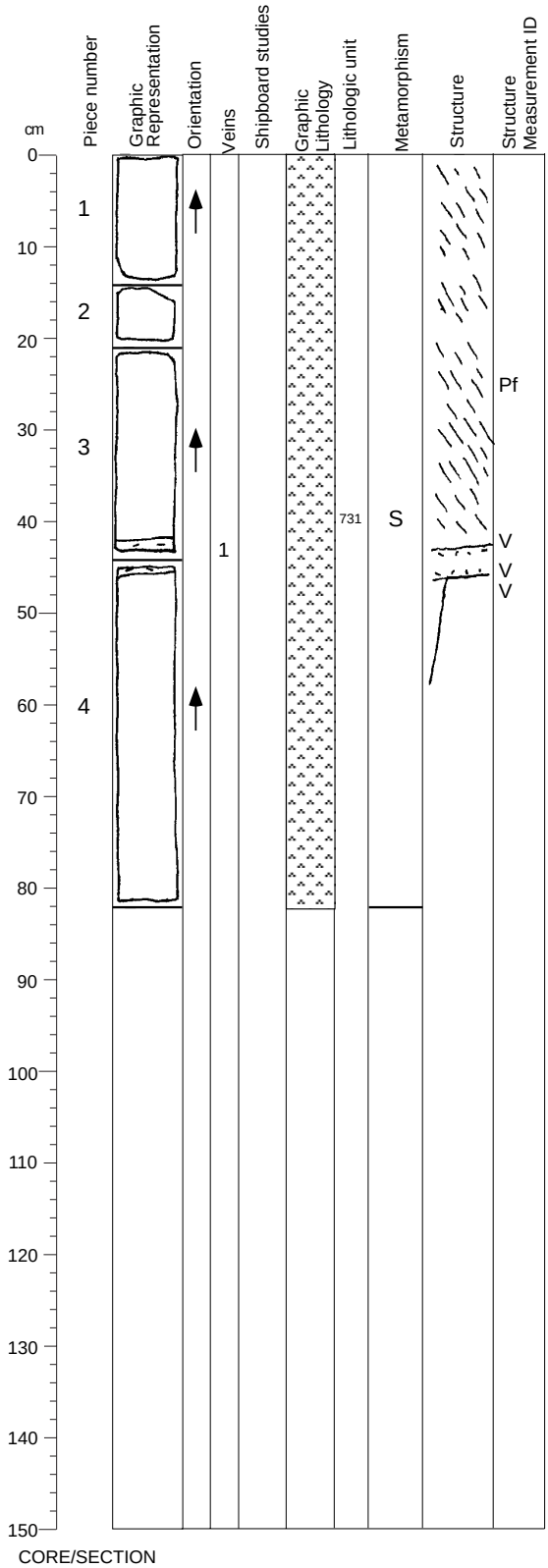
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: After brown amphibole.
Comments: As small patches and near an amphibole veinlet.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (8%). Same as previous section.

Vein/Fracture Filling:
0.5 mm amphibole vein in Piece 2; 2 mm plagioclase+amphibole vein in Piece 2.

Structures:
Mf>Pf; Mf>V
The entire section displays a moderate magmatic foliation, overprinted by a weak crystal-plastic foliation from 0 to 46 cm, and from 115 to 149 cm (dipping around 45°). In Piece 4, the magmatic foliation is steeper, dipping 75 to 80°. Two veins cut the igneous texture in Piece 2.

Core Image



176-735B-154R-7

Interval 731: OLIVINE GABBRO
(see Section 176-735B-154R-3)

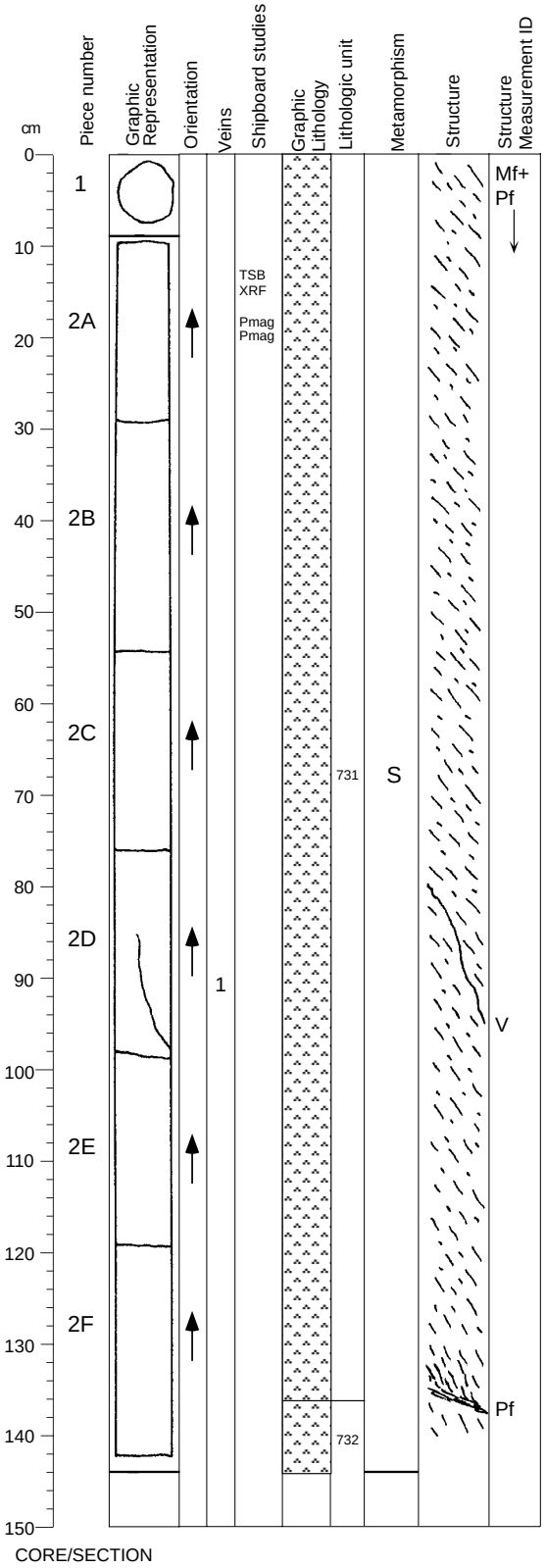
Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: tr.
Mode of occurrence: Along pyroxene cleavages, as rims.
Comments: More developed near felsic veins.
Green amphibole:
Total Percent: tr.
Mode of occurrence: After brown amphibole.
Comments: In and near the amphibole bearing felsic veins.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (8%). Same as previous section.

Vein/Fracture Filling:
10 mm compound felsic vein in Pieces 3 and 4.

Structures:
Mf>Pf>V; Mf>V
The first half of the section (Pieces 1 to 3) displays a weak crystal-plastic foliation, dipping 50°, overprinting a weak magmatic foliation. The vein present at the boundary between Pieces 3 and 4 overprints the plastic foliation; it is not deformed, and a few veinlets splay off the main vein, parallel to the foliation. Piece 4 displays a weak, nearly vertical magmatic foliation, cut by a vein.

Core Image



176-735B-155R-1

Interval 731: OLIVINE GABBRO
(see Section 176-735B-154R-3)
Interval 732: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	155	1	136	2F	1016.36
Lower contact:	155	4	108	2D	1020.35

Thickness (m): 3.99

		Grain Size (mm):			
	Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	15	3	coarse	tabular/ subhedral
Clinopyroxene	30	20	0.3	coarse	equant/ anhedral
Olivine	7	5	1	medium	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	102.5*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Graded
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

Comments: Coarse patches present locally at 38-117 cm in 153R-3, 29-38 cm in 155R-4. Locally subophitic. Cirrus texture throughout.

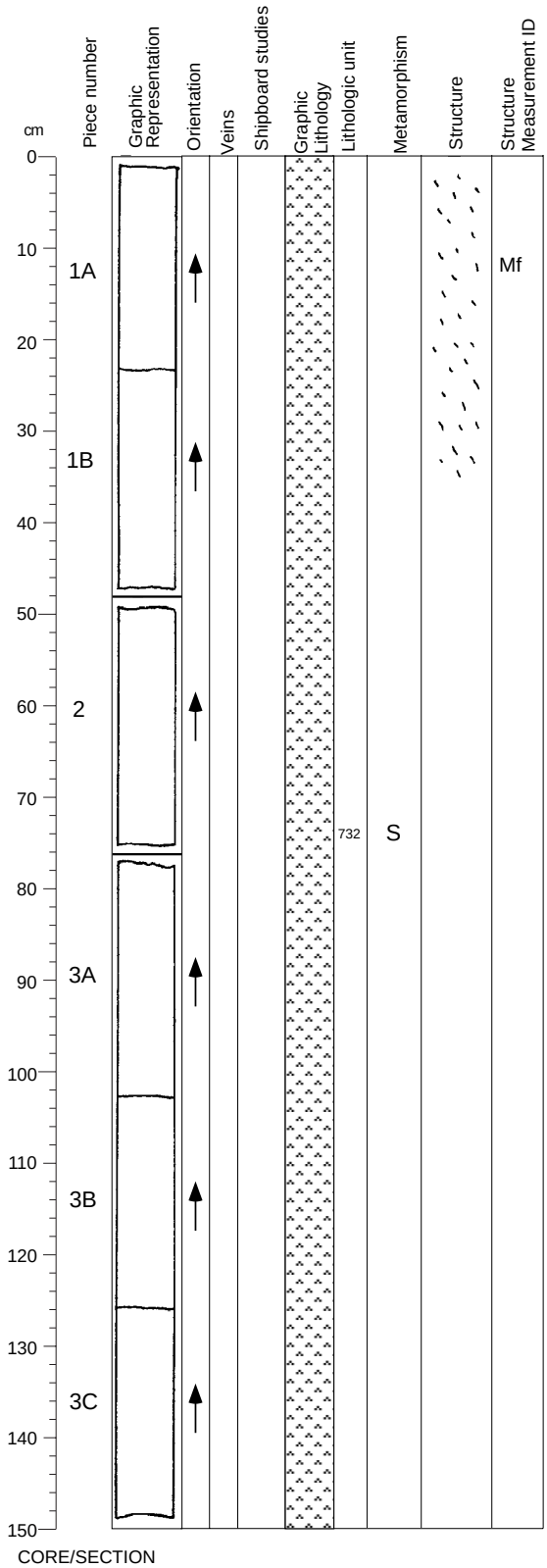
Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims and around a vein of amphibole.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (6%). Olivine is weakly altered to amphibole and smectite (5%). Clinopyroxene is weakly altered to amphibole (5%). 6% of the plagioclase is recrystallized.

Vein/Fracture Filling:
0.3 mm amphibole vein in Piece 2D.

Structures:
Mf>Pf>V; Mf>Pf>Pf
The entire section displays a regularly dipping (50 to 60°), weak crystal-plastic foliation, overprinting a moderate magmatic foliation. Both fabrics are cut by a vein in Piece 2D, and overprinted by a narrow, shallow, reverse mylonitic zone at the bottom of Piece 2F.

Core Image



176-735B-155R-2

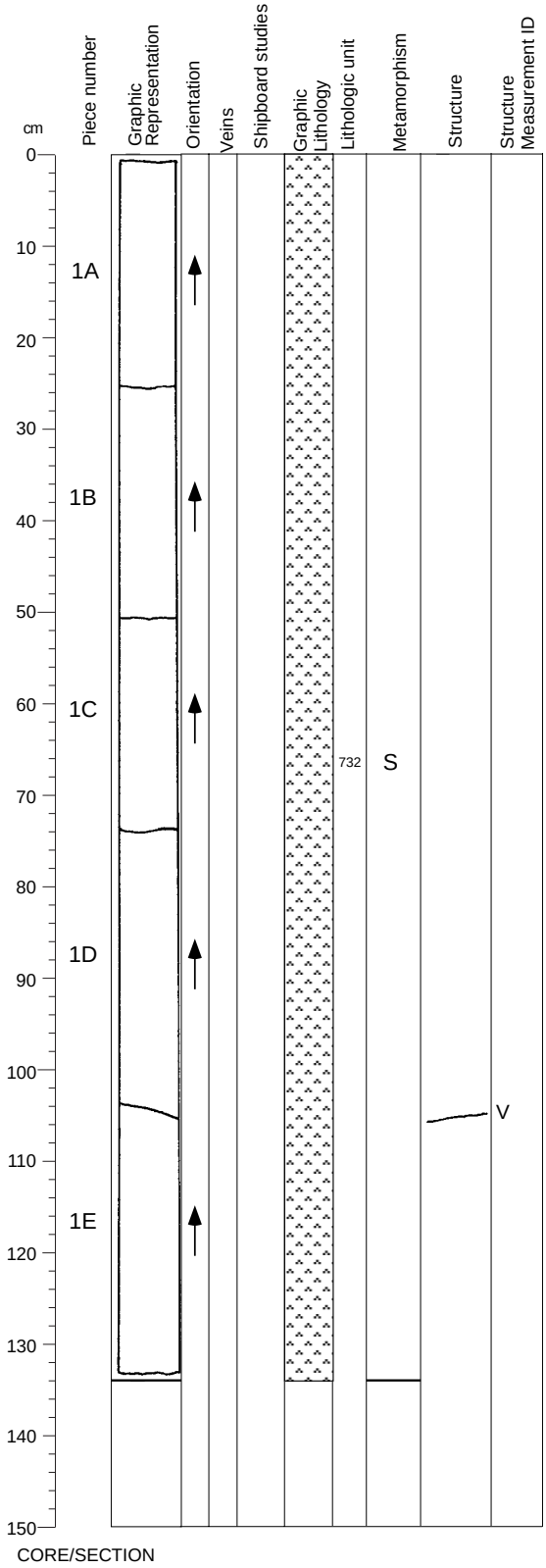
Interval 732: OLIVINE GABBRO
(see previous section)

Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (4%). Olivine is weakly altered to amphibole and smectite (5%). Clinopyroxene is weakly altered to amphibole (3%). 4% of the plagioclase is recrystallized.

Structures:
Mf
The section displays a middle to coarse-grained igneous texture, with a moderate magmatic foliation from 0 to 36 cm, dipping 60°.

Core Image



176-735B-155R-3

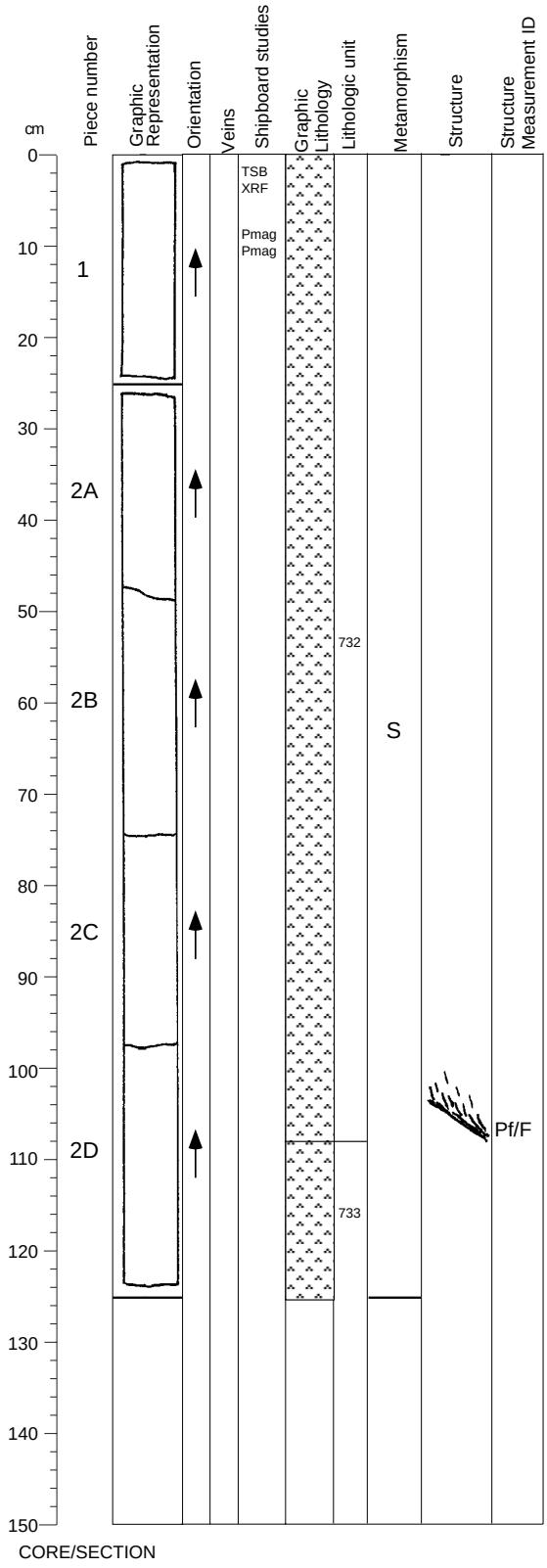
Interval 732: OLIVINE GABBRO
(see Section 176-735B-155R-1)

Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (6%). Olivine is weakly altered to amphibole and smectite (5%). Clinopyroxene is weakly altered to amphibole (5%). 6% of the plagioclase is recrystallized.

Structures:
Mf>V
The entire section displays a coarse-grained igneous texture, with no or a weak magmatic foliation, cut by a vein at the boundary between Pieces 1D and 1E.

Core Image



176-735B-155R-4

Interval 732: OLIVINE GABBRO
(see Section 176-735B-155R-1)
Interval 733: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	155	4	108	2D	1020.35
Lower contact:	155	6	118	5B	1023.15

Thickness (m): 2.80

	Grain Size (mm): Mode	Max	Min	Avg. Size	Shape/Habit
Plagioclase	65	15	2	coarse	tabular/ subhedral
Clinopyroxene	30	40	4	coarse	equant/ anhedral subhedral
Olivine	6	4	1	medium	amoeboidal/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	101.5*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Coarse
Modal IUGS Name (calculated): Olivine Gabbro
Texture: Type: granular; Distribution: N/A

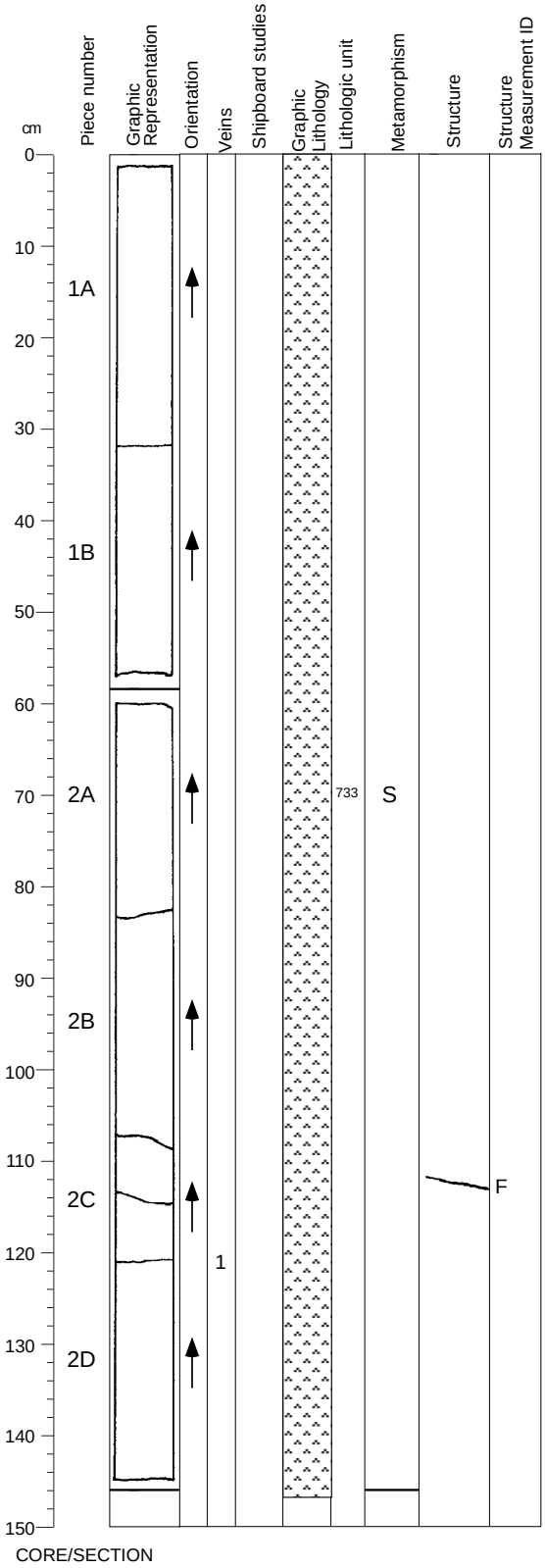
Comments: Medium- to coarse-grained. Locally subophitic. Pegmatitic clinopyroxene present at 36-48 cm and 76-97 cm in 155R-6. Cirrus texture present locally.

Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <3
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (6%). Same as previous section.

Structures:
Mf>Pf/F
The entire section displays a medium to coarse-grained size igneous texture, with no or a weak magmatic foliation, overprinted by a narrow (1-2 cm thick), reverse semi-brittle mylonitic zone at 106 cm, dipping 30°. Where the magmatic foliation is present, it is nearly vertical (0 to 23 cm), or dipping 50 to 60° (23 to 107 cm).

Core Image



176-735B-155R-5

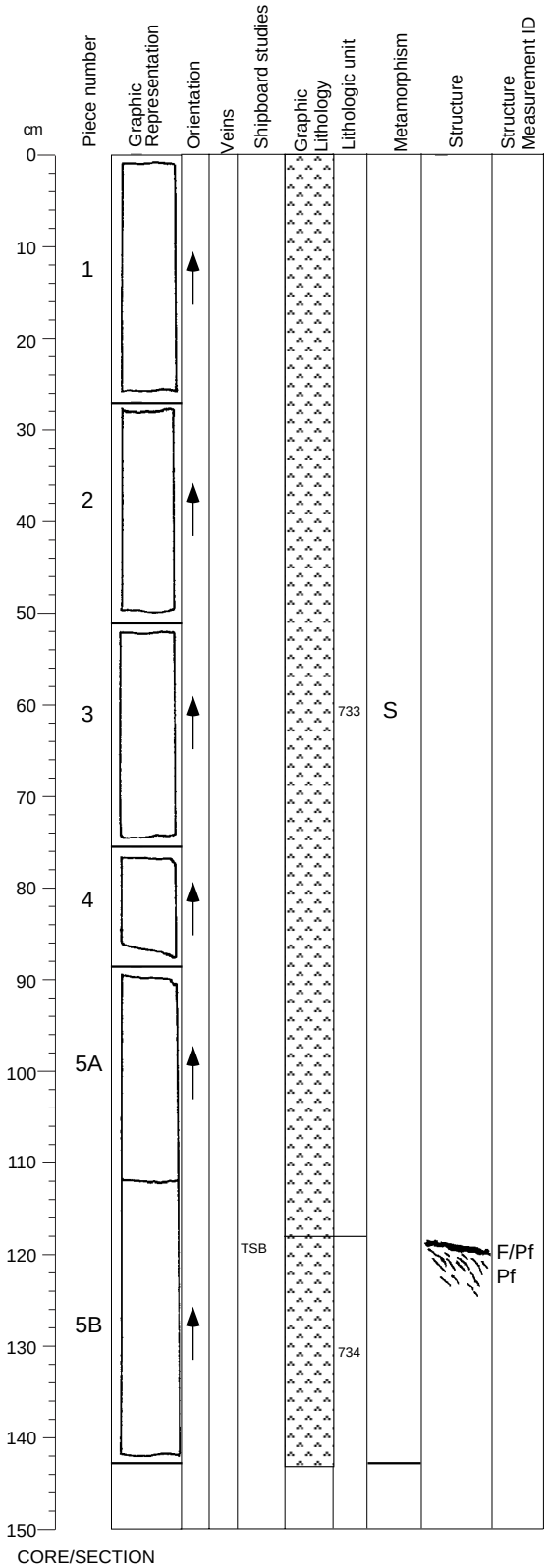
Interval 733: OLIVINE GABBRO
(see previous section)

Alteration:
Dark green amphibole:
Total Percent: <2
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace.
Mode of occurrence: Along pyroxene cleavages, as rims.
Secondary plagioclase:
Total Percent: <2
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (4%). Olivine is weakly altered to amphibole and smectite (5%). Clinopyroxene is weakly altered to amphibole (3%). 4% of the plagioclase is recrystallized.

Structures:
Mf>F
The entire section displays a medium to coarse-grained size igneous texture, with a weak magmatic foliation, regularly dipping 30°, and locally strong. The igneous texture is overprinted by a fault in Piece 2C.

Core Image



176-735B-155R-6

Interval 733: OLIVINE GABBRO
(see Section 176-735B-155R-4)
Interval 734: OLIVINE GABBRO

Interval Location:	Core	Section	Depth in Section	Piece	Depth mbsf
Upper contact:	155	6	118	5B	1023.15
Lower contact:	156	3	17	1	1027.25

Thickness (m): 4.10

	Mode	Grain Size (mm): Max	Min	Avg. Size	Shape/Habit
Plagioclase	60	30	2	coarse	tabular/ subhedral
Clinopyroxene	35	10	1	coarse	equant/ anhedral
Olivine	6	10	1	medium	elongate/ anhedral
Opaques	0.5				amoeboidal aggregates/ disseminated
Total	101.5*	(see explanatory notes)			

*Major phases estimated to ± 5%
Grain Size: Variable
Modal IUGS Name (calculated): Olivine Gabbro

	Type	Distribution
Texture:	granular	N/A

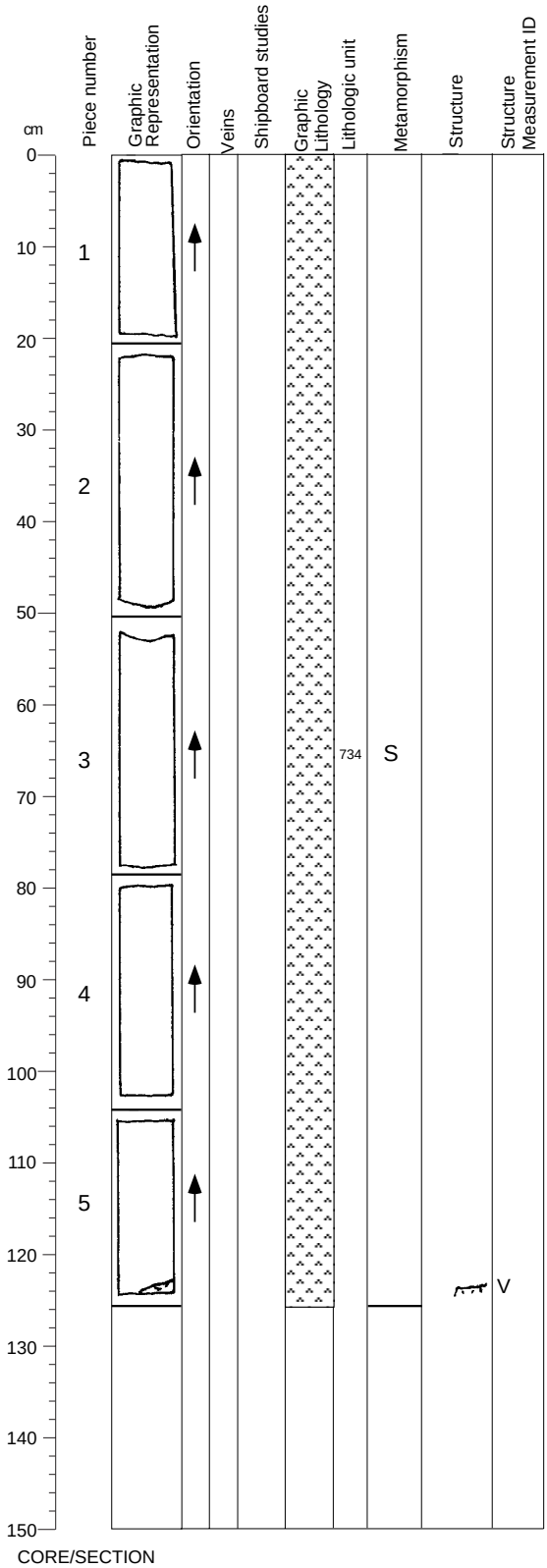
Comments: Grain size variable, and randomly distributed. Top to 93 cm in 156R-1: medium-grained; 93 cm in 156R-1 to 142 cm in 156R-2: coarse-grained with oxide present at 90-114 cm in 156R-2; 142 cm in 156R-2 to base: highly foliated and mylonitized with clear deformational segregations.

Alteration:
Dark green amphibole:
Total Percent: <3
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: Small scattered patches.
Comments: In and near the amphibole bearing felsic veins.
Secondary plagioclase:
Total Percent: <4
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (8%). Olivine is weakly altered to amphibole and smectite (10%). Clinopyroxene is weakly altered to amphibole (6%). 10% of the plagioclase is recrystallized.

Structures:
Mf>Pf>F/Pf
The entire section displays a medium to coarse-grained igneous texture, with no or a weak magmatic foliation, overprinted by a narrow (1-2 cm thick), reverse semi-brittle mylonitic zone at 118 cm, dipping 20°. A strong crystal-plastic foliation (2-3 cm thick zone) sweeps out of the shear zone downwards. The magmatic foliation is nearly vertical between 53 and 118 cm.

Core Image



176-735B-155R-7

Interval 734: OLIVINE GABBRO
(see previous section)

Alteration:
Dark green amphibole:
Total Percent: <5
Mode of occurrence: After pyroxene and olivine.
Comments: As alteration rims.
Brown amphibole:
Total Percent: trace
Mode of occurrence: Along pyroxene cleavages, as rims.
Green amphibole:
Total Percent: trace
Mode of occurrence: Small patches and near an amphibole vein.
Secondary plagioclase:
Total Percent: <5
Mode of occurrence: Replacing primary plagioclase.
Comments: Irregularly distributed.

Background Alteration:
Degree of alteration: slight (4%). Olivine is weakly altered to amphibole and smectite (5%). Clinopyroxene is weakly altered to amphibole (3%). 4% of the plagioclase is recrystallized.

Structures:
Mf>V
The entire section displays a medium to coarse-grained size igneous texture, with no or a weak magmatic foliation. The latter is steeply dipping at the bottom of the section (104 to 124 cm), cut by a vein at the bottom of Piece 5.