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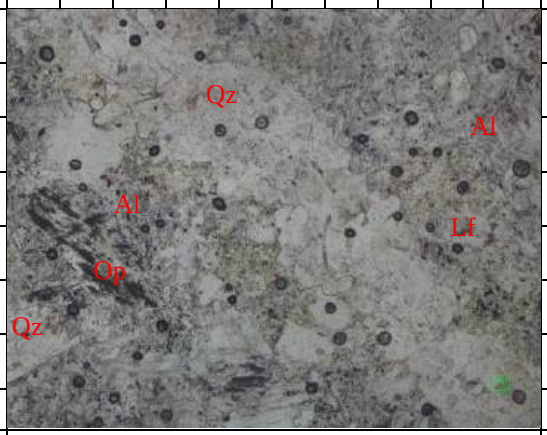
L A M P I R A N

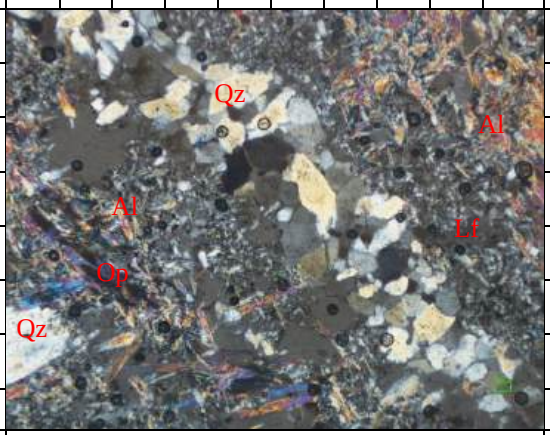
No. Sayatan : UHGZ-23-143-19 | Satuan : Phreatomagmatic Breccia

Lokasi : Tujuh Bukit | Formasi :

Foto



//-NIKOL



X-NIKOL

Lensa Okuler : 10x | Lensa Objektif : 5x | Perbesaran Total : 50x

Tipe Batuan : Batuan Sedimen

Tipe Struktur : Tidak Berlapis

Klasifikasi : Pettijohn, 1975

Deskripsi Mikroskopis :

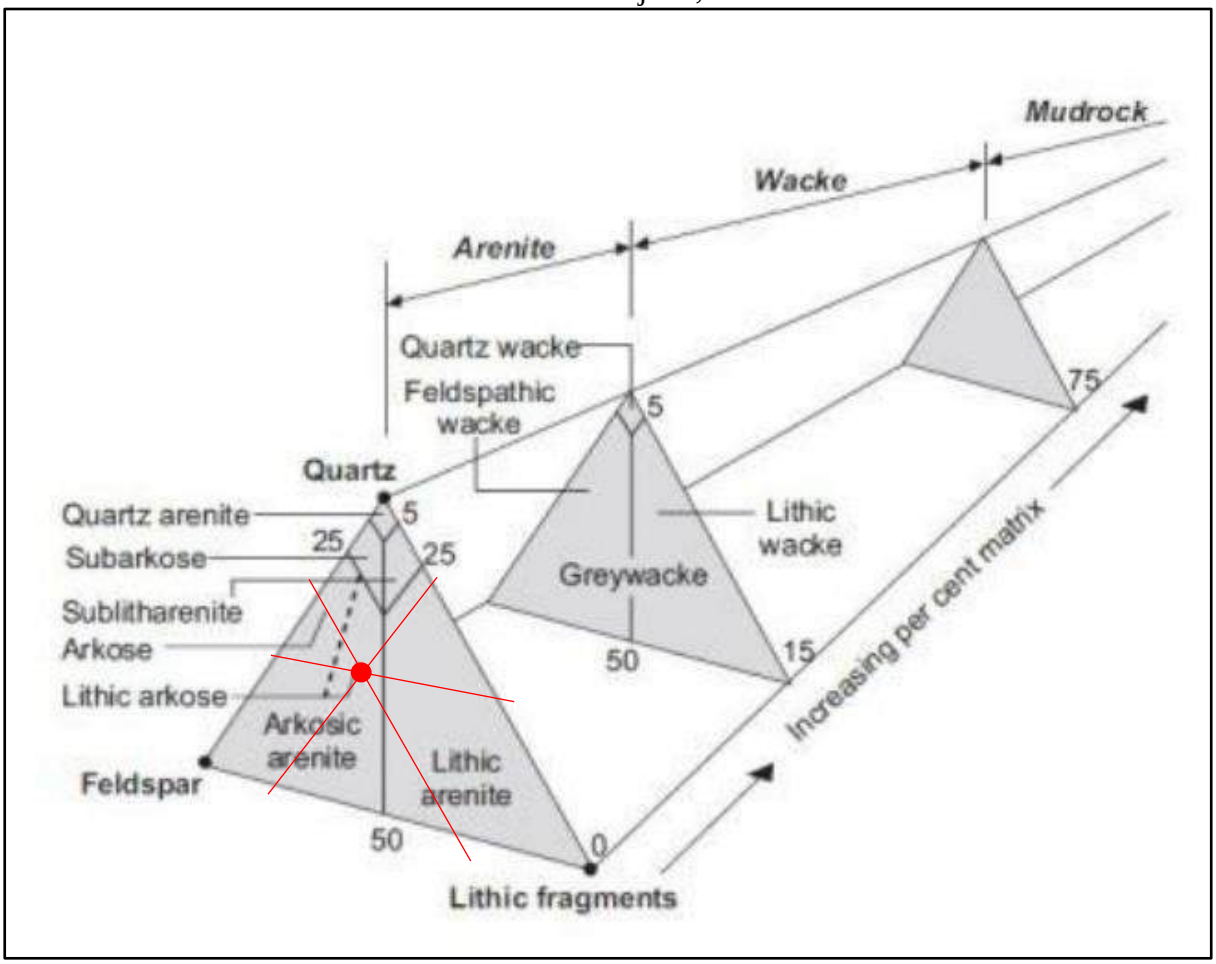
Kenampakan mikroskopis batuan dengan warna absorbsi abu-abu kecoklatan dan warna interferensi abu-abu putih biru *tarnished* (Orde I). Memiliki tekstur batuan klastik dan bentuk *angular-subrounded* dengan komposisi material berupa Kuarsa, Alunite, Opaq, dan *Lithic Fragment*. Memiliki ukuran 0,01-0,5mm dengan bentuk eubhedral-subhedral.

Deskripsi Mineralogi

Komposisi Mineral	Jumlah (%)	Keterangan Optik Mineral
Kuarsa (Qz)	40%	Warna absorbsi putih hingga tak berwarna, bentuk mineral subhedral-anhedral, belahan tidak ada, pecahan ada, pleokroisme tidak ada, relief rendah, ukuran mineral 0,075-0,5 mm, warna interferensi putih sampai abu-abu kehitaman, jenis gelapan bergelombang.
Alunit (Al)	30%	Warna absorbsi putih kekuningan, relief sedang, belahan satu arah, bentuk subhedral, warna interferensi merah muda kebiruan, pleokroisme dwikroik, ukuran 0,375 mm, jenis gelapan parallel
Lithic Fragment (Lf)	25%	Warna absorbsi kecokelatan dan warna interferensi abu-abu hingga kehitaman (Orde I), berukuran 0,001-0,004 mm.
Mineral Opaq (Opq)	5%	Warna absorbsi hitam, warna interferensi hitam, ukuran 0,25mm

Nama Batuan : *Arkosic Arenite* (Pettijohn, 1975)

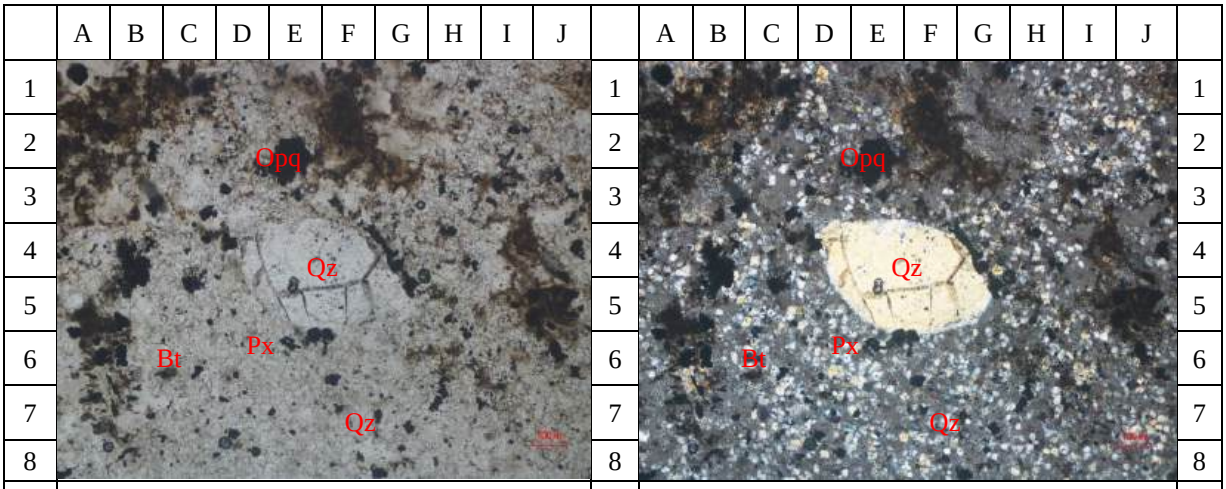
Klasifikasi Pettijohn, 1975



No. Sayatan : UHGZ-23-143-86 Satuan : Dasit

Lokasi : Tujuh Bukit Formasi :

Foto



//-NIKOL *X-NIKOL*

Lensa Okuler : 10x Lensa Objektif : 5x Perbesaran Total : 50x

Tipe Batuan : Batuan Beku

Tipe Struktur : Masif

Klasifikasi : Travis, 1955

Deskripsi Mikroskopis :

Kenampakan mikroskopis batuan dengan warna absorbsi abu-abu kecoklatan dan warna interferensi abu-abu. Bentuk mineral euhedral-subhedral, relasi inequigranular. Tekstur batuan porfiriafanitik, kristalinitas hipokristalin. Komposisi mineral terdiri dari biotit, piroksen, kuarsa, mineral opaq, dan massa dasar. Memiliki ukuran mineral 0,01-0,45mm.

Deskripsi Mineralogi

Komposisi Mineral	Jumlah (%)	Keterangan Optik Mineral
Kuarsa (Qz)	50%	Warna absorbsi tidak berwarna, belahan tidak ada, pecahan ada, relief rendah, bentuk mineral subhedral-anhedral, ukuran 0,01-0,45 mm warna interferensi putih keabu-abuan, pleokroisme tidak ada, jenis gelapan bergelombang, kembaran tidak ada.
Biotit (Bt)	15%	Warna absorpsi cokelat, warna interferensi cokelat, bentuk subhedral-anhedral, relief sedang, intensitas sedang, belahan tidak ada, ukuran mineral 0,05 - 0,5 mm.
Piroksen (Px)	15%	Warna absorpsi cokelat, warna interferensi kuning, relief rendah, intensitas rendah, bentuk mineral *subhedral-anhedral*, belahan satu arah,ukuran mineral 0,01 - 0,5 mm, jenis gelapan miring.
Mineral Opaq (Opq)	10%	Warna absorbsi tidak berwarna hitam, warna interferensi hitam, bentuk mineral subhedral-anhedral ukuran mineral >0,2mm.
Massa Dasar	10%	Massa dasar mikrokristalin dengan warna absorpsi kuning kecokelatan, warna interferensi abu-abu kehitaman.

Nama Batuan : *Dacite* (Travis, 1955)

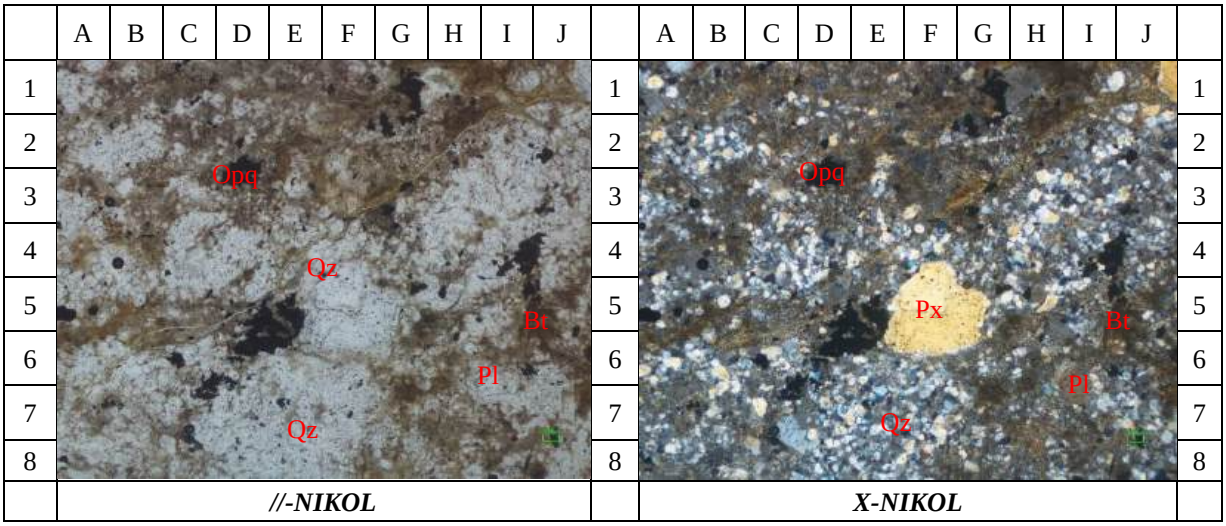
Klasifikasi Travis, 1955

	MINERAL UTAMA	K. Felspar > 2/3 Seluruh Feldspar			K. Felspar 1/3 – 2/3 seluruh Feldspar			Felspar Plagioklas > 2/3 seluruh Feldspar					Sedikit/Tidak ada Feldspar		Tipe Khusus
								K.Feldspar >10% seluruh Felspar	K. Felspar <10% Seluruh Felspar						
									Na - Plagioklas		Ca - Plagioklas				
		KWARSA >10%	KWARSA <10% FELSPATOID <10%	FELSPATOID >10%	KWARSA >10%	KWARSA <10% FELSPATOID <10%	FELSPATOID >10%		KWARSA >10%	Kwarsa <10% Felspatoid <10%	Kwarsa <10% Felspatoid <10%	Felspatoid >10% Pyroksin >10%	Terutama : Piroksin Dan atau Olivin	Terutama : Mineral Fe/Mg Dan Felspatoid	
	MINERAL TAMBAHAN KHAS	Terutama : Hornblende, Biotit, Piroksin, Muskovit Juga : Na-Amphibol, Eigirin, Kankrinit, Turmalin, Sodalit			Terutama : Hornblende, Biotit, Piroksin Juga : Na-Amfibol, Eigirin			Terutama : Hornblende, Biotit, Piroksin (dalam Andesit) Juga : Felspatoid, Na-Amphibol			Terutama : Prioksin, Uralit, Olovin Juga : Hornblende, Biotit, Kwarsa, Eigirin, Na-Amphibol		Terutama : Serpentin Bijih besi Juga : Biotit, Hronblende	Hornblende Biotit Bijih besi	PEGMATIT APLIT LAMPROPIR
	INDEKS WARNA	10	15	20	20	25	30	20	20	25	30	60	95	55	
FANERITIK	EKWIGRANULAR Batolit Lapolit "Stock" Lakolit luas Retas tebal Sill	GRANIT	SIANIT	SIANIT NEFELIN	MONSONIT KWARSA (ADAMELIT)	MONSONIT	MONSONIT NEFELIN	GRANO DIORIT	DIORIT KWARSA (TONALIT)	DIORIT	GABRO Norit Olivin salu Traktolit Anortorit Gabro kwarsa	TERALIT	PERIDOTIT Harzburgit Pikrit Dunit Piroksen Serpentinit	IJOLIT Messorite Dsb	
PORFIRITIK	MASA DASAR FANERITIK Lakolit Retas Sill "mug" "Stock" kecil Tepi masa luas	PORFIRI GRANIT	PORFIRI SIANIT	PORFIRI SIANIT NEFELIN	PORFIRI MONZONIT KWARSA	PORFIRI MONZONIT	PORFIRI MONZONIT NEFELIN	PORFIRI GRANO DIORIT	PORFIRI DIORIT KWARSA	PORFIRI DIORIT	PORFIRI GABRO	DIABAS (Dolerit) / PORFIRI TERALIT	PORFIRI PERIDOTIT		
	MASA DASAR AFANITIK Retas Sill Lakolit Aliran Pemrukaan Tepi Masa luas	PORFIRI RIOLIT	PORFIRI TRAKIT	PORFIRI FONOLIT	PORFIRI LATIT KWARSA	PORFIRI LATIT	PORFIRI LATIT NEFELIN	PORFIRI DASIT		PORFIRI ANDESIT	PORFIRI BASAL		PORFIRI LIMBURGIT		
AFANITIK	MIKROKRISTALIN Retas Sill Aliran Permukaan Tepi masa luas "welded tuffs"	RIOLIT	TRAKIT	FONOLIT	LATIT KWARSA (DELENIT)	LATIT (TRAKIT-ANDESIT	LATIT NEFELIN	DASIT		ANDESIT	BASAL	TEFRIT	LIMBURGIT	Nefelit Lesitit Melilitit Olivin Nepelinit Dsb.	TRAP FELSIT
	GELAS Aliran permukaan Tepi retas dan Sill "Welded tuffs	OBSIDIAN "PITCHSTONE" VITROFIR" PERLIT BATUAPUNG SKOREA													

No. Sayatan : UHGZ-23-143-131 Satuan : Diorit

Lokasi : Tujuh Bukit Formasi :

Foto



//-NIKOL *X-NIKOL*

Lensa Okuler : 10x Lensa Objektif : 5x Perbesaran Total : 50x

Tipe Batuan : Batuan Beku

Tipe Struktur : Masif

Klasifikasi : Travis, 1955

Deskripsi Mikroskopis :

Warna absorbsi tidak berwarna, warna inteferensi putih hingga biru muda, kristalinitas hipokristalin, granularitas porfiroafanitik, inequigranular, ukuran mineral 0,1 – 1,25 mm, bentuk mineral subhderal - anhedral. Komposisi mineral terdiri dari Kuarsa, Plagioklas, Piroksen, Biotit, dan mineral opaq

Deskripsi Mineralogi

Komposisi Mineral	Jumlah (%)	Keterangan Optik Mineral
Kuarsa (Qz)	25%	Warna absorbsi tidak berwarna, belahan tidak ada, pecahan ada, relief rendah, bentuk mineral subhedral-anhedral, ukuran 0,01-0,45 mm warna interferensi putih keabu-abuan, pleokroisme tidak ada, jenis gelapan bergelombang, kembaran tidak ada.
Biotit (Bt)	10%	Warna absorpsi cokelat, warna interferensi cokelat, bentuk subhedral-anhedral, relief sedang, intensitas sedang, belahan tidak ada, ukuran mineral 0,05 - 0,5 mm.
Plagioklas	20%	Warna absorbsi tidak berwarna, pleokroisme monokroik, bentuk mineral subhedral - anhedral, dan belahan satu arah, pecahan tidak ada, kembaran ada, relief rendah dan ukuran mineral 0,5 – 0,55 mm. Warna interferensi putih hingga abu abu (Orde I), jenis gelapan miring.
Piroksen (Px)	15%	Warna absorpsi cokelat, warna interferensi kuning, relief rendah, intensitas rendah, bentuk mineral *subhedral-anhedral*, belahan satu arah,ukuran mineral 0,01 - 0,5 mm, jenis gelapan miring.
Mineral Opaq (Opq)	10%	Warna absorbsi tidak berwarna hitam, warna interferensi hitam, bentuk mineral subhedral-anhedral ukuran mineral >0,2mm.
Massa Dasar	20%	Massa dasar mikrokristalin dengan warna absorpsi kuning kecokelatan, warna interferensi abu-abu kehitaman.

Nama Batuan : *Diorite* (Travis, 1955)

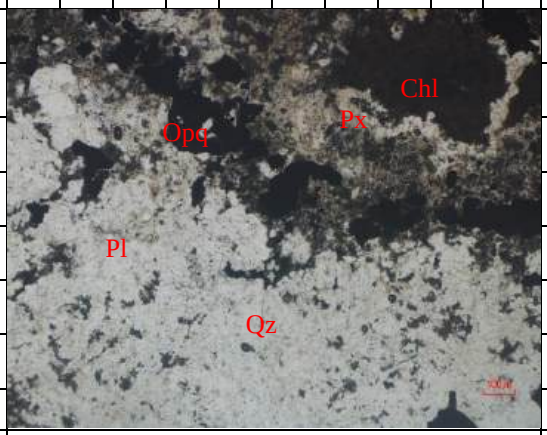
Klasifikasi Travis, 1955

		K. Felspar > 2/3 Seluruh Feldspar			K. Felspar 1/3 – 2/3 seluruh Feldspar			Felspar Plagioklas > 2/3 seluruh Feldspar					Sedikit/Tidak ada Feldspar		Tipe Khusus
	MINERAL UTAMA	KWARSA >10%	KWARSA <10% FELSPATOID <10%	FELSPATOID >10%	KWARSA >10%	KWARSA <10% FELSPATOID <10%	FELSPATOID >10%	K.Feldspar >10% seluruh Felspar	K. Felspar <10% Seluruh Felspar				Terutama : Piroksin Dan atau Olivin	Terutama : Mineral Fe/Mg Dan Felspatoid	
									Na - Plagioklas		Ca - Plagioklas				
									KWARSA >10%	Kwarsa <10% Felspatoid <10%	Kwarsa <10% Felspatoid <10%	Felspatoid >10% Pyroksin >10%			
	MINERAL TAMBAHAN KHAS	Terutama : Hornblende, Biotit, Piroksin, Muskovit Juga : Na-Amphibol, Eigirin, Kankrinit, Turmalin, Sodalit			Terutama : Hornblende, Biotit, Piroksin Juga : Na-Amfibol, Eigirin			Terutama : Hornblende, Biotit, Piroksin (dalam Andesit) Juga : Felspatoid, Na-Amphibol			Terutama : Prioksin, Uralit, Olovin Juga : Hornblende, Biotit, Kwarsa, Eigirin, Na-Amphibol		Terutama : Serpentin Bijih besi Juga : Biotit, Hronblende	Hornblende Biotit Bijih besi	PEGMATIT APLIT LAMPROPIR
	INDEKS WARNA	10	15	20	20	25	30	20	20	25	30	60	95	55	
FANERITIK	EKWIGRANULAR Batolit Lapolit "Stock" Lakolit luas Retas tebal Sill	GRANIT	SIANIT	SIANIT NEFELIN	MONSONIT KWARSA (ADAMELIT)	MONSONIT	MONSONIT NEFELIN	GRANO DIORIT	DIORIT KWARSA (TONALIT)	DIORIT	GABRO Norit Olivin salu Traktolit Anortorit Gabro kwarsa	TERALIT	PERIDOTIT Harzburgit Pikrit Dunit Piroksen Serpentinit	IJOLIT Messorite Dsb	
PORFIRITIK	MASA DASAR FANERITIK Lakolit Retas Sill "mug" "Stock" kecil Tepi masa luas	PORFIRI GRANIT	PORFIRI SIANIT	PORFIRI SIANIT NEFELIN	PORFIRI MONZONIT KWARSA	PORFIRI MONZONIT	PORFIRI MONZONIT NEFELIN	PORFIRI GRANO DIORIT	PORFIRI DIORIT KWARSA	PORFIRI DIORIT	PORFIRI GABRO	DIABAS (Dolerit) / PORFIRI TERALIT	PORFIRI PERIDOTIT		
	MASA DASAR AFANITIK Retas Sill Lakolit Aliran Pemrukaan Tepi Masa luas	PORFIRI RIOLIT	PORFIRI TRAKIT	PORFIRI FONOLIT	PORFIRI LATIT KWARSA	PORFIRI LATIT	PORFIRI LATIT NEFELIN	PORFIRI DASIT		PORFIRI ANDESIT	PORFIRI BASAL		PORFIRI LIMBURGIT		
AFANITIK	MIKROKRISTALIN Retas Sill Aliran Permukaan Tepi masa luas "welded tuffs"	RIOLIT	TRAKIT	FONOLIT	LATIT KWARSA (DELENIT)	LATIT (TRAKIT-ANDESIT	LATIT NEFELIN	DASIT		ANDESIT	BASAL	TEFRIT	LIMBURGIT	Nefelit Lesitit Melilitit Olivin Nepelinit Dsb.	TRAP FELSIT
	GELAS Aliran permukaan Tepi retas dan Sill "Welded tuffs	OBSIDIAN "PITCHSTONE" VITROFIR" PERLIT BATUAPUNG SKOREA													

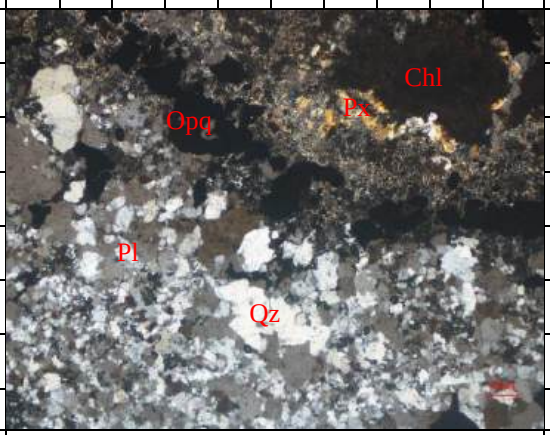
No. Sayatan : UHGZ-23-144-43 Satuan : Tonalit

Lokasi : Tujuh Bukit Formasi :

Foto



//-NIKOL



X-NIKOL

Lensa Okuler : 10x Lensa Objektif : 5x Perbesaran Total : 50x

Tipe Batuan : Batuan Beku

Tipe Struktur : Masif

Klasifikasi : Travis, 1955

Deskripsi Mikroskopis :

Warna absorbsi tidak berwarna, warna inteferensi putih hingga biru muda, kristalinitas holokristalin, granularitas porfifoafanitik, fabrik inequigranular, ukuran mineral 0,075 – 2 mm, bentuk mineral subhderal - anhedral. Komposisi mineral terdiri dari Kuarsa, Plagioklas, Piroksen, Klorit dan Mineral Opaq

Deskripsi Mineralogi

Komposisi Mineral	Jumlah (%)	Keterangan Optik Mineral
Kuarsa (Qz)	45%	Warna absorbsi tidak berwarna, belahan tidak ada, pecahan ada, relief rendah, bentuk mineral subhedral-anhedral, ukuran 0,01-0,5 mm warna interferensi putih keabu-abuan, pleokroisme tidak ada, jenis gelapan bergelombang, kembaran tidak ada.
Klorit (Ch)	20%	Warna absorbs hijau keabu-abuan, warna interferensi cokelat kehijauan, bentuk *subhedral-anhedral,* relief tinggi, intensitas kuat, tidak memiliki kembaran, ukuran mineral 0,05 - 0,5 mm.
Plagioklas	10%	Warna absorbsi tidak berwarna, pleokroisme monokroik, bentuk mineral subhedral - anhedral, dan belahan satu arah, pecahan tidak ada, memiliki kembaran, relief rendah dan ukuran mineral 0,5 – 0,75 mm. Warna interferensi putih hingga abu abu (Orde I), jenis gelapan miring.
Piroksen (Px)	15%	Warna absorpsi cokelat, warna interferensi kuning, relief rendah, intensitas rendah, bentuk mineral *subhedral-anhedral*, belahan satu arah,ukuran mineral 0,01 - 0,5 mm, jenis gelapan miring.
Mineral Opaq (Opq)	10%	Warna absorbsi tidak berwarna hitam, warna interferensi hitam, bentuk mineral subhedral-anhedral ukuran mineral >0,2mm.

Nama Batuan : *Diorite* Kuarsa (*Tonalite*) (Travis, 1955)

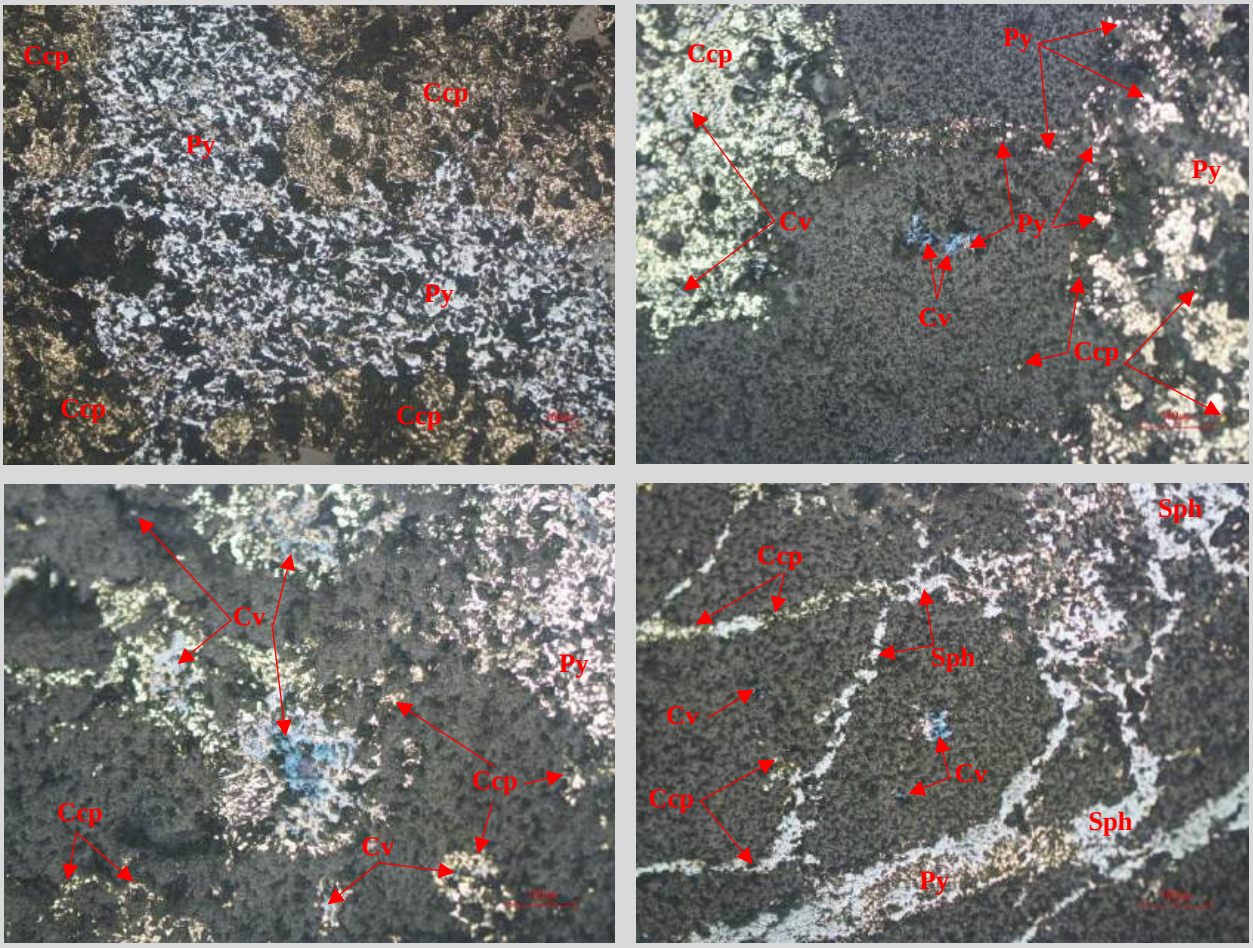
Klasifikasi Travis, 1955

	MINERAL UTAMA	K. Felspar > 2/3 Seluruh Feldspar			K. Felspar 1/3 – 2/3 seluruh Feldspar			Felspar Plagioklas > 2/3 seluruh Feldspar					Sedikit/Tidak ada Feldspar		Tipe Khusus
								K.Feldspar >10% seluruh Felspar	K. Felspar <10% Seluruh Felspar						
									Na - Plagioklas		Ca - Plagioklas				
		KWARSA >10%	KWARSA <10% FELSPATOID <10%	FELSPATOID >10%	KWARSA >10%	KWARSA <10% FELSPATOID <10%	FELSPATOID >10%		KWARSA >10%	Kwarsa <10% Felspatoid <10%	Kwarsa <10% Felspatoid <10%	Felspatoid >10% Pyroksin >10%	Terutama : Piroksin Dan atau Olivin	Terutama : Mineral Fe/Mg Dan Felspatoid	
	MINERAL TAMBAHAN KHAS	Terutama : Hornblende, Biotit, Piroksin, Muskovit Juga : Na-Amphibol,Eigirin, Kankrinit, Turmalin, Sodalit			Terutama : Hornblende, Biotit, Piroksin Juga : Na-Amfibol, Eigirin			Terutama : Hornblende, Biotit, Piroksin (dalam Andesit) Juga : Felspatoid, Na-Amphibol			Terutama : Prioksin, Uralit,Olovin Juga : Hornblende,Biotit, Kwarsa, Eigirin, Na-Amphibol		Terutama : Serpentin Bijih besi Juga : Biotit, Hronblende	Hornblende Biotit Bijih besi	PEGMATIT APLIT LAMPROPIR
	INDEKS WARNA	10	15	20	20	25	30	20	20	25	30	60	95	55	
FANERITIK	EKWIGRANULAR Batolit Lapolit "Stock" Lakolit luas Retas tebal Sill	GRANIT	SIANIT	SIANIT NEFELIN	MONSONIT KWARSA (ADAMELIT)	MONSONIT	MONSONIT NEFELIN	GRANO DIORIT	DIORIT KWARSA (TONALIT)	DIORIT	GABRO Norit Olivin salu Traktolit Anortorit Gabro kwarsa	TERALIT	PERIDOTIT Harzburgit Pikrit Dunit Piroksen Serpentinit	IJOLIT Messorite Dsb	
PORFIRITIK	MASA DASAR FANERITIK Lakolit Retas Sill "mug" "Stock" kecil Tepi masa luas	PORFIRI GRANIT	PORFIRI SIANIT	PORFIRI SIANIT NEFELIN	PORFIRI MONZONIT KWARSA	PORFIRI MONZONIT	PORFIRI MONZONIT NEFELIN	PORFIRI GRANO DIORIT	PORFIRI DIORIT KWARSA	PORFIRI DIORIT	PORFIRI GABRO	PORFIRI TERALIT	PORFIRI PERIDOTIT		
	MASA DASAR AFANITIK Retas Sill Lakolit Aliran Pemrukaan Tepi Masa luas	PORFIRI RIOLIT	PORFIRI TRAKIT	PORFIRI FONOLIT	PORFIRI LATIT KWARSA	PORFIRI LATIT	PORFIRI LATIT NEFELIN	PORFIRI DASIT		PORFIRI ANDESIT	PORFIRI BASAL	PORFIRI TEFRIT	PORFIRI LIMBURGIT		
AFANITIK	MIKROKRISTALIN Retas Sill Aliran Permukaan Tepi masa luas "welded tuffs"	RIOLIT	TRAKIT	FONOLIT	LATIT KWARSA (DELENIT)	LATIT (TRAKIT-ANDESIT	LATIT NEFELIN	DASIT		ANDESIT	BASAL	TEFRIT	LIMBURGIT	Nefelit Lesitit Melilitit Olivin Nepelinit Dsb.	TRAP FELSIT
	GELAS Aliran permukaan Tepi retas dan Sill "Welded tuffs	OBSIDIAN "PITCHSTONE" VITROFIR" PERLIT BATUAPUNG SKOREA													

DIABAS (Doleri t)

No sayatan / No stasiun : UHGZ-23-143-97
Lokasi : Tujuh Bukit
Nama Batuan : Dasit

Foto



Lensa Okuler : 10x *Lensa Obyektif : 10x* *Perbesaran Total : 100x*

Tipe Endapan : Epitermal (*High Sulphidation*)

Jenis Mineralisasi : Pirit – Kalkopirit – Kovelit – Sfalerit

Referensi : Ore Mineral Atlas (Marshal dkk, 2004)

Mikroskopis :

Kenampakan pada sayatan poles memperlihatkan kehadiran mineral yang terdiri dari Pirit, Kalkopirit, Kovelit, dan Sfalerit. Dijumpai tekstur *infilling*, *intergrowth*, dan *replacement*. Mineral pirit, kalkopirit, kovelit, dan sfalerit memiliki tekstur *infilling*. Mineral kalkopirit dan pirit menunjukkan tekstur *intergrowth*. Mineral pirit menunjukkan tekstur *replacement* dengan mineral kalkopirit, kovelit, dan sfalerit. Mineral kovelit menunjukkan tekstur *replacement* dengan mineral pirit dan kalkopirit. Mineral sfalerit menunjukkan tekstur *replacement* dengan mineral pirit dan kalkopirit. Mineral kalkopirit menunjukkan tekstur *replacement* dengan mineral pirit, kalkopirit, dan sfalerit.

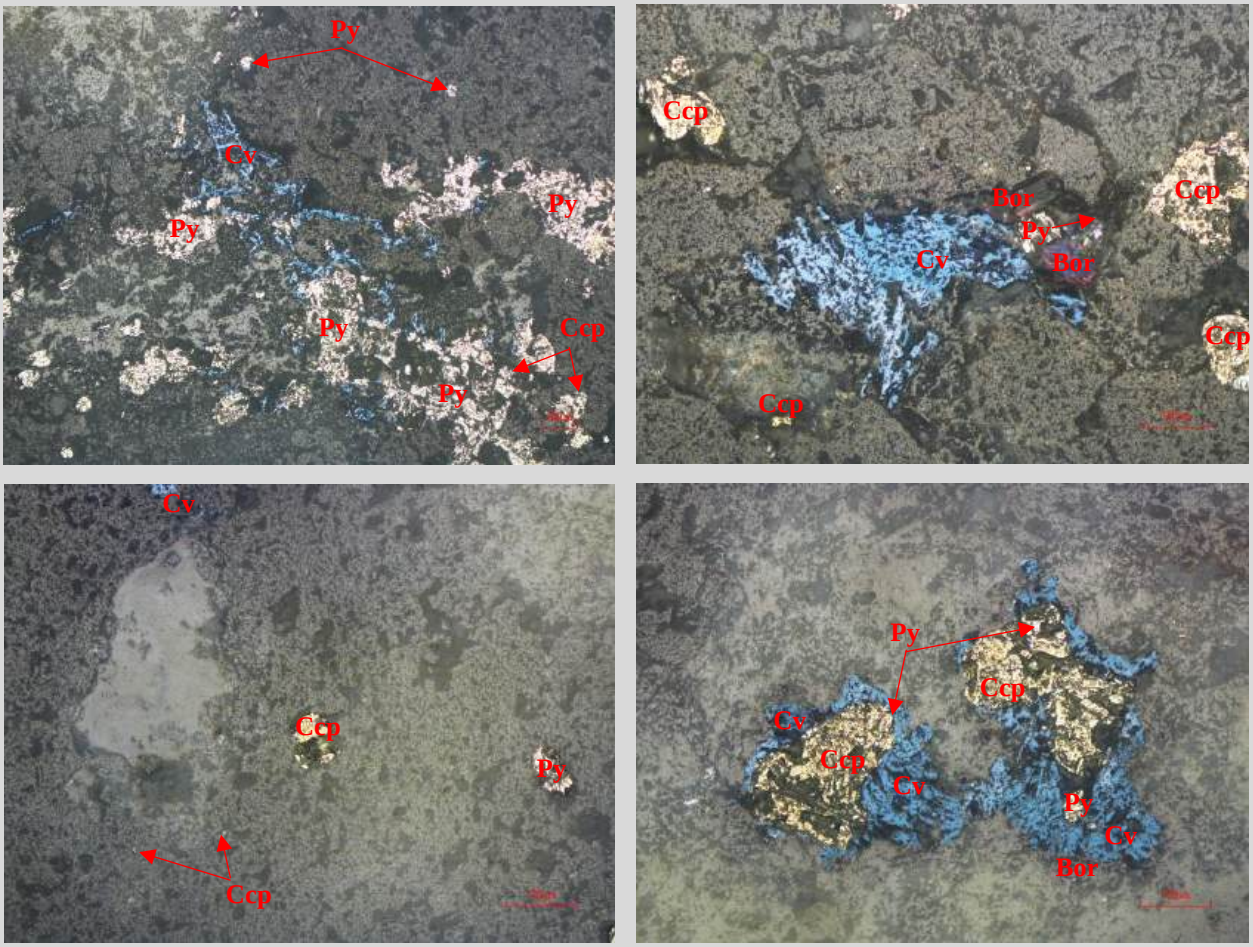
Deskripsi Mineralogi

Komposisi Mineral	Keterangan Optik mineral
Pirit (Py) **(FeS_2)**	Berwarna putih kekuningan, bentuk subhedral - euhedral, ukuran 0,01 mm – 0,9 mm, memiliki tekstur *infilling*, tekstur *intergrowth* bersama dengan kalkopirit, tekstur *replacement* dengan mineral kalkopirit, kovelit, dan sfalerit, bersifat isotropik, tidak dijumpai adanya pleokroisme.
Kalkopirit (Ccp) **($CuFeS_2$)**	Berwarna kuning, bentuk subhedral, ukuran 0,01 mm – 0,7 mm, memiliki tekstur *infilling*, tekstur *intergrowth* dengan mineral pirit, tekstur *replacement* dengan mineral kovelit dan sfalerit, bersifat isotropik, tidak dijumpai adanya pleokroisme.
Kovelit (Cv) **(CuS)**	Berwarna Biru tua, bentuk subhedral-euhedral, ukuran mineral 0,01 mm - 0,25 mm, memiliki tekstur *infilling*, tekstur *intergrowth*, dan tekstur *replacement* dengan mineral pirit dan kalkopirit, bersifat isotropik dan tidak dijumpai adanya pleokroisme.

Sfalerit (Sph) **(ZnS)**	Berwarna abu-abu, bentuk subhedral-euhedral, ukuran mineral 0,02 mm – 0,8 mm, memiliki tekstur *infilling*, tekstur *replacement* dengan mineral pirit dan kalkopirit, bersifat isotropik dan tidak dijumpai adanya pleokroisme.

No sayatan / No stasiun : UHGZ-23-144-43
Lokasi : Tujuh Bukit
Nama Batuan : Tonalit

Foto



Lensa Okuler : 10x *Lensa Obyektif : 10x* *Perbesaran Total : 100x*

Tipe Endapan : Epitermal (*High Sulphidation*)

Jenis Mineralisasi : Pirit – Kalkopirit – Kovelit – Bornit

Referensi : Ore Mineral Atlas (Marshal dkk, 2004)

Mikroskopis :

Kenampakan pada sayatan poles memperlihatkan kehadiran mineral yang terdiri dari Pirit, Kalkopirit, Kovelit, dan Bornite. Dijumpai tekstur *infilling, intergrowth,* dan *replacement*. Mineral pirit, kalkopirit, dan kovelit memiliki tekstur *infilling*. Mineral pirit, kalkopirit, dan kovelit juga menunjukkan tekstur *intergrowth*. Mineral pirit menunjukkan tekstur *replacement* dengan mineral kalkopirit, kovelit, dan bornit. Mineral kovelit menunjukkan tekstur *replacement* dengan mineral pirit, kalkopirit, dan bornit. Mineral bornit menunjukkan tekstur *replacement* dengan mineral pirit, kalkopirit dan kovelit. Mineral kalkopirit menunjukkan tekstur *replacement* dengan mineral pirit, kalkopirit, dan bornit.

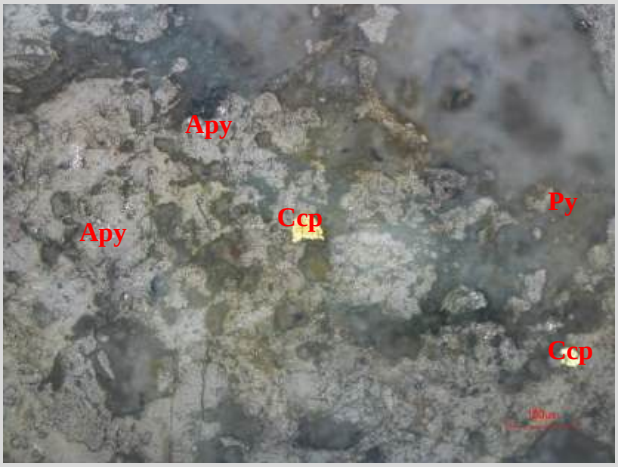
Deskripsi Mineralogi

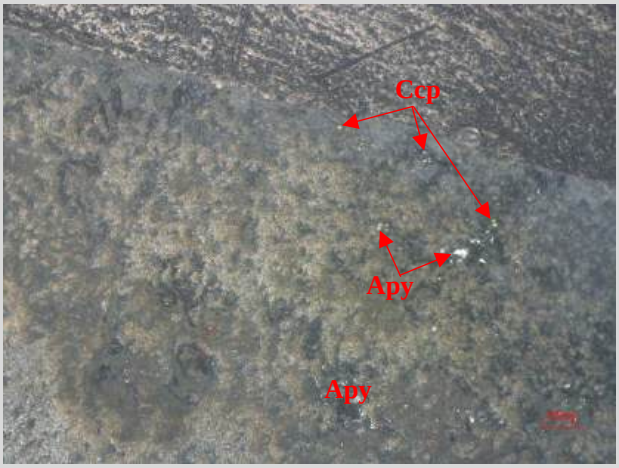
Komposisi Mineral	Keterangan Optik mineral
Pirit (Py) **(FeS_2)**	Berwarna putih kekuningan, bentuk subhedral - euhedral, ukuran 0,01 mm – 0,9 mm, memiliki tekstur *infilling*, tekstur *intergrowth* bersama dengan kalkopirit, tekstur *replacement* dengan mineral kalkopirit, kovelit, dan bornit, bersifat isotropik, tidak dijumpai adanya pleokroisme.
Kalkopirit (Ccp) **($CuFeS_2$)**	Berwarna kuning, bentuk subhedral, ukuran 0,01 mm – 0,7 mm, memiliki tekstur *infilling*, tekstur *intergrowth* dengan mineral pirit, tekstur *replacement* dengan mineral kovelit dan bornit, bersifat isotropik, tidak dijumpai adanya pleokroisme.
Kovelit (Cv) **(CuS)**	Berwarna Biru tua, bentuk subhedral-euhedral, ukuran mineral 0,01 mm - 0,6 mm, memiliki tekstur *infilling*, tekstur *replacement* dengan mineral pirit dan kalkopirit, bersifat isotropik dan tidak dijumpai adanya pleokroisme.

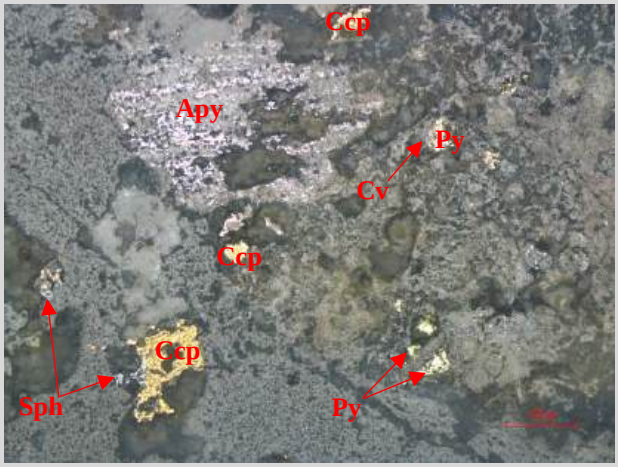
Bornit (Bor) **(Cu_5FeS_4)**	Berwarna biru kemerahan, berukuran <0,3 mm, bentuk subhedral – anhedral tekstur *replacement* dengan mineral pirit dan kalkopirit, bersifat isotropik dan tidak dijumpai adanya pleokroisme

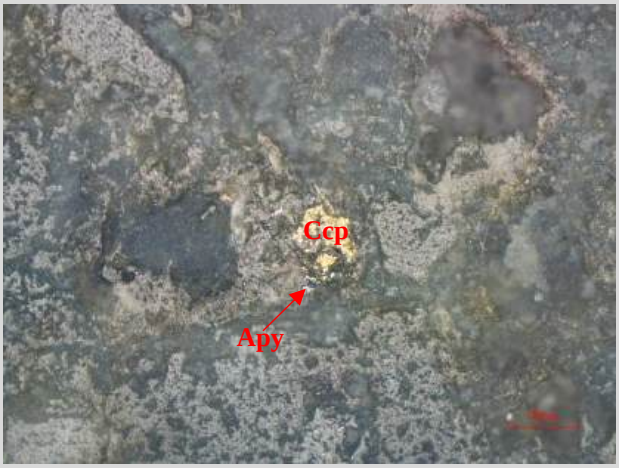
No sayatan / No stasiun : UHGZ-23-143-40
Lokasi : Tujuh Bukit
Nama Batuan : Breksi

Foto









Lensa Okuler : 10x *Lensa Obyektif : 10x* *Perbesaran Total : 100x*

Tipe Endapan : Epitermal (*High Sulphidation*)

Jenis Mineralisasi : Pirit – Kalkopirit – Arsenopirit – Sfalerit

Referensi : Ore Mineral Atlas (Marshal dkk, 2004)

Mikroskopis :

Kenampakan pada sayatan poles memperlihatkan kehadiran mineral yang terdiri dari Pirit, Kalkopirit, Arsenopirit, dan Sfalerit. Dijumpai tekstur *infilling*, *intergrowth*, dan *replacement*. Mineral pirit, kalkopirit, dan arsenopirit memiliki tekstur *infilling*. Mineral pirit, kalkopirit, dan kovelit juga menunjukkan tekstur *intergrowth*. Mineral pirit menunjukkan tekstur *replacement* dengan mineral kalkopirit, arsenopirit, dan sfalerit. Mineral arsenopirit menunjukkan tekstur *replacement* dengan mineral pirit, kalkopirit, dan sfalerit. Mineral sfalerit menunjukkan tekstur *replacement* dengan mineral pirit, kalkopirit dan arsenopirit. Mineral kalkopirit menunjukkan tekstur *replacement* dengan mineral pirit dan sfalerit.

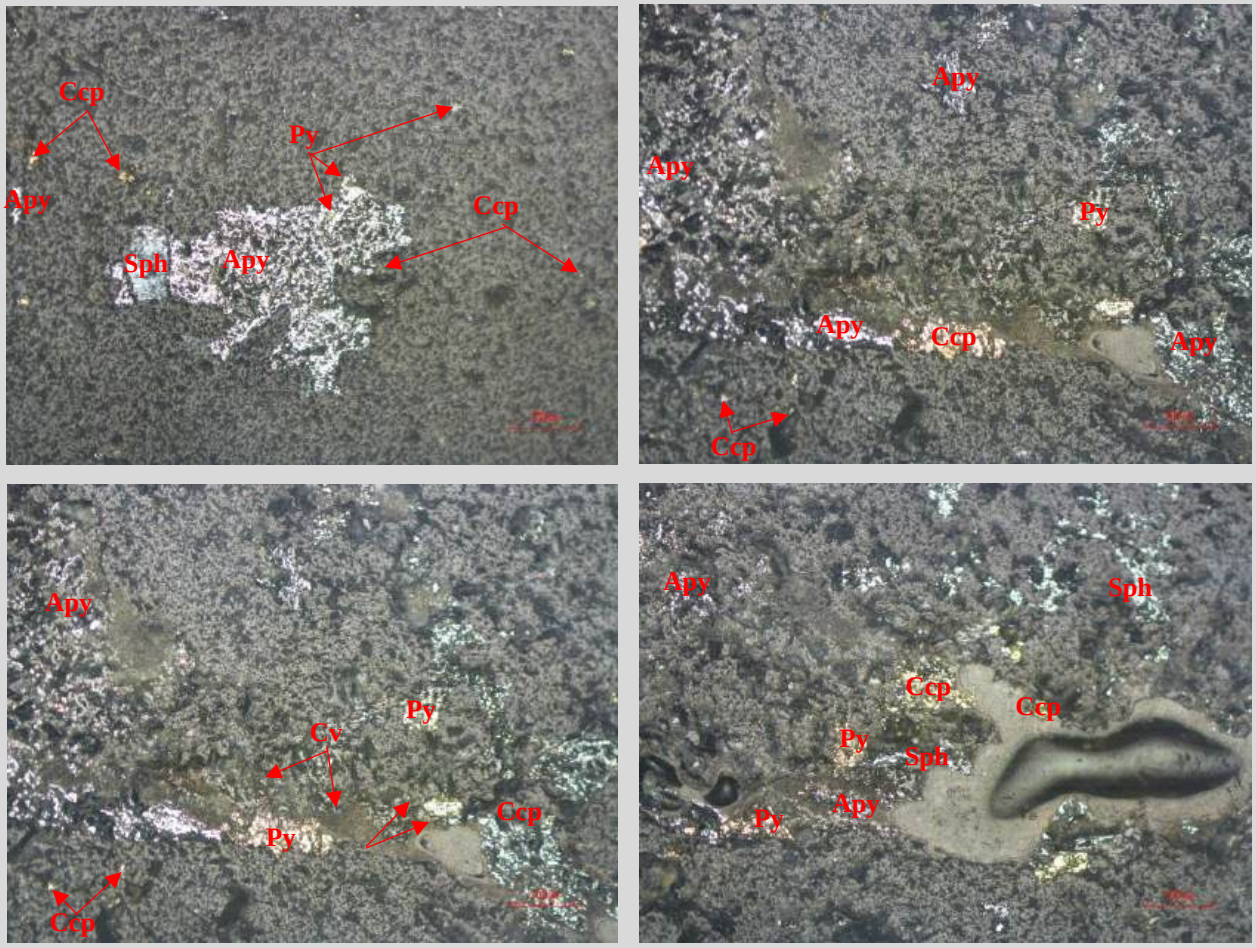
Deskripsi Mineralogi

Komposisi Mineral	Keterangan Optik mineral
Pirit (Py) (FeS_2)	Berwarna putih kekuningan, bentuk subhedral - euhedral, ukuran 0,01 mm – 0,5 mm, memiliki tekstur *infilling*, tekstur *intergrowth* bersama dengan kalkopirit, tekstur *replacement* dengan mineral kalkopirit, arsenopirit, dan sfalerit, bersifat isotropik, tidak dijumpai adanya pleokroisme.
Kalkopirit (Ccp) ($CuFeS_2$)	Berwarna kuning, bentuk subhedral, ukuran 0,01 mm – 0,5 mm, memiliki tekstur *infilling*, tekstur *intergrowth* dengan mineral pirit, tekstur *replacement* dengan mineral pirit, arsenopirit, dan sfalerit, bersifat isotropik, tidak dijumpai adanya pleokroisme.
Arsenopirit (Apy) (FeAsS)	Berwarna putih abu-abu, bentuk subhedral – anhedral, ukuran <0,6 mm, tekstur *replacement*, bersifat isotropik dan tidak dijumpai adanya pleokrisme.

Sfalerit (Sph) **(ZnS)**	Berwarna abu-abu, bentuk subhedral-euhedral, ukuran mineral <0,3 mm, memiliki tekstur *infilling* dan *replacement*, bersifat isotropik dan tidak dijumpai adanya pleokroisme.

No sayatan / No stasiun : **UHGZ-23-144-103**
Lokasi : **Tujuh Bukit**
Nama Batuan : **Breksi**

Foto



Lensa Okuler : 10x *Lensa Obyektif : 10x* *Perbesaran Total : 100x*

Tipe Endapan : **Epitermal (*High Sulphidation*)**

Jenis Mineralisasi : **Pirit – Kalkopirit – Arsenopirit – Sfalerit – Kovelit**

Referensi : Ore Mineral Atlas (Marshal dkk, 2004)

Mikroskopis :

Kenampakan pada sayatan poles memperlihatkan kehadiran mineral yang terdiri dari Pirit, Kalkopirit, Arsenopirit, Sfalerit, dan Kovelit. Dijumpai tekstur *infilling*, *intergrowth*, dan *replacement*. Mineral pirit, kalkopirit, sfalerit, dan arsenopirit memiliki tekstur *infilling*. Mineral pirit, kalkopirit, sfalerit, dan arsenopirit juga menunjukkan tekstur *intergrowth*. Mineral pirit menunjukkan tekstur *replacement* dengan mineral kalkopirit, arsenopirit, kovelit, dan sfalerit. Mineral arsenopirit menunjukkan tekstur *replacement* dengan mineral pirit, kalkopirit, dan sfalerit. Mineral sfalerit menunjukkan tekstur *replacement* dengan mineral pirit, kalkopirit dan arsenopirit. Mineral kalkopirit menunjukkan tekstur *replacement* dengan mineral pirit, arsenopirit, kovelit, dan sfalerit.

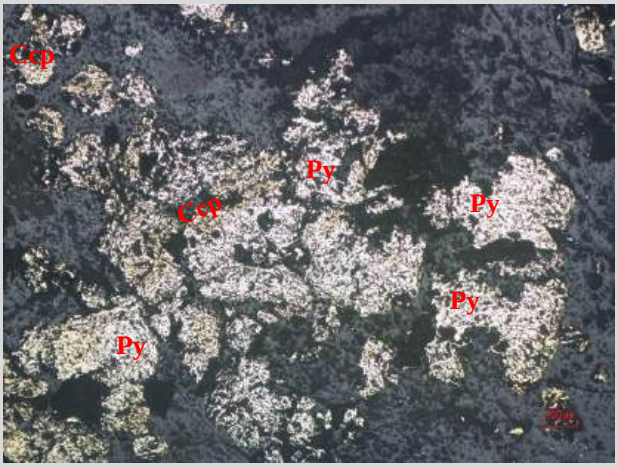
Deskripsi Mineralogi

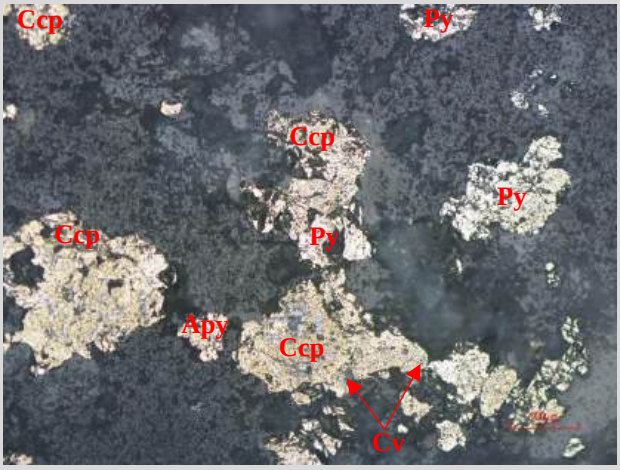
Komposisi Mineral	Keterangan Optik mineral
Pirit (Py) **(FeS_2)**	Berwarna putih kekuningan, bentuk subhedral - euhedral, ukuran 0,01 mm – 0,4 mm, memiliki tekstur *infilling*, tekstur *intergrowth* bersama dengan kalkopirit, tekstur *replacement* dengan mineral kalkopirit, arsenopirit, kovelit, dan sfalerit, bersifat isotropik, tidak dijumpai adanya pleokroisme.
Kalkopirit (Ccp) **($CuFeS_2$)**	Berwarna kuning, bentuk subhedral, ukuran 0,01 mm – 0,5 mm, memiliki tekstur *infilling*, tekstur *intergrowth* dengan mineral pirit, tekstur *replacement* dengan mineral pirit, arsenopirit, dan sfalerit, bersifat isotropik, tidak dijumpai adanya pleokroisme.

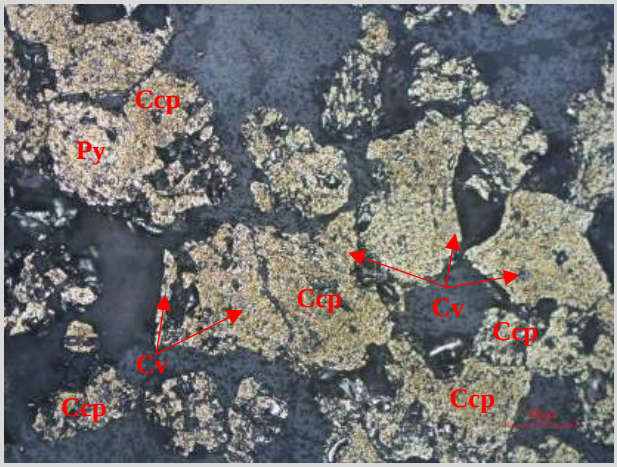
Arsenopirit (Apy) **(FeAsS)**	Berwarna putih abu-abu, bentuk subhedral – anhedral, ukuran <0,6 mm, bentuk subhedral – anhedral, tekstur *replacement*, bersifat isotropik dan tidak dijumpai adanya pleokrisme.
Sfalerit (Sph) **(ZnS)**	Berwarna abu-abu, bentuk subhedral-euhedral, ukuran mineral <0,3 mm, memiliki tekstur *infilling* dan *replacement*, bersifat isotropik dan tidak dijumpai adanya pleokroisme.
Kovelit (Cv) **(CuS)**	Berwarna Biru tua, bentuk subhedral-euhedral, ukuran mineral 0,01 mm - 0,25 mm, memiliki tekstur *infilling*, tekstur *replacement* dengan mineral pirit dan kalkopirit, bersifat isotropik dan tidak dijumpai adanya pleokroisme.

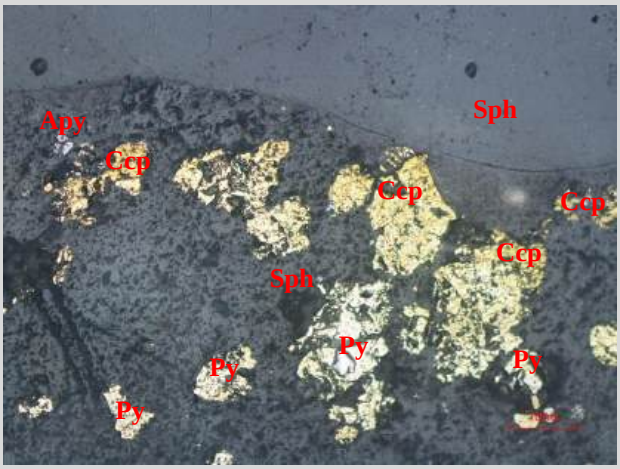
No sayatan / No stasiun : UHGZ-23-144-99
Lokasi : Tujuh Bukit
Nama Batuan : Breksi

Foto









Lensa Okuler : 10x *Lensa Obyektif : 10x* *Perbesaran Total : 100x*

Tipe Endapan : Epitermal (*High Sulphidation*)

Jenis Mineralisasi : Pirit – Kalkopirit – Arsenopirit – Kovelit

Referensi : Ore Mineral Atlas (Marshal dkk, 2004)

Mikroskopis :

Kenampakan pada sayatan poles memperlihatkan kehadiran mineral yang terdiri dari Pirit, Kalkopirit, Arsenopirit, dan Kovelit. Dijumpai tekstur *infilling*, *intergrowth*, dan *replacement*. Mineral pirit dan kalkopirit memiliki tekstur *infilling*. Mineral pirit, kalkopirit, dan arsenopirit juga menunjukkan tekstur *intergrowth*. Mineral pirit menunjukkan tekstur *replacement* dengan mineral kalkopirit, arsenopirit, dan kovelit. Mineral arsenopirit menunjukkan tekstur *replacement* dengan mineral pirit dan kalkopirit. Mineral kalkopirit menunjukkan tekstur *replacement* dengan mineral pirit, arsenopirit, dan kovelit.

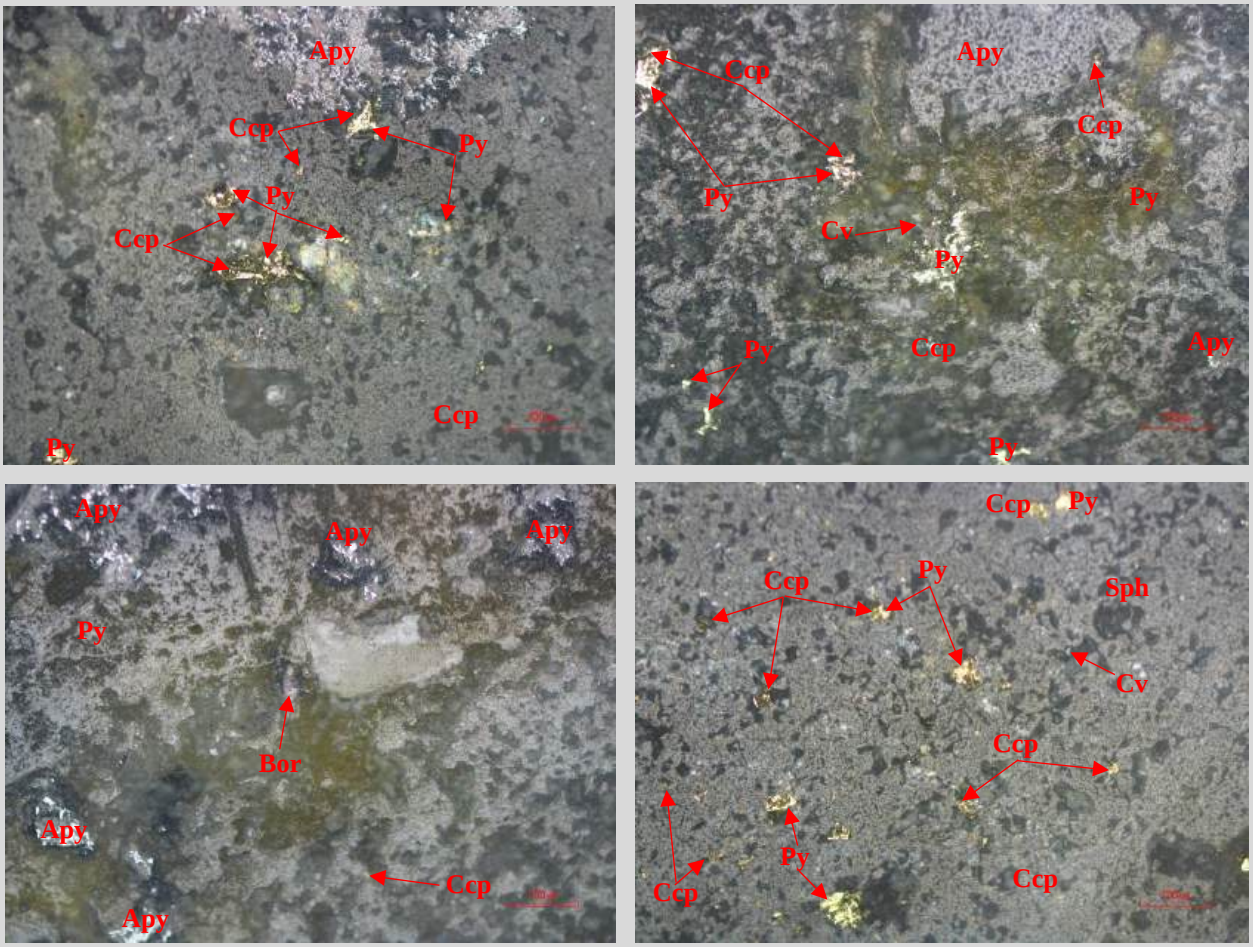
Deskripsi Mineralogi

Komposisi Mineral	Keterangan Optik mineral
Pirit (Py) (FeS_2)	Berwarna putih kekuningan, bentuk subhedral - euhedral, ukuran 0,01 mm – 0,8 mm, memiliki tekstur *infilling*, tekstur *intergrowth* bersama dengan kalkopirit, tekstur *replacement* dengan mineral kalkopirit, arsenopirit dan kovelit, bersifat isotropik, tidak dijumpai adanya pleokroisme.
Kalkopirit (Ccp) ($CuFeS_2$)	Berwarna kuning, bentuk subhedral, ukuran 0,01 mm – 0,7 mm, memiliki tekstur *infilling*, tekstur *intergrowth* dengan mineral pirit, tekstur *replacement* dengan mineral pirit dan arsenopirit, bersifat isotropik, tidak dijumpai adanya pleokroisme.
Arsenopirit (Apy) (FeAsS)	Berwarna putih abu-abu, bentuk subhedral – anhedral, ukuran <0,1 mm, bentuk subhedral – anhedral, tekstur *intergrowth* dan *replacement*, bersifat isotropik dan tidak dijumpai adanya pleokrisme.

Kovelit (Cv) **(CuS)**	Berwarna Biru tua, bentuk subhedral-euhedral, ukuran mineral 0,01 mm - 0,08 mm, memiliki tekstur *infilling*, tekstur *replacement* dengan mineral pirit dan kalkopirit, bersifat isotropik dan tidak dijumpai adanya pleokroisme.

No sayatan / No stasiun : UHGZ-23-143-131
Lokasi : Tujuh Bukit
Nama Batuan : Diorit

Foto



Lensa Okuler : 10x *Lensa Obyektif : 10x* *Perbesaran Total : 100x*

Tipe Endapan : Epitermal (*High Sulphidation*)

Jenis Mineralisasi : Pirit – Kalkopirit – Arsenopirit – Bornit

Referensi : Ore Mineral Atlas (Marshal dkk, 2004)

Mikroskopis :

Kenampakan pada sayatan poles memperlihatkan kehadiran mineral yang terdiri dari Pirit, Kalkopirit, Arsenopirit, dan Bornit. Dijumpai tekstur *infilling*, *intergrowth*, dan *replacement*. Mineral pirit, kalkopirit, arsenopirit, dan bornit memiliki tekstur *infilling*. Mineral pirit, kalkopirit, dan arsenopirit juga menunjukkan tekstur *intergrowth*. Mineral pirit menunjukkan tekstur *replacement* dengan mineral kalkopirit dan arsenopirit. Mineral arsenopirit menunjukkan tekstur *replacement* dengan mineral pirit dan kalkopirit. Mineral kalkopirit menunjukkan tekstur *replacement* dengan mineral pirit dan arsenopirit.

Deskripsi Mineralogi

Komposisi Mineral	Keterangan Optik mineral
Pirit (Py) **(FeS_2)**	Berwarna putih kekuningan, bentuk subhedral - euhedral, ukuran 0,01 mm – 0,2 mm, memiliki tekstur *infilling*, tekstur *intergrowth* bersama dengan kalkopirit, tekstur *replacement* dengan mineral kalkopirit dan arsenopirit, bersifat isotropik, tidak dijumpai adanya pleokroisme.
Kalkopirit (Ccp) **($CuFeS_2$)**	Berwarna kuning, bentuk subhedral, ukuran 0,01 mm – 0,3 mm, memiliki tekstur *infilling*, tekstur *intergrowth* dengan mineral pirit, tekstur *replacement* dengan mineral pirit dan arsenopirit, bersifat isotropik, tidak dijumpai adanya pleokroisme.
Arsenopirit (Apy) **(FeAsS)**	Berwarna putih abu-abu, bentuk subhedral – anhedral, ukuran <0,6 mm, bentuk subhedral – anhedral, tekstur *intergrowth* dan *replacement*, bersifat isotropik dan tidak dijumpai adanya pleokrisme.

Bornit (Bor) **(Cu_5FeS_4)**	Berwarna biru kemerahan, berukuran <0,25 mm, bentuk subhedral – anhedral tekstur *infilling*, bersifat isotropik dan tidak dijumpai adanya pleokroisme

Match! Phase Analysis Report

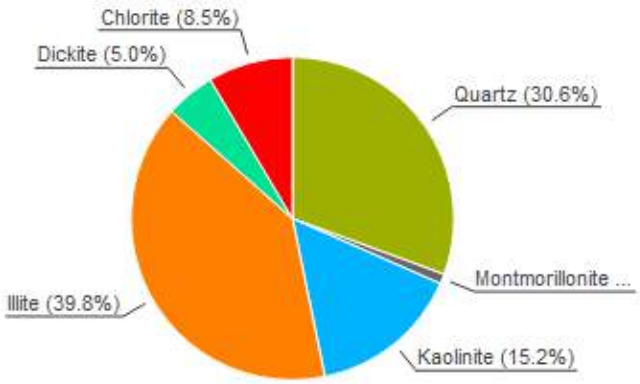
Sample: UHGZ-143-40-PRO (2-70)

Sample Data

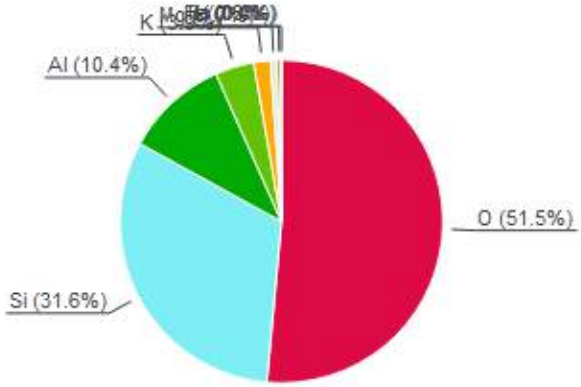
File name	UHGZ-143-40-PRO.ORG
File path	D:/MAGANG PT. BSI/DATA XRD/UHGZ-143-40-PRO
Data collected	Feb 16, 2024 19:24:26
Data range	2.000° - 70.000°
Original data range	2.000° - 70.000°
Number of points	3401
Step size	0.020
Rietveld refinement converged	No
Alpha2 subtracted	No
Background subtr.	No
Data smoothed	Yes
Radiation	X-rays
Wavelength	1.540600 Å

Analysis Results

Phase composition (Weight %)



Elemental composition (Weight %)



Index	*Amount (%)*	*Name*	*Formula sum*
A	30.6	Quartz	O2 Si
B	1.0	Montmorillonite	Al0.86 Fe0.1 H Li0.08 Mg0.14 O10 Si3.9
C	15.2	Kaolinite	Al2 H4 O9 Si2
D	39.8	Illite	Al2 H2 K O12 Si4
E	5.0	Dickite	Al2 H4 O9 Si2
F	8.5	Chlorite	Al0.865 Fe0.255 H4 Mg2.292 O9 Si1.588
	4.7	*Unidentified peak area*	

Amounts calculated by RIR (Reference Intensity Ratio) method

Element	*Amount (weight %)*
O	*51.5%(*)*
Si	31.6%
Al	10.4%
K	3.9%
Mg	1.7%
H	*0.6%(*)*
Fe	0.4%
Li	*0.0%(*)*
**LE (sum)*	*52.1%*

Details of identified phases

A: Quartz (30.6 %)*

Formula sum	O2 Si
Entry number	96-901-0145
Figure-of-Merit (FoM)	0.792408*
Total number of peaks	71
Peaks in range	18
Peaks matched	18
Intensity scale factor	1.01
2theta correction	-0.060°
Space group	P 32 2 1 S
Crystal system	trigonal (hexagonal axes)
Unit cell	a= 4.9230 Å c= 5.4090 Å
I/Ic	2.86
Calc. density	2.636 g/cm³
Reference	Ikuta D., Kawame N., Banno S., Hirajima T., Ito K., Rakovan J. F., Downs R. T., Tamada O., "First in situ X-ray diffraction identification of coesite and retrogradequartz on a glass thin section of an ultrahigh-pressure

	metamorphic rock andtheir crystal structure details Locality: Yangkou meta-igneous complex in themiddle part of the Sulu UHP terrain, eastern China Note: Sample is on a thinsection", American Mineralogist **92**, 57-63 (2007)

B: Montmorillonite (1.0 %)*

Formula sum	Al0.86 Fe0.1 H Li0.08 Mg0.14 O10 Si3.9
Entry number	96-901-0959
Figure-of-Merit (FoM)	0.606405*
Total number of peaks	301
Peaks in range	106
Peaks matched	94
Intensity scale factor	0.06
2theta correction	-0.003°
Space group	C 1 2/m 1
Crystal system	monoclinic
Unit cell	a= 5.1710 Å b= 8.9570 Å c= 9.7400 Å β= 96.100 º
I/Ic	5.00
Calc. density	2.245 g/cm³
Reference	Gournis D., Lappas A., Karakassides M. A., Tobbens D., Moukarika A., "A neutron diffraction study of alkali cation migration in montmorillonitesSample: Li-mont-300", Physics and Chemistry of Minerals **35**, 49-58 (2008)

C: Kaolinite (15.2 %)*

Formula sum	Al2 H4 O9 Si2
Entry number	96-900-9235
Figure-of-Merit (FoM)	0.671294*
Total number of peaks	253
Peaks in range	143
Peaks matched	123
Intensity scale factor	0.17
2theta correction	0.030°
Space group	C 1
Crystal system	triclinic (anorthic)
Unit cell	a= 5.1535 Å b= 8.9419 Å c= 7.3906 Å α= 91.926º β= 105.046 º γ= 89.797 º
I/Ic	0.97
Calc. density	2.608 g/cm³
Reference	Bish D. L., "Rietveld refinement of the kaolinite structure at 1.5 KNote: sample at T = 1.5 K", Clays and Clay Minerals **41**, 738-744 (1993)

D: Illite (39.8 %)*

Formula sum	Al2 H2 K O12 Si4
Entry number	96-901-3733
Figure-of-Merit (FoM)	0.670101*
Total number of peaks	303
Peaks in range	111
Peaks matched	98
Intensity scale factor	0.31
2theta correction	-0.026°
Space group	C 1 2 1
Crystal system	monoclinic
Unit cell	a= 5.1973 Å b= 8.9990 Å c= 10.1470 Å β= 99.000 º
I/Ic	0.67
Calc. density	2.830 g/cm³
Reference	Drits V. A., Zviagina B. B., McCarty D. K., Salyn A. L., "Factors responsible for crystal-chemical variations in the solid solutionsfrom illite to aluminoceladonite and from glauconite to celadoniteSample Name: 10564", American Mineralogist **95**, 348-361 (2010)

E: Dickite (5.0 %)*

Formula sum	Al2 H4 O9 Si2
Entry number	96-900-3082
Figure-of-Merit (FoM)	0.606697*
Total number of peaks	289
Peaks in range	142
Peaks matched	128
Intensity scale factor	0.06
2theta correction	-0.007°
Space group	C 1 c 1
Crystal system	monoclinic
Unit cell	a= 5.1610 Å b= 8.9600 Å c= 14.4590 Å β= 96.770 º
I/Ic	0.97
Calc. density	2.583 g/cm³
Reference	Dera P., Prewitt C. T., Japel S., Bish D. L., Johnston C. T., "Pressure-controlled polytypism in hydrous layered materialsSample: Low pressure dickite at P = 0.1 MPa", American Mineralogist **88**, 1428-1435 (2003)

F: Chlorite (8.5 %)

Formula sum	Al0.865 Fe0.255 H4 Mg2.292 O9 Si1.588
Entry number	96-901-0164
Figure-of-Merit (FoM)	0.604070
Total number of peaks	300
Peaks in range	162
Peaks matched	140
Intensity scale factor	0.07
Space group	C 1 2/m 1

Crystal system	monoclinic
Unit cell	a= 5.3363 Å b= 9.2400 Å c= 14.3700 Å β= 96.930 º
I/Ic	0.69
Calc. density	2.700 g/cm³
Reference	Zanazzi P. F., Montagnoli M., Nazzareni S., Comodi P., "Structural effects of pressure on monoclinic chlorite: a single-crystal study", American Mineralogist **92**, 655-661 (2007)

(*)2theta values have been shifted internally for the calculation of the amounts, the intensity scaling factors as well as the figure-of-merit (FoM), due to the active search-match option 'Automatic zero point adaption'.

Search-Match

Settings

Reference database used	COD-Inorg 2023.12.05
Automatic zeropoint adaptation	Yes
Downgrade entries with low scaling factors	Yes
Minimum figure-of-merit (FoM)	0.60
2theta window for peak corr.	0.30 deg.
Minimum rel. int. for peak corr.	0
Parameter/influence 2theta	0.50
Parameter/influence intensities	0.50
Parameter multiple/single phase(s)	0.50

Selection Criteria

Elements:

Elements of which at least one must be present:	H, Li, N, O, Na, Mg, Al, Si, S, K, Ca, Fe, Ni, Cu, As, Ag, Cs, Au
Elements that must NOT be present:	All elements not mentioned above

Peak List

No.	*2theta [º]*	*d [Å]*	*I/I0 (peak height)*	*Counts (peak area)*	*FWHM*	*Matched*
1	2.28	38.7174	0.18	0.10	0.2800	
2	2.56	34.4833	0.11	0.10	0.4400	
3	2.70	32.6956	0.06	0.10	0.8480	
4	2.98	29.6241	0.18	0.10	0.2800	
5	3.22	27.4166	0.18	0.10	0.2800	
6	3.42	25.8137	1.39	0.77	0.2800	
7	3.64	24.2540	0.10	0.05	0.2800	
8	3.88	22.7543	0.18	0.10	0.2800	
9	4.24	20.8231	0.68	0.38	0.2800	
10	4.48	19.7081	0.18	0.10	0.2800	
11	4.66	18.9473	1.59	0.88	0.2800	
12	4.86	18.1680	2.09	1.16	0.2800	
13	5.06	17.4503	2.70	1.50	0.2800	
14	5.28	16.7237	3.53	1.96	0.2800	
15	5.66	15.6017	3.24	1.80	0.2800	
16	5.98	14.7676	1.52	0.85	0.2800	
17	6.30	14.0182	0.18	0.10	0.2800	F
18	6.58	13.4222	5.67	2.88	0.2553	
19	6.84	12.9126	5.24	0.98	0.0946	
20	7.00	12.6178	2.73	1.15	0.2126	
21	7.38	11.9690	7.85	2.81	0.1804	
22	7.84	11.2677	8.43	6.77	0.4040	
23	7.98	11.0703	1.38	1.66	0.6057	
24	8.18	10.8001	8.21	18.93	1.1600	
25	8.52	10.3699	9.11	17.37	0.9600	
26	8.68	10.1791	9.42	11.97	0.6400	
27	8.90	9.9279	7.72	9.82	0.6400	D
28	9.14	9.6678	7.52	2.99	0.2000	B
29	9.74	9.0735	0.18	0.10	0.2800	
30	10.30	8.5814	5.39	0.96	0.0899	
31	10.48	8.4345	0.40	0.07	0.0899	
32	10.66	8.2924	2.28	0.41	0.0899	
33	10.94	8.0808	0.96	0.17	0.0899	
34	11.16	7.9220	0.19	0.10	0.2621	
35	11.54	7.6620	2.84	1.48	0.2621	
36	11.74	7.5319	1.24	0.64	0.2621	
37	11.92	7.4186	0.18	0.10	0.2800	
38	12.26	7.2136	0.18	0.10	0.2800	E
39	12.42	7.1210	0.45	0.25	0.2800	C,F
40	12.94	6.8360	0.18	0.10	0.2800	
41	13.18	6.7120	1.75	0.86	0.2465	
42	13.48	6.5633	0.18	0.10	0.2800	
43	13.66	6.4773	0.18	0.10	0.2800	
44	14.02	6.3117	0.31	0.17	0.2800	
45	14.38	6.1545	0.18	0.10	0.2800	
46	14.66	6.0376	1.20	0.67	0.2800	
47	14.86	5.9568	0.63	0.35	0.2800	
48	15.12	5.8549	0.18	0.10	0.2800	

49	15.48	5.7196	0.10	0.06	0.2800	
50	15.72	5.6328	0.18	0.10	0.2800	
51	16.32	5.4270	0.51	0.28	0.2800	
52	16.54	5.3553	0.18	0.10	0.2800	
53	16.78	5.2793	0.18	0.10	0.2800	
54	17.16	5.1632	0.18	0.10	0.2800	
55	17.42	5.0867	4.04	2.25	0.2800	
56	17.68	5.0125	13.44	7.37	0.2760	D
57	17.98	4.9295	5.81	3.30	0.2861	
58	18.30	4.8441	3.03	0.73	0.1209	B
59	18.48	4.7973	1.88	0.45	0.1209	
60	18.76	4.7263	0.18	0.10	0.2778	F
61	18.98	4.6720	0.09	0.05	0.2778	
62	19.30	4.5953	0.36	0.16	0.2207	F
63	19.88	4.4625	52.29	43.49	0.4187	B,C,D,E,F
64	20.10	4.4141	0.10	0.10	0.5200	C,E,F
65	20.92	4.2429	207.48	126.51	0.3069	A,B,C,D,E,F
66	21.58	4.1146	0.05	0.10	1.1028	C,D,E
67	21.74	4.0847	5.88	10.28	0.8800	B,F
68	22.04	4.0298	5.31	2.96	0.2800	
69	22.34	3.9763	3.09	1.72	0.2800	E
70	22.64	3.9243	5.88	4.21	0.3600	B
71	22.96	3.8704	3.98	3.97	0.5017	C,D,F
72	23.26	3.8211	4.58	1.37	0.1502	
73	23.44	3.7922	2.21	3.78	0.8602	E
74	23.70	3.7512	6.38	1.66	0.1311	
75	23.94	3.7141	7.38	2.93	0.2000	C
76	24.16	3.6808	9.15	4.75	0.2614	F
77	24.34	3.6539	8.10	13.52	0.8400	
78	24.64	3.6101	6.90	3.84	0.2800	E
79	24.88	3.5759	0.41	0.10	0.1233	C,D,E,F
80	25.10	3.5450	4.62	2.57	0.2800	
81	25.44	3.4984	0.18	0.10	0.2800	F
82	25.64	3.4716	0.18	0.10	0.2800	
83	25.86	3.4425	7.53	23.92	1.6000	B,E
84	26.06	3.4166	10.12	36.99	1.8400	C
85	26.64	3.3435	1000.00	476.74	0.2400	A,C,D,F
86	27.44	3.2478	15.60	57.00	1.8400	E
87	27.64	3.2247	14.36	42.22	1.4800	B
88	27.92	3.1930	14.97	26.16	0.8800	
89	28.22	3.1598	11.96	17.10	0.7200	C
90	28.48	3.1315	9.44	5.25	0.2800	B,D,F
91	28.68	3.1101	7.84	4.36	0.2800	C,E
92	28.94	3.0828	9.59	5.33	0.2800	
93	29.36	3.0396	15.51	10.70	0.3474	
94	29.82	2.9938	9.19	14.60	0.8000	
95	30.02	2.9743	3.49	1.24	0.1790	F
96	30.36	2.9417	4.88	11.62	1.2000	E
97	30.82	2.8989	5.94	2.83	0.2400	
98	31.14	2.8698	5.46	2.30	0.2117	D,F
99	31.54	2.8343	2.59	3.33	0.6487	C
100	31.78	2.8135	4.26	5.49	0.6487	F
101	32.06	2.7895	0.05	0.10	1.1179	E
102	32.26	2.7727	2.82	6.27	1.1179	
103	32.44	2.7577	1.79	3.97	1.1179	
104	32.66	2.7396	1.34	2.97	1.1179	B,C
105	32.90	2.7202	3.65	1.36	0.1879	
106	33.10	2.7042	6.59	2.16	0.1649	F
107	33.62	2.6636	0.80	0.26	0.1649	D,E,F
108	33.76	2.6528	1.44	0.47	0.1649	F
109	34.02	2.6332	0.05	0.10	0.9722	B
110	35.04	2.5588	50.45	48.10	0.4800	B,C,D,E,F
111	35.42	2.5322	28.60	17.63	0.3103	B,C,D,E
112	36.60	2.4532	115.92	55.27	0.2400	A,B,D,F
113	36.96	2.4302	12.94	11.31	0.4400	B,E,F
114	37.68	2.3854	11.47	19.14	0.8400	D,E,F
115	37.86	2.3744	3.74	0.85	0.1144	B,C,D,F
116	38.76	2.3214	0.18	0.10	0.2800	B,C,D,E,F
117	39.02	2.3065	0.43	0.24	0.2800	C,E,F
118	39.48	2.2807	66.08	26.25	0.2000	A,C,F
119	40.32	2.2351	48.94	23.33	0.2400	A,B,C,D,E,F
120	40.74	2.2130	2.78	3.39	0.6131	B,C,D,E,F
121	41.06	2.1965	9.04	4.31	0.2400	C,D,E,F
122	41.36	2.1812	7.19	4.00	0.2800	B,C
123	41.76	2.1613	6.18	3.89	0.3169	C,E,F
124	42.08	2.1456	12.09	5.76	0.2400	C,D,E
125	42.52	2.1244	100.04	45.12	0.2270	A,B,C,D,E,F
126	43.14	2.0953	9.56	4.88	0.2569	B,C,E
127	44.06	2.0536	5.04	6.13	0.6129	B,C,D,E
128	44.32	2.0422	0.31	0.84	1.3723	E,F
129	44.64	2.0283	2.80	6.96	1.2535	B,E,F
130	45.00	2.0129	2.90	5.35	0.9304	D,F
131	45.54	1.9903	9.06	13.67	0.7600	C,F

132	45.84	1.9779	53.06	20.62	0.1956	A,C,D,E
133	46.28	1.9602	4.94	13.34	1.3600	B,D
134	46.82	1.9388	3.89	10.51	1.3600	B,C,D,E,F
135	47.50	1.9126	1.24	3.35	1.3600	B,C
136	48.38	1.8799	2.48	6.71	1.3600	D,F
137	48.72	1.8675	5.28	2.10	0.2000	B,C,D,E,F
138	49.14	1.8526	9.75	5.42	0.2800	E
139	49.44	1.8420	3.28	1.12	0.1725	B,C,F
140	50.12	1.8186	137.97	43.85	0.1600	A,B,C
141	50.64	1.8011	5.93	2.83	0.2400	A,C,E,F
142	51.52	1.7724	1.96	0.82	0.2116	B,E
143	52.18	1.7515	1.97	1.29	0.3306	B,D
144	52.42	1.7441	1.05	0.53	0.2523	D,F
145	52.76	1.7337	2.61	1.31	0.2523	D,F
146	53.06	1.7246	1.66	1.83	0.5569	E,F
147	53.28	1.7180	2.03	2.26	0.5608	B,D,E,F
148	53.50	1.7114	3.07	3.02	0.4947	F
149	53.84	1.7014	9.06	6.48	0.3600	C,D,E,F
150	54.36	1.6863	10.29	9.00	0.4400	B,C,D,E,F
151	54.90	1.6710	41.09	19.59	0.2400	A,B,C,D,E,F
152	55.34	1.6588	22.47	16.13	0.3614	A,B,C,D,E,F
153	56.22	1.6349	9.58	5.33	0.2800	B,C,D,E,F
154	56.64	1.6238	6.54	15.34	1.1806	
155	56.92	1.6164	5.64	4.78	0.4261	B,C,D,E,F
156	57.14	1.6107	0.69	0.63	0.4620	A,C,E,F
157	57.38	1.6046	3.08	4.72	0.7700	C,D,F
158	57.60	1.5989	7.39	3.52	0.2400	C
159	57.80	1.5939	4.46	2.12	0.2400	B,C,E,F
160	58.10	1.5864	2.44	0.72	0.1493	C,D,F
161	58.46	1.5775	4.03	1.71	0.2139	B,C,D,E
162	58.82	1.5687	1.93	1.59	0.4162	B,C,D,F
163	59.12	1.5614	1.82	1.51	0.4162	B,D,E
164	59.26	1.5581	2.12	0.62	0.1462	C,D,E
165	59.66	1.5486	5.78	2.75	0.2400	A,C,D,E,F
166	60.02	1.5401	132.07	63.43	0.2418	B,C,F
167	60.88	1.5204	3.07	1.48	0.2418	B,C,D,E,F
168	61.46	1.5075	6.05	2.88	0.2400	B,C,D,E,F
169	62.04	1.4947	29.89	29.12	0.4904	B,C,D,E,F
170	62.48	1.4853	11.31	7.23	0.3219	B,C,D,E,F
171	63.14	1.4713	2.77	4.38	0.7977	B,C,D,E,F
172	64.06	1.4524	17.39	6.91	0.2000	A,B,C,D,E,F
173	64.56	1.4424	0.61	0.24	0.2000	C,D,F
174	64.94	1.4348	0.54	0.21	0.2000	B,C,D,E,F
175	65.78	1.4185	7.56	2.58	0.1717	A,C,D,E,F
176	66.44	1.4060	0.26	0.09	0.1717	B,C,E,F
177	66.76	1.4001	0.15	0.05	0.1717	B,C,D,E,F
178	67.32	1.3898	1.02	0.35	0.1717	B,C,E
179	67.82	1.3807	49.63	39.43	0.4000	A,B,E,F
180	68.26	1.3729	87.28	56.12	0.3237	A,B,C,D,E,F
181	69.36	1.3538	4.77	3.10	0.3266	B,C,D,E,F
182	69.80	1.3463	6.16	2.97	0.2424	C

Integrated Profile Areas

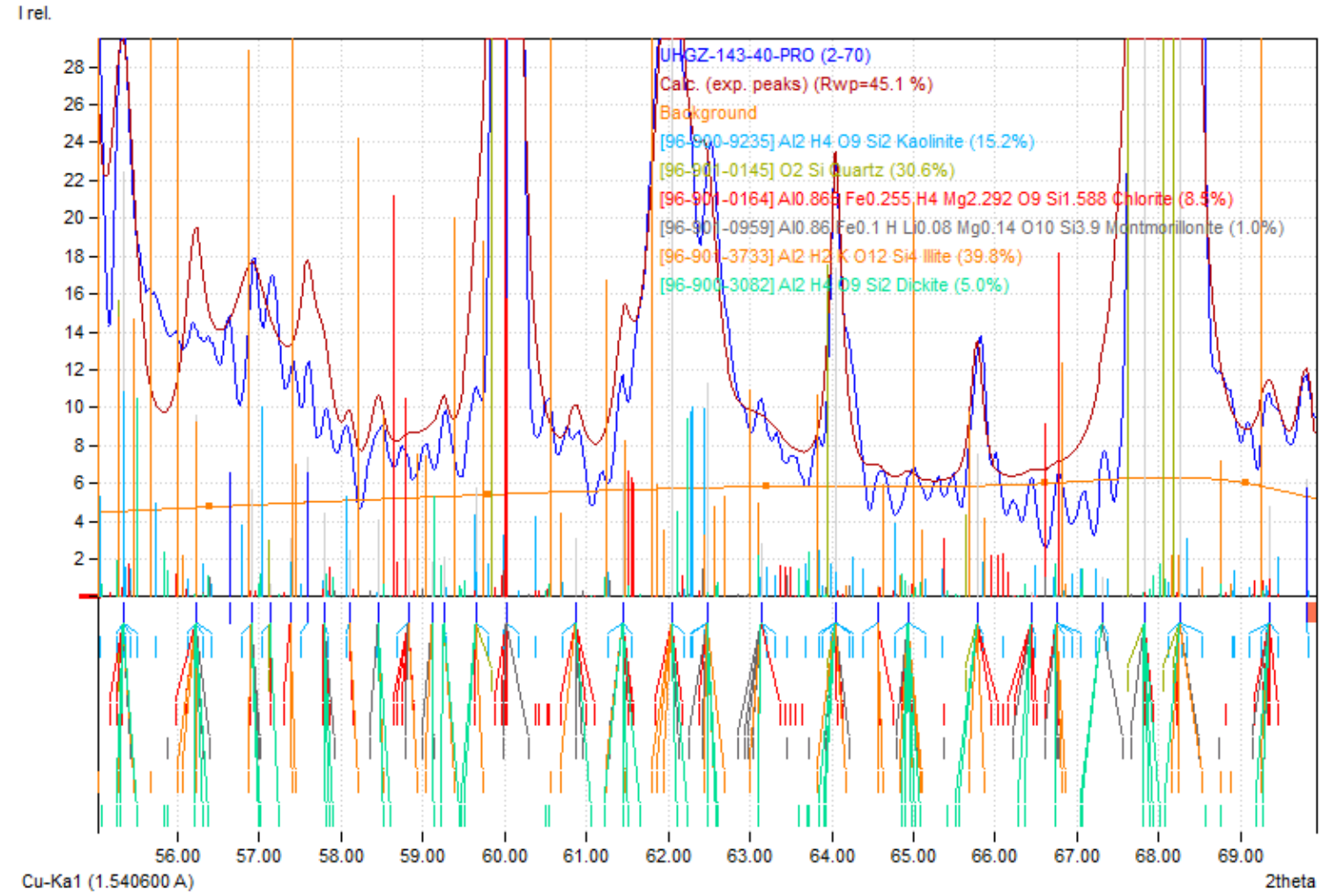
Based on calculated profile

Profile area	***Counts***	***Amount***
Overall diffraction profile	129687	100.00%
Background radiation	58589	45.18%
Diffraction peaks	71097	54.82%
Peak area belonging to selected phases	64956	50.09%
Peak area of phase A (Kaolinite)	*5533*	*4.27%*
Peak area of phase B (Quartz)	*28497*	*21.97%*
Peak area of phase C (Chlorite)	*4416*	*3.40%*
Peak area of phase D (Montmorillonite)	*671*	*0.52%*
Peak area of phase E (Illite)	*23572*	*18.18%*
Peak area of phase F (Dickite)	*2268*	*1.75%*
Unidentified peak area	6141	4.74%

Peak Residuals

Peak data	***Counts***	***Amount***
Overall peak intensity	1847	100.00%
Peak intensity belonging to selected phases	1740	94.22%
Unidentified peak intensity	107	5.78%

Diffraction Pattern Graphics



Match! Phase Analysis Report

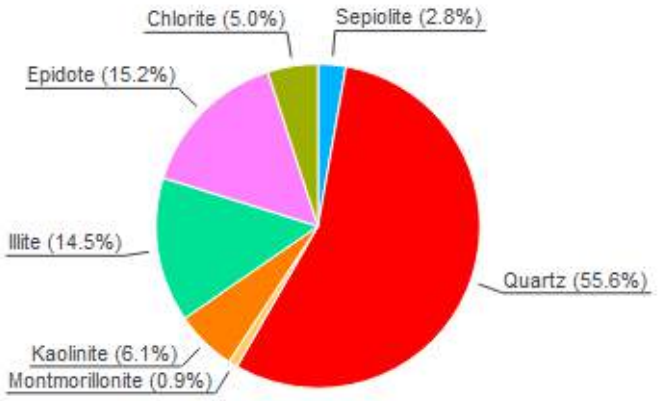
Sample: UHGZ-144-99-IA (2-70)

Sample Data

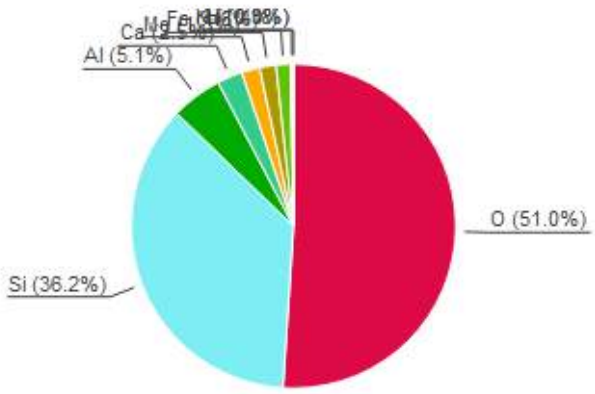
File name	UHGZ-144-99-IA.ORG
File path	D:/MAGANG PT. BSI/DATA XRD/UHGZ-144-99-IA
Data collected	Feb 16, 2024 19:24:26
Data range	2.000º - 70.000º
Original data range	2.000º - 70.000º
Number of points	3401
Step size	0.020
Rietveld refinement converged	No
Alpha2 subtracted	No
Background subtr.	No
Data smoothed	Yes
Radiation	X-rays
Wavelength	1.540600 Å

Analysis Results

Phase composition (Weight %)



Elemental composition (Weight %)



Index	*Amount (%)*	*Name*	*Formula sum*
A	2.8	Sepiolite	H2 Mg2 O9 Si3
B	55.6	Quartz	O2 Si
C	0.9	Montmorillonite	Al0.86 Fe0.1 H Li0.08 Mg0.14 O10 Si3.9
D	6.1	Kaolinite	Al2 H4 O9 Si2
E	14.5	Illite	Al2 H2 K O12 Si4
F	15.2	Epidote	Al2.09 Ca2 Fe0.91 H O13 Si3
G	5.0	Chlorite	H4 Mg3 O9 Si2
	14.7	*Unidentified peak area*	

Amounts calculated by RIR (Reference Intensity Ratio) method

Element	*Amount (weight %)*
O	*51.0%(*)*
Si	36.2%
Al	5.1%
Ca	2.5%
Mg	1.8%
Fe	1.6%
K	1.4%
H	*0.3%(*)*
Li	*0.0%(*)*
**LE (sum)*	*51.3%*

Details of identified phases

A: Sepiolite (2.8 %)*

Formula sum	H2 Mg2 O9 Si3
Entry number	96-901-0150
Figure-of-Merit (FoM)	0.700396*
Total number of peaks	499
Peaks in range	499
Peaks matched	480
Intensity scale factor	0.01
2theta correction	-0.004°
Space group	P 1 21/n 1
Crystal system	monoclinic
Unit cell	a= 23.4460 Å b= 11.3520 Å c= 5.2782 Å β= 89.060 º
I/Ic	0.78
Calc. density	2.633 g/cm³

Reference	Post J. E., Bish D. L., Heaney P. J., "Synchrotron powder X-ray diffraction study of the structure and dehydrationbehavior of sepioliteSample: T = 742 K", American Mineralogist **92**, 91-97 (2007)

B: Quartz (55.6 %)*

Formula sum	O2 Si
Entry number	96-901-2601
Figure-of-Merit (FoM)	0.858519*
Total number of peaks	70
Peaks in range	18
Peaks matched	18
Intensity scale factor	0.92
2theta correction	-0.039°
Space group	P 31 2 1
Crystal system	trigonal (hexagonal axes)
Unit cell	a= 4.9140 Å c= 5.4060 Å
I/Ic	2.97
Calc. density	2.648 g/cm³
Reference	Hazen R. M., Finger L. W., Hemley R. J., Mao H. K., "High-pressure crystal chemistry and amorphization of alpha-quartzSample: P = 1 bar", Solid State Communications **72**, 507-511 (1989)

C: Montmorillonite (0.9 %)*

Formula sum	Al0.86 Fe0.1 H Li0.08 Mg0.14 O10 Si3.9
Entry number	96-901-0959
Figure-of-Merit (FoM)	0.630554*
Total number of peaks	301
Peaks in range	106
Peaks matched	100
Intensity scale factor	0.03
2theta correction	0.056°
Space group	C 1 2/m 1
Crystal system	monoclinic
Unit cell	a= 5.1710 Å b= 8.9570 Å c= 9.7400 Å β= 96.100 °
I/Ic	5.00
Calc. density	2.245 g/cm³
Reference	Gournis D., Lappas A., Karakassides M. A., Tobbens D., Moukarika A., "A neutron diffraction study of alkali cation migration in montmorillonitesSample: Li-mont-300", Physics and Chemistry of Minerals **35**, 49-58 (2008)

D: Kaolinite (6.1 %)*

Formula sum	Al2 H4 O9 Si2
Entry number	96-900-9235
Figure-of-Merit (FoM)	0.722773*
Total number of peaks	253
Peaks in range	145
Peaks matched	135
Intensity scale factor	0.03
2theta correction	-0.011°
Space group	C 1
Crystal system	triclinic (anorthic)
Unit cell	a= 5.1535 Å b= 8.9419 Å c= 7.3906 Å α= 91.926° β= 105.046 ° γ= 89.797 °
I/Ic	0.97
Calc. density	2.608 g/cm³
Reference	Bish D. L., "Rietveld refinement of the kaolinite structure at 1.5 KNote: sample at T = 1.5 K", Clays and Clay Minerals **41**, 738-744 (1993)

E: Illite (14.5 %)*

Formula sum	Al2 H2 K O12 Si4
Entry number	96-901-3733
Figure-of-Merit (FoM)	0.734081*
Total number of peaks	303
Peaks in range	113
Peaks matched	105
Intensity scale factor	0.05
2theta correction	-0.028°
Space group	C 1 2 1
Crystal system	monoclinic
Unit cell	a= 5.1973 Å b= 8.9990 Å c= 10.1470 Å β= 99.000 °
I/Ic	0.67
Calc. density	2.830 g/cm³
Reference	Drits V. A., Zviagina B. B., McCarty D. K., Salyn A. L., "Factors responsible for crystal-chemical variations in the solid solutionsfrom illite to aluminoceladonite and from glauconite to celadoniteSample Name: 10564", American Mineralogist **95**, 348-361 (2010)

F: Epidote (15.2 %)*

Formula sum	Al2.09 Ca2 Fe0.91 H O13 Si3
Entry number	96-901-6200
Figure-of-Merit (FoM)	0.643890*
Total number of peaks	499
Peaks in range	238
Peaks matched	221
Intensity scale factor	0.07

2theta correction	0.031°
Space group	P 1 21/m 1
Crystal system	monoclinic
Unit cell	a= 8.8902 Å b= 5.6366 Å c= 10.1600 Å β= 115.432 °
I/Ic	0.85
Calc. density	3.472 g/cm³
Reference	Nagashima M., Akasada M., "X-ray Rietveld and 57Fe Mossbauer studies of epidote and piemontite on the joinCa2Al2FeSi3O12(OH) - Ca2Al2MnSi3O12(OH) formed by hydrothermal synthesisSample: q=1.0, run 41", American Mineralogist **95**, 1237-1246 (2010)

G: Chlorite (5.0 %)*

Formula sum	H4 Mg3 O9 Si2
Entry number	96-900-0159
Figure-of-Merit (FoM)	0.684593*
Total number of peaks	91
Peaks in range	91
Peaks matched	85
Intensity scale factor	0.02
2theta correction	0.002°
Space group	C 1
Crystal system	triclinic (anorthic)
Unit cell	a= 5.3350 Å b= 9.2400 Å c= 28.7350 Å α= 90.000° β= 90.000 ° γ= 90.000 °
I/Ic	0.81
Calc. density	2.599 g/cm³
Reference	Lister J. S., Bailey S. W., "Chlorite polytypism: IV. Regular two-layer structuresrefined structure", American Mineralogist **52**, 1614-1631 (1967)

(*) 2theta values have been shifted internally for the calculation of the amounts, the intensity scaling factors as well as the figure-of-merit (FoM), due to the active search-match option 'Automatic zero point adaption'.

Search-Match

Settings

Reference database used	COD-Inorg 2023.12.05
Automatic zeropoint adaptation	Yes
Downgrade entries with low scaling factors	Yes
Minimum figure-of-merit (FoM)	0.60
2theta window for peak corr.	0.30 deg.
Minimum rel. int. for peak corr.	0
Parameter/influence 2theta	0.50
Parameter/influence intensities	0.50
Parameter multiple/single phase(s)	0.50

Selection Criteria

Elements:

Elements of which at least one must be present:	H, Li, O, Na, Mg, Al, Si, S, K, Ca, Fe, Ni, Cs
Elements that must NOT be present:	All elements not mentioned above

Peak List

No.	*2theta [°]*	*d [Å]*	*I/I0 (peak height)*	*Counts (peak area)*	*FWHM*	*Matched*
1	2.16	40.8681	186.03	45.17	0.2400	
2	2.26	39.0600	0.19	0.10	0.5234	
3	2.60	33.9529	146.79	77.73	0.5234	
4	2.88	30.6525	141.28	74.81	0.5234	
5	3.16	27.9370	135.04	71.51	0.5234	G
6	3.18	27.7614	0.04	0.02	0.5234	
7	3.18	27.7614	0.93	0.49	0.5234	
8	3.18	27.7614	0.30	0.16	0.5234	
9	3.18	27.7614	0.93	0.49	0.5234	
10	3.44	25.6637	6.60	1.07	0.1600	
11	3.56	24.7989	11.41	2.31	0.2000	
12	3.84	22.9913	3.90	0.61	0.1538	
13	4.02	21.9622	8.35	1.10	0.1300	
14	4.32	20.4377	8.47	1.09	0.1271	
15	4.68	18.8663	13.06	1.56	0.1178	
16	5.06	17.4503	8.09	1.32	0.1611	
17	5.26	16.7872	6.59	0.79	0.1189	
18	5.52	15.9971	6.17	0.50	0.0798	
19	6.08	14.5249	0.35	0.10	0.2800	G
20	6.36	13.8860	7.26	0.88	0.1200	
21	6.70	13.1821	11.89	3.78	0.3140	
22	6.86	12.8750	5.29	1.09	0.2038	
23	7.32	12.0669	10.03	1.12	0.1102	
24	7.66	11.5321	5.14	0.71	0.1370	A
25	8.10	10.9066	0.35	0.10	0.2800	
26	8.42	10.4928	5.52	1.57	0.2800	
27	8.62	10.2498	20.16	4.52	0.2216	A,E

28	9.02	9.7961	5.94	1.70	0.2832	C,G
29	9.72	9.0922	0.12	0.10	0.7926	F
30	10.12	8.7337	0.35	0.10	0.2800	
31	10.58	8.3550	0.13	0.04	0.2800	
32	10.86	8.1402	0.35	0.10	0.2800	A
33	11.10	7.9647	0.35	0.10	0.2800	F
34	11.52	7.6752	0.35	0.10	0.2800	
35	11.78	7.5064	0.62	0.62	0.9776	
36	12.24	7.2253	59.13	21.33	0.3565	D,G
37	12.96	6.8255	0.17	0.10	0.5838	
38	13.36	6.6220	5.50	3.25	0.5838	
39	13.82	6.4026	1.91	1.13	0.5838	A
40	14.20	6.2321	0.95	0.56	0.5838	
41	14.62	6.0540	0.80	0.47	0.5838	
42	14.94	5.9251	1.89	1.11	0.5838	A
43	15.36	5.7640	1.54	0.91	0.5838	G
44	15.60	5.6758	1.86	1.10	0.5838	A
45	15.86	5.5834	3.07	1.81	0.5838	A
46	16.38	5.4073	1.70	1.00	0.5838	
47	16.68	5.3107	0.03	0.02	0.5838	
48	16.88	5.2482	2.45	1.45	0.5838	
49	17.14	5.1692	0.35	0.10	0.2800	A
50	17.52	5.0579	6.06	5.17	0.8435	A,F
51	17.84	4.9679	11.75	2.31	0.1946	E
52	18.18	4.8758	2.56	0.50	0.1946	C
53	18.52	4.7870	0.35	0.10	0.2800	A,F,G
54	18.94	4.6818	2.83	0.67	0.2338	A
55	19.38	4.5765	4.11	2.77	0.6665	A,F,G
56	19.92	4.4536	41.24	18.08	0.4334	A,C,D,E,F
57	20.30	4.3711	26.70	37.81	1.4000	A,D,G
58	20.86	4.2550	240.94	63.16	0.2591	B,C,E
59	21.48	4.1336	5.74	1.76	0.3026	A,D,G
60	21.76	4.0810	13.31	3.77	0.2800	A,C,E,G
61	22.08	4.0226	7.70	6.54	0.8400	F
62	22.30	3.9834	6.10	5.18	0.8400	F
63	22.70	3.9141	8.24	1.67	0.2000	A,C
64	22.90	3.8804	0.35	0.10	0.2800	A,E,G
65	23.20	3.8309	8.99	10.91	1.2000	A,D
66	23.38	3.8018	9.81	3.57	0.3600	A,F
67	23.94	3.7141	8.73	2.83	0.3200	A,D,F
68	24.32	3.6569	4.91	6.74	1.3567	A
69	24.90	3.5730	78.94	23.87	0.2989	A,D,E,F,G
70	25.64	3.4716	19.91	6.56	0.3257	A,C,F
71	26.68	3.3385	1000.00	248.10	0.2452	A,B,D,E,G
72	27.34	3.2594	13.01	8.95	0.6800	A,C,F
73	27.94	3.1908	14.56	7.07	0.4800	A,F,G
74	28.48	3.1315	140.02	25.64	0.1810	C,D,E
75	29.06	3.0703	7.09	1.72	0.2400	A,D,F,G
76	29.36	3.0396	10.66	2.49	0.2313	A
77	29.96	2.9801	11.30	4.92	0.4302	A
78	30.28	2.9493	7.87	1.07	0.1345	A,F
79	30.76	2.9044	0.27	0.04	0.1345	F
80	31.00	2.8824	0.83	0.11	0.1345	A,G
81	31.24	2.8608	7.92	1.22	0.1520	A,E
82	31.42	2.8449	4.47	0.48	0.1069	A,D,G
83	31.74	2.8169	0.32	0.03	0.1069	A,F
84	32.00	2.7946	5.54	1.03	0.1839	F
85	32.32	2.7677	2.03	0.30	0.1467	A,F
86	33.02	2.7106	191.22	41.56	0.2148	A,F
87	34.20	2.6197	0.35	0.10	0.2800	A,C,G
88	34.64	2.5874	11.26	2.74	0.2400	A,C,E,F
89	35.06	2.5574	51.70	15.69	0.2999	A,C,D,E,G
90	35.80	2.5062	13.76	6.67	0.4791	A,C,D,E,F,G
91	36.00	2.4927	16.99	4.13	0.2400	A,D
92	36.60	2.4532	132.29	30.28	0.2263	A,B,C,E,F,G
93	37.12	2.4201	149.26	33.09	0.2191	A,C,F,G
94	37.72	2.3829	16.97	8.93	0.5200	A,C,D,E,F,G
95	38.12	2.3588	9.76	1.98	0.2000	A,D
96	38.72	2.3237	24.85	10.12	0.4026	A,C,D,E,F,G
97	39.50	2.2796	61.01	13.75	0.2227	A,B,D,F,G
98	40.34	2.2340	48.52	11.78	0.2400	A,B,C,D,E,F,G
99	40.82	2.2088	122.46	28.27	0.2282	A,C,D,E,G
100	41.24	2.1873	1.85	0.54	0.2872	A,C,D,E
101	41.92	2.1534	7.19	3.66	0.5029	A,D,E,F
102	42.12	2.1436	5.93	2.73	0.4546	A,E,F,G
103	42.48	2.1263	98.32	20.84	0.2095	A,B,C,D,E,F,G
104	42.88	2.1074	2.56	0.54	0.2095	A,C,D,E,F
105	43.32	2.0870	3.53	0.63	0.1764	A,D,G
106	43.64	2.0724	4.75	1.31	0.2714	A,C,D,E,F
107	44.06	2.0536	4.18	1.14	0.2698	A,C,D,E,F,G
108	44.48	2.0352	1.49	0.41	0.2698	A,C,F
109	44.94	2.0154	2.99	1.58	0.5223	A,F,G
110	45.44	1.9944	21.61	7.00	0.3200	A,D,E,F,G

111	45.86	1.9771	63.93	15.76	0.2437	A,B,D,E,F
112	46.20	1.9634	4.49	1.08	0.2389	A,C,F,G
113	46.72	1.9427	7.16	2.78	0.3835	A,D,E,F,G
114	46.92	1.9349	1.48	0.40	0.2660	A,C,D,E,F
115	47.46	1.9141	107.71	23.58	0.2163	A,C,D,F,G
116	48.10	1.8902	7.35	1.56	0.2098	A,D,E,F
117	48.18	1.8872	0.52	0.13	0.2444	A,F
118	48.54	1.8740	2.32	0.57	0.2444	A,E,F,G
119	48.72	1.8675	3.87	0.66	0.1677	A,C,D,E,F,G
120	49.08	1.8547	6.81	1.98	0.2876	A,F
121	49.56	1.8378	2.14	0.93	0.4279	A,C,D,E,F
122	50.18	1.8166	126.16	28.54	0.2236	A,B,C,D
123	50.70	1.7991	3.37	0.27	0.0784	A,B,D,F,G
124	50.96	1.7906	5.55	2.07	0.3687	A,E,F
125	51.08	1.7867	0.31	0.10	0.3200	D
126	51.30	1.7795	2.14	0.30	0.1376	A,C,F,G
127	51.50	1.7731	0.47	0.07	0.1376	A,F
128	51.98	1.7578	1.15	0.20	0.1734	A,C,F
129	52.20	1.7509	2.42	0.47	0.1933	A,E
130	52.54	1.7404	5.31	1.29	0.2408	A,E,F
131	52.82	1.7318	3.40	0.79	0.2301	A,E,F
132	53.10	1.7233	2.61	0.71	0.2676	A,C,F
133	53.44	1.7132	1.53	0.41	0.2676	A,D,E,F
134	54.06	1.6950	3.64	2.68	0.7259	A,C,D,E,F
135	54.38	1.6858	10.03	2.96	0.2915	A,C,D,E,F
136	54.54	1.6812	0.33	0.10	0.3027	A,C,D,E
137	54.92	1.6705	52.91	14.99	0.2800	A,B,D,E,F
138	55.36	1.6582	11.93	7.90	0.6543	A,B,C,D,E,F
139	55.76	1.6473	14.15	12.08	0.8435	A,D,E,F
140	55.98	1.6413	13.11	6.50	0.4903	A,C,D,E,F
141	56.34	1.6317	203.70	49.86	0.2419	A,C,D,E,F
142	56.80	1.6196	9.62	12.07	1.2400	A,C,D,E,F
143	57.26	1.6076	8.99	3.27	0.3600	A,B,D,E,F
144	57.56	1.6000	5.08	1.85	0.3600	A,D,E,F
145	57.92	1.5909	7.09	1.14	0.1587	A,C,D,F
146	58.32	1.5809	3.08	0.49	0.1587	A,C,D,E,F
147	58.56	1.5750	4.28	0.62	0.1435	A,C,D,E,F
148	59.02	1.5638	50.29	9.54	0.1875	A,C,D,E
149	59.58	1.5505	7.08	10.60	1.4800	A,D,E
150	60.02	1.5401	125.78	40.72	0.3200	A,B,C,D,F
151	60.86	1.5209	0.35	0.10	0.2800	A,C,D,E,F
152	61.72	1.5017	50.59	16.84	0.3290	A,D,E,F
153	62.38	1.4874	17.30	7.80	0.4458	A,C,D,E
154	62.82	1.4781	0.61	0.47	0.7663	A,C,E,F
155	63.04	1.4734	0.27	0.10	0.3600	A,C,D,E
156	63.40	1.4659	2.97	1.08	0.3600	A,C,D,F
157	63.68	1.4601	4.56	1.66	0.3600	A,C,D,E,F
158	64.04	1.4528	14.91	5.43	0.3600	A,B,C,D,F
159	64.28	1.4480	70.75	14.32	0.2000	A,C,D,E,F
160	64.82	1.4372	3.65	0.74	0.2000	A,C,D,E,F
161	65.12	1.4313	3.91	0.47	0.1188	C,D,E,F
162	65.36	1.4266	3.75	0.78	0.2047	C,D
163	65.82	1.4178	6.16	1.19	0.1911	B,D,E,F
164	66.18	1.4109	2.32	0.21	0.0907	C,D,F
165	66.40	1.4068	0.26	0.02	0.0907	D,F
166	66.72	1.4008	0.35	0.10	0.2800	C,D,E,F
167	67.32	1.3898	1.72	0.49	0.2800	D,F
168	67.76	1.3818	59.08	14.35	0.2400	B,C,F
169	68.16	1.3747	65.12	18.45	0.2800	B,D,E,F
170	68.32	1.3718	51.71	10.43	0.1994	B,C,D,E,F
171	69.08	1.3586	6.03	1.98	0.3250	C,D,E,F
172	69.50	1.3514	12.47	5.36	0.4252	C,D,F
173	69.68	1.3484	14.04	9.09	0.6400	F
174	69.96	1.3436	11.95	0.97	0.0800	D,F

Integrated Profile Areas

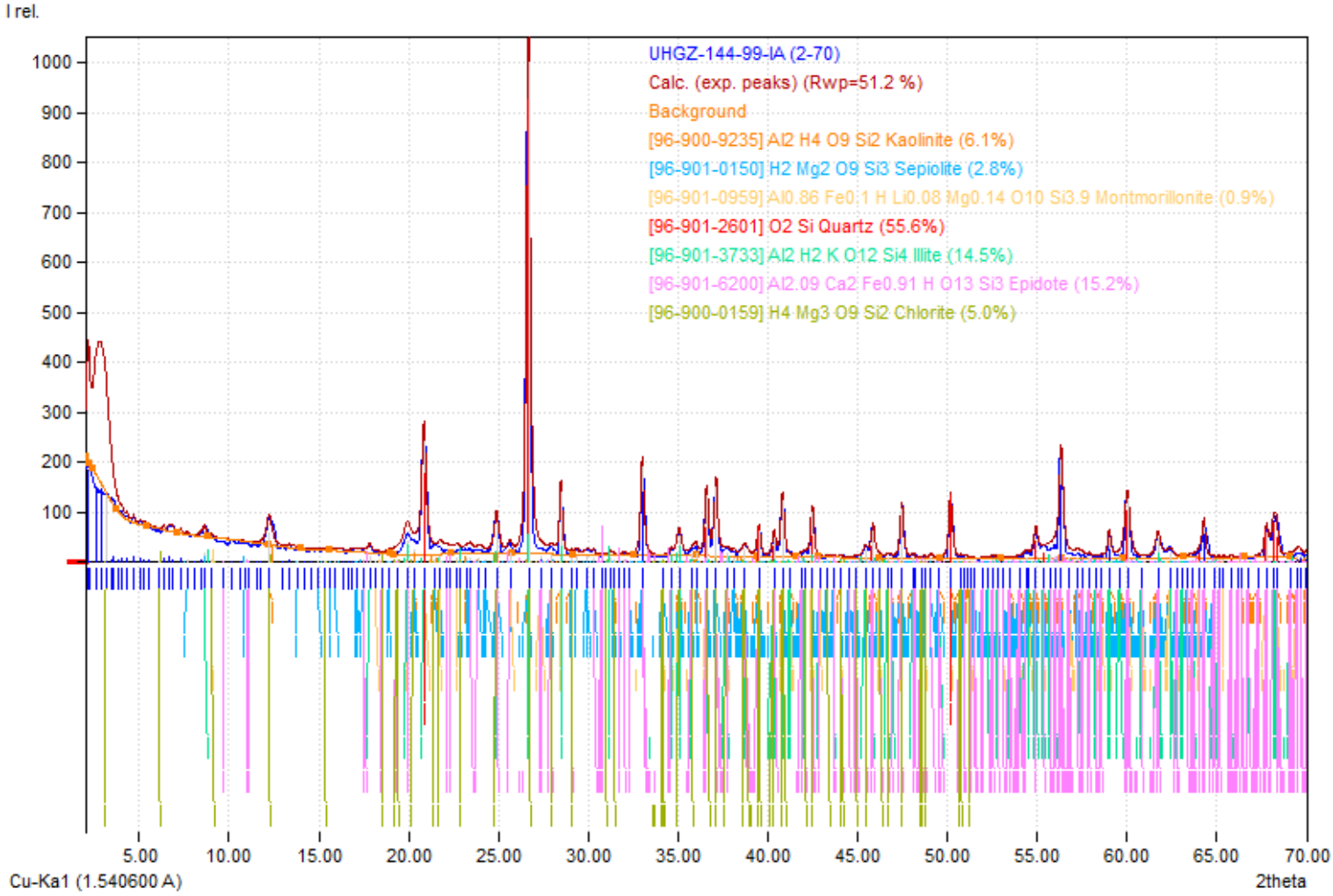
Based on calculated profile

Profile area	***Counts***	***Amount***
Overall diffraction profile	105727	100.00%
Background radiation	57265	54.16%
Diffraction peaks	48461	45.84%
Peak area belonging to selected phases	32924	31.14%
Peak area of phase A (Kaolinite)	*2023*	*1.91%*
Peak area of phase B (Sepiolite)	*938*	*0.89%*
Peak area of phase C (Montmorillonite)	*365*	*0.35%*
Peak area of phase D (Quartz)	*19337*	*18.29%*
Peak area of phase E (Illite)	*5438*	*5.14%*
Peak area of phase F (Epidote)	*3675*	*3.48%*
Peak area of phase G (Chlorite)	*1147*	*1.09%*
Unidentified peak area	15538	14.70%

Peak Residuals

Peak data	*Counts*	*Amount*
Overall peak intensity	1463	100.00%
Peak intensity belonging to selected phases	1362	93.07%
Unidentified peak intensity	101	6.93%

Diffraction Pattern Graphics



Match! Phase Analysis Report

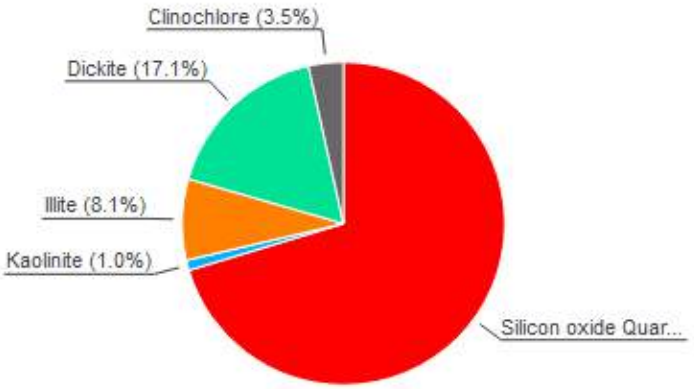
Sample: UHGZ-143-35-AR (2-70)

Sample Data

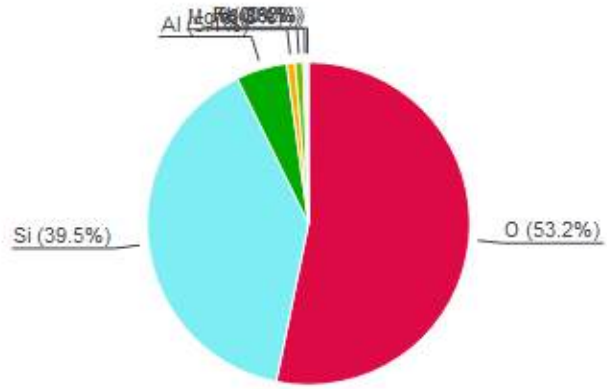
File name	UHGZ-143-35-AR.ORG
File path	D:/MAGANG PT. BSI/DATA XRD/UHGZ-143-35-AR
Data collected	Feb 16, 2024 19:24:26
Data range	2.000° - 70.000°
Original data range	2.000° - 70.000°
Number of points	3401
Step size	0.020
Rietveld refinement converged	No
Alpha2 subtracted	No
Background subtr.	No
Data smoothed	Yes
Radiation	X-rays
Wavelength	1.540600 Å

Analysis Results

Phase composition (Weight %)



Elemental composition (Weight %)



Index	*Amount (%)*	*Name*	*Formula sum*
A	70.3	Silicon oxide Quartz	O2 Si
B	1.0	Kaolinite	Al2 H4 O9 Si2
C	8.1	Illite	Al2 H2 K O12 Si4
D	17.1	Dickite	Al2 H4 O9 Si2
E	3.5	Clinochlore	Al0.721 Fe0.219 H4 Mg2.782 O9 Si1.279
	11.6	*Unidentified peak area*	

Amounts calculated by RIR (Reference Intensity Ratio) method

Element	*Amount (weight %)*
O	*53.2%(*)*
Si	39.5%
Al	5.1%
Mg	0.8%
K	0.8%
H	*0.4%(*)*
Fe	0.2%
**LE (sum)*	*53.6%*

Details of identified phases

A: Silicon oxide Quartz (70.3 %)*

Formula sum	O2 Si
Entry number	96-500-0036
Figure-of-Merit (FoM)	0.848069*
Total number of peaks	70
Peaks in range	18
Peaks matched	18
Intensity scale factor	0.88
2theta correction	0.011°
Space group	P 32 2 1
Crystal system	trigonal (hexagonal axes)
Unit cell	a= 4.9124 Å c= 5.4039 Å
I/Ic	2.92
Calc. density	2.650 g/cm³
Reference	Will G, Bellotto M, Parrish W, Hart M, "Crystal structures of quartz and magnesium germanate by profileanalysis of synchrotron-radiation high-resolution powder data.", Journal of Applied Crystallography **21**, 182-191 (1988)

B: Kaolinite (1.0 %)*

Formula sum	Al2 H4 O9 Si2
Entry number	96-155-0599
Figure-of-Merit (FoM)	0.664220*
Total number of peaks	254
Peaks in range	143
Peaks matched	115
Intensity scale factor	0.00
2theta correction	-0.040°
Space group	P 1
Crystal system	triclinic (anorthic)
Unit cell	a= 5.1737 Å b= 8.9850 Å c= 7.3522 Å α= 91.684° β= 105.128 ° γ= 89.755 °
I/Ic	0.74
Calc. density	2.599 g/cm³
Reference	Richard D., Rendtorff N. M., "First principles study of structural properties and electric fieldgradients in kaolinite", Applied Clay Science **169**, 67-73 (2019)

C: Illite (8.1 %)*

Formula sum	Al2 H2 K O12 Si4
Entry number	96-901-3733
Figure-of-Merit (FoM)	0.674222*
Total number of peaks	303
Peaks in range	113
Peaks matched	89
Intensity scale factor	0.02
2theta correction	-0.055°
Space group	C 1 2 1
Crystal system	monoclinic
Unit cell	a= 5.1973 Å b= 8.9990 Å c= 10.1470 Å β= 99.000 °
I/Ic	0.67
Calc. density	2.830 g/cm³
Reference	Drits V. A., Zviagina B. B., McCarty D. K., Salyn A. L., "Factors responsible for crystal-chemical variations in the solid solutionsfrom illite to aluminoceladonite and from glauconite to celadoniteSample Name: 10564", American Mineralogist **95**, 348-361 (2010)

D: Dickite (17.1 %)*

Formula sum	Al2 H4 O9 Si2
Entry number	96-900-3082
Figure-of-Merit (FoM)	0.687406*
Total number of peaks	289
Peaks in range	142
Peaks matched	120
Intensity scale factor	0.07
2theta correction	-0.022°
Space group	C 1 c 1
Crystal system	monoclinic
Unit cell	a= 5.1610 Å b= 8.9600 Å c= 14.4590 Å β= 96.770 °
I/Ic	0.97
Calc. density	2.583 g/cm³
Reference	Dera P., Prewitt C. T., Japel S., Bish D. L., Johnston C. T., "Pressure-controlled polytypism in hydrous layered materialsSample: Low pressure dickite at P = 0.1 MPa", American Mineralogist **88**, 1428-1435 (2003)

E: Clinochlore (3.5 %)*

Formula sum	Al0.721 Fe0.219 H4 Mg2.782 O9 Si1.279
Entry number	96-901-3854
Figure-of-Merit (FoM)	0.652485*
Total number of peaks	253
Peaks in range	253
Peaks matched	213
Intensity scale factor	0.01
2theta correction	0.019°
Space group	C -1
Crystal system	triclinic (anorthic)
Unit cell	a= 5.3454 Å b= 9.2584 Å c= 14.4350 Å α= 90.290° β= 97.280 ° γ= 90.000 °
I/Ic	0.75
Calc. density	2.655 g/cm³
Reference	Zanazzi P. F., Comodi P., Nazzareni S., Andreozzi G. B., "Thermal behaviour of chlorite: an in situ single-crystaland powder diffraction studyNote: T = 301 C", European Journal of Mineralogy **21**, 581-589 (2009)

(*) 2theta values have been shifted internally for the calculation of the amounts, the intensity scaling factors as well as the figure-of-merit (FoM), due to the active search-match option 'Automatic zero point adaption'.

Search-Match

Settings

Reference database used	COD-Inorg 2023.12.05
Automatic zeropoint adaptation	Yes
Downgrade entries with low scaling factors	Yes
Minimum figure-of-merit (FoM)	0.60
2theta window for peak corr.	0.30 deg.
Minimum rel. int. for peak corr.	0
Parameter/influence 2theta	0.50

Parameter/influence intensities	0.50
Parameter multiple/single phase(s)	0.50

Selection Criteria

Elements:

Elements of which at least one must be present:	H, Li, N, O, Na, Mg, Al, Si, K, Ca, Fe, Ni, As, Cs, Ba
Elements that must NOT be present:	All elements not mentioned above

Peak List

No.	*2theta [º]*	*d [Å]*	*I/I0 (peak height)*	*Counts (peak area)*	*FWHM*	*Matched*
1	2.06	42.8518	1.31	0.67	0.2800	
2	2.32	38.0500	0.05	0.10	1.1409	
3	3.08	28.6625	0.19	0.10	0.2800	
4	3.60	24.5234	1.64	0.84	0.2800	
5	4.04	21.8535	0.19	0.10	0.2800	
6	4.34	20.3435	0.19	0.10	0.2800	
7	4.86	18.1680	0.19	0.10	0.2800	
8	5.36	16.4743	1.85	0.95	0.2800	
9	5.94	14.8669	4.52	2.26	0.2718	E
10	6.48	13.6292	10.40	8.13	0.4249	
11	6.78	13.0268	5.44	7.76	0.7752	
12	7.08	12.4754	20.28	12.72	0.3408	
13	7.56	11.6844	7.21	4.25	0.3200	
14	7.96	11.0981	0.19	0.10	0.2800	
15	8.92	9.9057	5.94	1.82	0.1663	C
16	9.80	9.0181	0.19	0.10	0.2800	
17	10.68	8.2769	2.57	0.79	0.1663	
18	12.32	7.1786	44.61	33.36	0.4063	B,D,E
19	13.50	6.5537	1.39	1.07	0.4164	
20	15.50	5.7122	0.19	0.10	0.2800	
21	17.02	5.2054	1.75	0.90	0.2800	
22	17.78	4.9845	10.50	8.88	0.4595	C
23	18.14	4.8864	3.69	1.50	0.2212	
24	18.72	4.7363	0.87	0.12	0.0745	E
25	20.00	4.4360	75.21	50.02	0.3614	B,C,D,E
26	20.82	4.2631	229.44	142.05	0.3364	A,C,D,E
27	21.36	4.1565	7.83	13.39	0.9296	B
28	21.58	4.1146	18.55	16.39	0.4800	C,D,E
29	21.98	4.0406	13.63	36.13	1.4400	E
30	22.42	3.9623	11.32	5.83	0.2800	D
31	22.92	3.8770	8.67	12.74	0.7982	C,E
32	23.18	3.8341	3.88	2.32	0.3252	B
33	23.48	3.7858	10.06	5.18	0.2800	D
34	23.96	3.7110	10.61	12.90	0.6607	B,E
35	24.24	3.6688	1.66	2.88	0.9421	E
36	24.84	3.5815	53.53	40.51	0.4111	C,D,E
37	25.32	3.5147	17.34	56.17	1.7600	B,E
38	25.72	3.4609	13.72	7.07	0.2800	D
39	26.62	3.3459	1000.00	441.71	0.2400	A,B,C,E
40	27.10	3.2878	26.15	53.91	1.1200	D,E
41	27.48	3.2431	21.77	11.22	0.2800	
42	27.86	3.1998	19.22	9.90	0.2800	
43	28.52	3.1272	24.63	34.45	0.7600	B,C,D,E
44	29.28	3.0477	7.82	4.60	0.3200	
45	29.94	2.9820	8.62	11.42	0.7200	E
46	30.30	2.9474	3.95	1.07	0.1470	D
47	30.62	2.9173	5.63	1.52	0.1470	
48	31.04	2.8788	5.37	3.94	0.3984	
49	31.28	2.8573	4.40	2.10	0.2599	C,E
50	31.46	2.8413	3.06	1.11	0.1966	B,E
51	32.02	2.7929	2.58	0.93	0.1966	D
52	32.34	2.7660	2.45	1.11	0.2469	B
53	32.98	2.7138	21.94	6.11	0.1514	
54	33.60	2.6651	11.68	3.25	0.1514	C,D,E
55	35.18	2.5489	57.19	54.11	0.5141	B,C,D,E
56	35.98	2.4941	23.19	54.28	1.2716	B,C,D
57	36.58	2.4545	108.76	46.06	0.2301	A,B,C,E
58	37.70	2.3842	14.96	25.68	0.9327	C,D,E
59	38.50	2.3364	20.92	23.11	0.6000	B,C,D,E
60	39.46	2.2818	90.43	40.84	0.2454	A,B,E
61	40.34	2.2340	46.39	19.78	0.2316	A,B,C,D,E
62	40.72	2.2140	5.64	2.03	0.1953	C,D,E
63	41.24	2.1873	10.56	7.71	0.3968	B,C,D,E
64	42.48	2.1263	94.37	43.92	0.2529	A,B,C,D,E
65	43.38	2.0842	4.50	2.10	0.2529	B,E
66	44.08	2.0527	2.20	1.03	0.2529	C,D
67	44.34	2.0413	3.06	0.72	0.1287	D,E

68	44.86	2.0188	2.69	1.59	0.3213	D,E
69	45.26	2.0019	7.90	3.81	0.2617	B,C,E
70	45.80	1.9796	51.65	29.41	0.3093	A,B,C,D,E
71	46.58	1.9482	8.18	8.00	0.5312	B,C,D,E
72	46.96	1.9333	7.68	3.39	0.2400	B,C,D,E
73	47.28	1.9210	6.39	2.27	0.1933	B
74	47.68	1.9058	3.00	5.20	0.9402	E
75	47.96	1.8953	3.52	6.09	0.9402	B,C,D,E
76	48.88	1.8618	2.01	3.49	0.9402	B,C,D,E
77	49.32	1.8462	2.16	3.74	0.9402	B,D,E
78	49.68	1.8337	2.50	4.33	0.9402	B,C,E
79	50.16	1.8172	140.41	60.20	0.2329	A,B
80	50.60	1.8025	2.43	4.66	1.0412	A,B,D,E
81	51.04	1.7880	3.47	6.64	1.0412	B,C,D,E
82	52.32	1.7472	1.62	3.11	1.0412	C,E
83	53.04	1.7252	1.06	2.03	1.0412	C,D,E
84	53.50	1.7114	2.52	4.83	1.0412	B,C,D,E
85	54.02	1.6962	3.09	5.92	1.0412	B,C,D,E
86	54.40	1.6852	13.46	10.90	0.4400	B,C,D,E
87	54.90	1.6710	48.64	34.25	0.3827	A,B,C,D,E
88	55.34	1.6588	22.44	17.93	0.4340	A,B,C,D,E
89	55.90	1.6435	11.16	5.75	0.2800	B,C,D,E
90	56.38	1.6306	10.06	15.07	0.8137	B,C,D
91	56.66	1.6232	3.55	4.70	0.7208	B,C,E
92	57.24	1.6081	12.07	7.11	0.3200	A,B,C,D,E
93	57.92	1.5909	5.16	7.70	0.8103	B,D,E
94	58.12	1.5859	6.62	3.41	0.2800	B,C
95	58.64	1.5730	3.54	1.22	0.1869	B,C,D,E
96	59.12	1.5614	2.86	4.33	0.8213	B,C,D,E
97	59.64	1.5490	7.79	2.87	0.2000	B,C,D,E
98	60.00	1.5406	132.63	63.02	0.2582	A,B,E
99	60.54	1.5281	0.29	0.10	0.1885	B,C,D,E
100	60.80	1.5222	1.78	0.62	0.1885	B,C,E
101	61.14	1.5146	2.73	1.67	0.3336	B,C,D,E
102	62.46	1.4857	42.07	47.56	0.6141	B,C,D,E
103	63.18	1.4705	1.40	2.09	0.8118	B,C,D,E
104	63.72	1.4593	5.40	8.06	0.8118	B,C,D,E
105	64.12	1.4512	16.25	9.32	0.3116	A,B,C,D,E
106	65.30	1.4278	2.10	0.87	0.2252	B,C,D
107	65.78	1.4185	7.86	3.81	0.2635	A,B,C,D
108	67.26	1.3909	0.13	0.06	0.2635	B,D
109	67.74	1.3822	66.25	24.39	0.2000	A,B,D
110	68.28	1.3726	108.96	77.11	0.3845	A,B,C,D
111	69.92	1.3443	9.67	2.85	0.1600	B

Integrated Profile Areas

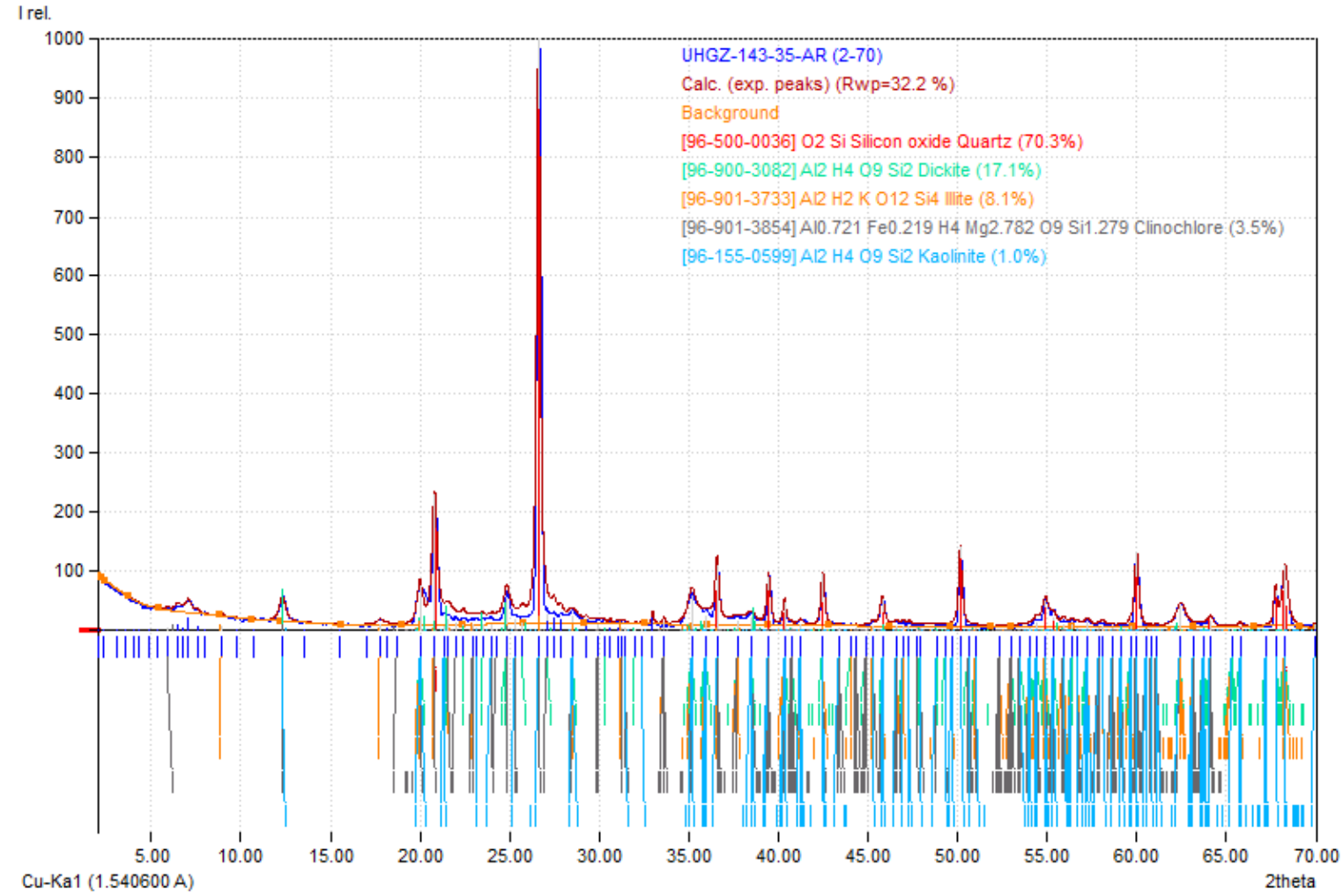
Based on calculated profile

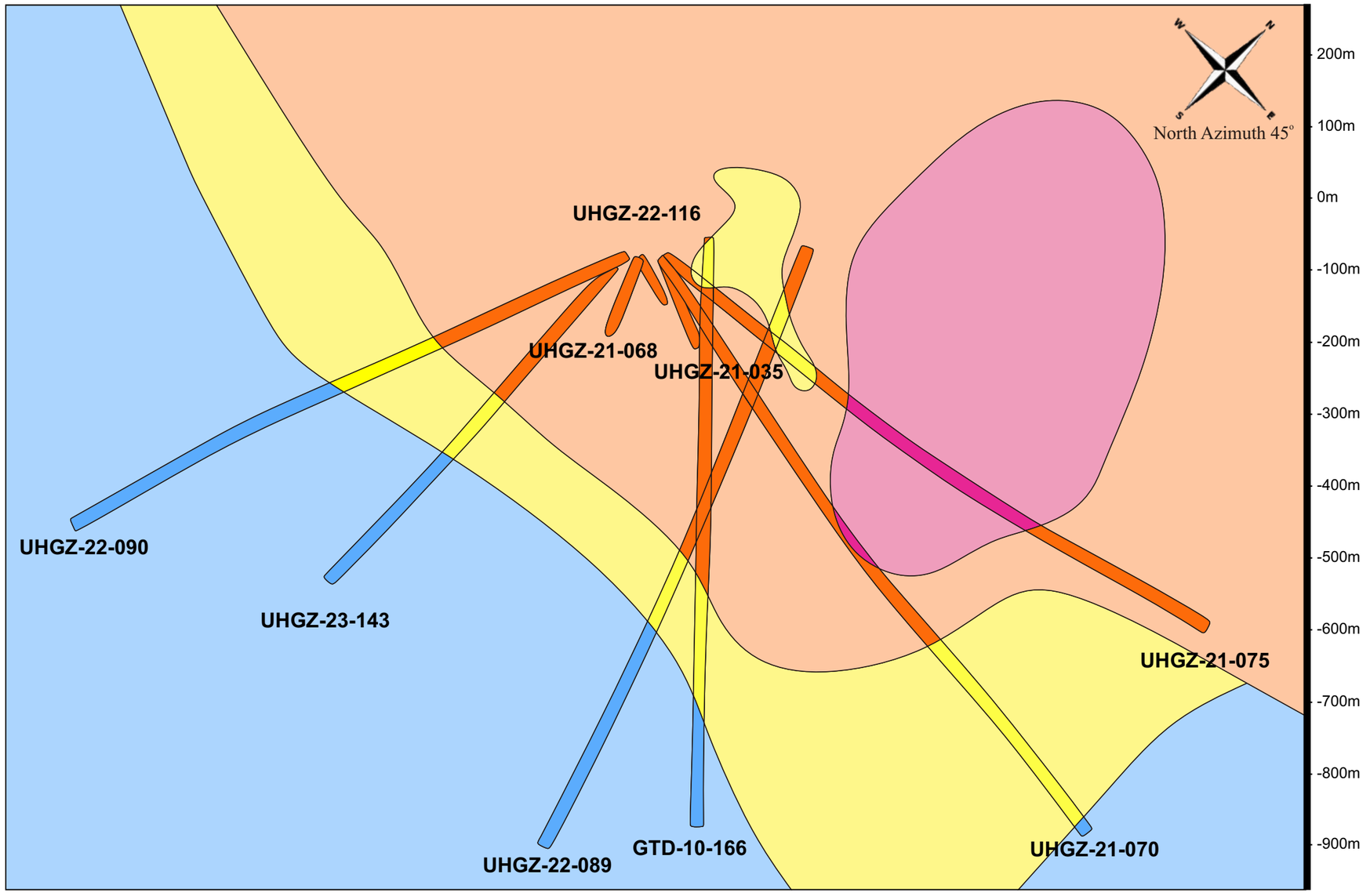
Profile area	***Counts***	***Amount***
Overall diffraction profile	146530	100.00%
Background radiation	67894	46.33%
Diffraction peaks	78636	53.67%
Peak area belonging to selected phases	61633	42.06%
Peak area of phase A (Silicon oxide Quartz)	*41381*	*28.24%*
Peak area of phase B (Dickite)	*11843*	*8.08%*
Peak area of phase C (Illite)	*5697*	*3.89%*
Peak area of phase D (Clinochlore)	*1992*	*1.36%*
Peak area of phase E (Kaolinite)	*720*	*0.49%*
Unidentified peak area	17003	11.60%

Peak Residuals

Peak data	***Counts***	***Amount***
Overall peak intensity	1916	100.00%
Peak intensity belonging to selected phases	1866	97.39%
Unidentified peak intensity	50	2.61%

Diffraction Pattern Graphics





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

PETA MODEL SEBARAN ZONA ALTERASI

BLOK X, PT. BUMI SUKSESINDO
TUJUH BUKIT, PESANGGARAN, BANYUWANGI, JAWA TIMUR

SKALA TIDAK SEBENARNYA

OLEH :
FERNANDA DZIKRI AL GHIFARI
D061 19 1057

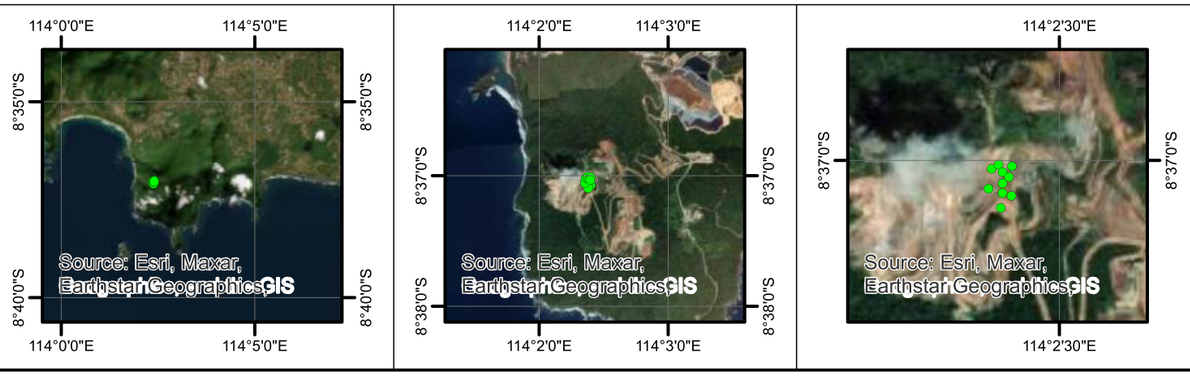
GOWA
2024

KETERANGAN :

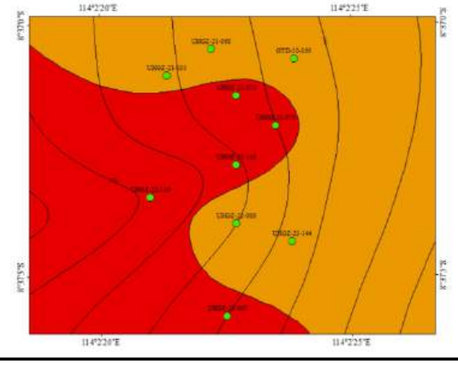
- Zona *Silica-Alunite* (*Advanced Argillic*)
- Zona *Silica-Clay dan Clay-Silica* (*Advanced Argillic*)
- Zona *Illite-Dickite* (*Argillic*)
- Zona *Epidote-Chlorite* (*Propylitic*)
- Data Bor Zona *Silica-Alunite*
- Data Bor Zona *Silica-Clay dan Clay-Silica*
- Data Bor Zona *Illite-Dickite*
- Data Bor Zona *Epidote-Chlorite*
- Lubang Bor
- UHGZ-23-143 Kode Bor

"Modifikasi dari pemodelan menggunakan aplikasi *Leapfrog Geo 5.1*"
Sayatan penampang menggunakan sudut azimuth 45°.

PETA TUNJUK LOKASI



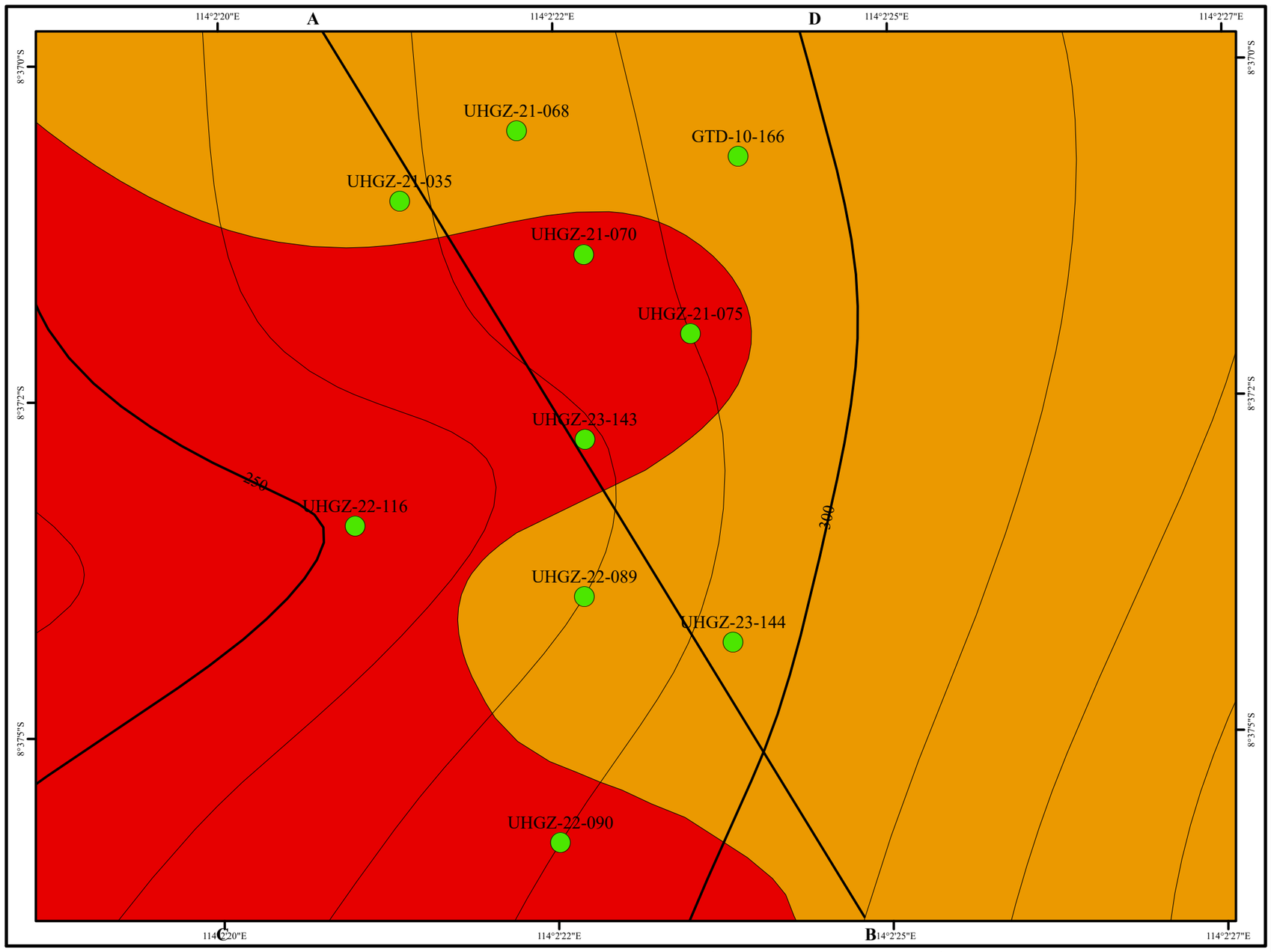
PETA GEOLOGI



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

PETA GEOLOGI

DAERAH TUJUH BUKIT, KECAMATAN PESANGGARAN
KABUPATEN BANYUWANGI, PROVINSI JAWA TIMUR



N
W E
S

0 10 20 40 60 80 Meters

SKALA 1 : 1.000
IK 12.5 METER

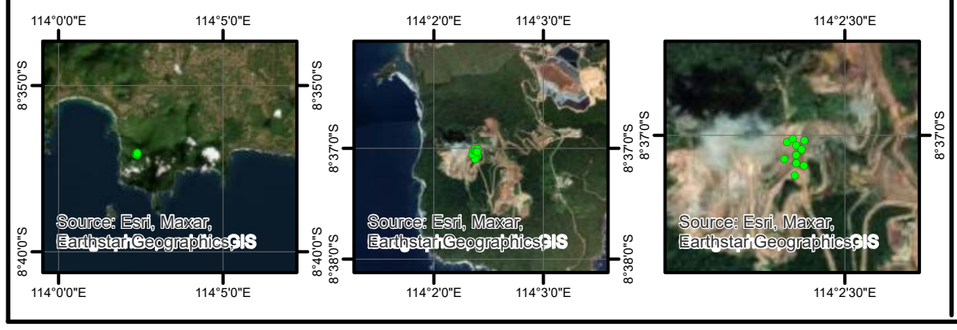
OLEH :
FERNANDA DZIKRI AL GHIFARI
D061 19 1057

GOWA
2024

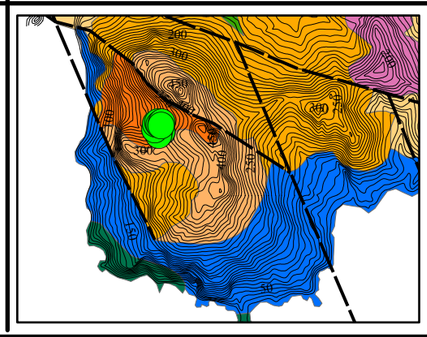
KETERANGAN :

- *Phreatomagmatic Breccia*
- *Dacite*
- Titik Bor
- Kontur
- Garis Sayatan A-B
- Garis Sayatan C-D
- Nama Titik Bor

PETA TUNJUK LOKASI



PETA INDEKS

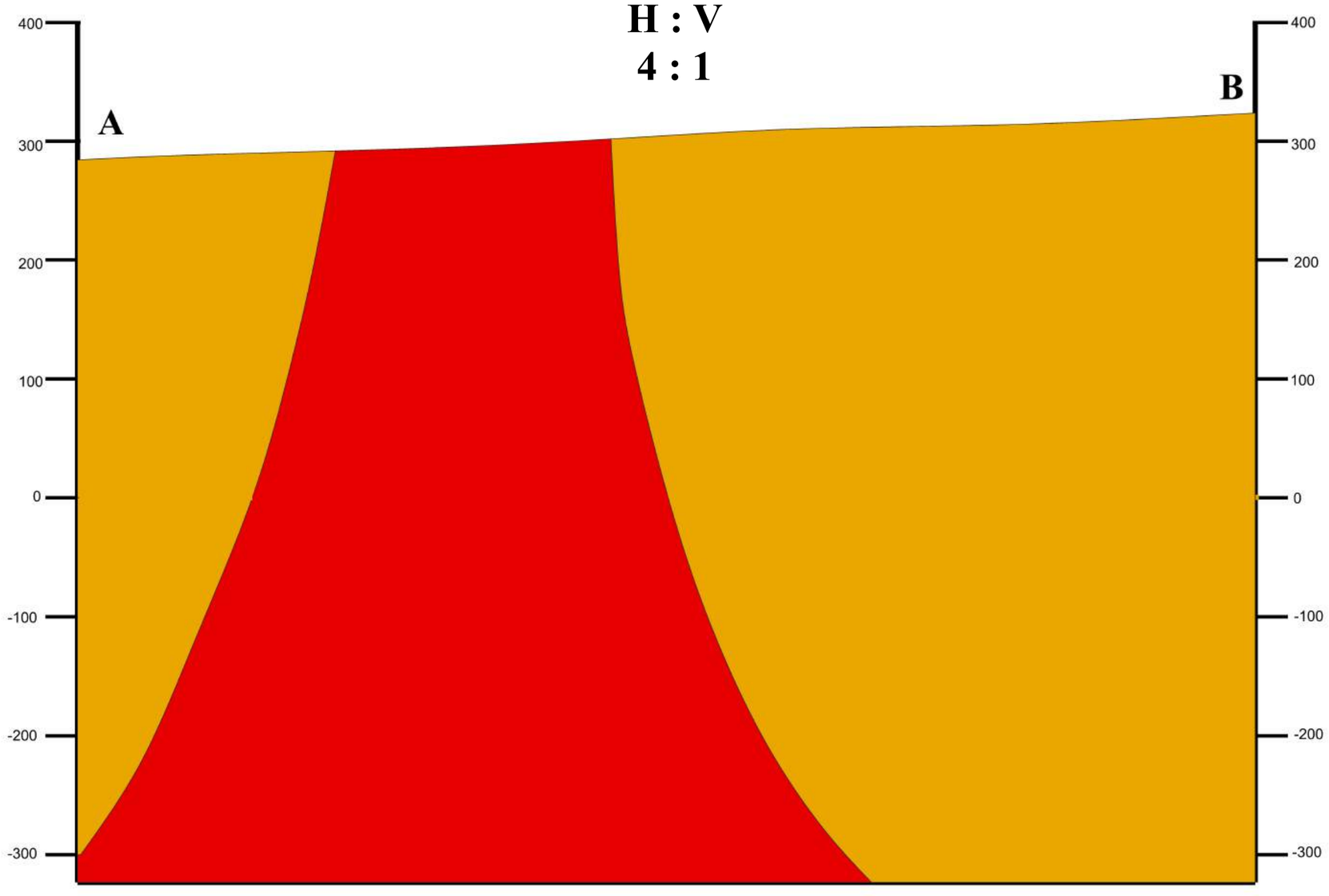


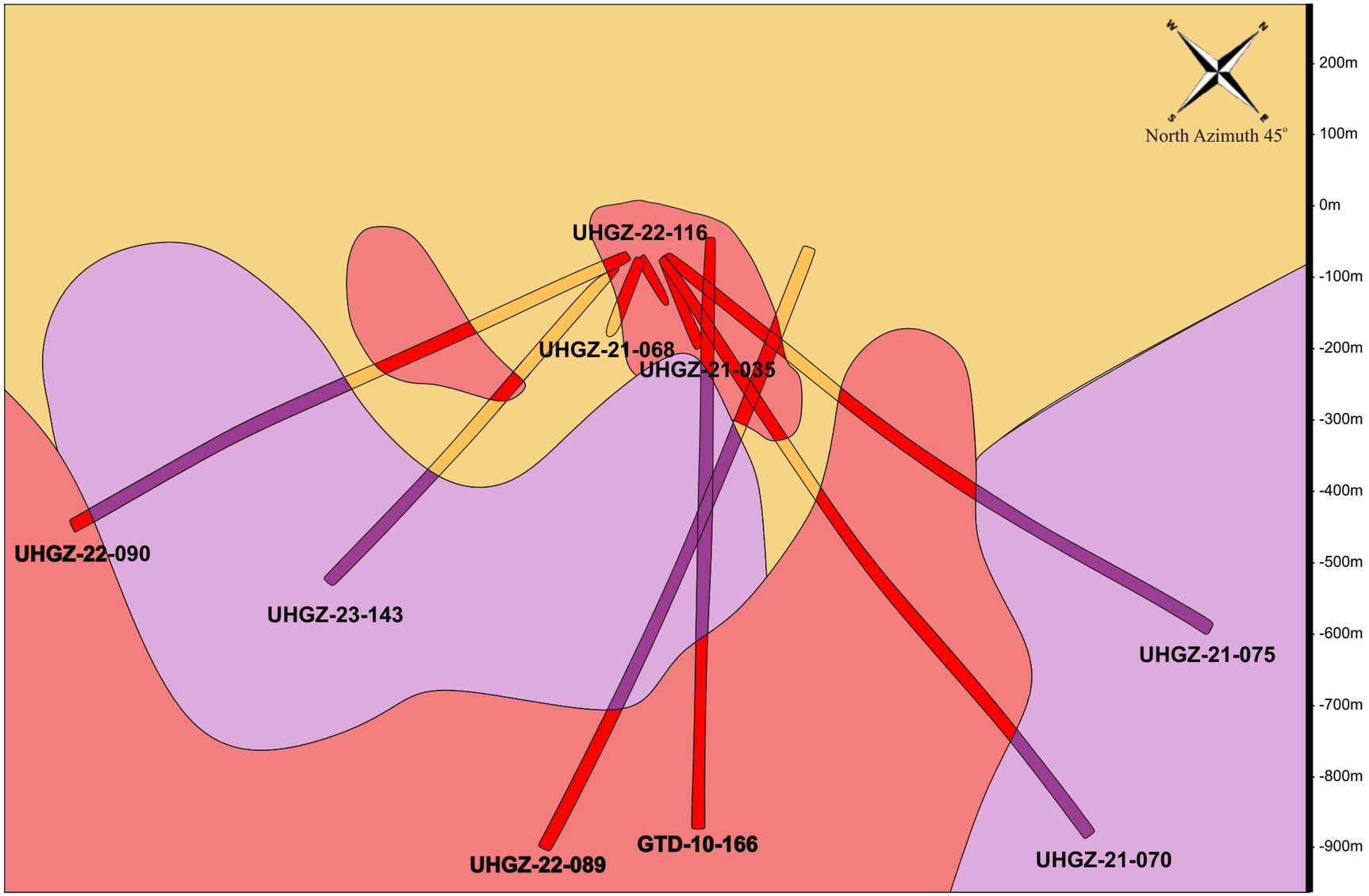
SUMBER PETA

Modifikasi
Phillip L. Hellman
Tujuh Bukit Project Report
on Mineral Resources, East Java, Indonesia
Australia-2011

PENAMPANG GEOLOGI A-B

H : V
4 : 1





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

PETA MODEL SEBARAN LITOLOGI

BLOK X, PT. BUMI SUKSESINDO
TUJUH BUKIT, PESANGGARAN, BANYUWANGI, JAWA TIMUR

SKALA TIDAK SEBENARNYA

OLEH :
FERNANDA DZIKRI AL GHIFARI
D061 19 1057

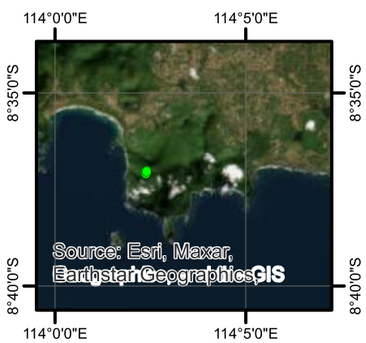
GOWA
2024

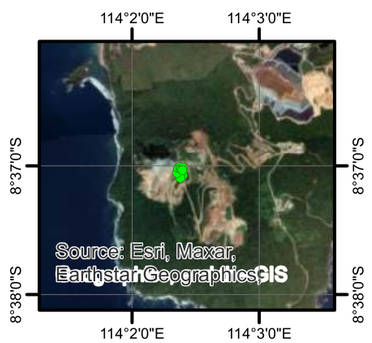
KETERANGAN :

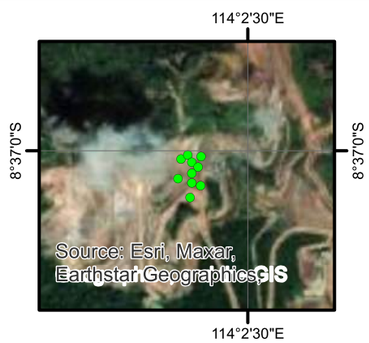
- *Dacite*
- *Phreatomagmatic Breccia*
- *Diorite*
- Data Bor *Dacite*
- Data Bor *PhreatomagmaticBreccia*
- Data Bor *Diorite*
- Lubang Bor
- UHGZ-23-143 Kode Bor

"Modifikasi dari pemodelan menggunakan aplikasi *Leapfrog Geo 5.1*"
Sayatan penampang menggunakan sudut azimuth 45°.

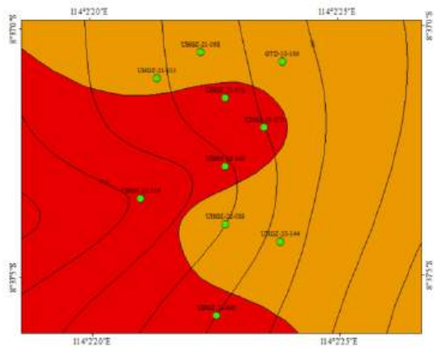
PETA TUNJUK LOKASI

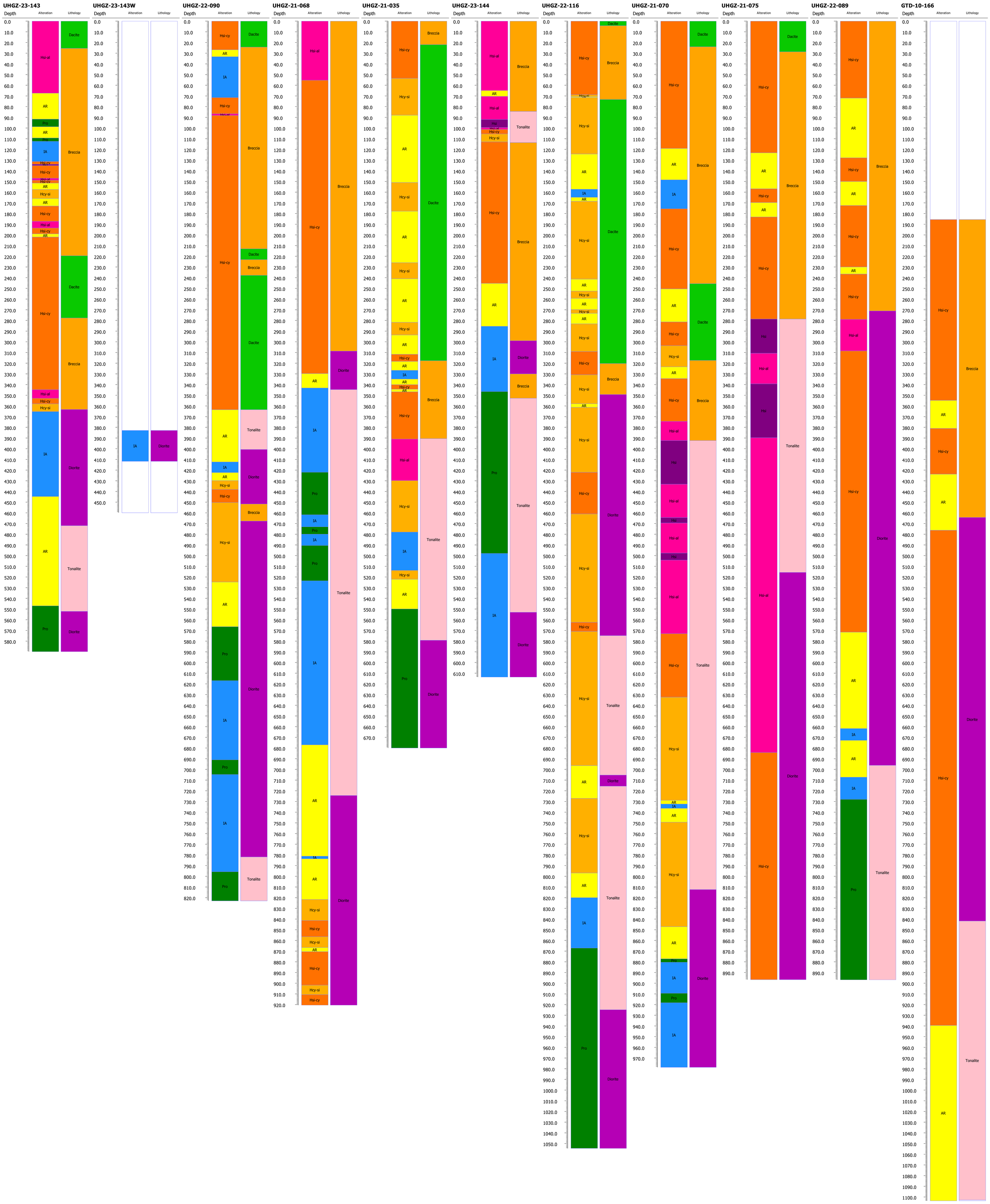






PETA GEOLOGI




UHGZ-23-143
Depth
Alteration
Lithology
Hsi-al
AR
Pro
AR
Pro
IA
Hsi-cy
Hsi-cy
Hsi-al
Hsi-cy
AR
Hcy-si
AR
Hsi-cy
Hsi-al
Hsi-cy
AR
Hsi-cy
Hsi-al
Hcy-si
Dacite
Breccia
Dacite
Breccia
Diorite
Tonalite
Diorite
UHGZ-23-143W
Depth
Alteration
Lithology
IA
Diorite
UHGZ-22-090
Depth
Alteration
Lithology
Hsi-cy
AR
IA
Hsi-cy
Hsi-al
Hsi-cy
Hcy-si
AR
Hcy-si
Hsi-cy
Dacite
Breccia
Dacite
Breccia
Dacite
Breccia
Tonalite
Diorite
Diorite
Tonalite
UHGZ-21-068
Depth
Alteration
Lithology
Hsi-al
Hsi-cy
AR
IA
Pro
IA
Pro
IA
AR
Breccia
Diorite
Tonalite
UHGZ-21-035
Depth
Alteration
Lithology
Hsi-cy
Hcy-si
AR
Hcy-si
AR
Hcy-si
AR
Hsi-cy
AR
IA
AR
Hsi-cy
Hsi-cy
Hsi-al
Hcy-si
IA
Hcy-si
AR
Pro
Breccia
Dacite
Breccia
Tonalite
Diorite
UHGZ-23-144
Depth
Alteration
Lithology
Hsi-al
AR
Hsi-al
Hsi
Hsi-al
Hsi-cy
Hcy-si
Hsi-cy
AR
IA
Pro
IA
Breccia
Tonalite
Breccia
Diorite
Tonalite
Diorite
UHGZ-22-116
Depth
Alteration
Lithology
Hsi-cy
Hcy-si
Hcy-si
AR
IA
AR
Hcy-si
AR
Hcy-si
AR
Hcy-si
Hsi-cy
Hcy-si
AR
Hcy-si
AR
Dacite
Breccia
Dacite
Breccia
Diorite
Tonalite
Diorite
UHGZ-21-070
Depth
Alteration
Lithology
Hsi-cy
AR
IA
Hsi-cy
AR
Hsi-cy
Hcy-si
AR
Hsi-cy
Hsi-al
Hsi
Hsi-al
Hsi
Hsi-al
Hsi-cy
Hcy-si
AR
IA
Pro
IA
Dacite
Breccia
Dacite
Tonalite
Diorite
UHGZ-21-075
Depth
Alteration
Lithology
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AR
Hsi-cy
AR
Hsi-cy
Hsi
Hsi-al
Hsi
Hsi-al
Dacite
Breccia
Tonalite
Diorite
UHGZ-22-089
Depth
Alteration
Lithology
Hsi-cy
AR
Hsi-cy
AR
Hsi-cy
Hsi-al
AR
IA
AR
Pro
Breccia
Diorite
Tonalite
GTD-10-166
Depth
Alteration
Lithology
Hsi-cy
AR
Hsi-cy
AR
Hsi-cy
Breccia
Diorite
Tonalite