PROPOSAL FOR PRELIMINARY(G-3) EXPLORATION FOR LIMESTONE IN NORTH OF KRUNGMING AREA, DIST: DIMA HASAO, ASSAM (THROUGH NMET FUND)

GOVERNMENT OF ASSAM

DIRECTORATE OF GEOLOGY AND MINING, ASSAM

KAHILIPARA, GUWAHATI - 19

PRELIMINARY EXPLORATION (G-3) FOR LIMESTONE IN NORTH OF KRUNGMING AREA OF DIMA HASAO DISTRICT, ASSAM

Details enclosed with map

i.	Name of Mineral	Limestone
ii.	Name of Block	North of Krungming
iii.	Location	Latitude: 25°35'23.37" N to 25°36'35.65" N Longitude: 92°47'48.55" E to 92°49'23.91" E
iv.	Toposheet No.	83 C/14
v.	Name of villages	Krungming
vi.	Sub-division	Umrangsho
Vii.	District	Dima Hasao
Viii.	Area	5.80 km^2 (approximately)
ix.	Type of Land	Government Land
x.	Status of Exploration	Partly explored by DGM
xi.	Detailed mapping	5.80 sq. km. Scale = 1:4000 Scale
xii.	Present Category of UNFC	333
xiii.	Total Meterage to be drilled	1000 mtrs (approx.)
xiv.	Number of borehole to be drilled	10 nos. (approx.)
xv.	Spacing of boreholes	400 Mtr. (borehole to borehole)
xvi.	Depth of borehole	100 Mtr. or till basement is reached.
xvii.	Category of explorationas per UNFC	333
xviii.	Logging	All the borehole cores (Approx. 1000 Mtr.)
xix.	Sampling	450 Nos. (Approx.) that includes both Surface and Drill core samples. Out of those, 90% will be Primary samples and 10% will be Check samples. These samples include both Surface and Drill Core samples.
xx.	Analysis	DGM Lab.
xxi.	Report Writing	Will be done by Exploration agency

Preliminary survey (G-3 level) for Limestone Exploration North of Krungming Area in 5.80 sq. km. area District Dima Hasao (Assam)

1. Introduction:

Assam is the state where Cement is in short supply from the local production. Limestone is perhaps, the most exploitedminerals since Limestone constitute the basic raw materials for theseindustries. But today bulk of the cement comes to Assam outside of the state as the local plant is hardly able to meet the growing demand. With increasing construction in the entire nation including North East India, the demand for Cement has increased exponentially. In view of the above, the central and state government have been evincing keen interest in promoting cement plants, mini or major, within the state of Assam. In this background, the state Directorate of Geology and Mining was entrusted with the task of undertaking raw materials investigation forcement and lime manufacture within the State.

2. Location of the Block:

The area under investigation lies in the North of Krungming area in Dima Hasao district, Umrangsho subdivision under Umrangsho Police Station of Dima Hasao district, Assam.

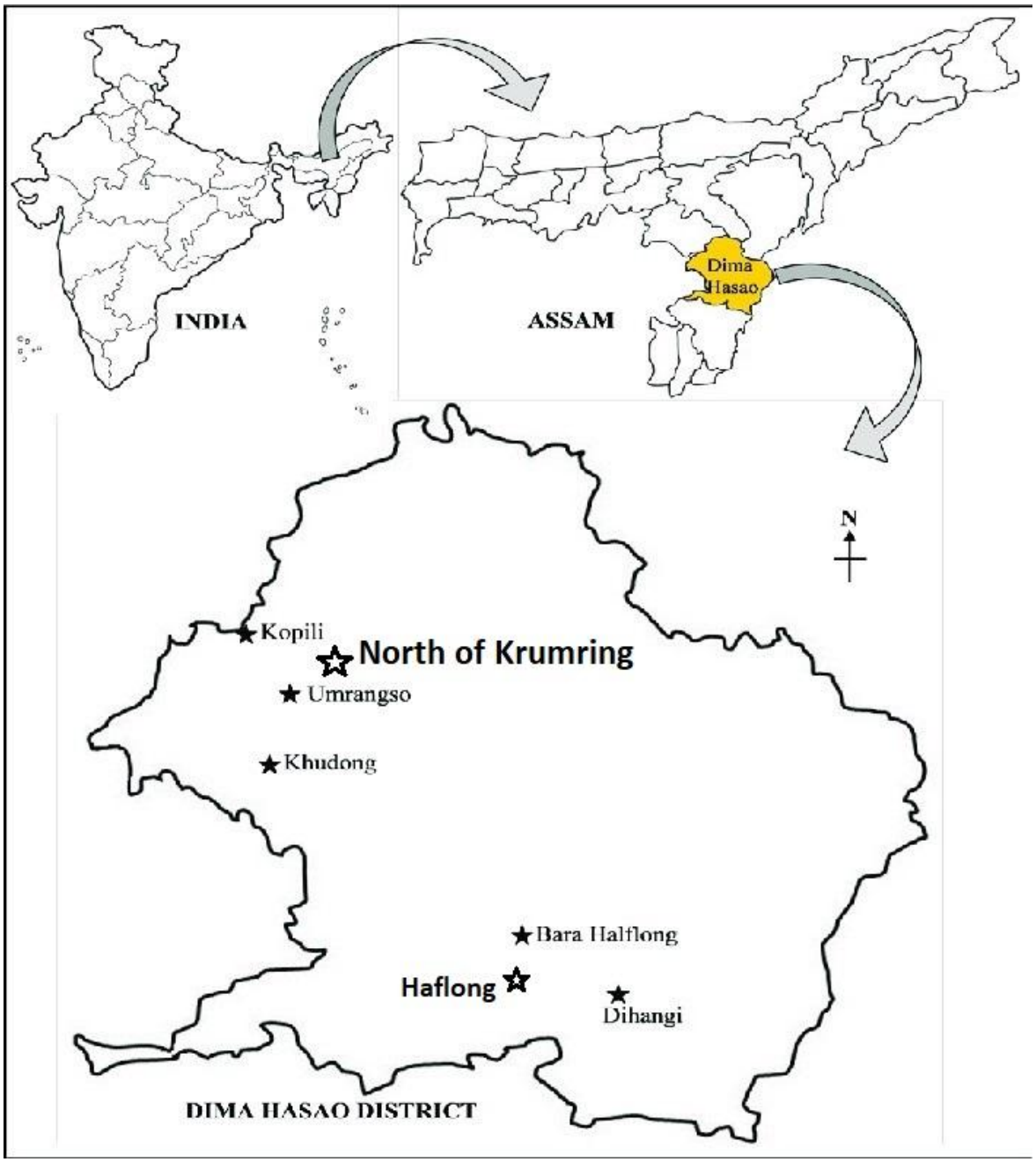
The Limestone Deposits of North of Krungming is located North of Krungming Block which was surveyed by Geological Survey of India, State Unit: Assam recently. The block North of Krungming is located near the Lanka-Umrangsho road in Dima Hasao district. It is 62 Km. south-west from Lanka, 50 Km. SW from Kheroni and 24 Km. south from Panimur Picnic Spot and around 18 km from Umrangsho. The nearest train station is Lanka Railway Station which fall the main line of North East Frontier railway which lies at a 151km from Guwahati.

The deposit occurs on an area with undulating topography with several Nalas cutting across the region forming valley like topography. The deposit is bounded by the following boundary points:

Sl No	Boundary Point	Latitude	Longitude
1	A	25° 35’ 23.37” N	92° 47’ 48.55” E
2	B	25° 36’ 35.54” N	92° 47’ 49.25” E
3	C	25° 36’ 35.65” N	92° 49’ 22.24” E
4	D	25° 35’ 24.66” N	92° 49’ 23.91” E

The block lies near the Lanka Umrangsho road which is all weather road but the roads leading to the block from the highway are kuccha roads which can be used only during dry season. The block is also filled with thick vegetation which can be cleared during dry season only.

The area under investigation is shown as location as in the figure Map.1 below:



3. Physiology and Drainage:

The area of the investigation lies is in the western extremity of N.C.Hills district and are bordered on west by the Kopili River. The region constitutes the eastern flank of the Shillong Plateau. The drainage system of the area is controlled by river Kopili which flows in an east west direction. Several Nalas cut across the proposed deposit forming ravines. As the area lies in the vicinity of Kopili fault zone, some Nalas may be inferred as minor faults that are linked to the main Kopili Fault zone. The area comprises small flat-topped hillocks whose elevations vary from 580m to around 840m above mean sea level.

4. Previous Work:

The hydel potentiality of the Kopili River and the limestone belt of the Garampani area in N.C. Hills was drawing attention of geologists since the middle of the current century. Oldham (1883) and La Touche made some geological traverses in the area. However, Sondhi (1949) and Mukherjee (1949 and 1955) of G.S.I. were the pioneer geologists to visit this area for systematic geological mapping.

Since 1972-73, geologists of the State Directorate of Geology & Mining have been carrying out systematic geological mapping for location of promising limestone deposits. The efforts of the State DGM resulted in locating one of the largest limestone deposits of the region during 1978 in Umrangsho area of erstwhile North Cachar Hills district, presently in Dima Hasao district.

The investigation is carried out in the form of detailed geological mapping, sampling, chemical analysis of the samples andpetrography of the samples collected from the respective locations. This investigation has resulted that the limestone deposit hasthe CaO % along with a lower percentage of MgO % which is favorable for the cement plant.

In the year 2024-25, during the G-4 survey of Longplaidisa area (under NMET fund), by the Directorate of Geology and Mining, Assam this new block was seen which can be surveyed for Limestone in FS 2024-25. The Longplaidisa area is around 200 m South of this proposed block and has huge potential of Limestone.

Geological Survey of India (GSI), SU: Assam has carried out G-3 level of exploration in the Krungming, Dima Hasao District, which is in Southern direction from the proposed area. In their investigation, it was established that the area has a huge potential of Limestone mineral. About 2.56 sq km of the block is covered by the Upper Sylhet Limestone of the Shella Formation, while the Kopili Formation is exposed in the northeastern, southwestern, and parts of the southeastern regions. Limestone thickness varies from 30.00 m to 70.00 m across four (4) boreholes, with an average thickness of around 55.00 m. From the core samples collected from the Block, it was found that CaO% ranges from 32.21–53.12% with a total limestone reserve of 91.86 million tonnes with 21.10 million tonnes under Cement Grade and 60.76 million tonnes under Unclassified Grade.

5. Geology and Structure:

5.1. Regional Geology:

Geologically, Assam and NE India compile most astonishingstratigraphy. Starting from oldest Archean gneissic rocks to recent quaternary alluvium found in this part of India. Among all other parts of Assam Karbi-Anglong host most complex geological stratigraphy.

These complex stratigraphy, structure, and deformations results in Karbi- Anglong as the most mineralized part of Assam. The Archean basement gneissic complex forms the basement as other parts of NE India. It is followed by quartzites and phyllites metasediments belong to Shillong Group of rocks. But these metasediments are mostly absent in West Karbi-Anglong area. These gneisses and Precambrian metasediments of central part are intruded by younger acidic granitoid intrusive bodies. These granitoid bodies are scattered as Inselberg. These Precambrian rocks are overlain by the younger Tertiary shelf sediments, which are again overlain at places by the Quaternary and Recent deposits.

Gneissic Complex represents the oldest group of rocks. The gneiss, when highly weathered, looks like sandstone. However, on carefulexamination, the dark toned mafic bands can be identified). The most prominent foliation (Gneissossity/ Schistosity/ Cleavage) strike along NE-SW direction and dip by 60°-70° towards southeast (GSI NER Report 1986-87). Exposure of equigranular, hard, compact homogeneous dark colored granite occurs at many places. The granites are generally grey- white in color with a pink tinge on fresh surface. On weathering it becomes dark grey to black in color with sub rounded spheroidally weathered surface. These Precambrian rocks are overlain by tertiary sedimentary sequences of sandstone, limestone and shale and thin coal beds. These strata are mainly horizontal to sub-horizontal striking NNE-SSW dippingtowards SE by an amount of about 40 -100.

The limestone deposit on the proposed block ‘North of Krungming’ is part of the carbonate belt extending from the Kopili-Kharkar confluence in the south-west to Panimur in the north-east. Along its 40 km of extension, good outcrops appear at Tumbung and at 29 kilo, 13 kilo post on the Garampani-Lanka road and also at Longplaidisa and Monglaigaon village. The width of the limestone belt varies from 1 km to 2.4 km. The limestone belongs to the Shella Limestone Formation of the Jaintia Group of Eocene age. The top band of Limestone is Ferrugeneous Limestone which is less fossiliferous in nature while the bottom band is Grey Fossiliferous Limestone that is rich in fossils of Foramenifera like *Nummulites sp.* and *Alveolina sp.* The two beds are separated aby a layer of Shale which is around 6 m thick. It is overlain by a thick shale-sandstone alternation and is underlain by a sandstone bed which occurs at the top of Pre-Cambrian rocks or occasionally over Jurassic Traps.

The general stratigraphic sequence of the area can be summarized as below:

Age	Group	Formation	Lithounits
Quaternary to recent			Soil and alluvium
Late Eocene to Late Paleocene	Jaintia Group	Kopili Formation	Alteration of splintery shale and fine to medium grained brownish sandstone
		Shella Formation	Sylhet Limestone Member (Fossiliferous Limestone)
			Sylhet sandstone Member with clay and thin coal seam

	Disconformity		
Precambrians	Shillong Group		Quartzo feldspathic and quartz veins Intrusives- biotite- granitoid
	Angular Unconformity		
	Basement Gneissic Complex(BGC)		Granitoid Gneisses

Table 1: Generalized regional stratigraphic succession of the area (GSI 1985-86)

The stratigraphy of the Shella Formation can be divided into two (2) litho-units: -

Age	Group	Formation	Lithounits	Description
Quaternary to recent			Soil and alluvium	Red color soil
Late Paleocene to late Eocene	Jaintia Group	Shella Formation	Sylhet Limestone	**Band I**: Ferrugeneous less fossiliferous Limestone **Band II:** Grey highly fossiliferous Limestone
			Basal Sandstone	Medium to fine grained gritty sandstone grey to brown color quartzitic in character
Disconformity ----------				
Precambrian	Basement Crystalline	Granite and various gneissic rocks		

5.1.1 General Geology

The limestone deposit of the proposed area is expected to have two bands as the same Shella Formation Limestone is expected to be present in the block. The upper band is Ferrugeneous Limestone which is light brownish in color owing to comparatively higher FeO (T) content, less fossiliferous in nature while the lower band is highly fossiliferous in nature, comprising of colonies of foraminifera fossils like *Nummulites sp. and Alveolina sp.* The two bands of Limestone are separated by a layer of Shale which is around 6m to 8m thick.

5.2. Description of the Rock Unit

5.2.1 Limestone:

The Limestone present in the area belongs to Shella Formation of Jaintia Group of Palaeocene to Mid Eocene age. The Limestones are present as bedded deposits but are highly deformed in some areas as it is present in tectonically active Kopili fault zone. In many areas, interbedded layers of Shale occur within Limestone. The Limestone present are greyish to greenish grey in color, highly fossiliferous in nature comprising colonies of foraminifera such as *Nummulites sp., Alveolina sp.* and so on.

The thickness of Limestone exposure that is present in the surface varies from centimetres to metres, however, majority of Limestone is present in the subsurface. From the Limestone outcrops seen in the Nala sections after taking N-S traverses, it's evident that they are gently dipping towards SE direction.

Some of the readings taken at various outcrops are specified below:
1. 45, 225/ 8 → N 135 (SE)
2. 40, 220/ 10 → N 130 (SE)
3. 55, 235/ 6 → N 145 (SE)

5.2.2 Shale

Shale is found within the layers of Limestone. The shale layers are calcareous in composition but are highly weathered and deformed as it lies in tectonically active Kopili fault zone. These shale layers are very thin, thickness ranges from few inches to metres in some areas. They are soft and friable in nature for they get easily weathered.

5.2.3 Sandstone

The Sandstone is light grey to brownish in color, fine to medium grained and the grain size is uniform throughout the rock. Local secondary ferrugenisation of matrix has imparted brownish to yellowish brown color of the rock. The Sandstone is friable and weathered in nature, neither durable nor compact for which it can be broken easily. The rock is primarily composed of Quartz with Feldspar and some Ferruginous minerals as accessory minerals forming most of the matrix. The rock samples collected show very low signs of metamorphism, for which it is termed as **Quartzitic Sandstone** by some authors.

5.2.4 Siltstone

The Siltstone is light grey to brownish in color, fine grained (silt sized) and the grain size is uniform throughout the rock. Local secondary ferrugenisation of matrix has imparted brownish to yellowish brown color of the rock. The Siltstone is friable and weathered in nature, neither durable nor compact for which it can be broken easily. The rock is primarily composed of Quartz with Feldspar and some Ferruginous minerals as accessory minerals forming most of the matrix.

5.3 Structures

The general trend of the lithology is NE-SW with gently dipping towards SE. As the area is present in the vicinity of Kopili fault zone that is tectonically disturbed, the Limestone is highly deformed and local variation of trends and dip can be observed in the area. The Limestone can be seen dipping at SE direction at very low dip angle.

Some of the readings taken at various outcrops are specified below:

1. 45, 225/ 8 → N 135 (SE)
2. 40, 220/ 10 → N 130 (SE)
3. 55, 235/ 6 → N 145 (SE)

Chemical Composition of Limestone present

A few grab samples were collected from North of Krungming area while surveying in Longplaidisa area. The samples were analyzed for Major Oxides (CaO, MgO, Al_2O_3, SiO_2, Na2O, K2O, Fe_2O_3 and LOI) at the Chemical Laboratory of GSI NER, Shillong whose results are tabulated below:

Sl No	Sample No	**CaO**	SiO2	Al2O3	Fe2O3(T)	Na2O	K2O	TiO2
1	NKL 1	**40.57**	18.02	3.91	3.68	0.11	0.14	0.07
2	NKL 2	**42.04**	16.50	2.95	3.13	0.10	0.13	0.06
3	NKL 3	**41.94**	13.33	1.18	4.76	<0.10	0.15	0.07
4	NKL 4	**43.61**	12.65	1.60	4.05	<0.10	0.13	0.06
5	NKL 5	**42.12**	14.02	1.57	4.06	<0.10	0.14	0.07

6. Objective of the proposed exploration program:

The following are the objectives of proposed exploration:

i) To ascertain the Limestone occurrence in the study area by GeologicalMapping on 1: 4000 Scale for G-3 level of exploration.

ii) To collect surface outcrop samples and drill core samples to get analyzed for Major Oxides to find out the quality & grade of Limestone. Drilling of 10 boreholes up to 100 m depth or up to basement (whichever is earlier) at 400 m interval in Grid pattern.

iii)In case the results of the proposed exploration are encouraging then future exploration can be planned.

iv) To carry out the exploration as per Mineral (Evidence of Mineral Contents) Rule-2015, Mineral Auction Rule-2015 and MMDR Act, 1957 Amended, 2015 in turn to facilitate the State Govt. (Assam) in Auctioning of Blocks.

7. Methodology of Exploration:

7.1. Topographic Survey & Geological Mapping:

Triangulation network will be laid down in the proposed study area of 5.80 Sq. Km. Detailed Geological Mapping will be done in the proposed block on 1:4000 scale. Borehole will be fixed on the ground. RL's and co-ordinates of survey and exploration points will be determined. All the geological features will be recorded. This map willbe used as base map for future work and auctioning of minerals.

7.2. Surface Sampling:

Surface / outcrop samples will be collected during Geological Mapping from outcrops / exposures of Limestone formations on a systematic 400m x 400m grid interval in an area of 5.80 sq.km (Approx).In case outcrops are not available on systematic grid then random samples will be collected from the available outcrops / exposures. Pitting and Trenching will be done at regular intervals where Limestone samples will be collected at different depth

7.3. Core Drilling:

a) After the analysis of surface samples, number of continuous or detached mineralized zones may come up on map. Core drilling of 100.00 m depth at 400 m interval will be done in Grid pattern considering the Dip and Strike of Ore body.

b) Drill Core Logging: The drill core will be logged for rock types, structural features, textures, intersection of ore zones and type ofmineralization an occurrence of various core minerals.

c) Drill Core Sampling: During the geological logging of drill core,mineralized zones will be marked based on concentration and Lithological variation. All core samples (primary) will be analyzed.

7.4. Laboratory Studies:

7.4.1 Chemical Analysis: All the surface / outcrop samples approximately 10 Nos will be analysed for 6 radicals/ all major oxides CaO, MgO, Al_2O_3, SiO_2, Fe_2O_3 and LOI.

7.4.2 Petrological Studies: Petrological studies will be done on around 10 Nos. of drill core specimen.

7.4.3 Specific Gravity Determination: Specific Gravity will be determined on 10 Nos drill core specimen.

8. Quantum of Work Time Schedule Proposed:

8.1. <u>Time Schedule:</u> The proposed exploration programme is planned for activities like, camp setting, topographic survey and geological mappingand surface sample collection winding and laboratory work will be completed within 3 months' time. Report writing will take another 2 months' time including one month overlapping period of one month of laboratory studies. Thus, the total duration of project shall be completedin 6 months from the date of commencement of the project**.**

Time schedule for Reconnaissance survey (G4) for Limestone in North of Krungming area of Dima Hasao district, Assam. Area = 5.80 sq km

S. No.	Activities	Months												
		1	2	3	4	5	6	Review	7	8	9	10	11	12
1	Camp mobilisation													
2	Mapping (1:12500)													
3	Geologist days in field													
4	Sub Surface drilling (2 rig)													
5	Survey days													
6	Sampling days													
7	Laboratory Studies													
8	Camp winding													
9	Geologist days in HQ													
10	Geological Report Writing													

Note: 1. Commencement of project may be reckoned from the day the exploration acreage is available along with all statutory clearances.

2. Time loss on account of monsoon/agricultural activity/forest clearance/local law & order problem may be additional to above time line.

* The Schedule is planned for optimal weather condition, as Assam has long rainy season, drilling and surveying activity can be hampered so need to be planned accordingly.

Table No.2: - Quantum of Work Proposed

Sl. No.	Item of Work	Unit	Quantum
1	Topographic Survey on 1:4000 scale.	Sq. Km.	5.80
2	Geological Mapping on 1:4000 scale.	Sq. Km.	5.80
3	Surface / Out crop sampling	Nos.	100 numbers in an area of 5.80 Sq. Km
4	Core drilling (B.H)	Nos	10, at spacing 400 m of Depth 100 m each
5	Laboratory Studies: Surface and Drill core Samples for 6 radicals i.e. CaO, MgO, Al_2O_3, SiO_2, Fe_2O_3 and LOI	Nos	350 out of which 90% are Primary samples, 10% are Check samples
6	Petrological Studies (Petrographic Studies)	Nos	10
7	Specific Gravity/ Bulk Density Determinations	Nos	2
8	Report Preparation (Hard Copy)	Nos.	5

9. Exploration Report:

Data generated from proposed exploration along with integration of chemical analysis data from Chemical Laboratory GSI- NER, Shillong will be utilized in Report preparation.

10. Cost Estimate:

Cost has been estimated based on actual and provisional escalation as per RBI indices as on 31-03-15 and provisional escalation of @ 25% pointsfor Geological and Laboratory Studies for the subsequent years. The total estimated cost is Rs 230.08 Lakhs. The details of cost estimates are given inTable 3 and summary is given below.

Summary of Cost Estimates

Sl. No.	Item	Total Estimated Cost (Rs.)
1	Geological Mapping	29,46,960.00/-
2	Pitting and Trenching	2,85,000.00/-
3	Core drilling	82,03,000.00/-
As the area falls in remote and inaccessible terrain of North Eastern States and Hilly terrain, the amount will be 3.35 times higher than the normal SoC. Total amount for field = 3.35 x (2946960 + 285000 + 8203000) =Rs 3,83,07,116.00		

4	Laboratory Studies (Include Quantitative analysis of 6 radicals, Petrological study, Bulk density determination)	25,62,930.00/-
5	Misc. Charges (Includes Report Preparation)	13,47,400.92/-
	Total estimated cost (without GST)	4,22,17,446.92/-
	Provision for GST (18%)	75,99,140.45/-
	Total estimated cost (with GST)	Rs 4,98,16,587.37 Or say Rs 498.16 Lakh

11. Justification

- In view of MMDR Act, 1957 and Mineral Auction Rule 2015, DGM, Assam is willing to take up the exploration in this block.

- Geological Survey of India (GSI), SU: Assam has carried out G-3 level of exploration in the Krungming, Dima Hasao District, which is in Southern direction from the proposed area. In their investigation, it was established that the area has a huge potential of Limestone mineral. About 2.56 sq km of the block is covered by the Upper Sylhet Limestone of the Shella Formation, while the Kopili Formation is exposed in the northeastern, southwestern, and parts of the southeastern regions. Limestone thickness varies from 30.00 m to 70.00 m across four (4) boreholes, with an average thickness of around 55.00 m. From the core samples collected from the Block, it was found that CaO% ranges from 32.21–53.12% with a total limestone reserve of 91.86 million tonnes with 21.10 million tonnes under Cement Grade and 60.76 million tonnes under Unclassified Grade.

- If the results of the Limestone block is found satisfactory, the block may be put up for auction.

Schedule of Charges for Limestone in North of Krungming area, Dima Hasao District, Assam						
Sl No.	**Work Activity**	**Item no as per SOC**	**Unit**	**Charges / Cost (in Rs)**	**Qty**	**Total (In Rs)**
A. Geological Mapping						
1	Charges for Geologist (Field)	1.30	Days	₹ 11,000.00	120	₹ 13,20,000.00
2	Charges for Surveyor (Field)	1.6.1a		₹ 8,300.00	120	₹ 9,96,000.00
3	Labour charges for geological mapping	5.70		₹ 437.00	240	₹ 1,04,880.00
4	Charges for Sampler	1.5.2		₹ 5,100.00	60	₹ 3,06,000.00
5	Labour charges for sample work	5.7.0		₹ 437.00	240	₹ 1,04,880.00
6	Borehole fixation and Determination of Coordinate & RL	1.6.2		₹ 19,200.00	6	₹ 1,15,200.00
Sub Total A						**₹ 29,46,960.00**
B. Pitting & Trenching						
1	Pitting and Trenching	2.1.1/2.1.2	per cu m	₹ 3,800.00	75	₹ 2,85,000.00
Sub Total B						**₹ 2,85,000.00**
C. Core Drilling						
1	Drilling – Soft rock	2.2.1.1b	Mtr	₹ 5,242.00	1000	₹ 52,42,000.00
2	Land/Crop compensation in case BH falls in agricultural land	5.60	Per BH	₹ 20,000.00	10	₹ 2,00,000.00
3	Construction of concrete pillar (12” x 12” x 30”)	2.2.7a	Per BH	₹ 2,000.00	10	₹ 20,000.00
4	Transportation of Drill rig & truck associated per drill	2.2.8	km	₹ 36.00	500	₹ 18,000.00
5	Monthly accommodation charges for drilling camp (upto 2 Rigs)	2.2.9	Month	₹ 50,000.00	3	₹ 1,50,000.00
6	Drilling camp setting cost	2.2.9.a	Nos.	₹ 2,50,000.00	1	₹ 2,50,000.00
7	Drilling camp winding up cost	2.2.9.b	Nos.	₹ 2,50,000.00	1	₹ 2,50,000.00
8	Road making (Hilly terrain)	2.2.10.a	Km	₹ 32,200.00	15	₹ 4,83,000.00
9	Drill core preservation	5.30	Per m	₹ 1,590.00	1000	₹ 15,90,000.00
Sub Total C						**₹ 82,03,000.00**

As the area falls in remote and inaccessible terrain in NE states and Hilly terrain, the amount is 3.35 times higher than the normal SoC, hence the total amount = 3.35x (29,46,960.00+2,85,000.00 +53,82,200) = Rs 3,83,07,116.00						
Sub Total A+B+C (X3.35)						**₹ 3,83,07,116.00**
D. Laboratory Studies						
a) Chemical Analysis						
1	Primary samples - 100 Surface samples plus 350 core samples (CaO, MgO, Al2O3, SiO2, Fe2O3 & LOI)	4.1.15.a	Per Sample	₹ 4,200.00	400	₹ 16,80,000.00
b) Physical Analysis						
1	Preparation of thin section	4.3.1	No.	₹ 2,353.00	10	₹ 23,530.00
2	Bulk density determination	4.1.0	No.	₹ 3,540.00	2	₹ 7,080.00
3	Petrographic Studies	4.3.4	No.	₹ 4,232.00	10	₹ 42,320.00
4	Charges of one Geologist per day at HQ	1.3.a	day	₹ 9,000.00	90	₹ 8,10,000.00
Sub Total D						**₹ 25,62,930.00**
Total of A+B+C+D						**₹ 4,08,70,046.00**
E Miscellaneous Charges						
1	Preparation of Exploration proposal	5.10	5 Hard Copies and Soft Copies	2% of the Total A+B+C+D		₹ 8,17,400.92
2	Geological Report Preparation	5.20	5 Hard Copies and Soft Copies			₹ 5,00,000.00
3	Peer review charges		As per EC decision			₹ 30,000.00
Sub Total of E						₹ 13,47,400.92
Total of A+B+C+D+E						**₹ 4,22,17,446.92**
Provision for GST (18%)						**₹ 75,99,140.45**
Total estimated Cost (With GST 18%)						**₹ 4,98,16,587.37**
						Rs 498.16 Lakhs

Map 1: Google Earth image of the proposed North of Krungming block, Dist: Dima Hasao, Assam

Area = 5.80 sq km

Toposheet No: 83 C/14

Coordinates of the Boundary Points of the North Krungming Block, Dist: Dima Hasao, Assam

Sl No	Boundary Point	Latitude	Longitude
1	A	25° 35’ 23.37” N	92° 47’ 48.55” E
2	B	25° 36’ 35.54” N	92° 47’ 49.25” E
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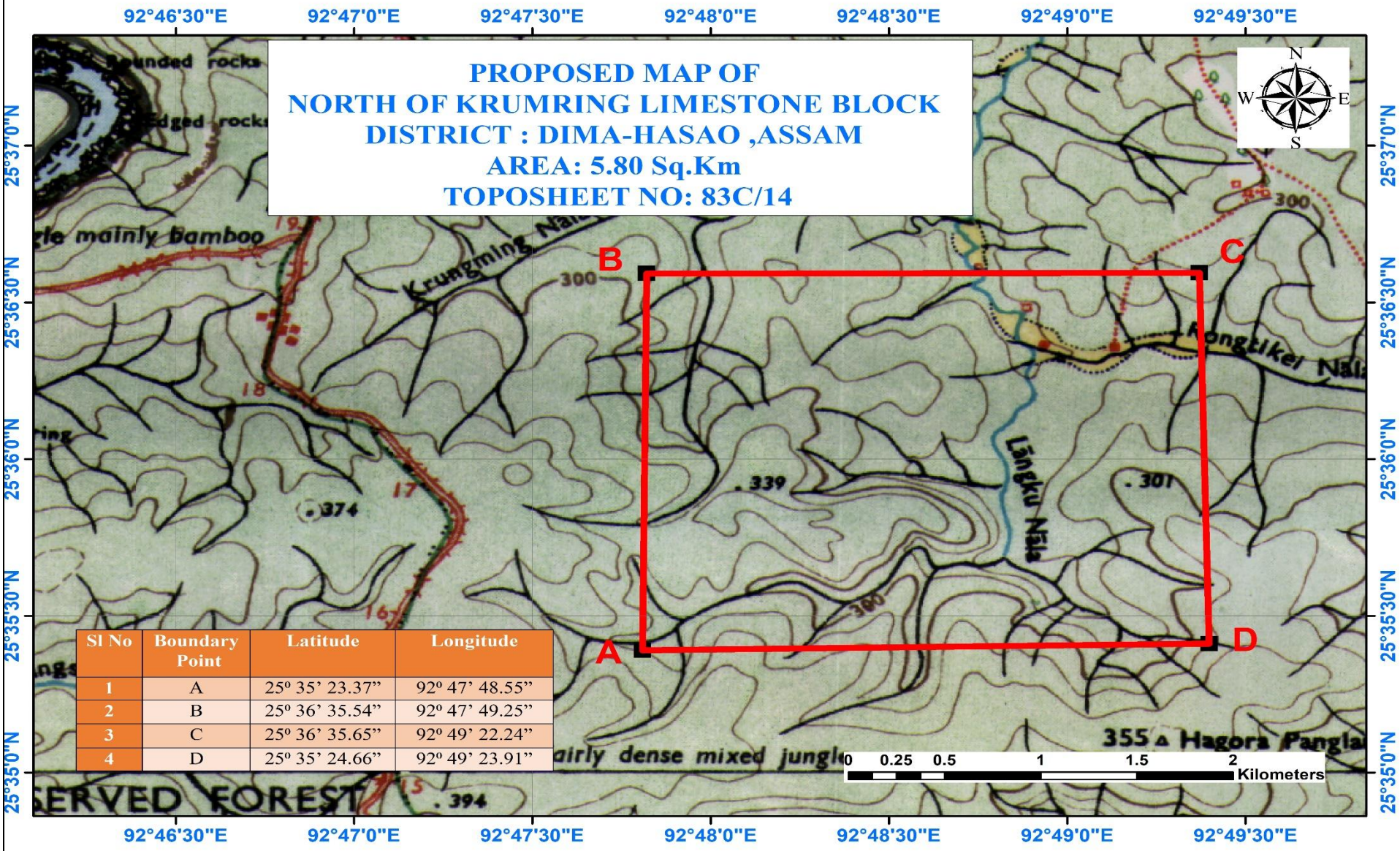

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