

153-923A-1W-1 (Piece 6, 44 cm)
 Rock Name: GABBRO
 Grain size: Medium.
 Texture: Hypidiomorphic granular.

Observer: CDW

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Plagioclase.	54	60	0.2-4	Anhedral.	
Clinopyroxene.	36	40	0.2-5	Anhedral.	Partly altered to tremolite and chlorite.

ACCESSORY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Iron oxide minerals.	<1	<1	0.02-0.8	Anhedral.	

SECONDARY MINERAL NAME	PERCENT PRESENT	REPLACING/ FILLING
Brown /green amphibole.	<1	Replacing clinopyroxene.
Iron oxide minerals.	<1	Replacing clinopyroxene.
Secondary clinopyroxene.	<1	Replacing clinopyroxene.
Clay minerals.	1	Replacing plagioclase.
Chlorite.	2	Replacing plagioclase.
Actinolite.	3	Replacing clinopyroxene.
Epidote.	1	Replacing plagioclase.

VEIN/FRACTURE FILLING	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	ORIENTATION	DESCRIPTION
Prehnite and clay minerals.	90/10		0.05-0.4		TS not oriented. Array of subparallel veins. Post-date chlorite-coated cracks.
Chlorite veins.	100		<0.05		Chlorite-coated microcracks, no preferred orientation. Locally sheared.
Zeolite(?) and epidote.	90/10		0.2 mm		Cut by chlorite veins.

COMMENTS: #240
 STRUCTURE

Composite thin section: contact between a medium-grained gabbro and a coarse-grained gabbro displaying a well-preserved primary igneous texture. In the medium-grained half, plagioclase is found either as subhedral laths 1 to 3 mm in length showing a well-developed shape fabric, or as blocky subhedral to anhedral grains about 1 mm in size. Plagioclase lattice fabric is strong in this section. In the coarse-grained half, big plagioclase subhedral grains are weakly deformed (magmatic twins slightly curved and moderate undulose extinction) and partly recrystallized in a finer grained matrix (500 micrometers to 1 mm). Clinopyroxene is interstitial to ophitic in all the thin section. Brittle features include a few parallel <1 mm prehnite-epidote veins crosscutting the primary minerals.

153-923A-1W-1 (Piece 11A, 81 cm)
 Rock Name: OXIDE GABBRONORITE
 Grain size: Medium.
 Texture: Sheared, lineated.

Observer: NOR

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Plagioclase.	59	60	0.2-5	Anhedral.	Most of the plagioclase has recrystallized into fine grains (<0.5 mm).
Clinopyroxene.	22	23	0.2-4	Anhedral.	Partially recrystallized.
Orthopyroxene.	5	7	0.2-3	Subhedral/anhedral.	Elongated and bent.
Iron oxide minerals.	10	10	0.01-0.7	Anhedral.	Largely recrystallized.

SECONDARY MINERAL NAME	PERCENT PRESENT	REPLACING/ FILLING
Brown hornblende.	1	Replacing clinopyroxene.
Cummingtonite.	1	Replacing orthopyroxene.
Clay minerals.	2	Replacing orthopyroxene and plagioclase.

COMMENTS: #26L
 STRUCTURE

Pyroxene is heterogeneously recrystallized. Porphyroclasts are 1.5-3 mm in size. Plagioclase is totally recrystallized with the exception of a large (3 mm) relict grain. Neoblasts have uniform 200-300 µm grain size, are equant, anhedral, and contain a strong lattice fabric. Ten percent oxides in the matrix.

SITE 923

153-923A-2R-1 (Piece 4, 27 cm)
 Rock Name: LINEATED MICROGABBRO
 Grain size: Fine.
 Texture: Porphyroclastic, lineated.

Observer: CDW

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Plagioclase.	70	70	0.1–0.6	Anhedral.	Mostly not twinned; very few grains up to 1 mm.
Clinopyroxene.	20	20	0.05–0.8	Anhedral.	
Olivine.	3	3	0.2–1	Anhedral.	
Orthopyroxene.	5	5	0.1–0.3	Anhedral.	
ACCESSORY MINERAL NAME					
Brown amphibole.	1	1	<0.2	Anhedral.	Interstitial and at least partly igneous. Also part of high-temperature recrystallized assemblage.
Iron oxide minerals.	<<1	<<1	0.01–0.1	Anhedral.	
Sulfide minerals.	<<1	<<1		Anhedral.	
SECONDARY MINERAL NAME					
Amphibole.	1	REPLACING/ FILLING Clinopyroxene.	0.01–0.2	Anhedral.	Partly replacing clinopyroxene, partly late magmatic following clinopyroxene. The alteration products occur in trace amounts.
Iron oxide minerals.	<1	Clinopyroxene, olivine.			
Secondary plagioclase	<<1	Plagioclase.			
Amphibole.	<1	Clinopyroxene, olivine, plagioclase.			
Chlorite.	<1	Clinopyroxene, olivine, plagioclase.			
VEIN/FRACTURE FILLING					
Chlorite and smectite.	PERCENT 100	SIZE 0.1	ORIENTATION 30–40		Arrays of subparallel veins, some of them sheared.

Plagioclase is extensively recrystallized, average secondary grain size 0.1–0.2 mm. Alteration of metagabbro is very low, slightly enhanced near chlorite veins. Strong crystallographic fabric.

STRUCTURE

Very rare plagioclase, clinopyroxene and olivine (about 1 %) porphyroclasts 1–2 mm in size are embedded in a fine-grained matrix whose grain size ranges from 500 to less than 100 micrometers. Porphyroclasts have elongated anhedral shapes with core/mantle textures. Grains in the matrix are either elongated anhedral with core/mantle textures, or equant with relatively straight triple junction boundaries. Lattice fabric is very strong for plagioclase and olivine, much less pronounced for clinopyroxene.

153-923A-2R-1 (Piece 8, 70 cm)

Observer: CDW

Rock Name: GABBRO
 Grain size: Medium.
 Texture: Hypidiomorphic granular.

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Plagioclase.	60	60	0.1–2	Subhedral.	Partially recrystallized.
Clinopyroxene.	30	36	0.1–8	Anhedral.	In a few grains recrystallized/partly altered to tremolite and amphibole.
Olivine.	2	3	0.1–3	Anhedral.	Partly replaced by chlorite, serpentine, magnetite, and talc.
Orthopyroxene.	1	1	0.1–1.2	Subhedral.	Slightly recrystallized, fresh.
ACCESSORY MINERAL NAME					
Iron oxide minerals.	<<1	<<1	0.02–0.4	Anhedral.	Within plagioclase.
Sulfide minerals.	<<1	<<1		Anhedral.	
Apatite.	<<1	<<1	0.02–0.05		
SECONDARY MINERAL NAME					
Secondary clinopyroxene.	PERCENT <<1	REPLACING/ FILLING Replacing olivine.			In corona of equant grains around olivine.
Iron oxide minerals.	<1	Replacing olivine.			
Talc.	<<1	Replacing olivine.			
Actinolite.	4	Replacing olivine, clinopyroxene, and orthopyroxene.			
Brown/green amphibole.	2	Replacing clinopyroxene.			
Clay minerals.	1	Replacing clinopyroxene.			
VEIN/FRACTURE FILLING					
Smectite and chlorite.	PERCENT 100	SIZE <0.2	ORIENTATION		Arrays of thin veins and chlorite smectite-coated cracks, dipping preferentially 40°–50° in TS plane.

STRUCTURE

Primary igneous texture is overprinted by solid-state deformation. Large (<1 cm) plagioclase laths are slightly bent, except when included in clinopyroxene oikocrysts. Recrystallization of clinopyroxene into a mixture of fine-grained (<1 mm) brown amphibole and minor secondary clinopyroxene. Recrystallization of primary plagioclase crystals varies in intensity from several percent to 100%. Recrystallized grain size ranges from about 300 micrometers to about 50 micrometers. Mechanical twins are common. A single highly elongated (aspect ratio of 1/10) olivine porphyroclast occurs in the thin section. It is strongly recrystallized and has a poorly recovered substructure. Distribution of recrystallization in the thin section seems rather random and no structure-like shear zones can be delineated.

153-923A-2R-2 (Piece 1, 44 cm)

Observer: NOR

Rock Name: GABBRO

Grain size: Medium.

Texture: Sheared, lined.

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Plagioclase.	56	60	0.1–2.5	Anhedral.	Totally recrystallized.
Clinopyroxene.	20	33	0.1–7	Anhedral.	Highly deformed.
Orthopyroxene.	1	4	0.1–1	Subhedral/ Anhedral.	Highly altered to cummingtonite. Partially deformed.

ACCESSORY

MINERAL NAME	PERCENT	PERCENT ORIGINAL	SIZE	MORPHOLOGY	DESCRIPTION
Iron oxide minerals.	3	3	0.02–0.3	Anhedral.	Mostly recrystallized.

SECONDARY

MINERAL NAME	PERCENT	REPLACING/ FILLING
Brown hornblende.	2	Replacing clinopyroxene.
Chlorite.	6	Replacing clinopyroxene and plagioclase.
Actinolite.	5	Replacing clinopyroxene.
Tremolite.	3	Replacing clinopyroxene.
Cummingtonite.	2	Replacing orthopyroxene.
Clay minerals.	1	Replacing orthopyroxene.
Secondary plagioclase.	1	Replacing plagioclase.

VEIN/FRACTURE

FILLING	PERCENT	SIZE	ORIENTATION
Chlorite and clay minerals.	0.5	1, 0.5	2 veins, crosscutting the sheared structure.
Actinolite and chlorite.	0.5	<0.1	Many veins, crosscutting the sheared structure.

STRUCTURE

Large grain-size variations are observed in this thin section, symmetrically distributed relative to a 2-mm-thick ultramylonitic shear zone. In the coarser grained facies, plagioclase occurs mainly as slightly elongated anhedral porphyroclasts (1–2.5 mm in size) embedded in a matrix of finer grained neoblasts. Very high aspect ratio (>1/10) of previous plagioclase porphyroclasts can be inferred from the shape of neoblasts clusters showing a distinctly higher optical continuity relatively to the background recrystallized matrix (ghost porphyroclasts, recrystallized by progressive subgrain rotation). Grain size in the matrix ranges from 100 to 200 micrometers. Plagioclase, both porphyroclastic and recrystallized, show an extreme lattice fabric. Pyroxene occurs as porphyroclasts ranging in size from 1 mm to more than 5 mm, variably recrystallized at their edge. Some brown amphibole is associated with recrystallized clinopyroxene. Small pyroxene porphyroclasts frequently form necklaces parallel to the elongation of plagioclase porphyroclasts. The neoblast to porphyroclast ratio increases toward the ultramylonitic shear zone. This one is made of a very fine-grained mosaic of equant anhedral plagioclase neoblasts (50 micrometers and less). The plagioclase lattice fabric is much less developed in this shear zone. A few small (100–200 micrometers) elongated pyroxene porphyroclasts occur in this ultramylonitic shear zone. They are extensively replaced by green amphibole.

153-923A-2R-2 (Piece 8, 89 cm)

Observer: CDW

Rock Name: GABBRO

Grain size: Medium.

Texture: Porphyroclastic.

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Plagioclase.	55	55	0.1–1	Anhedral.	Larger grains show twinning, but are deformed and have mosaic texture.
Olivine.	9	10	0.1–0.6	Anhedral/subhedral.	Fresh, showing cracks with iron oxide minerals.
Clinopyroxene.	34.5	35	0.2–3	Anhedral/subhedral.	
Orthopyroxene.	3	3	0.1–1	Anhedral.	Generally fresh, only small cracks.

ACCESSORY

MINERAL NAME	PERCENT	PERCENT ORIGINAL	SIZE
Iron oxide minerals.	<<1	<<1	0.02–0.8
Sulfide minerals.	<<1	<<1	

SECONDARY

MINERAL NAME	PERCENT	REPLACING/ FILLING
Iron oxide minerals.	1	Replacing olivine and clinopyroxene.
Clay minerals.	<1	Replacing olivine and clinopyroxene.
Serpentine.	<<1	Replacing olivine.
Actinolite.	<<1	Replacing clinopyroxene.

COMMENTS: #244

Very little alteration.

STRUCTURE

Primary igneous texture has been pervasively overprinted by solid-state deformation. Plagioclase is anhedral. Grain size varies from 2 mm to a few hundred micrometers. Coarser grains are variably elongated with irregular grain boundaries, while finer grains are either elongated or more equant, with triple junction grain boundaries. Mechanical twins and undulose extinction are omnipresent. Plagioclase lattice fabric is very strong. Olivine occurs in millimeter clusters of recrystallized grains several hundreds micrometers in size, or in necklaces of grains down to 100 micrometers in size. Clinopyroxene is more blocky, coarser grained (a few hundred micrometers to a few mm) and still presents magmatic twins.

SITE 923

153-923A-2R-3 (Piece 1, 2 cm)
 Rock Name: LINEATED OLIVINE GABBRO
 Grain size: Medium.
 Texture: Weakly lineated.

Observer: CDW

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Plagioclase.	67	67	0.2-3	Anhedral.	
Clinopyroxene.	20	26	0.2-4	Anhedral.	Slightly altered. In part replaced by tremolite and talc.
Olivine.	2	7	0.2-2	Anhedral.	More or less altered to talc, chlorite, ± iron oxide minerals.
ACCESSORY					
MINERAL NAME	PERCENT	PERCENT	SIZE	MORPHOLOGY	DESCRIPTION
Iron oxide minerals.	<<1	<<1			
Sulfide minerals.	<<1	<<1	0.01-0.15		
SECONDARY					
MINERAL NAME	PERCENT	REPLACING/ FILLING	SIZE	MORPHOLOGY	DESCRIPTION
Iron oxide minerals.	<1	Replacing olivine.			
Talc.	<1	Replacing olivine.			
Actinolite.	4	Replacing clinopyroxene, olivine, plagioclase, and amphibole.			
Clay minerals.	4	Replacing olivine and plagioclase.			
Chlorite.	1	Replacing clinopyroxene and plagioclase.			
Serpentine.	<1	Replacing olivine.			
Tremolite.	1	Replacing clinopyroxene.			
VEIN/FRACTURE FILLING					
MINERAL NAME	PERCENT	PERCENT	SIZE	ORIENTATION	DESCRIPTION
Green amphibole.	100		0.05	60°-70° dip	
Chlorite and smectite.	100		0.05		No preferred orientation, connects with array of microcracks filled with chlorite, green amphibole, or actinolite.

COMMENTS: #243

Alteration is a linked array of chlorite or actinolite-coated microcracks.

STRUCTURE

Olivine is pervasively altered. Original olivine grains were elongated and/or formed necklaces of more equant grains. Some subequant plagioclase laths are aligned parallel to this olivine elongation direction, but most of the plagioclase crystals are anhedral, equant, and have a preferred orientation of their mechanical twins. Plagioclase lattice fabric is extreme. Pyroxene are more equant, but some grains present slightly elongated shapes, parallel to the olivine lineation. Pyroxene cleavage is weakly aligned parallel to mesofabric. Grain size of all minerals ranges continuously from 3 mm to 100 micrometers, with a most frequent grain size of about 1 mm.

153-923A-3R-1 (Piece 2, 10 cm)

Rock Name: OXIDE GABBRO
 Grain size: Coarse to fine.
 Texture: Augen gneissic.

Observer: CDW

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Plagioclase.	55	52	0.1-4	Anhedral.	
Clinopyroxene.	28	30	0.2-8	Anhedral.	Initial alteration to tremolite and chlorite.
Orthopyroxene.	2.5	3	0.1-2	Anhedral.	Cracks with iron oxide minerals and serpentine.
Opaque minerals.	12	12	0.05-4	Anhedral.	Ilmenite, a trace of pyrrhotite.
SECONDARY					
MINERAL NAME	PERCENT	REPLACING/ FILLING	SIZE	MORPHOLOGY	DESCRIPTION
Amphibole.	1	Clinopyroxene.	0.05-0.5	Anhedral.	Marginal and within clinopyroxene and ilmenite.
Tremolite/chlorite.	1	Clinopyroxene.			
Serpentine/magnetite	1	Olivine.			

COMMENTS: #247

STRUCTURE

Plagioclase is strongly recrystallized. Neoblasts are 200-300 µm in size. Rare relict grains have magmatic twins. Porphyroclasts are elongated and present mechanical twins. A 5 mm thick shear zone is defined by a higher concentration of plagioclase neoblasts. Pyroxene are recrystallized in the shear zone only. The shear zone is devoid of oxides but contains olivine and possibly derives from an olivine gabbro vein crosscutting the ferrogabbro.

153-923A-3R-1 (Piece 3, 34 cm)
 Rock Name: OLIVINE GABBRO
 Grain size: Fine to medium.
 Texture: Lineated, porphyroclastic.

Observer: CDW

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Plagioclase.	50	50	0.1-2	Anhedral.	
Olivine.	10	10	0.1-1	Anhedral.	
Clinopyroxene.	30	30	0.2-4	Anhedral.	
Orthopyroxene.	<1	<1	1.2	Anhedral.	

ACCESSORY

MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Iron oxide minerals.	<<1	<<1	0.02-0.6	Anhedral.	Ilmenite.
Sulfide minerals.	<<1	<<1		Anhedral.	Chalcopyrite and pyrrhotite.

SECONDARY

MINERAL NAME	PERCENT PRESENT	REPLACING/ FILLING	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Amphibole.	<1	Clinopyroxene.			Light-brown, always around clinopyroxene grains.
Iron oxide minerals.	<<1	Replacing olivine.			
Clay minerals.	<<1	Replacing olivine.			
Chlorite.	<<1	Replacing plagioclase and clinopyroxene.			
Actinolite.	<<1	Replacing clinopyroxene.			

COMMENTS: #245

All alteration minerals occur in trace amounts, rock is very fresh.

STRUCTURE

The primary texture has been pervasively overprinted by solid-state deformation. Plagioclase is anhedral. Grain size varies from 2 mm to a few hundred micrometers. Coarser grains are variably elongated with irregular grain boundaries, while finer grains are either elongated or more equant, with triple junction grain boundaries. Mechanical twins and undulose extinction are omnipresent. Plagioclase lattice fabric is very strong. Olivine occurs in millimeter clusters of recrystallized grains several hundreds micrometers in size, or in necklaces of grains down to 100 micrometers in size. Clinopyroxene is more blocky, coarser grained (a few hundred μm to a few mm) and still presents magmatic twins.

153-923A-3R-1 (Piece 4, 54 cm)
 Rock Name: OLIVINE GABBRO
 Grain size: Coarse to fine.
 Texture: Augen gneissic.

Observer: CDW

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Plagioclase.	65	65	0.1-3	Anhedral.	
Clinopyroxene.	25	30	0.2-8	Anhedral.	Some parts altered to tremolite, talc, and iron oxide minerals.
Olivine.	3	4	0.1-2	Anhedral.	Partly altered to talc and magnetite.
Orthopyroxene.	1	1	1	Anhedral.	

ACCESSORY

MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Opaque minerals.	<<1	<<1	0.02-1		Ilmenite, pyrrhotite.

SECONDARY

MINERAL NAME	PERCENT PRESENT	REPLACING/ FILLING	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Amphibole.	<1	Clinopyroxene.	0.03-0.3		Brown.
Tremolite, talc.	5	Clinopyroxene.			
Talc, magnetite.	1	Olivine.			

COMMENTS: #248

STRUCTURE

Plagioclase is extensively recrystallized. Neoblasts (about 300 μm) have irregular grain boundaries, and strong lattice and shape fabrics. Clinopyroxene is only weakly recrystallized. Clinopyroxene is slightly elongated and still contains plagioclase inclusions that represent former poikilitic texture.

SITE 923

153-923A-3R-1 (Piece 5B, 95 cm)

Observer: CDW

Rock Name: OLIVINE GABBRO

Grain size: Coarse to medium.

Texture: Plagioclase-olivine adcumulate, mildly deformed.

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Plagioclase.	80	80	0.2-10	Anhedral.	
Clinopyroxene.	13	15	0.4-7	Anhedral.	Incipient alteration to tremolite, talc, and chlorite.
Olivine.	4	5	0.1-4	Anhedral.	Partly altered to serpentine, talc, and iron oxide minerals.
Orthopyroxene.	<1	<1	1.2		

ACCESSORY

MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY
Iron oxide minerals.	<1	<1	0.03-0.8	Anhedral.
Sulfide minerals.	<<1	<<1		Anhedral.

SECONDARY

MINERAL NAME	PERCENT	REPLACING/FILLING	MORPHOLOGY	DESCRIPTION
Brown amphibole.	1	Replacing clinopyroxene.	Anhedral.	Light brown, within clinopyroxene and marginal.
Actinolite.	1	Replacing olivine, plagioclase, clinopyroxene, and orthopyroxene.	Anhedral.	
Iron oxide minerals.	<1	Replacing olivine.		
Talc.	<1	Replacing olivine and orthopyroxene.		
Chlorite.	<1	Replacing olivine and plagioclase.		
Clay minerals.	<1	Replacing olivine and orthopyroxene.		

COMMENTS: #246

30% of olivine has recrystallized. 70% primary.

STRUCTURE

Plagioclase is weakly recrystallized along grain boundaries. Plagioclase neoblasts about 200 µm have equant polygonal grain boundaries. Relict grains are bent and distorted. Pyroxene is largely unrecrystallized. Olivine is weakly recrystallized.

153-923A-3R-2 (Piece 1A, 5 cm)

Observer: CDW

Rock Name: OLIVINE GABBRO

Grain size: Medium to fine.

Texture: Porphyroclastic, lineated.

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Plagioclase.	70	70	0.1-4	Anhedral.	Main part is fine grained with mosaic texture (recrystallized).
Clinopyroxene.	21	25	0.2-3	Anhedral.	Partly altered to tremolite, talc, and iron oxide minerals.
Olivine.	4	5	0.1-0.8	Anhedral.	Cracked and partly changed to iron oxide minerals, serpentine, and chlorite.

ACCESSORY

MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Opaque minerals.	<<1	<<1	0.05-0.5	Anhedral	Ilmenite, pyrrhotite, chalcopyrite.

SECONDARY

MINERAL NAME	PERCENT	REPLACING/FILLING	MORPHOLOGY	DESCRIPTION	
Amphibole.	1	Clinopyroxene.	0.05-0.3	Anhedral.	Light brown.
Tremolite, talc.	3	Clinopyroxene.			
Serpentine./chlorite/oxide.	1	Olivine.			

COMMENTS: #249

STRUCTURE

Primary igneous texture has been pervasively overprinted by solid-state deformation. Plagioclase is anhedral. Grain size varies from 2 mm to 300 micrometers. Coarser grains are variably elongated with irregular grain boundaries, while finer grains are either elongated or more equant. Triple junction grain boundaries are dominant. Mechanical twins and undulose extinction are omnipresent. Plagioclase lattice fabric is very strong. Relict clinopyroxene are blocky and a few mm in size. Pyroxene neoblasts are 100-400 µm in size and occur as trails that define the elongated host grain.

153-923A-3R-2 (Piece 2A, 34 cm)
 Rock Name: OLIVINE GABBRO
 Grain size: Medium to fine.
 Texture: Porphyroclastic.

Observer: CDW

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Plagioclase.	54	54	0.1-4	Anhedral.	
Clinopyroxene.	35	35	0.2-7	Anhedral.	Weakly altered.
Olivine.	11	11	0.1-1.2	Anhedral.	Generally fresh.
Orthopyroxene.	<<1	<<1	to 1.6	Subhedral.	

ACCESSORY

MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Opaque minerals.	<<1	<<1	0.03-0.8	Anhedral.	Ilmenite > pyrrhotite, and chalcopyrite.
Brown hornblende.	1	1		Anhedral.	Interstitial phase.

SECONDARY

MINERAL NAME	PERCENT	REPLACING/ FILLING	SIZE	DESCRIPTION
Amphibole.	<1	Clinopyroxene.	0.1-0.5	Light brown.

COMMENTS: #250

STRUCTURE

Primary igneous texture has been pervasively overprinted by solid-state deformation. Plagioclase is anhedral. Grain size varies from 2 mm to 300 μ m. Coarser grains are variably elongated with irregular grain boundaries, while finer grains are either elongated or more equant. Triple junction grain boundaries are dominant. Mechanical twins and undulose extinction are omnipresent. Plagioclase lattice fabric is very strong. Clinopyroxene occurs as porphyroclasts that are primarily recrystallized along margins. Olivine occurs as elongated and recrystallized clusters, with a recrystallized grain size of about 500 μ m.

153-923A-4R-1 (Piece 7B, 118 cm)

Observer: NOR

Rock Name: GABBRO
 Grain size: Coarse.
 Texture: Allotriomorphic granular.

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Plagioclase.	63.5	64	0.2-8	Anhedral.	Half of plagioclase has recrystallized in subgrains, less than 1 mm in size.
Clinopyroxene.	29	29.5	0.4-8	Anhedral.	Some large clinopyroxene contains plagioclase in the marginal part.
Olivine.	2.8	3	0.2-2	Anhedral.	Kink banded.
Orthopyroxene.	2.8	3	1-2	Anhedral.	Associated with clinopyroxene.

ACCESSORY

MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY
Iron oxide minerals.	0.5	0.5	0.05-0.4	Anhedral.

SECONDARY

MINERAL NAME	PERCENT	REPLACING/ FILLING
Talc.	0.2	Orthopyroxene.
Talc.	0.15	Olivine.
Oxide minerals.	0.1	Olivine.
Clay.	0.05	Olivine.
Brown Hornblende.	0.5	Clinopyroxene.
Chlorite.	0.2	Clinopyroxene.
Chlorite.	0.5	Plagioclase.

VEIN/FRACTURE

FILLING	PERCENT	SIZE	ORIENTATION
Brown hornblende and chlorite.	<<0.1		

COMMENTS: #251 and #252

In a vein, possibly formed by fluid infiltration, clinopyroxene is transformed into brown hornblende and plagioclase into chlorite.

STRUCTURE

Heterogeneously recrystallized rock. Plagioclase occurs as 3-4 mm relict grains and 100-400 μ m neoblasts with rather polygonal grain boundaries showing triple junctions. Clinopyroxene is only weakly recrystallized and show very little distortion. Olivine occurs in elongated clusters of recrystallized grains, with a neoblast size ranging from 500 μ m to 1 mm.

SITE 923

153-923A-5R-2 (Piece 1, 35 cm)
 Rock Name: OLIVINE GABBRO
 Grain size: Medium to coarse.
 Texture: Allotriomorphic granular.

Observer: CDW

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Plagioclase.	80	80	0.2-9		
Clinopyroxene.	12	15	0.2-8		Partly altered to tremolite, brown hornblende.
Olivine.	5	5	0.1-4		Iron oxide minerals in cracks.

ACCESSORY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Brown hornblende.	<0.5	<0.5		Anhedral.	
Opaque minerals.	<<1	<<1	0.02-0.3		Ilmenite and traces of sulfide minerals.

SECONDARY MINERAL NAME	PERCENT	REPLACING/ FILLING	DESCRIPTION
Amphibole.	<1	Clinopyroxene.	Pale brown.
Tremolite.	3	Clinopyroxene.	

COMMENTS: #253

STRUCTURE

Primary igneous texture is well preserved except along a 1.5 mm shear zone that shows grain-scale fracturing and dynamic recrystallization.

153-923A-5R-2 (Piece 2, 109 cm)
 Rock Name: OLIVINE GABBRO
 Grain size: Medium.
 Texture: Adcumulate.

Observer: CDW

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Plagioclase.	65	65	0.2-7	Anhedral.	
Clinopyroxene.	30	30	0.2-3	Anhedral.	Incipient alteration to tremolite.
Olivine.	5	5	0.1-1.2	Anhedral.	Quite fresh, some cracks contain serpentine and iron oxide minerals.

ACCESSORY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Opaque minerals.	<<1	<<1	0.02-0.2		Ilmenite > sulfide minerals.

SECONDARY MINERAL NAME	PERCENT	REPLACING/ FILLING	DESCRIPTION
Amphibole.	<1	Clinopyroxene.	Pale brown.

COMMENTS: #254

STRUCTURE

Plagioclase occurs as subhedral laths which are slightly bent. Anhedral plagioclase grains are about 1 mm in size and make up less than 20% of the rock. Pyroxene is undeformed.

153-923A-5R-2 (Piece 3, 123 cm)
 Rock Name: GABBRO.
 Grain size: Medium.
 Texture: Adcumulate.

Observer: CDW

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Plagioclase.	69	69	0.2-3	Anhedral.	
Clinopyroxene.	15	28	0.2-8	Anhedral.	Partly altered to tremolite and talc.

ACCESSORY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Olivine.	2	2	0.2-2	Anhedral.	Partly altered to serpentine, talc, and iron oxide minerals.
Opaque minerals.	<<1	<<1	0.03-0.3		Ilmenite, sulfide minerals.

SECONDARY MINERAL NAME	PERCENT	REPLACING/ FILLING	DESCRIPTION
Amphibole.	<<1	Clinopyroxene.	Pale brown.
Tremolite, talc.	13	Clinopyroxene.	
Serpentine/magnetite	1	Olivine.	

COMMENTS: #255

STRUCTURE

Plagioclase occurs as subhedral laths which are slightly bent. Anhedral plagioclase grains are about 1 mm in size and make up less than 20% of the rock. Pyroxene is undeformed.

153-923A-6R-1 (Piece 7, 22 cm)
 Rock Name: OLIVINE GABBRO
 Grain size: Coarse to medium.
 Texture: Allotriomorphic granular.

Observer: CDW

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Plagioclase.		65	0.2-6	Anhedral.	
Clinopyroxene.		27	0.2-5	Anhedral.	In part altered, but mostly plucked.
Olivine.		8	0.2-2	Anhedral.	Relatively fresh.
ACCESSORY					
MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Opaque minerals.	<<1	<<1	0.03-0.5		Sulfide minerals, pyrrhotite > chalcopyrite >> ilmenite.
SECONDARY					
MINERAL NAME	PERCENT	REPLACING/ FILLING	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Brown hornblende.	0.5	Clinopyroxene.			

COMMENTS: #256
 STRUCTURE

Plagioclase occurs as subhedral laths which are slightly bent and have a preferred shape alignment. Anhedral plagioclase grains are about 1 mm in size and make up less than 30% of the rock. Pyroxene is undeformed.

153-923A-7R-2 (Piece 1, 1 cm)
 Rock Name: OLIVINE GABBRO
 Grain size: Coarse to medium.

Observer: CDW

Texture: Olivine crescumulate, plagioclase heteradocumulate.

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Plagioclase.	70	70	0.2-4	Anhedral.	Albite, pericline, rare Carlsbad twins.
Olivine.	15	16	0.2-9	Anhedral.	Remarkably fresh, only minor replacement by serpentine iron oxides, and talc.
Clinopyroxene.	9	10	0.1-2	Anhedral.	Only incipient alteration to tremolite and talc.
ACCESSORY					
MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Hornblende.	4	4	0.1-2	Anhedral.	Younger than clinopyroxene, incipient chloritization.
Opaque minerals.	<<1	<<1	0.03-0.4		Ilmenite > pyrrhotite.
SECONDARY					
MINERAL NAME	PERCENT	REPLACING/ FILLING	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Serpentine./talc/oxide.	1	Olivine.			
Tremolite/talc.	1	Clinopyroxene.			

VEIN/FRACTURE
 FILLING

VEIN/FRACTURE FILLING	PERCENT	SIZE (mm)	ORIENTATION
Prehnite and chlorite veinlets.		0.01-0.5	Mainly within plagioclase.

COMMENTS: #257 and #258
 STRUCTURE

The primary igneous texture is well preserved. Plagioclase occurs as subhedral laths up to 5 mm and moderately developed shape fabric. Pyroxene, hornblende, and olivine form large undeformed oikocrysts. Weak overprint of solid-state deformation seen by mechanical twins in plagioclase and subgrains in olivine.

SITE 923

153-923A-8R-1 (Piece 5A, 29 cm)

Observer: CDW

Rock Name: OLIVINE GABBRO

Grain size: Medium.

Texture: Allotriomorphic granular with crescumulus olivine.

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Plagioclase.	84	84	0.2-5	Subhedral.	
Clinopyroxene.	6	6	0.1-1.5	Anhedral.	Minor alteration to tremolite.
Olivine.	8	10	0.1-3	Anhedral.	Generally fresh. Some grains replaced by talc, serpentine, and iron oxide minerals.

ACCESSORY

MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Iron oxide minerals.	<<1	<<1	0.03-0.7	Anhedral.	Ilmenite.
Brown hornblende.	<<1	<<1		Anhedral.	Interstitial phase.
Sulfide minerals.	<<1	<<1			
Orthopyroxene.	<<1	<<1		Anhedral.	As rims on olivine.

SECONDARY

MINERAL NAME	PERCENT PRESENT	REPLACING/ FILLING
Talc/serpentine/oxide.	2	Replacing olivine.

VEIN/FRACTURE

FILLING	PERCENT	SIZE	ORIENTATION
Serpentine and chlorite.		0.02-0.2	
Tremolite.			
Prehnite.			

COMMENTS: #259

STRUCTURE

The primary igneous texture is well preserved. Plagioclase occurs as subhedral laths 2-4 mm in size, with a random shape fabric, and as smaller (around 1 mm) and more equant grains with locally triple junction relations. Olivine and clinopyroxene form large oikocrysts.

153-923A-8R-3 (Piece 1, 10 cm)

Observer: CDW

Rock Name: OLIVINE GABBRO

Grain size: Medium.

Texture: Cumulate.

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Plagioclase.	63	63	0.1-3	Anhedral.	
Clinopyroxene.	22	28	0.1-3	Anhedral.	Partially replaced by tremolite, talc, and iron oxide minerals.
Olivine.	5	9	0.1-1	Anhedral.	Partially replaced by serpentine, talc, and iron oxide minerals.

ACCESSORY

MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Iron oxide minerals.	<<1	<<1	0.01-0.2		
Sulfide minerals.	<<1	<<1			Pyrrhotite, chalcopyrite.

SECONDARY

MINERAL NAME	PERCENT PRESENT	REPLACING/ FILLING	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Amphibole.	1	Replacing clinopyroxene.	0.05-0.2		Light brown, within and marginal to spinel.
Tremolite, talc.	5	Replacing clinopyroxene.			
Serpentine/talc/oxide	4	Replacing olivine.			

COMMENTS: #260

STRUCTURE

Plagioclase occurs largely as anhedral grains but many are large (up to 2.5 mm), elongated, have distorted magmatic twins, and appear to be relict grains. The rest of the plagioclase grains are anhedral, equant and about 300 µm. The overall population of plagioclase has a moderate lattice preferred orientation. Pyroxene shows weak alteration to brown amphibole.

153-923A-9R-2 (Piece 8A, 70 cm)
 Rock Name: TROCTOLITIC OLIVINE GABBRO
 Grain size: Coarse.
 Texture: Crescumulate.

Observer: NOR

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Clinopyroxene.	7	6	0.1-2	Anhedral.	Interstitial.
Olivine.	23	21	0.4-12	Anhedral.	Extended amoeboid olivine more than 8 mm in longest axis surrounds plagioclase. Subophitic.
Plagioclase.	69	70	0.1-4	Subhedral.	

ACCESSORY MINERAL NAME	PERCENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY
Iron oxide minerals.	<<1	<<1	0.05-0.2	Anhedral.

SECONDARY MINERAL NAME	PERCENT	REPLACING/ FILLING
Brown hornblende.	0.5	Replacing clinopyroxene.
Clay minerals.	1.2	Replacing clinopyroxene, plagioclase, and olivine.
Chlorite.	1	Replacing plagioclase and olivine.
Talc.	1	Replacing olivine.
Iron oxide minerals.	0.3	Replacing olivine.

COMMENTS: #261

STRUCTURE

Plagioclase occurs as subhedral laths (up to 2 mm) with moderate preferred shape fabric and as equant anhedral grains. Olivine occurs as weakly deformed oikocrysts, with closely spaced subgrain boundaries perpendicular to their elongation.

153-923A-10R-1 (Piece 5D, 106 cm)
 Rock Name: OLIVINE GABBRO
 Grain size: Coarse.
 Texture: Adcumulate.

Observer: NOR

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Clinopyroxene.	22	23	0.5-8	Anhedral.	Large clinopyroxene oikocrysts enclose subhedral and anhedral plagioclase.
Plagioclase.	64	65	0.1-4.5	Anhedral/subhedral.	
Olivine.	9	12	0.3-4	Anhedral.	

ACCESSORY MINERAL NAME	PERCENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY
Iron oxide minerals.	<<1	<<1	0.2-0.4	Anhedral.

SECONDARY MINERAL NAME	PERCENT	REPLACING/ FILLING
Brown hornblende.	0.5	Replacing clinopyroxene.
Talc.	1.5	Replacing olivine.
Iron oxide minerals.	0.5	Replacing olivine.
Chlorite.	1.8	Replacing olivine, clinopyroxene, and plagioclase.
Clay minerals.	0.7	Replacing clinopyroxene and plagioclase.

COMMENTS: #262

STRUCTURE

The primary igneous texture is largely preserved. Plagioclase occurs as subhedral laths 2-4 mm in size, with a random shape fabric, and as smaller (around 1 mm) and more equant grains with locally triple junction relations. Weak bending of plagioclase magmatic twins. Olivine and clinopyroxene are subophitic.

SITE 923

153-923A-10R-2 (Piece 1C, 39 cm)
 Rock Name: OLIVINE GABBRO
 Grain size: Coarse.
 Texture: Crescumulate.

Observer: NOR

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Plagioclase.	64	66	0.1-6	Anhedral.	Partially recrystallized into subgrains (<0.2 mm). ~An ₆₀ .
Clinopyroxene.	15	17	0.1-6	Anhedral.	Clinopyroxene and olivine sometimes intergrown with plagioclase.
Olivine.	14	17	0.1-4	Anhedral.	

ACCESSORY MINERAL NAME	PERCENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Iron oxide minerals.	<<1	<<1	0.1-0.4	Anhedral.	
Orthopyroxene.	<<1	<<1		Anhedral.	Rims olivine.

SECONDARY MINERAL NAME	PERCENT	REPLACING/ FILLING
Talc.	1	Olivine.
Iron oxide minerals.	1	Olivine.
Smectite.	1	Replacing olivine.
Chlorite.	4.5	Replacing clinopyroxene and plagioclase.
Clay minerals.	1.5	Replacing plagioclase and clinopyroxene.
Brown hornblende.	1	Replacing clinopyroxene.

COMMENTS: #263

STRUCTURE

The primary igneous texture is largely preserved. Plagioclase occurs as subhedral laths 2-4 mm in size, with a random shape fabric, and as smaller (around 1 mm) and more equant grains with locally triple junctions. Plagioclase neoblasts (300 μm) occur on grain boundaries and in a 0.5-1-mm-thick shear zone. Plagioclase is bent but also shows magmatic twins. Olivine and clinopyroxene are subophitic.

153-923A-11R-1 (Piece 8, 69 cm)
 Rock Name: LINEATED GABBRO
 Grain size: Fine.
 Texture: Gneissic.

Observer: NOR

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Plagioclase.	60	60	0.1-3	Anhedral.	Tectonic alignment, igneous texture partially preserved.
Clinopyroxene.	31	32	0.1-2	Anhedral.	
Olivine.	7	8	0.1-2	Anhedral.	

ACCESSORY MINERAL NAME	PERCENT	PERCENT ORIGINAL
Iron oxide minerals.	<<1	<<1

SECONDARY MINERAL NAME	PERCENT	REPLACING/ FILLING
Iron oxide minerals.	0.9	Replacing olivine.
Talc.	0.1	Replacing olivine.
Brown hornblende.	1	Replacing clinopyroxene.

COMMENTS: #264

STRUCTURE

Plagioclase, clinopyroxene, and olivine are strongly recrystallized and range in size from 1.5 mm to 100 μm (the most common grain size is 500 μm). Most grains have elongated anhedral shapes and irregular boundaries. Plagioclase preferred orientation is well developed. Olivine and clinopyroxene show moderate lattice preferred orientation.

153-923A-12R-2 (Piece 2, 24 cm)

Observer: NOR

Rock Name: OLIVINE GABBRO WITH DEFORMED GABBRO

Grain size: Coarse.

Texture: Adcumulate.

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Plagioclase.	59	60	0.5-5	Anhedral.	
Clinopyroxene.	20	23	1-6	Anhedral.	Large oikocrysts commonly enclose plagioclase grains.
Olivine.	5	7	0.5-3	Anhedral.	Coexists with clinopyroxene.

ACCESSORY

MINERAL NAME	PERCENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Iron oxide minerals.	0.2	0.2	0.2-0.4	Anhedral.	

SECONDARY

MINERAL NAME	PERCENT	REPLACING/ FILLING
Talc.	0.5	Replacing olivine.
Cummingtonite.	0.5	Replacing olivine.
Carbonate minerals.	0.3	Replacing olivine.
Iron oxide minerals.	0.3	Replacing olivine.
Smectite.	0.3	Replacing olivine.
Chlorite.	2	Plagioclase and clinopyroxene.
Brown hornblende.	1	Replacing clinopyroxene.
Amphibole.	1	Replacing clinopyroxene.

COMMENTS: #265

STRUCTURE

Thin section contains several textural variations. One end of slide is a coarse-grained olivine gabbro and this is in contact with fine-grained and medium-grained olivine gabbro. The contact is sharp at the mesoscopic scale, although weakly irregular at the grain scale. The coarse-grained rock shows little evidence for strain alignment. It is probably of igneous origin. In the medium-grained olivine gabbro, primary minerals show little sign of deformation beyond weak lattice bending. Fine-grained rock has a weak lattice and shape fabric near the contact. Grain-size variation is gradational.

153-923A-13R-2 (Piece 7, 113 cm)

Observer: NOR

Rock Name: TROCTOLITIC OLIVINE GABBRO

Grain size: Coarse.

Texture: Crescumulate.

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Plagioclase.	69	70	1-6	Subhedral/anhedral.	
Olivine.	22	25	1-5	Anhedral.	Amoeboid shape. Intergrown with plagioclase.
Clinopyroxene.	4.5	5	1-10	Anhedral	Large clinopyroxene oikocrysts enclose plagioclase and olivine.
Orthopyroxene.	0.3	0.3		Anhedral	Rims around olivine.

ACCESSORY

MINERAL NAME	PERCENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Orthopyroxene.	0.3	0.3		Anhedral.	Rims around olivine.
Iron oxide minerals.	<1	<1	0.1-0.6	Anhedral.	
Brown hornblende.	0.2	0.2		Anhedral.	Usually rims around olivine, clinopyroxene, and iron oxide minerals.

SECONDARY

MINERAL NAME	PERCENT	REPLACING/ FILLING
Talc.	1	Replacing olivine.
Iron oxide minerals.	1	Replacing olivine.
Clay minerals.	1	Replacing plagioclase.
Chlorite.	1	Replacing plagioclase.
Brown hornblende.	0.5	Replacing clinopyroxene.

COMMENTS: #266 and #267

STRUCTURE

The primary igneous texture is well preserved. Plagioclase occurs as subhedral laths 2-4 mm in size, with a random shape fabric, and rarely (<10%) as smaller (around 1 mm) and more equant grains with locally triple junction relations. Olivine and clinopyroxene form large oikocrysts.

SITE 923

153-923A-15R-1 (Piece 9, 51 cm)
 Rock Name: OLIVINE GABBRO
 Grain size: Coarse.
 Texture: Allotriomorphic.

Observer: NOR

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Plagioclase.	65	70	0.2-4	Anhedral/subhedral.	
Clinopyroxene.	18	20	0.1-5	Anhedral.	Clinopyroxene appears interstitial, but some grains are optically continuous.
Olivine.	0	10	0.5-5	Anhedral.	Totally altered.

ACCESSORY MINERAL NAME	PERCENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Iron oxide minerals.	<1	<1	0.2-0.5	Anhedral.	

SECONDARY MINERAL NAME	PERCENT	REPLACING/FILLING
Smectite.	8	Replacing olivine.
Tremolite.	2	Replacing olivine.
Brown hornblende.	1	Replacing clinopyroxene.
Clay minerals.	2	Replacing clinopyroxene and plagioclase.
Chlorite.	1	Replacing plagioclase.
Secondary plagioclase.	3	Replacing plagioclase.

VEIN/FRACTURE FILLING	PERCENT	SIZE (mm)	ORIENTATION	DESCRIPTION
Prehnite, chlorite, and clay minerals.	3	<1.5		Two veins.
Chlorite and clay minerals.	1	<0.5		

COMMENTS: #268
 STRUCTURE

The primary igneous texture is well preserved. Plagioclase occurs as subhedral laths 2-4 mm in size, with a random shape fabric, and as smaller (around 1 mm) and more equant grains with locally triple junction relations (20% of the thin section). Olivine and clinopyroxene form large oikocrysts. Overprinted by veins and grain-scale fractures.

153-923A-15R-1 (Piece 14, 93 cm)
 Rock Name: OLIVINE GABBRO
 Grain size: Coarse.
 Texture: Allotriomorphic.

Observer: NOR

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Plagioclase.	67	68	0.1-5	Subhedral/anhedral.	
Olivine.	14	21	0.4-4	Anhedral.	
Clinopyroxene.	9	10	0.5-5	Anhedral.	Some interstitial grains seem to be optically continuous.

ACCESSORY MINERAL NAME	PERCENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Iron oxide minerals.	1	1	0.1-0.5	Anhedral.	
Brown hornblende.	0.3	0.3		Anhedral.	Rims around iron oxide minerals.
Orthopyroxene.	0.3	0.3		Anhedral.	Rims around olivine.

SECONDARY MINERAL NAME	PERCENT	REPLACING/FILLING
Talc.	2	Replacing olivine.
Smectite.	3	Replacing olivine.
Iron oxide minerals.	2	Replacing olivine.
Chlorite.	0.9	Replacing plagioclase.
Carbonate minerals.	0.1	Replacing plagioclase.
Brown hornblende.	0.8	Replacing clinopyroxene.
Actinolite.	0.2	Replacing clinopyroxene.

VEIN/FRACTURE FILLING	PERCENT	SIZE (mm)	ORIENTATION	DESCRIPTION
Chlorite.	1	<0.1		

COMMENTS: #269-
 STRUCTURE

The primary igneous texture is well preserved. Plagioclase occurs as subhedral laths 2-4 mm in size, with a random shape fabric, and as smaller (around 1 mm) and more equant grains with locally triple junctions (20% of the thin section). Olivine and clinopyroxene form large oikocrysts. Overprinted by veins.

153-923A-15R-3 (Piece 1, 4 cm)
Rock Name: OLIVINE GABBRO
Grain size: Coarse.
Texture: Heteradcumulate.

Observer: KIY

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Clinopyroxene.	14	14	0.5–11.5	Anhedral.	Interstitial to poikilitic.
Olivine.	18	20	2.3–7.5	Anhedral.	Predominantly intercumulus but some subhedral crystals.
Plagioclase.	65	65	0.1–5.6	Euhedral/anhedral.	Slightly zoned along margins of subhedral plagioclase.

ACCESSORY MINERAL NAME

Orthopyroxene.	0.5	0.5	<1	Anhedral.	Rims around olivine.
Magnetite.	0.5	0.5	0.4	Subhedral.	

SECONDARY MINERAL NAME

MINERAL NAME	PERCENT	REPLACING/ FILLING
Talc/smectite/oxide.	<2	After olivine.
Sulfide minerals.	<0.5	

COMMENTS: #270 and #271

STRUCTURE

The primary igneous texture is well preserved. Plagioclase occurs as subhedral laths 2–4 mm in size, with a random shape fabric, and as smaller (around 1 mm) and more equant grains with locally triple junctions (20% of the thin section). Olivine and clinopyroxene form large oikocrysts. Overprinted by veins.

153-923A-15R-3 (Piece 3, 88 cm)

Rock Name: OLIVINE GABBRO
Grain size: Medium.
Texture: Hypidiomorphic granular.

Observer: KIY

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Plagioclase.	70	72	0.2–5	Subhedral/anhedral.	Strongly zoned. Somewhat altered along veins.
Clinopyroxene.	15	21	0.2–4	Subhedral/anhedral.	Partially altered.
Olivine.	3	6	0.1–2	Euhedral/subhedral.	Partially altered.

ACCESSORY MINERAL NAME

Opaque minerals.	~1	~1			Oxide minerals>sulfide minerals.
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SECONDARY MINERAL NAME

MINERAL NAME	PERCENT	REPLACING/ FILLING
Prehnite/chlorite.	2	Plagioclase.
Talc/serpentine/oxide minerals.	3	Olivine.
Tremolite/talc/chlorite/oxide.	6	Clinopyroxene.
Amphibole.	<1	Clinopyroxene.

VEIN/FRACTURE

FILLING	PERCENT	SIZE	ORIENTATION
Tremolite.		0.05–0.2	
Prehnite and chlorite.			

COMMENTS: #277

STRUCTURE

The primary igneous texture is perfectly preserved. Large blocky or elongated plagioclase crystals show perfectly straight albite and simple twins. They show a weak shape preferred orientation. Olivine and clinopyroxene are interstitial.

153-923A-16R-2 (Piece 6, 110 cm)

Rock Name: OLIVINE GABBRO
Grain size: Medium.
Texture: Cumulate.

Observer: CDW

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Clinopyroxene.	Undet.	Undet.	Undet.		
Plagioclase.	"	"	"		Very altered.
Olivine.	"	"	"		

ACCESSORY MINERAL NAME

Opaque minerals.	<<1	<<1	0.02–0.6		
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COMMENTS: #272

The primary igneous texture is well preserved. Plagioclase occurs as subhedral laths 2–4 mm in size, with a random shape fabric, and as smaller (around 1 mm) and more equant grains with local triple junctions (20% of the thin section). Olivine and clinopyroxene form large oikocrysts. Static alteration.

SITE 923

153-923A-16R-3 (Piece 5, 74 cm)
 Rock Name: OLIVINE GABBRO
 Grain size: Medium to coarse.
 Texture: Heteradcumulate.

Observer: CDW

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Olivine.	16	20	0.5-8	Anhedral.	
Clinopyroxene.	12	17	0.5-8	Anhedral.	
Plagioclase.	63	63	0.4-6	Subhedral.	

ACCESSORY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Opaque minerals.	<<1	<<1	0.02-0.4		
Orthopyroxene.	0.5	0.5			Rims around olivine.
Brown hornblende.	0.5	0.5			Rims around clinopyroxene.

SECONDARY MINERAL NAME	PERCENT	REPLACING/FILLING
Talc/serpentine/oxide minerals.	4	Olivine.
Tremolite/talc.	5	Clinopyroxene.

COMMENTS: #273 and # 274

STRUCTURE

The primary igneous texture is well preserved. Plagioclase occurs as subhedral laths 2-4 mm in size, with a random shape fabric. Olivine and clinopyroxene form large oikocrysts.

153-923A-16R-4 (Piece 7, 60 cm)
 Rock Name: OLIVINE GABBRO
 Grain size: Medium.
 Texture: Hypidiomorphic granular.

Observer: CDW

PRIMARY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Olivine.	8	12	0.1-4	Anhedral.	
Clinopyroxene.	21	21	0.1-4	Subhedral.	
Plagioclase.	67	67	0.2-6	Subhedral/anhedral.	

ACCESSORY MINERAL NAME	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	MORPHOLOGY	DESCRIPTION
Opaque minerals.	<<1	<<1	0.05-1.2		Oxide minerals > sulfide minerals.

SECONDARY MINERAL NAME	PERCENT	REPLACING/FILLING
Talc/serpentine/oxide minerals.	4	Olivine.
Amphibole.	Trace.	Clinopyroxene.

COMMENTS: #275 and #276

STRUCTURE

The primary igneous texture includes large plagioclase subhedral crystals embedded in clinopyroxene and olivine oikocrysts. It is strongly overprinted by solid-state deformation structures. Plagioclase shows bent twins; 30% consists of a matrix of blocky crystals 500 micrometers to 1 mm in size. Olivine shows a strong development of subgrain boundaries. Undulose extinction is pervasive throughout this thin section.