PROPOSAL FOR PRELIMINARY EXPLORATION FOR PGE, GOLD & BASEMETAL IN TIMKITOLA BLOCK (G3) [6 SQ. KM.] DISTRICT- BALAGHAT, MADHYA PRADESH
"SPIN OFF ITEM"

COMMODITY: PGE, GOLD & BASEMETAL

BY

Gemcokati Exploration Pvt. Ltd
E-77, MIDC, Ghughus Road,
Chandrapur, Maharashtra- 442406.

Place: Chandrapur
Date: 19th September 2025

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Summary of the Block for G3 stage exploration

	Features	Details
	Block ID	TIMKITOLA BLOCK FOR PGE, GOLD & BASEMETAL
	Current Exploration Agency	GEMCO KATI EXPLORATION PVT.LTD.
	Previous Exploration Agency	G-4 REPORT BY GEMCO KATI EXPLORATION PVT.LTD.
	G4 stage Geological Report (Previous stage Geological Report)	Geological Report on Reconnaissance Survey (G4 stage) for PGE, Gold and REE in Maneri – Sitapala Block (80 sq. km), Balaghat District, Madhya Pradesh
	Commodity	PGE, GOLD & BASEMETAL
	Mineral Belt	KHAIRAGARH GROUP
	Completion Period with entire Time schedule to complete the project	12 Months
	Objectives	1. Detailed mapping on 1:4,000 scale to delineate the surface outcrop of PGE, Gold & Base metal bearing lithology with exploratory drilling. 2. Drill at the selected locales to delineate subsurface mineralized zones 3. Trenching at the selective locale to delineate mineralization zone if any. 4. Major oxide by WD-XRF, PGE by NiS fire assay, Petrography & ore microscopy, EPMA study of the selected samples. 5. To estimate the in-situ resources (if any) of PGE, Gold & Base Metal in G3 Stage of exploration (333) and preparation of Geological Report (GR). 6. Carry out mineral exploration works as per Minerals (Evidence of Mineral Contents) Rule-2015, Mineral (Auction) Rules-2015 and MMDR Amendment act-2015. 7. In turn to facilitate the Government of India for auctioning of the block.
	Whether the work will be carried out by the proposed agency or throughout sourcing and details thereof. **Components to be out sourced and name of the outsource agency**	Work will be carried out by the proposed agency i.e. Gemcokati Exploration Pvt. Ltd Not applicable
	Name/Number of Geoscientists	Two Geologist (2 G) Surveyor (02) Geophysicists (02) & Sampler (01)
	Expected Field days (Geology, Geophysics, Surveyor)	Geologist-180 days field + 45 days HQ, Geophysicist- 60 days field +30 days HQ Surveyor – 45 days
1.	**Location**	
	Latitude	21°22'58.83" - 21°24'07.95"
	Longitude	80°35'22.64" - 80°37'44.48"

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	Villages	Timkitola (G3)
	Tehsil/Taluk	Lanji
	District	BALAGHAT
	State	MADHYA PRADESH
2.	**Area (hectares / square kilo meters)**	
	Block Area	6.00 Sq. Km.
	Forest Area	Entire block lies within the Forest area
	Government Land Area	Entire block lies within the Forest area
	Private Land Area	------
3.	**Accessibility**	
	Nearest Rail Head	Amgaon (40KM)
	Road	Lanji-Khairagarh road passes through the south of the block
	Airport	Nagpur (210 km)
4.	**Hydrography**	
	Local Surface Drainage Pattern (Channels)	NE-SW trending ridges and valleys in the block has resulted in a trellis pattern of drainage in the block area.
	Rivers/Streams	1st, 2nd and 3rd order streams flowing from the hill ranges from the block areas drain to Bagh River which flows southeastwards.
5.	**Climate**	
	Mean Annual Rainfall	1420 mm
	Temperatures (December)(Minimum) Temperatures (May)(Maximum)	2.8ºC 49ºC
6.	**Topography**	
	Toposheet Number	**64C/11**
	Morphology of the Area	NE-SW trending parallel ridge and valley morphology are in the block.
7	**Availability of base line geosciences data**	
	Geological Map (1:50 K/25 K)	1:12,500 Scale Geological Map being mapped during G4 work is available.
	Geochemical Map	NGCM & other geochemical maps aren't available
	Geophysical Map (Aero Geophysical, Ground geophysical, Regional as well as local scale GP maps)	Aero Geophysical map of the block available in public domain.
8.	Justification for taking up G3 stage mineral exploration	(A) During exploration work in NMET funded Maneri-Sitapala Block a geologically, geophysically & geochemically anomalous zone along & near the contact of Sitagota basalt & Karutola sandstone trending NNE – SSW for a length of 2.4 km was identified. (B) The lithology of the zone is characterized by foliated quartz hematite chlorite rock have anomalous PGE, Gold. Traces of Base metal and REE content have also been recorded. (C) The NNE-SSW PGE bearing anomalous zone [2.4 km

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		x 50m] yielding Total PGE value upto **480ppb** in surface bedrock samples. (Annexture-1, analytical results PGE values during G4 exploration from this zone) As platinum group minerals (Pt, Pd) generally form around the ~400°C to 900°C temperature at low- to moderate pressure. It also has an affinity with gold, therefore, its presence in the anomalous zone cannot be denied. (D) Out of the ten samples analyzed for gold located in the mineralized area, there are two yielding gold values **0.06 & 0.12 ppm**. Back scattered electron images through the scanning electron microscope (SEM) show the presence or release of the gold grains in the vicinity of skeletal euhedral magnetite clearly indicating the secondary processes (post- magmatic or brittle-ductile tectonics) play a vital role in the release of the refractory gold from the basalt and its deposition as micro-nugget or tiny grain. Such formation of gold grain generally occurs around the 250°C to 400°C temperature at low- to moderate pressure. Therefore, the magnetite-bearing mineralized zone has the potential for the presence and deposition of gold mineralization. In EPMA study **two gold grains**, both less than 10 microns occurring both within Hematite crystals and the quartz-chlorite matrix. (Annexture-2, analytical results gold values through fire assay & EPMA study during G4 exploration from this zone) (E) Samples collected from the anomalous zone have total REE content **28-151ppm** from surface samples. There are **11 REE bearing grains** of Monazite and Xenotime were identified in EPMA study. (Annexture-3, analytical results REE values during G4 exploration from this zone & EPMA study) **(F) Scandium** content of samples collected from anomalous zone varies from **26-48ppm.** (G) In petrography study of rocks from Sitagota formation **(Sample no T-01)** about 1km perpendicular to strike of the anomalous zone, where few small clots of quartz are observed possibly amygdules in an original volcanic rock or sill of mafic or intermediate composition. Some of the quartz clusters contain specks of **Cu-Fe sulfides** surrounded by actinolite and

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		chlorite. (Annexture-4, petrographic report) (H) Actinolite-chlorite-epidote schist **(Sample no T-05)** derived near lineament within the Sitagota formation, parallel to anomalous zone, is evident of deformation & possibly mineralization. (Annexture-5, petrographic report) (I) Norli'Sk – Talnakh deposits in Russia area world class source of Nickel, Copper and Platinum Group Elements (Palladium) forming part of the Siberian Traps. The geological set up here is almost identical and not explored previously.
	9-Documents to be enclosed with the application	1. Block area on google map. 2.Location of the proposed block demarcated on Survey of India (SOI) & Toposheet(s) 56I/13&14. 3. Block area on Geological Map.

Place: - Chandrapur

Date – 19.09.2025

Signature of the applicant

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Detailed Project Report [DPR]

1. BLOCK SUMMARY:

1.1 Physiography: Physiographically the block represents a ridge and valley topography with minimum and maximum elevation being 327m and 566m respectively. It is occupied by thick forest and outcrop-rich NNE – SSW trending ridges and valleys.

1.2 Back Ground Geology & Regional Geology of the Block:

1.2.1 Regional Geology

The project area is situated in the north-central part of Survey of India Toposheet 64C/11. The exposed rock formations in this region include the Precambrian Amgaon Gneiss, phyllite, meta-sediments, and basic meta-lava enclaves. Additionally, rocks from the Palaeo-Proterozoic Nandgaon Volcanic Group and the Meso-Proterozoic Khairagarh Volcanic Group are present. Younger lateritic capping has developed in several locations over these formations.

The Amgaon Gneissic Complex in the block area comprises basement gneisses and supracrustal rocks, including phyllites and enclaves of meta-lava. Additionally, the Nandgaon Group is represented by the Bijli Rhyolites, while the Khairagarh Group consists of an alternating sequence of sandstones and basalts.

The stratigraphic sequence of the lithological formations exposed in the region is presented in the following table

Age	Supergroup	Group	Formation
Palaeo-Proterozoic – Meso-Proterozoic	Dongargarh Supergroup	Khairagarh Group	Kotima Basalt
			Ghogra Sandstone
			Mangikhuta Basalt
			Karutola Sandstone
			Sitagota Basalt
			Bortalao Sandstone
Palaeo Proterozoic		Nandgaon Group	Bijli Rhyolites
Archaean	Amgaon Gneissic Complex	Amgaon Group	Amgaon Gneiss
			Phyllites
			Meta-lava enclaves

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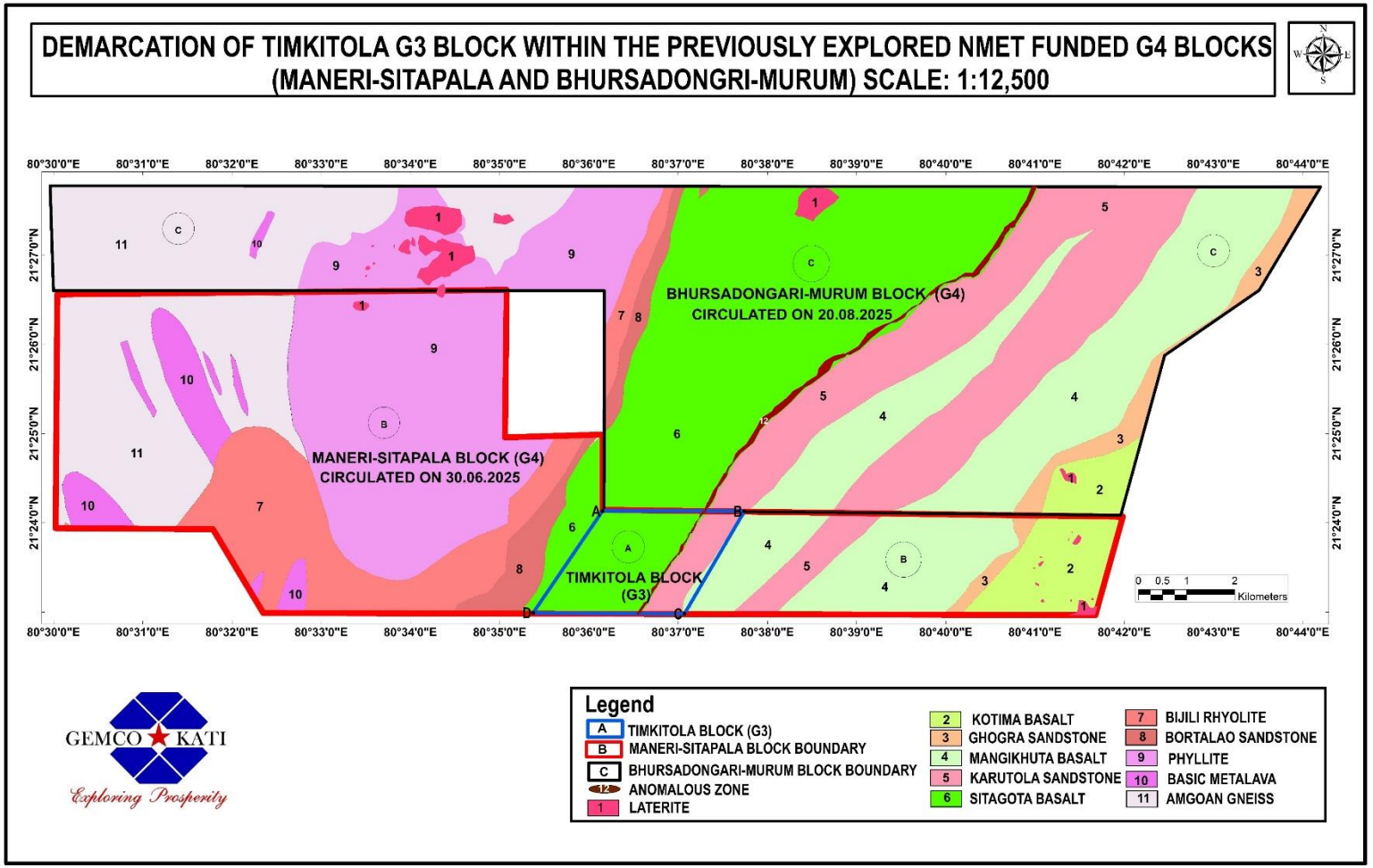

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1.2.2 Lithological description

Amgaon granitic gneiss / migmatite:
Amgaon granitic gneiss is usually medium to coarse-grained rock with well-developed foliation. The granitic rock after a prolonged compressive stress has converted to gneiss. The texture is granoblastic, equigranular to inequigranular; gneissic foliation is defined by sub-parallel alignment of biotite flakes, elongated quartz and feldspar crystals; colour varies from light grey to pinkish grey (Pradeep Mawar, 2012 – STM in contiguous toposheets).

Meta-lava / metabasalt / amphibolite enclaves:
In the western parts of the block where-in rocks of Amgaon gneissic complex are present, occur a few enclaves of fine-grained massive metabasalt and medium to fine-grained amphibolite. However, extensive cultivation activities overall several decades in this part of the block, have obliterated many such enclaves shown on the Bhukosh geological map.

Dongargarh Super Group.
Nandgaon Group
Only Bijli Rhyolite is exposed in the project area.
Bijli Rhyolite:
The rhyolites are hard, generally pink- and grey-coloured rocks. In the block area where outcrops were encountered, they are porphyritic texture with phenocrysts of quartz and elongated feldspar set in medium to fine grained matrix.
Khairagarh Group
As per the reported stratigraphy, there are 3 episodes of Khairagarh Basalts, alternating with clastic sediments, represented by sandstone.
Basalt:
The three episodes of basalts are represented by Lower Sitagota Basalt, Middle Mangikhuta Basalt and Upper Kotima Basalt.Basalts occupy the valley portions in the eastern part of the block. They are greenish grey in general and show a wide variety of textures – from hard compact fine-grained rocks to amygdular basaltic (and pitted texture where amygdales are dislodged) to porphyritic textures with phenocrysts of glassy material set in fine matrix.
Sandstone:
The three episodes of clastic sediment deposition is represented by Lower Bortalao Sandstone, Middle Karutola Sandstone and Upper Ghogra Sandstone. The clastic sedimentation of Khairagarh Volcanics start with a matured ortho-conglomerate which has well developed in one location within the present block.
The sandstones form the high ridges in the eastern part of the block area. They are grey to off-white to pale pink coloured hard, compact rocks. They show primary bedding and cross lamination features at places.
Laterite:
Several laterite occurrences have been mapped during the present fieldwork. These laterites have developed over the Archean supracrustals as well as Paleo- and Mesoproterozoic volcanic rocks.
Clay:
Several clay pockets have developed along with laterites capping supracrustal

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1.2.3 Geology of the Block

The block area falls within Khairagarh group. Detaills of the lithology & description is given below.

Sandstone

There are three episodes of sandstone deposition in the block area. The Bortalao Sandstone is the oldest, followed by Karutola Sandstone and the clastic sedimentation ends with Ghogra Sandstone. The rock occurs as NE-SW trending tall parallel ridges. The rock is massive, fine to medium grained and occurs in many hues of colours, ranging from off-white, reddish to pale pink, brown, and different shades of grey. Primary structures like cross bedding are seen at several places in these sandstones.

Basalt

The episodes of clastic sediment deposition are alternated with three episodes of volcanic activity, represented by emplacement of basalts. Presently the basalts occupy the valley portions between the sandstone ridges. As mentioned earlier, the there are three episodes of basalts, represented by Lower Sitagota Basalt, followed by Mangikhuta Basalt and then, the upper Kotima basalt.

The basalts are greenish grey in colour and massive. Usually, the nature of outcropping is bouldery. The variations within these basalts are presence of zones of vesicular and amygdular basalts and coarse-grained basalts.

1.3 Mineral potentiality based on geology

On the western slope of Karutola sandstone ridge, a zone containing euhedral hematite crystals is seen. Unambiguous outcrops are rare because of relatively steep slope and thick vegetation cover makes finding such occurrences even more difficult. The rock exposed mesocratic to melanocratic in appearance; it has thin venations of quartz. The characteristic feature of this zone is ubiquitous presence of perfectly euhedral double octahedral crystals of Hematite. The size of the crystals ranged from very small, visible only through the lens to well-developed crystals of up to 2mm. The hematite crystals generally occurred as disseminations with in, or along foliation planes in the quartz-hematite-chlorite host rock. By petrographic study this zone is identified as highly foliated quartz-hematite-chlorite rock.

PGE minerals are associated with quartz-hematite-chlorite beaing foliated rock. The quartz-hematite-chlorite rock zone was mapped in detail. This exercise delineated coarse hematite (1mm - 2mm euhedral crystals)-rich zones, crystal-rich zones up to 1mm and very small crystals rich zones where hematite was visible only under the hand lens. And there were zones where no hematite crystals were present but the rock was well foliated.

The NE-SW PGE & Gold bearing anomalous zone [2.4 km x 50m] occurs along and near the contact zone of Sitagota basalt and Karutola Sandstone. Rocks collected from this zone shows Total PGE value **upto 480ppb & gold upto 0.12ppm**. The representative channel samples, each collected for 1m length along the floor of four different trenches (1m x 1m x 25m) in the contact zone of Sitagota basalt and Karutola sandstone. The primary focus was analyzing the distribution of platinum (Pt), palladium (Pd), ruthenium (Ru), rhodium (Rh), iridium (Ir), and osmium (Os) to assess the PGM potential within the block. The highest total PGE value observed is 0.48 ppm in Sample ID 200623-08, which contains 0.19 ppm Pt, 0.23 ppm Ru, 0.04 ppm Rh and 0.02 ppm Ir. Some samples exhibit

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multi-element occurrences, such as Pt and Ru. Sulfide grains probably of relict nature are found in EPMA studies.

1.4 Scope for proposed exploration

Sr.No	Nature of Work	Proposed Work
1	Detailed Mapping (1:4000)	6 sq Km
2	Trenching	6 (6X25= 150 cum)
3	No. of Boreholes	14
4	No. of Rigs to be deployed	2
5	Total Drilling	960meters
6	Average Borehole Depth	60meters (1st level of exploration)
7	Drill Core samples	700
8	Trench samples	150
9	Bed Rock Samples	50
10	Chemical Analysis (Major Oxide) using WD XRF through Borate Fusion Bead	440 (BRS 50 + Trech 100 + Core samples 250+10% check)
11	PGE by NiS fire assay	990(BRS 50 + Trech 150 + Core samples 700+10% check)
12	Gold by Fire assay	165(BRS 2 + Trech (6x3) =18 + Core samples (12 Bhx10) =120+10% check)
13	REE & other trace elements through ICP-MS	154(BRS 2 + Trech (6x3) =18 + Core samples (12 Bhx10) =120+10% check)
14	Geophysical studies (I.P cum Resistivity, S.P, magnetic)	31.5 line Km
15	Category of Land	Forest land
16	Geological Personnel	2 field geologist + 1 HQ based geologist
17	Period of Scheme	12 Months

1.5 Recommendations

- On the basis of positive outcome of G4 study, recommendation of Peer Reviewer & approval of esteemed members of 9th TCC-II during deliberation dated 24th June 2025, a G3 proposal is proposed for upgradation.

1.6 Objectives

- To map the block area of 6.00 sq.km in1:4000 scale through DGPS and total station
- Close space trenching of in the anomalous zone at 200meter interval
- Geophysical study of the block with emphasis on the anomaly zone.
- To drill at the identified locale as per MEMC rules 2015 to decipher its depth persistent and subsurface continuity.
- Carry out mineral exploration as per Minerals (Evidence of Mineral Contents) Rule-2015, Mineral (Auction) Rules-2015 and MMDR Amendment act- 2015, which in turn to facilitate the Government of Madhya Pradesh for auctioning of the block.
- Demarcate zone of various zones PGE, Gold & Base metal ore bearing zone, if any & estimate grade wise resource in the study area as per MEMC norms from G-3 level of exploration.

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2.0 PREVIOUS WORK:

G4 level exploration has been conducted through NMET funded project "Reconnaissance Survey (G4 stage) for PGE, Gold and REE in Maneri – Sitapala Block (80 sq. km), Balaghat District, Madhya Pradesh (Toposheet No. 64C/11)" by Gemcokati Exploration Pvt. Ltd. Before that geological work in the Block and its surrounding area has been limited due to challenging terrain and security concerns linked to Naxalite activity. Historical studies include mapping by Dr. S.N. Sarkar in 1949-50, chromite exploration by R.K. Sharma and Harbans Kumar in 1968, and regional integrated surveys by V.D. Mahajan in 1977. Geophysical studies were enhanced by the National Aero Geophysical Mapping Programme (NAGMP) conducted by the Geological Survey of India (GSI) between 2017-2019, which produced high-resolution magnetic and gamma-ray spectrometric maps. However, no systematic ground geophysical or geochemical surveys were carried out in the block prior to this project. Geochemical coverage under the National Geochemical Mapping Programme (NGCM) has also been absent.

3.0 BLOCK DESCRIPTION:

TIMKITOLA (G3)						
	LONGITUDE			LATITUDE		
(A)	80°	36'	09.24"	21°	24'	07.95"
(B)	80°	37'	44.48"	21°	24'	07.84"
(C)	80°	37'	04.34"	21°	22'	58.83"
(D)	80°	35'	22.64"	21°	22'	59.44"

4.0 PLANNED METHODOLOGY

- **Detailed Geological Mapping:** The detailed geological mapping (DM) on a 1:4,000 scale is to be carried out in and around 6 sq km area by DGPS & total station. The detailed geological map will be finalized by adding physical features beyond geological features, attitudes of beds, structural features etc. to be picked up and plotted during mapping.

- **Geophysical study:** Ground magnetic, IP & SP survey are to be conducted to delineate sub-surface mineralization.

- **Close space trenching:** Multiple trenches are to be excavated at 200meter interval in anomalous zone to collect channel samples, study & identify the PGE, Gold & base metal bearing zone

- **Drilling:** The anomalous zone will be drilled 12 boreholes as per MEMC 2015 at 200meters strike interval, (11 nos. down to 90m each & 1 drill point down to 150m = 1150m).

- **Geochemical sampling:** BRSs, trench samples & Core samples etc. will be collected for analysis.

- **Chemical Analysis:** XRF, PGE by fire assay, Gold by fire assay and ICP analysis of major oxides, PGE content, gold content & trace element study of selected samples.

- **Petrographic and minerographic studies:** Petrographic & minerographic studies of possible host rock.

- **Exploration Report:** Generate a detailed report (Final G3 stage Report), identifying and establishing area worthy of being raised to a G-2 scheme as per MEMC-2015.Data generated from G-3 level works, shall be presented in the Report as per the laid guidelines.

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5.0 NATURE, QUANTUM ANDT ARGET:

Proposed Quantum of Work			
Sr. No.	**Item of work**	**Unit**	**Proposed Quantum of work**
1	Detailed Mapping (on1:4000 Scale)	sq. km.	6
2	Geophysical study (IP cum Resistivity, S.P., magnetic)	Line. Km	31.5
3	Trenching	Cu.m	150
4	Core Drilling	m.	960
5	Laboratory Studies	Nos.	
6	Chemical Analysis: for CaO, MgO, SiO_2, MnO, K_2O, Fe_2O_3, Al_2O_3, Na_2O, TiO_2, SO_3 P_2O_5, Cr_2O_3, ZnO, V_2O_5 & LOI	Nos.	440 (BRS 50 + Trech 100 + Core samples 250+10% check)
7	PGE by NiS fire assay	Nos.	990(BRS 50 + Trech 150 + Core samples 700+10% check)
9	Gold by fire assay	Nos.	165(BRS 2 + Trech (6x3) =18 + Core samples (12 Bhx10) =120+10% check)
10	REE & trace elements by ICP-MS		154(BRS 2 + Trech (6x3) =18 + Core samples (12 Bhx10) =120+10% check)
11	Bulk Density Determinations	Nos.	14
12	Report Preparation	Nos.	5

Borehole Spacing (as per MEMC 2015)

Type of deposit	Lenses, pockets, stockworks, irregular shaped modest to small sized bodies.
G3 stage	14 boreholes at 200meters strike interval

6.0 Exploratory drilling

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- The total block area is 6.00 sq.km. The area is proposed for exploration by drilling with 12 number of boreholes in the anomalous zone as per MEMC 2015 at 200meters strike interval with a stratigraphic borehole upto 150m.

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7.0 TIME SCHEDULE

PRELIMINARY EXPLORATION FOR PGE, GOLD & BASEMETALS IN TIMKITOLA BLOCK (G3) [6 SQ. KM. DISTRICT- BALAGHAT,MADHYA PRADESH, REVIEW AFTER - 4 & 8 MONTHS, PROJECT DURATION - 12 MONTHS.															
Sl No.	**Item of Work**	**1**	**2**	**3**	**4**		**5**	**6**	**7**	**8**		**9**	**10**	**11**	**12**
1	Forest clearance														
2	Detailed Mapping (1:4,000), Surface Sampling and Chemical analysis, Geophysical survey														
3	Trenching & Chem analysis														
4	Drilling														
5	Laboratory studies														
6	Interpretation of analytical data, finalization of lithologs, plates														
7	Review & report preparation / Peer review														
8	Final submission														

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8.0 References:

1. NMET funded “Reconnaissance Survey (G4 stage) for PGE, Gold and REE in Maneri – Sitapala Block (80 sq. km), Balaghat District, Madhya Pradesh “(Toposheet No. 64C/11), Gemcokati exploration private limited.
2. Sarkar SN (1950): Progress report for the field season, 1949-50: Report On Systematic Mapping (CRO: 222352).
3. Sharma RK, Harbans Kumar (1968): Report on search for chromite occurrences in parts of Balaghat district, M.P. (CR-006093).
4. Mahajan VD (1989): Report on Regional Integrated Surveys in parts of Malanjkhand Extension area (South Block), Balaghat District (MP). (CR-018798).
5. Dawande et.al. (1999): Report on resource survey for dimension Stones in parts of Balaghat and Seoni Districts, Madhya Pradesh
6. Pradeep Mawar (2012): Thematic Mapping of Archaean Gneiss, Nandgaon Group, Dongargarh Granite, Gondia District, Maharashtra. (CR-22770)

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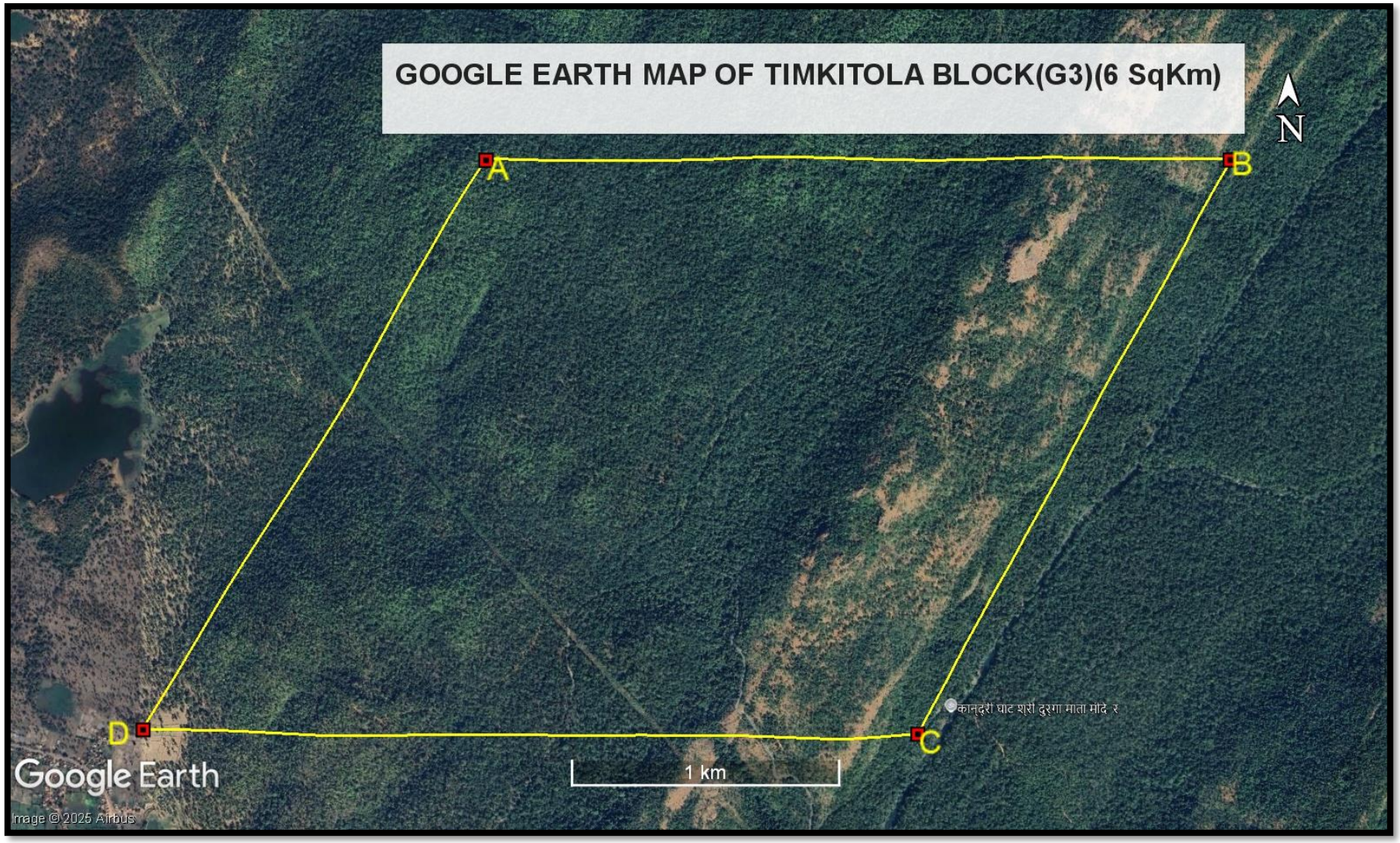
1. TIMKITOLA BLOCK ON GOOGLE EARTH MAP. [Toposheet-64C/11]



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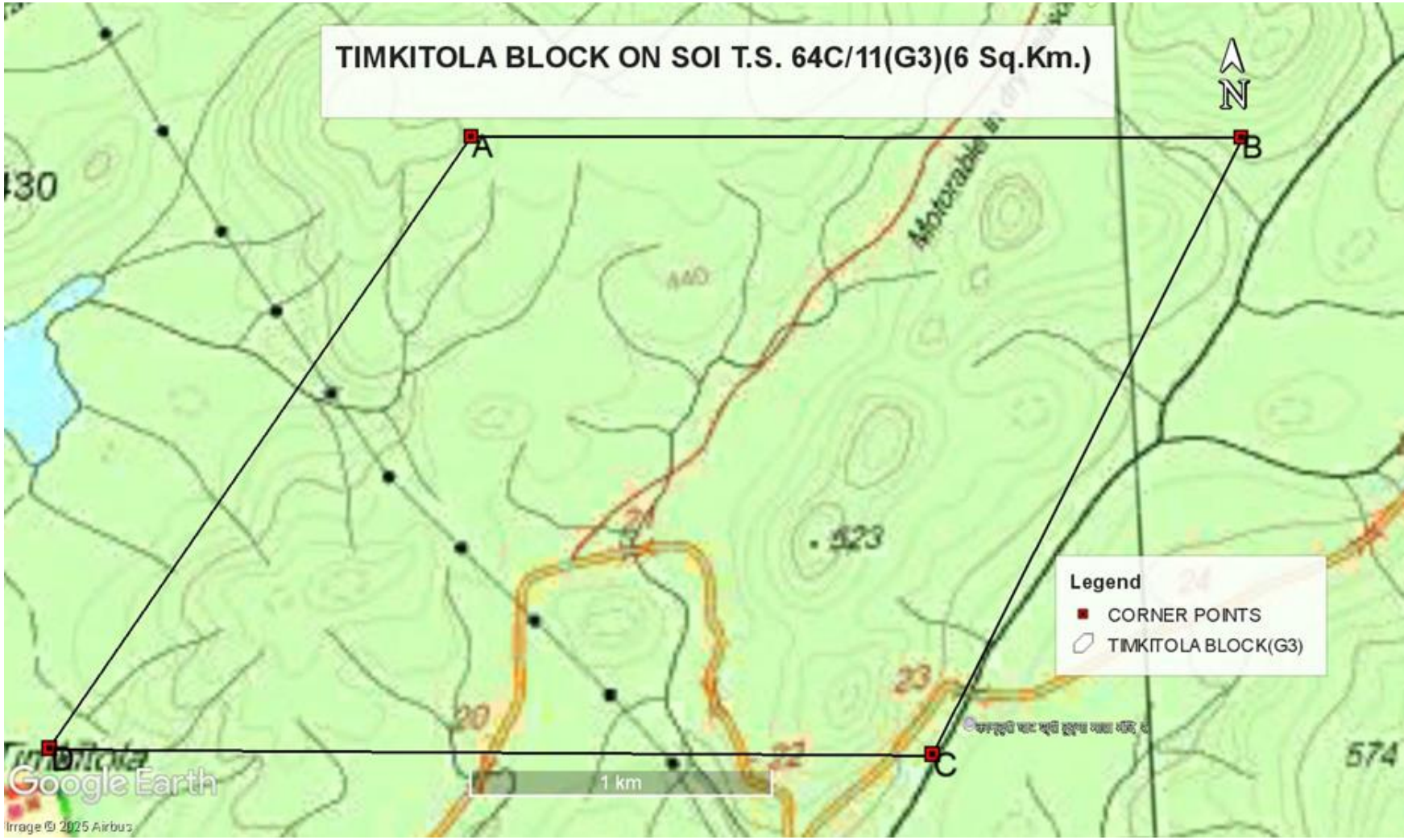
2. LOCATION OF THE PROPOSED TIMKITOLA DEMARCATED ON SURVEY OF INDIA (SOI) TOPOSHEET64C/11.



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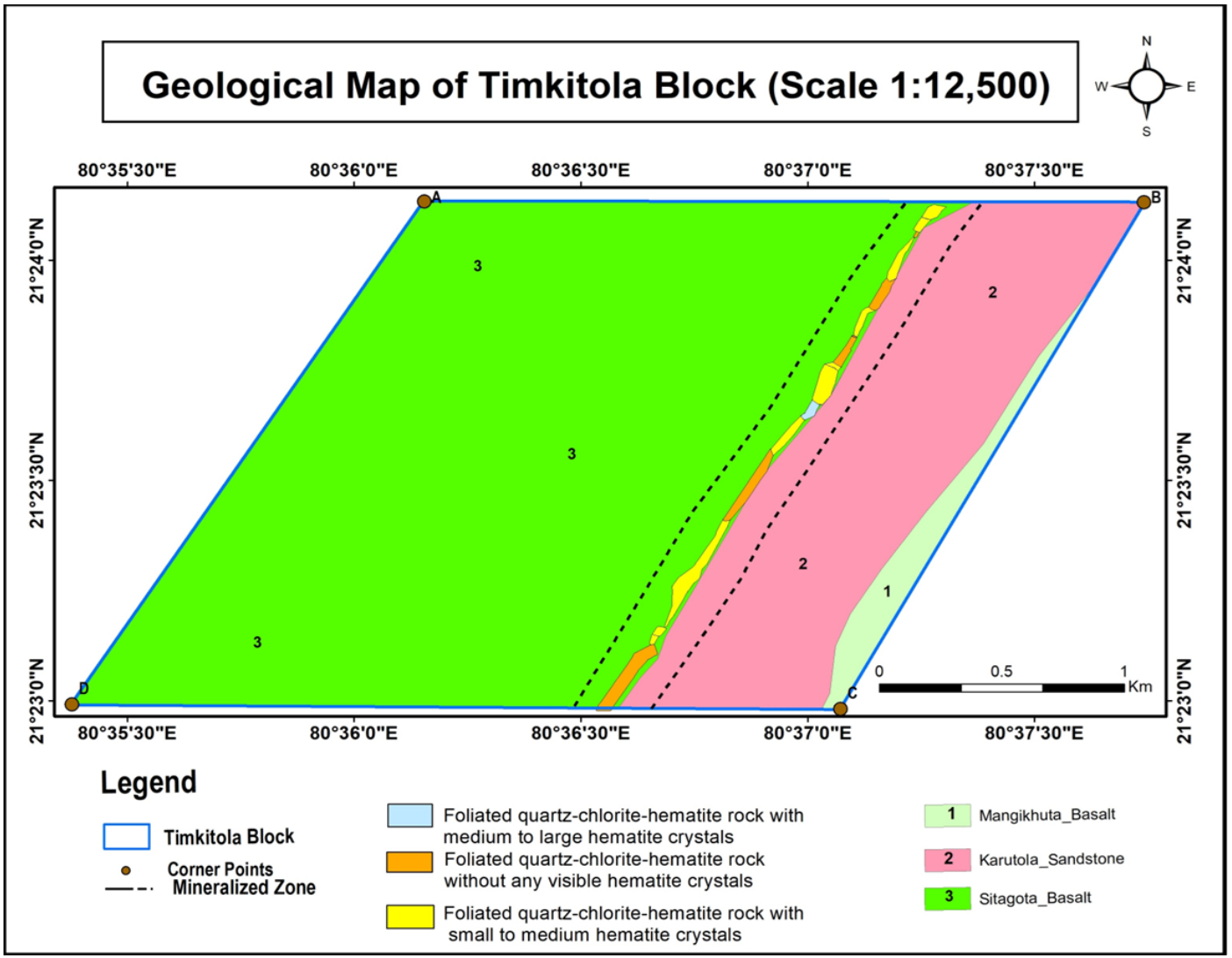
3. BLOCK AREA ON GEOLOGICAL MAP



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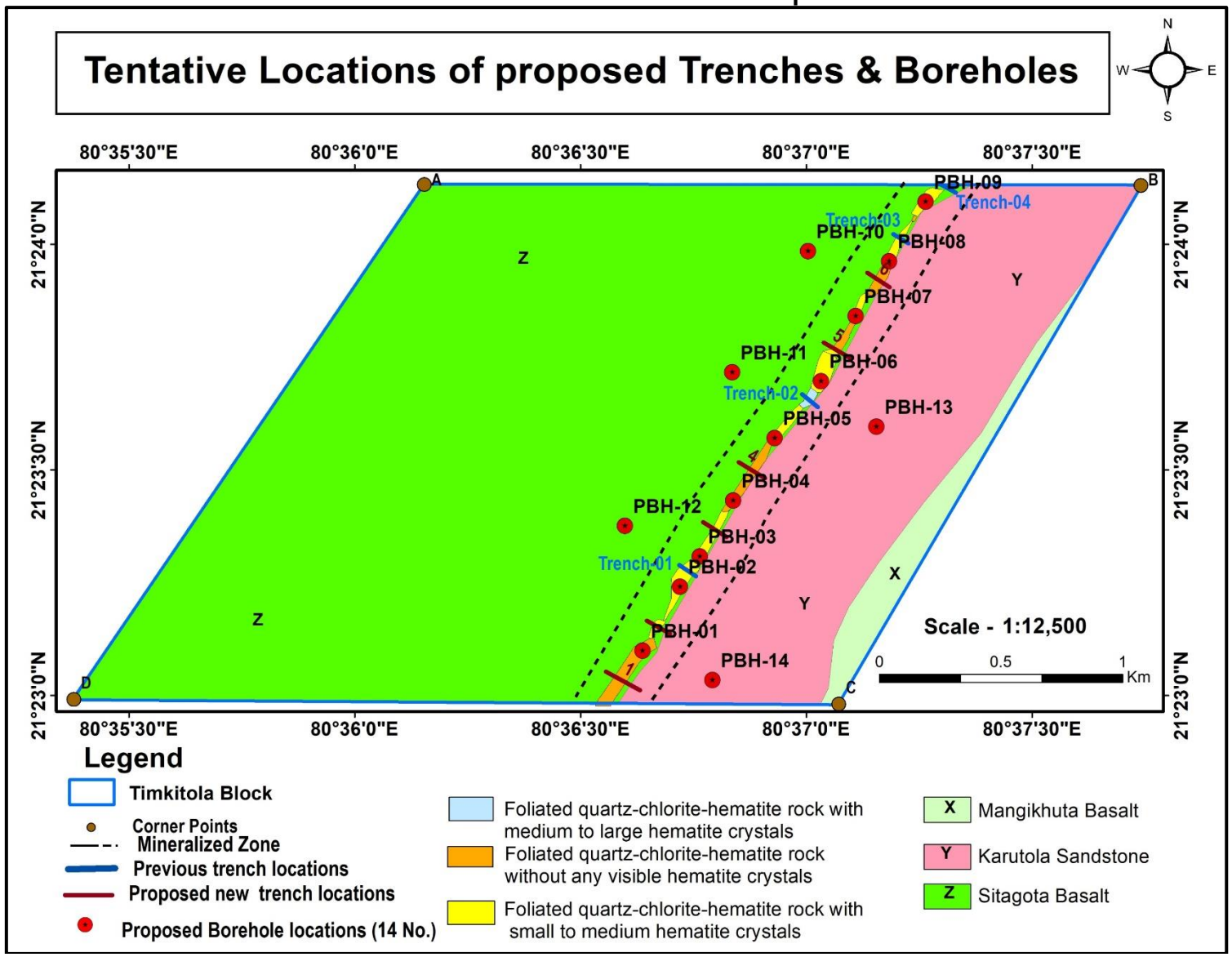
4. Bore Hole Location Map



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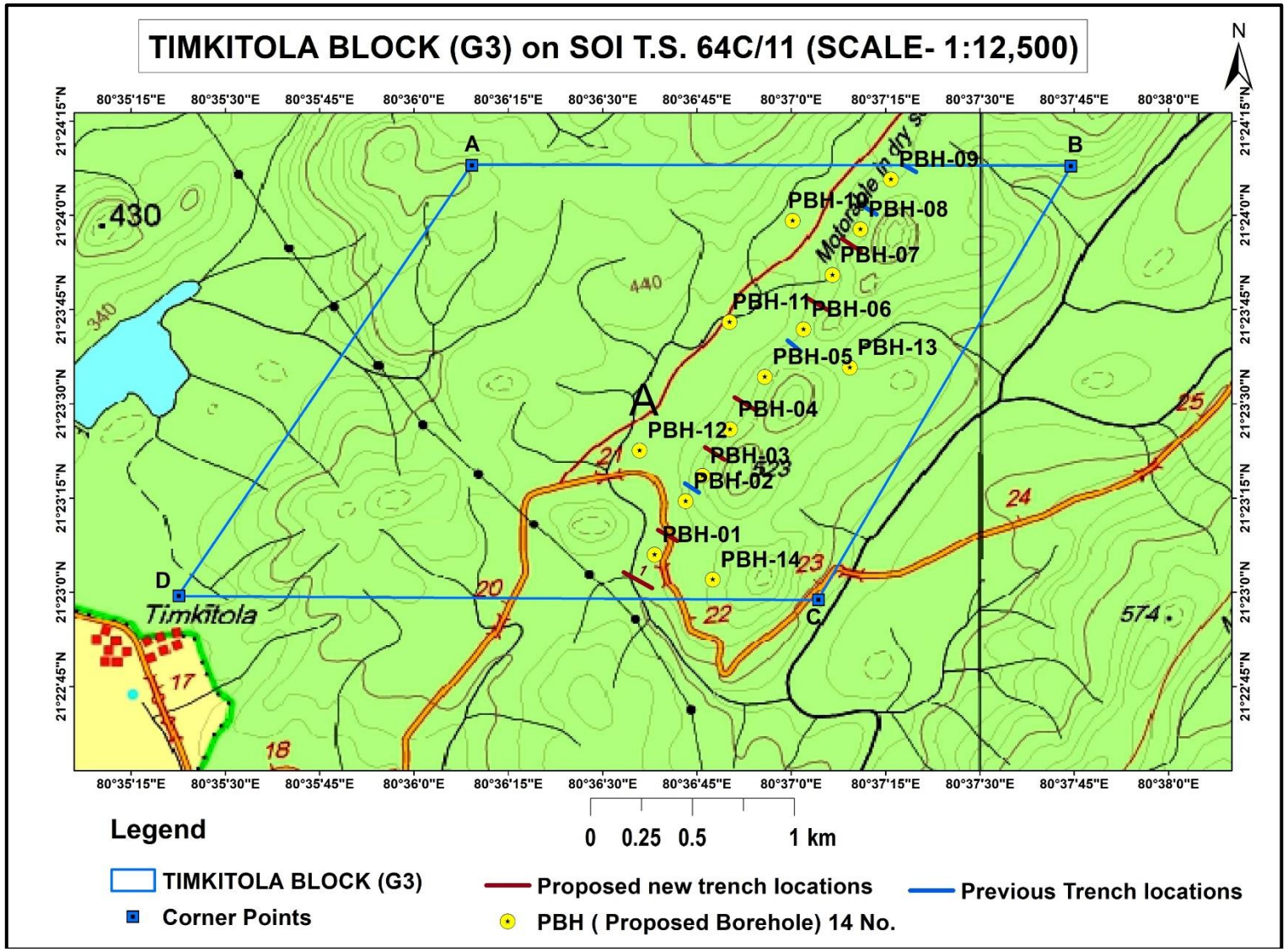
5. Bore Hole Location Map



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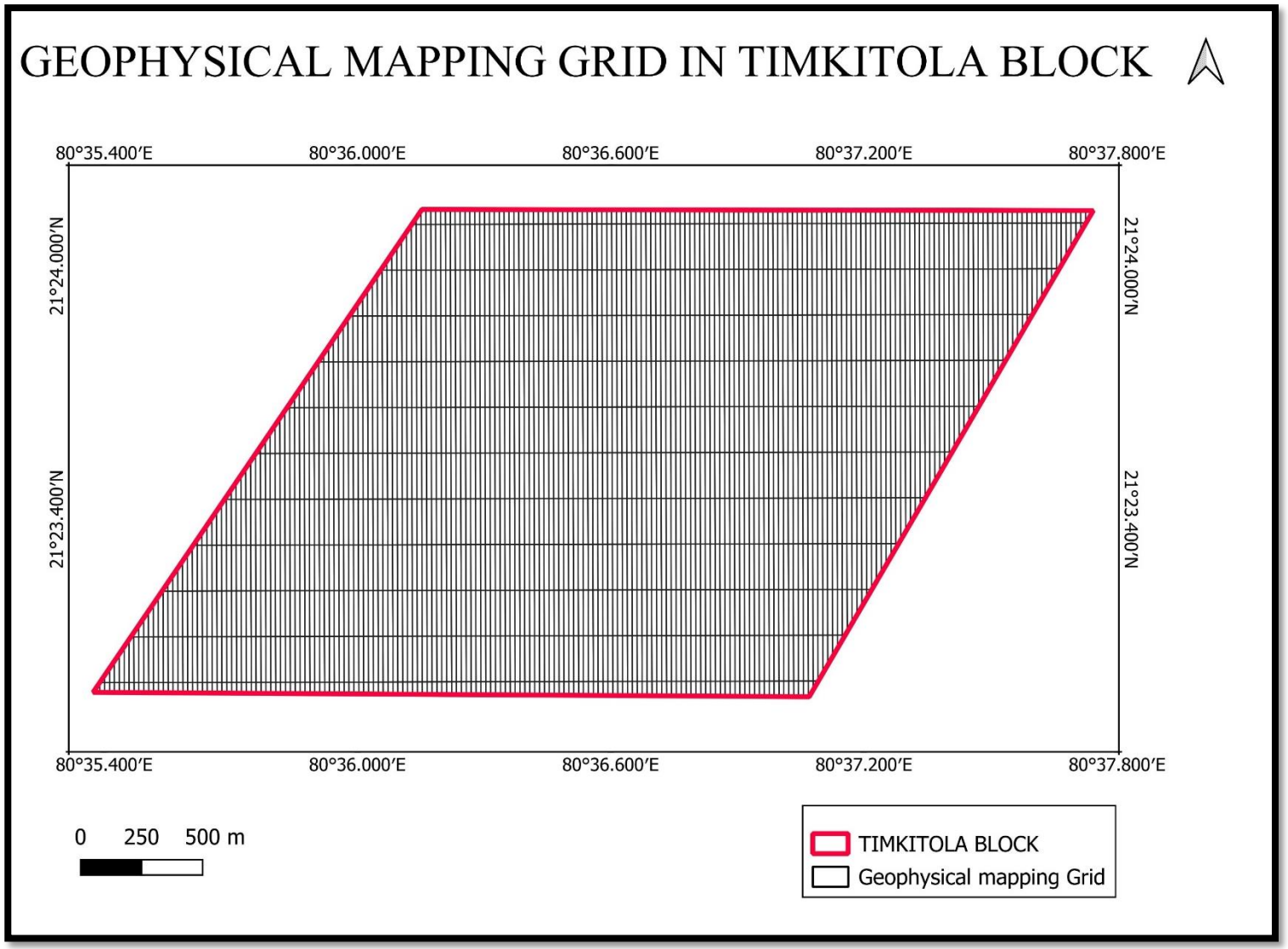
6. Gridlines for geophysical survey



Method:
I.P. cum-resistivity, S.P., magnetic

- **200m TRAVERSE INTERVAL**
- **20 m STATION INTERVAL**

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GEMCO KATI

Annexture-1
PGE ANALYSIS

S.N.	Sample Id	Rock type	Latitude	Longitude	Pt	Pd	Ru	Rh	Ir	Os	Total PGE (in ppm)
1	240208-08	Quartz hematite chlorite rock, Surface sample from shear or mixed zone near Sitagota basalt & Karutola sandstone contact	21° 23'50.44"	80° 37' 6.53"	BDL	BDL	BDL	BDL	BDL	BDL	0.000
2	240210-08	Quartz hematite chlorite rock, Surface sample from shear or mixed zone near Sitagota basalt & Karutola sandstone contact	21° 23'39.96"	80° 37' 1.42"	0.01	BDL	0.02	BDL	BDL	BDL	0.030
3	240210-10	Quartz hematite chlorite rock, Surface sample from shear or mixed zone near Sitagota basalt & Karutola sandstone contact	21° 23'39.40"	80° 37' 1.04"	0.01	BDL	0.02	0.01	BDL	BDL	0.040
4	240209-02	Grey colour Metal rich rock, Surface sample from shear or mixed zone near Sitagota basalt & Karutola sandstone contact	21° 23'45.34"	80° 37' 2.54"	BDL	BDL	0.03	BDL	BDL	BDL	0.030
5	240209-02a	Grey colour Metal rich rock, Surface sample from shear or mixed zone near Sitagota basalt & Karutola sandstone contact	21° 23'45.06"	80° 37' 2.60"	BDL	BDL	0.04	0.01	BDL	BDL	0.050
6	240209-02b	Grey colour Metal rich rock, Surface sample from shear or mixed zone near Sitagota basalt & Karutola sandstone contact	21° 23'45.26"	80° 37' 2.08"	0.02	BDL	0.02	BDL	BDL	BDL	0.040
7	240209-03	Grey colour Metal rich rock with fine hematite crystals, Surface sample from shear or mixed zone near Sitagota basalt & Karutola sandstone contact	21° 23'43.70"	80° 37' 2.30"	BDL	BDL	0.03	BDL	BDL	BDL	0.030
8	240209-04	Quartz hematite chlorite rock, Surface sample from shear or mixed zone near Sitagota basalt & Karutola sandstone contact	21° 23'41.75"	80° 37' 1.10"	0.01	BDL	0.02	0.01	BDL	BDL	0.040
9	240210-03	Quartz hematite chlorite rock, Surface sample from shear or mixed zone near Sitagota basalt & Karutola sandstone contact	21° 23'41.44"	80° 36' 58.93"	BDL	BDL	BDL	BDL	BDL	BDL	0.000
10	240210-06	Quartz hematite chlorite rock, Surface sample from shear or mixed zone near Sitagota basalt & Karutola sandstone contact	21° 23'40.85"	80° 37' 0.54"	0.01	BDL	BDL	BDL	BDL	BDL	0.010
11	240210-06	Quartz hematite chlorite rock, Surface sample from shear or mixed zone near Sitagota basalt & Karutola sandstone contact	21° 23'40.85"	80° 37' 0.54"	0.01	BDL	BDL	BDL	BDL	BDL	0.010
12	240212-07	Quartz hematite chlorite rock, Surface sample from shear or mixed zone near Sitagota basalt & Karutola sandstone contact	21° 23'37.53"	80° 36' 57.87"	0.03	BDL	0.02	BDL	BDL	BDL	0.050
13	240213-05	Quartz hematite chlorite rock, Surface sample from shear or mixed zone near Sitagota basalt & Karutola sandstone contact	21° 23'24.58"	80° 36' 49.24"	BDL	BDL	BDL	BDL	BDL	BDL	0.000

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S.N.	Sample Id	Rock type	Latitude	Longitude	Pt	Pd	Ru	Rh	Ir	Os	Total PGE (in ppm)
14	240229-01	Quartz hematite chlorite rock, Surface sample from shear or mixed zone near Sitagota basalt & Karutola sandstone contact	21° 24' 0.38"	80° 37' 12.64"	BDL	BDL	BDL	BDL	BDL	BDL	0.000
15	240229-R05	Grey colour metallic lustre, iron rich rock with, Surface sample from shear or mixed zone near Sitagota basalt & Karutola sandstone contact	21° 23'58.35"	80° 37' 9.35"	BDL	BDL	0.03	BDL	BDL	BDL	0.030
16	240301-08	Grey colour metallic lustre, iron rich rock with, Surface sample from shear or mixed zone near Sitagota basalt & Karutola sandstone contact	21° 24' 4.99"	80° 37' 14.54"	BDL	BDL	0.01	BDL	BDL	BDL	0.010
17	240304-14	Fine grained sandstone with metallic veins, Surface sample from shear or mixed zone near Sitagota basalt & Karutola sandstone contact	21° 23'40.32"	80° 37' 1.96"	BDL	BDL	0.02	BDL	BDL	BDL	0.020
18	240208-08A	Quartz hematite chlorite rock, Surface sample from shear or mixed zone near Sitagota basalt & Karutola sandstone contact	21° 23'50.44"	80° 37' 6.53"	BDL	BDL	BDL	BDL	BDL	BDL	0.000
19	200623-08	Quartz hematite chlorite rock from Shear or mixed zone, near Sitagota basalt & Karutola sandstone contact	21° 23'18.18"	80° 36' 43.73"	0.19	BDL	0.23	0.04	0.02	BDL	0.480
20	200623-01	Quartz hematite chlorite rock from Shear or mixed zone, near Sitagota basalt & Karutola sandstone contact	21° 23'16.45"	80° 36' 43.20"	0.13	0.01	0.13	0.02	0.02	BDL	0.310
21	200623-02	Quartz hematite chlorite rock from Shear or mixed zone, near Sitagota basalt & Karutola sandstone contact	21° 23'15.49"	80° 36' 43.45"	BDL	0.11	0.2	BDL	BDL	BDL	0.310
22	200623-03	Quartz hematite chlorite rock from Shear or mixed zone, near Sitagota basalt & Karutola sandstone contact	21° 23'14.99"	80° 36' 43.28"	0.11	BDL	BDL	BDL	0.01	BDL	0.120
23	200623-03a	Quartz hematite chlorite rock from Shear or mixed zone, near Sitagota basalt & Karutola sandstone contact	21° 23'14.99"	80° 36' 43.28"	0.1	BDL	0.04	BDL	0.01	BDL	0.150
24	200623-04	Quartz hematite chlorite rock from Shear or mixed zone, near Sitagota basalt & Karutola sandstone contact	21° 23'14.30"	80° 36' 42.87"	0.08	BDL	0.09	0.01	0.01	BDL	0.190
25	200623-05	Quartz hematite chlorite rock from Shear or mixed zone, near Sitagota basalt & Karutola sandstone contact	21° 23'14.99"	80° 36' 43.21"	0.05	BDL	BDL	BDL	BDL	BDL	0.050
26	200623-06	Quartz hematite chlorite rock from Shear or mixed zone, near Sitagota basalt & Karutola sandstone contact	21° 23'16.94"	80° 36' 42.87"	0.11	BDL	0.11	0.01	0.03	BDL	0.260
27	200623-07	Quartz hematite chlorite rock from Shear or mixed zone, near Sitagota basalt & Karutola sandstone contact	21° 23'17.51"	80° 36' 43.79"	0.13	BDL	0.11	0.01	0.02	BDL	0.270

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S.N.	Sample Id	Rock type	Latitude	Longitude	Pt	Pd	Ru	Rh	Ir	Os	Total PGE (in ppm)
28	200623-09	Quartz hematite chlorite rock from Shear or mixed zone, near Sitagota basalt & Karutola sandstone contact	21° 23'19.40"	80° 36' 44.14"	0.11	BDL	0.04	BDL	0.01	BDL	0.160
29	200623-09	Quartz hematite chlorite rock from Shear or mixed zone, near Sitagota basalt & Karutola sandstone contact	21° 23'19.40"	80° 36' 44.14"	0.11	BDL	0.13	0.01	0.01	BDL	0.260
30	200623-10	Quartz hematite chlorite rock from Shear or mixed zone, near Sitagota basalt & Karutola sandstone contact	21° 23'19.36"	80° 36' 43.46"	0.11	0.03	0.09	0.01	0.02	BDL	0.260
31	290423-2	Quartz hematite chlorite rock from Shear or mixed zone, near Sitagota basalt & Karutola sandstone contact	21° 23'12.34"	80° 36' 42.74"	0.09	0	0.11	0.01	0.02	BDL	0.230
32	290423-3	Quartz hematite chlorite rock from Shear or mixed zone, near Sitagota basalt & Karutola sandstone contact	21° 23' 9.80"	80° 36' 40.98"	0.07	0	0.11	0.02	0.02	BDL	0.220
33	290423-04	Quartz hematite chlorite rock from Shear or mixed zone, near Sitagota basalt & Karutola sandstone contact	21°23'16.48"	80°36'43.317"	0.1	0.01	0.04	0.02	0.08	BDL	0.250
34	240629-01	Channel sample, quartz hematite chlorite rock from Shear or mixed zone, near Sitagota basalt & Karutola sandstone contact	21°23'11.35"	80°36'41.80"	BDL	BDL	BDL	BDL	BDL	BDL	0.000
35	240629-01		21°23'11.35"	80°36'41.80"	BDL	BDL	0.01	BDL	BDL	BDL	0.010
36	240629-01		21°23'11.35"	80°36'41.80"	BDL	BDL	0.01	BDL	BDL	BDL	0.010
37	240629-01		21°23'11.35"	80°36'41.80"	0.01	0.01	BDL	BDL	BDL	BDL	0.020
38	240629-01		21°23'11.35"	80°36'41.80"	0.01	BDL	0.01	0.01	BDL	BDL	0.030
39	240629-01		21°23'11.35"	80°36'41.80"	BDL	BDL	BDL	BDL	BDL	BDL	0.000
40	240702-01	Channel sample, quartz hematite chlorite rock from Shear or mixed zone, near Sitagota basalt & Karutola sandstone contact	21°23' 10.76"	80°36' 41.53"	0.02	BDL	BDL	BDL	BDL	BDL	0.020
41	240702-01				0.01	BDL	0.01	BDL	BDL	BDL	0.020
42	240702-01				BDL	BDL	BDL	BDL	BDL	BDL	0.000
43	240702-01				0.01	BDL	BDL	0.01	BDL	BDL	0.020
44	240702-01				0.01	0.01	BDL	BDL	BDL	BDL	0.020
45	240702-01				0.01	BDL	BDL	BDL	BDL	BDL	0.010
46	MST-01 (7m to 8m)	Loose boulders of sandstone & quartz hematite chlorite rock	21°23'16.3"N	80°36'44.6"E	BDL	BDL	0.006	BDL	BDL	BDL	0.006
47	MST-01 (8m to 9m)	Loose boulders of sandstone & metallic lustre grey colour iron rich rock.	21°23'16.3"N	80°36'44.6"E	BDL	BDL	BDL	BDL	0.007	BDL	0.007
48	MST-01 (9m to 10m)	Quartz hematite chlorite rock & sandstone boulders	21°23'16.3"N	80°36'44.6"E	BDL	BDL	BDL	BDL	BDL	BDL	0.000
49	MST-01 (10m to 11m)	Quartz hematite chlorite rock	21°23'16.3"N	80°36'44.6"E	BDL	BDL	BDL	BDL	BDL	BDL	0.000
49	MST-01 (10m to 11m)	Quartz hematite chlorite rock	21°23'16.3"N	80°36'44.6"E	0.017	BDL	BDL	BDL	BDL	BDL	0.017

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50	MST-01 (12m to 13m)	Quartz hematite chlorite rock	21°23'16.3"N	80°36'44.6"E	BDL	BDL	0.008	0.005	BDL	BDL	0.013
51	MST-01 (13m to 14m)	Quartz hematite chlorite rock	21°23'16.3"N	80°36'44.6"E	BDL	BDL	BDL	BDL	BDL	BDL	0.000
52	MST-01 (14m to 15m)	Quartz hematite chlorite rock	21°23'16.3"N	80°36'44.6"E	BDL	BDL	BDL	BDL	BDL	BDL	0.000
53	MST-01 (15m to 16m)	Quartz hematite chlorite rock	21°23'16.3"N	80°36'44.6"E	BDL	BDL	BDL	BDL	BDL	BDL	0.000
54	MST-01 (17m to 18m)	Quartz hematite chlorite rock	21°23'16.3"N	80°36'44.6"E	0.009	BDL	BDL	BDL	BDL	BDL	0.009
55	MST-01 (18m to 19m)	Quartz hematite chlorite rock	21°23'16.3"N	80°36'44.6"E	BDL	BDL	BDL	BDL	BDL	BDL	0.000
56	MST-01 (20m to 21m)	Quartz hematite chlorite rock	21°23'16.3"N	80°36'44.6"E	BDL	BDL	0.019	0.005	BDL	BDL	0.024
57	MST-01 (21m to 22m)	Quartz hematite chlorite rock	21°23'16.3"N	80°36'44.6"E	BDL	BDL	0.01	0.005	BDL	BDL	0.015
58	MST-01 (22m to 23m)	Quartz hematite chlorite rock	21°23'16.3"N	80°36'44.6"E	BDL	BDL	BDL	BDL	BDL	BDL	0.000
59	MST-01 (24m to 25m)	Quartz hematite chlorite rock	21°23'16.3"N	80°36'44.6"E	BDL	BDL	BDL	0.006	BDL	BDL	0.006
60	MST-01 (1m to 2m)	Quartz hematite chlorite rock	21°23'16.3"N	80°36'44.6"E	BDL	BDL	0.006	BDL	BDL	BDL	0.006
61	MST-01 (11m to 12m)	Quartz hematite chlorite rock	21°23'16.3"N	80°36'44.6"E	BDL	BDL	0.006	BDL	BDL	BDL	0.006
62	MST-01 (16m to 17m)	Quartz hematite chlorite rock	21°23'16.3"N	80°36'44.6"E	BDL	BDL	0.007	BDL	BDL	BDL	0.007
63	MST-01 (19m to 20m)	Quartz hematite chlorite rock	21°23'16.3"N	80°36'44.6"E	0.0744	BDL	BDL	0.008	BDL	BDL	0.082
64	MST-01 (23m to 24m)	Quartz hematite chlorite rock	21°23'16.3"N	80°36'44.6"E	BDL	BDL	BDL	BDL	BDL	BDL	0.000
65	MST-02(0m to 1m)	Quartz hematite chlorite rock	21°23'38.9"N	80°37'0.9"E	0.083	BDL	0.01	BDL	BDL	BDL	0.093
66	MST-02(4m to 5m)	Quartz hematite chlorite rock	21°23'38.9"N	80°37'0.9"E	0.072	BDL	BDL	0.017	0.007	BDL	0.096
67	MST-02(6m to 7m)	Quartz hematite chlorite rock	21°23'38.9"N	80°37'0.9"E	0.093	BDL	BDL	BDL	BDL	BDL	0.093
68	MST-02(9m to 10m)	Quartz hematite chlorite rock	21°23'38.9"N	80°37'0.9"E	0.094	BDL	BDL	0.011	BDL	BDL	0.105
69	MST-02(14m to 15m)	Quartz hematite chlorite rock	21°23'38.9"N	80°37'0.9"E	0.096	BDL	0.04	BDL	BDL	BDL	0.136
70	MST-02(16m to 17m)	Metallic lustre hematite bearing iron rich rock	21°23'38.9"N	80°37'0.9"E	0.099	BDL	0.03	BDL	BDL	BDL	0.129
70	MST-02(16m to 17m)	Metallic lustre hematite bearing iron rich rock	21°23'38.9"N	80°37'0.9"E	0.015	0.012	BDL	BDL	0.04	BDL	0.067
71	MST-02(22m to 23m)	Metallic lustre hematite bearing iron rich rock	21°23'38.9"N	80°37'0.9"E	0.12	BDL	BDL	BDL	BDL	BDL	0.120
72	MST-02 (10m to 11m)	Metallic lustre hematite bearing iron rich rock	21°23'38.9"N	80°37'0.9"E	0.02224	0.0099	BDL	BDL	BDL	BDL	0.032

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73	MST-02 (18m to 19m)	Metallic lustre hematite bearing iron rich rock	21°23'38.9"N	80°37'0.9"E	0.01612	BDL	BDL	0.005	BDL	BDL	0.021
74	MST-02 (23m to 24m)	Metallic lustre hematite bearing iron rich rock	21°23'38.9"N	80°37'0.9"E	0.01816	0.0066	BDL	BDL	BDL	BDL	0.025
75	MST-02 (24m to 25m)	Metallic lustre hematite bearing iron rich rock	21°23'38.9"N	80°37'0.9"E	0.01714	BDL	BDL	BDL	BDL	BDL	0.017
76	MST-03(1m to 2m)	Quartz hematite chlorite rock	21°24'0.6"N	80°37'13.0"E	0.105	BDL	0.03	BDL	BDL	BDL	0.135
77	MST-03(4 to 5m)	Gravels of metallic lustre iron rich rock	21°24'0.6"N	80°37'13.0"E	0.088	BDL	0.02	BDL	BDL	BDL	0.108
78	MST-03(5m to 6m)	Gravels of metallic lustre iron rich rock	21°24'0.6"N	80°37'13.0"E	0.069	BDL	BDL	BDL	BDL	BDL	0.069
79	MST-03(7m to 8m)	Gravels of metallic lustre iron rich rock	21°24'0.6"N	80°37'13.0"E	0.098	BDL	0.02	BDL	BDL	BDL	0.118
80	MST-03(11m to 12m)	Gravels of metallic lustre iron rich rock	21°24'0.6"N	80°37'13.0"E	0.109	BDL	0.05	BDL	BDL	BDL	0.159
81	MST-03(14m to 15m)	Gravels of metallic lustre iron rich rock	21°24'0.6"N	80°37'13.0"E	0.082	0.008	0.03	0.01	BDL	BDL	0.130
81	MST-03(14m to 15m)	Gravels of metallic lustre iron rich rock	21°24'0.6"N	80°37'13.0"E	0.019	BDL	BDL	BDL	BDL	BDL	0.019
82	MST-03(17m to 18m)	Gravels of metallic lustre iron rich rock	21°24'0.6"N	80°37'13.0"E	0.09	BDL	0.03	BDL	BDL	BDL	0.120
83	MST-03(19m to 20m)	Gravels of metallic lustre iron rich rock	21°24'0.6"N	80°37'13.0"E	0.043	BDL	BDL	BDL	BDL	BDL	0.043
84	MST-03 (13m to 14m)	Gravels of metallic lustre iron rich rock	21°24'0.6"N	80°37'13.0"E	0.02326	0.0066	BDL	BDL	BDL	BDL	0.030
85	MST-04 (0m to 1m)	Gravels of metallic lustre iron rich rock	21°24'7.5"N	80°37'18.7"E	0.0471	0.0492	BDL	BDL	BDL	BDL	0.096
85	MST-04 (0m to 1m)	Gravels of metallic lustre iron rich rock	21°24'7.5"N	80°37'18.7"E	0.021	BDL	BDL	BDL	BDL	BDL	0.021
86	MST-04 (1m to 2m)	Gravels of metallic lustre iron rich rock	21°24'7.5"N	80°37'18.7"E	BDL	BDL	0.007	BDL	BDL	BDL	0.007
87	MST-04 (2m to 3m)	Quartz hematite chlorite rock	21°24'7.5"N	80°37'18.7"E	BDL	BDL	BDL	BDL	BDL	BDL	0.000
88	MST-04 (3m to 4m)	Quartz hematite chlorite rock	21°24'7.5"N	80°37'18.7"E	0.025	BDL	BDL	BDL	BDL	BDL	0.025
89	MST-04 (4m to 5m)	Quartz hematite chlorite rock	21°24'7.5"N	80°37'18.7"E	0.232	BDL	0.031	BDL	BDL	BDL	0.263
90	MST-04 (5m to 6m)	Quartz hematite chlorite rock	21°24'7.5"N	80°37'18.7"E	BDL	BDL	BDL	BDL	BDL	BDL	0.000
91	MST-04 (6m to 7m)	Quartz hematite chlorite rock	21°24'7.5"N	80°37'18.7"E	BDL	BDL	BDL	0.009	BDL	BDL	0.009
91	MST-04 (6m to 7m)	Quartz hematite chlorite rock	21°24'7.5"N	80°37'18.7"E	0.045	0.012	0.026	0.012	0.015	BDL	0.11
92	MST-04 (7m to 8m)	Quartz hematite chlorite rock	21°24'7.5"N	80°37'18.7"E	BDL	BDL	BDL	BDL	BDL	BDL	0.000
93	MST-04 (8m to 9m)	Quartz hematite chlorite rock	21°24'7.5"N	80°37'18.7"E	0.028	BDL	BDL	BDL	BDL	BDL	0.028

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S.N.	Sample Id	Rock type	Latitude	Longitude	Pt	Pd	Ru	Rh	Ir	Os	Total PGE (in ppm)
94	MST-04 (9m to 10m)	Quartz hematite chlorite rock	21°24'7.5"N	80°37'18.7"E	BDL	BDL	BDL	BDL	BDL	BDL	0.000
95	MST-04 (10m to 11m)	Quartz hematite chlorite rock	21°24'7.5"N	80°37'18.7"E	BDL	BDL	BDL	BDL	BDL	BDL	0.000
96	MST-04 (11m to 12m)	Quartz hematite chlorite rock	21°24'7.5"N	80°37'18.7"E	0.0221	BDL	BDL	BDL	BDL	BDL	0.022
97	MST-04(12 to 13m)	Quartz hematite chlorite rock	21°24'7.5"N	80°37'18.7"E	0.076	BDL	0.01	BDL	BDL	BDL	0.086
98	MST-04(14 to 15m)	Metallic lustre iron rich rock	21°24'7.5"N	80°37'18.7"E	0.076	BDL	0.018	0.01	BDL	BDL	0.104
99	MST-04(18to 19m)	Gravels of metallic lustre iron rich rock	21°24'7.5"N	80°37'18.7"E	0.089	BDL	0.02	0.012	BDL	BDL	0.121
99	MST-04(18to 19m)	Gravels of metallic lustre iron rich rock	21°24'7.5"N	80°37'18.7"E	0.025	BDL	BDL	BDL	0.08	BDL	0.105
100	MST-04(20to 21m)	Quartz hematite chlorite rock	21°24'7.5"N	80°37'18.7"E	0.088	BDL	0.016	BDL	BDL	BDL	0.104
101	MST-04(21to 22m)	Gravels of metallic lustre iron rich rock	21°24'7.5"N	80°37'18.7"E	0.078	BDL	BDL	BDL	BDL	BDL	0.078
101	MST-04(21to 22m)	Gravels of metallic lustre iron rich rock	21°24'7.5"N	80°37'18.7"E	0.028	BDL	BDL	BDL	0.07	BDL	0.098
102	MST-04(24 to 25m)	Gravels of metallic lustre iron rich rock	21°24'7.5"N	80°37'18.7"E	0.071	BDL	BDL	BDL	BDL	BDL	0.071
102	MST-04(24 to 25m)	Gravels of metallic lustre iron rich rock	21°24'7.5"N	80°37'18.7"E	0.018	BDL	BDL	BDL	BDL	BDL	0.018

N.B. BDL – Below detection limit. Check samples result from Lucid, Laboratory, Hyderabad. Results from Shiva Analytical, Bengaluru.

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Annexture-2
GOLD ANALYSIS

S.N.	Sample ID	Rock Type	Latitude	Longitude	Au
1	240702-02	Quartz hematite chlorite rock from near the contact of Sitagota basalt & Karutola Sandstone	21°23'9.72"	80°36'40.67"	**<0.01**
2	240208-08	Quartz hematite chlorite rock from near the contact of Sitagota basalt & Karutola Sandstone	21°23'50.44"	80°37'6.53"	**<0.01**
3	MST-01 (14m to 15m)	Quartz chlorite hematite rock	21°23'16.3"N	80°36'44.6"E	**<0.01**
4	MST-02(7m to 8m)	Trench sample from shear or mixed zone near the contact of Sitagota basalt & Karutola sandstone	21°23'38.9"N	80°37'0.9"E	**<0.01**
5	MST-03(10m to 11m)	Trench sample from shear or mixed zone near the contact of Sitagota basalt & Karutola sandstone	21°24'0.6"N	80°37'13.0"E	**<0.01**
6	MST-04 (4m to 5m)	Trench sample from shear or mixed zone near the contact of Sitagota basalt & Karutola sandstone	21°24'7.5"N	80°37'18.7"E	**<0.01**
7	MST-01 (9m-10m)	Trench sample from shear or mixed zone near the contact of Sitagota basalt & Karutola sandstone	21°23'16.3"N	80°36'44.6"E	**0.06**
8	MST-02 (8m-9m)	Trench sample from shear or mixed zone near the contact of Sitagota basalt & Karutola sandstone	21°23'38.9"N	80°37'0.9"E	**0.12**
9	MST-03 (9m-10m)	Trench sample from shear or mixed zone near the contact of Sitagota basalt & Karutola sandstone	21°24'0.6"N	80°37'13.0"E	**<0.01**
10	MST-04 (13m-14m)	Trench sample from shear or mixed zone near the contact of Sitagota basalt & Karutola sandstone	21°24'7.5"N	80°37'18.7"E	**<0.01**

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GEMCO KATI

Annexture-3
REE ANALYSIS

S.N.	Sample Id	Latitude	Longitude	Type of sample	La	Ce	Pr	Nd	Sm	Eu	Tb	Dy	Ho	Er	Tm	Yb	Lu	Total REE (PPM)	Sc	Y
1	CS-1.1	21° 23' 11.35"	80° 36' 41.80"	Channel samples from quartz hematite chlorite rock from contact zone of basalt and sandstone	10.16	23.51	3.14	13.45	2.75	0.59	<0.5	2.09	<0.5	1.36	<0.5	1.37	<0.5	58.42	47.56	11.23
2	CS-1.2	21° 23' 11.35"	80° 36' 41.80"		7.58	16.95	2.11	8.93	2.13	0.53	<0.5	1.72	<0.5	1.18	<0.5	1.33	<0.5	42.46	33.91	10.12
3	CS-1.3	21° 23' 11.35"	80° 36' 41.80"		3.81	13.48	1.15	4.96	1.25	<0.5	<0.5	1.15	<0.5	0.84	<0.5	0.97	<0.5	27.61	18.33	7.37
4	CS-1.4	21° 23' 11.35"	80° 36' 41.80"		11.95	23.08	3.33	14.36	3.54	0.9	<0.5	2.42	<0.5	1.43	<0.5	1.62	<0.5	62.63	38.39	12.89
5	CS-1.5	21° 23' 11.35"	80° 36' 41.80"		23.81	86.84	5.33	19.42	4.16	0.99	0.63	4.11	0.74	2.44	<0.5	2.38	<0.5	150.85	35.54	20.66
6	CS-1.6	21° 23' 11.35"	80° 36' 41.80"		8.46	18	2.45	10.38	2.1	0.58	<0.5	1.59	<0.5	1.17	<0.5	1.46	<0.5	46.19	38.08	12.88
7	CS-2.1	21° 23' 10.76"	80° 36' 41.53"	Channel samples from quartz hematite chlorite rock from contact zone of basalt and sandstone	8.26	21.02	2.38	10.54	2.58	0.7	<0.5	1.44	<0.5	0.93	<0.5	1.02	<0.5	48.87	25.65	8.33
8	CS-2.2	21° 23' 10.76"	80° 36' 41.53"		7.25	16.57	2.17	9.21	2.07	0.55	<0.5	1.15	<0.5	0.79	<0.5	0.95	<0.5	40.71	29.9	7.03
9	CS-2.3	21° 23' 10.76"	80° 36' 41.53"		4.05	9.09	1.22	5.74	1.59	<0.5	<0.5	1.18	<0.5	0.86	<0.5	1.08	<0.5	24.81	29.07	7.75
10	CS-2.4	21° 23' 10.76"	80° 36' 41.53"		18.38	39.59	5.11	20.4	3.68	1.13	<0.5	2.15	<0.5	1.45	<0.5	1.64	<0.5	93.53	44.42	12.97
11	CS-2.5	21° 23' 10.76"	80° 36' 41.53"		11.33	24.82	3.14	13.03	2.72	0.69	<0.5	1.32	<0.5	0.87	<0.5	1.02	<0.5	58.94	28.96	8.27
12	200623-03	21° 23' 14.99"	80° 36' 43.28"	Quartz hematite chlorite rock from contact zone of basalt and sandstone	15.08	39.78	5.36	18.77	4.25	1.61	0.63	3.18	0.86	2.21	<0.5	2.39	<0.5	94.12	~	~
13	200623-03a	21° 23' 14.99"	80° 36' 43.28"		5.33	8.17	1.94	8.64	2.67	1.57	<0.5	1.91	0.51	1.32	<0.5	1.35	<0.5	33.41	~	~
14	200623-04	21° 23' 14.30"	80° 36' 42.87"		5.89	10.68	1.78	6.81	1.75	1	<0.5	2.04	<0.5	1.4	<0.5	1.41	<0.5	32.76	~	~
15	200623-05	21° 23' 14.99"	80° 36' 43.21"		8.47	17.23	2.57	11.96	4.57	2.16	0.76	3.44	0.77	2.21	<0.5	2.01	<0.5	56.15	~	~

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Annexture-4
PETROGRAPHIC STUDY

Sample no. T-1

Hand specimen description
The sample is a greyish, fine grained, massive, compact aphanitic rock with whitish or brownish grey clots. The sample may be that of a low grade metamorphic volcanic rock or part of a sill of basaltic or andesitic composition.

Thin section petrography

The section shows a fine grained rock composed mainly of fibrous and acicular actinolite and patchy or flaky chlorite. Clusters of granular epidote are also seen in parts. Small clots of introduced quartz and are observed. The quartz clusters may represent amygdules in an original volcanic rock or sill of mafic or intermediate composition. Some of the quartz clusters contain specks of Cu-Fe sulphides surrounded by actinolite and chlorite.

Name of the rock: Metabasalt

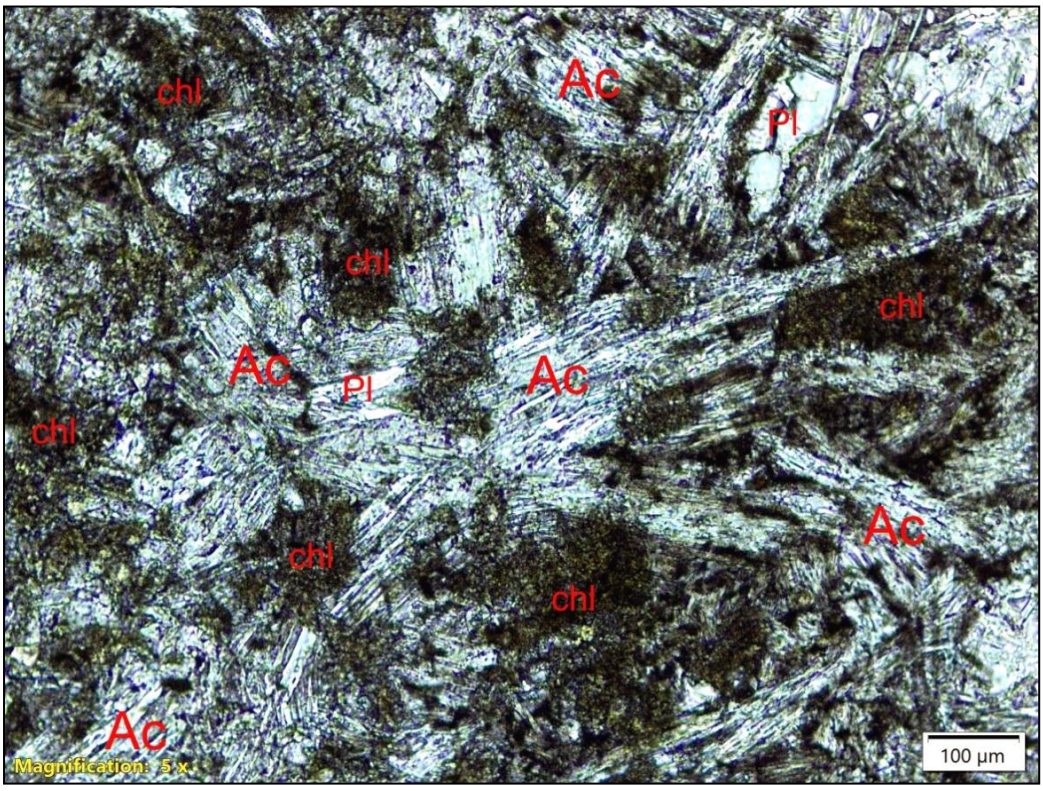

Fig.1 (PPL): The section shows pale greenish bladed, fibrous actinolite forming bundles or radiating aggregates and which surround dull greyish green patches of chlorite. Dusty opaque grains (magnetite?) occur associated with chlorite

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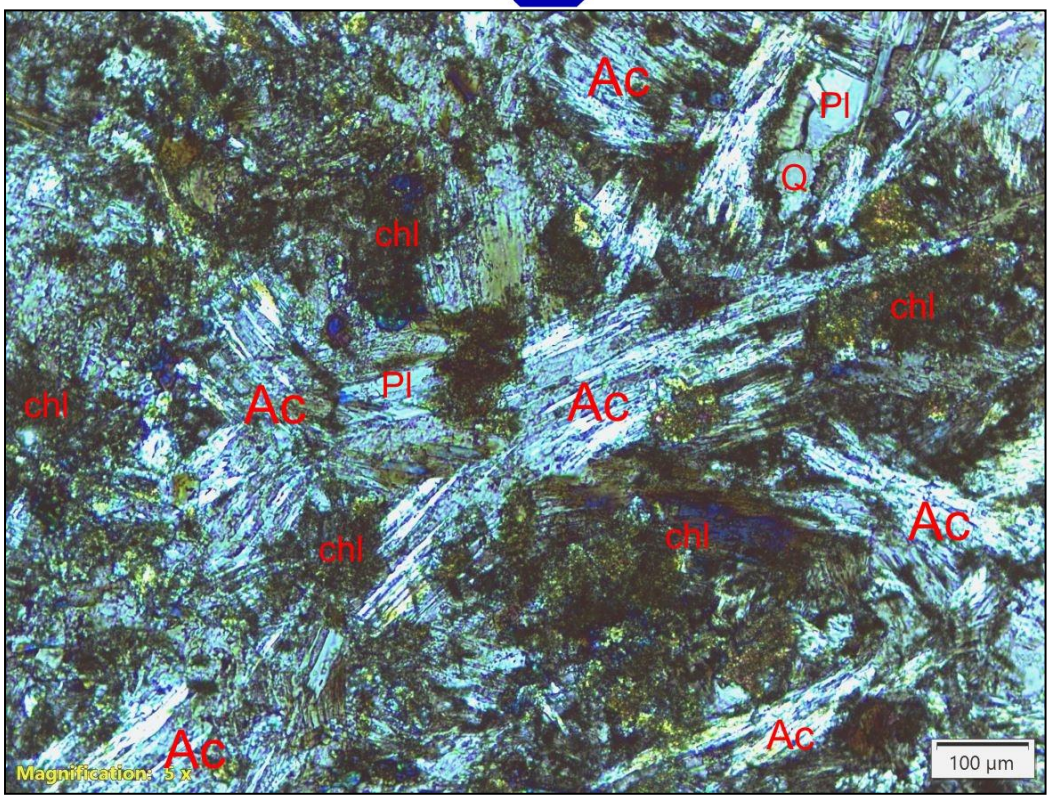

Fig.2 (XPL): Same portion of the section as in fig.1. Patches of chlorite exhibit yellowish brown or deep bluish interference colours.

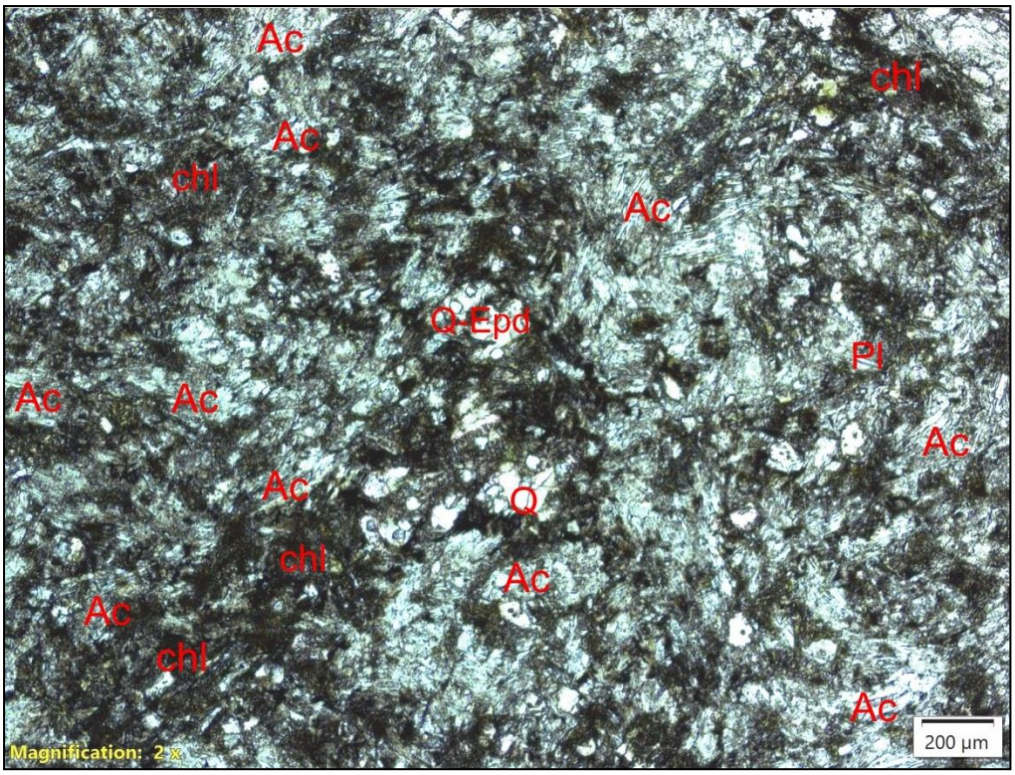

Fig.3 (PPL): The section shows pale greenish bladed, fibrous actinolite in clusters and dull greyish green patches of chlorite. Granular aggregates of colourless epidote also occur amidst actinolite and chlorite.

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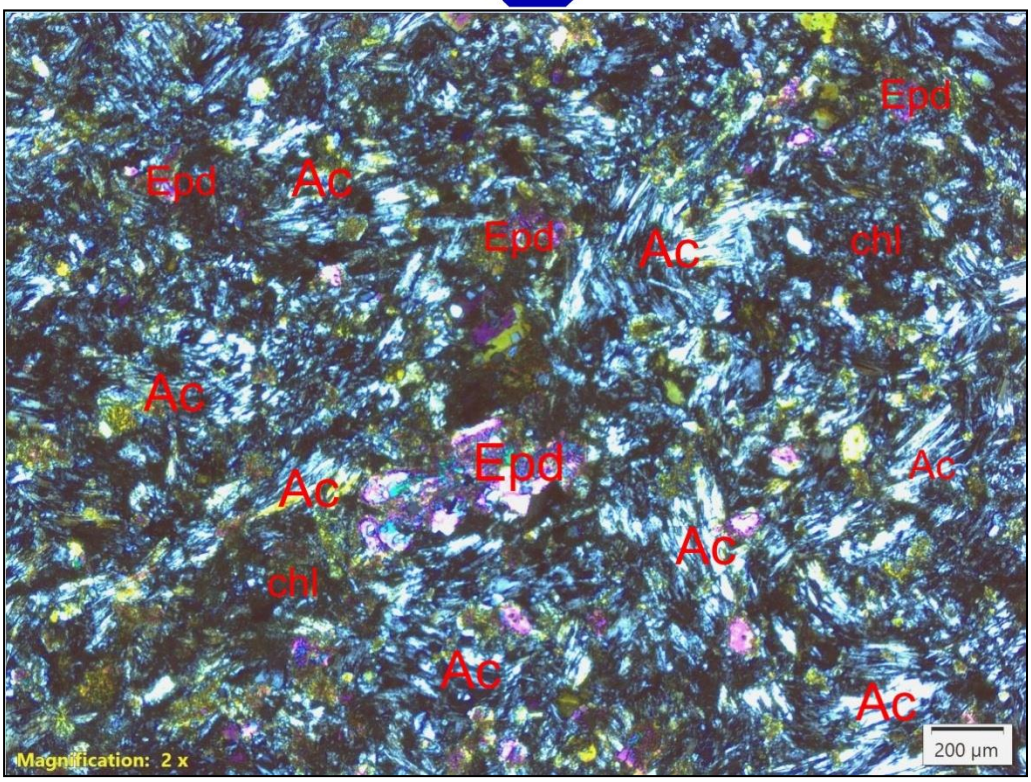

Fig.4 (XPL): Same portion of the section as in fig.3. Patches of chlorite exhibit yellowish brown or deep bluish interference colours and epidote displays intense colours.

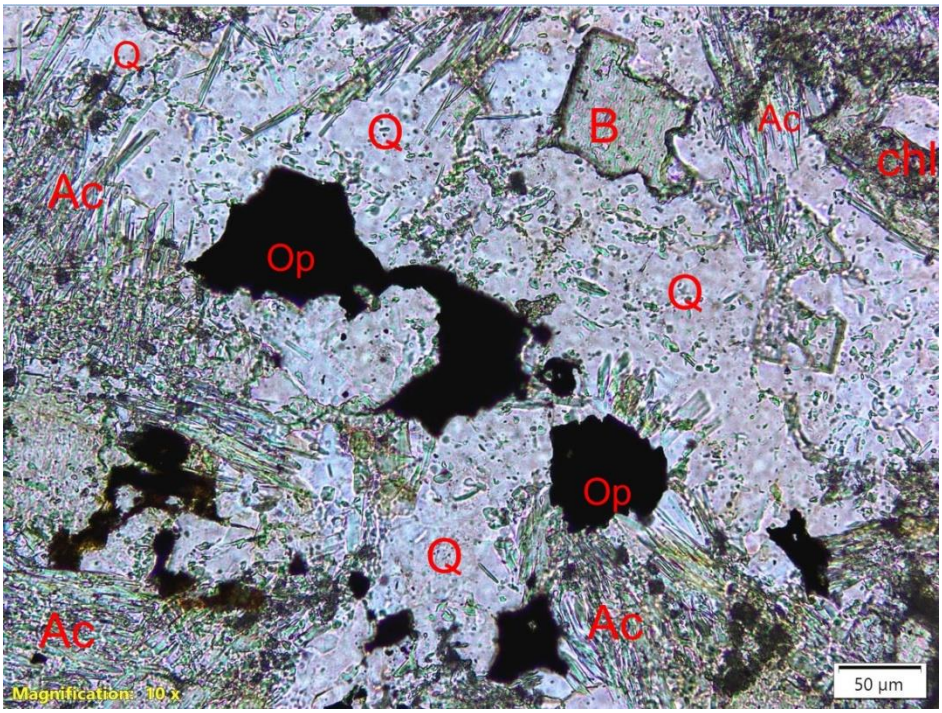

Fig.5 (PPL): Magnified view of a patch of xenomorphic fine to medium grained quartz as a part of veinlet is seen in the section. Acicular greenish actinolite forming radiating bundles or clusters occur around the quartz rich patch. Green flaky chlorite and a few opaque anhedral grains also occur in quartz cluster. Green acicular actinolite and chlorite are observed to radiate from the margin of the opaque grains. A flaky mottled green plate may be biotite (B).

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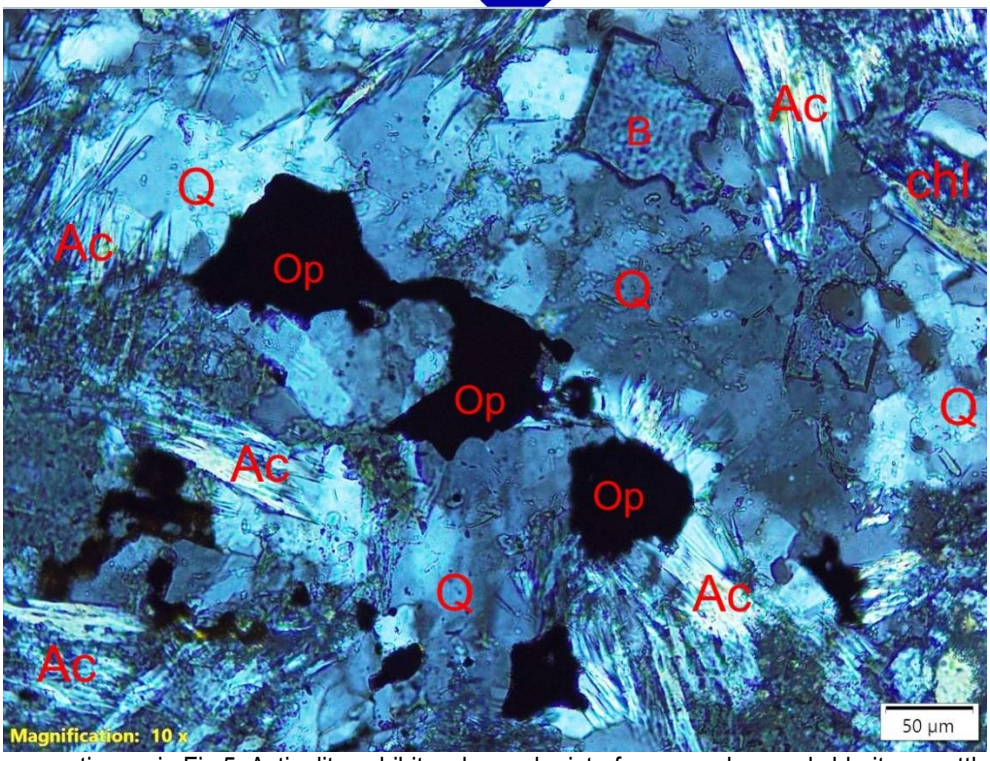

Fig.6 (XPL): Same portion as in Fig.5. Actinolite exhibits a low order interference colour and chlorite a mottled appearance. Feathery actinolite grows radially from the margin of the opaque grain

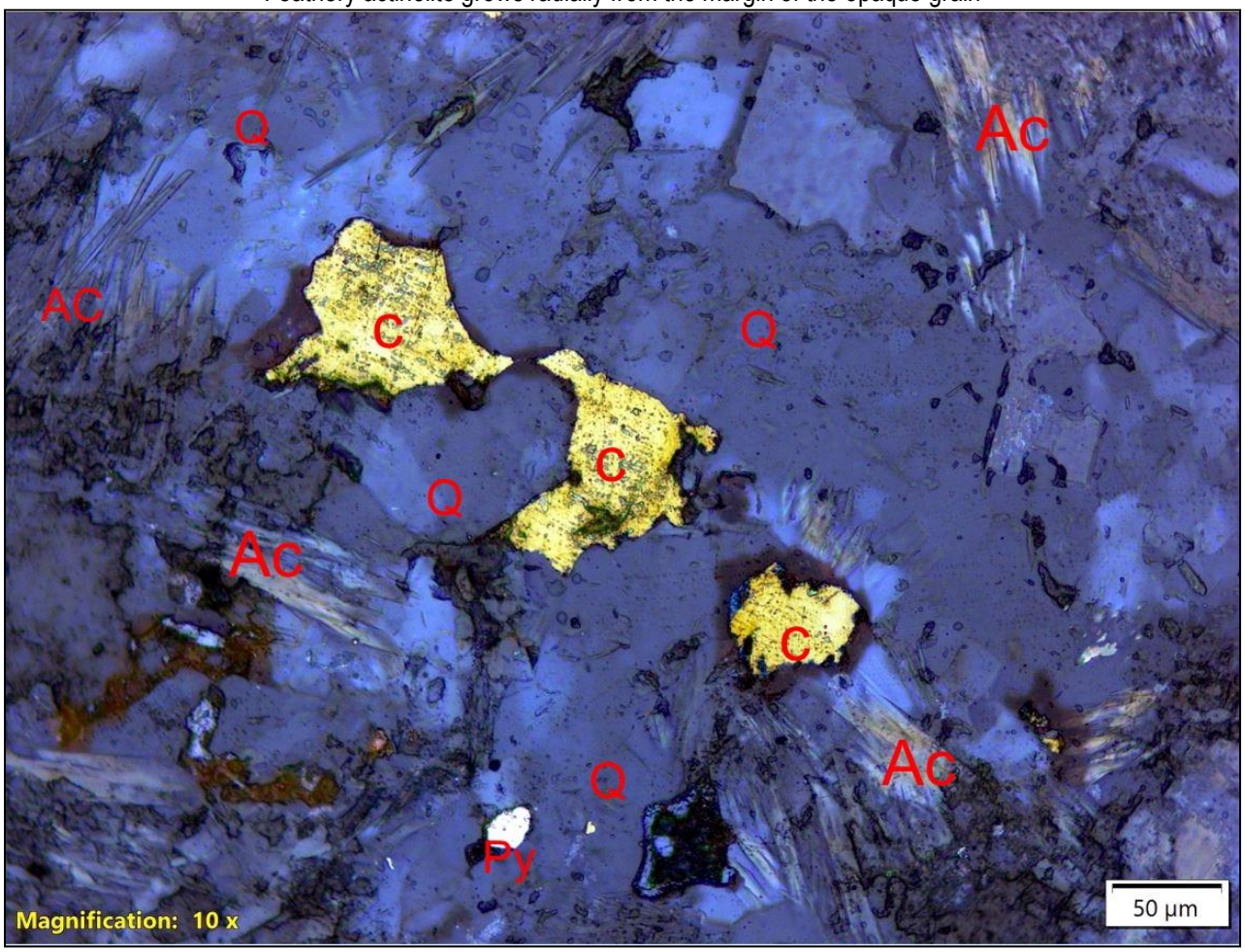

Fig.7 (RPL): In reflected light the opaque grains show a tarnished surface and scratches besides a golden yellow colour and moderate reflectance amidst dull and darker quartz, chlorite and actinolite. The opaque phases could be chalcopyrite (C). A small grain of cream yellow pyrite (Py) is also seen.

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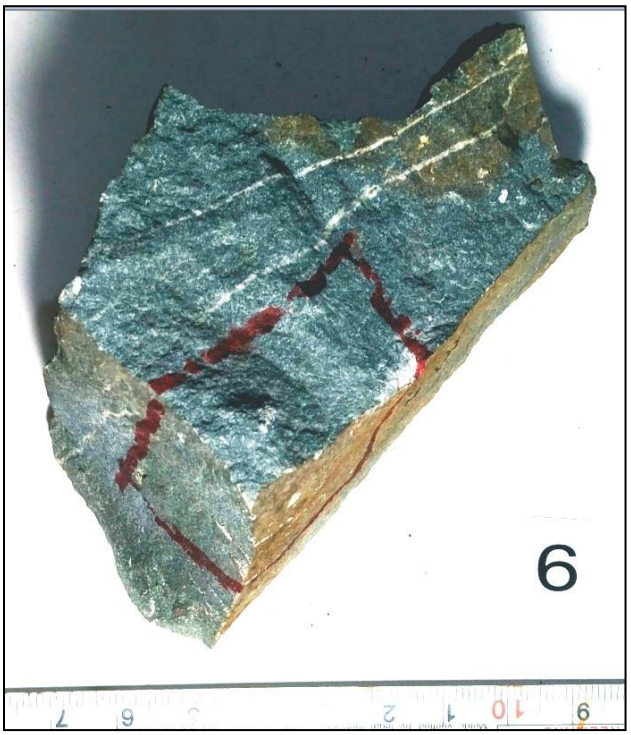
Annexture-5
PETROGRAPHIC STUDY



Sample no. T-5

Hand specimen description

The sample is a greenish grey, fine grained, massive, hard and compact rock. The sample is largely aphanitic but contains fine flakes and needles of greenish minerals. Amygdules may be present. Fine fractures filled with silica (?) are observed. The sample may rich in low grade metamorphic minerals like chlorite and actinolite possibly derived from a fine grained mafic igneous (volcanic?) rock.

Thin section petrography

The section comprises mainly prismatic or fibrous actinolite, felted masses or patches of chlorite and minor dusty opaque minerals. A few grains of plagioclase, quartz and zoisite could also be observed. The grains do not exhibit perceptible preferred orientation.

Actinolite: Actinolite (Ac) is nonpleochroic, pale greenish, exhibits fibrous, acicular or rarely stout prismatic habits and a weak preferred orientation. Basal sections display the characteristic cleavages. Prismatic grains show low to moderate interference colours and low extinction angles. Fibrous actinolite surrounds patches of chlorite and the associated opaque grains.

Chlorite: Chlorite (chl) is dull greyish or greenish, flaky or forms felted masses or patches surrounded by fibrous or prismatic actinolite. These are associated with dusty grains of opaque minerals. It displays an ink blue or greyish interference colours.

Plagioclase: Plagioclase (Pl) is tabular or lath shaped, colourless and shows a grey interference colour and fine lamellar twinning. It is largely saussuritised.

Accessory phases: Small stout grains of zoisite occur as accessory minerals. Zoisite (Z) exhibits a moderate relief and an anomalous ink blue interference colour.

Name of the rock: The sample is actinolite-chlorite-epidote schist derived possibly from a mafic volcanic rock metamorphosed under greenschist to epidote-amphibolite (lower amphibolite) facies.

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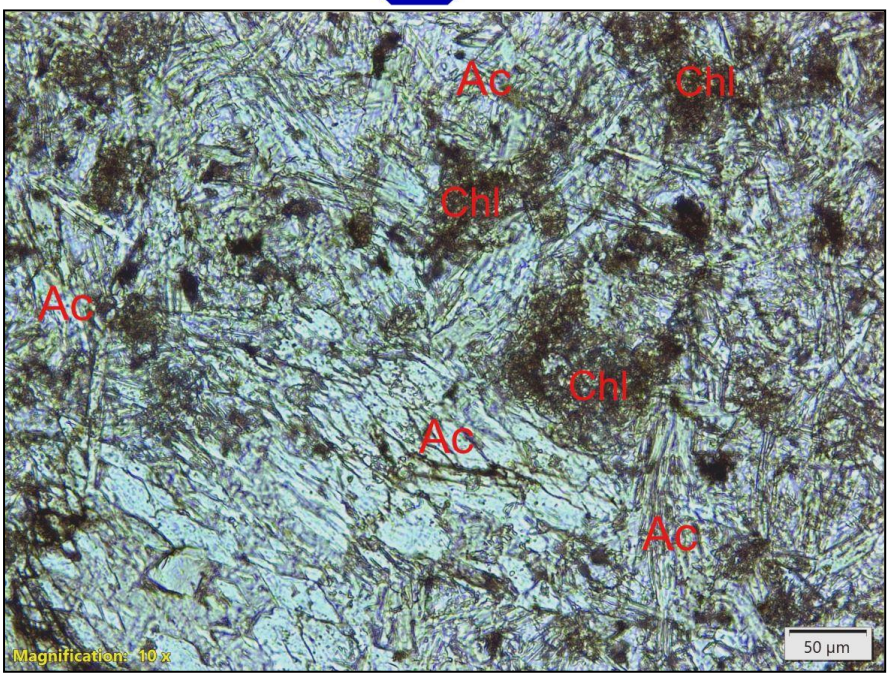

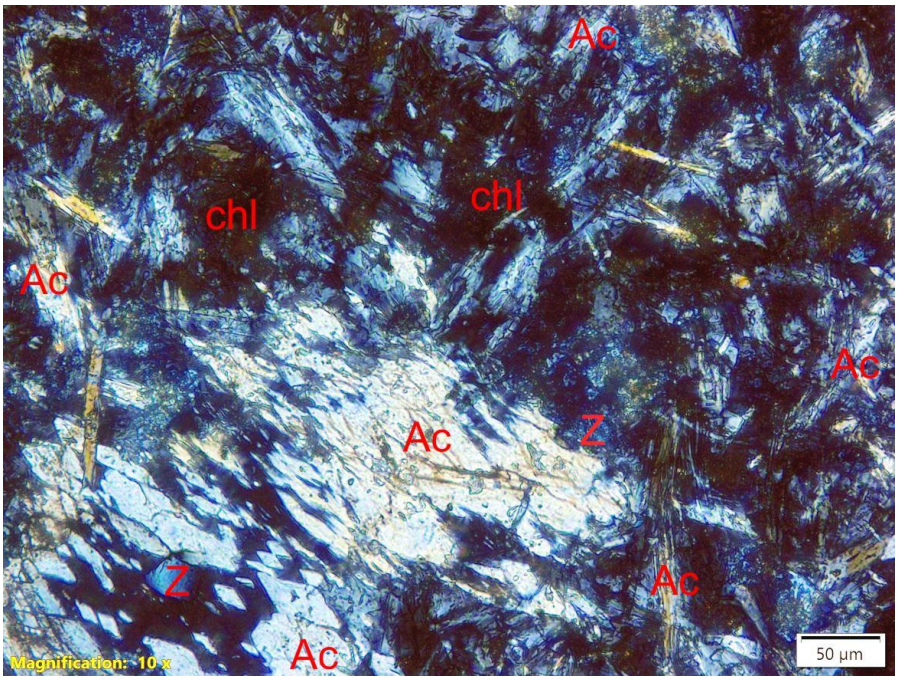

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