2. Proposal For Reconaissance Survey (G4) For Ree And Associated Minerals In Ektala-Rajanpalli & Jogiapalli-Gobindpur Area (127.00 Sq.Km) District, Nayagarh, Odisha

[Implementing Agency- MECL]

<table>
<tr><td></td><td>Features</td><td>Details</td></tr>
<tr><td></td><td>Block ID</td><td>Ektala-Rajanpali&Jogiapali-Govindapur</td></tr>
<tr><td></td><td>Exploration Agency</td><td>Mineral Exploration and Consultancy Limited (MECL)</td></tr>
<tr><td></td><td>Commodity</td><td>REE and associated minerals</td></tr>
<tr><td></td><td>Mineral Belt</td><td>Eastern Ghat Mobile Belt, Odisha</td></tr>
<tr><td></td><td>Completion Period with entire
Time schedule and cost</td><td>116.17Lakhs& 10 months</td></tr>
<tr><td></td><td>Objectives</td><td>The main objective of the investigation is to search the REE & RM mineralization in magmatic intrusive rocks of EGMB through delineation of REE-enriched zone through LSM, followed by piting and thereby systematic collection of samples from different media, like, bedrock, pit, regolith, stream sediment, auger drilling and heavy minerals. After the positive outcomes of the above activities scout drilling will be carried out to intersect REE bearing rocks in subsurface at 30m vertical depth. In addition assessment of quality and quantity of the resources (334) if any as per UNFC norms & Minerals (Evidence of Mineral Contents) Rules- 2015 will be carried out.</td></tr>
<tr><td></td><td>Whether the work will be carried out by the proposed agency or through outsourcing and details thereof.
Components to be outsourced
And name of the outsource agency</td><td>Work will be carried out by the proposed agency</td></tr>
<tr><td></td><td>Name/Number of Geoscientists</td><td>Will be provided during execution.</td></tr>
<tr><td></td><td>Expected Field days(Geology)Geological PartyDays</td><td>Geologist Party days: Field -150 days & HQ-45 days

Sampling Party days: 32 days</td></tr>
<tr><td>1.</td><td>Location</td><td>The proposed Ektala-Rajanpalli&Jogiapalli-Gobindpur Block comprises of 127.00 sq km area and lies in Nayagarh District (Toposheet No: 73H/4), Odisha. Nayagarh town is located 1km south of the proposed block.</td></tr>
<tr><td></td><td>Latitude and Longitude</td><td>
<table>
<tr><td colspan="5">Coordinates of Ektala-Rajanpalli&Jogiapalli-Gobindpur Area Block Boundary (Area -127 Sqkm)</td></tr>
<tr><td rowspan="2">Cardi</td><td>Latitude</td><td>Longitud</td><td>Northing</td><td>Easting</td></tr>
<tr><td colspan="2">WGS 1984 DMS</td><td colspan="2">Degree Decimal</td></tr>
</table>
</td></tr>
</table>

		A	20°13'	85°0'	20.2301	85.00464
		B	20°13'	85°8'	20.2296	85.14622
		C	20°09'	85°8'	20.1525	85.14622
		D	20°09'	85°0'	20.1521	85.00417
	Villages	Ektala-Rajanpalli&Jogiapalli-Gobindpur and others				
	Tehsil/Taluk	Nayagarh				
	District	Nayagarh				
	State	Odisha				
2.	**Area(hectares/squarekilometers)**					
	BlockArea	127.00 sq.km				
	ForestArea	50% of the area is forest land				
	GovernmentLandArea	Data not available				
	PrivateLandArea	Data not available				
3.	**Accessibility**					
	NearestRailHead	Nayagarh town in Odisha, India. Broadguage railway line of Khurda Road-Visakhapatnam section of the East Coast Railway passes in the southwestern part of the block.				
	Road	National highway NH-57 passes within the area in the southwestern part of the block which connects Khorda in the east via Nayagarh and Balangir in the west via Daspalla and Boudagarh. Many villages including Ektala, Rajanpalli & Jogiapalli, Gobindpur are located within the area and which are connected with the district and village level roads. Northern and western parts of the area are occupied by hillocks and forest area. Nayagarh town in Odisha, India. Broadguage railway line of Khurda Road-Visakhapatnam section of the East Coast Railway passes in the southwestern part of the block. Nayagarh town railway station on the same line located within the block.				
	Airport	The nearest airport is at Bhubaneswar, which is about 100 km east of the block.				
4.	**Hydrography**					
	LocalSurfaceDrainagePattern(Channels)/ Rivers/Streams	This area is showing mainly dendritic to subdendritic pattern with 1st order to 4th order streams. Mainly drained by Kusumi Nadi flowing from south to north outside the east of the proposed block. The main tributaries of Kusumi Nadi are Dabukanadi, Lunijharanadi, Baghamari nala etc. which flow within the block.				
5.	**Climate**					

	MeanAnnualRainfall	Average annual rainfall is 1400mm	
	Temperatures(December)(Minimum) Temperatures(June)(Maximum)	Minimum temperatures: 15°C (Dec-Feb), Maximum temperatures: up to 47°C (March-June)	
6.	**Topography**		
	ToposheetNumber	73H/04	
	Morphology of the Area	North and western part of the area is occupied by hillocks with NE-SW trend. Maxmium elevation has been observed in the NE corner of the proposed block which is around 510mRL based on toposheet. Southern and eastern part of the block is plain to gently undulating and mainly covered by agricultural land. Few isolated hills and ridges occur in this part.	
7	**Availabilityofbaselinegeosciencesdata**		
	GeologicalMap(1:50K/25K)	NGDR Map (1:50000), Plate-II:	
	GeochemicalMap	NGCM data available in NGDR	
	GeophysicalMap	NGPM Gravity and Magnetic data available in NGDR	
8.	**JustificationfortakingupG-3orG-2Stage mineralExploration**	The proposed block has been carved out on the basis of anomalous values of stream sediment samples collected during NGCM programme in the TS No. 73H/4. A total of 40 samples falling within the proposed block. Out of which 23 samples are more than 1000ppm, 07 samples are more than 1500ppm and 04 samples are more than 2500ppm. These anomalous values indicate for the further investigation in the area for the source of REE mineralization. The proposed block is part of the Central Migmatite Zone (CMZ) of Eastern Ghat Mobile Belt. In the surrounding area REE mineralization have been reported within the EGMB. Outcomes of the work carried out are as follows: During FS: 2022-23, 100 sq.km area (part of TS No. 73H/4) around Notara-Baulasahi area, was mapped on a larger scale. Khondalite, leptynite and charnockite form the major lithotypes of the Eastern Ghats Mobile Belts, exposed in the area. The EGMB suite of rocks is intruded by pyroxene-bearing syenite, syenite and pyroxenite, which act as the host rocks for REEs in the area. The pyroxenite, in turn, are either apatite-bearing, or are traversed by apatite veins, which are REE-rich. Analytical results indicated ∑REE content of regolith samples varies from 102.54 ppm to 18,415 ppm, whereas in stream sediment samples, it varies from 93.57 ppm to 5,447.70 ppm ppm and for BRS samples, it varies from 902 ppm to 52,743 ppm. The LREE concentration is predominant compared to HREE in all the samples of different media. EPMA studies of samples from y from the syenite-pyroxenite suit allanite, monazite, bastnaesite and Ce-rich REE phases have been identified.	

		Specialized thematic mapping carried out by Bhattacharjee & Sreenivas during FS: 2018-20 in TS No. 73H/3 brought out the first ever presence of REE-bearing phases in the heart of EGMB, hosted by bands of syenite-pyroxenite. Sphene along with allanite, thorite, monazite and other REE bearing phases were recorded. During FS: 2021-22, Khuntapada area by Swain & Behera was taken under STM programme. Large scale mapping of the area revealed that granite gneissic country rock is intruded by several leucocratic coarse grained to pegmatoidal syenite veins. EPMA study confirmed the presence of bastnaesite, thorite, allanite, and baddeleyite as significant REE/RM phases associated with sphene and apatite. Analytical results indicated ∑REE content of regolith samples varies from 228.86 ppm to 4,031.67 ppm whereas in stream sediment samples it varies from 214.86 ppm to 2,225.67 ppm and for BRS sample it varies from 89.409 ppm to 24,689.11 ppm. The LREE concentration is predominant compared to HREE in all the samples of different media. The proposed block is in between the two areas mentioned above and in the same geological set up. Hence, the proposed area has been selected for further investigation.	