

DAFTAR PUSTAKA

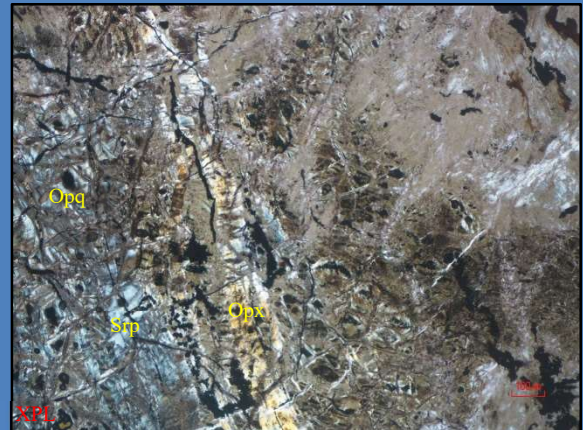
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LAMPIRAN

No Sampel : ST 14	Formasi : Kompleks Ultrabasa
Perbesaran : 50X	Satuan : Serpentininit
Tipe Batuan(Rock Type)	: Batuan Metamorf
Klasifikasi (Classification)	: Travis (1955)
Struktur	: Non Foliasi
Nama Batuan	: <i>Serpentinite</i> (Travis 1955)

Foto :



Mikroskopis (Microscopic):

Kenampakan petrografis, pada warna absorpsi colorless hingga abu-abu, warna interferensi abu-abu kehitaman, tesktur kristaloblastik, struktur non foliasi yaitu granulose. Tekstur khusus Mesh (kenampakan mineral serpentin menyerupai serat yang nampak pada rekahan dan membentuk seperti jala). Dengan ukuran mineral 0,01 – 0,12 mm. Tersusun atas *Serpentinite* (95%) , *Orthopyroxene* (4%) dan *Opaq* (1%)

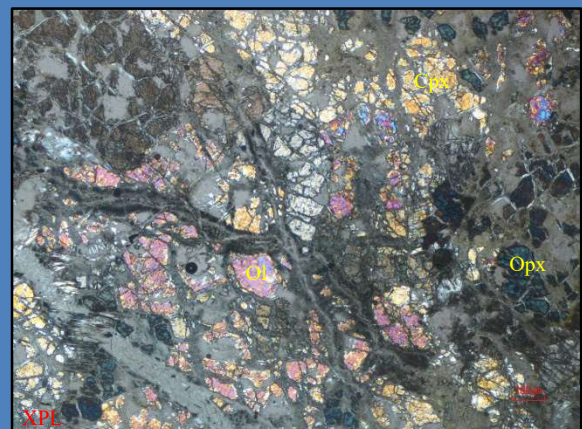
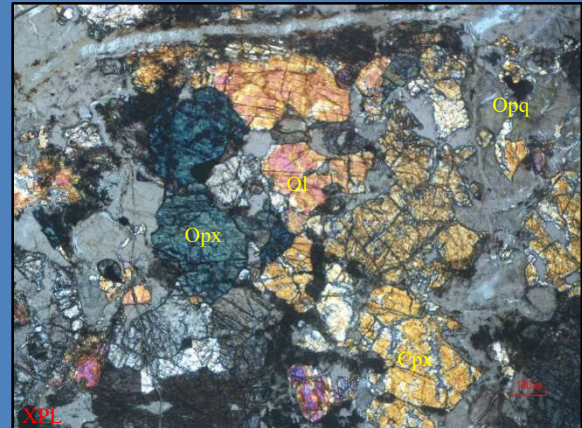
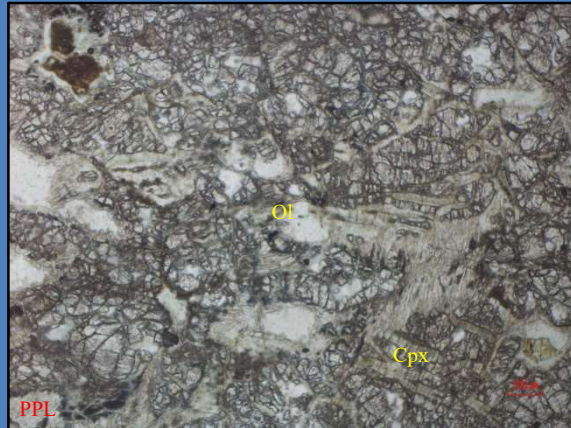
Deskripsi Mineralogi (Mineralogy Of Description)		
Komposisi Mineral Primer <i>Compositon of Mineral</i>	Jumlah <i>Amount</i> (%)	Keterangan optik mineral <i>Description of Optical Mineralogy</i>
<i>Serpentinite</i> (Srp)	95%	Warna absorpsi colorless, warna interferensi abu-abu kekuningan (Orde I), relief sedang, intensitas sedang, bentuk berserat, belahan tidak ada, sudut gelap bergelombang, tekstur khusus mesh (kenampakan mineral serpentin menyerupai serat yang nampak pada rekahan dan membentuk seperti jala).
<i>Orthopyroxene</i> (Opx)	4%	Warna absorpsi cokelat, warna interferensi abu-abu kecoklatan (Orde I), relief sedang, intensitas sedang, bentuk anhedralsubhedral, tidak terdapat kembaran, pleokroisme monokroik, ukuran mineral 0,01 mm – 0,03 mm sudut gelap 50o dengan jenis gelap miring.
Mineral Opaq	1%	Warna absorpsi dan interferensi hitam, intensitas rendah, relief tinggi, ukuran mineral 0,05-0,125.

TRAVIS (1955)

COLOR	CHIEF MINERAL	CARACTERIZING ACCESSORY MINERALS	NONDIRECTIONAL STRUCTURE		DIRECTIONAL STRUCTURE (Lineated Or Foliasi)				PLUTONIC METAMORF	
			CONTACT METAMORPHISM		MECHANICAL METAMORF	REGIONAL METAMORPHISME				
			Fine Grain (Aphanitic)	Medium Grained (Phaneritites)		Slaty	Phyllite	Schistose		Gneissose
Light	Quartz Feldspar Calcite Dolomite Talc Muscovite Sericite	Muscovite Sericite Silimanite Kyanite Tremolite Wollastonite Albite Anadaluiste Phlogite Diopside Enstatite Staurolite Glaucophane Anthophyllite Phyophyllite Chloritoid Actinolite Tourmaline Epidote Olivine Serpentine Chlorite Biotite Graphite	Metaquartzite Marble Brecite Marble Soapstone Only Metamorfic Rocks With Nondirectional Structure	Medium Grained (Phaneritites)	Cataclastik	Slaty	Phyllite	Schist	Gneiss Granulite	Migmatitic
			Metaquartzite Marble Skarn	Metaquartzite Marble Hornfels Skarn Serpentine	Milonite Flaser Granite Flaser Diorite Flaser Conglomerate Ultramylonite Algen Gneiss	Slate	Phyllite			
Intermediate (Includes red or brown)	Aboutequal Proportions of Light - Colored and Dark - Colored Minerals		Metaquartzite Marble Skarn Soapstone Chief Talc Marble Hornfels Only Metamorphic Rock with nondirectional Structure Serpentine							These rocks have a gneissose, Streaked, or irregular structure produced by intimated mixing of metamorphic and magmatic materials
Dark (Includes Green)	Quartz Calcite Dolomite Feldspar Cholorite Hornblande Serpentine Biotite Pyroxene Actinolite Epidote Olivine Magnetite		Metaquartzite Marble Skarn Graphite Marble Chlorite Marble Serpentine Marble (Ophicalcite) Soapstone Chiefly Talc Matamorphic Rock With Nondirectional Structure	Metaquartzite Marble Hornfels Serpentine Eclogite Megnetite Rock Amphibolite			Phyllonite	Schist Amphibolite	Gneiss	

No Sampel Perbesaran	: ST 26 : 50X	Formasi Satuan	: Kompleks Ultrabasa : Peridotit
Tipe Batuan(Rock Type)	: Batuan Beku		
Klasifikasi (Classification)	: Streickeisen (1976)		
Struktur	: Masif		
Nama Batuan	: <i>Lherzolite</i> (Streckeisen, 1976)		

Foto :



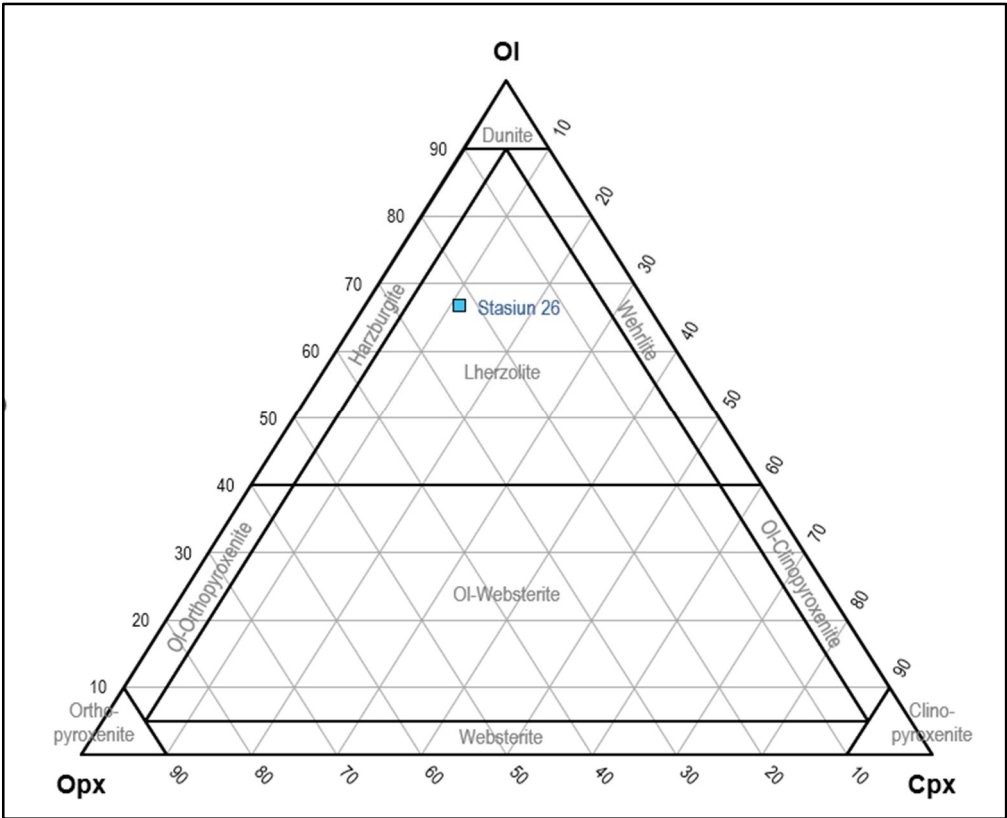
Mikroskopis (Microscopic):

Kenampakan petrografis, pada warna absorpsi colorless hingga abu-abu kecoklatan, warna interferensi bervariasi (sesuai dengan warna mineralnya), tekstur kristalinitas holokristalin, granularitas faneritik, bentuk mineral anhedral – subhedral, fabrik inequigranular, dengan ukuran mineral 0,01 – 2,5 mm. Tersusun atas *Olivine* (66 %), *Clinopyroxene* (11%), *Orthopyroxene* (22%), dan *Opaq* (1%).

Deskripsi Mineralogi (Mineralogy Of Description)		
Komposisi Mineral Primer <i>Compositition of Mineral</i>	Jumlah Amount (%)	Keterangan optik mineral <i>Description of Optical Mineralogy</i>
<i>Olivine</i> (Ol)	66%	Warna absorpsi coklat, warna interferensi biru kekuningan (Orde III), relief tinggi, intensitas sedang, bentuk anhedralsubhedral, tidak terdapat belahan, pecahan tidak rata, tidak terdapat kembaran, pleokroisme monokroik, ukuran mineral 0,3 mm – 2,5 mm, sudut gelap 40° dengan jenis gelap miring.
<i>Clinopyroxene</i> (Cpx)	11%	Warna absorpsi coklat, warna interferensi ungu kekuningan (Orde II), relief tinggi, intensitas sedang, bentuk anhedralsubhedral, terdapat belahan dua arah, pecahan tidak rata, pleokroisme monokroik, ukuran mineral 0,4 mm – 1,6 mm, sudut gelap 80° dengan jenis gelap miring.

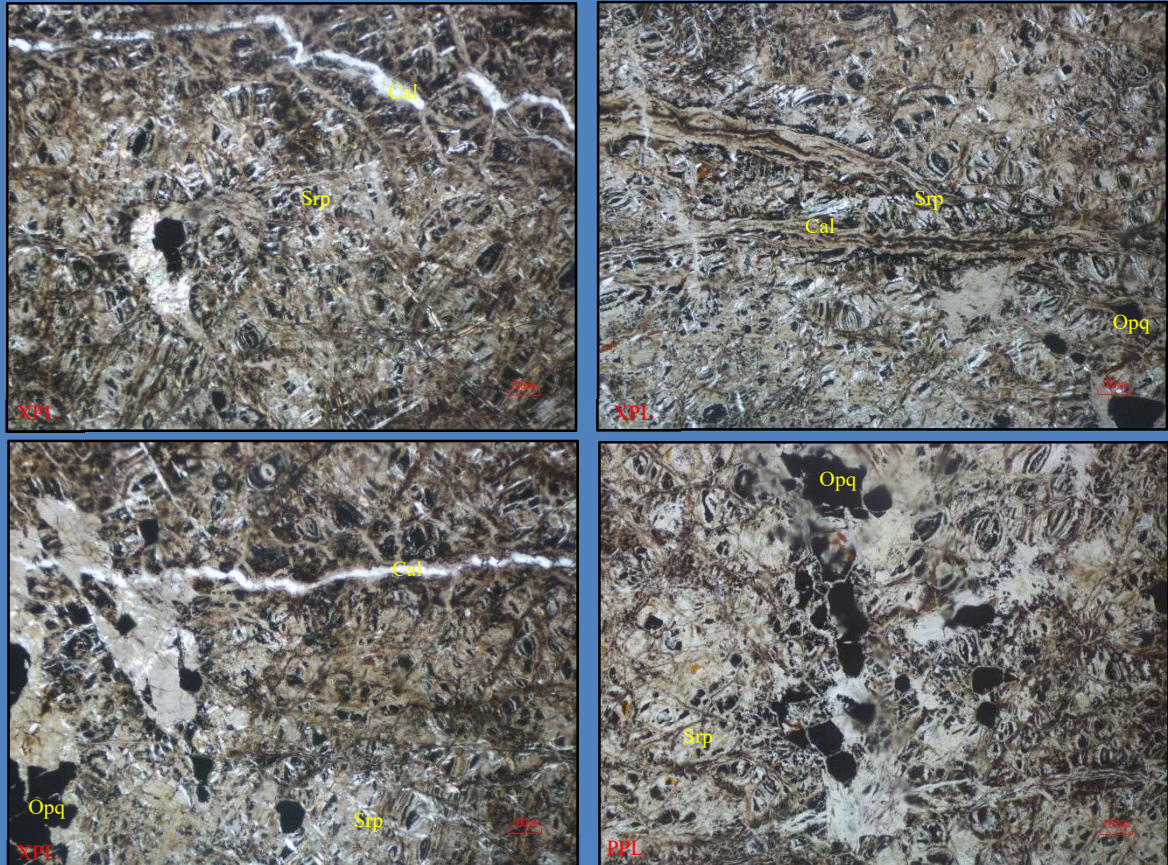
<i>Orthopyroxene (Opx)</i>	22%	Warna absorpsi coklat, warna interferensi abu-abu kecoklatan (Orde I), relief sedang, intensitas sedang, bentuk anhedralsubhedral, terdapat belahan dua arah, pecahan tidak rata, tidak terdapat kembaran, pleokroisme monokroik, ukuran mineral 0,01 mm – 0,05 mm, sudut gelap 57o dengan jenis gelap miring.
Mineral Opaq	1%	Warna absorpsi dan interferensi hitam, intensitas rendah, relief tinggi, ukuran mineral 0,1-0,125.

Klasifikasi Batuan Beku QAPF (Streckeisen, 1976)



No Sampel Perbesaran	: ST 29 : 50X	Formasi Satuan	:Kompleks Ultrabasa :Serpentinit
Tipe Batuan(Rock Type)	: Batuan Metamorf		
Klasifikasi (Classification)	: Travis (1955)		
Struktur	: Non Foliasi		
Nama Batuan	: <i>Serpentinite</i> (Travis 1955)		

Foto :



Mikroskopis (*Microscopic*):

Kenampakan petrografis, pada warna absorpsi colorless hingga abu-abu, warna interferensi abu-abu kehitaman, tesktur kristaloblastik, struktur non foliasi yaitu granulose. Tekstur khusus mesh (kenampakan mineral serpentinit menyerupai serat yang nampak pada rekahan dan membentuk seperti jala). Dengan ukuran mineral 0,02 – 0,15 mm. Tersusun atas *Kalsite* (3,5%), *Serpentinite* (95%) dan *Opaq* (1,5%)

Deskripsi Mineralogi (*Mineralogy Of Description*)

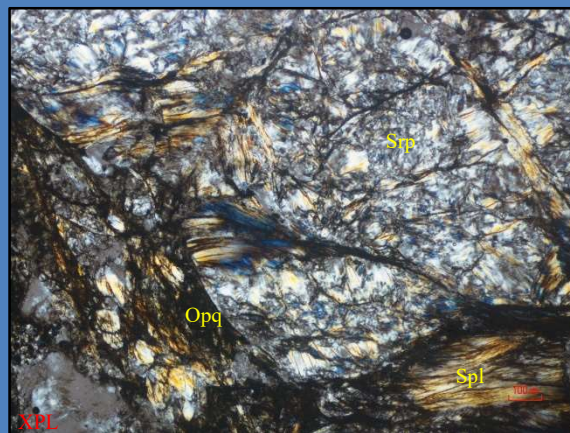
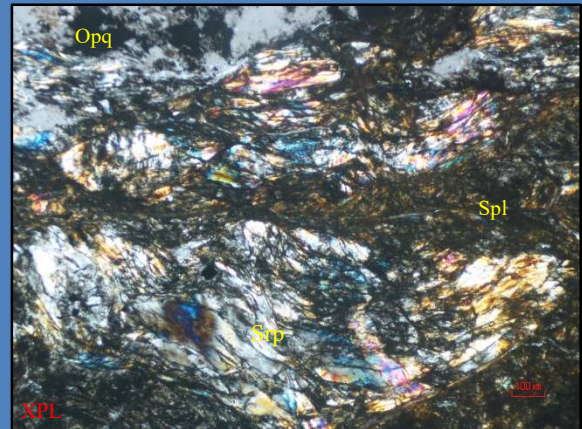
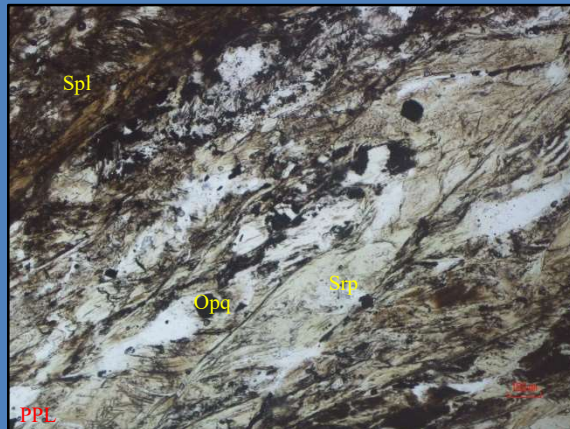
Komposisi Mineral Primer <i>Compositon of Mineral</i>	Jumlah Amount (%)	Keterangan optik mineral <i>Description of Optical Mineralogy</i>
<i>Serpentinite</i> (Srp)	95%	Warna absorpsi colorless, warna interferensi abu-abu kekuningan (Orde I), relief sedang, intensitas sedang, bentuk berserat, belahan tidak ada, sudut gelap bergelombang, tekstur khusus mesh (kenampakan mineral serpentinit menyerupai serat yang nampak pada rekahan dan membentuk seperti jala).
<i>Kalsite</i> (Cal)	3,5%	Warna absorpsi coklat transparan, warna interferensi pelangi, pleokroisme tidak ada, relief rendah, intensitas tinggi, belahan tidak jelas, pecahan tidak rata, bentuk subhedral
Mineral Opaq	1,5%	Warna absorpsi dan interferensi hitam, intensitas rendah, relief tinggi, ukuran mineral 0,125-0,2.

KLASIFIKASI BATUAN METAMORF TRAVIS (1955)

COLOR	CHIEF MINERAL	CHARACTERIZING ACCESSORY MINERALS	NONDIRECTIONAL STRUCTURE		DIRECTIONAL STRUCTURE (Lineated Or Folias)				PLUTONIC METAMORF	
			CONTACT METAMORPHISM		MECHANICAL METAMORF	REGIONAL METAMORPHISM				
			Fine Grain (Aphanitic)	Medium Grained (Phaneritic)		Cataclastik	Slaty	Phyllite		Schistose
Light	Quartz Feldspar Calcite Dolomite Talc Muscovite Sericite	Muscovite Sericite Silimanite Kyanite Tremolite Wollastonite Albite Anadalsite Phlogite Diopside Enstatite Staurolite Glaucothane Anthophyllite Phyrophyllite Chloritoid Actinolite Tourmaline Epidote Olivine Serpentine Chlorite Biotite Graphite	Metaquartzite Marble Brucite Marble Tremolite Marble Wollastonite Only Metamorphic Rocks With Nondirectional Structure	Medium Grained (Phaneritic)	Cataclastik	Slaty	Phyllite	Schist	Gneiss Granulite	Migmatitic
			Metaquartzite Marble Skarn Soapstone Chief Talc Hornfels Only Metamorphic Rock with nondirectional Structure Serpentine	Metaquartzite Marble Hornfels Skarn Serpentine	Milonite Flaser Granite Flaser Diorite Flaser Conglomerate Ultramylonite Algen Gneiss	Slate	Phyllite	Schist	Gneiss Granulite	
Intermediate (Includes red or brown)	About equal Proportions of Light - Colored and Dark - Colored Minerals		Metaquartzite Marble Skarn Soapstone Chief Talc Hornfels Only Metamorphic Rock with nondirectional Structure Serpentine							These rocks have a gneissose, Straked, or irregular structure produced by intimated mixing of metamorphic and magmatic materials
			Metaquartzite Marble Skarn Graphite Marble Chlorite Marble Serpentine Marble (Opicalcitic) Soapstone Chiefly Talc Metamorphic Rock With Nondirectional Structure	Metaquartzite Marble Hornfels Skarn Serpentine Marble (Opicalcitic) Soapstone Chiefly Talc Metamorphic Rock With Nondirectional Structure	Milonite Flaser Granite Flaser Diorite Flaser Conglomerate Ultramylonite Algen Gneiss	Slate	Phyllite	Schist	Gneiss Granulite	
Dark (Includes Green)	Quartz Calcite Dolomite Feldspar Chlorite Hornblende Serpentine Biotite Pyroxene Actinolite Epidote Olivine Magnetite		Metaquartzite Marble Skarn Graphite Marble Chlorite Marble Serpentine Marble (Opicalcitic) Soapstone Chiefly Talc Metamorphic Rock With Nondirectional Structure	Medium Grained (Phaneritic)	Cataclastik	Slaty	Phyllite	Schist Amphibolite	Gneiss	Migmatitic
			Metaquartzite Marble Skarn Graphite Marble Chlorite Marble Serpentine Marble (Opicalcitic) Soapstone Chiefly Talc Metamorphic Rock With Nondirectional Structure	Metaquartzite Marble Hornfels Skarn Serpentine Marble (Opicalcitic) Soapstone Chiefly Talc Metamorphic Rock With Nondirectional Structure	Milonite Flaser Granite Flaser Diorite Flaser Conglomerate Ultramylonite Algen Gneiss	Slate	Phyllite	Schist	Gneiss Granulite	

No Sampel : ST 31	Formasi	: Kompleks Ultrabasa
Perbesaran : 50X	Satuan	: Serpentin
Tipe Batuan(Rock Type)	: Batuan Metamorf	
Klasifikasi (Classification)	: Travis (1955)	
Struktur	: Non Foliasi	
Nama Batuan	: <i>Serpentinite</i> (Travis 1955)	

Foto :



Mikroskopis (Microscopic) :

Kenampakan petrografis, pada warna absorpsi colorless hingga abu-abu, warna interferensi abu-abu kehitaman, tesktur kristaloblastik, struktur non foliasi yaitu granulose. Tekstur khusus mesh (kenampakan mineral serpentinite menyerupai serat yang nampak pada rekahan dan membentuk seperti jala). Dengan ukuran mineral 0,02 – 0,15 mm. Tersusun atas Spinel (3,5%), *Serpentinite* (95%) dan Opaq (1,2%)

Deskripsi Mineralogi (Mineralogy Of Description)

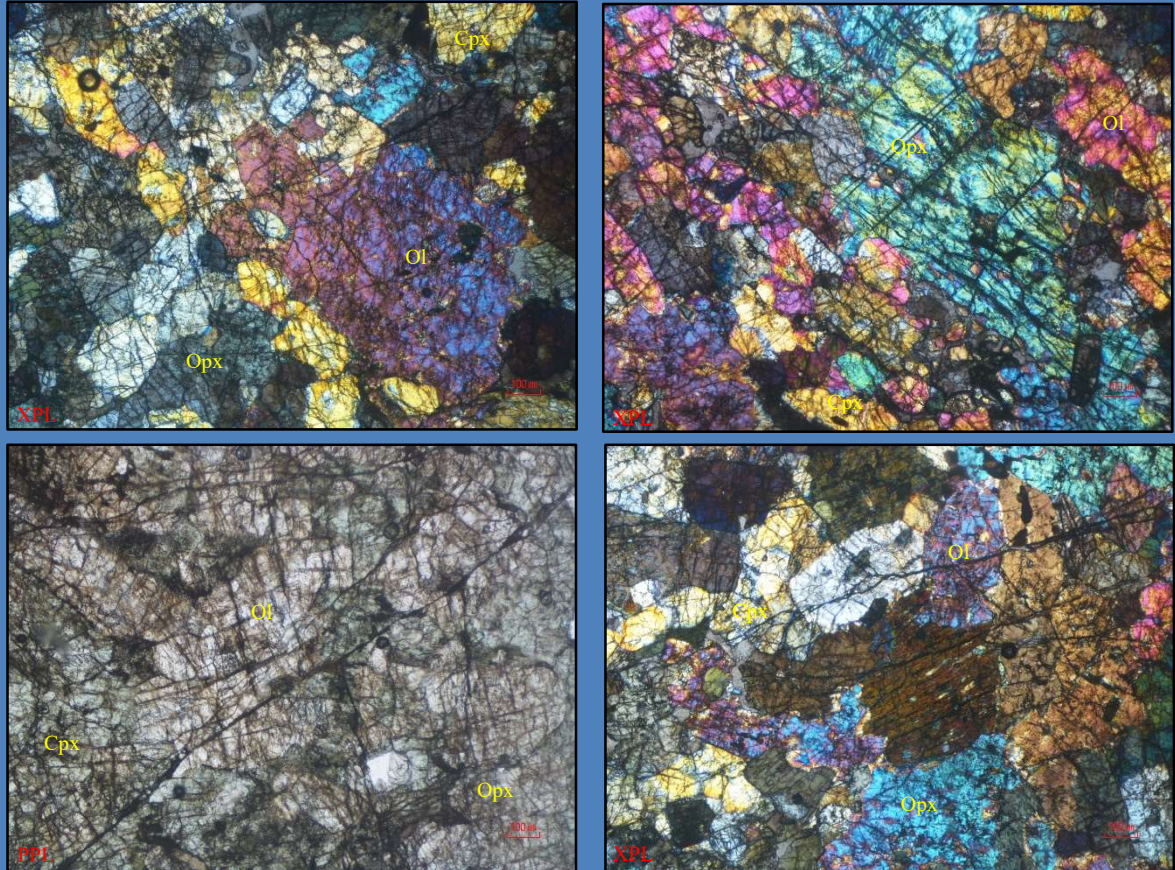
Komposisi Mineral Primer <i>Compositiion of Mineral</i>	Jumlah Amount (%)	Keterangan optik mineral <i>Description of Optical Mineralogy</i>
<i>Serpentinite</i> (Srp)	95%	Warna absorpsi colorless, warna interferensi abu-abu kekuningan (Orde I), relief sedang, intensitas sedang, bentuk berserat, belahan tidak ada, sudut gelapan bergelombang, tekstur khusus mesh (kenampakan mineral serpentinite menyerupai serat yang nampak pada rekahan)
Mineral Opaq	1,2%	Warna absorpsi hitam, warna interferensi hitam, ukuran mineral 0,02 – 1,3 mm.
Spinel (Sp)	3,5%	Berwarna hitam kecoklatan, opak, memiliki non pleokroik dalam bentuk veinlet berasosiasi dengan serpentinite, serta memiliki relief yang tinggi.

KLASIFIKASI BATUAN METAMORF TRAVIS (1955)

COLOR		CHIEF MINERAL	CHARACTERIZING ACCESSORY MINERALS	NONDIRECTIONAL STRUCTURE		DIRECTIONAL STRUCTURE (Lineated Or Foliasi)				PLUTONIC METAMORF
				CONTACT METAMORPHISM		MECHANICAL METAMORF	REGIONAL METAMORPHISME			
				Fine Grain (Aphanitic)	Medium Grained (Phaneritics)		Cataclastik	Slaty	Phyllite	
Light	Quartz Feldspar Calcite Dolomite Talc Muscovite Sericite	Muscovite Sericite Silimanite Kyanite Tremolite Wollastonite Albite Anadalsite Phlogite Diopside Enstatite Staurolite Glaucophane Anthophyllite Phyrophyllite Chloritoid Actinolite Tourmaline Epidote Olivine Serpentine Chlorite Biotite Graphite	Metaquartzite Marble Brucite Tremolite Marble Soapstone Only Metamorphic Rocks With Nondirectional Structure	Metaquartzite Marble Brucite Tremolite Marble Wollastonite Marble Calc - Silicate Hornfels Chiefly Calc - Silicate	Cataclastik	Slaty	Phyllite	Schist	Gneiss Granulite	Migmatitic
			Metaquartzite Marble Skarn Soapstone Chief Talc Hornfels Only Metamorphic Rock with nondirectional Structure Serpentine	Metaquartzite Marble Hornfels Skarn Serpentine						
Intermediate (Includes red or brown)	Aboutequal Proportions of Light - Colored and Dark - Colored Minerals		Metaquartzite Marble Skarn Soapstone Chief Talc Hornfels Only Metamorphic Rock with nondirectional Structure Serpentine	Metaquartzite Marble Hornfels Skarn Serpentine	Milonite Flaser Granite Flaser Diorite Flaser Conglomerate Ultramylonite Algen Gneiss	Slate	Phyllite	Schist	Gneiss Granulite	
Dark (Includes Green)	Quartz Calcite Dolomite Feldspar Cholorite Hornblande Serpentine Biotite Pyroxene Actinolrite Epidote Olivine Magnetite		Metaquartzite Marble Skarn Graphite Marble Chlorite Marble Serpentine Marble (Opicalcite) Soapstone Chiefly Talc Matamorphic Rock With Nondirectional Structure Serpentine	Metaquartzite Marble Hornfels Serpentine Eclogite Megnetite Rock Amphibolite			Phyllonite	Schist Amphibolite		

No Sampel Perbesaran	: ST 33 : 50X	Formasi Satuan	: Kompleks Ultrabasa : Peridotit
Tipe Batuan(Rock Type)	: Batuan Beku		
Klasifikasi (Classification)	: Streckeisen (1976)		
Struktur	: Masif		
Nama Batuan	: <i>Lherzolite</i> (Streckeisen, 1976)		

Foto :



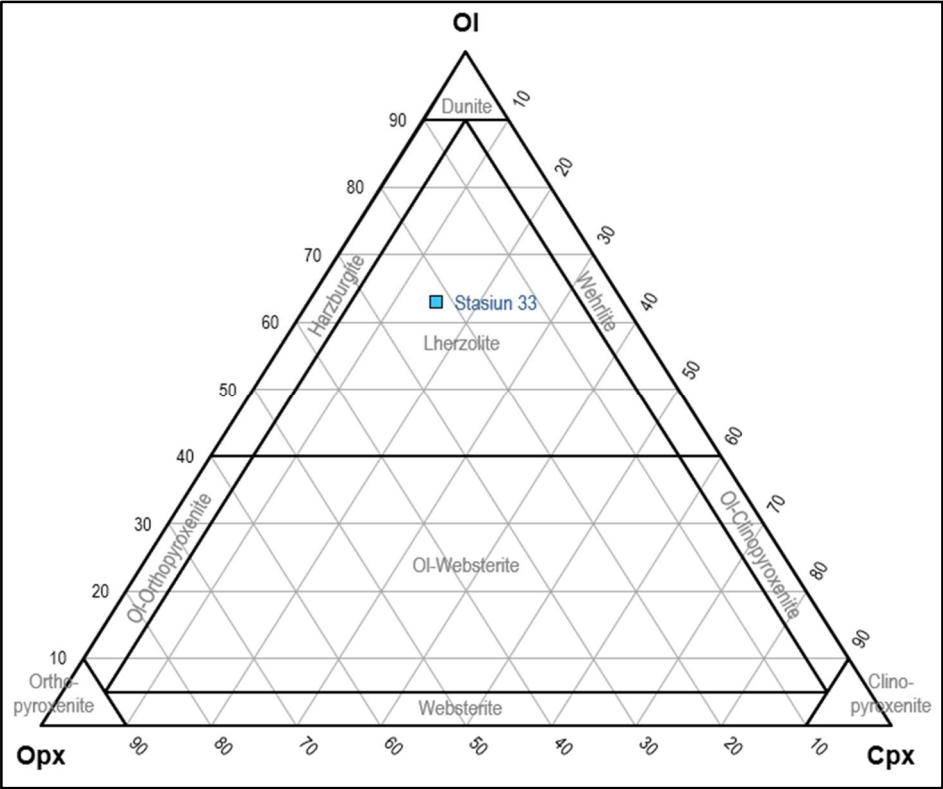
Mikroskopis (Microscopic) :

Kenampakan petrografis, pada warna absorpsi colorless hingga abu-abu kecoklatan, warna interferensi bervariasi (sesuai dengan warna mineralnya), tekstur kristalinitas holokristalin, granularitas faneritik, bentuk mineral anhedral – subhedral, fabrik inequigranular, dengan ukuran mineral 0,6 mm – 2,5 mm. Tersusun atas *Olivine* (63 %), *Clinopyroxene* (15%), dan *Orthopyroxene* (22%)

Deskripsi Mineralogi (Mineralogy Of Description)		
Komposisi Mineral Primer <i>Compositon of Mineral</i>	Jumlah <i>Amount</i> (%)	Keterangan optik mineral <i>Description of Optical Mineralogy</i>
<i>Olivine</i> (Ol)	63%	Warna absorpsi coklat, warna interferensi biru kekuningan (Orde III), relief tinggi, intensitas sedang, bentuk anhedralsubhedral, tidak terdapat belahan, pecahan tidak rata, tidak terdapat kembaran, pleokroisme monokroik, ukuran mineral 0,6 mm – 2,5 mm, sudut gelap 40° dengan jenis gelap miring.
<i>Clinopyroxene</i> (Cpx)	15%	Warna absorpsi coklat, warna interferensi ungu kekuningan (Orde II), relief tinggi, intensitas sedang, bentuk anhedralsubhedral, terdapat belahan dua arah, pecahan tidak rata, pleokroisme monokroik, ukuran mineral 0,2 mm – 0,93 mm, sudut gelap 90° dengan jenis gelap sejajar.
<i>Orthopyroxene</i> (Opx)	22%	Warna absorpsi coklat, warna interferensi abu-abu kecoklatan (Orde I), relief sedang, intensitas sedang, bentuk anhedralsubhedral, terdapat belahan dua arah, pecahan tidak rata, tidak terdapat kembaran, pleokroisme monokroik, ukuran

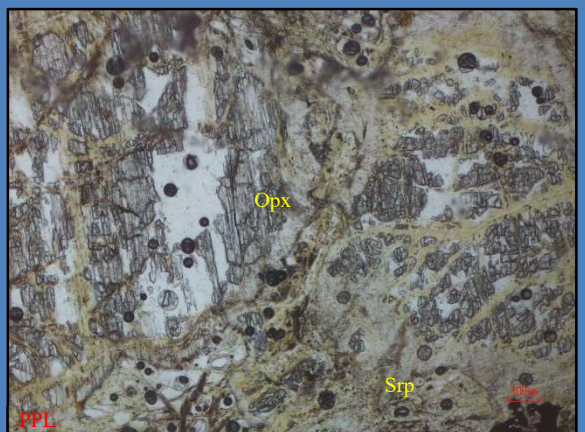
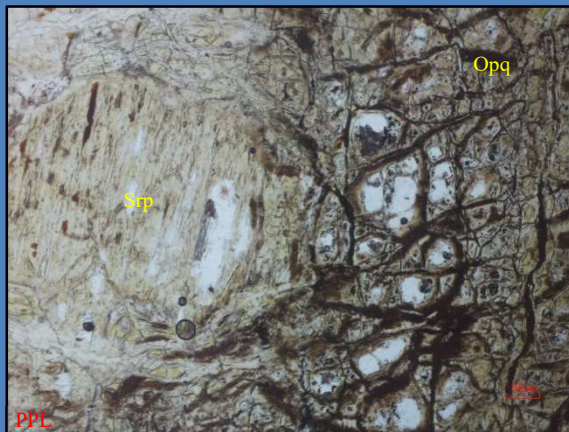
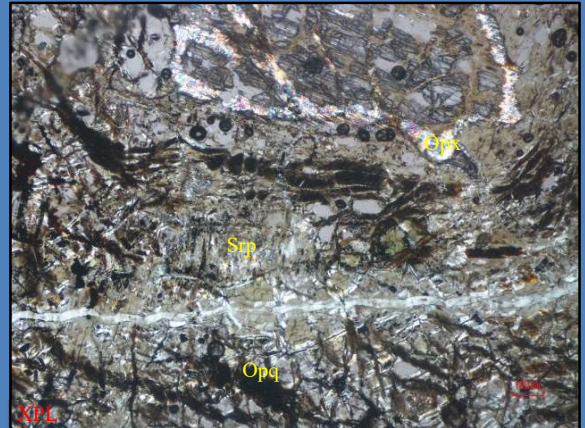
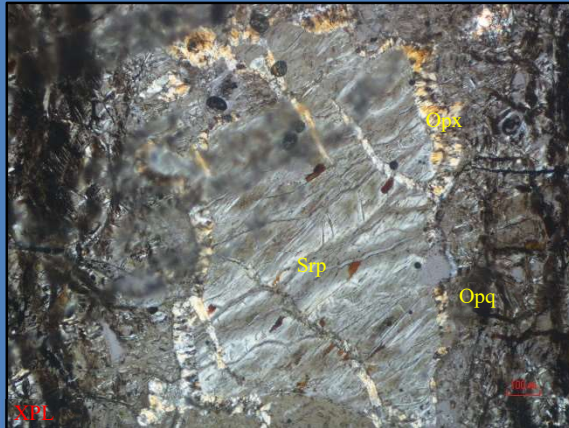
		mineral 0,45 mm – 1,63 mm, sudut gelap 50° dengan jenis gelap miring.
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Klasifikasi Batuan Beku QAPF (Streckeisen, 1976)



No Sampel Perbesaran	: ST 34 : 50X	Formasi Satuan	:Kompleks Ultrabasa :Serpentinit
Tipe Batuan(Rock Type)	: Batuan Metamorf		
Klasifikasi (Classification)	: Travis (1955)		
Struktur	: Non Foliasi		
Nama Batuan	: <i>Serpentinite</i> (Travis, 1955)		

Foto :



Mikroskopis (Microscopic) :

Kenampakan petrografis, pada warna absorpsi colorless hingga abu-abu, warna interferensi abu-abu kehitaman, tesktur kristaloblastik, struktur non foliasi yaitu granulose. Tekstur khusus mesh (kenampakan mineral serpentinit menyerupai serat yang nampak pada rekahan dan membentuk seperti jala). Dengan ukuran mineral 0,01 – 1,3 mm. Tersusun atas *Serpentinite* (93%) , *Orthopyroxene* (5%) dan *Opaq* (2%).

Deskripsi Mineralogi (Mineralogy Of Description)

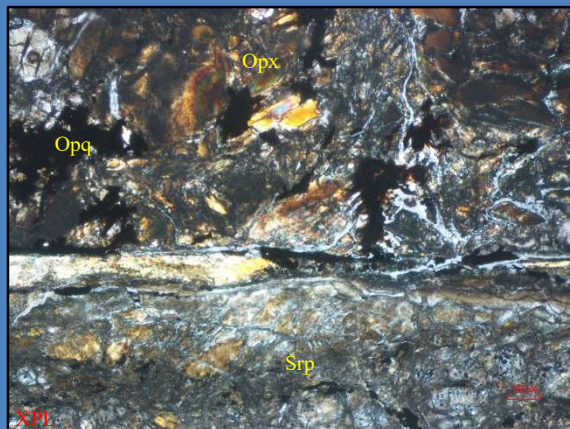
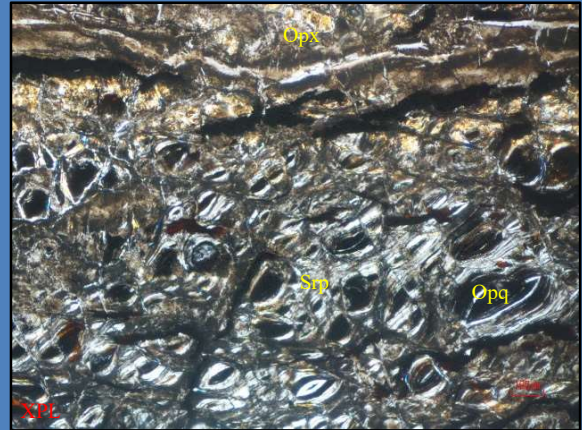
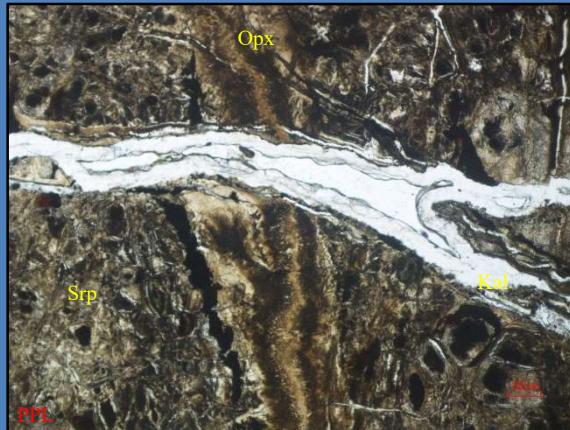
Komposisi Mineral Primer <i>Compositon of Mineral</i>	Jumlah Amount (%)	Keterangan optik mineral <i>Description of Optical Mineralogy</i>
Serpentin (Srp)	93%	Warna absorsi colorless, warna interferensi abu-abu kekuningan (Orde I), relief sedang, intensitas sedang, bentuk berserat, belahan tidak ada, sudut gelap bergelombang, tekstur khusus mesh (kenampakan mineral serpentinit menyerupai serat yang nampak pada rekahan dan membentuk seperti jala).
<i>Orthopyroxene</i> (Opx)	5%	Warna absorpsi cokelat, warna interferensi abu-abu kecoklatan (Orde I), relief sedang, intensitas sedang, bentuk anhedralsubhedral, tidak terdapat kembaran, pleokroisme monokroik, ukuran mineral 0,01 mm – 0,03 mm sudut gelap 50° dengan jenis gelap miring.
Mineral Opaq	2%	Warna absorpsi dan interferensi hitam, intensitas rendah, relief tinggi, ukuran mineral 0,1-0,125.

KLASIFIKASI BATUAN METAMORF TRAVIS (1955)

COLOR		CHIEF MINERAL	CHARACTERIZING ACCESSORY MINERALS	NONDIRECTIONAL STRUCTURE		DIRECTIONAL STRUCTURE (Lineated Or Foliated)				PLUTONIC METAMORF	
				CONTACT METAMORPHISM		MECHANICAL METAMORF	REGIONAL METAMORPHISME				
				Fine Grain (Aphanitic)	Medium Grained (Phaneritic)	Cataclastik	Slaty	Phyllite	Schistose	Gneissose	
Light	Quartz Feldspar Calcite Dolomite Talc Muscovite Sericite	Muscovite Sericite Silimanite Kyanite Tremolite Wollastonite Albite Anadalsite Phlogite Diopside Enstatite Staurolite Glaucoaphane Anthophyllite Phyrophyllite Chloritoid Actinolite Tourmaline Epidote Olivine Serpentine Chlorite Biotite Graphite	Metaquartzite Marble Brucite Marble Soapstone Only Metamorphic Rocks With Nondirectional Structure	Metaquartzite Marble Brucite Marble Wollastonite Marble Calc - Silicate Hornfels Chiefly Calc - Silicate					Schist	Gneiss Granulite	These rocks have a gneissose, Strreaked, or irregular structure produced by intimated mixing of metamorphic and magmatic materials
			Metaquartzite Marble Skarn Soapstone Chief Talc Hornfels Only Metamorphic Rock with nondirectional Structure Serpentine	Metaquartzite Marble Hornfels Skarn Serpentine	Milonite Flaser Granite Flaser Diorite Ultramylonite Algen Gneiss	Slate	Phyllite	Schist	Gneiss Granulite		
Dark (Includes Green)	Quartz Calcite Dolomite Feldspar Cholorite Hornblande Serpentine Biotite Pyroxene Actinolite Epidote Olivine Magnetite		Metaquartzite Marble Skarn Graphite Marble Chlorite Marble Serpentine Marble (Opicalcite) Soapstone Chiefly Talc Matamorphic Rock With Nondirectional Structure	Metaquartzite Marble Hornfels Serpentine Eclogite Megnetite Rock Amphibolite			Phyllonite	Schist Amphibolite	Gneiss		
			Serpentine								

No Sampel : ST 51	Formasi	: Kompleks Ultrabasa
Perbesaran : 50X	Satuan	: Serpentin
Tipe Batuan(Rock Type)	: Batuan Metamorf	
Klasifikasi (Classification)	: Travis (1955)	
Struktur	: Non Foliasi	
Nama Batuan	: <i>Serpentinite</i> (Travis 1955)	

Foto :



Mikroskopis (Microscopic) :

Kenampakan petrografis, pada warna absorpsi colorless hingga abu-abu, warna interferensi abu-abu kehitaman, tesktur kristaloblastik, struktur non foliasi yaitu granulose. Tekstur khusus mesh (kenampakan mineral serpentin menyerupai serat yang nampak pada rekahan dan membentuk seperti jala). Dengan ukuran mineral 0,02 – 0,15 mm. Tersusun atas *Orthopyroxene* (4%), *Serpentinite* (95%) dan *Opaq* (1%)

Deskripsi Mineralogi (Mineralogy Of Description)

Komposisi Mineral Primer <i>Compositon of Mineral</i>	Jumlah Amount (%)	Keterangan optik mineral <i>Description of Optical Mineralogy</i>
<i>Serpentinite</i> (Srp)	95%	Warna absorsi colorless, warna interferensi abu-abu kekuningan (Orde I), relief sedang, intensitas sedang, bentuk berserat, belahan tidak ada, sudut gelap bergelombang, tekstur khusus mesh (kenampakan mineral serpentin menyerupai serat yang nampak pada rekahan dan membentuk seperti jala).
<i>Orthopyroxene</i> (Opx)	4%	Warna absorpsi coklat, warna interferensi abu-abu kecoklatan (Orde I), relief sedang, intensitas sedang, bentuk anhedralsubhedral, tidak terdapat kembaran, pleokroisme monokroik, ukuran mineral 0,05 mm – 0,15 mm sudut gelap 52° dengan jenis gelap miring.

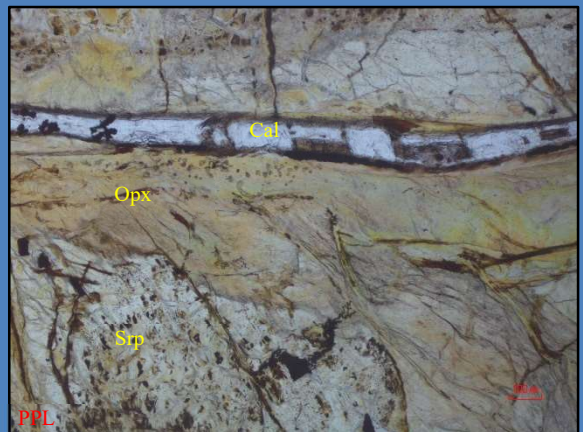
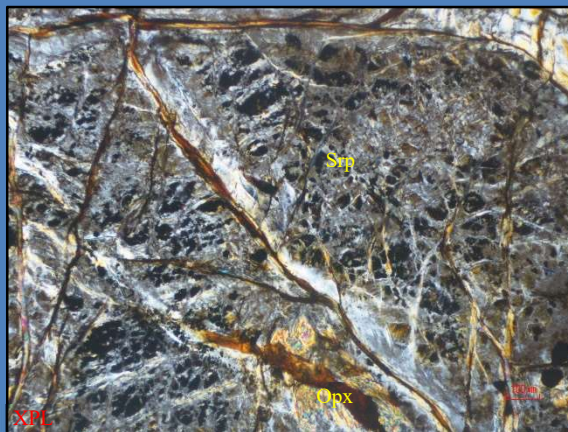
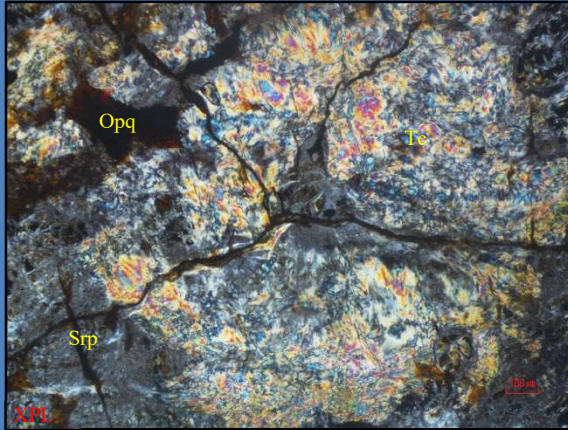
**KLASIFIKASI BATUAN METAMORF
TRAVIS (1955)**

Mineral Opaq	1%	Warna absorpsi dan interferensi hitam, intensitas rendah, relief tinggi, ukuran mineral 0,1-0,2 mm.
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COLOR	CHIEF MINERAL	CHARACTERIZING ACCESSORY MINERALS	NONDIRECTIONAL STRUCTURE		DIRECTIONAL STRUCTURE (Lineated Or Foliated)				
			CONTACT METAMORPHISM		MECHANICAL METAMORPH	REGIONAL METAMORPHISM			
			Fine Grain (Aphanitic)	Medium Grained (Phaneritic)		Slaty	Phyllite	Schistose	Gneissose
Light	Quartz Feldspar Calcite Dolomite Talc Muscovite Sericite	Muscovite Sericite Silimanite Kyanite Tremolite Wollastonite Albite Anadalsite Phlogite Diopside Enstatite Staurolite Glaucothane Anthophyllite Phyrophyllite Chloritoid Actinolite Tourmaline Epidote Olivine Serpentine Chlorite Biotite Graphite	Metaquartzite Marble Brucite Marble Tremolite Marble Soapstone Only Metamorphic Rocks With Nondirectional Structure	Metaquartzite Marble Brucite Marble Tremolite Marble Wollastonite Calc - Silicate Hornfels Chiefly Calc - Silicate		Schist	Gneiss Granulite	Migmatitic	
			Metaquartzite Marble Skarn Soapstone Chief Talc Hornfels Only Metamorphic Rock with nondirectional Structure Serpentine	Metaquartzite Marble Hornfels Skarn Serpentine	Milonite Flaser Granite Flaser Diorite Flaser Conglomerate Ultramylonite Aigen Gneiss	Slaty	Phyllite		Gneiss Granulite
Intermediate (Includes red or brown)	Aboutequal Proportions of Light - Colored and Dark - Colored Minerals								These rocks have a gneissose, Streaked, or irregular structure produced by intimately mixing of metamorphic and magmatic materials
Dark (Includes Green)	Quartz Calcite Dolomite Feldspar Chlorite Hornblende Serpentine Biotite Pyroxene Actinolite Epidote Olivine Magnetite		Metaquartzite Marble Skarn Graphite Marble Chlorite Marble Serpentine Marble (Opticalcite) Soapstone Chiefly Talc Metamorphic Rock With Nondirectional Structure	Metaquartzite Marble Hornfels Serpentine Eclogite Megnetite Rock Amphibolite			Phyllonite	Schist Amphibolite Gneiss	

No Sampel Perbesaran	: ST 56 : 50X	Formasi Satuan	: Kompleks Ultrabasa : Serpentininit
Tipe Batuan(Rock Type)	: Batuan Metamorf		
Klasifikasi (Classification)	: Travis (1955)		
Struktur	: Masif		
Nama Batuan	: <i>Serpentinite</i> (Travis 1955)		

Foto :



Mikroskopis (Microscopic) :

Kenampakan petrografis, pada warna absorpsi colorless hingga abu-abu, warna interferensi abu-abu kehitaman, tekstur kristaloblastik, struktur non foliasi yaitu granulose. Tekstur khusus mesh (kenampakan mineral serpentin menyerupai serat yang nampak pada rekahan dan membentuk seperti jala). Dengan ukuran mineral 0,02 – 0,15 mm. Tersusun atas *Talk* (4%), *Serpentinite* (93%), *Orthopyroxene* (1%), dan *Opaq* (1%)

Deskripsi Mineralogi (Mineralogy Of Description)		
Komposisi Mineral Primer <i>Compositon of Mineral</i>	Jumlah Amount (%)	Keterangan optik mineral <i>Description of Optical Mineralogy</i>
<i>Serpentinite (Srp)</i>	94%	Warna absorsi colorless, warna interferensi abu-abu kekuningan (Orde I), relief sedang, intensitas sedang, bentuk berserat, belahan tidak ada, sudut gelap bergelombang, tekstur khusus mesh (kenampakan mineral serpentin menyerupai serat yang nampak pada rekahan dan membentuk seperti jala).
<i>Talk (Tc)</i>	4%	Warna absorsi kuning kecoklatan, warna interfensi colorless (orde III), dengan relief sedang, memiliki belahan sempurna, memiliki sudut pepadaman paralel,
<i>Orthopyroxene (Opx)</i>	1%	Warna absorpsi coklat, warna interferensi abu-abu kecoklatan (Orde I), relief sedang, intensitas sedang, bentuk anhedralsubhedral, tidak terdapat kembaran, pleokroisme monokroik, ukuran mineral 0,05 mm – 0,15 mm sudut gelap 52° dengan jenis gelap miring.

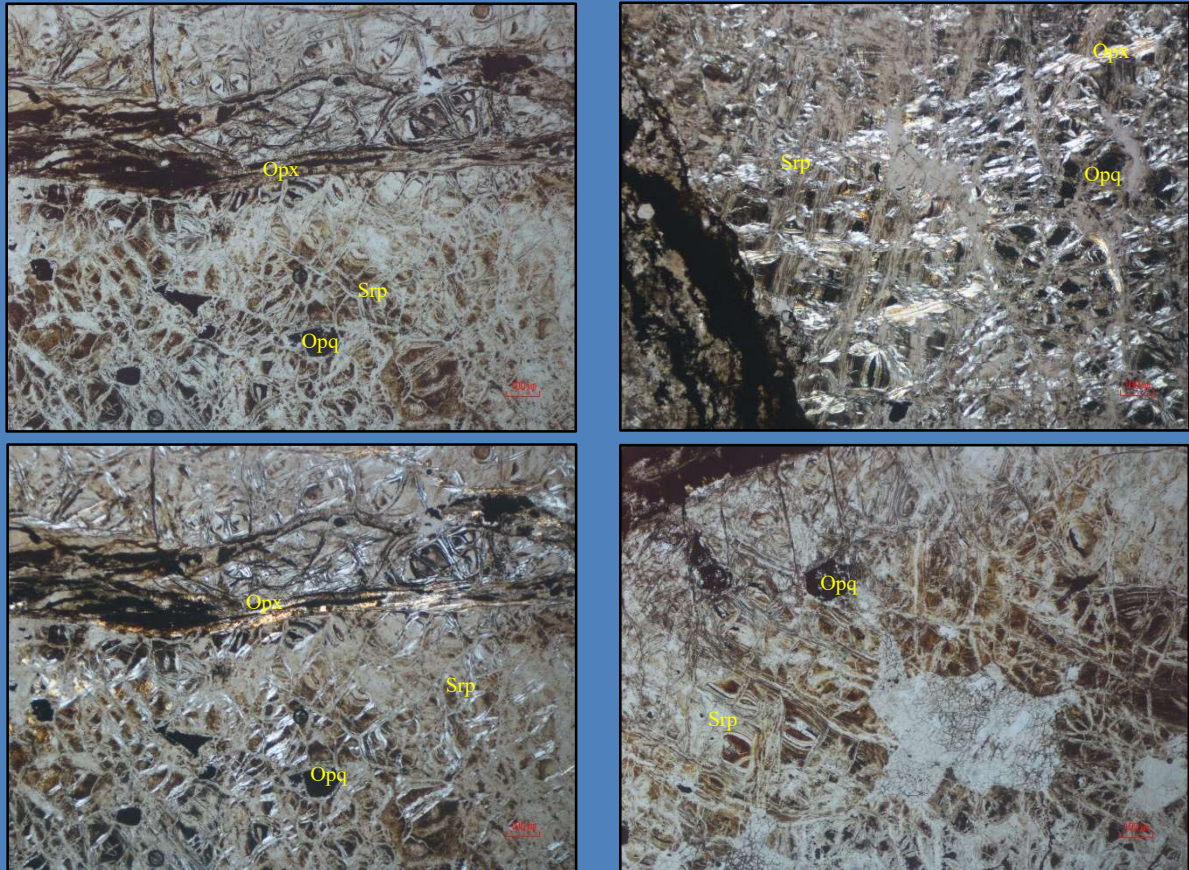
Mineral Opaq	1%	Warna absorpsi dan interferensi hitam, intensitas rendah, relief tinggi, ukuran mineral 0,1-0,2 mm.
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**KLASIFIKASI BATUAN METAMORF
TRAVIS (1955)**

NONDIRECTIONAL STRUCTURE			DIRECTIONAL STRUCTURE (Lineated Or Foliasi)							
COLOR	CHIEF MINERAL	CHARACTERIZING ACCESSORY MINERALS	CONTACT METAMORPHISM		MECHANICAL METAMORF	REGIONAL METAMORPHISME			PLUTONIC METAMORF	
			Fine Grain (Aphanitic)	Medium Grained (Phaneritites)	Cataclastik	Slaty	Phyllite	Schistose	Gneissose	Migmatitic
Light	Quartz Feldspar Calcite Dolomite Talc Muscovite Sericite	Muscovite Sericite Sillimanite Kyanite Tremolite Wollastonite Albite Anadalsuite Phlogite Diopside Enstatite Staurolite Glaucophane Anthophyllite Phyrophyllite Chloritoid Actinolite Tourmaline Epidote Olivine Serpentine Chlorite Biotite Graphite	Metaquartzite Marble Brucite Marble Soapstone Only Metamorphic Rocks With Nondirectional Structure	Metaquartzite Marble Tremolite Marble Wollastonite Marble Calc - Silicate Hornfels Chiefly Calc - Silicate	Milonite Flaser Granite Flaser Diorite Flaser Conglomerate Ultramylonite Algen Gneiss	Slate	Phyllite	Schist	Gneiss Granulite	These rocks have a gneissose, Streaked, or Irregular structure produced by intimately mixing of metamorphic and magmatic materials
			Metaquartzite Marble Skarn Soapstone Chief Talc Hornfels Only Metamorphic Rock with nondirectional Structure Serpentine	Metaquartzite Marble Hornfels Skarn Serpentine						
Dark (Includes Green)	Quartz Calcite Dolomite Feldspar Cholorite Hornblande Serpentine Biotite Pyroxene Actinolite Epidote Olivine Magnetite		Metaquartzite Marble Skarn Graphite Marble Chlorite Marble Serpentine Marble (Opicalcite) Soapstone Chiefly Talc Matamorphic Rock With Nondirectional Structure	Metaquartzite Marble Hornfels Serpentine Eclogite Megnetite Rock Amphibolite		Phyllonite	Schist Amphibolite	Gneiss		
			Serpentine							

No Sampel Perbesaran	: ST 57 : 50X	Formasi Satuan	: Kompleks Ultrabasa : Serpentininit
Tipe Batuan (Rock Type)	: Batuan Metamorf		
Klasifikasi (Classification)	: Travis (1955)		
Struktur	: Non Foliasi		
Nama Batuan	: <i>Serpentinite</i> (Travis 1955)		

Foto :



Mikroskopis (Microscopic)

Kenampakan petrografis, pada warna absorpsi colorless hingga abu-abu, warna interferensi abu-abu kehitaman, tesktur kristaloblastik, struktur non foliasi yaitu granulose. Tekstur khusus mesh (kenampakan mineral serpentin menyerupai serat yang nampak pada rekahan dan membentuk seperti jala). Dengan ukuran mineral 0,02 – 0,15 mm. Tersusun atas *Orthopyroxene* (2%), *Serpentinite* (97%) dan *Opaq* (1%)

Deskripsi Mineralogi (Mineralogy Of Description)		
Komposisi Mineral Primer <i>Compositon of Mineral</i>	Jumlah <i>Amount</i> (%)	Keterangan optik mineral <i>Description of Optical</i> Mineralogy
<i>Serpentinite</i> (Srp)	97%	Warna absorpsi colorless, warna interferensi abu-abu kekuningan (Orde I), relief sedang, intensitas sedang, bentuk berserat, belahan tidak ada, sudut gelapan bergelombang, tekstur khusus mesh (kenampakan mineral serpentin menyerupai serat yang nampak pada rekahan dan membentuk seperti jala).
<i>Orthopyroxene</i> (Opx)	2%	Warna absorpsi cokelat, warna interferensi abu-abu kecoklatan (Orde I), relief sedang, intensitas sedang, bentuk anhedralsubhedral, tidak terdapat kembaran, pleokroisme monokroik, ukuran mineral 0,05 mm – 0,15 mm sudut gelapan 52° dengan jenis gelapan miring.

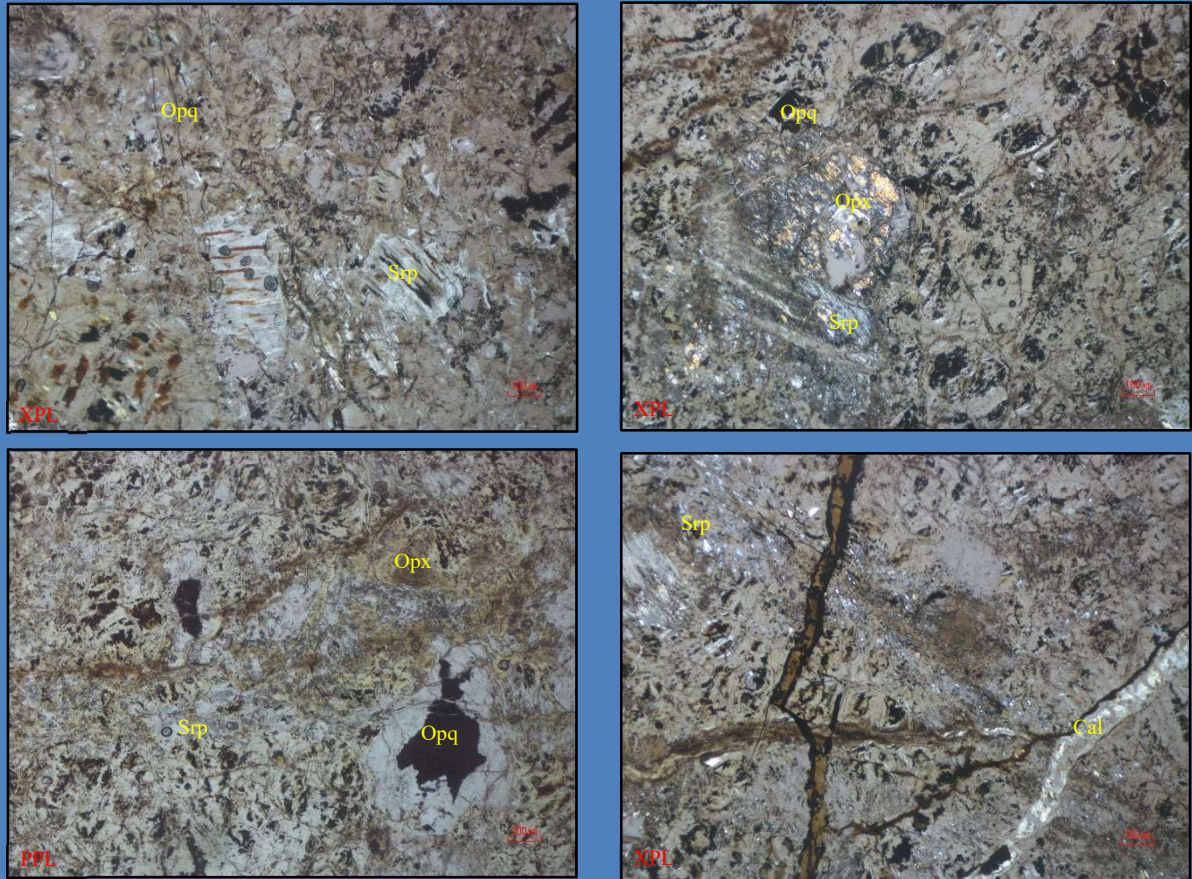
Mineral Opaq	1%	Warna absorpsi dan interferensi hitam, intensitas rendah, relief tinggi, ukuran mineral 0,1-0,2 mm.
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**KLASIFIKASI BATUAN METAMORF
TRAVIS (1955)**

COLOR	CHIEF MINERAL	CHARACTERIZING ACCESSORY MINERALS	NONDIRECTIONAL STRUCTURE		DIRECTIONAL STRUCTURE (Lineated Or Foliati)				PLUTONIC METAMORF	
			CONTACT METAMORPHISM		MECHANICAL METAMORF	REGIONAL METAMORPHISME				
			Fine Grain (Aphanitic)	Medium Grained (Phaneritites)	Cataclastik	Slaty	Phyllite	Schistose		Gneicose
Light	Quartz Feldspar Calcite Dolomite Talc Muscovite Sericite	Muscovite Sericite Silimanite Kyanite Tremolite Wollastonite Albite Anadulsite Phlogite Diopside Enstatite Staurolite Glaucothane Anthophyllite Phyrophyllite Chloritoid Actinolite Tourmaline Epidote Olivine Serpentine Chlorite Biotite Graphite	Metaquartzite Marble Brucite Marble Soapstone Only Metamorphic Rocks With Nondirectional Structure	Metaquartzite Marble Brucite Tremolite Marble Wollastonite Marble Calc - Silicate Hornfels Chiefly Calc - Silicate	Milonite Flaser Granite Flaser Diorite Flaser Conglomerate Ultramylonite Algen Gneiss	Slate	Phyllite	Schist	Gneiss Granulite	These rocks have a gneissose, Streaked, or irregular structure produced by intimately mixing of metamorphic and magmatic materials
			Metaquartzite Marble Skarn Soapstone Chief Talc Hornfels Only Metamorphic Rock with nondirectional Structure Serpentine	Metaquartzite Marble Hornfels Skarn Serpentine						
Dark (Includes Green)	Quartz Calcite Dolomite Feldspar Cholorite Hornblende Serpentine Biotite Pyroxene Actinolite Epidote Olivine Magnetite		Metaquartzite Marble Skarn Graphite Marble Chlorite Marble Serpentine Marble (Opicalcite) Soapstone Chiefly Talc Matamorphic Rock With Nondirectional Structure	Metaquartzite Marble Hornfels Serpentine Eclogite Megnetite Rock Amphibolite	Phyllonite	Schist Amphibolite	Gneiss			

No Sampel Perbesaran	: ST 58 : 50X	Formasi Satuan	: Kompleks Ultrabasa : Serpentin
Tipe Batuan(Rock Type)	: Batuan Metamorf		
Klasifikasi (Classification)	: Travis (1955)		
Struktur	: Non Foliasi		
Nama Batuan	: <i>Serpentinite</i> (Travis 1955)		

Foto :



Mikroskopis (Microscopic) :

Kenampakan petrografis, pada warna absorpsi colorless hingga abu-abu, warna interferensi abu-abu kehitaman, tesktur kristaloblastik, struktur non foliasi yaitu granulose. Tekstur khusus mesh (kenampakan mineral serpentin menyerupai serat yang nampak pada rekahan dan membentuk seperti jala). Dengan ukuran mineral 0,01 – 1,3 mm. Tersusun atas *Serpentinite* (92%) , *Orthopyroxene* (6%) dan *Opaq* (2%).

Deskripsi Mineralogi (Mineralogy Of Description)

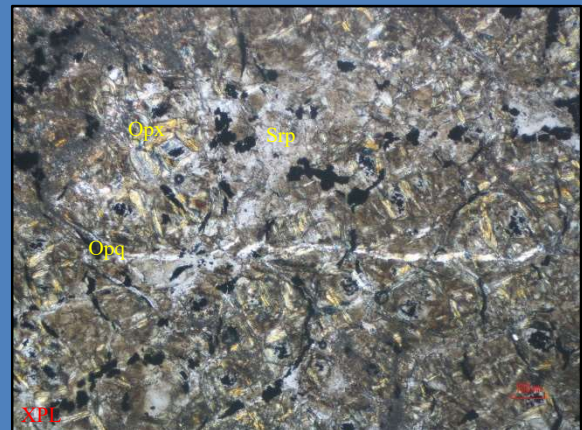
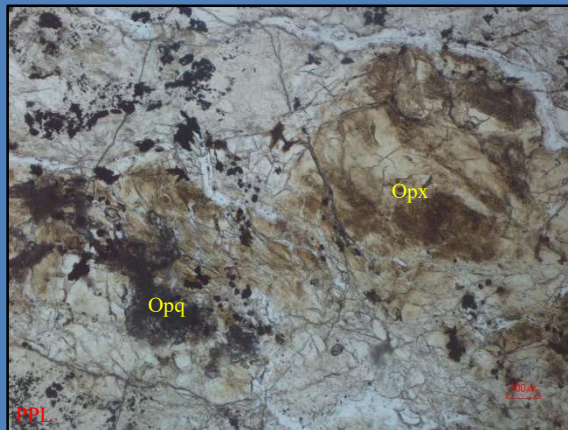
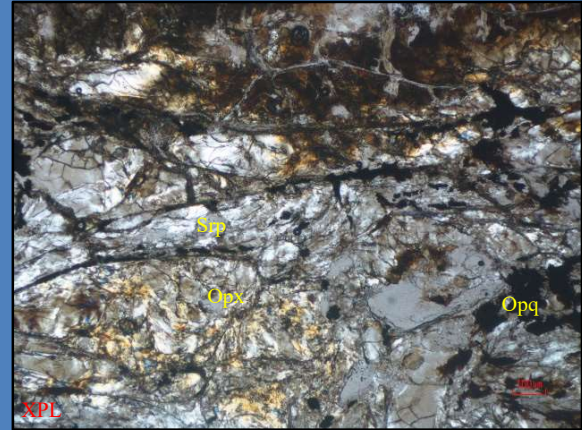
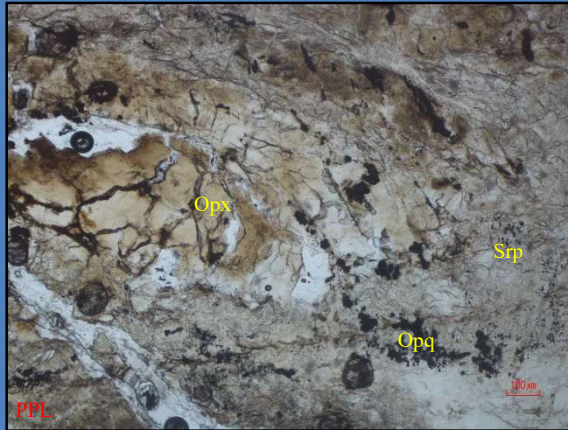
Komposisi Mineral Primer <i>Compositon of Mineral</i>	Jumlah Amount (%)	Keterangan optik mineral <i>Description of Optical Mineralogy</i>
<i>Serpentinite</i> (Srp)	92%	Warna absorsi colorless, warna interferensi abu-abu kekuningan (Orde I), relief sedang, intensitas sedang, bentuk berserat, belahan tidak ada, sudut gelap bergelombang, tekstur khusus mesh (kenampakan mineral serpentin menyerupai serat yang nampak pada rekahan dan membentuk seperti jala).
<i>Orthopyroxene</i> (Opx)	6%	Warna absorpsi coklat, warna interferensi abu-abu kecoklatan (Orde I), relief sedang, intensitas sedang, bentuk anhedralsubhedral, tidak terdapat kembaran, pleokroisme monokroik, ukuran mineral 0,05 mm – 0,15 mm sudut gelap 52° dengan jenis gelap miring.
Mineral Opaq	2%	Warna absorpsi dan interferensi hitam, intensitas rendah, relief tinggi, ukuran mineral 0,1-0,2 mm.

TRAVIS (1955)

COLOR		CHIEF MINERAL	CHARACTERIZING ACCESSORY MINERALS	NONDIRECTIONAL STRUCTURE		DIRECTIONAL STRUCTURE (Lineated Or Foliasi)				PLUTONIC METAMORF				
				CONTACT METAMORPHISM	MECHANICAL METAMORF	REGIONAL METAMORPHISME								
				Fine Grain (Aphanitic)	Medium Grained (Phaneritics)	Cataclastik	Slaty	Phyllite	Schistose	Gneissose	Migmatitic			
Light	Quartz Feldspar Calcite Dolomite Talc Muscovite Sericite	Muscovite Sericite Sillimanite Kyanite Tremolite Wollastonite Albite Anadalsite Phlogite Diopside Enstatite Staurolite Glaucophane Anthophyllite Phyrophyllite Chloritoid Actinolite Tourmaline Epidote Olivine Serpentine Chlorite Biotite Graphite	Metaquartzite Marble Brucite Marble Tremolite Marble Soapstone Wollastonite Only Metamorphic Rocks With Nondirectional Structure	Metaquartzite Marble Brucite Marble Tremolite Marble Soapstone Wollastonite Marble Calc - Silicate Hornfels Chiefly Calc - Silicate					Schist	Gneiss Granulite				
			Metaquartzite Marble Scharn	Metaquartzite Marble Hornfels Scharn Serpentine	Milonite Flaser Granite Flaser Diorite Flaser Conglomerate Ultramylonite Aigen Gneiss	Slate	Phyllite							
Intermediate (Includes red or brown)	About equal Proportions of Light - Colored and Dark - Colored Minerals													
Dark (Includes Green)	Quartz Calcite Dolomite Feldspar Chlorite Hornblende Serpentine Biotite Pyroxene Actinolite Epidote Olivine Magnetite													

No Sampel Perbesaran	: ST 62 : 50X	Formasi Satuan	: Kompleks Ultrabasa : Serpentininit
Tipe Batuan (Rock Type)	: Batuan Metamorf		
Klasifikasi (Classification)	: Travis (1955)		
Struktur	: Non Foliasi		
Nama Batuan	: <i>Serpentinite</i> (Travis 1955)		

Foto :



Mikroskopis (*Microscopic*) :

Kenampakan petrografis, pada warna absorpsi colorless hingga abu-abu, warna interferensi abu-abu kehitaman, tekstur kristaloblastik, struktur non foliasi yaitu granulose. Tekstur khusus mesh (kenampakan mineral serpentin menyerupai serat yang nampak pada rekahan dan membentuk seperti jala). Dengan ukuran mineral 0,01 – 1,3 mm. Tersusun atas *Serpentinite* (90%) , *Orthopyroxene* (7%) dan *Opaq* (3%).

Deskripsi Mineralogi (<i>Mineralogy Of Description</i>)		
Komposisi Mineral Primer <i>Compositon of Mineral</i>	Jumlah Amount (%)	Keterangan optik mineral <i>Description of Optical Mineralogy</i>
<i>Serpentinite</i> (Srp)	90%	Warna absorsi colorless, warna interferensi abu-abu kekuningan (Orde I), relief sedang, intensitas sedang, bentuk berserat, belahan tidak ada, sudut gelapan bergelombang, tekstur khusus mesh (kenampakan mineral serpentin menyerupai serat yang nampak pada rekahan dan membentuk seperti jala).
<i>Orthopyroxene</i> (Opx)	7%	Warna absorpsi coklat, warna interferensi abu-abu kecoklatan (Orde I), relief sedang, intensitas sedang, bentuk anhedralsubhedral, tidak terdapat kembaran, pleokroisme monokroik, ukuran mineral 0,05 mm – 0,15 mm sudut gelapan 52° dengan jenis gelapan miring.

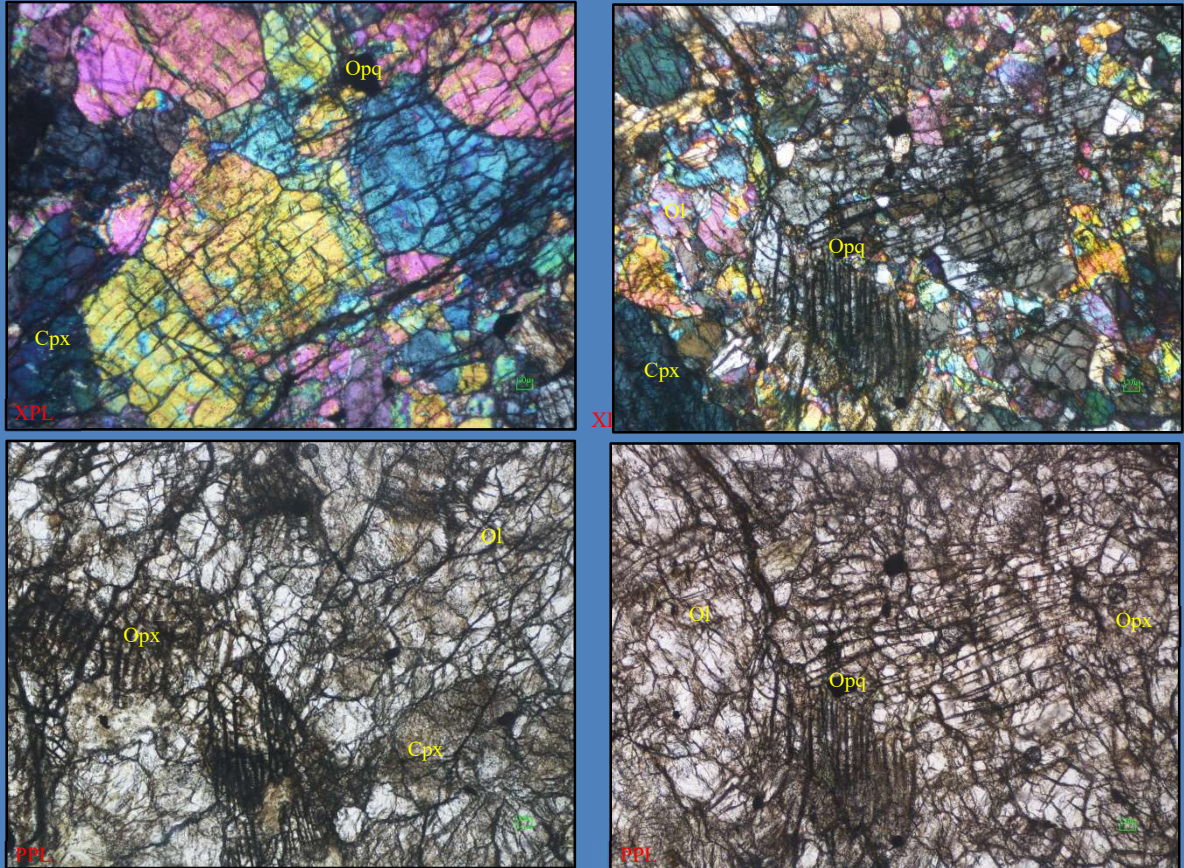
Mineral Opaq	3%	Warna absorpsi dan interferensi hitam, intensitas rendah, relief tinggi, ukuran mineral 0,1-0,2 mm.
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KLASIFIKASI BATUAN METAMORF TRAVIS (1955)

COLOR	CHIEF MINERAL	CHARACTERIZING ACCESSORY MINERALS	NONDIRECTIONAL STRUCTURE		DIRECTIONAL STRUCTURE (Lineated Or Foliated)				PLUTONIC METAMORF	
			CONTACT METAMORPHISM		MECHANICAL METAMORF	REGIONAL METAMORPHISME				
			Fine Grain (Aphanitic)	Medium Grained (Phaneritics)		Slaty	Phyllite	Schistose		Gneissose
Light	Quartz Feldspar Calcite Dolomite Talc Muscovite Sericite	Muscovite Sericite Silimanite Kyanite Tremolite Wollastonite Albite Anadalsuite Phlogsite Diopside Enstatite Staurolite Glaucothane Anthophyllite Phyrophyllite Chloritoid Tourmaline Epidote Olivine Serpentine Chlorite Biotite Graphite	Metaquartzite Marble Brucite Marble Soapstone Only Metamorphic Rocks With Nondirectional Structure	Metaquartzite Marble Brucite Marble Wollastonite Marble Calc – Silicate Hornfels Chiefly Calc - Silicate	Cataclastik	Slaty	Phyllite	Schist	Gneiss Granulite	Migmatitic
			Metaquartzite Marble Brucite Marble Soapstone Only Metamorphic Rocks With Nondirectional Structure	Metaquartzite Marble Brucite Marble Hornfels Skarn Serpentine	Milonite Flaser Granite Flaser Diorite Ultramylonite Aigen Gneiss	Slate	Phyllite	Schist	Gneiss Granulite	
Intermediate (Includes red or brown)	Aboutequal Proportions of Light - Colored and Dark - Colored Minerals		Metaquartzite Marble Brucite Marble Soapstone Only Metamorphic Rocks With Nondirectional Structure Serpentine	Metaquartzite Marble Brucite Marble Hornfels Skarn Serpentine						These rocks have a gneissose, Streaked, or irregular structure produced by infamited mixing of metamorphic and magmatic materials
			Metaquartzite Marble Brucite Marble Soapstone Only Metamorphic Rocks With Nondirectional Structure Serpentine	Metaquartzite Marble Brucite Marble Hornfels Skarn Serpentine						
Dark (Includes Green)	Quartz Calcite Dolomite Feldspar Cholorite Hornblende Serpentine Biotite Pyroxene Actinolite Epidote Olivine Magnetite		Metaquartzite Marble Graphite Marble Chlorite Marble Serpentine Marble (Opicalcite) Soapstone Chiefly Talc Metamorphic Rock With Nondirectional Stratification	Metaquartzite Marble Hornfels Serpentine Eclogite Megnetite Rock Amphibolite			Phyllonite	Schist Amphibolite	Gneiss	
			Metaquartzite Marble Graphite Marble Chlorite Marble Serpentine Marble (Opicalcite) Soapstone Chiefly Talc Metamorphic Rock With Nondirectional Stratification	Metaquartzite Marble Hornfels Serpentine Eclogite Megnetite Rock Amphibolite						
			Metaquartzite Marble Brucite Marble Soapstone Only Metamorphic Rocks With Nondirectional Structure	Metaquartzite Marble Brucite Marble Hornfels Skarn Serpentine						
			Metaquartzite Marble Brucite Marble Soapstone Only Metamorphic Rocks With Nondirectional Structure	Metaquartzite Marble Brucite Marble Hornfels Skarn Serpentine						
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			Metaquartzite Marble Brucite Marble Soapstone Only Metamorphic Rocks With Nondirectional Structure	Metaquartzite Marble Brucite Marble Hornfels						

No Sampel Perbesaran	: ST 7 : 50X	Formasi Satuan	:Kompleks Ultrabasa :Peridotit
Tipe Batuan(<i>Rock Type</i>)	: Batuan Beku		
Klasifikasi (<i>Classification</i>)	: Streckeisen (1976)		
Struktur	: Masif		
Nama Batuan	: <i>Lherzolite</i> (Streckeisen, 1976)		

Foto :



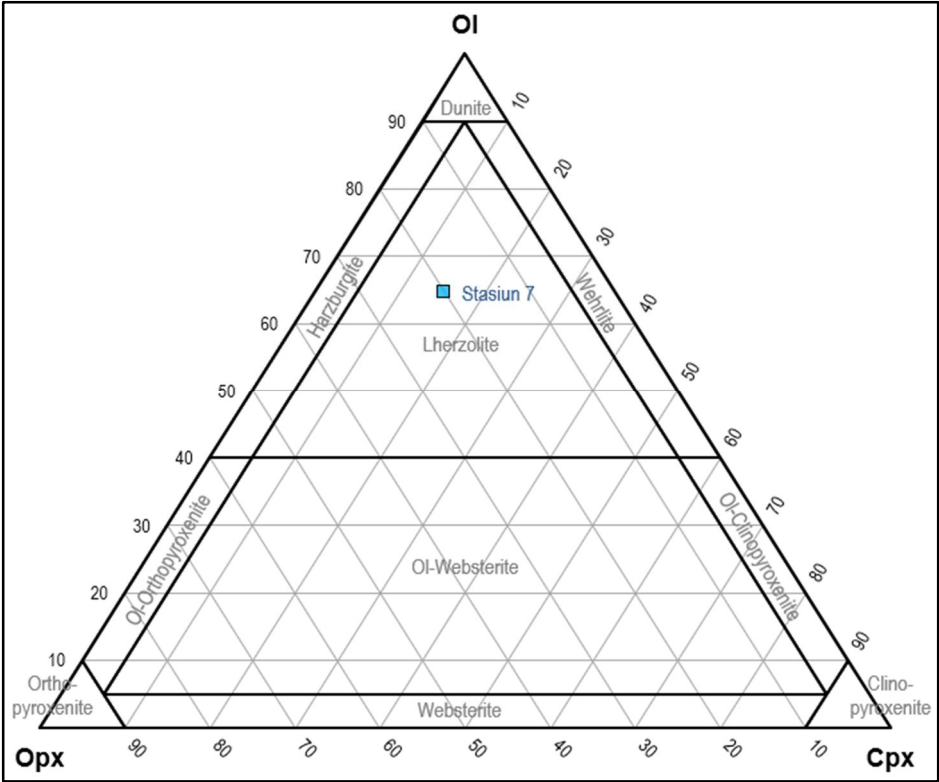
Mikroskopis (*Microscopic*) :

Kenampakan petrografis, pada warna absorpsi colorless hingga abu-abu kecoklatan, warna interferensi bervariasi (sesuai dengan warna mineralnya), tekstur kristalinitas holokristalin, granularitas faneritik, bentuk mineral anhedral – subhedral, fabrik inequigranular, dengan ukuran mineral 0,6 mm – 2,5 mm. Tersusun atas *Olivine* (64%), *Clinopyroxene* (15%), dan *Orthopyroxene* (20%) dan mineral Opaq (1%).

Deskripsi Mineralogi (<i>Mineralogy Of Description</i>)		
Komposisi Mineral Primer <i>Compositition of Mineral</i>	Jumlah Amount (%)	Keterangan optik mineral <i>Description of Optical Mineralogy</i>
<i>Olivine</i> (Ol)	64%	Warna absorpsi coklat, warna interferensi biru kekuningan (Orde III), relief tinggi, intensitas sedang, bentuk anhedralsubhedral, tidak terdapat belahan, pecahan tidak rata, tidak terdapat kembaran, pleokroisme monokroik, ukuran mineral 0,6 mm – 2,5 mm, sudut gelap 40° dengan jenis gelap miring.
<i>Clinopyroxene</i> (Cpx)	15%	Warna absorpsi coklat, warna interferensi ungu kekuningan (Orde II), relief tinggi, intensitas sedang, bentuk anhedralsubhedral, terdapat belahan dua arah, pecahan tidak rata, pleokroisme monokroik, ukuran mineral 0,2 mm – 0,93 mm, sudut gelap 90° dengan jenis gelap sejajar.
Mineral Opaq	1%	Warna absorpsi dan interferensi hitam, intensitas rendah, relief tinggi, ukuran mineral 0,1-0,125.

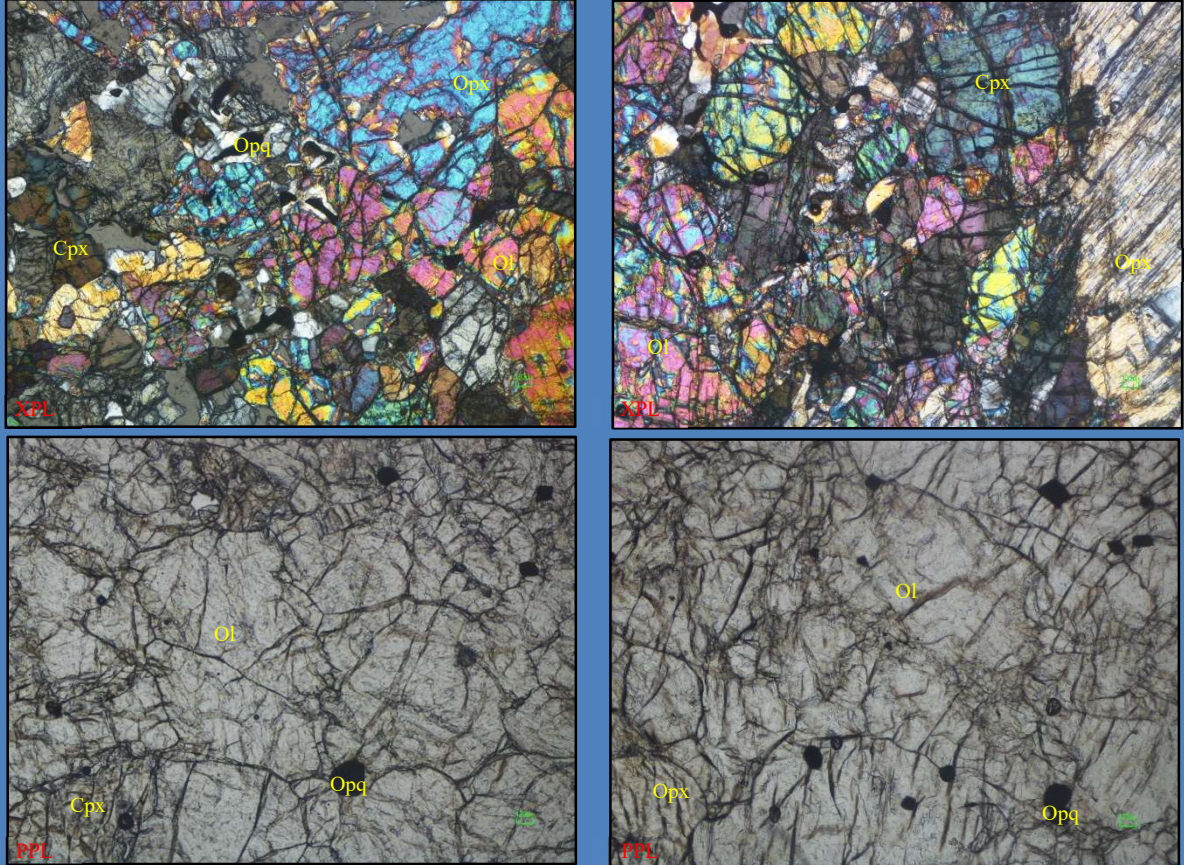
<i>Orthopyroxene (Opx)</i>	20%	Warna absorpsi coklat, warna interferensi abu-abu kecoklatan (Orde I), relief sedang, intensitas sedang, bentuk anhedralsubhedral, tidak terdapat kembaran, pleokroisme monokroik, ukuran mineral 0,05 mm – 0,15 mm sudut gelap 52° dengan jenis gelap miring.
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Klasifikasi Batuan Beku QAPF (Streckeisen, 1976)



No Sampel Perbesaran	: ST 36 : 50X	Formasi Satuan	:Kompleks Ultrabasa :Peridotit
Tipe Batuan(Rock Type)	: Batuan Beku		
Klasifikasi (Classification)	: Streckeisen (1976)		
Struktur	: Masif		
Nama Batuan	: <i>Lherzolite</i> (Streckeisen, 1976)		

Foto :



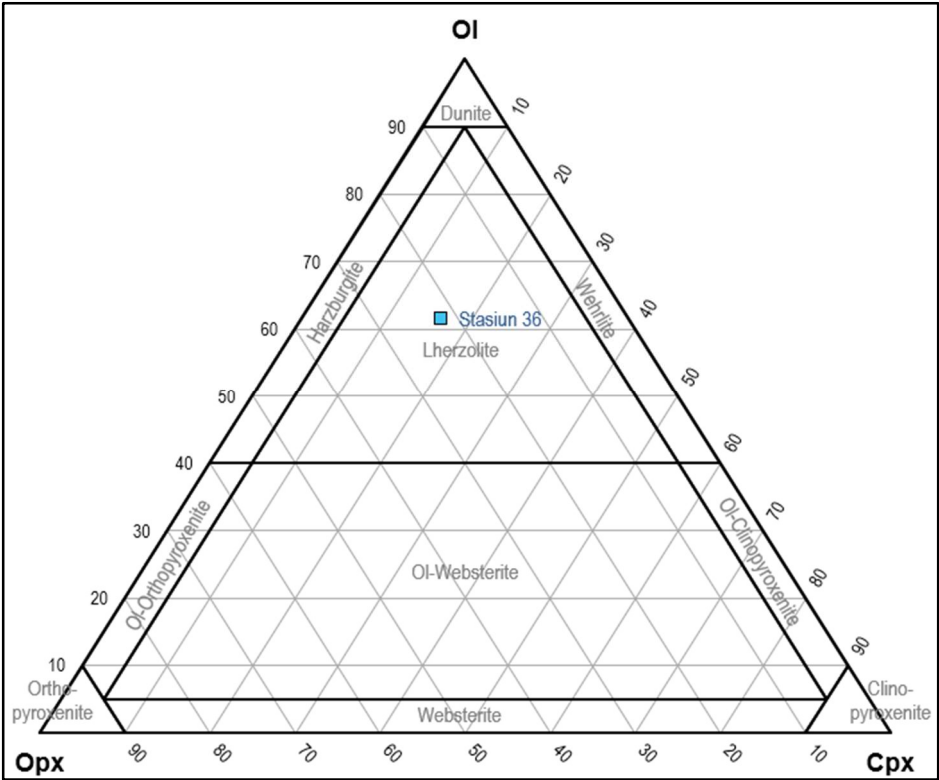
Mikroskopis (Microscopic) :

Kenampakan petrografis, pada warna absorpsi colorless hingga abu-abu kecoklatan, warna interferensi bervariasi (sesuai dengan warna mineralnya), tekstur kristalinitas holokristalin, granularitas faneritik, bentuk mineral anhedral – subhedral, fabrik inequigranular, dengan ukuran mineral 0,6 mm – 2,5 mm. Tersusun atas *Olivine* (64 %), *Clinopyroxene* (15%), dan *Orthopyroxene* (20%), dan mineral *Opaq* (1%).

Deskripsi Mineralogi (Mineralogy Of Description)		
Komposisi Mineral Primer <i>Compositon of Mineral</i>	Jumlah <i>Amount</i> (%)	Keterangan optik mineral <i>Description of Optical Mineralogy</i>
<i>Olivine</i> (Ol)	60%	Warna absorpsi coklat, warna interferensi biru kekuningan (Orde III), relief tinggi, intensitas sedang, bentuk anhedralsubhedral, tidak terdapat belahan, pecahan tidak rata, tidak terdapat kembaran, pleokroisme monokroik, ukuran mineral 0,6 mm – 2,5 mm, sudut gelap 40° dengan jenis gelap miring.
<i>Orthopyroxene</i> (Opx)	23%	Warna absorpsi coklat, warna interferensi abu-abu kecoklatan (Orde I), relief sedang, intensitas sedang, bentuk anhedralsubhedral, tidak terdapat kembaran, pleokroisme monokroik, ukuran mineral 0,05 mm – 0,15 mm sudut gelap 52° dengan jenis gelap miring.
Mineral Opaq	1%	Warna absorpsi dan interferensi hitam, intensitas rendah, relief tinggi, ukuran mineral 0,1-0,125.
<i>Clinopyroxene</i> (Cpx)	17%	Warna absorpsi coklat, warna interferensi ungu kekuningan (Orde II), relief tinggi, intensitas sedang, bentuk anhedralsubhedral, terdapat belahan dua arah, pecahan tidak rata, pleokroisme monokroik, ukuran

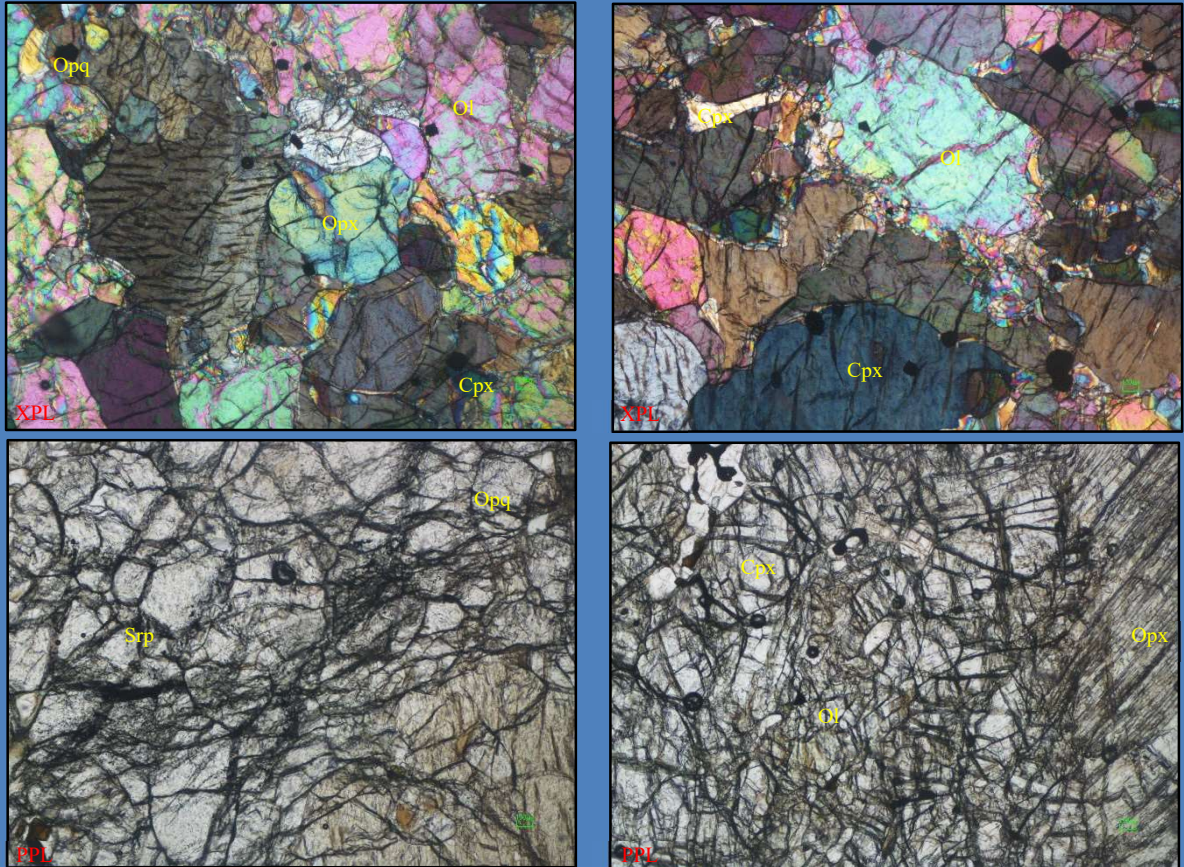
		mineral 0,2 mm – 0,93 mm, sudut gelap 90° dengan jenis gelap sejajar.
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Klasifikasi Batuan Beku QAPF (Streckeisen, 1976)



No Sampel : ST 1	Formasi	:Kompleks Ultrabasa
Perbesaran : 50X	Satuan	:Peridotit
Tipe Batuan(Rock Type)	: Batuan Beku	
Klasifikasi (Classification)	: Streckeisen (1976)	
Struktur	: Masif	
Nama Batuan	: <i>Lherzolite</i> (Streckeisen, 1976)	

Foto :



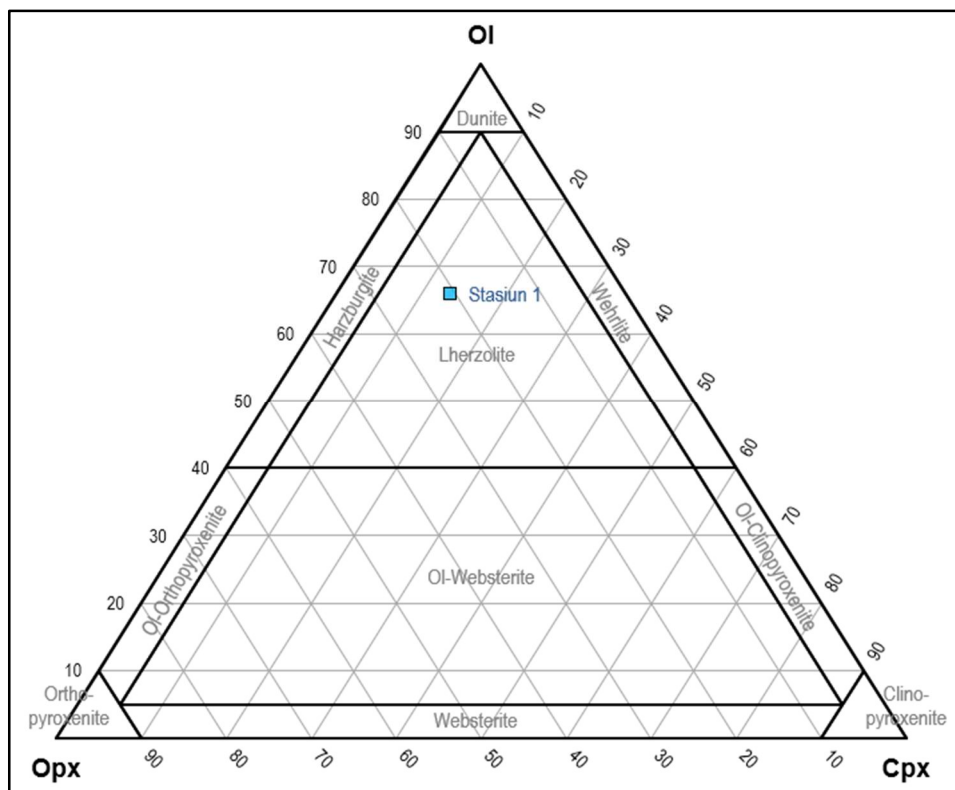
Mikroskopis (*Microscopic*) :

Kenampakan petrografis, pada warna absorpsi colorless hingga abu-abu kecoklatan, warna interferensi bervariasi (sesuai dengan warna mineralnya), tekstur kristalinitas holokristalin, granularitas faneritik, bentuk mineral anhedral – subhedral, fabrik inequigranular, dengan ukuran mineral 0,6 mm – 2,5 mm. Tersusun atas *Olivine* (634%), *Clinopyroxene* (15%), dan *Orthopyroxene* (20%) dan mineral *Opaq* (2%).

Deskripsi Mineralogi (<i>Mineralogy Of Description</i>)		
Komposisi Mineral Primer <i>Competition of Mineral</i>	Jumlah <i>Amount</i> (%)	Keterangan optik mineral <i>Description of Optical Mineralogy</i>
<i>Olivine</i> (Ol)	64%	Warna absorpsi coklat, warna interferensi biru kekuningan (Orde III), relief tinggi, intensitas sedang, bentuk anhedralsubhedral, tidak terdapat belahan, pecahan tidak rata, tidak terdapat kembaran, pleokroisme monokroik, ukuran mineral 0,6 mm – 2,5 mm, sudut gelap 40° dengan jenis gelap miring.
<i>Orthopyroxene</i> (Opx)	20%	Warna absorpsi coklat, warna interferensi abu-abu kecoklatan (Orde I), relief sedang, intensitas sedang, bentuk anhedralsubhedral, tidak terdapat kembaran, pleokroisme monokroik, ukuran mineral 0,01 mm – 0,03 mm sudut gelap 50° dengan jenis gelap miring.
Mineral Opaq	2%	Warna absorpsi dan interferensi hitam, intensitas rendah, relief tinggi, ukuran mineral 0,1-0,125.
<i>Clinopyroxene</i> (Cpx)	15%	Warna absorpsi coklat, warna interferensi ungu kekuningan (Orde II), relief tinggi, intensitas sedang, bentuk anhedralsubhedral, terdapat

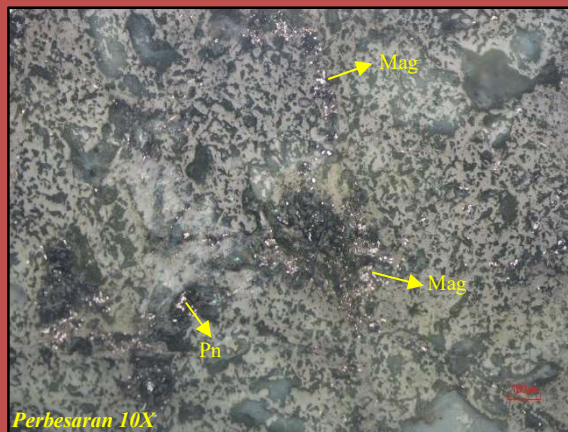
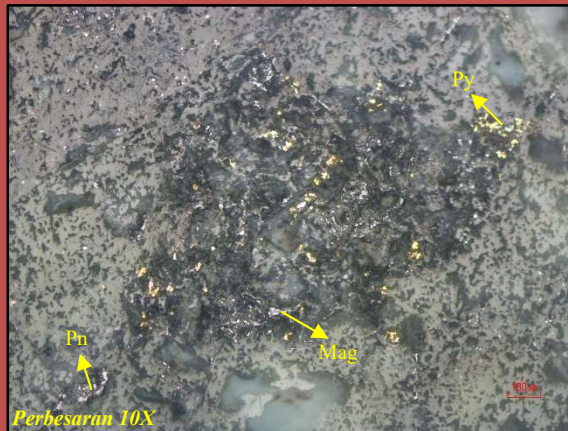
belahan dua arah, pecahan tidak rata, pleokroisme monokroik, ukuran mineral 0,2 mm – 0,93 mm, sudut gelap 90° dengan jenis gelap sejajar.

Klasifikasi Batuan Beku QAPF (Streckeisen, 1976)



No Sampel	: ST 14	Formasi	: Kompleks Ultrabasa
Lokasi	: Siumbatu	Satuan	: Serpentin
Tipe Batuan (Rock Type)	: Batuan Metemorf		
Nama Batuan	: <i>Serpentinite</i> (Streckeisen, 1976)		
Referensi	: The Ore Minerals Under the Microscope (Bernhard Pracejus, 2008)		

Foto :



Perbesaran 10X

Skala 100µm

Mikroskopis (Microscopic) :

Kenampakan pada sayatan poles memperlihatkan kehadiran mineral bijih yang terdiri atas Magnetit, Pentlandite, Kromit, dan Pyrite. Mineral Magnetit, Kromit, dan Pentlandite hadir mengisi rekahan pada batuan.

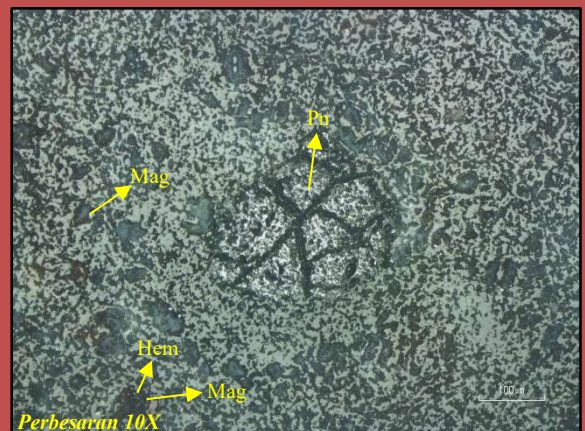
Deskripsi Mineralogi (Mineralogy Of Description)	
Komposisi Mineral Primer <i>Compositon of Mineral</i>	Keterangan optik mineral <i>Description of Optical Mineralogy</i>
Magnetit (Mag) Fe₃O₄	Berwarna abu-abu kecoklatan, ukuran 0,02 mm – 0,05 mm, bentuk subhedral-euhedral, bersifat isotropik, tidak dijumpai adanya pleokroisme. Nama mineral ini adalah Magnetit .
Kromit (Chr) FeCr₂O₄	Berwarna abu-abu gelap , bentuk subhedral-euhedral, ukuran 0,05 mm – 0,3 mm, bersifat isotropik, tidak dijumpai adanya pleokroisme. Nama mineral ini adalah Kromit .
Pentlandite (Pn) (Fe,Ni)₉S₈	Berwarna kuning pucat, ukuran 0,05 mm – 0,07 mm, bentuk subhedral-euhedral, bersifat isotropik, tidak dijumpai adanya pleokroisme. Nama mineral ini adalah Pentlandite .
Pyrite (Py) FeS₂	Berwarna kuning keemasan , bentuk subhedral-euhedral, ukuran 0,05 mm – 0,4 mm, bersifat isotropik, tidak dijumpai adanya pleokroisme. Nama mineral ini adalah Pyrite .

No Sampel	: ST 29	Formasi	: Kompleks Ultrabasa
Lokasi	: Siumbatu	Satuan	: Serpentin
Tipe Batuan(Rock Type)	: Batuan Metemorf		
Nama Batuan	: <i>Serpentinite</i> (Streckeisen, 1976)		
Referensi	: The Ore Minerals Under the Microscope (Bernhard Pracejus, 2008)		

Foto :



Perbesaran 10X



Perbesaran 10X



Perbesaran 10X



Perbesaran 10X

Perbesaran 10X

Skala 100µm

Mikroskopis (*Microscopic*) :

Kenampakan pada sayatan poles memperlihatkan kehadiran mineral bijih yang terdiri atas Magnetit, Goetit, Hematit, Pentlandite dan Mineral non-logam. Mineral Magnetit, Pentlandite, dan Kromit hadir mengisi rekahan pada batuan, sedangkan mineral Hematit mereplace mineral Magnetit.

Deskripsi Mineralogi (*Mineralogy Of Description*)

Komposisi Mineral Primer <i>Compositition of Mineral</i>	Keterangan optik mineral <i>Description of Optical Mineralogy</i>
Magnetit (Mag) Fe_3O_4	Berwarna abu-abu kecoklatan, ukuran 0,02 mm – 0,05 mm, bentuk subhedral-euhedral, bersifat isotropik, tidak dijumpai adanya pleokroisme. Nama mineral ini adalah Magnetit .
Pentlandite (Pn) $(\text{Fe},\text{Ni})_9\text{S}_8$	Berwarna kuning pucat, ukuran 0,05 mm – 0,07 mm, bentuk subhedral-euhedral, bersifat isotropik, tidak dijumpai adanya pleokroisme. Nama mineral ini adalah Pentlandite .
Hematit (Hem) Fe_2O_3	Berwarna abu kehijauan, bentuk subhedral-anhedral, ukuran 0,01 mm – 0,02 mm, bersifat anisotropik, tidak dijumpai adanya pleokroisme. Nama mineral ini adalah Hematit .

No Sampel	: ST 34	Formasi	: Kompleks Ultrabasa
Lokasi	: Siumbatu	Satuan	: Serpentin
Tipe Batuan(Rock Type)	: Batuan Metemorf		
Nama Batuan	: <i>Serpentine</i> (Streckeisen, 1976)		
Referensi	: The Ore Minerals Under the Microscope (Bernhard Pracejus, 2008)		

Foto :



Perbesaran 10X



Perbesaran 10X



Perbesaran 10X



Perbesaran 10X

Perbesaran 10X

Skala 100μm

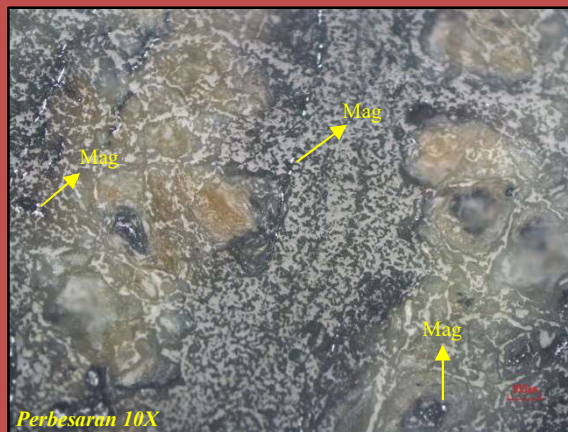
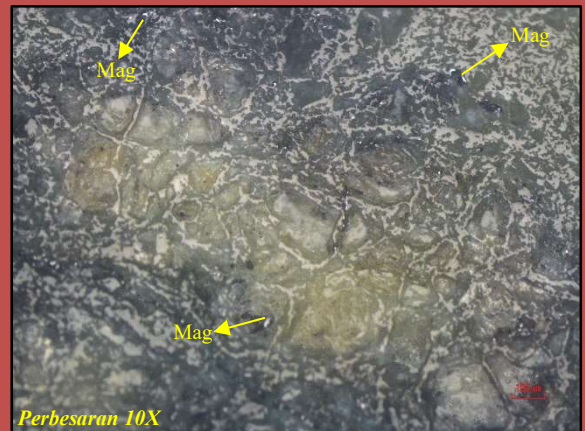
Mikroskopis (*Microscopic*) :

Kenampakan pada sayatan poles memperlihatkan kehadiran mineral bijih yang terdiri atas Magnetit, Goetit, Hematit, Pentlandite dan Mineral non-logam. Mineral Magnetit, Pentlandite, dan Kromit hadir mengisi rekahan pada batuan, sedangkan mineral Hematit mereplace mineral Magnetit.

Deskripsi Mineralogi (<i>Mineralogy Of Description</i>)	
Komposisi Mineral Primer <i>Compotition of Mineral</i>	Keterangan optik mineral <i>Description of Optical Mineralogy</i>
Magnetit (Mag) Fe₃O₄	Berwarna abu-abu kecoklatan, ukuran 0,02 mm – 0,05 mm, bentuk subhedral-euhedral, bersifat isotropik, tidak dijumpai adanya pleokroisme. Nama mineral ini adalah Magnetit .
Pentlandite (Pn) (Fe,Ni)₉S₈	Berwarna kuning pucat, ukuran 0,05 mm – 0,07 mm, bentuk subhedral-euhedral, bersifat isotropik, tidak dijumpai adanya pleokroisme. Nama mineral ini adalah Pentlandite .
Goetit (Goe) FeO(OH)	Berwarna coklat kekuningan, bentuk subhedral-anhedral, ukuran 0,01 mm – 0,02 mm, bersifat anisotropik, dijumpai adanya pleokroisme. Mineral ini adalah Goetit .
Hematit (Hem) Fe₂O₃	Berwarna abu kehijauan, bentuk subhedral-anhedral, ukuran 0,01 mm – 0,02 mm, bersifat anisotropik, tidak dijumpai adanya pleokroisme. Nama mineral ini adalah Hematit .

No Sampel	: ST 51	Formasi	: Kompleks Ultrabasa
Lokasi	: Siumbatu	Satuan	: Serpentin
Tipe Batuan(Rock Type)	: Batuan Metemorf		
Nama Batuan	: <i>Serpentinite</i> (Streckeisen, 1976)		
Referensi	: <i>The Ore Minerals Under the Microscope</i> (Bernhard Pracejus, 2008)		

Foto :



Perbesaran 10X

Skala 100µm

Mikroskopis (*Microscopic*) :

Kenampakan pada sayatan poles memperlihatkan kehadiran mineral bijih yang terdiri atas Magnetit, Pentlandite dan Mineral non-logam. Mineral Magnetit dan Pentlandite hadir mengisi rekahan pada batuan.

Deskripsi Mineralogi (*Mineralogy Of Description*)

Komposisi Mineral Primer <i>Compositon of Mineral</i>	Keterangan optik mineral <i>Description of Optical Mineralogy</i>
Magnetit (Mag) Fe_3O_4	Berwarna abu-abu kecoklatan, ukuran 0,02 mm – 0,05 mm, bentuk subhedral-euhedral, bersifat isotropik, tidak dijumpai adanya pleokroisme. Nama mineral ini adalah Magnetit .
Pentlandite (Pn) $(\text{FeNi})_9\text{S}_8$	Berwarna kuning pucat, ukuran 0,05 mm – 0,07 mm, bentuk subhedral-euhedral, bersifat isotropik, tidak dijumpai adanya pleokroisme. Nama mineral ini adalah Pentlandite .
Mineral Non-Logam	Berwarna coklat gelap, bentuk euhedral-anhedral, ukuran 0,05 mm – 0,2 mm, bersifat anisotropik, tidak dijumpai adanya pleokroisme.

No Sampel	: ST 56	Formasi	: Kompleks Ultrabasa
Lokasi	: Siumbatu	Satuan	: Serpentin
Tipe Batuan(Rock Type)	: Batuan Metemorf		
Nama Batuan	: <i>Serpentinite</i> (Streckeisen, 1976)		
Referensi	: The Ore Minerals Under the Microscope (Bernhard Pracejus, 2008)		

Foto :



Perbesaran 10X

Skala 100µm

Mikroskopis (Microscopic) :

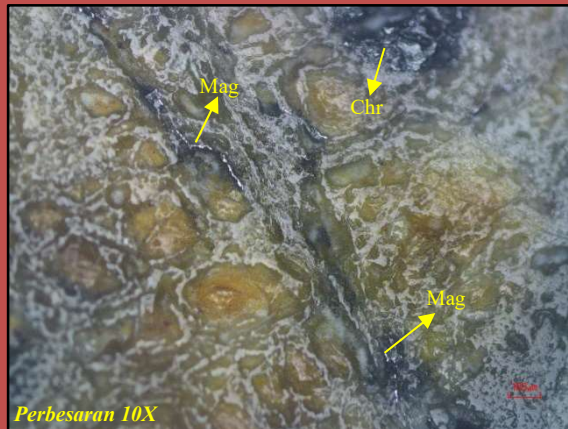
Kenampakan pada sayatan poles memperlihatkan kehadiran mineral bijih yang terdiri atas Magnetit, Goetit, dan Pyrite. Mineral Magnetit, Goetit, dan Pyrite hadir mengisi rekahan pada batuan,

Deskripsi Mineralogi (Mineralogy Of Description)

Komposisi Mineral Primer <i>Compotition of Mineral</i>	Keterangan optik mineral <i>Description of Optical Mineralogy</i>
Magnetit (Mag) Fe₃O₄	Berwarna abu-abu kecoklatan, ukuran 0,02 mm – 0,05 mm, bentuk subhedral-euhedral, bersifat isotropik, tidak dijumpai adanya pleokroisme. Nama mineral ini adalah Magnetit .
Goetit (Goe) FeO(OH)	Berwarna coklat kekuningan, bentuk subhedral-anhedral, ukuran 0,01 mm – 0,02 mm, bersifat anisotropik, dijumpai adanya pleokroisme. Mineral ini adalah Goetit .
Pyrite (Py) FeS₂	Berwarna kuning keemasan , bentuk subhedral-euhedral, ukuran 0,05 mm – 0,4 mm, bersifat isotropik, tidak dijumpai adanya pleokroisme. Nama mineral ini adalah Pyrite .
Mineral Non-logam	Berwarna coklat gelap, bentuk euhedral-anhedral, ukuran 0,05 mm – 0,2 mm, bersifat anisotropik, tidak dijumpai adanya pleokroisme.

No Sampel	: ST 57	Formasi	: Kompleks Ultrabasa
Lokasi	: Siumbatu	Satuan	: Serpentin
Tipe Batuan(Rock Type)	: Batuan Metemorf		
Nama Batuan	: <i>Serpentinite</i> (Streckeisen, 1976)		
Referensi	: The Ore Minerals Under the Microscope (Bernhard Pracejus, 2008)		

Foto :



Perbesaran 10X

Skala 100µm

Mikroskopis (Microscopic) :

Kenampakan pada sayatan poles memperlihatkan kehadiran mineral bijih yang terdiri atas Magnetit, Kromit, Hematit, dan Mineral non-logam. Mineral Magnetit dan Kromit hadir mengisi rekahan pada batuan, sedangkan mineral Hematit mereplace mineral Magnetit.

Deskripsi Mineralogi (Mineralogy Of Description)

Komposisi Mineral Primer <i>Compotition of Mineral</i>	Keterangan optik mineral <i>Description of Optical Mineralogy</i>
Magnetit (Mag) Fe_3O_4	Berwarna abu-abu kecoklatan, ukuran 0,02 mm – 0,05 mm, bentuk subhedral-euhedral, bersifat isotropik, tidak dijumpai adanya pleokroisme. Nama mineral ini adalah Magnetit .
Kromit (Chr) FeCr_2O_4	Berwarna abu-abu gelap , bentuk subhedral-euhedral, ukuran 0,05 mm – 0,3 mm, bersifat isotropik, tidak dijumpai adanya pleokroisme. Nama mineral ini adalah Kromit .
Hematit (Hem) Fe_2O_3	Berwarna abu kehijauan, bentuk subhedral-anhedral, ukuran 0,01 mm – 0,02 mm, bersifat anisotropik, tidak dijumpai adanya pleokroisme. Nama mineral ini adalah Hematit .
Mineral Non-logam	Berwarna coklat gelap, bentuk euhedral-anhedral, ukuran 0,05 mm – 0,2 mm, bersifat anisotropik, tidak dijumpai adanya pleokroisme

PETA STASIUN

Daerah Siumbatu, Kecamatan Bahadopi,
Kabupaten Morowali, Provinsi Sulawesi Tengah



0 250 500 1,000
Meter

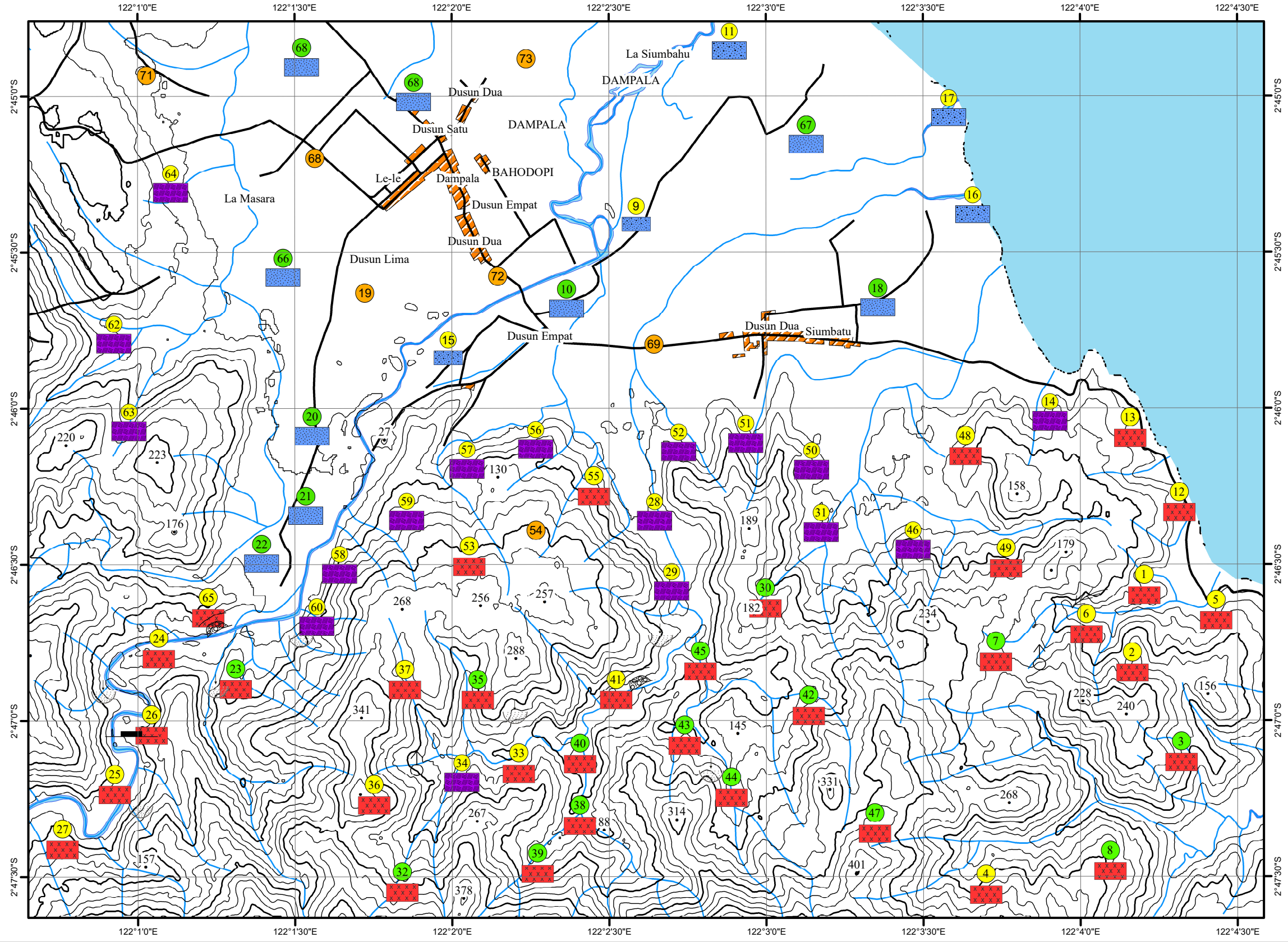
Peta Skala 1 : 25.000
Interval Kontur 25 m

Oleh :
Khalif Muhammad Fathan
D061 19 1063

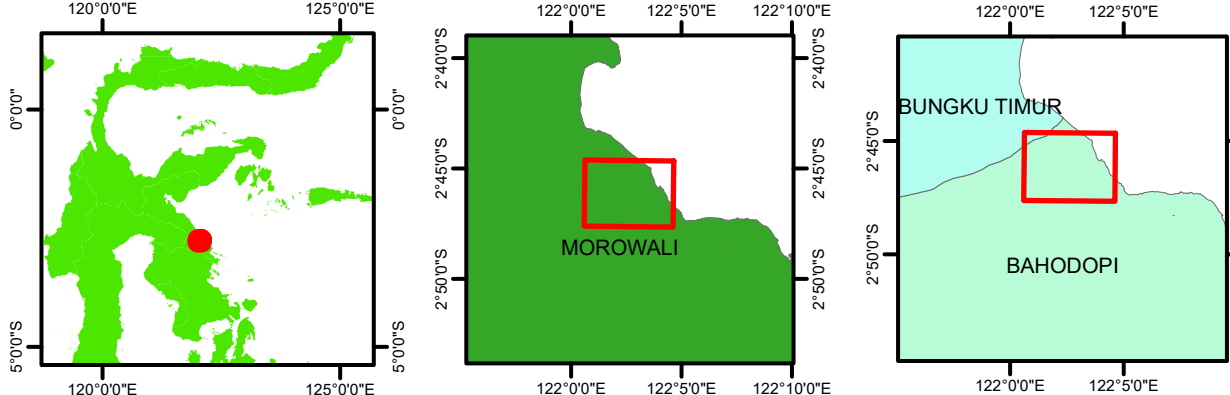
Gowa
2024

Keterangan :

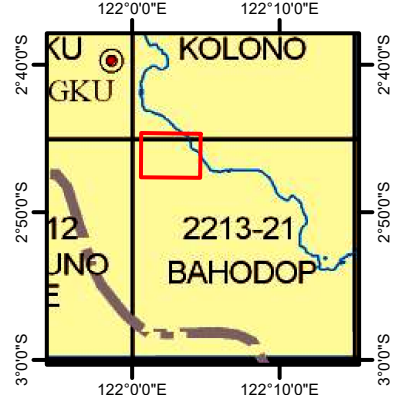
- : Peridotit
- : Aluvial
- : Serpentinit
- : Stasiun Dengan Pangambilan Sampel
- : Stasiun Tanpa Pengambilan Sampel
- : Stasiun Pengamatan Geomorfologi
- : Kekar
- : Gully Erosion
- : Debris Fall
- : Mata Air
- : Point Bar
- : Titik Ketinggian
- : Kontur Indeks
- : Kontur Biasa
- : Sungai dan Anak Sungai
- : Jalan
- : Pemukiman
- : Siumbatu : Nama Daerah



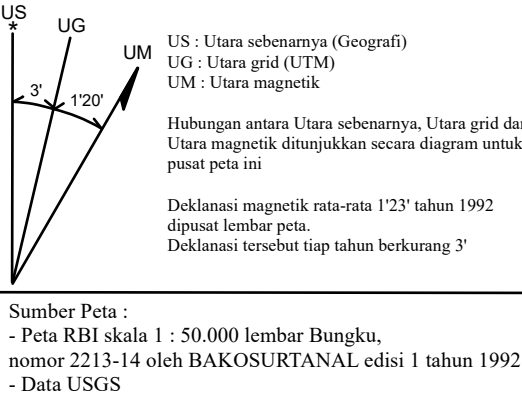
PETA TUNJUK LOKASI

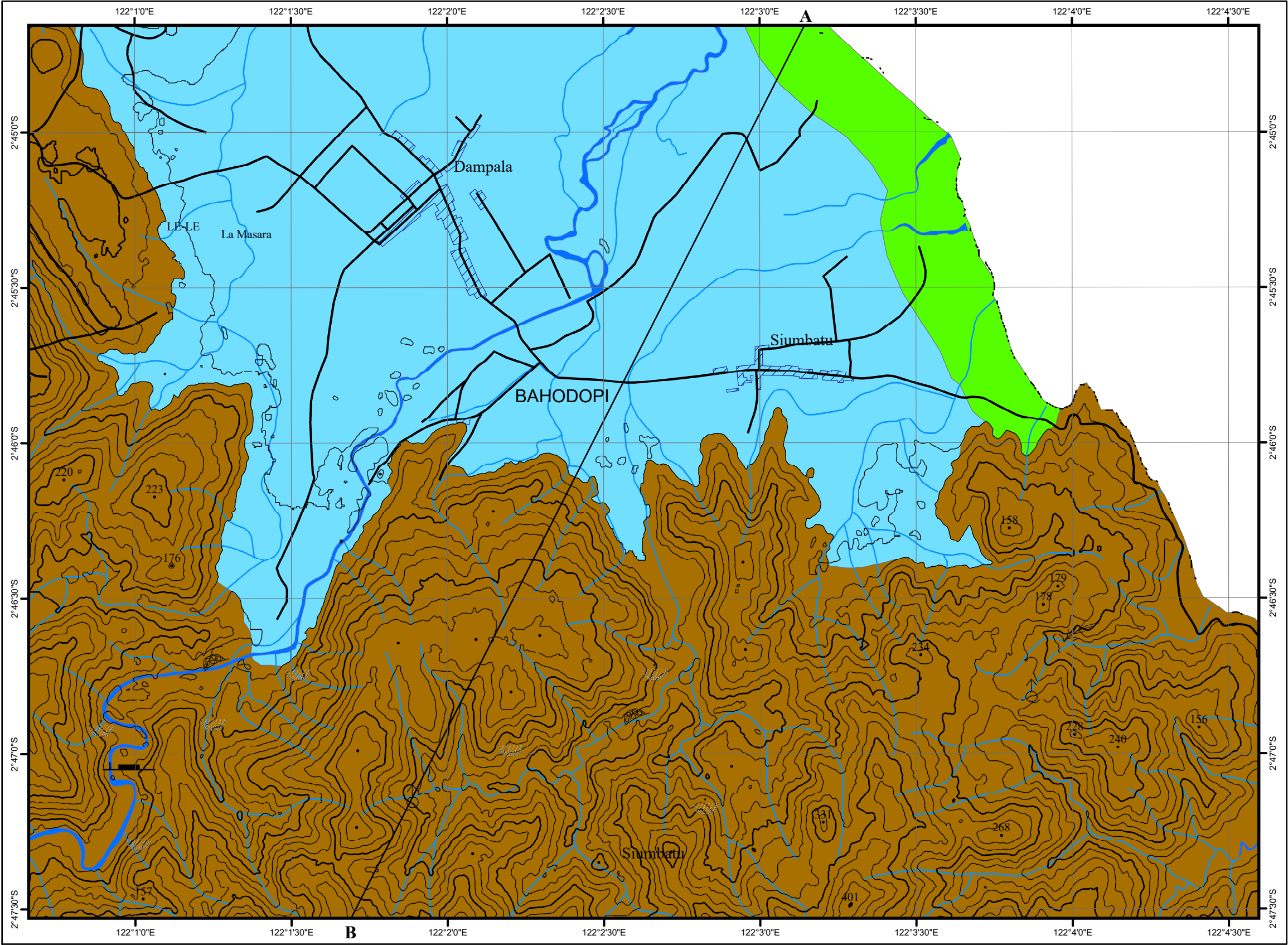


PETA INDEKS



SUDUT DEKLINASI





KEMENTERIAN PENDIDIKAN KEBUDAYAAN RISET DAN TEKNOLOGI
UNIVERSITAS HASANUDDIN
FAKULTAS TEKNIK
DEPARTEMEN TEKNIK GEOLOGI

PETA GEOMORFOLOGI

Daerah Siumbatu, Kecamatan Bahodopi,
Kabupaten Morowali, Provinsi Sulawesi Tengah

N

0 250 500 1,000 Meter

Peta Skala 1 : 25.000
Interval Kontur 25 m

Oleh :
Khalif Muhammad Fathan
D061 19 1063

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Keterangan :

	: Satuan Geomorfologi Perbukitan Denudasional
	: Satuan Geomorfologi Pedataran Fluvial
	: Satuan Geomorfologi Pedataran Pantai
	: Batas Satuan Geomorfologi
	: Kekar
	: Gully Erosion
	: Debris Fall
	: Mata Air
	: Point Bar
	: Titik Ketinggian
	: Kontur Indeks
	: Kontur Biasa
	: Sungai dan Anak Sungai
	: Jalan
	: Pemukiman
	: Nama Daerah

PETA TUNJUK LOKASI

PETA INDEKS

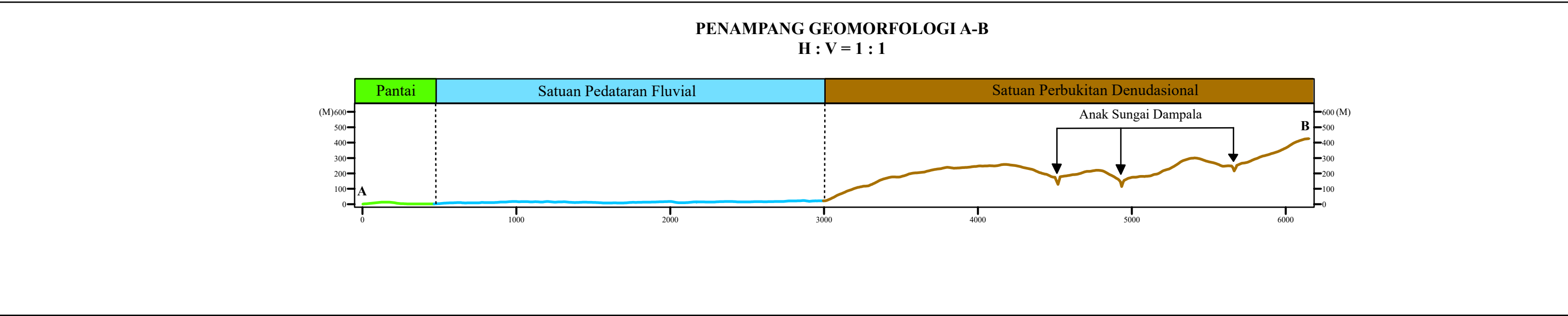
SUDUT DEKLINASI

US : Utara sebenarnya (Geografi)
UG : Utara grid (UTM)
UM : Utara magnetik

Hubungan antara Utara sebenarnya, Utara grid dan Utara magnetik ditunjukkan secara diagram untuk pusat peta ini

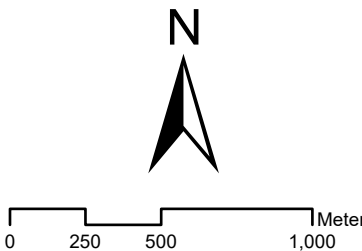
Deklanasi magnetik rata-rata 1'23" tahun 1992 dipusat lembar peta.
Deklanasi tersebut tiap tahun berkurang 3'

Sumber Peta :
- Peta RBI skala 1 : 50.000 lembar Bunku, nomor 2213-14 oleh BAKOSURTANAL edisi 1 tahun 1992
- Data USGS



PETA POLA ALIRAN DAN TIPE GENETIK SUNGAI

Daerah Siumbatu, Kecamatan Bahodopi,
Kabupaten Morowali, Provinsi Sulawesi Tengah

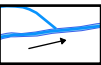
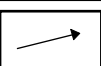


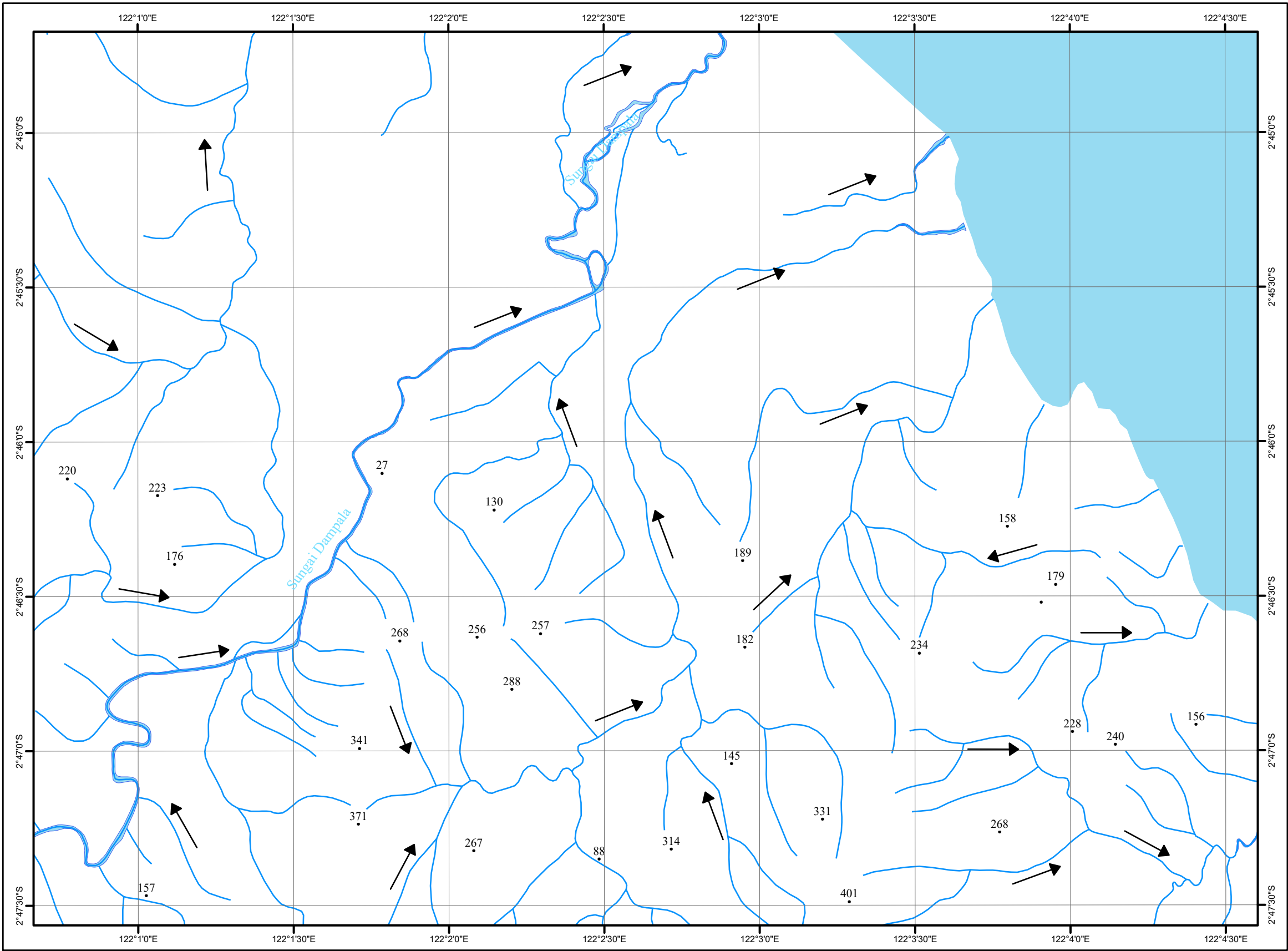
Peta Skala 1 : 25.000
Interval Kontur 25 m

Oleh :
Khalif Muhammad Fathan
D061 19 1063

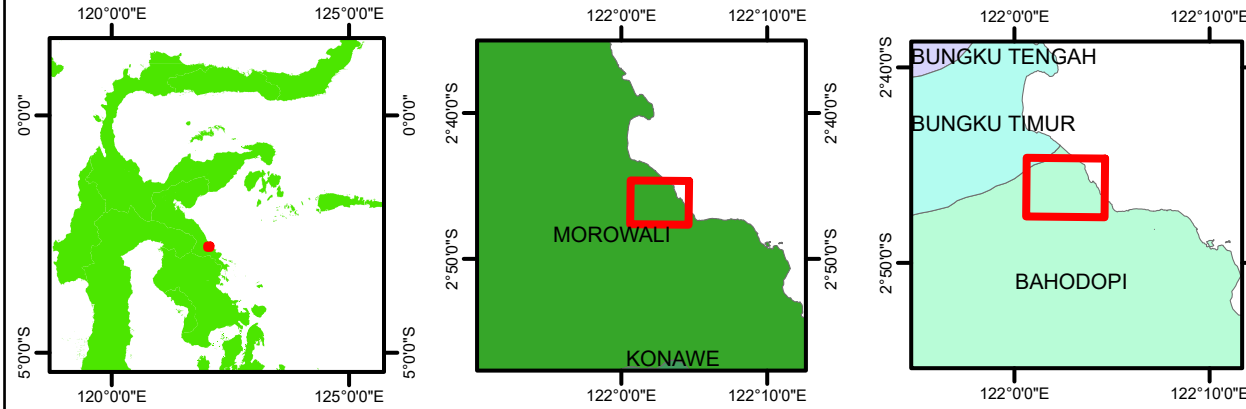
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Keterangan :

-  : Pola Aliran Rectangular
-  : Tipe Genetik Insekuen
-  : Arah Aliran Sungai
-  : Sungai Besar dan Sungai Kecil
-  : Titik Ketinggian



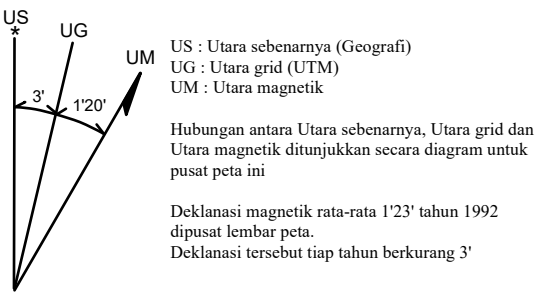
PETA TUNJUK LOKASI



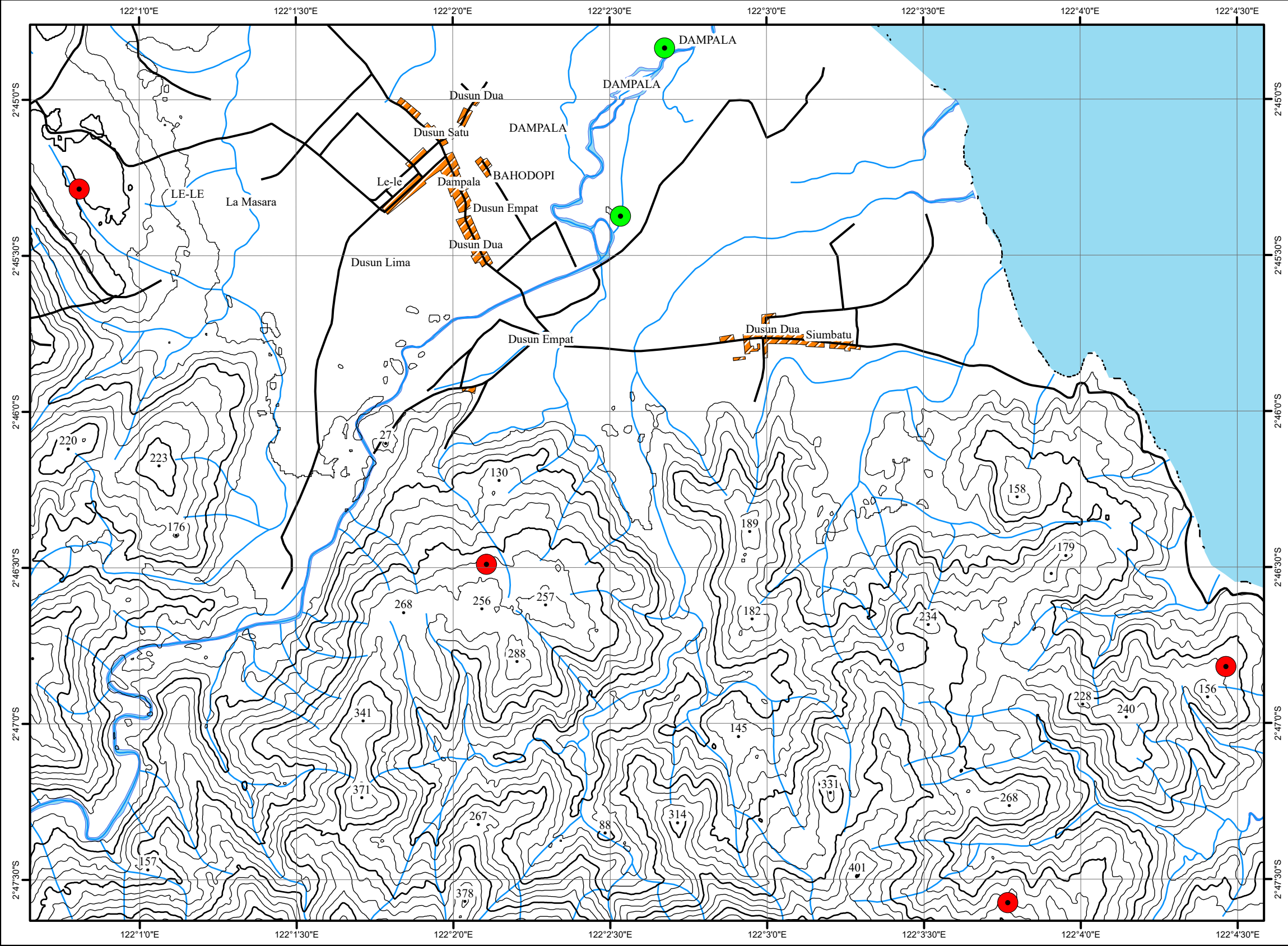
PETA INDEKS



SUDUT DEKLINASI

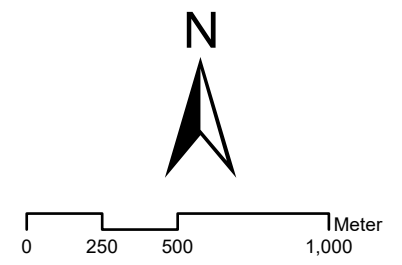


Sumber Peta :
- Peta RBI skala 1 : 50.000 lembar Bungku,
nomor 2213-14 oleh BAKOSURTANAL edisi 1 tahun 1992
- Data USGS



PETA SEBARAN DAN POTENSI BAHAN GALIAN

Daerah Siumbatu, Kecamatan Bahadopi,
Kabupaten Morowali, Provinsi Sulawesi Tengah



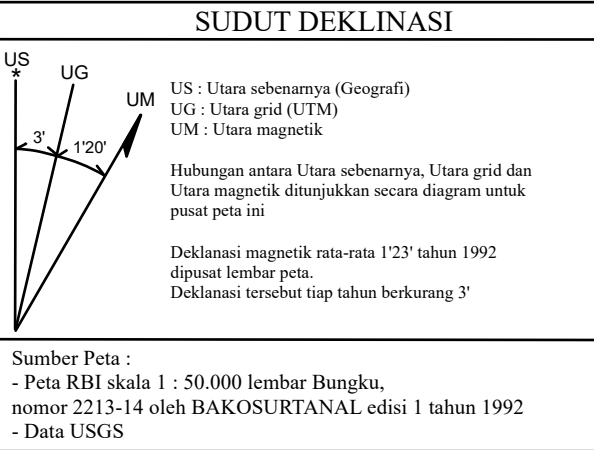
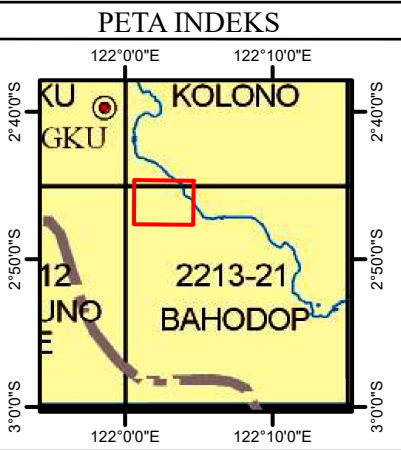
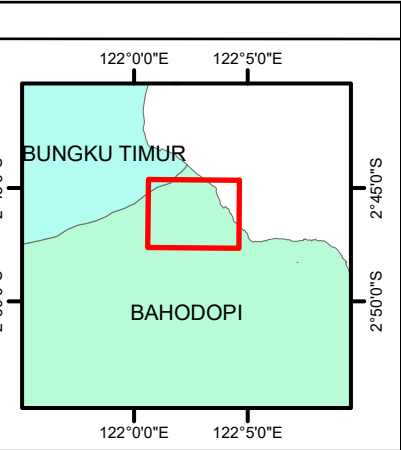
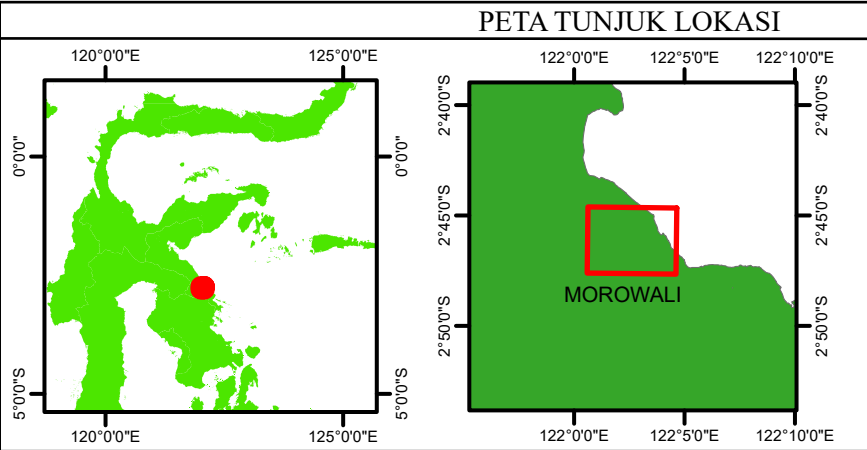
Peta Skala 1 : 25.000
Interval Kontur 25 m

Oleh :
Khalif Muhammad Fathan
D061 19 1063

Gowa
2024

Keterangan :

- : Sebaran Bahan Galian Nikel Laterit
- : Sebaran Bahan Galian Sirtu
- : Titik Ketinggian
- : Kontur Indeks
- : Kontur Biasa
- : Sungai dan Anak Sungai
- : Jalan
- : Pemukiman
- : Siumbatu : Nama Daerah



KOLOM STRATIGRAFI

SKALA TIDAK SEBENARNYA

DAERAH SIUMBATU DAN SEKITARNYA, KECAMATAN BAHODOPI, KABUPATEN MOROWALI, PROVINSI SULAWESI TENGAH

Umur			Formasi	Satuan	Tebal (meter)	(Ukuran Butir dan Tekstur Sedimen)												Litologi	Pemerian	Lingkungan Pembentukan	Lingkungan Pengendapan			
Masa	Zaman	Kala				BK	BR	KR	KL	PSK	PK	PS	PH	PSH	LN	LP	Darat				Transisi	Laut Dangkal	Laut Dalam	
Kenozoikum	Kuarter	Holosen	Aluvium (Qa)	Aluvial	±30													Satuan Aluvial , dari material berukuran butir lempung hingga kerikil yang merupakan hasil transportasi fluvial yang bersumber dari pelapukan satuan batuan yang ada di sekitarnya. Material satuan ini juga bersumber dari hasil aktivitas laut dengan penyusunnya berupa pecahan bagian keras dari organisme, berupa cangkang koral.						
Mesozoikum	Kapur	-	Kompleks Ultramafik (Ku)	Serpentin	±227													Satuan Serpentin it, dengan kenampakan segar berwarna hijau gelap, dan lapuk berwarna hitam kecoklatan, tekstur <i>relict</i> , struktur non foliasi yaitu <i>grabulose</i> , komposisi mineral serpentin (95%), olivine (5%). Kenampakan lapangan memperlihatkan hancuran batuan yang sangat kuat.		Kerak Samudera				
				Peridotit	±352													Satuan Peridotit , dengan kenampakan segar berwarna abu – abu dan dalam keadaan lapuk berwarna abu - abu kehitaman, kristalinitas holokristalin, granularitas faneritik, fabrik bentuk <i>euhedral-subhedral</i> , relasi equigranular, struktur masif, komposisi mineral olivin dan piroksen.			Kerak Samudera			