

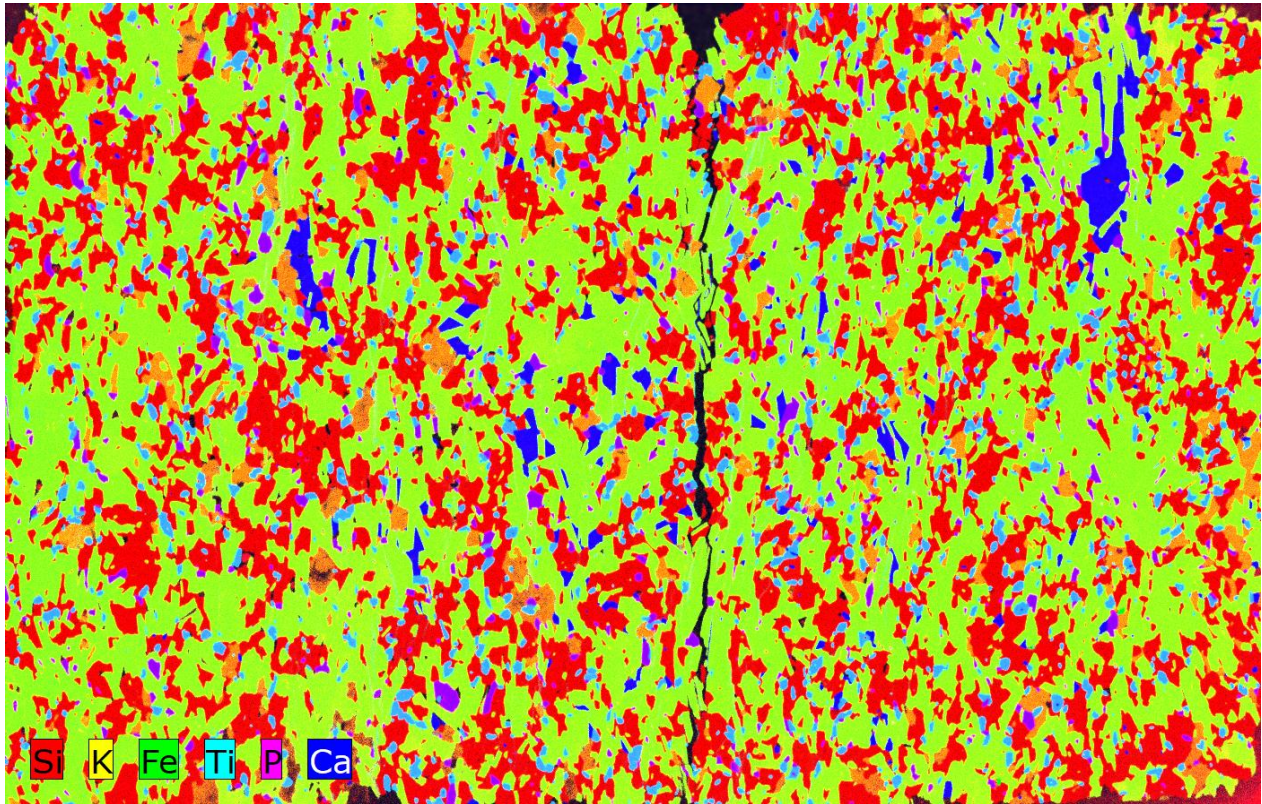
Supplementary material 6: examples of micro-XRF chemical mapping of representative lithologies from the Kipawa Syenite Complex

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Nota bene : size : 2.6 cm x 4.6 cm

1. Mafic syenite



	Albite		K-feldspar		Hornblende
	Fluorite		Titanite		Apatite

Unit: Zone 2 syenite unit

Mineralogy: xenomorph: Hornblende (55 %), albite (25 %), K-feldspar (5 %), fluorite (5%), titanite (5%), apatite (5%).

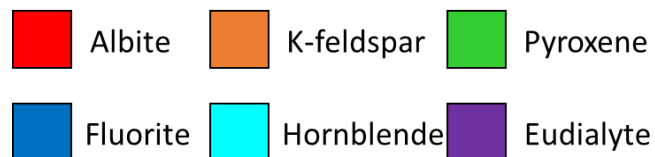
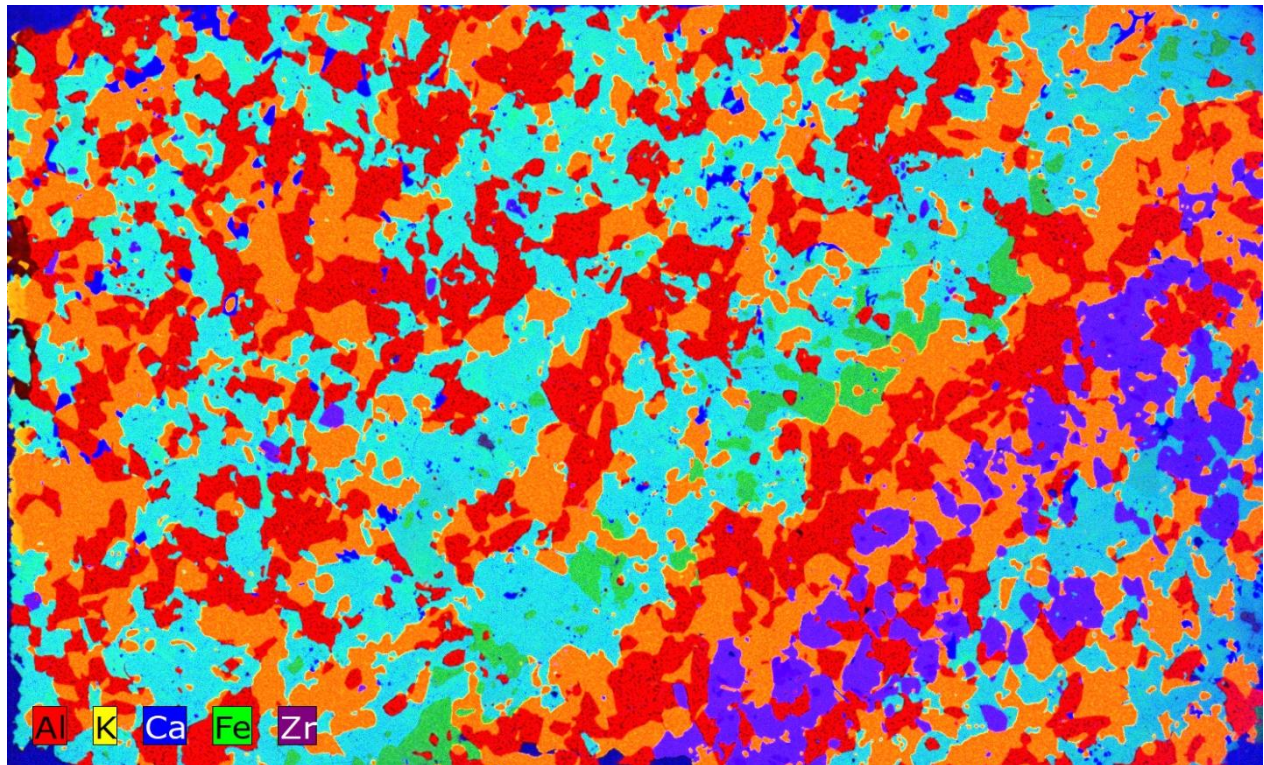
Texture: allotriomorphic

Granulometry: finely to medium coarse-grained

Color index : mesocrate

Structure: massive to foliated

2. Eudialyte bearing mesosyenite



Unit: Zone 2 syenite unit

Mineralogy: subidiomorph: albite (22 %), K-feldspar (30 %), eudialyte (10 %); xenomorph: Hornblende (30 %) , pyroxene (5 %), fluorite (3%),

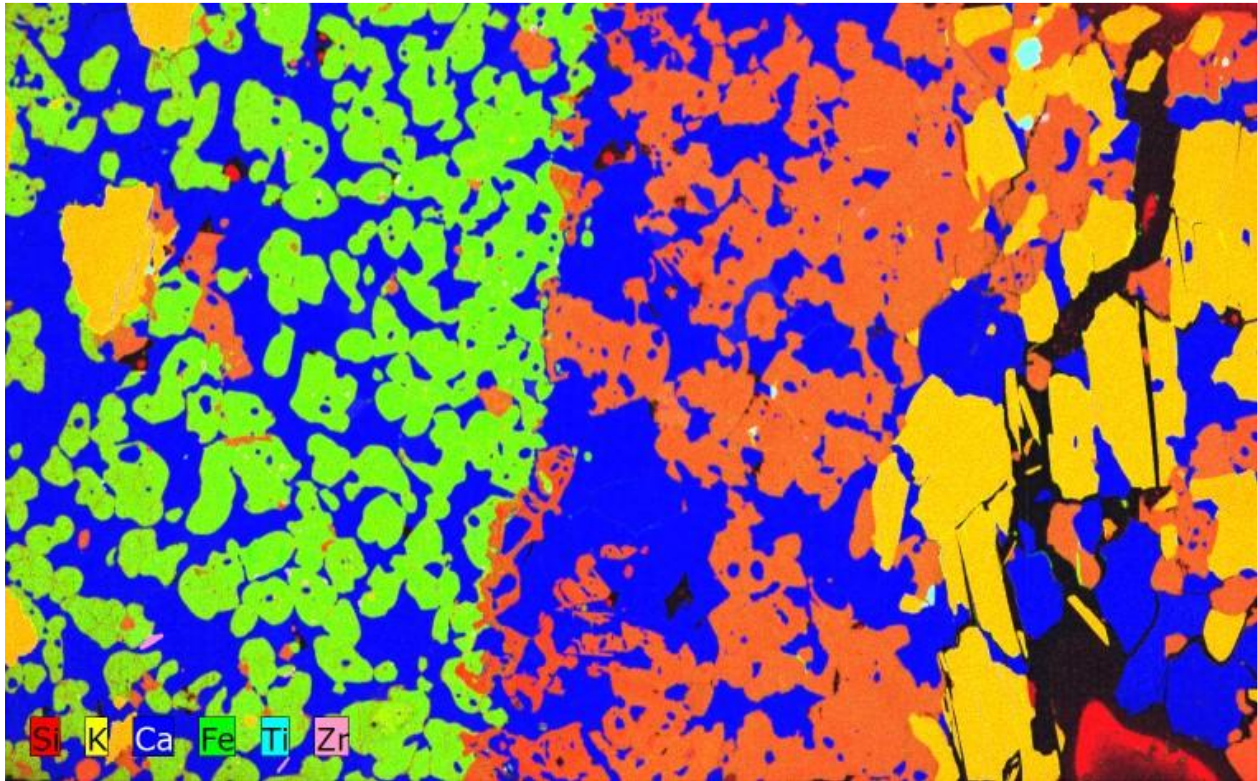
Texture: hypidiomorphic

Granulometry: medium coarse-grained

Color index: mesocrate

Structure: massive to foliated, cumulat

3. Skarn-marble



	Quartz		Richterite		Chondrodite
	Calcite		Zirconolite		Phlogopite
	Baddeileite				

Unit: Zone 3 calc-silicate and syenite unit

Mineralogy: automorph : chondrodite (20 %), phlogopite (10 %), baddeileite (<1 %),
subidiomorph: zirconolite (<1%) ; xenomorph: quartz (<1%), richterite (30 %), calcite (40 %)

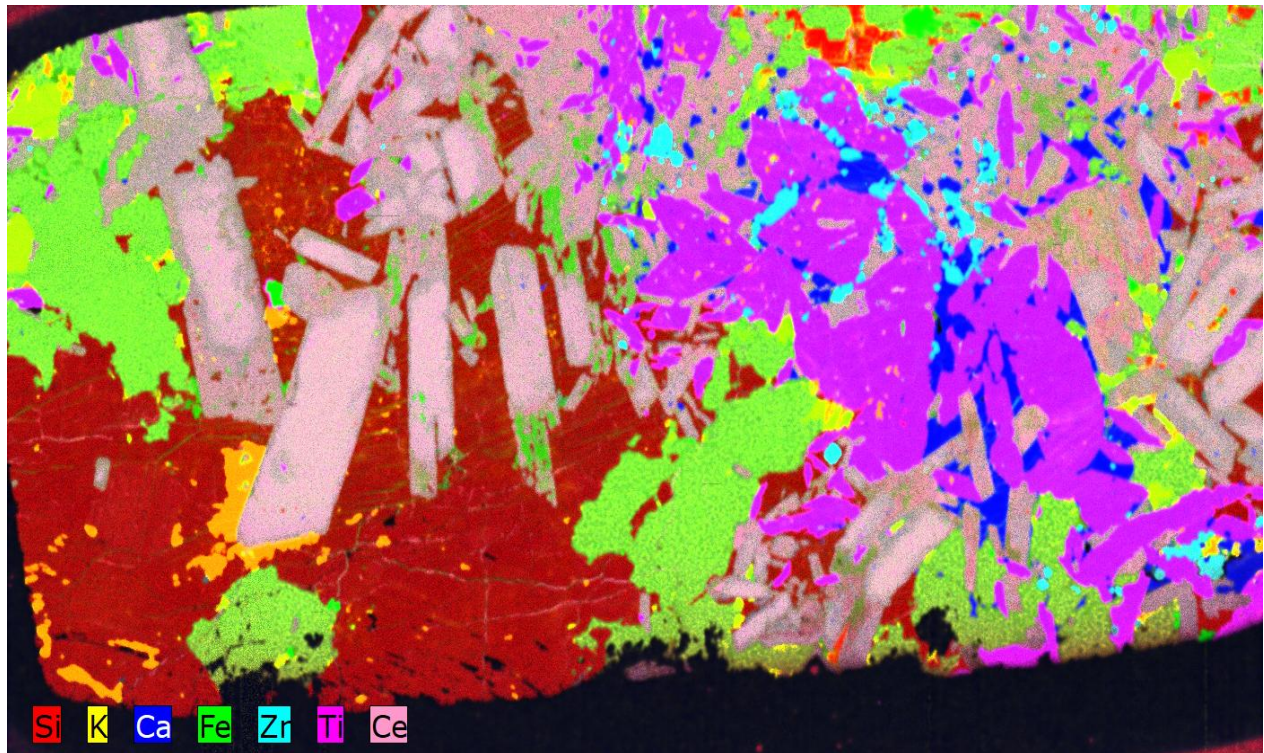
Texture: allotriomorphic

Granulometry: roughly-medium coarse-grained

Color index: leucocrate

Structure: massive, cumulat

4. Allanite bearing syenite



Quartz	K-feldspar	Albite
Fluorite	Zircon	Amphibole
Allanite	Titanite	

Unit: surface sample (zone 1)

Mineralogy: automorph : allanite (30 %), ; subidiomorph: quartz (2 %), Ttn. (20 %), zircon (3 %); xenomorph: albite (20 %), K-feldspar (2 %), fluorite (5 %), amphibole (10 %)

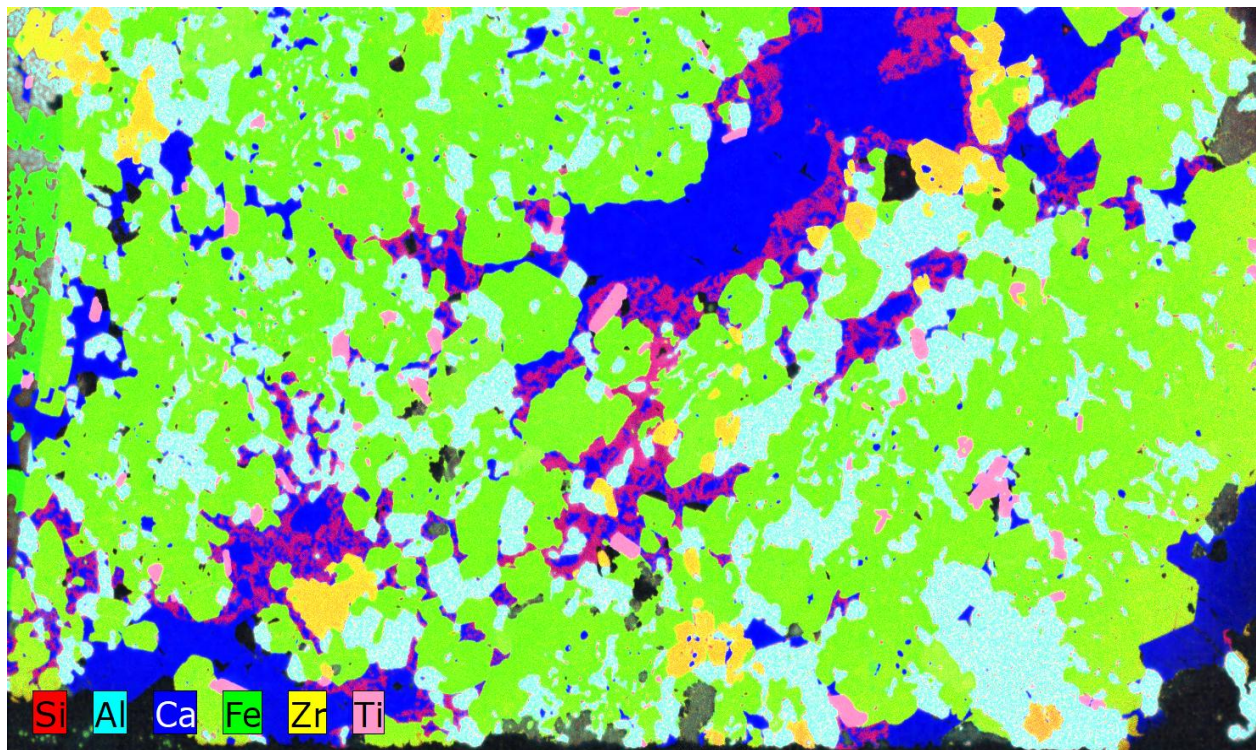
Texture: allotriomorphic

Granulometry: roughly-medium coarse-grained

Color index: mesocrate

Structure: massive

5. Amphibole-syenite



Unit: syenite unit (zone 2)

Mineralogy: automorph : titanite (2 %) ; subidiomorph: richterite (70 %), eudialyte (3 %);
xenomorph: fluorite (15 %), pectolite-agrellite (3 %), albite (7 %)

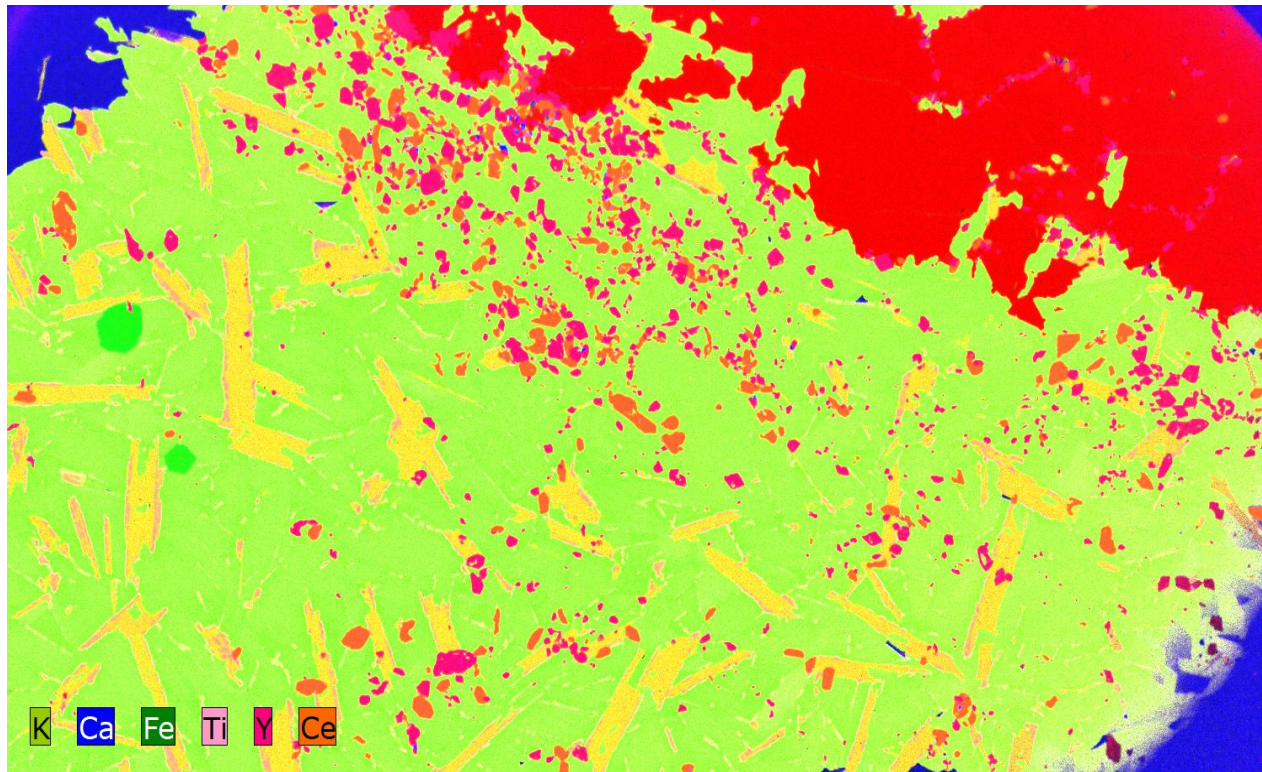
Texture: Hypidiomorphic

Granulometry: roughly-medium coarse-grained

Color index: melanocrate

Structure: massive to very strong foliated

6. Micas-quartz fenite



	Quartz		Monazite		Muscovite
	Apatite		Xenotime-Y		Ti-rich Phlogopite
	Hematite		Phlogopite-biotite		

Unit: Calco-silicate complex (zone 3)

Mineralogy: automorph : muscovite (5 %), monazite (2 %), xenotime (3 %), hematite (<1 %), Ti-rich phlogopite (3 %); subidiomorph: phlogopite-biotite (77 %), quartz (10 %) ; xenomorph: apatite (<1 %)

Texture: Hypidiomorphic

Granulometry: roughly-medium coarse-grained

Color index: melanocrate

Structure: massive