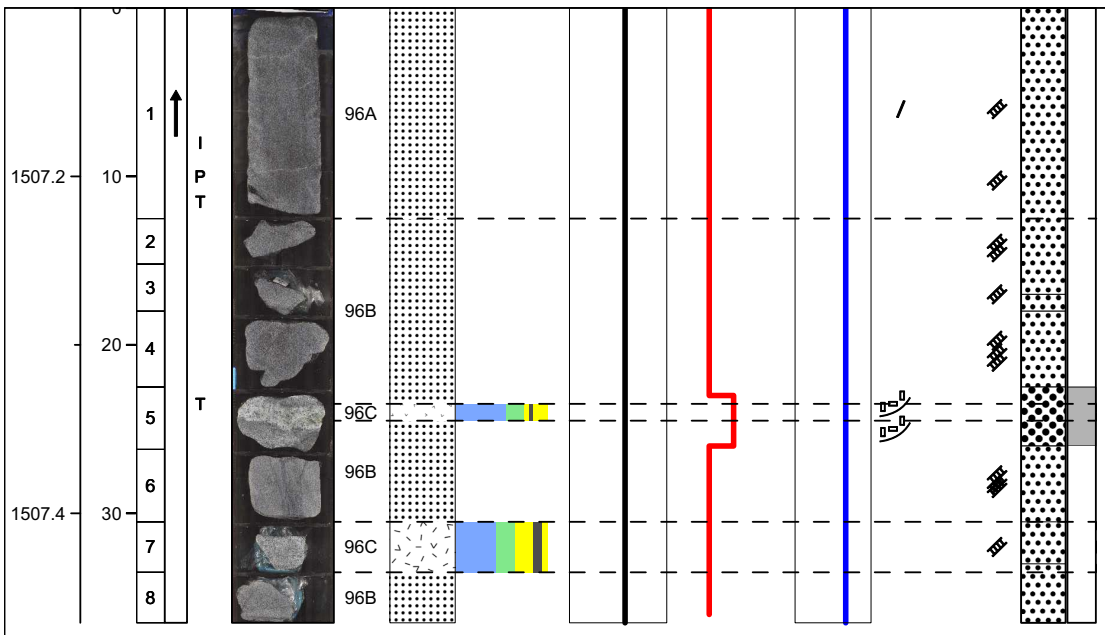
Core Photo

Hole 335-1256D-235R Section 1, Top of Section: 1507.1 m (CSF-A)



Unit: 96A
Section: 335-U1256D-235R-1-A
Interval (cm): 0-12.5 **Pieces:** 1
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture:
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole ± sulphide veins
Structures: Isotropic basalt cut by a network of veins.

Unit: 96B
Section: 335-U1256D-235R-1-A
Interval (cm): 12.5-23.5 **Pieces:** 2 to 4
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: Intrusive contact in piece 5
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture:
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole veins, amphibole rich alteration halos are present around 2 veins
Structures: Isotropic basalt cut by a network of veins.

Unit: 96C
Section: 335-U1256D-235R-1-A
Interval (cm): 23.5-24.5 **Pieces:** 5
Rock name: tonalite
Upper unit boundary: Intrusive contact in piece 5
Lower unit boundary: Intrusive contact in piece 5
Mineralogy:

	Modal (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Habit, shape, comments
Plagioclase	54.9	0.2	2	0.5	subequant, subhedral
Clinopyroxene	20	0.1	2	0.5	equant, subhedral
Amphibole	5	0.2	1	0.3	subequant, anhedral
Oxides	5	0.2	2	0.5	equant, anhedral, disseminated
Quartz	15	0.1	0.5	0.3	equant, anhedral
Sulfides	0.1			0.2	very minute grains or specks

Alteration: high background alteration; patchy (5% of highly altered patches)
Veins: No veins
Structures: Tonalite dikelet with magmatic foliation defined by plagioclase laths.

Unit: 96B
Section: 335-U1256D-235R-1-A
Interval (cm): 24.5-30.5 **Pieces:** 6
Rock name: aphyric basalt
Upper unit boundary: Intrusive contact in piece5
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture:
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole or amphibole ± secondary plagioclase (with amphibole rich alteration halos) veins.
Structures: Isotropic basalt cut by dense network of veins.

Unit: 96C
Section: 335-U1256D-235R-1-A
Interval (cm): 30.5-33.5 **Pieces:** 7
Rock name: quartz-diorite
Upper unit boundary: N.R.
Lower unit boundary: N.R.
Mineralogy:

	Modal (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Habit, shape, comments
Plagioclase	44.5	0.5	1.2	1	tabular, subhedral
Clinopyroxene	20	0.1	2	0.3	equant, subhedral
Amphibole	20	0.2	1.5	0.3	subequant, subhedral, ophitic to poikilitic
Oxides	10	0.2	0.5	0.2	equant, anhedral
Quartz	5	0.1	0.5	0.3	equant, anhedral
Sulfides	0.5			0.2	very minute grains or specks

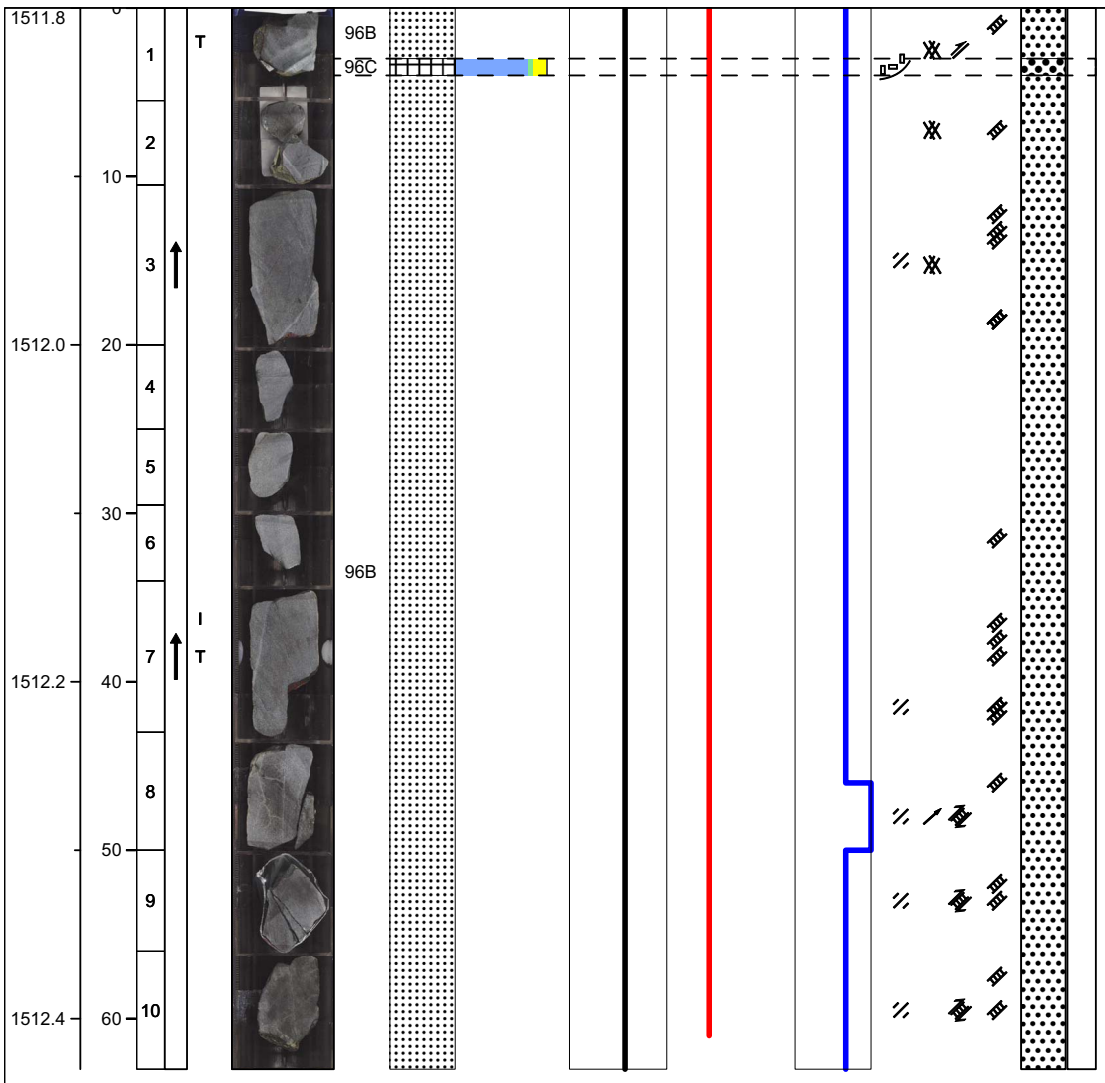
Alteration: moderate background alteration
Veins: Amphibole veins
Structures: Qtz diorite with isotropic magmatic fabric.

Unit: 96B
Section: 335-U1256D-235R-1-A
Interval (cm): 33.5-36.5 **Pieces:** 8
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture:
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole veins
Structures: Isotropic basalt cut by a network of veins.

Additional comments:
Unit 1256D-96 is predominantly composed of fine-grained granoblastic basalts. The first 12.5 cm (Section 335-1256D-235R-1, Piece 1) is strongly recrystallized (Unit 1256D-96A), whereas the granoblastic rocks in the rest of the unit are completely recrystallized (Unit 1256D-96B). The unit contain small amounts of leucocratic rocks (tonalite, quartz diorite and albitite; Unit 1256D-96C). Some of the granoblastic rocks contain cm-sized patches of oxide diorite (Unit 1256D-96D).

Core Photo

Hole 335-1256D-236R Section 1, Top of Section: 1511.8 m (CSF-A)



Unit: 96B
Section: 335-U1256D-236R-1-A
Interval (cm): 0-3 **Pieces:** 1
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: modal sutured planar
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture:
Alteration: totally recrystallized; moderate background alteration
Veins: Prehnite, actinolite and epidote vein
Structures: Isotropic basalt cut by dense network of veins cut by shear fractures.

Unit: 96C
Section: 335-U1256D-236R-1-A
Interval (cm): 3-4 **Pieces:** part of 1
Rock name: albitite
Upper unit boundary: modal sutured planar
Lower unit boundary: N.R.
Mineralogy:

	Modal (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Habit, shape, comments
Plagioclase	78	0.1	0.8	0.1	subequant, subhedral
Clinopyroxene	5	0.1	0.5	0.2	equant, subhedral
Amphibole	15	0.1	0.5	0.2	subequant, subhedral
Oxides	1	0.1	0.2	0.1	equant, anhedral, disseminated

Alteration: totally recrystallized; high background alteration
Veins: Amphibole vein net
Structures: Altered/albitized basalt cut by a microfault filled with prehnite and several amphibole veins.

Unit: 96B
Section: 335-U1256D-236R-1-A
Interval (cm): 4-63 **Pieces:** 2-9
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Piece 10 has a 2x2x0.2 cm patch of diorite (amph+plag) on the back
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole, chlorite and sulphide veins. One quartz + carbonate vein. Amphibole rich halos around 3 amphibole veins
Structures: Amphibole, chlorite and sulphide veins. One quartz + carbonate vein. Amphibole rich halos around 3 amphibole veins

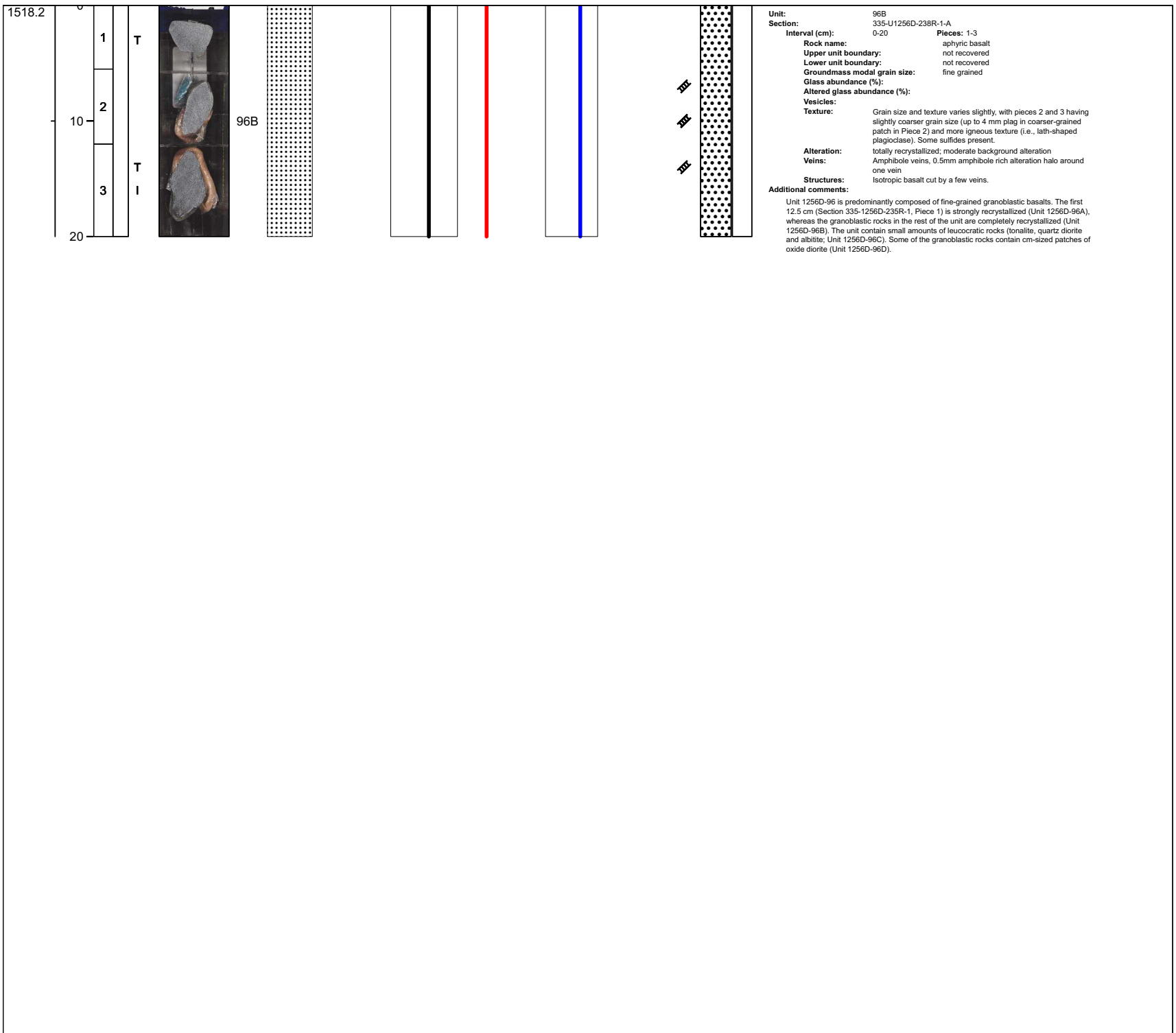
Additional comments:

Unit 1256D-96 is predominantly composed of fine-grained granoblastic basalts. The first 12.5 cm (Section 335-1256D-235R-1, Piece 1) is strongly recrystallized (Unit 1256D-96A), whereas the granoblastic rocks in the rest of the unit are completely recrystallized (Unit 1256D-96B). The unit contain small amounts of leucocratic rocks (tonalite, quartz diorite and albitite; Unit 1256D-96C). Some of the granoblastic rocks contain cm-sized patches of oxide diorite (Unit 1256D-96D).

1256D-237R-1 NO RECOVERY

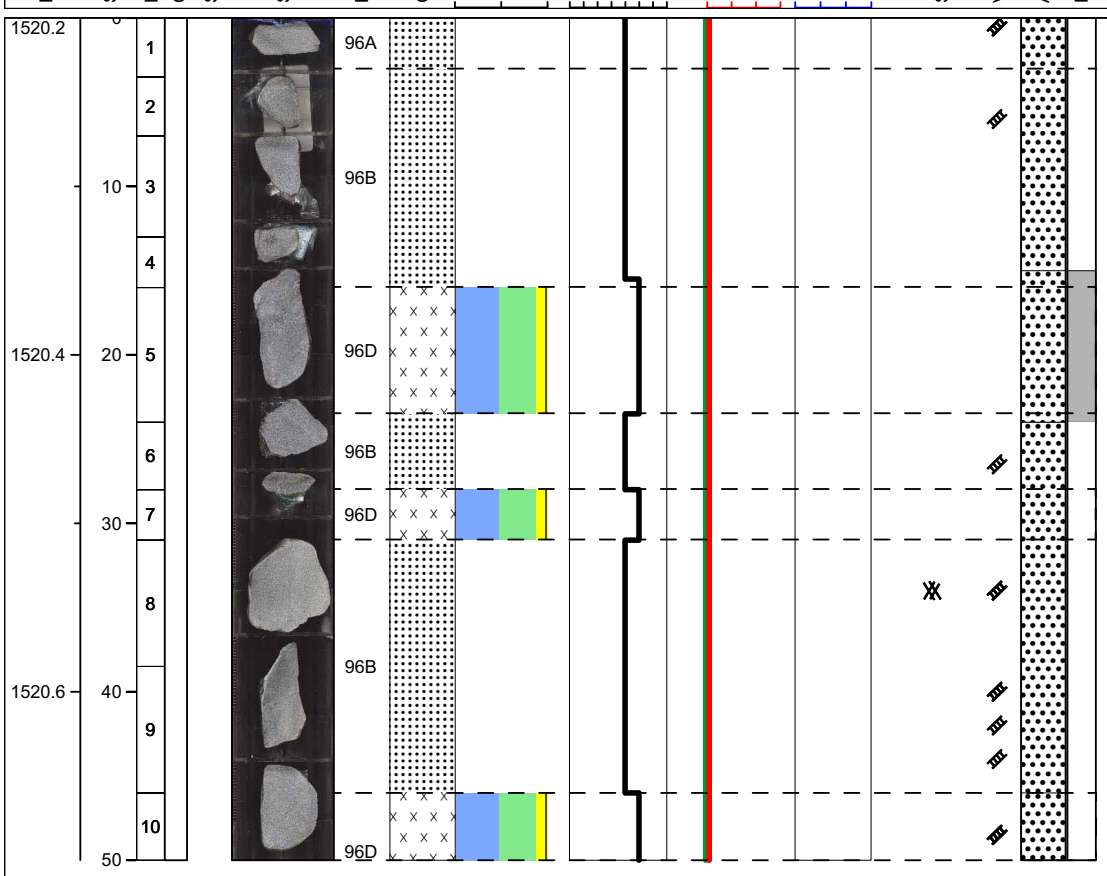
Core Photo

Hole 335-1256D-238R Section 1, Top of Section: 1518.2 m (CSF-A)



Core Photo

Hole 335-1256D-239R Section 1, Top of Section: 1520.2 m (CSF-A)



Unit: 96A
Section: 335-U1256D-239R-1-A
Interval (cm): 0-3 **Pieces:** 1
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: granoblastic
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole veins
Structures: Isotropic basalt cut by parallel veins.

Unit: 96B
Section: 335-U1256D-239R-1-A
Interval (cm): 3-16 **Pieces:** 2-4
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: granoblastic
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole vein
Structures: Isotropic basalt cut by a network of veins.

Unit: 96D
Section: 335-U1256D-239R-1-A
Interval (cm): 16-23.5 **Pieces:** Part of piece 5
Rock name: oxide diorite
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Mineralogy:

	Modal (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Habit, shape, comments
Plagioclase	45	0.2	1	0.5	subequant, subhedral
Clinopyroxene	37.5	0.5	2	1	equant, subhedral
Amphibole	10	1	1	1	elongate, subhedral
Oxides	2	0.2	1	0.5	equant, anhedral
Sulfides	0.5			0.5	anhedral

Alteration: moderate background alteration; patchy (15% of moderatly altered patches)
Veins: No veins
Structures: Interconnected diorite patches and veins with reticular pattern.

Unit: 96B
Section: 335-U1256D-239R-1-A
Interval (cm): 23.5-28 **Pieces:** 6
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: granoblastic
Alteration: totally recrystallized; moderate background alteration
Veins: Sulphide vein with dark gray alteration halo
Structures: Isotropic basalt cut by a network of veins.

Unit: 96D
Section: 335-U1256D-239R-1-A
Interval (cm): 28-31 **Pieces:** Part of piece 7
Rock name: oxide diorite
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Mineralogy:

	Modal (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Habit, shape, comments
Plagioclase	45	0.2	1	0.5	subequant, subhedral
Clinopyroxene	37.5	0.5	2	1	equant, subhedral
Amphibole	10	1	1	1	elongate, subhedral
Oxides	2	0.2	1	0.5	equant, anhedral
Sulfides	0.5			0.5	anhedral

Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole veins
Structures: Interconnected diorite patches and veins with reticular pattern.

Unit: 96B
Section: 335-U1256D-239R-1-A
Interval (cm): 31-46 **Pieces:** 8
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: granoblastic
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole vein net and veins, occasional dark gray halos. Amphibole vein crosscuts intrusion. One quartz + chlorite vein one edge of piece
Structures: Isotropic basalt cut by dense network of veins cut by shear fractures. One "vein structure" is orthogonal to parallel vein network.

Unit: 96D
Section: 335-U1256D-239R-1-A
Interval (cm): 46-50 **Pieces:** Part of piece 10
Rock name: oxide diorite
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Mineralogy:

	Modal (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Habit, shape, comments
Plagioclase	45	0.2	1	0.5	subequant, subhedral
Clinopyroxene	37.5	0.5	2	1	equant, subhedral
Amphibole	10	1	1	1	elongate, subhedral
Oxides	2	0.2	1	0.5	equant, anhedral
Sulfides	0.5			0.5	anhedral

Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole veins
Structures: Interconnected diorite patches and veins with reticular pattern.

Additional comments:

Unit 1256D-96 is predominantly composed of fine-grained granoblastic basalts. The first 12.5 cm (Section 335-1256D-235R-1, Piece 1) is strongly recrystallized (Unit 1256D-96A), whereas the granoblastic rocks in the rest of the unit are completely recrystallized (Unit 1256D-96B). The unit contain small amounts of leucocratic rocks (tonalite, quartz diorite and albitite; Unit 1256D-96C). Some of the granoblastic rocks contain cm-sized patches of oxide diorite (Unit 1256D-96D).

Section 335-1256D-Run 12 Rocks A through C

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Section: 335-U1256D-Run12-RCJB-Rock A
Interval (cm): 0-200
Rock name: oxide and orthopyroxene bearing gabbro
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Mineralogy:

	Modal (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Habit, shape, comments
Plagioclase	22	0.2	1	0.8	subequant, euhedral, Plagioclase is partly poikilitic
Clinopyroxene	70	0.5	2	1	equant, subhedral
Orthopyroxene	3	0.2	2	0.5	equant, anhedral
Oxides	2	0.2	1	0.2	equant, anhedral
Quartz	3			0.1	equant, anhedral

Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole vein net, white vein on exterior
Structures: One to three millimeter thick veinlet of gabbro, which crosscuts amphibole veins.

Interval (cm): 0-200
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: granoblastic
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole vein net, white vein on exterior
Structures: Dense, crosscutting network of distinct vein generations.

Additional comments:
Fine-grained aphyric granoblastic basalt with oxide and orthopyroxene bearing gabbro veins

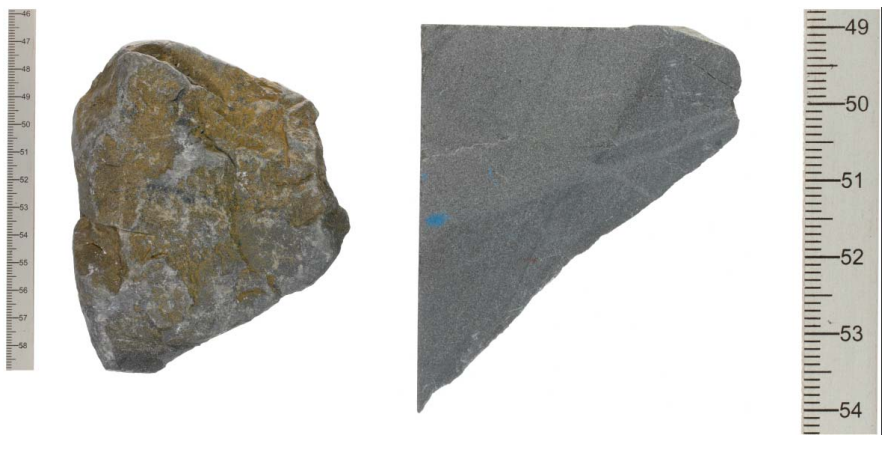
Section: 335-U1256D-Run12-RCJB-Rock B
Interval (cm): 0-200
Rock name: oxide diorite
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Mineralogy:

	Modal (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Habit, shape, comments
Plagioclase	39.5	0.3	1.5	1	subequant, subhedral
Clinopyroxene	39	0.5	2	1	equant, subhedral
Orthopyroxene	5	0.2	1.5	0.5	equant, subhedral
Amphibole	10				
Oxides	2			0.2	equant, anhedral
Quartz	5	0.1	1	0.5	equant, anhedral

Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole vein net and discrete amphibole vein that crosscuts intrusion
Structures: One to five millimeter thick veinlet of gabbro, which is crosscut by amphibole veins.

Interval (cm): 0-200
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: strongly granoblastic
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole veins, cross cut intrusion
Structures: Amphibole veins, cross cut intrusion

Additional comments:
Fine-grained aphyric granoblastic basalt with dioritic veins and patches. Modal content in different veins is variable.



Section: 335-U1256D-Run12-RCJB-Rock C
Interval (cm): 0-200
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Strongly granoblastic, Only a few plag grains are lath shaped; more granular than A&B.
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole vein net and veins, occasional dark gray halos
Structures: Dense, crosscutting network of distinct vein generations.

Additional comments:
Fine-grained aphyric granoblastic basalts

Section 335-1256D-Run 12 Rocks D through H		
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Section: 335-U1256D-Run12-RCJB-Rock D
Interval (cm): 0-200
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Completely granoblastic, Highly granular
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole vein net
Structures: Pyrrhotite-rich veins cut by plagiolcase-amphibole rich veins.
Additional comments:
Fine-grained aphyric granoblastic basalts

Section: 335-U1256D-Run12-RCJB-Rock E
Interval (cm): 0-200
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Strongly granoblastic, Less granular, plag retains lath shape
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole vein net
Structures: Magnetite rich vein cutting through a dark green vein and cutting through isotropic basalt.
Additional comments:
Fine-grained aphyric granoblastic basalts

Section: 335-U1256D-RUN12-RCJB-Rock F
Interval (cm): 0-200
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Strongly granoblastic, Less granular, plag retains lath shape
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole vein and amphibole + sulphide vein
Structures: Isotropic
Additional comments:
Fine-grained aphyric granoblastic basalts

Section: 335-U1256D-Run12-RCJB-Rock G
Interval (cm): 0-200
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Strongly granoblastic, Less granular, plag retains lath shape
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole vein net
Structures: Network of veins cutting through isotropic basalt. Basalt has some foliated domains.
Additional comments:
Fine-grained aphyric granoblastic basalts

Section: 335-U1256D-RUN12-RCJB-Rock H
Interval (cm): 0-200
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Strongly granoblastic, Less granular, plag retains lath shape
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole vein net
Structures: Isotropic basalt cut by dense network of veins.
Additional comments:
Fine-grained aphyric granoblastic basalts

Section 335-1256D-Run 12 Rocks I through N

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Section: 335-U1256D-RUN12-RCJB-Rock I
Interval (cm): 0-200
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Strongly granoblastic, Less granular, plag retains lath shape
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole vein net
Structures: Isotropic basalt cut by dense network of veins.
Additional comments:
Fine-grained aphyric granoblastic basalts

Section: 335-U1256D-RUN12-RCJB-Rock J
Interval (cm): 0-200
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Completely granoblastic, granular
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole vein net
Structures: Isotropic basalt cut by dense network of veins.
Additional comments:
Fine-grained aphyric granoblastic basalts

Section: 335-U1256D-RUN12-RCJB-Rock K
Interval (cm): 0-200
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Strongly granoblastic, Less granular, plag retains lath shape
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole vein with light brown halo
Structures: Isotropic basalt cut by dense network of veins.
Additional comments:
Fine-grained aphyric granoblastic basalts

Section: 335-U1256D-RUN12-RCJB-Rock L
Interval (cm): 0-200 **Pieces:**
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Strongly granoblastic, Less granular, plag retains lath shape
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole vein net
Structures: Isotropic basalt cut by dense network of veins.
Additional comments:
Fine-grained aphyric granoblastic basalts

Section: 335-U1256D-RUN12-RCJB-Rock M
Interval (cm): 0-200
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Completely granoblastic, granular
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole vein net
Structures: Isotropic basalt cut by dense network of veins.
Additional comments:
Fine-grained aphyric granoblastic basalts

Section: 335-U1256D-RUN12-RCJB-Rock N
Interval (cm): 0-200
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Strongly granoblastic, Less granular, plag retains lath shape
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole vein net
Structures: Isotropic basalt cut by dense network of veins.
Additional comments:
Fine-grained aphyric granoblastic basalts

Section 335-1256D-Run 12 Rocks O through T

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Section: 335-U1256D-RUN12-RCJB-Rock O
Interval (cm): 0-200
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Strongly granoblastic, Less granular, plag retains lath shape
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole vein net
Structures: Isotropic basalt cut by dense network of veins.
Additional comments:
Fine-grained aphyric granoblastic basalts

Section: 335-U1256D-RUN12-RCJB-Rock P
Interval (cm): 0-200
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Strongly granoblastic, Less granular, plag retains lath shape
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole vein with gray halo
Structures: Isotropic basalt cut by dense network of veins.
Additional comments:
Fine-grained aphyric granoblastic basalts

Section: 335-U1256D-RUN12-RCJB-Rock Q
Interval (cm): 0-200
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Completely granoblastic, granular
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole vein
Structures: Foliated and banded granoblastic basalt with some coarser grained bands. Foliation defined by plagioclase laths.
Additional comments:
Fine-grained aphyric granoblastic basalts

Section: 335-U1256D-RUN12-RCJB-Rock R
Interval (cm): 0-200
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Completely granoblastic, granular
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole vein net
Structures: Isotropic basalt cut by dense network of veins.
Additional comments:
Fine-grained aphyric granoblastic basalts

Section: 335-U1256D-RUN12-RCJB-Rock S
Interval (cm): 0-200
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Both granular and more lath-shapd plag
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole vein net
Structures: Isotropic basalt cut by dense network of veins including a sulfide-rich vein.
Additional comments:
Fine-grained aphyric granoblastic basalts

Section: 335-U1256D-RUN12-RCJB-Rock T
Interval (cm): 0-200
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Strongly granoblastic, Less granular, plag retains lath shape
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole vein net
Structures: Isotropic basalt cut by dense network of veins.
Additional comments:
Fine-grained aphyric granoblastic basalts

Section 335-1256D-Run 12 Rocks U through Y

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Section: 335-U1256D-RUN12-RCJB-Rock U
Interval (cm): 0-200
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Strongly granoblastic, Less granular, plag retains lath shape
Alteration: totally recrystallized; moderate background alteration
Veins: 5 subparallel amphibole veins
Structures: Isotropic basalt cut by dense network of veins.
Additional comments:
Fine-grained aphyric granoblastic basalts

Section: 335-U1256D-RUN12-RCJB-Rock V
Interval (cm): 0-200
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Strongly granoblastic, Less granular, plag retains lath shape
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole vein net
Structures: Isotropic basalt cut by dense network of veins.
Additional comments:
Fine-grained aphyric granoblastic basalts

Section: 335-U1256D-RUN12-RCJB-Rock W
Interval (cm): 0-200
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Strongly granoblastic, Less granular, plag retains lath shape
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole vein net
Structures: Isotropic basalt cut by dense network of veins including a sulfide-rich vein.
Additional comments:
Fine-grained aphyric granoblastic basalts

Section: 335-U1256D-RUN12-RCJB-Rock X
Interval (cm): 0-200
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Strongly granoblastic, Less granular, plag retains lath shape
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole vein net
Structures: Isotropic basalt cut by dense network of veins.
Additional comments:
Fine-grained aphyric granoblastic basalts

Section: 335-U1256D-RUN12-RCJB-Rock Y
Interval (cm): 0-200
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Completely granoblastic, granular
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole vein net
Structures: Isotropic basalt cut by dense network of veins.
Additional comments:
Fine-grained aphyric granoblastic basalts

Section 335-1256D-Run 13 Rocks A and B

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Section: 335-U1256D-Run13-RCJB-RockA
Interval (cm): 0-124800
Rock name: oxide tonalite
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Mineralogy:

	Modal (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Habit, shape, comments
Plagioclase	20	0.5	2	1	subequant, subhedral
Clinopyroxene	20	0.5	2	1	equant, anhedral
Amphibole	19	0.5	2	1	subequant, subhedral, Amphibole vs cpx % uncertain
Oxides	10	0.2	2	0.5	equant, anhedral
Quartz	30			0.5	equant, anhedral
Sulfides	1	0.2	2	0.5	anhedral

Alteration: moderate background alteration
Veins: 3 amphibole veins
Structures: Irregular tonalite vein cutting through amphibole veins.

Interval (cm): 0-124800
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Completely granoblastic basalt with patches and veins.
Alteration: totally recrystallized; moderate background alteration
Veins: 3 amphibole veins
Structures: Isotropic basalt cut by dense network of veins.

Additional comments:
Fine-grained granoblastic basalt with patches (up to 5 x 3 cm) of tonalite.

Section: 335-U1256D-Run13-RCJB-RockB
Interval (cm): 0-124800
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Strongly granoblastic with some elongated plag laths.
Alteration: totally recrystallized; moderate background alteration
Veins: No veins
Structures: Isotropic basalt cut by dense network of veins.

Additional comments:
Fine-graned aphyric granoblastic basalts

Section 335-1256D-Run 14 Rocks A and B

Scanned whole image | Scanned slab image | Description

Section: 335-U1256D-RUN14-FTJB-Rock A
Interval (cm): 0-200
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: granoblastic
Alteration: totally recrystallized; moderate background alteration
Veins: 10+ amphibole veins
Structures: Isotropic basalt with dense network of magnetite veins, and dark and light green veins.
Additional comments:
Strongly granoblastic with abundant elongated plag laths.

Section: 335-U1256D-RUN14-FTJB-Rock B
Interval (cm): 0-200
Rock name: oxide diorite
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Mineralogy:

	Modal (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Habit, shape, comments
Plagioclase	40	0.5	1.3	1	tabular, subhedral
Clinopyroxene	40	0.2	1	0.7	equant, anhedral
Amphibole	15	0.5	1.3	1	tabular, subhedral
Oxides	5	0.1	1	0.5	equant, subhedral
Sulfides	0.5				

Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole or sulphide vein
Structures: One to two millimeter thick veinlet of diorite.

Interval (cm): 0-200
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Strongly granoblastic
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole or sulphide vein
Structures: Isotropic basalt cut by dense network of veins with subrounded coarser grained inclusions(?).
Additional comments:
Fine-grained aphyric granoblastic basalt with minor small (0.5 cm) oxide diorite patches

Section 335-1256D-Run 19 Rocks A through D

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Section: 335-U1256D-RUN19-RCJB-Rock A
Interval (cm): 0-200
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Strongly granoblastic with abundant elongated plag laths.
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole vein net and veins. Dark gray halos
Structures: Isotropic basalt cut by dense network of veins.
Additional comments:
Fine-grained granoblastic basalt with one ~1 mm wide gabbroic vein

Section: 335-U1256D-RUN19-RCJB-Rock B
Interval (cm): 0-200
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Strongly granoblastic with abundant elongated plag laths.
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole or Fe oxide vein
Structures: Isotropic basalt cut by dense network of veins.
Additional comments:
Fine-grained granoblastic basalt with one ~1 mm wide gabbroic vein

Section: 335-U1256D-RUN19-RCJB-Rock C
Interval (cm): 0-200
Rock name: disseminated oxide diorite
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Mineralogy:

	Modal (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Habit, shape, comments
Plagioclase	50	0.2	3	0.5	subequant, subhedral
Amphibole	46	0.1	5	2	tabular, subhedral
Oxides	2	0.2	1.5	0.5	equant, anhedral
Quartz	2			0.3	equant, anhedral

Alteration: moderate background alteration
Veins: 2 amphibole veins with dark gray alteration halos up to 0.5mm
Structures: Branching diorite dikelet with irregular shape crosscut by amphibole veins.

Interval (cm): 0-200
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Strongly granoblastic with abundant elongated plag laths. With multiple veins.
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole vein net and veins. Dark grayor light gray halos
Structures: Isotropic basalt cut by dense network of veins.
Additional comments:
Fine-grained aphyric granoblastic basalt crosscut by spectacular diorite dikelet. Dikelet has two facies: a fine-grained marginal facies and medium-grained central facies.

Section: 335-U1256D-RUN19-RCJB-Rock D
Interval (cm): 0-200
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Strongly granoblastic with abundant elongated plag laths.
Alteration: totally recrystallized; moderate background alteration
Veins: Amphibole vein net and amphibole + Fe oxide vein
Structures: Isotropic basalt cut by dense network of veins.
Additional comments:
Fine-grained aphyric granoblastic basalts

Section 335-1256D-Run 20 Rocks A through D

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Section: 335-U1256D-RUN20-RCJB-Rock A
Interval (cm): 0-50
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Strongly granoblastic with some elongated plag laths. With veins.
Alteration: totally recrystallized; moderate background alteration
Veins: 10+ amphibole veins
Structures: Isotropic basalt cut by dense network of veins.
Additional comments:
Fine-grained aphyric granoblastic basalts

Section: 335-U1256D-RUN20-RCJB-Rock B
Interval (cm): 0-50
Rock name: aphyric basalt
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Groundmass modal grain size: fine grained
Glass abundance (%):
Altered glass abundance (%):
Vesicles:
Texture: Strongly granoblastic with some elongated plag laths. With veins.
Alteration: totally recrystallized; moderate background alteration
Veins: 3 amphibole veins
Structures: Isotropic basalt cut by dense network of veins.
Additional comments:
Fine-grained aphyric granoblastic basalts

Section: 335-U1256D-RUN20-RCJB-Rock C
Interval (cm): 0-50
Rock name: olivine-gabbro
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Mineralogy:

	Modal (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Habit, shape, comments
Olivine	10	0.5	2	0.7	equant, subhedral
Plagioclase	47.4	0.1	1	0.5	tabular, subhedral
Clinopyroxene	40	1	5	2.5	equant, anhedral to subhedral
Orthopyroxene	2	2	6	3	equant, anhedral
Amphibole	0.1				
Oxides	0.5			0.5	equant, anhedral

Alteration: moderate background alteration
Veins: Irregular amphibole and secondary plagioclase
Structures: Isotropic gabbro.
Additional comments:
Medium-grained, equigranular, subophitic homogeneous olivine gabbro

Section: 335-U1256D-RUN20-RCJB-Rock D
Interval (cm): 0-50
Rock name: albitite
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Mineralogy:

	Modal (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Habit, shape, comments
Plagioclase	92	0.1	1	0.3	subequant, subhedral
Clinopyroxene	3	0.1	0.3	0.2	equant, anhedral
Oxides	5			0.2	equant, anhedral

Alteration: moderate background alteration
Veins: No veins
Structures: Sharp contact between isotropic coarse grained diorite and isotropic fine grained albitite.

Interval (cm): 0-50
Rock name: diorite
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Mineralogy:

	Modal (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Habit, shape, comments
Plagioclase	55	2	7	5	subequant, euhedral
Clinopyroxene	30	1	10	5	equant, subhedral
Amphibole	15	0.5	2	1	equant, anhedral

Alteration: high background alteration
Veins: No veins
Structures:
Additional comments:
Fine grained granular albitite in contact with coarse-grained, granular diorite

Section 335-1256D-Run 20 Rock E

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Section: 335-U1256D-RUN20-RCJB-Rock E
Interval (cm): 0-50
Rock name: albitite
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Mineralogy:

	Modal (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Habit, shape, comments
Plagioclase	92	0.1	1	0.3	subequant, subhedral
Clinopyroxene	3	0.1	0.3	0.2	equant, anhedral
Oxides	5			0.2	equant, anhedral

Alteration: complete background alteration
Veins: No veins
Structures: Sharp contact between isotropic albitite and isotropic coarse grained diorite.

Interval (cm): 0-50
Rock name: diorite
Upper unit boundary: not recovered
Lower unit boundary: not recovered
Mineralogy:

	Modal (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Habit, shape, comments
Plagioclase	55	2	7	5	subequant, euhedral
Clinopyroxene	30	1	10	5	equant, subhedral
Amphibole	15	0.5	2	1	equant, anhedral

Alteration: complete background alteration
Veins: No veins
Structures:
Additional comments:
Fine grained granular albitite in contact with coarse-grained, granular diorite

SAMPLE: 335-1256D-235R-1-W 11/12-TSB(lg)02_Piece1-TS_02
Rock name: fine grained phyric basalt granoblastic overprinted
Rock comment: granoblastic dike with primary intergranular or intersertal texture, converted to granulite facies assemblage; patchy distribution of oxide: patches of aggregates of opx and cpx
Unit/subunit: 96A
Piece no.: 1

PRIMARY MINERALOGY Number of domains: 1 Nature of igneous domains:

Igneous domain name: domain 1 Domain lithology: fine grained phyric basalt, granoblastic overprinted
Domain grain size: fine grained Grain size distribution: seriate
Domain texture: granoblastic Relative abundance (%):
General comment:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	53	56		0.05	1.2	0.4	suhedral	elongate	continuous zoning abundant		inclusion-bearing	some contains inclusion of small cpx
Clinopyroxene	15	20		0.05	0.8	0.3	anhedral to subhedral	prismatic		colorless	inclusions	many of them show tiny oxide inclusions
Orthopyroxene	19	20		0.05	0.8	0.3	anhedral to subhedral	equant to prismatic		pale pinkish brown	inclusion-bearing	many of them bear inclusions of tiny oxides
Amphibole	5			0.05	0.2	0.1	subhedral	fibrous or prismatic		green to brownish green	overgrowth	some are flakes belonging to the granoblastic assemblage, some are fibrous aggregates as alteration products
Opaque	5	4		0.01	0.2	0.08	anhedral	granular				many tiny grains in cpx and opx
Quartz												*

SECONDARY MINERALOGY

Alteration domain or feature: background Total alteration (%): 14.5
Recrystallization: partial Recrystallization degree: 2 40% recrystallization. tiny rounded oxides within cpx and opx. several pyrox inclusion within plag
General alteration comment: fresh exept in vein halo

	Present (%)	Comment
Actinolite	4	appears as fibrous corona around cpx and opx or in the cores of secondary dusty pyrox
Green hornblende	2	replace cpx & opx
Brown hornblende	0.5	within patch, igneous ?
Talc	2	replace opx and often associated with chlorite
Chlorite	3	replace opx & plag as corona
Secondary plag.	2	corona replacing plag
Titanite	1	euhedral in recrystallized plag

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):
dependent on host mineral composition	cuts actinolite vein	0.05		
		0.1	5	70

small veins, discontinuous, follow and cut grain

MICROSTRUCTURES

Microstructure comments
contact metamorphosed texture with recrystallized cpx and partially recrystallized plag
euhedral to subhedral tabular laths of plag, no alingment.

SAMPLE: 335-1256D-235R-1-W 23/25-TSB(lg)03_Piece 5-TS_03
Rock name: contact tonalite/qtz-diorite
Rock comment: smooth contact without discontinuity
Unit/subunit: 96C
Piece no.: 5

PRIMARY MINERALOGY Number of domains: 2 Nature of igneous domains: mix of two lithologies

Igneous domain name: domain 1 Domain lithology: fine grained oxide tonalite
Domain grain size: fine grained Grain size distribution: equigranular
Domain texture: granular Relative abundance (%): 50
General comment: contains a zone in the middle where grainsize increases up to 4 mm and where primary amphiboles are present; this zone is also more altered; this domain contains lots of zircon and apatite

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	40	45		0.05	0.8	0.4	subhedral	tabular	variable abundant			strongly altered
Clinopyroxene	5	6		0.05	0.8	0.6	anhedral to subhedral	prismatic		pale green	overgrowth by actinolite	some are prismatic subheudral, other anhedral filled with numerous tiny oxides
Amphibole	5	2		0.2	1.6	0.4	subhedral to euhedral	prismatic		green to brownish green	inclusion-bearing	only one large grain evident as primary in nature
Opaque	3	2		0.05	0.8	0.4	anhedral	equant			aggregates	some with tendency to poikilitic growth; many tiny grains as alteration products
Quartz	45	45					anhedral	equant			fluid inclusions	

Igneous domain name: domain 2 Domain lithology: fine grained oxide quartz diorite
Domain grain size: fine grained Grain size distribution: equigranular
Domain texture: granular Relative abundance (%): 50
General comment: contains lots of apatite, titanite, some zircon

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	35	41		0.1	0.8	0.6	subhedral	elongate	continuous zoning abundant		some plagioclases show ghost cores eventually inherited from a previous magmatic stage	strongly altered
Clinopyroxene	25	29		0.05	1.2	0.4	anhedral to subhedral	prismatic		pale green	twinnings	some show many oxide inclusions; some are poikilitic enclosing plag
Orthopyroxene												there might be some talc as alteration product in some of the larger mafic minerals (which were in some cases identified as primary hbl) suggesting the presence of former opx
Amphibole	10	5		0.1	1.2	0.4	subhedral	prismatic		green to brownish green	overgrowth	not clear whether they are really primary, but some show nice shapes and are associated with apatite indicating late co-crystallization; in contrast to cpx many are poikilitic
Opaque	17	15		0.05	1.2	0.3	anhedral	equant			aggregates	many tiny grains as alteration products
Quartz	10	10										

SECONDARY MINERALOGY

Alteration domain or feature: background Total alteration (%): 39.1
Recrystallization: not present Recrystallization degree: 0
General alteration comment: about 7% of cpx with uncommon internal texture. presence of zircon and apatite

	Present (%)	Comment
Actinolite	5	fibrous, replacing cpx & amphibole
Green hornblende	3	replacing cpx & amphibole
Brown hornblende		present as primary phase
Epdote	3	replacing plag & green hbl
Talc	0.5	replacing green amphibole
Chlorite	3	replacing amphibole + plag
Secondary plag.	10	replacing plag
Zeolite	0.1	replacing plag
Prehnite	1	small "vein" within plag
Other Ca-Al sec.	10	clays replacing plag
Titanite	3	interstitial, corona around magnetite + ilmenite
Other oxide	0.5	rutile replacing titanite

Alteration domain or feature: leucocratic vein Total alteration (%): 46
Recrystallization: not present Recrystallization degree: 0
General alteration comment: presence of cpx with uncommon internal texture. presence of zircon and apatite

	Present (%)	Comment
Actinolite	5	fibrous, replacing cpx, amphibole & plag
Green hornblende	3	replacing cpx & amphibole
Brown hornblende		present as primary phase
Epdote	5	replacing plag in cleavage and as corona
Chlorite	3	needles replacing amphibole, plag & qtz
Secondary plag.	5	replace plag
Prehnite	1	replacing plag
Other Ca-Al sec.	20	clays replacing plag
Titanite	4	interstitial & around magnetite, ilmenite
Ilmenite		present as exsolution in magnetite
Magnetite		present as primary phase

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):
discontinuous, defined by large qtz		5		

MICROSTRUCTURES

Microstructure comments
weak magmatic flow fabric carried by plag laths
narrow intrusion containing a vein

SAMPLE: 335-1256D-236R-1-W 0/4-TSB(Struc)04_Piece 1-TS_04
Rock name: contact unit96B/96C
Rock comment: contact between a granoblastic dike (main lithology) and a probably former felsic intrusion, now converted to albitite; contact is smooth without discontinuity implying a former intrusive contact at high temperatures
Unit/subunit: 96B
Piece no.: 1

PRIMARY MINERALOGY Number of domains: 2 Nature of igneous domains: contact between two units

Igneous domain name: domain 1 Domain lithology: cryptocrystalline phyric basalt, granoblastic overprinted
Domain grain size: cryptocrystalline Grain size distribution: inequigranular
Domain texture: granoblastic Relative abundance (%): 90
General comment: alteration increases when approaching the contact;

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	45	50		0.02	0.2	0.07	anhedral to subhedral	subequant to elongate	variable abundant			matrix plag is equant; some inherited phenocrysts are lath-shaped
Clinopyroxene	20	25		0.02	0.1	0.07	anhedral to subhedral	prismatic		colorless	inclusions	many of them show tiny oxide inclusions
Amphibole	25	20		0.02	0.1	0.07	subhedral	subequant to flaky		pale green to dark green	overgrowth	often overgrown by fibrous actinolite
Opaque	5	5		0.01	0.1	0.05	anhedral	granular				many tiny grains in cpx and opx

Igneous domain name: domain 2 Domain lithology: microcrystalline albitite,
Domain grain size: microcrystalline Grain size distribution: equigranular
Domain texture: granular Relative abundance (%): 10
General comment: former granoblastic dike?? with microphenocryst; now completely altered to albitite with poikiloblastic epidote and lumpy titanite/oxide aggregates; record of focused fluid flow??

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	85			0.05	0.8	0.2	anhedral to subhedral	subequant to elongate				probably completely altered to albite; some primary ghost phenocrysts are visible
Amphibole				0.05	0.4	0.2	subhedral to euhedral	flaky to fibrous		pale green to green		actinolite
Opaque	5			0.02	0.4	0.2	anhedral	equant			aggregates	many form lumpy aggregates together with titanite

SECONDARY MINERALOGY

Alteration domain or feature: background1 Total alteration (%): 89.1
Recrystallization: strong to complete Recrystallization degree: 5
General alteration comment: presence of zircon

	Present (%)	Comment
Actinolite	8	fibrous, replacing cpx & amphibole
Green hornblende	1	replacing cpx & amphibole
Epdote	8	poikilitic or metamorphic texture, replacing plag
Chlorite	3	fibrous, replacing amphibole & plag
Secondary plag.	30	replace plag
Prehnite	1	within cracks & vein croscutting the secondary assemblage
Other Ca-Al sec.	30	clays replacing plag, dusty texture
Titanite	7	euhedral and replacing magnetite, ilmenite
Magnetite	1	replacing primary magnetite
Chalcopyrite	0.1	euhedral

Alteration domain or feature: background2 Total alteration (%): 78.5
Recrystallization: complete Recrystallization degree: 6 tiny roundish oxides in cpx & opx
General alteration comment:

	Present (%)	Comment
Actinolite	25	fibrous, replacing cpx & amphibole
Green hornblende	5	replacing brown hbl
Epdote	2	replacing plag
Chlorite	30	fibrous, replacing hbl, plag
Quartz	0.5	replacing plag
Secondary plag.	0.5	replace plag
Prehnite	3	within veins
Titanite	3	euhedral, replace magnetite & plag
Magnetite	9	replacing primary magnetite
Chalcopyrite	0.5	interstitial around plag

Alteration domain or feature: background3 Total alteration (%): 54
Recrystallization: complete Recrystallization degree: 6 tiny roundish oxides in cpx & opx
General alteration comment:

	Present (%)	Comment
Actinolite	15	fibrous, replacing cpx & amphibole
Green hornblende	5	replacing brown hbl
Brown hornblende	2	replacing cpx
Epdote	0.5	replacing plag
Smectite	4	replacing cpx & opx
Chlorite	20	fibrous, replacing hbl, plag
Prehnite	2	within veins
Other Ca-Al sec.	0.5	dusty clays replacing plag within grains
Titanite	2	interstitial, corona around magnetite + ilmenite
Magnetite	3	replacing primary magnetite

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):
small veins, discontinuous, follow and cut grain		0.05		
where vein thins, mostly chlorite and rare epidote.		0.75		

MICROSTRUCTURES

Microstructure comments
several networked irregular/wavy mineralized fractures (now veins) and a prominent irregular fault with ~2 mm offset crosscutting surface of contact at a high angle, also mineralized after faulting
intrusion contains needle-shaped actinolite and elongated plag with an alignment roughly perpendicular to edge of contact

SAMPLE: 335-1256D-236R-1-W 38/39-TSB(lg)05_Piece 7-TS_05
Rock name: microcrystalline phyric basalt granoblastic overprinted
Rock comment: granoblastic dike with primary intergranular or intersertal texture, converted to granulite facies assemblage; several veins of opx probably corresponding to prior veins of secondary alteration
Unit/subunit: 96B
Piece no.: 7

PRIMARY MINERALOGY Number of domains: 1 Nature of igneous domains:

Igneous domain name: domain 1 Domain lithology: microcrystalline phyric basalt, granoblastic overprinted
Domain grain size: microcrystalline Grain size distribution: inequigranular
Domain texture: granoblastic Relative abundance (%):
General comment:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	55	55		0.01	0.8	0.1	anhedral to subhedral	subequant to elongate	continuous zoning abundant		inclusion-bearing	many of them bear inclusions of cpx; former phenocrysts are strongly elongated and show effects of fast growth like former fillings now converted to cpx and oxide
Clinopyroxene	18	20		0.05	0.4	0.2	anhedral to subhedral	prismatic		colorless	inclusions	many of them show tiny oxide inclusions
Orthopyroxene	20	20		0.05	0.4	0.1	anhedral to subhedral	equant to prismatic		pale pinkish brown	inclusion-bearing	many of them bear inclusions of tiny oxides and cpx
Amphibole	1			0.01	0.05	0.04	subhedral	fibrous		colorless	overgrowth	alteration product of cpx
Opaque	5	5		0.01	0.2	0.08	anhedral	granular				many tiny grains in cpx and opx

SECONDARY MINERALOGY

Alteration domain or feature: background Total alteration (%): 10
Recrystallization: strong Recrystallization degree: 4 no oxide inclusion in pyrox
General alteration comment: very fresh sample with recrystallized texture. presence of opx veins. exsolution of oxide within cpx

	Present (%)	Comment
Actinolite	2	replacing cpx & opx as thin fiber at rim
Green hornblende	2	replacing cpx & opx
Brown hornblende	1	after opx
Talc	0.5	replace opx as corona
Chlorite	2	fibrous at cpx/opx boundaries, often associated with talc & actinolite
Secondary plag.	2	replacing plag
Titanite	0.5	after magnetite
Magnetite		primary

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):
vein net, micron sized		0.05 0.1		

MICROSTRUCTURES

Microstructure comments

the fracture has large opx grains on the side, which may idicate the fracture was a vein filled similar to the other opx veins in the sample

SAMPLE: 335-1256D-238R-1-W 2/4-TSB(lg)06_Piece 1-TS_06
Rock name: fine grained aphyric basalt granoblastic overprinted
Rock comment: granoblastic dike with primary intergranular or intersertal texture, converted to granulite facies assemblage; contains one vein which can be interpreted as former hydrothermal vein, now perfectly converted into the granoblastic framework; this vein lacks oxide and bear brown amphibole
Unit/subunit: 96B
Piece no.: 1

PRIMARY MINERALOGY Number of domains: 1 Nature of igneous domains:

Igneous domain name: domain 1 Domain lithology: fine grained aphyric basalt, granoblastic overprinted
Domain grain size: fine grained Grain size distribution: equigranular
Domain texture: granoblastic Relative abundance (%):
General comment:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	47	50		0.05	1	0.4	subhedral	elongate to tabular	continuous zoning abundant		inclusion-bearing	many are dusty due to millions of oxide? inclusions; especially the cores
Clinopyroxene	25	30		0.05	0.4	0.2	anhedral to subhedral	prismatic		colorless	twinnings	many of them show tiny oxide inclusions; eventually presence of exsolution blebs??
Orthopyroxene	7	8		0.05	0.3	0.2	anhedral to subhedral	prismatic		pinkish green	inclusion-bearing	some show inclusions (oxide, cpx, flakes of amphibole); some are altered to talc; some potentially show exsolution lamellae
Amphibole	10	3		0.01	0.1	0.05	anhedral to subhedral	subequant to flaky		green to brownish green	interstitial growth	brown hbl especially in a zone interpreted as former alteration vein; here nice interstitial growth. other are overgrowths of cpx and are fibrous actinolites
Opaque	9	9		0.02	0.3	0.1	anhedral	equant				many tiny grains in cpx and opx

SECONDARY MINERALOGY

Alteration domain or feature: background Total alteration (%): 16.5
Recrystallization: partial to strong Recrystallization degree: 3 tiny roundish oxides in cpx
General alteration comment: variation in the alteration degree probably related to vein halos

	Present (%)	Comment
Actinolite	4	fibrous, replacing cpx & opx as corona
Green hornblende	1	replacing cpx
Brown hornblende	1	replacing cpx
Talc	1	replacing opx
Smectite	0.5	replacing pyrox.
Chlorite	1	replacing cpx & opx
Quartz	1	replacing plag
Secondary plag.	5	replacing plag
Titanite	1	euhedral in inclusion in plag
Pyrolite	1	corona around opx

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):
	crosscut by actinolite	0.2		
	crosscut hbl vein	0.05		
		0.1		

MICROSTRUCTURES

Microstructure comments
a conjugate fracture set cross cuts the sample oblique to the major cpx and oxide vein in the sample

SAMPLE: 335-1256D-238R-1-W 13/15-TSB(lg)07_Piece3-TS_07
Rock name: fine grained aphyric basalt granoblastic overprinted
Rock comment: granoblastic dike with primary intergranular or intersertal texture, converted to granulite facies assemblage; patchy distribution of oxide
Unit/subunit: 96B
Piece no.: 3

PRIMARY MINERALOGY Number of domains: 1 Nature of igneous domains:

Igneous domain name: domain 1 Domain lithology: fine grained aphyric basalt, granoblastic overprinted
Domain grain size: fine grained Grain size distribution: equigranular
Domain texture: granoblastic Relative abundance (%):
General comment:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	52	55		0.05	1.2	0.4	subhedral	elongate to tabular	continuous zoning abundant		inclusion-bearing	many are dusty due to millions of oxide? inclusions
Clinopyroxene	19	21		0.05	0.8	0.3	anhedral to subhedral	prismatic		colorless	twinnings	many of them show tiny oxide inclusions; eventually presence of exsolution blebs??
Orthopyroxene	2	2		0.05	0.5	0.3	anhedral to subhedral	prismatic		colorless		presence of opx is not clear
Amphibole	18	15		0.05	0.4	0.8	subhedral	subequant to flaky		green to brownish green	overgrowth	many "primary" hbl which were converted to fibrous actinolite
Opaque	5	5		0.02	0.4	0.2	anhedral	equant			poikilitic	many tiny grains in cpx; some show poikilitic growth
Quartz	2	2		0.05	0.8	0.3	anhedral	equant			interstitial	

SECONDARY MINERALOGY

Alteration domain or feature: background Total alteration (%): 36.5
Recrystallization: partial Recrystallization degree: 2 tiny roundish oxides in cpx
General alteration comment: variation in the alteration degree probably related to vein halos

	Present (%)	Comment
Actinolite	9	fibrous, replacing cpx & opx as corona
Green hornblende	5	replacing cpx
Brown hornblende	3	replacing cpx
Talc	3	replacing opx, fibrous mixed with chlorite
Smectite	2	replacing opx
Chlorite	5	replacing pyrox, plag & qtz
Quartz	3	replacing plag
Secondary plag.	3	replacing plag
Other Ca-Al sec.	2	clays in plag fractures
Titanite	0.5	corona around magnetite
Chalcopyrite	0.5	corona around opx
Pyrolite	0.5	interstitial

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):
		0.5	10	20
		0.1		
		0.1		
		0.5		

MICROSTRUCTURES

Microstructure comments
a small fracture, non-penetrative, runs E-W in sample

SAMPLE: 335-1256D-Run11-EXJB-J1-TSB08-TS_08
Rock name: fine grained aphyric basalt granoblastic overprinted
Rock comment: granoblastic dike with primary intergranular or intersertal texture, converted to granulite facies assemblage; patchy distribution of oxide; two opx veins; one is seamed by oxide
Unit/subunit: Run 11
Piece no.: J1

PRIMARY MINERALOGY Number of domains: 1 Nature of igneous domains:

Igneous domain name: domain 1 Domain lithology: fine grained aphyric basalt, granoblastic overprinted
Domain grain size: fine grained Grain size distribution: equigranular
Domain texture: granoblastic Relative abundance (%):
General comment:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	54	55		0.05	0.8	0.2	subhedral	elongate	continuous zoning abundant		inclusion-bearing	many are dusty due to millions of oxide inclusions
Clinopyroxene	27	28		0.01	0.2	0.1	anhedral to subhedral	prismatic		colorless lamellae		many of them show tiny oxide inclusions; some show presence of oxide exsolutions
Orthopyroxene	9	10		0.05	0.3	0.1	anhedral to subhedral	prismatic		colorless		larger crystals forming veins; a bigger one is seamed by oxides
Amphibole	3			0.01	0.1	0.05	subhedral	fibrous aggregates		pale green to green	overgrowth	overgrows cpx
Opaque	7	7		0.01	0.3	0.1	anhedral	granular				oxide seam an the contact to a opx vein; many tiny grains in cpx

SECONDARY MINERALOGY

Alteration domain or feature: background Total alteration (%): 10.2
Recrystallization: strong Recrystallization degree: 4 tiny roundish oxides in cpx & opx
General alteration comment:

	Present (%)	Comment
Actinolite	2	fibrous corona around cpx and opx
Green hornblende	0.5	replacing cpx & opx
Brown hornblende	0.5	replacing cpx & opx
Talc	1	replacing opx. fibrous
Smectite	0.1	replacing cpx
Chlorite	1	fibrous, replacing cpx, opx & plag
Secondary plag.	3	replacing plag
Titanite	1	euhedral in inclusion within plag
Ilmenite	1	inclusion in cpx
Chalcopyrite	0.1	interstitial

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):
		0.05		

MICROSTRUCTURES

Microstructure comments
a weak to absent magmatic foliation may be observed running E-W in the slide, this is defined by plag laths that have not been recrystallized

SAMPLE: 335-1256D-Run11-EXJB-J2-TSB09-TS_09
Rock name: cryptocrystalline phyric basalt granoblastic overprinted
Rock comment: granoblastic dike with primary intergranular or intersertal texture, converted to granulite facies assemblage; some domains are "dry", some contain hbl, which could be a primary granoblastic phase; but most hbl seems secondary overprinted
Unit/subunit: Run 11
Piece no.: J2

PRIMARY MINERALOGY Number of domains: 1 Nature of igneous domains:

Igneous domain name: domain 1 Domain lithology: cryptocrystalline phyric basalt, granoblastic overprinted
Domain grain size: cryptocrystalline Grain size distribution: inequigranular
Domain texture: granoblastic Relative abundance (%):
General comment:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	43	45		0.05	0.3	0.09	subhedral	elongate	continuous zoning abundant			some former phenocrysts visible; one glomerocryst associated with cpx
Clinopyroxene	15	20		0.01	0.1	0.06	anhedral to subhedral	prismatic		colorless		
Orthopyroxene	8	10		0.01	0.1	0.06	anhedral to subhedral	prismatic		colorless		
Amphibole	17	10		0.05	0.2	0.1	subhedral	flaky to fibrous		pale green to green		some domains can be regarded as "wet" domains, where green hbl form flaky network with plag; many overgrowth to secondary fibrous amphibole
Opaque	15	15		0.01	0.1	0.05	anhedral	granular				

SECONDARY MINERALOGY

Alteration domain or feature: background Total alteration (%): 31.5
Recrystallization: strong Recrystallization degree: 4 tiny roundish opaque (oxides & sulfides) in cpx
General alteration comment:

	Present (%)	Comment
Actinolite	10	fibrous, replacing cpx & opx as corona
Green hornblende	2	replacing cpx & opx
Brown hornblende	2	replacing cpx & opx
Smectite	0.2	replacing opx, associated with actinolite
Chlorite	6	fibrous replacing cpx & plag
Secondary plag.	10	many small grains replacing plag
Titanite	0.5	euhedral in inclusion within plag
Magnetite		present as primary phase
Chalcopyrite	0.3	corona around opx
Pyrolite	0.5	corona around opx

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):
		0.05	4	40

MICROSTRUCTURES
Microstructure comments

SAMPLE: 335-1256D-Run11-EXJB-J3-TSB10-TS_10
Rock name: cryptocrystalline phyric basalt intersertal
Rock comment: basalt from upper section with microphenocrysts of plag and cpx; glass is altered, minerals are fresh; primary mode contains ~ 20vol% glass
Unit/subunit: Run 11
Piece no.: J3

PRIMARY MINERALOGY Number of domains: 1 Nature of igneous domains:

Igneous domain name: domain 1 Domain lithology: cryptocrystalline phyric basalt, intersertal
Domain grain size: cryptocrystalline Grain size distribution: seriate
Domain texture: intersertal Relative abundance (%):
General comment:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	50	50		0.01	0.4	0.06	subhedral	elongate	continuous zoning abundant			phenocrystys up to 0.4 mm, glomerocrysts
Clinopyroxene	30	30		0.01	0.4	0.05	anhedral to subhedral	prismatic		colorless		phenocrysts up to 0.4 mm
Opaque	8			0.01	0.05	0.02	anhedral	granular				lumpy masses in patches of altered glass

SECONDARY MINERALOGY

Alteration domain or feature: background Total alteration (%): 70.25
Recrystallization: not present Recrystallization degree: 0
General alteration comment: nonrecrystallized basalt

	Present (%)	Comment
Actinolite	20	replacing cpx as fine needles
Smectite	25	yellow and replacing glass and often associated with opaques
Chlorite	20	replacing cpx, needles
Magnetite	5	small grain aften dendritic associated with smectite
Chalcopyrite	0.25	small grain in association with smectite

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):

MICROSTRUCTURES

Microstructure comments
relatively fresh basalt, not recrystallized

SAMPLE: 335-1256D-Run11-EXJB-J4-TSB11-TS_11
Rock name: microcrystalline aphyric basalt granoblastic overprinted
Rock comment: granoblastic dike with primary intergranular or intersertal texture, converted to granulite facies assemblage; several veins of opx probably corresponding to prior veins of secondary alteration
Unit/subunit: Run 11
Piece no.: J4

PRIMARY MINERALOGY Number of domains: 1 Nature of igneous domains:

Igneous domain name: domain 1 Domain lithology: microcrystalline phyric basalt, granoblastic overprinted
Domain grain size: microcrystalline Grain size distribution: equigranular
Domain texture: granoblastic Relative abundance (%):
General comment:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	53	55		0.05	0.2	0.1	anhedral to subhedral	subequant to elongate	continuous zoning abundant		inclusion-bearing	
Clinopyroxene	16	19		0.05	0.2	0.1	anhedral to subhedral	prismatic		colorless	inclusions	many of them show tiny oxide inclusions
Orthopyroxene	14	15		0.05	0.4	0.1	anhedral to subhedral	equant to prismatic		pale pinkish brown	inclusion-bearing	large crystals (up to 0.4 mm) form veins; opx in the matrix is much smaller
Amphibole	8	4		0.05	1	0.2	subhedral	prismatic, flaky		green to brownish green	twinnings	part of a hydrous domain associated to the vein; never coexisting with opx; large poikilitic crystals with twinning suggest primary origin instead of secondary hydrothermal alteration
Opaque	7	7		0.01	0.2	0.05	anhedral	granular				many tiny grains in cpx and opx
Quartz				0.05	0.2	0.1	anhedral	equant				only a few grains in an opx vein

SECONDARY MINERALOGY

Alteration domain or feature: background Total alteration (%): 6.7
Recrystallization: strong Recrystallization degree: 4 presence of roundish oxides in inclusion within cpx & opx
General alteration comment: presence of opx & cpx veins. variation of the alteration degree due to veins & halos. opx more altered than cpx

	Present (%)	Comment
Actinolite	2	fibrous corona around cpx & opx
Green hornblende	1	replacing cpx, brown hbl
Brown hornblende	0.5	replacing cpx, igneous?
Talc	1	replacing opx & plag, mixed with chlorite
Smectite	0.2	replacing opx
Chlorite	2	fibrous, cororna replacing cpx & opx, around and within plag
Magnetite		about 7% igneous

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):
		0.1		
	crosscuts	0.25	0.5	40
75% recrystallized, actinolite when in vein is within		0.25		
50% recrystallized opx +plag	crosscut by hbl vein	1		
network of 3 veins	crosscuts	0.05		

MICROSTRUCTURES

Microstructure comments
vein network form conjugate fracture sets, but their orientation is not consistent. some veins parallel eachother

SAMPLE: 335-1256D-Run11-EXJB-J5-TSB12-TS_12
Rock name: medium grained disseminated oxide gabbro varitextured
Rock comment: varitextured gabbro from fine to medium grained; from subophitic to granular; was eventually opx-bearing; contains primary oxides; eventually zircon-bearing
Unit/subunit: Run 11
Piece no.: J5

PRIMARY MINERALOGY Number of domains: 1 Nature of igneous domains:

Igneous domain name: domain 1 Domain lithology: medium grained disseminated oxide gabbro, varitextured
Domain grain size: medium grained Grain size distribution: seriate
Domain texture: granular Relative abundance (%):
General comment:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	50	55		0.1	4	1	subhedral to euhedral	elongate to tabular	continuous zoning abundant			
Clinopyroxene	25	34		0.1	4	0.8	anhedral	equant to prismatic		colorless lamellae	reaction rim	in the finer grained parts cpx tend to be subophitic; shows symplectite-like intergrowth at the rim; overgrown by obviously primary amphibole (which is in turn overgrown by low-T amphibole)
Orthopyroxene												some obscured objects can be interpreted as former opx, below 1%, so no consequence for the rock name
Amphibole	18	10		0.01	0.8	0.2	subhedral to anhedral	prismatic, interstitial		green to brownish green	overgrowth	grown interstitially and replaces cpx; often with relics of cpx; later overgrown by secondary fibrous to flaky actinolite
Opaque	2	1		0.05	1	0.3	anhedral	equant				magnetite with ilmenite lamellae

SECONDARY MINERALOGY

Alteration domain or feature: coarse grained zone Total alteration (%): 64.4
Recrystallization: not present Recrystallization degree: 0
General alteration comment: cpx totally altered, magnetite is altered in a mix of ilmenite, titanite & phyllosilicates with symplectite-like texture. presence of zircon

	Present (%)	Comment
Actinolite	15	fibrous corona replacing cpx, plag & hbl
Green hornblende	20	replacing cpx, in association with brown hbl
Brown hornblende	3	replacing cpx, igneous?
Epdote	1	replacing plag within cracks
Chlorite	10	fibrous, replacing plag & amphibole
Secondary plag.	10	replacing plag mainly in tiny cracks
Zeolite	1	replacing plag
Other Ca-Al sec.	0.5	clays replacing plag
Titanite	2	corona & inclusion within magnetite & ilmenite, euhedral within amphibole
Ilmenite	0.5	replace magnetite
Magnetite	1	replace primary magnetite (about 5%) and inclusion in amphibole replacing cpx
Chalcopyrite	0.2	globules within oxides
Pyrolite	0.2	interstitial & associated with chalcopyrite

Alteration domain or feature: fine grained zone Total alteration (%): 34.4
Recrystallization: not present Recrystallization degree: 0
General alteration comment: cpx is destabilized into amphibole+magnetite. some relics are present. plag is relatively fresh

	Present (%)	Comment
Actinolite	5	fibrous corona replacing cpx, plag & green hbl
Green hornblende	7	replacing cpx in association with brown hbl
Brown hornblende	2	replacing cpx, igneous?
Epdote	1	replacing plag within cracks
Talc	0.5	replacing opx, mixed with chlorite
Chlorite	3	fibrous, replacing plag & amphibole
Secondary plag.	4	replacing plag
Titanite	0.5	small euhedral grains within fiber of actinolite
Magnetite	1	in inclusion within amphibole replacing cpx
Chalcopyrite	0.3	interstitial near the contact with the coarse grained zone
Pyrolite	0.1	interstitial in assiciation with chalcopyrite
Other	10	destabilized cpx

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):
microvein within plag		0.05		

MICROSTRUCTURES

Microstructure comments
plag grains have tapered twins (deformation twinning), but overall sample looks like a typical hypidiomorphic granular oxide gabbro

SAMPLE: 335-1256D-Run11-EXJB-J6-TSB13-TS_13
Rock name: fine grained granoblastic dike with diorite intrusion
Rock comment: at the contact between dike and intrusion a mixed zone is developed with gradual grain size which is more altered than the dike; smooth contact
Unit/subunit: Run 11
Piece no.: J6

PRIMARY MINERALOGY Number of domains: 2 Nature of igneous domains: diorite probably intruded the dike

Igneous domain name: domain 1 Domain lithology: fine grained aphyric basalt, granoblastic overprinted
Domain grain size: fine grained Grain size distribution: equigranular
Domain texture: granoblastic Relative abundance (%): 20
General comment: granoblastic dike with primary intergranular or intersertal texture, converted to granulite facies assemblage

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	55	57		0.05	0.8	0.3	subhedral to euhedral	elongate	continuous zoning abundant		inclusion-bearing	many are dusty due to millions of oxide? inclusions; especially the cores
Clinopyroxene	23	28		0.05	0.4	0.2	anhedral to subhedral	prismatic		colorless		many of them show tiny oxide inclusions; some show presence of oxide exsolutions
Orthopyroxene	7	8		0.05	0.4	0.2	anhedral to subhedral	equant to prismatic		pale pinkish brown	inclusion-bearing	many of them bear inclusions of tiny oxides
Amphibole	6			0.01	0.05	0.04	subhedral	fibrous aggregates		pale green to green	overgrowth	overgrows cpx
Opaque	7	7		0.01	0.2	0.1	anhedral	equant				many tiny grains in cpx and opx

Igneous domain name: domain 2 Domain lithology: medium grained quartz diorite, cpx-amph-bearing
Domain grain size: medium grained Grain size distribution: seriate
Domain texture: granular Relative abundance (%): 80
General comment: modal estimations are very uncertain since domain is very inhomogeneous and complex; contains areas where either amphibole or cpx is prominent; qtz is patchy distributed; zircons inside

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	20	39		0.05	1.4	0.8	subhedral	tabular	patchy zoning abundant			very patchy altered: some with ghost cores
Clinopyroxene	20	27		0.1	1.6	1	subhedral	prismatic		pale green	twinnings	many show overgrowth of hbl as result of high T reaction and overgrowth of actinolite as a result of low T alteration; many form aggregates; some are chadacrysts in later hbl
Amphibole	40	27		0.05	1.2	0.5	subhedral	prismatic		pale green to brownish green	overgrowth	form clusters; some are poikilitic enclosing cpx; overgrowth in cpx
Opaque	1	2		0.01	0.4	0.1	anhedral to subhedral	equant				
Quartz	5	5		0.2	0.6	1.2	anhedral	equant				trails of inclusions, some are dusty, ingrowths of actinolite

SECONDARY MINERALOGY

Alteration domain or feature: background Total alteration (%): 13.4
Recrystallization: partial Recrystallization degree: 2
General alteration comment: the alteration degree increases with proximity of patch

	Present (%)	Comment
Actinolite	3	fibrous, replacing cpx & opx
Brown hornblende	1	replacing cpx, opx, igneous?
Epdote	0.5	replacing plag within microcracks
Talc	3	replacing opx
Smectite	0.5	replacing opx
Chlorite	2	fibrous, replacing plag & cpx & opx
Secondary plag.	3	replacing plag
Titanite	0.2	euhedral in inclusion in plag
Pyrolite	0.2	interstitial around opx

Alteration domain or feature: patch Total alteration (%): 49.6
Recrystallization: not present Recrystallization degree: 0
General alteration comment: zircon, apatite, biotite

	Present (%)	Comment
Actinolite	7	fibrous, replacing cpx, amphibole & plag
Green hornblende	7	replacing cpx, opx & brown hbl
Brown hornblende	2	blebs within cpx & amphibole
Epdote	2	replacing plag within microcracks
Talc	0.2	fibers within opx
Chlorite	7	fibrous, replacing plag & cpx, amphibole
Quartz	5	replacing plag or igneous ?
Secondary plag.	5	replacing plag
Zeolite	0.5	replace plag as inclusion
Other Ca-Al sec.	10	clays replacing plag
Titanite	3	euhedral in inclusion in plag, replacing oxides essentially close to veins and patch
Ilmenite	0.2	replacing magnetite as corona
Magnetite	0.5	interstitial as corona around other minerals. ~7% igneous
Chalcopyrite	0.2	interstitial

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):
vein thins and pinches out towards edge of thin		1	0.5	20
			0.5	20
			0.5	20
discontinuous		0.05		

MICROSTRUCTURES

Microstructure comments
a fracture crosscuts the sample, oblique to the contact
contact between a corase grained gabbro and a granoblastic fine grained gabbro. the coarse grained gabbro has a chilled margin. the contact is gradational to sharp

SAMPLE: 335-1256D-Run11-EXJB-J7-TSB14-TS_14
Rock name: fine grained phyric basalt granoblastic overprinted
Rock comment: granoblastic dike with primary intergranular or intersertal texture, converted to granulite facies assemblage; patchy distribution of oxide
Unit/subunit: Run 11
Piece no.: J7

PRIMARY MINERALOGY Number of domains: 1 Nature of igneous domains:

Igneous domain name: domain 1 Domain lithology: fine grained phyric basalt, granoblastic overprinted
Domain grain size: fine grained Grain size distribution: inequigranular
Domain texture: granoblastic Relative abundance (%):
General comment:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	52	55		0.05	1.4	0.4	subhedral	elongate	continuous zoning abundant		inclusion-bearing	many are dusty due to millions of oxide? inclusions; some have tiny cpx inclusions; some plag form glomerocrysts
Clinopyroxene	22	26		0.05	0.3	0.6	anhedral to subhedral	prismatic		colorless lamellae		many of them show tiny oxide inclusions; some show presence of oxide exsolutions
Orthopyroxene	10	12		0.05	0.6	0.2	anhedral to subhedral	prismatic		colorless	overgrowth	
Amphibole	7			0.01	0.1	0.05	subhedral	fibrous aggregates		pale green to green	overgrowth	overgrows cpx
Opaque	7	7		0.01	0.4	0.1	anhedral	granular				many tiny grains in cpx

SECONDARY MINERALOGY

Alteration domain or feature: background Total alteration (%): 27.2
Recrystallization: partial to strong Recrystallization degree: 3 tiny roundish oxides in cpx, unrecrystallized cpx, totally recrystallized opx
General alteration comment: presence of clays within plag

	Present (%)	Comment
Actinolite	4	fibrous, replacing cpx & opx in corona
Green hornblende	1	replacing cpx & brown hbl
Brown hornblende	1	replacing cpx
Talc	5	fibers around opx
Smectite	0.5	replacing opx
Chlorite	5	fibrous, replacing plag & pyrox
Quartz	0.5	replacing plag or igneous ?
Secondary plag.	8	replacing plag
Prehnite	1	interstitial
Titanite	1	euhedral in inclusion in plag, replacing oxides
Chalcopyrite	0.1	few grains in cpx & corona around pyrox
Pyrolite	0.1	few grains in cpx & corona around pyrox

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):

MICROSTRUCTURES

Microstructure comments
a fracture crosscuts the sample

SAMPLE: 335-1256D-Run11-EXJB--TSB29-TS_29
Rock name: medium grained olivine gabbronorite hbl-bearing
Rock comment: late amphibole as primary magmatic phase
Unit/subunit: Run 11
Piece no.:

PRIMARY MINERALOGY Number of domains: 1 Nature of igneous domains:

Igneous domain name: domain 1 Domain lithology: medium grained olivine gabbronorite, hbl-bearing
Domain grain size: medium grained Grain size distribution: poikilitic
Domain texture: subophitic to granular Relative abundance (%):
General comment:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Olivine	10	15		0.2	1.2	0.8	subhedral	prismatic			inclusion-bearing	contains mu-sized wormy exsolutions of probably oxides; trails of tiny dark inclusions (oxides?)
Plagioclase	35	42		0.05	1.2	0.8	subhedral	tabular to elongated	continuous zoning abundant		fast crystal growth	in part dusty appearance due to oxide dust
Clinopyroxene	15	23		0.4	5	2	anhedral	poikilitic		colorless	overgrowth	overgrown by actinolite
Orthopyroxene	8	14		0.4	3.5	1.2	subhedral	prismatic		pale pinkish brown		often encloses olivine
Amphibole	25	5		0.1	0.4	0.2	anhedral	prismatic		green to brown	interstitial growth	some crystals with brownish domains grew interstitially implying a magmatic origin; often associated with oxide
Opaque	2	1		0.1	0.8	0.4	anhedral	equant			interstitial	some of the larger oxides are associated with brown amphibole; lots of tiny secondary oxides around the olivines; largest tend to poikilitic growth

SECONDARY MINERALOGY

Alteration domain or feature: background Total alteration (%): 65
Recrystallization: not present Recrystallization degree: 0 no recrystallization
General alteration comment: olivine gabbro is quite altered. zoned plag and poikilitic cpx. olivine altered in chlorite-smectite green-red assemblage

	Present (%)	Comment
Actinolite	20	fibrous, replacing cpx & opx, plag olivine
Green hornblende	7	replacing cpx & amphibole
Brown hornblende	5	replacing cpx, opx & hbl or igneous
Talc	7	replacing cpx, opx, hbl, olivine in corona, mixed with chlorite
Smectite	4	replacing olivine & opx, ofen associated with chlorite
Chlorite	8	fibrous, replacing opx & plag & olivine
Secondary plag.	10	corona around plag laths
Magnetite	3	replacing olivine & pyrox within other alteration phases
Chalcopyrite	0.5	interstial, associated with secondary amphibole
Pyrolite	0.5	within altered opx & corona around olivine

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):

MICROSTRUCTURES

Microstructure comments
olivine has normal extinction

SAMPLE: 335-1256D-Run11-EXJB-TSB36-TS_36
Rock name: fine grained phyric basalt granoblastic overprinted
Rock comment: opx-vein; opx cluster
Unit/subunit: Run 11
Piece no.:

PRIMARY MINERALOGY Number of domains: 1 Nature of igneous domains:

Igneous domain name: domain 1 Domain lithology: fine grained aphyric basalt, granoblastic overprinted
Domain grain size: fine grained Grain size distribution: equigranular
Domain texture: granoblastic Relative abundance (%):
General comment:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	56	58		0.05	2.4	0.4	subhedral	elongate	patchy zoning abundant		inclusion-bearing	partly patchy zoning exhibiting "ghost cores"; some show dusty appearance; some have tiny cpx inclusions
Clinopyroxene	16	18		0.01	0.8	0.2	anhedral to subhedral	equant to prismatic		colorless lamellae		often contain tiny oxide inclusions; some show oxide exsolutions as lamellae; tend to form larger aggregates, some of these show overgrowth by brownish hbl
Orthopyroxene	16	18		0.05	0.8	0.2	subhedral	prismatic		pale pinkish brown	inclusion-bearing	many tiny inclusions of oxide; form clusters and a vein
Amphibole	5			0.01	0.1	0.05	subhedral	prismatic, fibrous aggregates		pale green to green; some brownish	mostly secondary as overgrowth of cpx; some are flaky and product of higher granoblastic stage	overgrows cpx
Opaque	6	6		0.01	0.2	0.1	anhedral	granular				many tiny grains in cpx and opx; exsolutions in cpx

SECONDARY MINERALOGY

Alteration domain or feature: background Total alteration (%): 14
Recrystallization: partial Recrystallization degree: 2 few inclusions of Ox within pyroxide. plag in laths and pyroxide intersticial.

General alteration comment: presence of opx vein

	Present (%)	Comment
Actinolite	3	replace opx & cpx
Green hornblende	2	replace cpx in patch and plag
Brown hornblende	1	replacing cpx in blebs
Talc	2	replacing opx
Smectite	1	replacing opx
Chlorite	3	replacing plag & pyrox
Quartz	0.2	interstitial, replacing plag
Secondary plag.	0.1	replacing plag
Titanite	1	euhedral in inclusion within plag
Chalcopyrite	0.3	interstitial and corona around opx
Pyrolite	0.3	interstitial and corona around opx
Other	0.1	rutile within cpx

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):
no veins				
multiple subparallel actinolite veins		0.01		

MICROSTRUCTURES

Microstructure comments
black actinolite-chlorite veins crosscut sample forming parallel to eachother or in conjugate sets

SAMPLE: 335-1256D-Run12-RCJB-RockB-TSB21-TS_21
Rock name: cryptocrystalline granoblastic dike with magmatic vein
Rock comment: granoblastic dike with gabbroic intrusion; intruded dioritic vein is much more altered than the dike host
Unit/subunit: Run 12
Piece no.: Rock B

PRIMARY MINERALOGY Number of domains: 2 Nature of igneous domains: host rock with magmatic vein

Igneous domain name: domain 2 Domain lithology: fine grained hornblende diorite, qtz bearing
Domain grain size: fine grained Grain size distribution: equigranular to poikilitic
Domain texture: granular Relative abundance (%): 10
General comment: two veins perpendicular to each other; mineral composition is very mafic; only a few plag grains; crystallization order: cpx - plag - amph, qtz; high water activity suppressing plag crystallization

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	15	23		0.2	0.8	0.4	anhedral to subhedral	tabular	continuous zoning abundant			interstitial to poikilitic, thus crystallizing after cpx: water-rich
Clinopyroxene	50	60		0.1	1.2	0.4	anhedral to subhedral	prismatic		colorless lamellae	overgrowth	probably magmatic; overgrowth of hbl, many hbl blebs; replaced by hbl by reaction; many secondary oxide inclusions
Amphibole	25	12		0.1	0.8	0.4	anhedral to subhedral	prismatic		green to brownish green	overgrowth	overgrows cpx; form blebs within cpx; tendency to poikilitic growth
Opaque	3	2		0.01	0.3	0.1	anhedral	equant				many tiny grains in cpx as alteration product
Quartz	3	3					anhedral	equant			interstitial	

Igneous domain name: domain 1 Domain lithology: cryptocrystalline phyric basalt, granoblastic overprinted
Domain grain size: cryptocrystalline Grain size distribution: inequigranular
Domain texture: granoblastic Relative abundance (%): 90
General comment:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	53	55		0.01	1.2	0.07	anhedral to subhedral	subequant	continuous zoning abundant		inclusion-bearing	many bear tiny cpx inclusions; few former phenocrysts with euhedral shape integrated into the granoblastic matrix
Clinopyroxene	16	18		0.01	0.2	0.06	anhedral	equant to prismatic		colorless	inclusion-bearing	many of them show inclusions of tiny oxides and cpx; some show exsolutions of oxide
Orthopyroxene	14	16		0.01	0.2	0.06	anhedral	equant to prismatic		colorless	inclusion-bearing	many of them show inclusions of tiny oxides and cpx; clusters and veins of opx showing slightly larger grain size
Amphibole	9	5		0.01	0.1	0.07	subhedral	prismatic		pale green to brownish green	overgrowth	probably primary granoblastic along veins and haloes; overgrown by actinolitic amphibole
Opaque	6	6		0.01	1.2	0.05	anhedral	equant				many tiny grains in cpx and opx

SECONDARY MINERALOGY

Alteration domain or feature: background Total alteration (%): 7.7
Recrystallization: complete Recrystallization degree: 6 some tiny roundish oxide in cpx/opx, plag is recrystallized
General alteration comment: relatively fresh background with two gabbroic intrusions. amphibole alteration vein with halo. the alteration degree increases when approaching the halo. gabbroic intrusion 100% altered within the halo.

	Present (%)	Comment
Actinolite	2	fibrous, replacing cpx & opx in corona
Green hornblende	1	replacing cpx
Talc	1	fibers around opx
Smectite	1	replacing opx
Chlorite	1	fibrous, replacing plag & cpx & opx
Secondary plag.	1	replacing plag
Titanite	0.5	euhedral in inclusion in plag, replacing oxides
Pyrolite	0.2	corona around opx

Alteration domain or feature: intrusion 1 Total alteration (%): 54.6
Recrystallization: not present Recrystallization degree: 0 presence of roundish opx
General alteration comment: relatively fresh background with two gabbroic intrusions. amphibole alteration vein with halo. the alteration degree increases when approaching the halo. gabbroic intrusion 100% altered within the halo.

	Present (%)	Comment
Actinolite	4	fibrous within cpx & opx cleavages
Green hornblende	8	replacing cpx, opx & brown hbl
Brown hornblende	7	replacing cpx or green hbl igneous?
Other amphibole	15	dusty amphibole replacing pyrox and other amphibole
Epdote	2	replacing plag within microcracks
Smectite	1	replacing opx
Chlorite	3	fibrous, replacing plag & cpx
Quartz	1	replacing plag
Secondary plag.	2	replacing plag
Prehnite	1	replacing plag & interstitial
Other Ca-Al sec.	6	silicate replacing plags
Titanite	0.5	euhedral & corona around magnetite
Magnetite	4	replacing cpx & amphibole: dusty cpx & amph + 5% igneous
Chalcopyrite	0.1	small grains in cpx

Alteration domain or feature: intrusion 2 Total alteration (%): 21
Recrystallization: not present Recrystallization degree: 0 presence of roundish opx
General alteration comment: some plag & cpx belong to the granoblastic background

	Present (%)	Comment
Actinolite	3	fibrous, replacing cpx & plag in corona
Green hornblende	4	replacing cpx, opx & brown hbl
Brown hornblende	4	replacing cpx, igneous?
Other amphibole		dusty amphibole replacing pyrox and other amphibole
Epdote	0.5	replacing the rare plag
Smectite	1	replacing opx
Chlorite	2	fibrous, replacing cpx & plag
Secondary plag.	0.5	replacing the rare plag
Other Ca-Al sec.	0.5	clays replacing plags
Titanite	0.5	replacing oxides
Ilmenite	1	within cpx
Magnetite	4	replacing cpx & amphibole: dusty cpx & amphibole + 2% igneous

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):
80% recrystallized		0.1		
at end of intrusion, tapers		0.05		
interconnected actinolite strings		0.05		
actinolite as intergrown needles, chlorite as "blebs"	crosscuts actinolite +	0.25	3	40

MICROSTRUCTURES

Microstructure comments
several veins crosscut the sample. one actinolite vein cross cuts an anastomosing pyrox vein.

SAMPLE: 335-1256D-Run12-RCJB-RockC-TSB22-TS_22
Rock name: cryptocrystalline granoblastic dike
Rock comment: granoblastic dikes with dry and wet domains; the wet domains develop from amphibole veins
Unit/subunit: Run 12
Piece no.: Rock C

PRIMARY MINERALOGY Number of domains: 2 Nature of igneous domains: two domains with different mineralogy

Igneous domain name: domain 1 Domain lithology: cryptocrystalline phyric basalt, granoblastic overprinted
Domain grain size: cryptocrystalline Grain size distribution: equigranular
Domain texture: granoblastic Relative abundance (%): 40
General comment: this domain was formed under low water activities: plag - cpx - opx - oxide; contains many linear alignments of minerals (bands of opx, plag)

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	52	53		0.01	1.2	0.09	anhedral to subhedral	subequant	continuous zoning abundant		inclusion-bearing	many bear tiny cpx and oxide inclusions; some former dusty glomerocrysts full with cpx inclusions (plus oxide) forming internal structure
Clinopyroxene	16	18		0.01	0.7	0.08	anhedral	equant to prismatic		colorless	inclusion-bearing	many show inclusions of tiny oxides
Orthopyroxene	18	20		0.01	0.2	0.09	anhedral to subhedral	prismatic		pale pinkish brown	inclusion-bearing	often arranged in bands or in clusters; show tiny oxide and cpx inclusions
Amphibole	5	3		0.01	0.09	0.08	subhedral	fibrous aggregates		pale green to green	overgrowth	
Opaque	6	6		0.01	0.2	0.06	anhedral	equant				many tiny grains in cpx and opx

Igneous domain name: domain 2 Domain lithology: cryptocrystalline phyric basalt, granoblastic overprinted
Domain grain size: cryptocrystalline Grain size distribution: equigranular
Domain texture: granoblastic Relative abundance (%): 60
General comment: this domain was formed under low water activities: plag - cpx - amph - oxide; associated with hornblende-rich veins

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	55	58		0.01	0.8	0.09	anhedral to subhedral	subequant to tabular	continuous zoning abundant		inclusion-bearing	many bear tiny cpx and oxide inclusions; former phenocryst with internal ghost structure formed by oxide dust
Clinopyroxene	14	18		0.01	0.2	0.08	anhedral	equant to prismatic		colorless	inclusion-bearing	many show inclusions of tiny oxides
Amphibole	23	18		0.01	0.2	0.08	subhedral	prismatic		pale green to brownish green	overgrowth	probably primary granoblastic associated with high-T veins; overgrown by actinolitic amphibole
Opaque	6	6		0.01	0.2	0.05	anhedral	equant				many tiny grains in cpx and opx

SECONDARY MINERALOGY

Alteration domain or feature: background middle Total alteration (%): 10
Recrystallization: complete Recrystallization degree: 6 absence of plag laths. zoned plag in magmatic patches, tiny roundish opaques within cpx & opx
General alteration comment: sample rich in veins. variation of alteration degree from right ot left, the side next to label is highly altered.

	Present (%)	Comment
Actinolite	3	fibrous, replacing cpx & opx in corona
Green hornblende	1	replacing cpx & opx
Brown hornblende	1	corona around cpx
Talc	1	replacing opx, mixed with chlorite
Chlorite	2	fibrous, replacing cpx opx & plag
Secondary plag.	1	replacing plag
Titanite	0.5	interstitial & around oxides
Magnetite	0.5	replacing cpx as dusty cpx + 7% igneous

Alteration domain or feature: background opx-poor Total alteration (%): 30.5
Recrystallization: complete Recrystallization degree: 6 absence of plag laths. zoned plag in magmatic patches. roundish oxide within cpx.
General alteration comment: sample rich in veins. variation of alteration degree from right ot left, the side next to label is highly altered.

	Present (%)	Comment
Actinolite	10	fibrous, replacing cpx & opx in corona
Green hornblende	1	replacing opx in corona
Epdote	1	replacing plag in corona
Talc	7	replacing opx, mixed with chlorite
Chlorite	7	fibrous, replacing opx & plag
Secondary plag.	0.5	replacing plag
Titanite	3	within amphibole replacing opx, corona around oxides
Magnetite	1	replacing cpx & amphibole: dusty cpx & amphibole + 5% igneous

Alteration domain or feature: background opx-rich Total alteration (%): 7
Recrystallization: complete Recrystallization degree: 6 absence of plag laths. zoned plag in magmatic patches
General alteration comment: sample rich in veins. variation of alteration degree close to the veins

	Present (%)	Comment
Actinolite	2	fibrous, replacing cpx & opx in corona
Green hornblende	0.5	replacing cpx
Talc	1	replacing opx, mixed with chlorite
Chlorite	2	fibrous, replacing opx & plag
Secondary plag.	0.5	replacing plag
Titanite	0.5	interstitial
Magnetite	0.5	replacing cpx as dusty cpx + 7% igneous

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):
branched	cross cuts actinolite +	0.25		
	crosscuts	0.01		
	crosscut by actinolite	0.2	1	50
		0.1	1	40

MICROSTRUCTURES

Microstructure comments
several veins crosscut the sample. a more diffuse actinolite vein is crosscut by another non-diffuse actinolite vein. a thin black vein (amphibole?) crosscuts all other veins and is sometimes refracted through the other vein material

SAMPLE: 335-1256D-Run12-RCJB-RockD-TSB23-TS_23
Rock name: microcrystalline granoblastic dike with magmatic vein
Rock comment: granoblastic dike with quartz dioritic intrusion
Unit/subunit: Run 12
Piece no.: Rock D

PRIMARY MINERALOGY Number of domains: 2 Nature of igneous domains: host rock with magmatic vein

Igneous domain name: domain 1 Domain lithology: microcrystalline aphyric basalt, granoblastic overprinted
Domain grain size: microcrystalline Grain size distribution: equigranular
Domain texture: granoblastic Relative abundance (%): 80
General comment: vein like features; some opx rich patches;

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	55	58		0.01	0.3	0.1	anhedral to subhedral	subequant	continuous zoning abundant		inclusion-bearing	many bear tiny cpx and oxide inclusions
Clinopyroxene	16	18		0.01	0.2	0.09	anhedral	equant to prismatic		colorless	inclusion-bearing	some show inclusions of tiny oxides; some show exsolutions of oxide
Orthopyroxene	15	17		0.01	0.2	0.09	anhedral to subhedral	prismatic		pale pinkish brown	inclusion-bearing	show tiny oxide and cpx inclusions
Opaque	7	7		0.01	0.2	0.08	anhedral	equant				many tiny grains in cpx and opx

Igneous domain name: domain 2 Domain lithology: fine grained quartz diorite,
Domain grain size: fine grained Grain size distribution: seriate to poikilitic
Domain texture: granular Relative abundance (%): 20
General comment: two veins interconnected by each other; large poik cpx; late primary amphibole replacing cpx and eventually opx ; mode is very uncertain due to very inhomogeneous distribution of minerals

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	15	26		0.1	1.2	0.4	subhedral	subequant to tabular	continuous zoning abundant		inclusion-bearing	many are stuffed with tiny cpx inclusions (photo); "anorthositic patches"; some form chadacrysts in cpx
Clinopyroxene	15	18		0.1	1.2	0.4	anhedral to subhedral	prismatic, poikilitic		colorless lamellae	overgrowth	probably magmatic; form oikocrysts with plag chadacrysts; replaced by hbl by reaction; hbl blebs; apparent oxide exsolutions as lamellae
Orthopyroxene	20	25		0.01	1.2	0.5	subhedral	prismatic		pale pinkish brown	inclusion-bearing	many tiny cpx inclusions
Amphibole	17	10		0.1	0.4	0.2	anhedral	prismatic		green to brownish green	overgrowth	overgrows cpx; form blebs within cpx; tendency to poikilitic growth
Opaque	1	1		0.01	0.4	0.1	anhedral	equant			interstitial, partly poikilitic	
Quartz	20	20		0.1	1.2	0.2	anhedral	equant			interstitial	

SECONDARY MINERALOGY

Alteration domain or feature: background Total alteration (%): 5
Recrystallization: strong to complete Recrystallization degree: 5 plag laths remaining, presence of poikilitic cpx
General alteration comment: fresh norite with few corona of talc +/- chlorite.

	Present (%)	Comment
Actinolite	1	fibrous, replacing cpx in corona
Talc	1	replacing opx, mixed with chlorite
Smectite	1	replacing opx
Chlorite	1	fibrous, replacing opx & plag
Secondary plag.	0.5	replacing plag
Titanite	0.5	corona around magnetite

Alteration domain or feature: coarse grained vein Total alteration (%): 14
Recrystallization: incipient Recrystallization degree: 1 presence of poikilitic cpx & opx
General alteration comment: alteration is higher in the magmatic vein. plag & pyrox full of inclusions giving a dusty aspect.

	Present (%)	Comment
Actinolite	2	fibrous, replacing opx in corona
Brown hornblende	4	poikilitic, probably igneous, appears as corona around cpx
Epdote	0.5	replacing plag within microcracks
Talc	2	replacing opx in corona, mixed with chlorite
Smectite	1	replacing opx
Chlorite	1	fibrous, replacing opx & plag
Secondary plag.	1	replacing plag
Titanite	0.5	corona around magnetite
Magnetite	2	replacing primary magnetite, about 5% of (original) igneous magnetite

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):
when vein cuts across intrusion it follows grain		0.05		
	possibly cuts 0.05mm	0.01		
		0.01		

MICROSTRUCTURES

Microstructure comments
foliation is defined by tabular plag laths oriented NE-SW in sample
foliation is defined by tabular plag laths oriented NE-SW in sample

SAMPLE: 335-1256D-Run12-RCJB-RockG-TSB24-TS_24
Rock name: fine grained granoblastic dike with magmatic vein
Rock comment: granoblastic dike with quartz dioritic intrusion
Unit/subunit: Run 12
Piece no.: Rock G

PRIMARY MINERALOGY Number of domains: 2 Nature of igneous domains: host rock with magmatic vein

Igneous domain name: domain 1 Domain lithology: fine grained aphyric basalt, granoblastic overprinted
Domain grain size: fine grained Grain size distribution: equigranular
Domain texture: granoblastic Relative abundance (%): 90
General comment: some linear alignment of minerals (opx, plag);

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	53	55		0.01	1.2	0.3	subhedral	tabular to elongated	continuous zoning abundant		inclusion-bearing	many bear tiny cpx and oxide inclusions
Clinopyroxene	18	20		0.01	0.4	0.2	anhedral	equant to prismatic		colorless	inclusion-bearing	many show inclusions of tiny oxides
Orthopyroxene	18	20		0.01	0.4	0.2	anhedral to subhedral	prismatic		pale pinkish brown	inclusion-bearing	show tiny oxide and cpx inclusions
Amphibole	5			0.01	0.4	0.2	subhedral	prismatic		pale green to green	overgrowth	a few may be primary grown in the granoblastic stage: most are overgrowth of actinolitic amphibole
Opaque		5		0.01	0.2	0.1	anhedral	equant				many tiny grains in cpx

Igneous domain name: domain 2 Domain lithology: fine grained oxide quartz diorite,
Domain grain size: fine grained Grain size distribution: equigranular
Domain texture: granular Relative abundance (%): 10
General comment: accessory zircon

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	36	37		0.1	1.2	0.4	subhedral	tabular, poikilitic	continuous zoning abundant			in part poikilitic (cpx, opx as chadacrysts; photo); trails of tiny oxide exsolutions
Clinopyroxene	15	17		0.1	0.6	0.3	subhedral	prismatic		colorless	inclusions	tend to form clusters; inclusions of oxide; overgrown by primary hbl; replaced by secondary hbl
Orthopyroxene	17	19		0.05	0.2	0.1	subhedral	prismatic		pale pinkish brown		obviously in paragenesis with opx; overgrown by actinolite and talc
Amphibole	8	5		0.01	0.4	0.2	anhedral to subhedral	prismatic		pale green to brownish green	overgrowth	overgrows cpx; form blebs within cpx
Opaque	7	7		0.01	0.8	0.3	anhedral	equant			interstitial	some with tendency to poikilitic growth; many tiny grains as alteration products
Quartz	15	15		0.1	1	0.4	anhedral	equant			interstitial	

SECONDARY MINERALOGY

Alteration domain or feature: background Total alteration (%): 3.5
Recrystallization: partial Recrystallization degree: 3 presence of large plag laths, tiny roundish oxides in cpx, a few in opx
General alteration comment:

	Present (%)	Comment
Actinolite	1	fibrous, replacing opx, cpx in corona
Green hornblende	0.5	blebs within cpx
Talc	0.5	replacing opx, mixed with chlorite
Chlorite	0.5	fibrous, replacing opx & plag
Titanite	0.5	corona around magnetite
Chalcopyrite	0.5	corona around opx

Alteration domain or feature: coarse grained vein Total alteration (%): 13.6
Recrystallization: incipient Recrystallization degree: 1 partially recrystallized pyrox without oxide inclusion
General alteration comment:

	Present (%)	Comment
Actinolite	3	fibrous, replacing cpx & opx in corona
Green hornblende	2	replacing cpx & opx
Brown hornblende	2	replacing opx cpx as corona
Epdote	0.1	replacing plag within microcracks
Talc	2	replacing opx in corona, mixed with chlorite
Smectite	0.5	replacing opx
Chlorite	3	fibrous, replacing cpx, opx & plag
Magnetite	1	within cpx & opx

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):
halo but no obvious vein			2	50
irregular, cut grain boundaries		0.05		
		0.01		
		0.07		

MICROSTRUCTURES

Microstructure comments

sample is cut by prominent magmatic vein with irregular non-planar shape. plag in and outside of vein appear weakly deformed with incipient recrystallization. some metamorphosed veins also present, which are crosscut by later narrower veins

SAMPLE: 335-1256D-Run12-RCJB-RockQ-TSB25-TS_25
Rock name: microcrystalline to fine grained granoblastic dike with banding and foliation
Rock comment: very heterogeneous rock with a orientated fabric in many parts, but not in all; marked banding due to parallel continuous or discontinuous bands with defined mode (mostly due to amount of opx and oxides); no crystal plastic deformation; mode estimation very uncertain due to inhomogeneity of the rock
Unit/subunit: Run 12
Piece no.: Rock Q

PRIMARY MINERALOGY Number of domains: 1 Nature of igneous domains:

Igneous domain name: domain 1 Domain lithology: microcrystalline to fine grained granoblastic dike, with banding and foliation
Domain grain size: microcrystalline to fine grained Grain size distribution: seriate
Domain texture: granular Relative abundance (%):
General comment:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	48	50		0.01	0.8	0.1	anhedral to subhedral	tabular to elongated	continuous zoning abundant		inclusion-bearing	crystals are in some banded zones larger and follow foliation; many bear tiny cpx and oxide inclusions (photo) as observed elsewhere
Clinopyroxene	18	20		0.01	0.8	0.1	anhedral to subhedral	equant to prismatic		colorless	inclusions	show inclusions of tiny oxides; some show exsolutions of oxide; some are poikilitic; cluster together with opx in bands or patches
Orthopyroxene	13	15		0.01	0.6	0.1	anhedral to subhedral	equant to prismatic		pale pinkish brown	inclusion-bearing	show tiny oxide and cpx inclusions; form clusters and bands, sometimes together with cpx
Amphibole	3			0.01	0.05	0.04	subhedral	fibrous aggregates		pale green to green	overgrowth	overgrows cpx
Opaque	15	15		0.01	0.8	0.1	anhedral	equant			aggregates	many tiny grains in cpx and opx; exsolutions in cpx; tend to form aggregates; some with "diffuse" boundaries

SECONDARY MINERALOGY

Alteration domain or feature: background Total alteration (%): 5
Recrystallization: complete Recrystallization degree: 6 plag laths do not remain, oxides in inclusion in every other mineral

General alteration comment: almost totally fresh out of alteration vein. halos are also almost absent

	Present (%)	Comment
Actinolite	0.5	fibrous, replacing cpx in corona
Green hornblende	0.5	replacing the 2 pyrox
Brown hornblende	0.5	replacing the 2 pyrox
Talc	0.5	replacing opx
Chlorite	0.5	fibrous, replacing opx & plag
Titanite	0.5	interstitial, corona around magnetite
Chalcopyrite	1	interstitial
Pyrolite	1	interstitial

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):
branching, discontinuous		0.05		
irregular, discontinuous		0.01		

MICROSTRUCTURES

Microstructure comments

strong alignment of coarse magmatic plag, oxides commonly appear elongated parallel to plag. some deformation twins are present in large plag grains. mineral alignments produce macroscopic appearance of banding. some recrystallized areas are fine-grained and isotropic. some plag phenocrysts have subgrains along their edge, but most boundaries are straight, suggesting a low amount of subgrain rotation recrystallization

SAMPLE: 335-1256D-Run12-RCJB-RockS-TSB26-TS_26
Rock name: contact: two granoblastic dikes with different grainsizes
Rock comment: contact of two granoblastic dikes with different grain sizes; contact represent obviously former dike/dike contact; modal zoning and absence of phenocrysts directly at the contact of the more fine grained imply that this zone correspond to a former chilled margin
Unit/subunit: Run 12
Piece no.: Rock S

PRIMARY MINERALOGY Number of domains: 2 Nature of igneous domains: mix of two lithologies within one sample

Igneous domain name: domain 1 Domain lithology: cryptocrystalline phyric basalt, granoblastic overprinted
Domain grain size: cryptocrystalline Grain size distribution: inequigranular
Domain texture: granoblastic Relative abundance (%): 60
General comment:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	50	50		0.01	1.2	0.09	anhedral to subhedral	subequant	continuous zoning abundant		inclusion-bearing	many bear tiny cpx inclusions; many former phenocrysts with euhedral shape integrated into the granoblastic matrix
Clinopyroxene	28	30		0.01	0.1	0.06	anhedral	equant to prismatic		colorless	inclusion-bearing	many of them show inclusions of tiny oxides and cpx
Orthopyroxene	13	15		0.01	0.1	0.07	anhedral	equant to prismatic		pale pinkish brown	inclusion-bearing	many of them show inclusions of tiny oxides and cpx
Opaque	5	5		0.01	1.2	0.05	anhedral	equant				many tiny grains in cpx and opx

Igneous domain name: domain 2 Domain lithology: fine grained aphyric basalt, granoblastic overprinted
Domain grain size: fine grained Grain size distribution: equigranular
Domain texture: granoblastic Relative abundance (%): 40
General comment:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	53	55		0.01	0.8	0.2	subhedral	tabular to elongated	continuous zoning abundant		inclusion-bearing	many bear tiny cpx inclusions; many former phenocrysts with euhedral shape integrated into the granoblastic matrix
Clinopyroxene	23	25		0.05	0.8	0.2	anhedral to subhedral	prismatic		colorless lamellae	inclusion-bearing	many of them show tiny oxide inclusions; some show presence of oxide exsolutions
Orthopyroxene	13	15		0.05	0.8	0.3	anhedral to subhedral	prismatic		pale pinkish brown	inclusion-bearing	many of them show tiny oxide inclusions
Opaque	5	5		0.01	0.2	0.06	anhedral	equant				many tiny grains in cpx and opx

SECONDARY MINERALOGY

Alteration domain or feature: coarse grain zone Total alteration (%): 8.8
Recrystallization: partial Recrystallization degree: 2 slightly recrystallized, presence of roundish opaques in pyrox, roundish pyrox inclusions within plag
General alteration comment: extremely fresh except in alteration veins

	Present (%)	Comment
Actinolite	1	fibrous, replacing cpx & opx in corona
Green hornblende	0.5	replacing cpx
Brown hornblende	1	replacing cpx, or igneous
Talc	1	replacing opx
Smectite	0.5	replacing opx
Chlorite	1	fibrous, replacing opx & plag
Secondary plag.	2	corona around plag laths
Titanite	0.5	euhedral in inclusion in plag
Magnetite	1	replacing cpx & opx with amphibole
Pyrolite	0.3	corona around opx

Alteration domain or feature: fine grain zone Total alteration (%): 4.5
Recrystallization: complete Recrystallization degree: 5 total recrystallization except in some plag-rich patches, 2% of plag lath
General alteration comment: extremely fresh except in alteration veins, sulfides are aligned

	Present (%)	Comment
Actinolite	0.5	replacing opx
Talc	0.5	replacing opx in corona, mixed with chlorite
Smectite	0.5	replacing cpx
Chlorite	1	fibrous, replacing opx & plag
Secondary plag.	0.5	corona around plag laths
Titanite	0.5	euhedral in inclusion in plag
Magnetite	0.5	replacing cpx & opx with amphibole
Chalcopyrite	0.25	corona around opx
Pyrolite	0.25	corona around opx

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):
irregular, discontinuous		0.01		

MICROSTRUCTURES

Microstructure comments

contact between granoblastic gabbro and fine grained gabbro. a vein parallels the contact then diverts away, oblique to the contact. black veins (amphibole) are parallel to eachother, but some form conjugate sets phenocrysts of plag have straight boundaries in contact with finer grained crystals

SAMPLE: 335-1256D-Run12-RCJB-RockT-TSB27-TS_27
Rock name: fine grained aphyric basalt granoblastic overprinted
Rock comment:
Unit/subunit: Run 12
Piece no.: Rock T

PRIMARY MINERALOGY Number of domains: 1 Nature of igneous domains:

Igneous domain name: domain 1 Domain lithology: fine grained aphyric basalt, granoblastic overprinted
Domain grain size: fine grained Grain size distribution: equigranular
Domain texture: granoblastic Relative abundance (%): 90
General comment: some linear alignment of minerals (opx, plag);

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	58	60		0.05	1	0.3	subhedral	elongate	continuous zoning abundant		inclusion-bearing	dusty appearance; some have tiny cpx inclusions
Clinopyroxene	16	18		0.01	0.4	0.1	anhedral to subhedral	prismatic		colorless		many of them show tiny oxide inclusions
Orthopyroxene	15	17		0.01	0.4	0.1	anhedral to subhedral	prismatic		pale pinkish brown		oxide inclusions; some form clusters
Amphibole	2			0.01	0.05	0.04	subhedral	fibrous aggregates		pale green to green	overgrowth	overgrows cpx
Opaque	5	5		0.01	0.2	0.1	anhedral	granular				many tiny grains in cpx

SECONDARY MINERALOGY

Alteration domain or feature: background Total alteration (%): 16
Recrystallization: incipient Recrystallization degree: 1 pyrox not recrystallized, presence of roundish opque within cpx, plag in laths
General alteration comment:

	Present (%)	Comment
Actinolite	3	fibrous, replacing cpx in corona, opx & plag
Green hornblende	1	replacing cpx & amphibole
Brown hornblende	1	replacing cpx & opx
Talc	3	replacing opx in corona, mixed with chlorite
Chlorite	3	fibrous, replacing cpx, opx & plag
Secondary plag.	3	replacing plag
Titanite	0.5	euhedral in inclusion in plag
Magnetite	1	replacing opx & cpx mixed with other alteration phases
Chalcopyrite	0.5	corona around opx

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):
prehnite has blocky appearance		0.1	2	40

MICROSTRUCTURES
Microstructure comments

SAMPLE: 335-1256D-Run12-RCJB-RockV-TSB28-TS_28
Rock name: fine grained granoblastic dike with coarser grained oxide noritic patches
Rock comment: granoblastic dike with patches of oxide norite; not clear whether these are related to magmatic process
Unit/subunit: Run 12
Piece no.: Rock V

PRIMARY MINERALOGY Number of domains: 2 Nature of igneous domains: host rock with coarser grained patches

Igneous domain name: domain 1 Domain lithology: fine grained aphyric basalt, granoblastic overprinted
Domain grain size: fine grained Grain size distribution: equigranular
Domain texture: granoblastic Relative abundance (%): 90
General comment: some linear alignment or clustering of opx

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	55	55		0.01	1	0.3	subhedral	elongate	continuous zoning abundant		inclusion-bearing	dusty appearance; some have tiny cpx inclusions
Clinopyroxene	15	15		0.01	0.2	0.1	anhedral to subhedral	prismatic		colorless		
Orthopyroxene	22	22		0.01	0.8	0.1	anhedral to subhedral	prismatic		pale pinkish brown	inclusion-bearing	oxide inclusions; form bands and clusters
Opaque	8	8		0.01	0.2	0.1	anhedral	granular				

Igneous domain name: domain 2 Domain lithology: fine grained oxide norite,
Domain grain size: fine grained Grain size distribution: equigranular
Domain texture: granular Relative abundance (%): 10
General comment: very patchy distributions of minerals; therefore mode estimation is very uncertain

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	40	40		0.05	0.8	0.3	subhedral	tabular	continuous zoning abundant		inclusion-bearing	many crystals have "cores" of tiny cpx (photo); some have ghost structures eventually displaying a former magmatic feature
Clinopyroxene	9	10		0.05	0.4	0.2	anhedral to subhedral	equant to prismatic		colorless lamellae		some seem to be interstitial some to tend to be poikilitic; some show oxide exsolutions as lamellae
Orthopyroxene	38	40		0.05	1.2	0.4	subhedral	prismatic, poikilitic		pale pinkish brown lamellae	inclusion-bearing	form large clusters; some grains are poikilitic; many tiny inclusions
Opaque	10	10		0.01	0.4	0.2	anhedral	equant			interstitial	some with tendency to poikilitic growth; some aggregates

SECONDARY MINERALOGY

Alteration domain or feature: background Total alteration (%): 5.4
Recrystallization: partial to strong Recrystallization degree: 3 no oxide inclusions in cpx/opx, plag in laths
General alteration comment:

	Present (%)	Comment
Actinolite	1	fibrous and replace cpx
Brown hornblende	0.5	blebs in cpx
Talc	1	replacing opx in fine needles
Chlorite	0.5	replace plag & opx as fine needles
Secondary plag.	2	corona around plag laths
Other Ca-Al sec.	0.1	clays replacing plag
Titanite	0.1	euhedral
Magnetite	0.2	replace cpx & opx in association with amphibole

Alteration domain or feature: patch Total alteration (%): 14.1
Recrystallization: incipient Recrystallization degree: 1 large poikilitic opx, roundish opques within cpx & opx
General alteration comment: undulose extinction in cpx & opx

	Present (%)	Comment
Actinolite	3	fibrous and replace opx & cpx
Green hornblende	1	replace opx within cracks in association with talc
Brown hornblende	1	blebs within opx
Talc	4	replacing opx in crack
Chlorite	3	replace plag & opx in cracks
Secondary plag.	1	corona around plag laths
Titanite	0.1	euhedral
Magnetite	1	replace cpx & opx in association with amphibole

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):
irregular, discontinuous		0.01 0.05		

MICROSTRUCTURES

Microstructure comments
fine-grained material showing contact with coarser region, is partially recrystallized, possible weak magmatic foliation. abundant narrow deformation twins in plag

SAMPLE: 335-1256D-Run13-RCJB-RockA-TSB31-TS_31
Rock name: microcrystalline granoblastic dike with magmatic patch
Rock comment: granoblastic dike with tonalitic intrusion
Unit/subunit: Run 13
Piece no.: Rock A

PRIMARY MINERALOGY Number of domains: 2 Nature of igneous domains: host rock with magmatic patches

Igneous domain name: domain 1 Domain lithology: microcrystalline aphyric basalt, granoblastic overprinted
Domain grain size: microcrystalline Grain size distribution: equigranular
Domain texture: granoblastic Relative abundance (%): 20
General comment:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	55	55		0.05	0.4	0.2	subhedral	elongate	continuous zoning abundant		inclusion-bearing	some show dusty appearance; some have tiny cpx inclusions
Clinopyroxene	24	25		0.01	0.2	0.1	anhedral	equant to prismatic		colorless lamellae		often contain tiny oxide inclusions; some show oxide exsolutions as lamellae
Orthopyroxene	12	13		0.01	0.2	0.1	anhedral	equant to prismatic		pale pinkish brown	inclusion-bearing	many tiny inclusions of oxide, a few plag
Opaque	7	7		0.01	0.2	0.08	anhedral	granular				many tiny grains in cpx and opx; exsolutions in cpx

Igneous domain name: domain 2 Domain lithology: fine grained tonalite, oxide rich
Domain grain size: fine grained Grain size distribution: seriate
Domain texture: granular Relative abundance (%): 80
General comment: with cpx, primary amphibole and accessory apatite and zircon

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	22	25		0.2	5	0.8	subhedral	tabular to elongated	continuous zoning abundant			some show trails of tiny oxide inclusions
Clinopyroxene	15	20		0.1	0.9	0.4	subhedral	prismatic		pale green	inclusion-bearing	form clusters; show oxide inclusions; many are enclosed by amphibole
Amphibole	20	17		0.05	1.2	0.4	anhedral	prismatic		green to brown	interstitial growth	form interstitial network; some are poikilitic, enclosing cpx; overgrown by actinolite
Opaque	8	8		0.1	4	0.4	anhedral	granular			aggregates	form large aggregates; largest tend to poikilitic growth
Quartz	30	30		0.1	0.8	0.4	anhedral	equant			interstitial	

SECONDARY MINERALOGY

Alteration domain or feature: background Total alteration (%): 7
Recrystallization: partial Recrystallization degree: 2 opx entirely recrystallized, cpx interstitial probably in the igneous position. numerous plag laths
General alteration comment: the degree of alteration increases close to the patch, especially within cpx & opx that are highly decomposed

	Present (%)	Comment
Actinolite	2	fibrous, replacing cpx & opx
Green hornblende	1	replace cpx
Brown hornblende	0.5	replacing cpx, or igneous
Talc	1	replacing opx in crack
Chlorite	1	replace plag & opx, cpx in cracks
Secondary plag.	1	replacing plag
Titanite	0.5	euhedral

Alteration domain or feature: patch Total alteration (%): 39.5
Recrystallization: not present Recrystallization degree: 0 no recrystallization
General alteration comment: qtz-diorite especially altered near the contact with the granoblastic lithology. only about 10% alteration in the core of the patch; about 50% alteration at the contact. presence of zircon, olivine, apatite. evidence of transformation of plag into qtz

	Present (%)	Comment
Actinolite	10	fibrous, replacing cpx
Green hornblende	5	replacing cpx & amphibole
Brown hornblende	3	replacing cpx, or igneous
Epdote	1	replacing plag
Talc	2	replacing opx
Smectite	1	replacing opx
Chlorite	10	replacing pyrox, hbl & plag
Quartz	5	replacing plag
Secondary plag.	1	replacing plag
Titanite	0.5	euhedral
Magnetite	0.5	within altered cpx & opx
Chalcopyrite	0.5	interstitial

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):
no veins				

MICROSTRUCTURES

Microstructure comments
fine-grained material, slightly recrystallized, possible weak alignment of lath-shaped plag grains.

SAMPLE: 335-1256D-Run13-RCJB-RockB-TSB30-TS_30
Rock name: fine grained aphyric basalt granoblastic overprinted
Rock comment:
Unit/subunit: Run 13
Piece no.: Rock B

PRIMARY MINERALOGY Number of domains: 1 Nature of igneous domains:

Igneous domain name: domain 1 Domain lithology: fine grained aphyric basalt, granoblastic overprinted
Domain grain size: fine grained Grain size distribution: equigranular
Domain texture: granoblastic Relative abundance (%):
General comment:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	53	55		0.05	0.8	0.3	subhedral	elongate	continuous zoning abundant		inclusion-bearing	some show dusty appearance; some have tiny cpx inclusions
Clinopyroxene	23	25		0.01	0.4	0.2	anhedral to subhedral	equant to prismatic		pale green lamellae		often contain tiny oxide inclusions; some show oxide exsolutions as lamellae
Orthopyroxene	12	15		0.05	0.4	0.2	subhedral	prismatic		pale pinkish brown	inclusion-bearing	many tiny inclusions of oxide, a few plag
Amphibole	1			0.01	0.09	0.08	subhedral	fibrous aggregates		pale green to green	overgrowth	overgrows cpx
Opaque	5	5		0.01	0.2	0.1	anhedral	granular				many tiny grains in cpx and opx; exsolutions in cpx

SECONDARY MINERALOGY

Alteration domain or feature: background Total alteration (%): 2.3
Recrystallization: partial to strong Recrystallization degree: 3 partial recrystallization of the pyrox. roundish ox inclusions in opx
General alteration comment: fresh out of the alteration veins

	Present (%)	Comment
Actinolite	0.5	fibrous, replacing cpx & opx
Green hornblende	0.1	corona around opx
Epdote	0.1	within plag cracks
Talc	0.5	replacing opx in corona, mixed with chlorite
Chlorite	0.5	replace plag & opx in association with talc
Titanite	0.1	euhedral
Magnetite	0.5	dusty inclusion in some pyrox

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):
vein net of 10+ veins		0.05		

MICROSTRUCTURES

Microstructure comments
black actinolite veins crosscut sample; most are parallel to eachother or form conjugate sets

SAMPLE: 335-1256D-Run13-RCJB-RockB-TSB33-TS_33
Rock name: fine grained aphyric basalt granoblastic overprinted
Rock comment: granoblastic dike; plain
Unit/subunit: Run 13
Piece no.: Rock B

PRIMARY MINERALOGY Number of domains: 1 Nature of igneous domains:

Igneous domain name: domain 1 Domain lithology: fine grained aphyric basalt, granoblastic overprinted
Domain grain size: fine grained Grain size distribution: seriate
Domain texture: granoblastic Relative abundance (%):
General comment:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	53	55		0.05	2	0.3	subhedral	tabular to elongated	continuous zoning abundant		inclusion-bearing	cpx inclusions; dust of oxide
Clinopyroxene	19	20		0.01	0.4	0.1	anhedral	equant to prismatic		colorless lamellae		often contain tiny oxide inclusions; some show oxide exsolutions as lamellae
Orthopyroxene	18	19		0.01	0.4	0.1	anhedral	equant to prismatic		pale pinkish brown	inclusion-bearing	many tiny inclusions of oxide
Amphibole	2			0.01	0.1	0.07	subhedral	prismatic		green	overgrowth	some actinolitic fibrous aggregates overgrows cpx
Opaque	6	6		0.01	0.2	0.08	anhedral	granular				many tiny grains in cpx and opx; exsolutions in cpx

SECONDARY MINERALOGY

Alteration domain or feature: background Total alteration (%): 6
Recrystallization: partial to strong Recrystallization degree: 3 tiny roundish oxides in cpx and few in opx
General alteration comment:

	Present (%)	Comment
Actinolite	1	replace cpx as fine needles
Brown hornblende	1	replacing cpx
Talc	1	replacing opx as corona
Chlorite	2	replace pyrox in association with talc, replacing plag
Titanite	0.5	euhedral, corona around magnetite
Chalcopyrite	0.5	corona around opx

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):
vein net, often "Y" shaped branches		0.01		

MICROSTRUCTURES

Microstructure comments
black actinolite veins crosscut sample; form parallel to eachother or form conjugate sets

SAMPLE: 335-1256D-Run14-EXJB-Folia-TSB32-TS_32
Rock name: microcrystalline to fine grained granoblastic dike with banding and foliation
Rock comment: very heterogeneous rock with a orientated fabric in many parts, but not in all; marked banding due to parallel continuous or discontinuous bands with defined mode (mostly due to amount of opx and oxides); no crystal plastic deformation; could be metamorphic brecciated sheeted dike; mode estimation very uncertain due to inhomogeneity of the rock
Unit/subunit: Run 14
Piece no.: Folia

PRIMARY MINERALOGY Number of domains: 1 Nature of igneous domains:

Igneous domain name: domain 1 Domain lithology: microcrystalline to fine grained granoblastic dike, with banding and foliation
Domain grain size: microcrystalline to fine grained Grain size distribution: seriate
Domain texture: granular Relative abundance (%):
General comment:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	48	50		0.01	0.8	0.1	anhedral to subhedral	tabular to elongated	continuous zoning abundant		inclusion-bearing	crystals are in some banded zones larger and follow foliation; some larger grains bear tiny cpx and oxide inclusions implying ghost structures from the magmatic stage
Clinopyroxene	5	5		0.01	1.6	0.1	anhedral to subhedral	equant to prismatic		colorless	inclusions	rare in the granoblastic matrix; larger grains are poikilitic or poikiloblastic (photo) enclosing plag, opx, oxide; some show exsolutions of oxide
Orthopyroxene	32	33		0.01	3	0.1	anhedral to subhedral	equant to prismatic		pale pinkish brown	inclusion-bearing	form clusters or bands; some are completely filled with roundish plag (photo); some show mm-long poikiloblastic columns following the foliation
Amphibole	2			0.01	0.1	0.05	subhedral	fibrous aggregates		pale green to green	overgrowth	overgrows cpx
Opaque	12	12		0.01	1.6	0.1	anhedral	equant			aggregates	tend to form aggregates and to enclose other phases, especially opx

SECONDARY MINERALOGY

Alteration domain or feature: background Total alteration (%): 1.7
Recrystallization: complete Recrystallization degree: 6 totally recrystallized with mineralogical zonations and opx/cpx veins
General alteration comment: fresh with alteration only in veins

	Present (%)	Comment
Actinolite	0.5	replace cpx as fine needles
Talc	0.2	replace opx as fine needles
Chlorite	0.2	replace plag & opx as fine needles
Titanite	0.1	euhedral
Magnetite	0.5	replace cpx & opx with amphiboles
Chalcopyrite	0.2	interstitial and within fracture in slightly altered pyrox

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):
follows grain boundaries in breccia matrix area		0.05	0.1	40
when cuts cpx crystal, entire crystal replaced by		0.05		

MICROSTRUCTURES

Microstructure comments
possible former hydrothermal breccia that has been metamorphosed. subangular clasts of plag and oxide are surrounded by a matrix of opx (possible former veins)
foliation in part of sample defined by alignment of oxides and plag
some layers of coarser plag appear to be weakly folded

SAMPLE: 335-1256D-Run15-EXJB-TSB35-TS_35
Rock name: microcrystalline phyric basalt granoblastic overprinted; with veins and patches
Rock comment: heterogeneous granoblastic dike with many strange features, like foliation, bands of opx and plag; roundish patches of opx; very oxide rich; many plag's with ghost cores; heterogeneity is eventually due to precursor structures and features of the educt (strongly hydrothermally altered, brecciated, dike)
Unit/subunit: Run 15
Piece no.:

PRIMARY MINERALOGY Number of domains: 1 Nature of igneous domains:

Igneous domain name: domain 1 Domain lithology: microcrystalline phyric basalt, granoblastic overprinted; with veins and patches
Domain grain size: microcrystalline Grain size distribution: inequigranular
Domain texture: granoblastic Relative abundance (%):
General comment:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	50	50		0.01	1	0.2	subhedral	subequant to tabular	continuous zoning abundant		inclusion-bearing	many oxide inclusions; some show magmatic ghost cores; obviously magmatic precursor structures: radiating aggregates, parallel alignments; plagioclase vein with rectangular kink; some elongated crystals at an opx vein show signs of plastic deformation; some parts between the opx-oxide clusters are oxide anorthositic domains
Clinopyroxene	1	1		0.01	0.4	0.2	anhedral	prismatic		colorless		grows poikilitically enclosing opx
Orthopyroxene	27	29		0.01	1	0.1	anhedral to subhedral	subequant		pale pinkish brown	inclusion-bearing	many oxide inclusions; form veins, clusters and roundish patches, associated with oxide; some with roundish plag inclusions; one vein with two opx types similar to poikilitic growth
Opaque	20	20		0.01	0.8	0.1	anhedral	granular			aggregates	tend to form aggregates enclosing other phases; very often associated with opx forming cluster and roundish patches; forming a seam at the border of a opx vein

SECONDARY MINERALOGY

Alteration domain or feature: background Total alteration (%): 2.3
Recrystallization: complete Recrystallization degree: 6 plag totally recrystallized, presence of roundish oxides in opx. opx in patches in a plag matrix
General alteration comment: noritic facies poor in cpx. cpx hardly altered.

	Present (%)	Comment
Actinolite	0.4	replacing opx
Brown hornblende	0.1	replacing opx
Talc	0.4	replacing opx, fibrous
Chlorite	0.4	replacing plag
Secondary plag.	0.3	replacing plag
Titanite	0.5	euhedral in inclusion within plag
Magnetite	0.1	replace opx with amphiboles
Chalcopyrite	0.1	interstitial in patches rich in opx

Alteration domain or feature: oxide-poor opx vein Total alteration (%): 4.2
Recrystallization: incipient Recrystallization degree: 3 presence of large poikilitic opx, opx contain small roundish oxides near the rim of the vein, presence of roundish recrystallized-like opx included in poikilitic ones. undulose extinction in opx
General alteration comment: veins are slightly more altered than background, grains are coarser. presence of secondary opx around rounded opx.

	Present (%)	Comment
Actinolite	1	replacing opx
Green hornblende	0.2	replacing opx
Brown hornblende	0.2	replacing cpx
Talc	1	replacing opx, fibrous
Chlorite	1	replacing plag & amphibole
Secondary plag.	0.5	replacing plag
Pyrolite	0.1	interstitial within opx

Alteration domain or feature: oxide-rich opx vein Total alteration (%): 3.8
Recrystallization: strong to complete Recrystallization degree: 5 abundance of small roundish oxides within opx, aspect similar to the "opx patches" in the background. aspect of the opx typically recrystallized
General alteration comment:

	Present (%)	Comment
Actinolite	0.5	replacing opx
Green hornblende	0.5	replacing opx
Brown hornblende	0.1	replacing opx
Talc	1	replacing opx
Chlorite	1	replacing opx & amphibole
Magnetite	0.5	replace opx with amphiboles
Pyrolite	0.2	interstitial within opx

Alteration domain or feature: plag vein Total alteration (%): 0.6
Recrystallization: incipient Recrystallization degree: 0 recrystallization feature not convincing. anhedral & elongated crystals. presence of roundish oxides in plag & opx -> related to magmatism or specific recrystallization?
General alteration comment: contains a few grain of opx rich in oxides. numerous dusty plag. presence of mechanical twins and undulose extinction in plag

	Present (%)	Comment
Actinolite	0.1	replacing opx
Chlorite	0.5	replacing plag & opx in veinlet

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):

MICROSTRUCTURES
Microstructure comments
magmatic veins crosscut the sample disaggregating the granoblastic gabbro. the magmatic veins form interesting patterns, some anastmosnig, others form 'V' shapes. the opx-rich veins have similar orientation of 'V's' but the plag-rich veins are in a different orientation. a larger magmatic vein crosscuts a large portion of the section disaggregating the granoblastic gabbro, forming a network vein

SAMPLE: 335-1256D-Run17-BSJB-TSB34-TS_34
Rock name: microcrystalline albitite oxide rich
Rock comment: rock is strongly altered, and the primary magmatic structures and textures are blurred. One end of the rock shows slightly coarser grain size. Primary mafic phase is probably oxide. Metamorphic phases: porphbyroblastic epidote and clinopyroxene; brownish hornblende; leucoxene (titanite/ilmenite-alteration). Primary mode very uncertain, due to the pervasive alteration.
Unit/subunit: Run 17
Piece no.:

PRIMARY MINERALOGY Number of domains: 1 Nature of igneous domains:

Igneous domain name: domain 1 Domain lithology: microcrystalline albitite, oxide rich
Domain grain size: microcrystalline Grain size distribution: equigranular
Domain texture: granular Relative abundance (%):
General comment:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	90			0.05	0.8	0.1	subhedral	subequant to tabular				strongly altered to dusty brown masses; ghost crystal from the magmatic stage are visible
Clinopyroxene				0.05	1.6	0.1	subhedral	prismatic		colorless	twinnings	secondary, probably diopside; grows in part poikilitically from the matrix
Amphibole				0.05	0.2	0.1	subhedral	flaky to fibrous		green to brownish green		high-T amphibole (brownish) together with epidote
Opaque	6			0.01	0.2	0.1	anhedral	granular				tend to form aggregates and to enclose other phases

SECONDARY MINERALOGY

Alteration domain or feature: background Total alteration (%): 57
Recrystallization: strong to complete Recrystallization degree: 5?
General alteration comment: presence of rutile needles within ilmenite. variation of the alteration degree

	Present (%)	Comment
Actinolite	3	replacing cpx
Green hornblende	5	replacing cpx
Brown hornblende	5	replacing cpx & amphibole
Epdote	7	replacing plag & interstitial
Chlorite	8	replacing plag & amph
Secondary plag.	5	replacing plag
Other Ca-Al sec.	15	clays replacing plag
Titanite	7	interstitial
Ilmenite	2	replacing magnetite

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):

MICROSTRUCTURES

Microstructure comments
weak banding (?)of regions of different grain size and possible slight preferred orientation of opaque grains

SAMPLE: 335-1256D-Run19-RCJB-RockC-TSB40-TS_40
Rock name: fine grained granoblastic dike with dioritic vein
Rock comment: at the contact between dike and intrusion a mixed zone is developed with gradual grain size which is more altered than the dike; sutured contact
Unit/subunit: Run 19
Piece no.: Rock C

PRIMARY MINERALOGY Number of domains: 2 Nature of igneous domains: diorite probably intruded the dike

Igneous domain name: domain 1 Domain lithology: fine grained aphyric basalt, granoblastic overprinted
Domain grain size: fine grained Grain size distribution: equigranular
Domain texture: granoblastic Relative abundance (%): 70
General comment: granoblastic dike with primary intergranular or intersertal texture, converted to granulite facies assemblage; a few grains of interstitial quartz

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	52	55		0.05	2	0.3	subhedral	tabular to elongated	continuous zoning abundant		inclusion-bearing	cpx inclusions; dust of oxide
Clinopyroxene	15	19		0.01	0.4	0.2	anhedral	equant to prismatic		colorless lamellae		often contain tiny oxide inclusions
Orthopyroxene	15	19		0.01	0.4	0.2	anhedral to subhedral	equant to prismatic		pale pinkish brown	inclusion-bearing	many tiny inclusions of oxide
Amphibole	5			0.1	0.4	0.2	anhedral	prismatic, flaky		green to brown		hbl flakes in the zone near the dioritic vein; some actinolitic fibrous aggregates overgrows cpx
Opaque	8	7		0.01	0.4	0.2	anhedral	granular				many tiny grains in cpx and opx; some grow interstitially enclosing matrix minerals

Igneous domain name: domain 2 Domain lithology: medium grained hornblende diorite, qtz bearing
Domain grain size: medium grained Grain size distribution: equigranular
Domain texture: granular Relative abundance (%): 30
General comment: large fresh hornblendes; zircon, apatite; interconnected with offshooting vein infiltrating granoblastic matrix; this offshoot contains quartz, the main vein not

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	23	32		0.1	3	1	subhedral to euhedral	tabular	patchy zoning abundant			very patchy altered: some with ghost cores
Clinopyroxene	1	1		0.1	0.9	0.3	anhedral to subhedral	prismatic, poikilitic		colorless to pale green	twinnings	poikilitic growth, only in the offshoot vein, enclosing granoblastic minerals
Amphibole	70	65		0.1	9	2	subhedral	prismatic		green to brownish green		forms clusters
Opaque	1	1		0.1	2	0.3	anhedral to subhedral	equant			interstitial	grains show elongated inclusions (titanite?)
Quartz	1	1		0.1	0.4	0.2	anhedral	equant				

SECONDARY MINERALOGY

Alteration domain or feature: background Total alteration (%): 16.5
Recrystallization: partial Recrystallization degree: 2 background with some ox inclusions in a cpx partially recrystallized and altered. numerous plag laths
General alteration comment: opx more altered than cpx

	Present (%)	Comment
Actinolite	3	replacing cpx & opx
Green hornblende	0.5	replacing cpx & opx
Brown hornblende	0.5	replacing pyrox
Epdote	2	replacing plag
Talc	3	replacing opx
Smectite	0.5	replacing opx
Chlorite	3	replacing plag & pyrox
Secondary plag.	2	replacing plag
Titanite	0.5	replacing magnetite as corona
Magnetite	0.5	replacing cpx with amphibole
Chalcopyrite	0.5	replacing opx as corona. interstitial
Pyrolite	0.5	interstitial and corona around opx

Alteration domain or feature: magmatic vein Total alteration (%): 41
Recrystallization: not present Recrystallization degree: 0 plag and amphibole assemblage without recrystallization
General alteration comment: presence of zircon and relics of magmatic poikilitic cpx

	Present (%)	Comment
Actinolite	4	replace amphibole & plag
Green hornblende	6	replacing brown hbl & former pyrox
Brown hornblende	10	55% of total brown hbl with 45% igneous. 10% replacing cpx and primary hbl
Epdote	1	replacing plag as laths
Chlorite	4	replacing plag
Secondary plag.	8	replacing plag as small veins
Other Ca-Al sec.	7	clays replacing plag
Titanite	1	replacing oxides in plag

Alteration domain or feature: vein halo Total alteration (%): 46.8
Recrystallization: partial Recrystallization degree: 2 idem background with more alteration
General alteration comment: presence of zircon

	Present (%)	Comment
Actinolite	13	replacing cpx & opx
Green hornblende	5	replacing cpx
Brown hornblende	2	replacing cpx & opx
Epdote	1	replacing plag
Talc	7	replacing opx
Smectite	3	replacing opx
Chlorite	10	replacing plag & pyrox
Secondary plag.	5	replacing plag
Titanite	0.5	replacing magnetite as corona
Ilmenite	0.3	corona around magnetite

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):
amphibole when cross cutting intrusion		0.1		
		0.1		
diffuse, not coherent linear feature, interconnected		0.1		
variable thickness, crosscuts magmatic intrusion.		0.1		
		0.05		

MICROSTRUCTURES

Microstructure comments
magmatic vein crosscuts sample. qtz exhibits undulose extinction; the plag exhibits deformation twinning; and the amphibole is sometmes kinked

SAMPLE: 335-1256D-Run20-RCJB-RockD-TSB38-TS_38
Rock name: contact: albitite, qtz-diorite
Rock comment: domain 1 is pervasively altered to albitite, and the primary magmatic structures and textures are blurred
Unit/subunit: Run 20
Piece no.: Rock D

PRIMARY MINERALOGY Number of domains: 2 Nature of igneous domains: contact between two lithologies; sutured contact

Igneous domain name: domain 1 Domain lithology: fine grained albitite, oxide rich
Domain grain size: fine grained Grain size distribution: equigranular
Domain texture: granular Relative abundance (%): 50
General comment: protolithic rock of unknown source is completely altered to albitite, and the primary magmatic structures and textures are blurred. Metamorphic phases: diopside, actinolite, chlorite, titanite/ilmenite-alteration. Primary mode very uncertain, due to the pervasive alteration.

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	85			0.05	0.8	0.4	subhedral	subequant to tabular				strongly altered to dusty brown masses; ghost crystals from the magmatic stage are visible
Clinopyroxene				0.05	0.4	0.2	anhedral	prismatic		colorless		secondary; probably low-grade diopside; grows in part poikilitically
Opaque	6			0.01	0.4	0.1	anhedral	granular			aggregates	tend to form aggregates and to enclose other phases

Igneous domain name: domain 2 Domain lithology: coarse grained quartz diorite,
Domain grain size: coarse grained Grain size distribution: equigranular
Domain texture: granular Relative abundance (%): 50
General comment: strongly altered; mode very uncertain, due to coarse-grained rock an only very limited rock in the ts; lots of secondary epidote

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	60	70		0.4	9	4	subhedral	tabular	patchy zoning abundant			strongly altered
Clinopyroxene	5	10		0.4	1.6	1	anhedral	prismatic		colorless	twinnings	overgrown and replaced/resorbed by brownish hbl
Amphibole	5	10		0.1	3	1	anhedral to subhedral	subequant		green to brownish green	interstitial growth	interstitial primary, overgrows cpx
Quartz		10					anhedral	equant			undulatory extinction	interstitial

SECONDARY MINERALOGY

Alteration domain or feature: coarse grained zone Total alteration (%): 85.5
Recrystallization: not present Recrystallization degree: 0
General alteration comment: coarse grain leucocratic lithology (vein?). no quartz observed. few apatites

	Present (%)	Comment
Actinolite	2	replacing cpx, amphibole
Green hornblende	3	replacing brown hbl & cpx
Brown hornblende	10	replacing cpx
Epdote	12	large & small laths within plag
Chlorite	15	globular & fibrous replacing plag
Quartz	5	replacing plag
Secondary plag.	20	replacing plag
Prehnite	1	replacing plag
Other Ca-Al sec.	15	clays replacing plag
Titanite	1	replacing magnetite as corona within plag & qtz
Other oxide	0.5	rutile included in plag
Chalcopyrite	0.5	corona around oxides
Pyrolite	0.5	inclusions within plag

Alteration domain or feature: fine grain zone Total alteration (%): 69.3
Recrystallization: partial Recrystallization degree: 0 presence of relics of large nonrecrystallized plag. small (altered) amphibole between plag crystals. oxides in amph
General alteration comment: no traces of potentially poikilitic pyrox left. few apatites.

	Present (%)	Comment
Actinolite	2	replacing amphibole, cpx
Green hornblende	1	replacing cpx
Brown hornblende	1	replacing cpx or igneous
Epdote	2	small laths within plag
Chlorite	8	fibrous & globular. replacing plag
Quartz	2	replacing plag
Secondary plag.	22	replacing Plag
Zeolite	2	replacing plag
Other Ca-Al sec.	25	clays replacing Plag
Titanite	4	euhedral & replacing magnetite as corona
Pyrolite	0.3	small grain in plag & cpx

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):

MICROSTRUCTURES

Microstructure comments
the contact between the coarse grained and finer grained unit is sharp, with some local mingling of units
coarse grained unit has kinked plag crystals and sometimes they exhibit patchy extinction

SAMPLE: 335-1256D-Run20-RCJB-TSB37-TS_37
Rock name: medium grained disseminated oxide olivine gabbro opx-bearing
Rock comment:
Unit/subunit: Run 20
Piece no.:

PRIMARY MINERALOGY Number of domains: 1 Nature of igneous domains:

Igneous domain name: domain 1 Domain lithology: medium grained disseminated oxide olivine gabbro, opx-bearing
Domain grain size: medium grained Grain size distribution: equigranular to poikilitic
Domain texture: subophitic to granular Relative abundance (%):
General comment:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Olivine	7	10		0.2	2	1	subhedral	prismatic			inclusion-bearing	contains mu-sized wormy exsolutions of probably oxides; roundish inclusions with radiating cracks (former melt inclusions?); trails of micrometer sized oxides
Plagioclase	40	48		0.05	2.4	0.8	subhedral	tabular to elongated	patchy zoning abundant			very patchy zonation exhibiting "ghost" cores; these "cores" also show dust of oxide particles
Clinopyroxene	20	35		0.2	2	0.8	anhedral	poikilitic		colorless	twinnings	overgrown by green to brownish hbl, which is in turn replaced by actinolite
Orthopyroxene	1	2		2	2	2	subhedral	prismatic		colorless		one grain, coexisting with cpx
Amphibole	25	4		0.1	0.4	0.2	anhedral	interstitial		green to brown	interstitial growth	some crystals with brownish domains grew interstitially implying a magmatic origin; often associated with oxide
Opaque	1	1		0.1	0.8	0.4	anhedral	equant			interstitial	some of the larger oxides are associated with brown amphibole; lots of tiny secondary oxides around the olivines; largest tend to poikilitic growth

SECONDARY MINERALOGY

Alteration domain or feature: background Total alteration (%): 55.9
Recrystallization: not present Recrystallization degree: 0 single alteration
General alteration comment: classical olivine-gabbronorite with highly altered cpx, opx and olivine. abundant smectite around olivine. 3 types of corona around olvine: oxide, smectite, chlorite+actinolite assembleges

	Present (%)	Comment
Actinolite	10	replacing pyrox, amphibole
Green hornblende	7	replacing pyrox & brown hbl
Brown hornblende	5	replacing cpx
Talc	2	replacing olivine & opx
Smectite	5	replacing olivine & opx as corona
Chlorite	8	replacing plag & olivine, fibrous at the grain boundaries. replacing probably pyrox also
Dusty CPX	10	replacing pyrox
Secondary plag.	3	replacing plag
Other Ca-Al sec.	1	clays replacing plag
Titanite	0.5	replacing oxides within hbl
Magnetite	3	replacing cpx within amphibole, corona around olivine & opx
Other oxide	0.2	rutile in amphibole cleavages
Chalcopyrite	1	replacing cpx with amphibole & corona around olivine
Pyrolite	0.2	replacing chalcopyrite within amphibole, within altered pyrox & corona around olivine

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):
as microveins around plagioclase in some areas		0.01		
composition varies along vein		0.1		

MICROSTRUCTURES

Microstructure comments
olivine has normal extinction

SAMPLE: 335-1256D-Run20-RCJB-TSB39-TS_39
Rock name: contact: albitite, qtz-diorite
Rock comment: domain 1 is pervasively altered to albitite, and the primary magmatic structures and textures are blurred
Unit/subunit: Run 20
Piece no.: Rock E

PRIMARY MINERALOGY Number of domains: 2 Nature of igneous domains: contact between two lithologies; sutured contact

Igneous domain name: domain 1 Domain lithology: microcrystalline albitite, oxide rich
Domain grain size: microcrystalline Grain size distribution: equigranular
Domain texture: granular Relative abundance (%): 90
General comment: protolithic rock of unknown source is completely altered to albitite, and the primary magmatic structures and textures are blurred; probably former granoblastic dike; metamorphic phases: chlorite, diopside, actinolite, titanite/ilmenite-alterations, titanite. No primary mode, due to the pervasive alteration.

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	95			0.05	0.4	0.1	subhedral	subequant to tabular				strongly altered to dusty brown masses; ghost crystal from the magmatic stage are visible
Opaque	2			0.01	0.2	0.1	anhedral	granular			aggregates	oxide distribution very uneven: two domains, one oxide-rich, and one nearly oxide-free

Igneous domain name: domain 2 Domain lithology: coarse grained quartz diorite,
Domain grain size: coarse grained Grain size distribution: equigranular
Domain texture: granular Relative abundance (%): 10
General comment: strongly altered; mode very uncertain, due to coarse-grained rock an only very limited rock in the ts

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	80	90		0.4	5	3	subhedral	tabular	patchy zoning abundant			strongly altered
Quartz		10		0.1	0.8	0.4	anhedral	equant			undulatory extinction	interstitial

SECONDARY MINERALOGY

Alteration domain or feature: coarse grained patch Total alteration (%): 64.5
Recrystallization: not present Recrystallization degree: 0
General alteration comment:

	Present (%)	Comment
Actinolite	5	replacing magmatic amphibole, fibers & plag
Epdote	4	replacing plag as laths
Chlorite	5	fibrous & globular, replacing plag & amphibole
Quartz	3	corona around plag
Secondary plag.	25	albite, replacing plag as veins within primary plag
Zeolite	1	replacing plag
Prehnite	1	replacing plag
Other Ca-Al sec.	20	clays replacing plag
Titanite	0.5	replacing oxides in plag & qtz

Alteration domain or feature: oxide-poor zone Total alteration (%): 87.5
Recrystallization: not present Recrystallization degree: 0
General alteration comment:

	Present (%)	Comment
Actinolite	2	replacing magmatic amphibole & plag, fibers
Green hornblende	1	replace cpx?
Epdote	4	replacing plag as small laths
Chlorite	6	replacing plag & qtz
Quartz	2	replacing qtz
Secondary plag.	32	replacing plag
Zeolite	1	replacing plag
Prehnite	3	replacing plag
Other Ca-Al sec.	35	clays replacing plag
Titanite	1.5	interstitial

Alteration domain or feature: oxide-rich zone Total alteration (%): 78
Recrystallization: not present Recrystallization degree: 0
General alteration comment:

	Present (%)	Comment
Actinolite	3	replacing magmatic amphibole & plag, fibers
Green hornblende	1	replace cpx?
Epdote	3	replacing plag as small laths
Chlorite	6	replacing plag & qtz
Quartz	1	replacing qtz
Secondary plag.	28	replacing plag
Prehnite	1	replacing plag
Other Ca-Al sec.	30	clays replacing plag
Titanite	5	replacing magnetite around crystals

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):
		0.1		
branch of qtz+chlorite+prehnite vein		0.2		
branch of the qtz/chlorite/actinolite/carbonate vein		0.1		
		0.1		
prehnite and chlorite replacing qtz		1		
carbonate present within qtz, chlorite along vein		1		

MICROSTRUCTURES

Microstructure comments
contact between fine grained and coarse grained rocks is sharp. the coarse grained section seems to have a chilled margin. several veins crosscut the sample but are parallel to eachother

SAMPLE: 335-1256D-Run20-RCJB-TSB41-TS_41
Rock name: fine grained phyric basalt granoblastic overprinted
Rock comment: opx vein
Unit/subunit: Run 20
Piece no.:

PRIMARY MINERALOGY Number of domains: 1 Nature of igneous domains:

Igneous domain name: domain 1 Domain lithology: fine grained aphyric basalt, granoblastic overprinted
Domain grain size: fine grained Grain size distribution: equigranular
Domain texture: granoblastic Relative abundance (%):
General comment:

	Present (%)	Original (%)	Vol. repl. (%)	Size min. (mm)	Size max. (mm)	Size mode (mm)	Shape	Habit	Zoning	Color, exsolution	Special features	Comment
Plagioclase	54	55		0.05	3	0.4	subhedral	elongated	continuous zoning abundant		inclusion-bearing	cpx inclusions; dust of oxide
Clinopyroxene	22	24		0.01	0.5	0.2	anhedral	equant to prismatic		colorless lamellae		often contain tiny oxide inclusions
Orthopyroxene	13	16		0.01	0.4	0.2	anhedral to subhedral	equant to prismatic		pale pinkish brown	inclusion-bearing	some bear inclusions of oxide
Amphibole	3			0.1	0.4	0.2	subhedral	fibrous		green		actinolitic fibrous aggregates overgrow cpx
Opaque	5	5		0.01	0.2	0.1	anhedral	granular				many tiny grains in cpx and opx; some grow interstitially enclosing matrix minerals
Quartz												*

SECONDARY MINERALOGY

Alteration domain or feature: background Total alteration (%): 14.2
Recrystallization: strong Recrystallization degree: 3 recrystallized pyrox with remaining plag laths. presence of roundish oxides wihtin cpx & few in opx. roundish cpx in plag
General alteration comment: dusty plag frequent. relatively altered sample according to the beerbachite standards

	Present (%)	Comment
Actinolite	3	replacing cpx, opx
Green hornblende	2	replacing cpx
Brown hornblende	1	replacing pyrox
Talc	2	replacing opx, fibrous in corona
Smectite	1	replacing opx
Chlorite	1	replacing plag & cpx, needles within primary grain
Quartz		2% igneous?
Secondary plag.	2	replacing plag
Titanite	1	replacing magnetite in corona
Magnetite	0.5	replacing pyrox with amphibole, corona around opx
Other oxide	0.1	rutile within cpx & plag
Chalcopyrite	0.1	corona around opx
Pyrolite	0.5	interstitial and corona around pyrox and oxide

VEINS AND HALOS

Vein fill compositional comment:	Vein generation:	Average vein thicknes (mm):	Halo width (mm):	Total halo (%):
		0.01		
		0.01		
		0.01		
		0.1		

MICROSTRUCTURES

Microstructure comments
several veins crosscut the sample. a thicker actinolite vein is crosscut by a thinner actinolite anhedral vein