Ministry of Mines
National Mineral Exploration Trust

Minutes of the 55th Technical-cum-Cost Committee (TCC) meeting held on 27th , 28th, 31stJuly, 2023 & supplementary meeting on 7th August, 2023 through video conferencing at New Delhi

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The 55thmeeting of Technical-cum-Cost Committee [TCC] of National Mineral Exploration Trust [NMET] was held through video conferencing under the chairmanship of Dr. S. Ravi, Dy. Director General, Geological Survey of India (DDG, GSI) and Chairman, TCC, NMETon 27th, 28th, 31st July, 2023&supplementary meeting on 7th August, 2023 at New Delhi. Members of TCC-NMET and representatives from MECL, CGM Gujarat, DGM Uttar Pradesh, DGM Arunachal Pradesh, OMC, DGM Madhya Pradesh, DMR Meghalaya, DGM Nagaland, DMG Karnataka, KIOCL, CMPDI,NMDC, DGM Maharashtra, DGM Rajasthan, DMM West Bengal, M/s. Geovale Services Private Limited, M/s. Gemcokati Exploration Pvt. Ltd. and M/s. United Exploration India Pvt. Ltd. have attended the meeting through their respective VC modes.

The list of participants is at **Annexure-1.**

Shri Suresh Chander, Director, GSI and Member Secretary, TCC-NMET, welcomed Dr. S. Ravi, DDG, GSI and Chairman, TCC, NMET, Members of the TCC and participants representing various Notified Exploration Agencies [NEAs] and Notified Private Exploration Agencies [NPEAs]. He briefed about the project proposals submitted by EAs for consideration of 55thTCC meeting. He conveyed that a total of 17 nos. of mineral exploration proposals were submitted by MECL, CGM Gujarat, M/s. Geovale Services Private Limited through CGM Gujarat &DGM Uttar Pradesh, DGM Arunachal Pradesh, OMC, M/s. Gemcokati Exploration Pvt. Ltd. through DGM Madhya Pradesh, and M/s. United Exploration India Pvt. Ltd. through DMM West Bengal. 06 proposals related to financial assistance for procurement submitted the State Meghalaya, Nagaland, Goa and Gujarat. Projects from DGM Maharashtra, CMPDI, DMG Karnataka, OMC, MECL, KIOCL and NMDC have been also submitted for review.

Shri Vivek Kumar Sharma, Director & HoD, requested to submit Utilization certificate from State, NEAs and NPEAs for release of second installment of fund. Further, he informed the committee that field visit for review the ongoing projects of NMET will be conducted by Ministry of Mines.

Dr. S. Ravi, DDG, GSI and Chairman, TCC welcomed the members and other participants from various NEAs/NPEAs. He requested to NEAs/NPEAs for submission of projects related to REE, PGE, critical and strategic mineral instead of bulk minerals.

Subsequently, the proceeding of meeting was initiated as per agenda of the meeting.

Agenda wise discussions are summarized as follows:

Agenda 55.1: Technical evaluation of new project proposals:





Agenda 55.1.1. Preliminary Exploration (G-3 Level) for Gold in Kakol Block (29.06 sq. km), Haveri District, Karnataka. [Implementing Agency: MECL]

a) Geologically the area belongs to the Ranibennur Formation of Chitradurga Group of Dharwar Supergroup. The meta-argillite/meta-greywacke is the major lithounit in the area. They are commonly inter-banded and occupy the low lying areas.The argillite unit composed of microgranular quartz and chlorite, biotite, muscovite, pyrite, carbonate as mosaic. The acidic and basic intrusive of Palaeoproterozoic age are the quartz veins and gabbro, dolerite respectively.

b) The committee has been informed that Gold mineralization in the area is confined to Banded Iron Formation. In Kakol area, quartzite bands of BIF show limonitisation, carbonitisation and silicification with finely developed box works. At places it is gossanised. In Chetra area, folded BIF band are limonitized, sericitized with quartz veins with goethite characterized by finely disseminated pyrite recorded in fracture planes. Gold mineralization is associated with quartz carbonate and sulphide facies of the BIF; pyrrhotite, pyrite, arsenopyrite and occasionally chalcopyrite occur along bedding plane at the contact of chert and magnetite layers.

c) MECL conveyed that in Kakol area, ten (nos.) BIF bands are traced and thickness ranges from 1 to 14m with a maximum strike length of 2.4 km. In Chetra area, four (nos.) BIF bands are traced. The strike length of the BIF bands vary from 1km to 4km with width varies from 1m-5m. The total cumulative length of the BIF bands is around 26 km with an average thickness of 3m.

d) It has been informed that Kakol Gold Block (29.06 sq km) is one among the 100 geological potential blocks (G4) for auction delineated by GSI and handed over the Geological Memorandum to the State Govt., Karnataka. State Govt. put the block on auction as THYE Composite License. However, on auction platform the block annulled for 2 times due to various reason. Further action on the block were discussed in the 5th, 6th and 10th meeting of the Joint Working Group (JWG) where it was decided to explore the block to increase the confidence level in quality and quantity of the resources and investors. DMG, Karnataka nominated MECL to explore the said block and issued consent for further exploration on higher level through NMET funding after getting opinion from GSI.

e) MECL further conveyed that from the previous studies of GSI, it is observed that the gold mineralization is hosted in highly sheared and brecciated BIF bands with box works, void limonitisation and a defined wall rock alteration scheme in the form of chloritisation, silicification, sericitisation and carbonitisation. At places, it is sheared, brecciated containing specks of sulphides occasionally. Pyrite, pyrrohtite and arsenopyrite in veins, stringers and clusters within highly sheared brecciated quartz-carbonate veins (cutting at a low angle with BIF) have altered the BIF. The analytical results for bed rock samples in the area showing Au values ranges from 0.03g/t/1m to 1.78g/t/1m in BIF and average assay value for Au in trenches are 0.11g/t/1.5m & 0.15/8m, 0.06 g/t /06m, 0.11 g/t /1m & 0.10 g/t /3m, 0.21 g/t /3m, 0.05 g/t /1m, 0.09 g/t /0.5m, 0.03 g/t /0.5m, 0.03 g/t /1.5m.

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f) In view of above, committee agreed to take up G-3 Level exploration for Gold in Kakol Block (29.06 sq. km), Haveri District, Karnataka. The committee suggested to carry out detailed mapping and extensive sampling in first phase. After review of the outcome of first phase the agency may carry out the geophysical survey and drilling in the proposed block.

g) The outcome of the project will be reviewed after 6 months.

Recommendation of TCC:

The committee recommended the proposal for approval of EC for "Preliminary Exploration (G-3 Level) for Gold in Kakol Block (29.06 sq. km), Haveri District, Karnataka" with an estimated cost of ₹ 448.27 lakh (including GST) within time schedule of 12 months for carrying out the proposed work and submission of report as per annexure -2A & 2 B.

Agenda 55.1.2. Preliminary Exploration (G-3 stage) for Potash in Dhakowali Dhani (North) Block (9.63 sq. km), Satipura Sub Basin, Hanumangarh District, Rajasthan. [Implementing Agency: MECL]

a) Geologically the present proposal falls in the Satipura Sub Basin of Nagaur Ganganagar Basin in Northwestern Part of Rajasthan.TheNagaur Ganganagar Basin is covered by aeoliansand.The sediments are mostly disposed horizontally to sub horizontally with 3° to 5° rolling dips towards NW.

b) It has been conveyed that locally the halite beds shows steep dips due to salt flowage. A number of vertical to sub vertical faults trending N-S, NE-SW and E-W with down throw towards W, NW & S respectively have been inferred on the basis of drill data in the Nagaur Ganganagar Basin. The Potash minerals intersected in the Nagaur -Ganganagar basin include Polyhalite, Sylvinite ,Sylvite and Carnallite.

c) MECL further conveyed that GSI had launched exploration programme for Potash in Nagaur-Ganganagar Basin in 1974. GSI carried out Potash exploration in an area of 28,500 sq.km out of the total area of 50,000 Sq.Km of Nagaur-Ganganagar basin and drilled 58,733.95m in 68 closed & 2 abandoned boreholes. GSI had estimated Potash Resources in 3 sub basins i.e. Satipura, Bharusari and Lakhasar, based on the intersection of potash mineralisation at 3% K cut off and 1.50 m minimum stopping width. The resources computed in three basins are given in Table below:-





Sub-Basin wise Potash Resource with average Grade Estimated by GSI

Sub-Basin	Area Sq. Kms	Ore Resource (Million Tonnes)			Grade	
		Probable	Possible	Total	K%	Na%
Satipura	245.61	202.30	1429.95	1632.25	4.80	25.08
Bharusari	71.00	88.16	300.15	388.31	4.68	17.17
Lakhasar	29.50	113.73	342.29	456.02	4.39	23.51
Total	**346.11**	**404.19**	**2072.39**	**2476.58**	**4.70**	**23.54**

d) The proposal has been sent to GSI for their comments. In response to this GSI has informed that the proposed block is overlapping with the ensuing GSI FSP 2024-25 titled as "Preliminary exploration for potash in Pakkasarna block, Satipura sub-basin, Nagaur-Ganganagar Evaporate Basin, Hanumangarh District, Rajasthan" .

e) After the detailed deliberation, the committee opined that decision on quantum of work the project will be taken after the outcome of ongoing projects of potash being carried out by MECL. The committee also suggested to exclude the overlap area and submit fresh proposal for remaining area.

Recommendation of TCC:

The committee suggested to submit the proposal after excluding the overlapping area and also agreed to decide the quantum of work after the outcome of ongoing potash projects.

Agenda 55.1.3. Reconnaissance Survey (G-4 stage) for REE in Kathiwara Block (124.00 sq. km) in Alirajpur District, Madhya Pradesh.[Implementing Agency: MECL]

a) MECL conveyed that the main lithounits of the proposed block is Granite gneiss of Pre-Champaner Group and metasediments of the Champaner Group of Aravalli Supergroup. These are intruded by Godhra granite of Neo-Proterozoic age and by several dykes and sills of Deccan volcanics belonging to Upper Cretaceous to Eocene age.

b) It was informed that on the basis of the geochemical sampling done by GSI in toposheet no. 46J/02 and J/03, the geochemical distribution pattern of REE shows anomalously higher concentration over granite gneisses and Godhra Granite. Total LREE shows minimum value of 439.4375ppm &maximum value of 6,448.33ppm, total HREE shows minimum value of 72.83ppm & maximum value of 475.75ppm and total REE shows minimum value of 516.49ppm & maximum value of 6,924.08ppm.

c) It has been communicated that 34 samples falls within the proposed block. Out of these 9 samples shows TREE value above 2000 ppm and 12 samples shows TREE values from >1000 to <2000 ppm. The La values ranges from 107.218 to 2167.651 ppm and Ce values ranges from 211.935 to 3200.15 ppm.

d) The proposal has been sent to GSI for their comments. In response to this GSI has informed that there is no overlap with the work carried out/ proposed by GSI, SU: MP.

e) In view of above, the committee agreed to take up G3 stage exploration for REE in Kathiwara Block and also suggested to prepare a drainage map. The outcome of the project will be reviewed after 6 months.

Recommendation of TCC:

The committee recommended the proposal for approval of EC for "Reconnaissance Survey (G-4 stage) for REE in Kathiwara Block (124.00 sq. km) in Alirajpur District, Madhya Pradesh" with an estimated cost of ₹ 79.31 lakh (including GST) within time schedule of 12 months for carrying out the proposed work and submission of report as per annexure -3A & 3B.

Agenda 55.1.4. Preliminary Exploration (G-3 stage) for Potash in Bharusari South Block (8.68 sq. km), Bharusari Sub Basin, Hanumangarh District, Rajasthan. [Implementing Agency: MECL]

a) Geologically, the proposed block is located in the North-central part of the Bharusari sub basin and situated in the Hanumangarh District of Rajasthan State falling in Survey of India Toposheet no 44K/07.

b) It has been conveyed that GSI has carried out preliminary exploration by drilling 10 nos. of boreholes at wider interval and estimated resources of 388.31 million tonnes with grade 4.68% K and 17.17% Na.

c) Further it is also informed that MECL has completed Geophysical Exploration (Gravity and Magnetic Survey) covering an area of 1119 sq. km. in Bharusari Sub Basin.Based on the finding of these studies, 20 exploratory boreholes up to a depth of 700-750m have been recommended to test/validate the veracity of the G-M survey interpretation in the area.

d) The committee has been informed that MECL has carried out exploration in Bharusari Block and drilled a total 7868 m in 12 numbers of boreholes along with associated geological and geophysical activity.The resource estimated in the block based on the data of 12 boreholes of MECL and 5 boreholes of GSI at 2% , 3% and 5% K cut off with minimum thickness of 1.00 m by area of influence method is as follows:

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CUT-OFF CATEGORY	TOTAL GROSS Inferred + Reconnaissance Resource of Potash (Million Tonnes)	Grade (% K)	TOTAL NET Inferred + Reconnaissance Resource of Potash (Million Tonnes)	Average Grade (% K)	Average Grade (% K20)
AT 2% K CUT OFF	203.57	3.05	162.860	3.05	3.69
AT 3% K CUT OFF	71.745	4.29	57.397	4.29	5.19
AT 5% K CUT OFF	18.163	5.60	14.531	5.60	6.78

e) Further MECL informed that MECL has taken up exploration in Bharusari North Block with approved quantum of 3500 m in 5 Nos of Boreholes with associated Geological work. Presently as on 25th July, 2023 a total 2696 m has been drilled in two closed and three running boreholes.

f) The committee has observed that there is an ongoing project of MECL in the same basin and one report is already submitted to State Government. Therefore, the committee opined to take decision on the block after seeing the response of auctioning of available blocks.

Recommendation of TCC:

The committee suggested to consider the project after observing the response of the bidders for auction of available block with State Government.

Agenda 55.1.5 Preliminary Exploration (G-3 stage) for Limestone Block in Porbandar District (Porbandar Limestone Drilling Scheme-PLDS), Gujarat [Implementing Agency: CGM, Gujarat]

a) Geology of the proposed area belongs to the Milliolite Series comprising of Deccan basalt, alluvium, clay, calcareous sand, associated with good quality of limestone.TheMilliolite occur as whitish, buff coloured, current bedded limestone in the form of coastal ridge.

b) CGM Gujarat conveyed that A. K. Trivedi (1989-90) had carried out systematic surveying and sampling of limestone from Balej to Ratia in Porbandar district. The survey was done on the scale of 1:8000 and a total of 55 sq. kms. was covered. As a result of investigation reserve of limestone is proved to the tune of 262 million tonnes and reserve of calcareous sand is estimated to the tune of 20 million tonnes.





c) P. J. Bhavsar (1984-85 & 1985-86) had carried out the survey of limestone deposits around villages Chingaria, Gorsar, Mocha, Kadachh and to assess quality and quantity of limestone for its industrial application.. During the investigation the reserve of chemical grade limestone of 20.22 million tonnes was proved out of total reserve of 112.93 million tonnes.

d) Further CGM Gujarat conveyed that the avg. CaO% of limestone is 46.97% and SiO2% is 5.6% to 8.07%.The proposed block is surrounded by the operating Limestone leases.

e) The proposal was sent for the comments of GSI . GSI conveyed that the proposed block/area does not fall within the block boundary/coordinates of areas already explored/being explored during the current FSP/proposed for the next Field Season Programme (FSP).

f) Keeping in view of above, the committee suggested to submit the document regarding demand and supply of limestone in the area and also opined that the entire block may be divided into three blocks and the revised proposal may be resubmitted in the next TCC meeting.

Recommendation of TCC:

The committee suggested to submit demand and supply of limestone in the area in next TCC meeting along with modified proposal.

Agenda 55.1.6. Preliminary Exploration (G-3 stage) for Bauxite in Maleta-Bankodi Block, Devbhumi Dwarka District, Gujarat [Implementing Agency: CGM, Gujarat]

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Agenda 55.1.7. Preliminary Exploration (G-3 stage) for Bauxite in Khakharda-Kenedi Block, Devbhumi Dwarka District, Gujarat. [Implementing Agency: CGM, Gujarat]

a) CGM Gujarat conveyed that Bauxite occurs as small segregations in the ferruginous laterite as boulders and nodules, having shade of pink and brown colour. The patches of bauxite in ferruginous laterite was reported north west of Bankodi village

b) Several exposures of bauxite are noticed around Kenedi village. The deposits around Khakharda village shows hard, stand out prominently small humps of Bauxite in the plain terrain. There are a number of old pits and quarries around proposed area which indicates potentiality of the area.





c) Further it has been conveyed that Part of the proposed block was explored by Shri H. R. Vyas (1968) and excavated 80 pits up to depth of 3 meters. The analysis shows Al2O3 concentration of 51.39 %. He estimated resource 3,70,000 tonnes. Shri N. V. Shah and Shri J. V. Bhatt (1975) carried out exploration in parts of TS no. 41F/7, 8 and 41G/5 and drilled 312 boreholes, out of which 156 boreholes encountered Bauxite. The chemical analysis of the samples yielded avg. Al2O3 50.23 % with SiO2 4.39 %. They estimated resources 97000 tonnes.

d) CGM Gujarat further conveyed that the region was primarily investigated by G4 stage of exploration by CGM by means of pitting and drilling. It was found that the Bauxite occurs as pocket deposit in ferruginous Laterite. The thickness of bauxite found 1.6 m to 3.58 m. The chemical analysis of the samples shows avg. Al2O3 50.23% with SiO2 4.39%. The proposed block is surrounded by the operating Bauxite leases and extension of the same lithology.

e) After the detailed deliberation committee suggestedto modified the depth of boreholes. Accordingly, CGM Gujarat submitted the drilling meterage of 1410 m in 94 boreholes with an average depth of 15 m at each borehole in Khakharda-Kenedi Block and drilling meterage of 855m in 57 bhs. With an average depth of 15m in Maleta-Bankodi Block.

f) In view of above, committee agreed to take G3 stage exploration for Bauxite in Maleta-Bankodi Block and Khakharda-Kenedi Block.

Recommendation of TCC:

The committee recommended the proposal for approval of EC for "Preliminary Exploration (G-3 stage) for Bauxite in Maleta-Bankodi Block, Devbhumi Dwarka District, Gujarat" with an estimated cost of ₹ 126.64 lakh (including GST) within time schedule of 05 months for carrying out the proposed work and submission of report as per annexure 4A &4B.

The committee recommended the proposal for approval of EC for "Preliminary Exploration (G-3 stage) for Bauxite in Khakharda-Kenedi Block, Devbhumi Dwarka District, Gujarat." with an estimated cost of ₹ 182.59 lakh (including GST) within time schedule of 05 months for carrying out the proposed work and submission of report as per annexure 5A &5B.

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Agenda 55.1.8. Preliminary Exploration (G-3 stage) for Limestone and Bauxite in Jodhpur-Satapar Block, Devbhumi Dwarka District, Gujarat. [Implementing Agency: CGM, Gujarat]

a) CGM Gujarat conveyed that In the part of the proposed block exploration was carried out by CGM in Jodhpur village in 2018-19 in 36.097 hectares by drilling to understand subsurface mineralisation of limestone. Drilling of 13 boreholes on the grid of 200 x 200 meters was done and limestone was encountered in all boreholes, so it was interpreted that limestone is of bedded type deposit.The resource estimation was done for cement grade limestone, limestone and marl of 8.05 MT and CaO% varies between 40 to 52%.

b) Further, CGM Gujarat conveyed that block is also surrounded by several limestone leases. Therefore CGM Gujarat has submitted the proposal with drilling at 400m x400 m grid pattern.

c) In view of above, Committee suggested to submit the proposal only for Limestone with the drilling at 800m x 800 m as limestone occur as bedded deposit.

d) The proposal has been sent to GSI for their comments. In response to this GSI has informed that proposed block/area does not fall within the block boundary/coordinates of areas already explored/being explored during the current FSP/proposed for the next Field Season Programme (FSP).

e) Accordingly CGM Gujarat submitted the modified proposal with drilling of 165 m in 11 bhs. at 800 x 800 m grid.

f) The committee agreed to take up limestone exploration in proposed block.

Recommendation of TCC:

The committee recommended the proposal for approval of EC for "Preliminary Exploration (G-3 stage) for Limestone in Jodhpur-Satapar Block, Devbhumi Dwarka District, Gujarat." with an estimated cost of ₹ 63.38 lakh (including GST) within time schedule of 03 months for carrying out the proposed work and submission of report as per annexure 6A &6B.

Agenda 55.1.9. Reconnaissance Survey (G4) for Evaluation of Placer Xenotime Prospect in the Ujol River Basin, Dahod, Chhota Udaipur and Panchmahal Districts, Gujarat [Implementing Agency: CGM, Gujarat (M/s. Geovale Services Private Limited)]

a) The project was firstly discussed in 50th TCC meeting titled as "Reconnaissance Survey (G4 Stage) for evaluation of placer xenotime prospect in Ujol and Vasva River basin, Dahod, Chhota Udaipur and Panchmahal Districts, Gujarat"

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b) The Committee has been informed that the catchment area of the Ujol rivers includes Godhra Granite (~50% of the area), high grade metasediments of Lunavada Group (~30% of the area) and pre-Champaner Granite Gneiss ~20% of the area). Pre-Champaner Group is dominated by granite paragneiss that originated from the partial melting of the Lunavada Group.

c) It has been conveyed that NGCM survey indicate high HREE (>100 ppm) for about half of the samples for the Ujol river catchment areas. Heavy minerals content in stream sand varies from 2.94 to 11.29% by weight. NGCM data include approximately 113 numbers of stream sediment samples within the proposed block. Out of which 15% of the samples has the HREE content more than 100 ppm (maximum is 388.02 ppm) and almost 30% of the data has total REE > 500 ppm (maximum is 4631.07 ppm).

d) Further M/s. Geovale Services Private Limited conveyed that there are two possible sources as below:

   i. HREE rich A type granite itself is the source. While the low CaO content of these granites is favorable for crystallization of xenotime over apatite, low P2O5 content of these granites is an uncertain parameter for granite hosted xenotime.
   ii. Xenotime could have originated by interaction of HREE rich hydrothermal / flurithermal fluids with phosphate rich Pre-Champaner Formation. Because of such possibility, source of xenotime could be interaction zones of REE rich granites with phosphate rich metasediments.

e) The proposal has been sent to GSI for their comments. In response to this GSI has informed that Approx. an area of 75 sq. km of the REE, RM covered by GSI during FS 19-20 and 21-22 overlaps within the proposed block.

f) TCC suggested to exclude the overlap area. Accordingly, M/s. Geovale Services Private Limited modified the area to 500 sq.km.

g) The committee opined that godhra granite known for xenotime deposits. But concentration is not economically viable. However, presence of paleo-placer may increase the concentration of Xenotime. Therefore committee suggested to take exploration activity in eastern side of the block over an area of 370 sq.km.

h) The committee also suggested to review the project after 6 months.

Recommendation of TCC:

The committee recommended the proposal for approval of EC for "Reconnaissance Survey (G4) for Evaluation of Placer Xenotime Prospect in the Ujol River Basin, (easternside having an area of 350 sq.km.), Gujarat" with an estimated cost of ₹ 184.27lakh (including GST) within time schedule of 12 months for carrying out the proposed work and submission of report as per annexure 7A &7B.

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Agenda 55.1.10 Reconnaissance Survey (G4 Stage) for Gugarwara Base Metal - Gold Prospect Block in Gugarwara-Biltala-Banpur region, Lalitpur district, Uttar Pradesh. [Implementing Agency: DGM Uttar Pradesh (M/s. Geovale Services Private Limited)]

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Agenda 55.1.11 Reconnaissance Survey (G4 Stage) for Mailar Base Metal - Gold Prospect Block in Mailar Area, Lalitpur District, Uttar Pradesh. [Implementing Agency: DGM Uttar Pradesh (M/s. Geovale Services Private Limited)]

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Agenda 55.1.12 Reconnaissance Survey (G4 Stage) for Pachwara Gold-Tellurides Prospect Block in Pachwara-Bhanesh Region, Jhansi District, Uttar Pradesh. [Implementing Agency: DGM Uttar Pradesh (M/s. Geovale Services Private Limited)

a) The study area is an integral part of the Bundelkhand Craton also known as Bundelkhand Granitoid Complex (BGC). The proposed block is largely occupied by massive (non-foliated) granites of different modal composition.

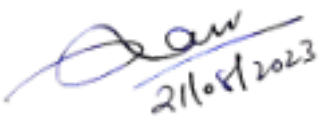
b) It has been conveyed that Pati et al., (2014) reported molybdenite mineralization in granitic pegmatites, coarse grained pink porphyritic granite, medium grained grey granites and medium grained pink granites, predominantly associated with Bundelkhand Tectonic Zone in the southern part of Babina which lies adjacent to the block. Incidences of gold in the neighboring areas, like that of Talbehat region by Pati et al., (1997), is another important report of mineralization.

c) Singh and Singh (1986) reported base metal mineralization along the Karesara Kakan–Sahpur–Talbehat Shear Zone carried out during the field season 1982-83 and 83-84. The results of grab samples collected from various rock types did not show encouraging values of Cu, Pb, and Zn. Mineralization in form specks of pyrite, specularite and rare specks of chalcopyrite is seen at Sahpur, Bamorisar and Jamalpur (central part of the proposed block). Specks of primary sulphides (mostly pyrite) have been reported from the fine grinned granite and porphyroblastic medium grained granite of this area.

d) The proposed area is covered by GSI's NGCM survey. The Cu (max- 489 ppm) -Mo (max-8000 ppm) show high values along with the high values for Co (upto 8855 ppm), Cr (upto 2602 ppm), Ni (upto 1038ppm), Pb (upto 313 ppm), Sr (upto 1183 ppm), iii Th (upto 474ppm), V (upto 1167ppm), Zn (upto 556ppm), As (upto 982ppm), F (upto 1060 ppm), Hg (4 upto 22 ppm), W (upto 444 ppm) U (upto 61ppm) and B(upto 467ppm) Analysis of NGCM data reveal high mercury (>10ppb), high arsenic (>10 ppm), high antimony (>1ppm) in a large area in the southern part of the proposed block. Anomalous gold (10-200 ppb) and bismuth (>0,5 ppm) are also present in some areas.

e) Geovale proposes to carry out a G4 exploration in the area by exploring both the granitoid rocks and the GQVs.





f) The project was send to GSI for comments. GSI conveyed that there is neither any investigation work going on during FS 2023-24 nor proposed during FS 2024-25 from the SU: Uttar Pradesh, GSI.

g) In view of above, committee opined that the gold values in is not encouraging and advised that collect few samples from each of the blocks. It the results are encouraging the proposals may be submitted in the next TCC. The TCC also suggested to reduce the area of the blocks accordingly.

Recommendation of TCC:

The committee suggested to collect few samples & get it analyzed for Gold from each block and submit the proposal in the next TCC, provided the results are encouraging.

Agenda 55.1.13. Reconnaissance survey on the Graphite Occurrences at singing Area under Upper Siang District, over an Area of 15 Sq. Km [Implementing Agency: DGM Arunachal Pradesh]

a) Geologically, the Himalayan reaches comprise Siwalik Group, Miri–buxa Group and Bomdila Group and Sela Group.Graphite schists are are well exposed along the foot track to singing Village from the main road from Yinkiong to Tutin and and the adjoining forest areas. The first zone has a strike length of 300 meters with a average thickness of 8 mtrs- 10 meter with a down dip direction of 400 meters and 250 meters 100 meters respectively.

b) DGM Arunachal Pradesh conveyed that the beneficiation study of selected sample collected from the region indicated high ash content of (85-93%) as well as high volatile matter (5.1-6.9%).Chemical weathering and bands of iron oxides are noted in this region.The result of the major oxide composition and carbon revealed that Graphite Schists of Ninging and singing in Upper Siang District is pure with high content of carbon which ranging from 64.01% to 66.81 wt% with an average of 65.54 wt% accordingly the CaCO3 content ranging from 0.00 Wt %-1.87 Wt%. CaO content varies from 4.4 Wt%-1.6 Wt% SiO2 content varies widely ranging from 18.01 % to 17.6wt%.. total alkali value 1.44%- 0.83 wt. %

c) The proposal has been sent to GSI for their comments. In response to this GSI has informed that GSI has carried out G4 investigation for Graphite in the FS year 1997-98 in Survey of India Toposheet no 82L/13 covering an area of 16 sq. km in Singing-Ninging-Pango area of upper Siang district of Arunachal Pradesh. The samples collected indicated range from 0.21-0.39% for Carbonate Carbon (CO2) and 2.17-4.78% for Non-Carbonate Carbon. Hence, the area did not appear to be prospective for graphite. GSI has established a number of graphite deposits in several areas among which Tai, Talia, Radphu, Phop, Depo, Pakro, Sitosike deposits may be mentioned . however, high value of carbon 64.01% to 66.81% as claimed as claimed by DGM Arunachal Pradesh is highly doubtful.

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d) Considering the above, the committee opined that a couple of samples may be rechecked in another laboratory for carbon values. The committee also advised DGM Arunachal Pradesh to visit the field area, collect fresh samples and demarcate the graphite bands tentatively. Field photographs may also be submitted with proposal.

Recommendation of TCC:

The committee recommended the proposal may be modified as per the suggestions of the TCC for visiting the field area, collecting samples, and demarcating graphite band roughly. TCC also suggested rechecking some of the samples for carbon values. The modified proposal may be submitted in the next TCC.

Agenda 55.1.14. Reconnaissance survey (G4) for Gold in Salaikana Block (28.765Sq. Km), District: Keonjhar, Odisha [Implementing Agency: OMC]

a) OMC informed the committee that the proposed block falls in part Toposheet No. 73 G/7 covering an area of 28.7 Sq Km. with nearby villages of Bagamunda, Barhadebata, Bhadimara, Dandargauni, Dumuria, Kalapokhari, Parunapani, Salaikena, Sonapenth and Telkoi etc. which are well known for gold occurrences.

b) Primary gold mineralisation is mainly associated with the chert bands which occur as part of relict schist belt within tonalites. The quartz vienintrusives within the granites away from chert band do not show gold mineralisation, whereas micro veins of quartz intrusives within granite in close association with auriferous chert bands show gold mineralisation (Upadhye et. al., GSI, 1994.)

c) The investigation for gold in the area was initiated in field season 1970-71 of DoMG. Pitting and trenching revealed placer zones between two small hilllocks NE of Saleikena village.

d) GSI (FS 1970-80) carried out investigation for gold in the Telkoi Block for an area of 60 sq km by reconnaissance survey, 30 sq km by large scale geological mapping on 1:15,840 scale and 1.1 sq km of detailed mapping on 1:2000 scale by plane table was covered besides undertaking pitting of 260 cu m and collection of 175 bulk and 63 grab samples, for gold and silver.

e) OMC informed that the analysis of 95 bulk samples by BGML and GSI laboratories shows that gold content, in saprolite and bed rock horizon are below 0.1 ppm and 0.5 ppm respectively.





f) OMC informed that from the desktop study and field visit they have observed that the airborne magnetic image displays a moderate magnetic response with a feeble East-West linear structure cutting the block.Out of the 100 historic samples 27 samples exhibited gold values for traces to 67.6 g/t. The area bears one drillhole (79.59m) with positive gold values of 0.3 g/t and 0.6 g/t. Gold values of 0.6 and 0.3 g/t have been obtained by fire assay from amphibolite with bands of vein quartz at depth from 58.0 – 59.74m an 72 to 73.5 m respectively. The fire assay results of pitting and trenching shows gold values upto 4.6 g/t gold

g) GSI communicated that the proposed Salaikena Block, is overlapping with GSI Explored blocks already covered by G-4 stage investigation during FS 1979-80, FS 1980-81 and FS 1981-82. The proposed block, is not overlapping with the GSI blocks taken up during FS 2023-24

h) Considering the above, TCC opined that ample reconnaissance work has already been carried out in the area. Therefore, to avoid the duplication of work, the committee recommended the project in G3 stage exploration. The outcome of the project will be reviewed after 6 months.

Recommendation of TCC:

The committee recommended the proposal for approval of EC for " Preliminary Exploration* (G3) for Gold in Salaikana Block (3.98 Sq. Km), District: Keonjhar, Odisha*" with an estimated cost of ₹ 201.99 lakh (including GST) within time schedule of 12 months for carrying out the proposed work and submission of report as per Annexure 8A &8B.

Agenda 55.1.15. Reconnaissance survey (G4) for Gold in Dimirimunda Block (44.942 Sq. Km), District- Keonjhar, Odisha. [Implementing Agency: OMC]

a) The important litho units exposed around the Dimrimunda block include Granite gneiss, Quartz mica schist, Quartz pebble conglomerate, Quartz schist, Quartz veins, Quartz veins and Quaternary Gravel bed.

b) OMC conveyed that the DoMG, Odisha study included mapping of 1.1 Sq. Km of area in field session of 1975-76 at 1: 2000 scale. The trench samples confirmed the presence of persistant Quartz veins without striking any gold occurrences. However the rock chip samples collected over the area yielded 18.9 gm/tonne. Further, The study by M. A Karim and N. K Sahu from GSI, chemical analyses data revealed that the gold content in the volcanic is suite highly erratic and values range from 50 ppb to 260 ppb.

c) The proposal has been sent to GSI for their comments. In response to this GSI has informed thatThe proposed Dimirimunda Block, Keonjhar district, Odisha, proposed by OMC overlapping with GSI Explored blocks already covered by G-4 stage investigation during FS 1980-81, FS 1981-82, FS 1993-94 and FS 1995-96.The proposed block is not overlapping with the GSI blocks taken up during FS 2023-24.

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i) Based on the above, committee opined that the project may be recommended for G3 stage as G4 stage exploration work was already carried out in the area.

j) The committee also suggested to review the project after 6 months.

Recommendation of TCC:

The committee recommended the proposal for approval of EC for "Preliminary Exploration (G3) for Gold in Dimirimunda Block (5 Sq. Km), District- Keonjhar, Odisha" with an estimated cost of ₹ 201.99 lakh (including GST) within time schedule of 12 months for carrying out the proposed work and submission of report as per Annexure 9A &9B.

Agenda.55.1.16. Reconnaissance survey PGE, Gold and REE in Maneri-Sitapala Block (80 sq. km), Balaghat District: M.P.

[Implementing Agency: DGM, Madhya Pradesh (M/s, Gemcokati Exploration Pvt. Ltd.)]

a) Geologically the proposed area is marked by the Amgoan Gneissic Complex consisting of Basement gneisses and supracrustals - phyllites and enclaves of metalava, Nandgaon Group represented by Bijli Rhyolites and Khairagarh Group represented by alternating sequence of Sandstones and basalts make up the lithopackage present in the block area.

b) The Atlas of Geological Potential Areas by GSI marks that the entire Khairagarh volcano-sedimentary sequence as OGP for gol. PGE is also indicated towards the west of the proposed block in the boundary between Amgaonneiss and Bijli Rhyolite.

c) Stream sediment sampling carried out in the western part of Toposheet no. 64C/11(V.D. Mahajan, 1977), where metagabbro dykes, Bijali rhyolites and tuffs, Pitepanimetabasalt belonging to Dongargarh supergroup are exposed, did not bring out significant basemetal anomalies. However, one sample from stream draining over rhyolite intruded by aplite vein showed anomalous value for copper and two samples from streams originating from a small raised area where metagabbro is exposed showed low anomaly for nickel.

d) Considering that gabbroic intrusive phases associated with Meso - Proterozoinc Volcanics have affinity towards chalcophile elements (Ni, Co, Cu, Cr) and magnetite-bearing gabbro can have significant PGE anomaly upto 1, three (3) magnetite gabbro samples analyzed; the Ni values range from 112ppm to 209ppm (against normal background values of 80 ppm); the Co values range from 73ppm to 148ppm (against normal background values of 25 ppm); V values range from 199pm to 310ppm (against normal background values of 120 ppm); The totalPGE values ranged from 0.23 to 0.25ppm.

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e) One more sampling programme exclusively from the magnetitite-bearing gabbro/basalt zone was carried out. A total of 11 samples were collected from the ~350m long zone and were analyzed for PGE by NiS Fire Assay. The total PGE values ranged from 0.12ppm to 0.49ppm.

f) The comment from GSI, SU: MP suggested that the proposed block does not have any overlap with the work carried out/ proposed by GSI.

g) In view of the above, the committee recommended Reconnaissance survey (G4 level) PGE, Gold and REE in Maneri-Sitapala Block (80 sq. km), Balaghat District: M.P. The project will be reviewed after 5 months.

Recommendation of TCC:

The committee recommended the proposal for approval of EC for "Reconnaissance survey PGE, Gold and REE in Maneri-Sitapala Block (80 sq. km), Balaghat District: M.P." with an estimated cost of ₹ 64.92 lakh (including GST) within time schedule of 8 months for carrying out the proposed work and submission of report as per annexure -10A &10 B.

Agenda 55.1.17. Reconnaissance Survey (G4 Stage) for Bodadihi-Belpahari Manganese Block, Jhargram District, West Bengal. [Implementing Agency: DMM West Bengal (M/s. United Exploration India Pvt. Ltd.)]

a) The proposal has been sent to GSI for their comments. In response to this GSI has informed that the major portion of the proposed block overlaps with the already explored block of GSI during FS 2020-21 entitled "Reconnaissance survey for manganese and associated sulphide mineralization in and around Chaukisar Pahar area, West Medinipur district, West Bengal", vide Code: M2AFGBM-MEP/NC/ER/SUWBAN/2020/30287. Further it also informed that A total of 100 sq. km area has been covered through large scale mapping (LSM; scale 1:12500) in and around Chaukisar Pahar, Labani, Pathatchakri, Sarisabasa, Odolchua, Mahulbani and Balichua areas in Jhargram District, West Bengal.
Based on the results received, Ni and Cr values are encouraging in certain locales. Cr concentration as high as 7570 ppm has been found in one bed rock sample from metabasalt near Odolchua. In the metaultramafite band west of Chirakuti, encouraging values of Cr and 5 Ni are found to occur. One bed rock sample from this band show Cr value 4769 ppm. Ni concentration from the metaultramafite band ranges from 825 to 1951 ppm. Mn concentration is not very encouraging in the area with only a few samples showing concentration greater than 10%. A total of 06 nos. of bed rock samples show concentrations ranging from 10.53 to 25.96 %, the highest value being observed from near Chaukisar Pahar. Most of the higher values of Mn have been found to occur within phyllite and brecciated quartzite of Dalbhum Formation.





b) In view of above, Committee opined that the area is already explored by GSI at G4 Stage and concentration of manganese is not encouraging. Therefore, the committee decided not to take up the project proposal to avoid duplication of the work.

Recommendation of TCC:

Keeping in view of above, the committee suggested not to take up the project in the proposed block to avoid duplication of work.

Agenda 55.2: Proposal on Financial Assistance for procurement of Machinery/Equipment

Agenda 55.2.1. Financial assistance from NMET funds to procure machinery/laboratory equipment/instruments etc. aimed at enhancing the exploration activities. [Implementing Agency: Director of Mineral Resources, Meghalaya : Shillong]

a) The Directorate of Mineral Resources, Shillong , Meghalaya submitted the proposal for procurements of machinery/ laboratory equipment/ instruments etc. aimed at enhancing the exploration activities with estimated cost of ₹ 223.63 Lakh.

b) Based on the requirement of DMR, Meghalaya, the committee evaluated the proposal for procurement of machinery/ laboratory equipment/ instruments etc. The details are given below:

Sl.no	Item	Quantity	Estimated Cost Per Unit (₹) in lakh	Total Estimated Cost (₹) in lakh
1	DGPS	1	16	16
2	Digital Camera	3	1.5	4.5
3	Brunton Compass	10	0.10	1.0
4	Total Station	2	6.96	13.92
5	Coral Draw	2	0.75	1.5
6	Handheld GPS	5	0.95	4.75
7	Transmitted and reflected light research microscope with software attached camera	1	18.58	18.58
			Total	**60.25**

The committee recommended the proposal for approval of EC towards procurement of equipment's/ software's for Directorate of Mineral resources, Shillong , Meghalaya with estimated cost of Rs. 60.25 lakh as detailed at para (b) above, to enhance the exploration activities in the country.

The committee opined that due process of procurement including item wise cost estimation as per extant Government of India Financial rules be followed by DMR Meghalaya in consent with the competent authority of State Department/ State Financial Wing (Division). The State Govt. should also ensure full utilization of the instruments/software to be procured.

Agenda 55.2.2. Financial assistance from NMET fund to procure machinery/laboratory equipment/instrument etc. aimed at enhancing the exploration activities. [Implementing Agency:Director of Geology & Mining, Nagaland]

a) The committee has been informed that the Executive Committee (EC) of NMET in its 28th meeting held on 16th March 2023 approved ₹ 4,40,46,000/- to procure machinery/laboratory equipments/instruments, etc. Further, in its 29th EC meeting held on 31st March 2023 an additional cost of ₹14,25,000/- was approved. The first installment towards the approved cost ₹1,92,18,400/- and ₹ 5,70,000/- respectively has also been disbursed to the state.

b) Now DGM Nagaland has proposed the enhancement of ₹1,34,35,214 in the approved cost of the following instruments:

Sl.No	Item	Qty	NMET approved coat In ₹	Bid price (incl.GST) in₹	Less amount (bid price ₹	Excess amount (bid price) (₹)
1	Core splitter hydrostatic	1	2,00,000	9,94,000	-	7,94,000
2	Pulveriser	1	40,00,000	9,98,168	30,01,832	-
3	WD-XRF	1	2,00,00,000	3,19,84,578	-	1,19,84,578
4	Press pellet machine	1	3,90,000	10,46,636	-	6,56,636
					Total	1,34,35,214

TCC opined that the cost approved for Core splitter hydrostatic, Pulveriser and Press pellet machine is same as the upper ceiling cost of approved by NMET. However, the upper ceiling cost of WD-XRF is ₹ 2, 20, 00,000/-.

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Considering the above, TCC opined that an additional amount of ₹20,00,000/- may be recommended for WD- XRF to DGM Nagaland as the amount of ₹30,01,832/- has been reduced in pulveriser.

Recommendation of TCC:

The committee recommended the additional cost of ₹20 Lakh for procurement of WD-XRF for Directorate of Geology & Mining, Dimapur, Nagaland for approval of EC.

Agenda 55.2.3. Proposal for funding allocation for geochemical analysis of 9932 GGCMP sample. [Implementing Agency: CGM, Gujarat]

a) CGM Gujarat Conveyed that GSI had launched National Geochemical Mapping program (NGCMP) during FS 2001-2002 with an objective to create geochemical data base of the entire country.

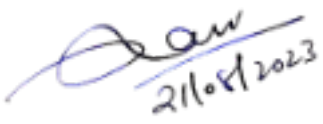
b) In this regard, the Commissionerate of Geology and Mining, Gandhinagar, Govt. of Gujarat and Geological Survey of India, State unit: Gujarat, Gandhinagar singed an MOU for cooperation and knowledge sharing between CGM and GSI for speedy coverage of entire Gujarat under the National Geochemical Mapping (NGCM) Programme.

c) CGM Gujarat informed that a total of 17,680 samples were collected by the CGM for this program. The CGM has already analyzed different packages on these samples. However due to limitations in fund 9932 samples could not be analyzed. But after consultation with GSI officials, CGM again started analysis of 9932 samples in 56 toposheets. A total number of 9932 samples (56 toposheets) will be analyzed through different analytical methods in the Petrography and Mineral Chemistry Laboratory, CGM, Gujarat.

d) CGM Gujarat conveyed that as per the clause 3.i.&3.ii of the MoU between CGM and GSI, the program is funded by Government of Gujarat through GMRDS and Additional funding sources' including Government of India is to be pursued.

e) CGM Gujarat informed that CGM has already incurred expenses for a total of₹66,29,810/- for the GGCMP project. As the project is expected to be completed by March 2024, CGM Gujarat requested for allotmentof ₹ 22,67,37,628 (Rupees Twenty-two crores sixty-seven lakhs thirty-seven thousand six hundred twenty-eight only) for carrying out analyses of pending samples from the GGCMP survey.





f) Considering the above, TCC recommended the proposal for funding geochemical analysis of 9932 GGCMP samples as given in table below:

S.N	Instrument Name	Analyzed Elements	Total Samples	Unit Cost	Total Cost
1	XRF	26	9932	4200	4,17,14,400.00
2	ICP-MS	22	9932	7731	7,67,84,292.00
3	ISE	1	9932	2320	2,30,42,240.00
4	DMA	1	9932	1060	1,05,27,920.00
5	Flame AAS	2	9932	2506	2,48,89,592.00
6	Hg-AAS	3	9932	2506	2,48,89,592.00
7	Gf-AAS	4	9932	2506	2,48,89,592.00
Total Cost		**22,67,37,628**			

g) However, some members of TCC shown their dissent based on (i) CGM, Gujarat has not mentioned in their proposal that the pending work could not be taken up due to shortage of funds.(ii) MoU between Geological Survey of India and CGM, Gujarat signed on 21st June, 2014 for a period of 5 years i.e. up to 20, June, 2019. Therefore, the MoU has become null and void as on date. These members opined that CGM, Gujarat should take up the matter of additional funding with the Government of India and if the Government advises them to approach NMET, then CGM, Gujarat may send a proper proposal for consideration of TCC, NMET.

h) Chairman TCC opined that as the project is part of Ministry of Mines(MoM) national baseline mapping endeavor of National Geochemical Mapping Programme (NGCM) , which is envisaged to be covered and completed in the core and extended OGP areas by FY 2023-24, the completion of the 9,932 nos. of pending chemical analysis from 56 nos. toposheets assumes urgency. These data forms the part of baseline database which is to be shared in the Bhukosh Portal of GSI and NGDR platform for wider stake holders to give fillip to exploration activities in the country.

i) Based on the above, majority of members of TCC & Chairman TCC, NMET opined that the proposal of pending chemical analysis submitted by CGM Gujarat and also in the backdrop of discussions held in last GB meeting of NMET needs to be forwarded to EC, NMET . Moreover, the geo-chemical database from the NGCMP will help the country in managing and developing natural resources; application in environmental, agricultural, human health and other social concerns, as well as to search for hidden mineral deposits.

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j) Based on the above rational and also keeping in view the urgency of the completion of the pending analysis, the majority of committee opined that the project proposal submitted by CGM Gujarat needs to be submitted for the perusal and approval of EC, NMET.

Recommendation of TCC:
The committee recommended the proposal for funding allocation for geochemical analysis of 9932 GGCMP samples with estimated cost of ₹ 22,67,37,628 (Rupees Twenty-two crores sixty-seven lakhs thirty-seven thousand six hundred twenty-eight only)

Agenda 55.2.4.Financial assistance from NMET funds to procure machinery/ laboratory equipment/instruments etc. aimed at enhancing the exploration activities. [Implementing Agency: CGM, Gujarat]

a) The Commissionerate of Geology and Mining, Gandhinagar, Govt. of Gujarat has submitted the proposal for procurement machinery/ laboratory equipment/instruments etc. aimed at enhancing the exploration activities- CGM, Gujarat with an estimated cost of ₹ 493 Lakh.

b) The committee evaluated the proposal and after detailed discussions agreed to recommend the following items to CGM Gujarat:

Sl.no	Item	Quantity	Estimated Cost Per Unit (₹) in lakh	Total Estimated Cost (₹) in lakh
1	Pulverizer	1	10.0	10.0
2	Trinocular Stereo zoom Microscope with camera	1	15	15
3	Hand held XRF	2	14.0	28
4	Press pellet machine	1	3.90	3.90
			Total	**56.90**

Recommendation of TCC:
The committee recommended the proposal for approval of EC towards procurement of equipment's/ software's for CGM, Gujarat with estimated cost of ₹ 56.90 lakh as detailed at para (b) above, to enhance the exploration activities in the country.





The committee opined that due process of procurement including item wise cost estimation as per extant Government of India Financial rules be followed by CGM Gujarat in consent with the competent authority of State Department/ State Financial Wing (Division). The State Govt. should also ensure full utilization of the instruments/software to be procured.

Agenda 55.2.5.Establishment of Centre of Excellence for Rare Earth Elements Laboratory, Gandhinagar. [Implementing Agency: CGM, Gujarat]

a) CGM Gujarat put forward the proposal to establish a Centre of Excellence for Rare Earth Elements Laboratory, Gandhinagar. Gujarat is looking to create this Center of Excellence as a world class center, first of its kind in any state in India, and would also look to cater to international projects working on India's REE source security.

b) CGM Gujarat informed that 29 new critical metal prospective blocks have been identified in the state. Gujarat is moving fast in establishing country's first REE mine (Ambadungar) along with beneficiation / processing plants.

c) Considering the present thrust in both REE and critical mineral exploration in the country, CGM Gujarat is proposing to provide modern laboratory and infrastructural facility as a 'onestop-shop' for smooth execution of these exploration activities.The proposed cost of the instruments is ₹ 6510 Lakhs.

d) The committee welcomed the idea for a specialized lab for REE and mineral exploration. However, it was opined that the funding for establishment of Centre of Excellence for Rare Earth Elements Laboratory is beyond the purview of TCC.

Recommendation of TCC:

The committeedid not recommend the proposal as it does not fall within the purview of TCC.

Agenda 55.3: Other Agenda

Agenda 55.3.1. Cost for Ash Analysis [Implementing Agency: CMPDI]

a) CMPDI communicated that the ash analysis charges for coal samples in Schedule of Charges (SoC) of NMET at Sl.no 4.2.25 is ₹335/-. However, the actual charges for the ash analysis is Rs 13,664/. The supporting document which is the same that was submitted by CMPDI at NMET at the time of formulation of SoC was also submitted by CMPDI.





b) CMPDI requested that the necessary correction may be made in SOC for claiming ash analysis charges in NMET approved project

c) Considering the variation in cost, TCC opined that EC may be recommended to modify Schedule of Charges (SoC) of NMET at Sl.no 4.2.25 regarding rate of Ash analysis to ₹13664/- (Rupees thirteen thousand six hundred sixty four only) in place of ₹335/-.

Recommendation of TCC:

***The committee recommended that EC may approve the modification for the cost of Ash analysis to ₹13664/- (Rupees thirteen thousand six hundred sixty four only) in the SOC at* Sl.no 4.2.25.**

Agenda 55.3.2. Preliminary exploration (G3) for limestone in Itga blocks, District: Kalaburagi, Karnataka. [Implementing Agency: DMG Karnataka]

a) DMG Karnataka conveyed that in 30th EC of NMET held on 6th June ,2023 approved the cost of ₹ 125.50 lakh.
b) DMG Karnataka informed that they will submit two reports in this project. Therefore requested to increase the cost of peer reviewer (₹ 60,000/-) and cost of geological report preparation (₹ ₹9,22,585/-)
c) In view of above the committee agreed for the increase of cost of the project.

Recommendation of TCC:

The committee recommended the modified cost of ₹ 131.55 lakh for preliminary exploration for Limestone in Itga block as annex at annexure-11.

Agenda 55.3.3. Reconnaissance Survey (G4) for Phosphorite, Baryte & REE in Katamadevarahalli Area, Kalburgi Dist., Karnataka. [Implementing Agency: OMC]

a) KIOCL conveyed that the cost of phosphorite analysis is ₹ 9,805/- per sample (conventional wet chemical method). However, they have got ₹ 4,200/- per sample. Therefore, requested to consider the cost of ₹ 9,805/- per sample.

b) TCC opined that KIOCL may carry out the analysis by XRF technique. Hence, there is no need of change in cost of per samples.

Recommendation of TCC:

The committee suggested to carry out the analysis by XRF technique.

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Agenda 55.3.4. Preliminary exploration for manganese ore in Lashi Block (1.60 sq. km) District: Sundargarh, Odisha. [Implementing Agency: OMC]

a) The project was reviewed in 53rd TCC meeting. In the meeting, "*The committee noted the outcome of the project and recommended the borehole no. LSN/11/1/22, LSN/11/2/22 and LSN/11/8/22 at the depth of 88m, 147m and 96m respectively. Remaining 5 boreholes recommended upto depth of 75 m. The TCC recommended the time extension upto 20/04/2023".*

b) OMC conveyed that 8 BHs planned for G3 level of exploration of the Lashi Block. LSN/11/1/22 and LSN/11/2/22(First two borehole) drilled on Mn outcrop and further proved Mn horizons at depths. Four Mn horizons encountered at different RLs such as ~ surface weathered zone, ~ 475 mRL, ~460mRL and ~440 mRL(Deepest occurrences). Rest six Bhs planned covering the block with depth target up to 440 mRL or Black Shale(non- mineralized zone for Manganese) encountered, whichever is earlier.Accordingly BHs drilled upto depth 90 to 110m.

c) After the detailed deliberation, the committee again opined that the extra drilling meterage cannot be recommended.

Recommendation of TCC:

The committee did not recommend the extra drilling meterage.

Agenda 55.3.5. Net Present Value (NPV) For Forest Clearance for Boreholes in Kachaldara block (5.60 sq. km), District: Jhabua, Madhya Pradesh [Implementing Agency: MECL]

a) The project "Preliminary exploration (G3) for phosphorite in Kachaldara East block (5.60 sq. km), District: Jhabua, Madhya Pradesh" was approved in the 27th EC meeting of NMET held on 10th January, 2023 with an estimated cost of ₹ 180.77 Lakhs and 12 months duration. The Sanction order for the project was issued on 03rd February,2023.

b) MECL conveyed that for forest clearance they have applied on 18th March, 2023 and they have received a letter issued for demand of NPV from Forest Division on 13th July, 2023 for amount of NPV ₹ 6,14,295/-. After deposition of NPV a formal letter of permission to take up the boreholes in Forest area will be issued by PCCF, Bhopal.

c) In view of above, committee agreed for the amount of ₹ 6,14,295/- towards NPV for obtaing forest permission.

Recommendation of TCC:

The committee recommended for an amount of ₹ 6,14,295/- (towards NPV for obtaining forest permission to carry out exploration work.

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Agenda 55.3.6. Status of 1st Completed Boreholes in Bharusari North Block, Hanumangarh District, Rajasthan [Implementing Agency: MECL]

a) The project was recommended in 29th EC meeting of NMET and MECL got the sanction order on 17th April, 2023.

b) It has been conveyed that MECL started the exploration work immediately on 21/04/2023 by deploying rig for drilling borehole no MPB-13. The details of the all five boreholes are as follows:

PBH No.	Bh. No.	Running Depth as on 27.07.23	Date of Commencement	Remarks
PBH-1	MBP-15	499.50 m	15-05-23	HEG
PBH-2	MBP-16	590.50 m	25-05-23	HEG
PBH-3	MBP-13	694.00 m	21-04-23	Bh closed at 694.00 m. All 7 halite cycle encountered. 134 Nos of primary samples generated from H1, H2 and H4
PBH-4	MBP-17	631.00 m	04-06-23	HEG
PBH-5	MBP-14	281.00 m	05-05-23	BH Closed due to artesian condition

c) MECL has prepared 134 Nos of primary samples from H-4, H-2 and H-1 halite cycles with varying sample length from 0.20 m to 1.00 m considering the mineralogical variation and geophysical interpretation. The Geophysical Logging indicates Polyhalite and Syvinite zone. Further, the sample has also been subjected to XRD analysis for mineral phase identification.

d) MECL presented the comparative study of borehole no. MBP-13 (PBH-03) with geophysical logging and geological logging. Further, MECL conveyed that result of XRD analysis will be submitted in next TCCC meeting.

e) The committee reviewed the borehole no. MBP-13 and note the outcome of the exploration activities.

Recommendation of TCC:

The committee note the current status of the project and reviewed the borehole no. MBP-13.

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Agenda 55.3.7. Preliminary exploration (G3) for coal in West of Chuperbhita block (24.57 sq. km), Rajmahal coalfield District: Godda, Jharkhand [Implementing Agency: CMPDI]

a) The project "Preliminary exploration (G3) for coal in West of Chuperbhita block (24.57 sq. km), Rajmahal coalfield District: Godda, Jharkhand" was approved in 26th EC meeting of NMET held on 25th August, 2022 with an estimated cost of ₹ 2.49 Cr. within 12 months duration.

b) CMPDI conveyed that exploration activities through outsourcing in adjacent NMET funded block i.e East of Chuperbhita block, drilling is continuously is being hampered due to local conditions. Due to hostile conditions, carrying out field activities in the West of Chuperbhita Block is not feasible.

c) The committee suggested to submit the reason for surrendering of project with supporting documents in next TCC meeting.

Recommendation of TCC:

The committee suggested to submit the reason for surrendering of project with supporting documents in next TCC meeting.

Agenda 55.3.8. Preliminary exploration (G3) for coal in Brahmni North block (21.73 sq. km), Talcher Coalfield, District: Dhenkanal, Odisha. [Implementing Agency: CMPDI]

a) The project was approved in 27th EC meeting of NMET held on 10th January, 2023 with an estimated cost of ₹ 254.50 lakh in 12 months duration.

b) CMPDI conveyed that the drilling & geophysical logging are to be taken through departmental resources. Since 25th of July 2022 due to local Law and order issues our departmental activities have been completely halted in the area.On request, approval was accorded by NMET for outsourcing of drilling and geophysical activities. However due to prevailing ground conditions any activities through departmental or outsourcing mode cannot be carried out in the block.

c) The committee suggested to take assistance from State Government to resolve to law & order issues and also suggested to submit the justification for surrendering the project.

Recommendation of TCC:

The committee suggested CMPDI to submit justification with supporting documents regarding the surrender of the project in next TCC meeting.





Agenda 55.3.9. Reconnaissance Survey for coal in Pawanchora Central block, Wardha Valley Coalfield, District: Chandrapur, Maharashtra. [Implementing Agency: CMPDI]

a) The project was approved in 24th EC meeting of NMET and got sanction order in 01st, January, 2023.

b) CMPDI conveyed that earlier floated tender was cancelled in the month of December due to GOI directive of tending through GEM only. Retendering through GEM portal was done on 17/03/2023.The tender through GEM portal was cancelled on 19/7/2023 due to the rate quoted by L1 bidder was disproportionally higher than estimated cost. Quoted rates are even higher than the sanctioned rate of drilling by NMET also.

c) It has been informed that the project got time extension upto 31st Jan, 2024.

d) In view of above, committee suggested CMPDI to submit a letter regarding non-commencement of work, justifying the surrender of the project as drilling could not be carried out either in-house resources or out-sourced resources.

Recommendation of TCC:

The committee suggested CMPDI to submit a letter regarding non-commencement of work, justifying the surrender of the project in next TCC meeting.

Agenda 55.4: Review of completed/ongoing projects and time extension

Agenda 55.4.1.Preliminary Exploration (G-3 stage) for Limestone in Periyakurichi Block (1.88 sq. km) in Ariyalur District, Tamil Nadu. [Implementing Agency: MECL]

a) The project "Preliminary Exploration (G-3 stage) for Limestone in Periyakurichi Block (1.88 sq. km) in Ariyalur District, Tamil Nadu" was approved in 24th EC meeting of NMET with an estimated cost of ₹ 0.97 Cr. within 8 months duration.

b) MECL conveyed that in Periyakurichi block area is mostly covered by Niniyur formation of Paleocene age, Cuddalore formation of Mio-Pliocene age and most of the area is covered by quarternyalluvium.The strike is ENE-WSW and the dips are very low of 1° to 3° due southeast. There are no major folds and faults occur in Niniyur formation.Survey work, drilling and other exploration activities in this block has been completed. The detail of resources are as follows:





Category and UNFC Code	Cement (Portland)	Blendable Grade	Threshold Grade	Total	Remarks
Indicated-333	26.44	3.34	5.84	35.62	73.71%
Reconnaissance-334	9.56	1.09	2.04	12.69	26.28%
Total	36.00	4.43	7.88	48.31	100.00%
Average Quality	CaO 47.98%,	CaO 41.11%,	CaO 36.29%,	CaO 44.24%,	
	MgO 0.76%,	MgO 1.15%,	MgO 1.46%,	MgO 0.94%,	
	SiO_2 7.88%	SiO_2 13.75%	SiO_2 19.84%	SiO_2 11.16%	

c) In view of above, the committee poined that as limestone is a bedded deposit, the resource may be calculed for G2 level and also suggested to consult IBM, Nagpur before submission of geological report. TCC also agreed for Time extension of 1.5 months I.eupto 15th August,2023.

Recommendation of TCC:

The committee suggested to calculate resource at G2 stage and suggested to consult IBM, Nagpur before submission of geological report. TCC also recommended the timeline extension of 1.5 months i.e. upto 15th August, 2023 for submission of geological report to NMET Secretariat.

Agenda 55.4.2 Preliminary Exploration (G-3 stage) for Phosphorite in Pahadi Kalan-Gora Kalan Block in Lalitpur District, Uttar Pradesh. [Implementing Agency: MECL]

a) MECL conveyed that the Pahadi Kalan-Gora Kalan block is the western continuity of previously explored Sonrai I to V Blocks. Phosphorite mineralization in the block is mainly lithologically controlled and is present in Brecciated Quartzite of more or less ferruginous characteristics. Phosphate is also resulting from surface weathering in Rohini member of Sonrai Formation and occurs as fracture fillings, forming veins and lenses in silicified breccias and carbonates.

b) It has been conveyed that MECL carried out a total of 1019.00m of exploratory drilling in 11 boreholes at 800m section interval against 1085.00m drilling approved in 11 boreholes. All the boreholes has encountered the phosphorite bearing FerrugineousBreciated Quartzites in which phosphorites has also been confirmed through chemical analysis above the cut-off grade of 5% P_2O_5%.Phosphorites of Pahadi-Kalan Block falls in two grades – 1. Benificiable Grade (5-<16% P2O5) and Soil Reclamation Grade (16-25% P2O5).

c) MECL further conveyed that It has been reported by AMD that none of the boreholes contain any important radioactive elements at above the threshold limit.A total of **19.08 Million tonnes** of Net In –situ Inferred Resources (333 category) of Phosphorite with average grade of **9.83% P_2O_5** has been estimated by **cross sectional method** and **17.67 Million tonnes**of Inferred Resources (333 category) with average grade of **9.70% P_2O_5** have been estimated by **slice plan method.**

d) MECL also requested for time extension of 2.5 months (i.e. upto 15th August, 2023) for submission of report.

e) In view of above, the committee noted the outcome of the project and agreed for time extension of 2.5 months for submission of geological report.

Recommendation of TCC:

The committee noted the outcome of project and recommended the timeline extension of 2.5 months i.e. upto 15th August, 2023 for submission of geological report to NMET Secretariat.

Agenda 55.4.3. Reconnaissance Survey (G-4) for Emerald in Rajgarh Block (115.00 sq. km) in Ajmer District, Rajasthan. [Implementing Agency: MECL]

a) The project "Reconnaissance Survey (G-4) for Emerald in Rajgarh Block (115.00 sq. km) in Ajmer District, Rajasthan" was approved in 22nd EC meeting at an estimated cost of ₹ 0.98 Cr. in 14 months duration.

b) MECL conveyed that mapping was focusing on the contact between altered ultramafic bodies and pegmatite, which is known to host metasomatic zones associated with emerald mineralization and trenches were excavated to expose concealed metasomatic zones.Emerald mineralization was evident in Trench-03 and Trench-08 within the metasomatic zones.

c) MECL further conveyed that High chromium (507 ppm to 1300 ppm) and Nickel (600ppm to 2800ppm) in the altered ultramafics and metasomatic zone indicates a high P/T condition pertaining to hydrothermal alteration of the ultramafics. At places, the ultramafics are associated with beryl-tourmaline bearing pegmatite.The pegmatites are K-rich (1.6% to 5.7%) represented by presence of Phlogophite& potassic feldspar. Apatite is also found in these pegmatites, represented by 1.27% P value. The metasomatic zones are typically represented by high Mg value and low K, Al and Si value.





d) MECL further requested for timeline extension upto 31st July,2023 for submission of report.

Recommendation of TCC:

The committee noted the outcome of project and recommended the timeline extension upto 31st July, 2023for submission of geological report to NMET Secretariat.

Agenda 55.4.4. Preliminary Exploration (G-3 stage) for Iron Ore in Malangtoli Block, Sub Block-G in Sundargarh and Kendujhar Districts, Odisha. [Implementing Agency: MECL]

a) MECL conveyed that topographic survey (5m Contour Interval) at 1:10000 scale over 17.39 sq.km, drilling in 10 borehole with 953 m meterage, and other activities have been completed.

b) MECL further conveyed that the type of ore encountred in block and their values are follows:

Type of Ore		Characteristic Features	Value (Min.- Max.)		
			Fe%	SiO_2 %	Al_2O_3%
Lateritic ore		Brecciated, soil bounded , pebbly in nature reconsolidated in ferruginous matrix	54.02	17.39	3.96
Hard Laminated Ore	Hard Laminated Ore (Steel Grey Laminated Ore)	Closely spaced compact laminations	Max 68.45	0.96	0.55
	Massive (Hematitic) / Steel Grey Massive Ore	With or without planar structure	Min 45.00	34.63	0.14
Soft laminated Ore / Biscuity Ore		Laminated and friable in nature mixed with powdery ore or clay	Max 68.13	1.02	0.81
			Min 45.25	9.34	14.99
Powdery Ore/ Blue Dust		The powdery ores consist almost entirely of Unconsolidated grain	Max 62.99	2.61	1.58
			Min 46.31	14.01	13.96

The total net resource including (G3 & G4) level is 377.82 metric million tonnes with avg. grade of Fe 59.34 %, 5.52% SiO2% and 5.28% Al2O3 %.the details are follows:





Resource Category	Gross Resource in Tonnes	Net Resource in Tonnes	Net Resource in Metric Tonnes	Fe%	SiO_2 %	Al_2O_3%
G4 level (334)	118458547.61	106612692.85	106.61	60.64	4.86	4.50
G3 level (333)	301336295.77	271202666.19	271.20	58.84	5.79	5.60

c) After the detailed deliberation committee suggested to submit the separate resource in Forest area and non-forest area and also suggested to calculate the resource for G2 stage. Therefore, the committee also recommended the time extension of 15 days i.e. upto 15th August, 2023.

Recommendation of TCC:

The committee suggested to submit resources in forest area and non-forest area and also suggested to calculate the resource for G2 stage. The committee also recommended the time extension of 15 days i.e. upto 15th August, 2023 for submission of geological report.

Agenda 55.4.5. Detailed Exploration (G-1 stage) for Lignite in Veeranam Block, Sub Block-IV in Cuddalore, Tamil Nadu. [Implementing Agency: MECL]

a) MECL conveyed that 52nd TCC of NMET recommended the time extension for the project.The30th Executive committee of NMET approved time extension upto 30.06.2023 for Sub Block-IV.

b) Further it has been conveyed that Net in-situ Resource of 459.414 million tonnes (Proved category of 354.490 million tonnes, Indicated category of 54.828 million tonnes and Inferred category of 50.096 million tonnes) over lignite development area of 52.84 sq. km. with an average grade of 2513 K.cal./kg. (Lignite B Grade) have been assessed.

c) MECL informed that Geological Report of the Veeranam Block-IV was submitted by MECL to ADG & National Mission head-II, GSI, Nagpur on dated 30.06.2023 for peer review.

d) In view of above, MECL requested for time extension upto 31st August, 2023 for submission of geological report.

e) The committee agreed for recommendation of timeline for 2 months for submission of geological report.

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Recommendation of TCC:

Keeping in view of above, the committee recommended the timeline extension of 2 months i.e. upto 31st August, 2023 for submission of geological report to NMET Secretariat.

Agenda 55.4.6.Reconnaissance Survey (G4) for Kyanite in Kallahalli Kyanite block, District- Mysore, Karnataka. [Implementing Agency: KIOCL]

a) The project "Reconnaissance Survey (G4) for Kyanite in Kallahalli Kyanite block, District- Mysore, Karnataka" was approved in 18th EC meeting held on 17th February, 2021, at an estimated cost of ₹ 1.92 Cr. in 12 months duration i.e. upto 23.02.2022.

b) KIOCL conveyed that Large Scale Geological Mapping as revealed 3 nos. of potential mineralized bands (band 1,3,& 5(south)) of Kyanite-Sillimanite over total area extent of 1.5 sq.km with average Al2O3 % varying from 41.25 to 41.93. Modal analysis works on the surface samples collected from these bands indicates the modal % of Kyanite – Sillimanite up to 32 % and Kyanite – Sillimanite are the main contributor of Al2O3. On the other hand, the geochemical studies of the bed rock samples shows the average Al2O3 % of 41.49% . As the mineralised ore zone bands (band 1and 3) are situated within the mallewarana betta deemed forest area, no drilling works is carried out.

c) KIOCL requested for time extension upto 15th August, 2023 for submission of geological report.

d) The committee opined that proper justification may be sought fromKIOCL for the timeline extension upto 15th August 2023 (almost 18 months)

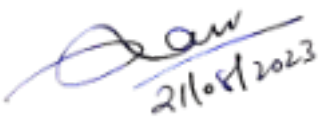
Recommendation of TCC:

Keeping in view of above, the committee suggested to submit the justification for the timeline extension required in the next TCC.

Agenda 55.4.7. Reconnaissance survey for basemetal in Anaji block (135.00 sq. km), District: Davangere, Karnataka. [Implementing Agency: KIOCL]

a) The project "Reconnaissance survey for basemetal in Anaji block (135.00 sq. km), District: Davangere, Karnataka" was approved in 22nd EC meeting with an estimated cost of ₹ 1.44 Cr. in 12 months.





b) KIOCL conveyed that Large scale geological mapping was carried out in 1:12,500 scale covered an area of 135 sq.km. The rock types of the area are Quartzite, Amphibolite, Meta-ultramafites, Talc schist, Chlorite-Sericite-schist within peninsular gneiss and basic intrusive like gabbro, dolerite, and Quartz vein. No surface manifestation of mineralisation observed in the area for targeting. Sampling was done only along the limited outcrops and the area is covered with intensive agricultural activities and urbanization. The quartzite bands do not show oxidized surfaces. Surface manifestation of various lithounits encountered does not shows primary sulphides and specks of Chalcopyrite and malachite strains.

c) KIOCL further conveyed that out of 34 nos of BRS samples collected and analysed only 06 nos of samples has indicated Cu value > 100 ppm. In stream sediments samples, no sample shows Cu value > 100 ppm & Au values.

d) The committee has been informed that during the LSM works carried out by KIOCL, it is observed that brecciated quartzite bands which have shown Cu value up to 0.53% as identified by GSI, were not traceable due to recent land reformation such as intensive agricultural activities and urbanisation. In order to delineate and trace out the brecciated Quartzite bands which have indicated Cu values upto 0.53% as identified by GSI, a close space ground geophysical works (EM & IP) in priority zone 1 -7 over a cumulative extent of 6.27 sqkm., followed by trenching and scout drilling is recommended.

e) KIOCL also requested for time extension upto 6th August, 2023 for submission of geological report.

Recommendation of TCC:

The committee noted the outcome of project and recommended the project for time extension upto 6th August, 2023 for submission of geological report to NMET Secretariat.

Agenda 55.4.8. Reconnaissance survey for basemetal in Oblapuram block (53.0 sq.km), District: Davangere, Karnataka. [Implementing Agency: KIOCL]

a) The project "Reconnaissance survey for basemetal in Oblapuram block (53.0 sq. km), District: Davangere, Karnataka" was approved in 22nd EC meeting of NMET at an estimated cost of ₹ 1.66 Cr. in 12 months.

b) KIOCL conveyed that Large Scale geological mapping was carried out in 1:12,500 scale covering an area of 53.00 sq.km. The rock types of the area are Quartzite, Quartz-sercite-schist, Chlorite-sercite-schist, Amphibolite within peninsular gneiss and basic intrusive like dolerite and Quartz vein.





c) KIOCL further conveyed that out of 49 nos. of BRS samples collected and analysed only 07 nos. of samples has indicated Cu value > 100 ppm and balance 42 samples has shown Cu value < 100 ppm. Out of 30 nos of Stream Sediment Samples collected from 1st,2nd, 3rd and 4th order streams, no sample has indicated Cu value > 100 ppm and no sample is detected with Au value. Heavies / Residuals of panning works of all 30 nos of Stream Sediment Samples have not indicated any specks of Gold.

d) Further KIOCL informed that during the LSM works carried out by KIOCL, it is observed that brecciated quartzite bands which have shown Cu value up to 0.16%, as identified by GSI 04 decades ago, were not traceable due to recent land reformation such as intensive agricultural activities and urbanisation. In order to delineate and trace out the brecciated quartzite bands which have indicated copper values upto 0.16% as identified by GSI, a close spaced Ground Geo physical works (EM & IP) in priority zones 01, 02 and 03 over cumulative extent of 10.49 sq.km. followed by trenching and scout drilling is recommended.

e) In view of above, KIOCL requested for time extension of 8 months.

f) The committee opined that justification for the time extension of 8 months is to be submitted in the next TCC meeting.

Recommendation of TCC:

Keeping in view of above, the committee suggested to submit justification for the time extension of 8 months in next TCC meeting.

Agenda 55.4.9. General exploration for coal in Marwatola Sector-III & IV Block, Sohagpur Coalfield, District: Umaria, Madhya Pradesh. [Implementing Agency: CMPDI]

a) The project “General exploration for coal in Marwatola Sector-III & IV Block, Sohagpur Coalfield, District: Umaria, Madhya Pradesh” was approved in 20th EC meeting of NMET. The sanction order issued on 30th June, 2021.

b) CMPDI conveyed that 13 bhs (3674 m) have been drilled in the block and 16 correlatable seams including splits (V, IV, L2, IIIA, III Top, III Middle, III Bottom, III Combined, II Top, II Bottom, II Combined, IB, IA, I Top, I Bottom and I Combined) have been proved to exist. Among them regional seams IV, IIIA, III Top, III Middle, III Bottom, III Comb, II Bottom, II Comb, IB and IA have been assessed for resource in the block. A total of **82.361 million tonnes**of gross indicated resources have been estimated in the entire block. The Grade wise resources are as follows:

Recommendation of TCC:

The committee noted the outcome of project and agreed for submission of geological report to NMET Secretariat.

Agenda 55.4.10. Reconnaissance Survey (G4) for diamond in Jheriya block,(100.30 sq.km.), District: Janjgir-Champa,Chhattisgarh [Implementing Agency: NMDC]

a) The project was approved in 26th EC meeting of NMET and sanction order has been issued on 20th September, 2022.

b) NMDC conveyed that forest permission has been granted on 25th November, 2022 . Accordingly, NMDC had done orientation visit to Jheriya Block in the month of November, 2022. Due to presence of water in the creek and crops in the field, exploration activities commenced in the month of January, 2023.

c) It has been conveyed that a total of 36stream sediment samples were collected. All the 36 samples processing, microscopic sorting followed by mounting & polishing works completed.

d) Further NMDC conveyed that during microscopic sorting of Heavy Indicator Minerals it has been observed that most of the HIM's are Chromite & Garnet. However, confirmation regarding the HIM's Kimberlitic affinity and from Diamond stability filed can only be made after the outcome of EPMA analysis After EPMA results Geophysical survey and Soil sampling will be planned and If any positive anomaly results comes after Geophysical Survey, then test drilling will be planned accordingly.

e) In view of above, the committee suggested to review the project after completion of Geophysical survey.

Recommendation of TCC:

The committee suggested to review the project after completion of Geophysical survey.

Agenda 55.4.11. Preliminary Exploration for Limestone in Malkhaed Block 1 & 2 (G-3 Stage), Gulbarga District, Karnataka [Implementing Agency: MECL]

a) MECL conveyed that 9 Boreholes drilled up to 50m and closed in limestone & 01 Stratigraphic borehole (KML-09) drilled up to 150m. Limestone occur after soil cover from 2.60 and continued up to the bottom of the borehole at 50.00m and The stratigraphy borehole has the 130.00m thick limestone continuously after the soil cover of 3.00 from surface.

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b) MECL further conveyed that due to continuous occurrence of limestone no. of sample increases. The approved no of primary samples are 400 but actually collected 422 samples and approved nos. of check samples are 60 and actual no of sample 63. Therefore, MECL requested for the approval of additional 22 primary samples and 03 check samples.

c) After the detailed deliberation committee suggested MECL to submit the analytical result of some samples to take decision on approval of additional samples.

Recommendation of TCC:

The committee suggested to submit the analytical result of some samples to take decision on approval of additional samples in next TCC meeting.

Agenda 55.4.12.Preliminary Exploration (G-3 stage) for Limestone in Piparya-Nayakheda Block and Semariyakalan-Baheriya Block, Narsingpur District, Madhya Pradesh. [Implementing Agency: MECL]

a) The project "Preliminary Exploration (G-3 stage) for Limestone in Piparya-Nayakheda Block and Semariyakalan-Baheriya Block, Narsingpur District, Madhya Pradesh" was approved in 30th EC Meeting of NMET with an estimated cost of ₹ 116.50 Lakh in 8 months time duration. Accordingly, the sanction order has been issued on 26th June , 2023.

b) It has been conveyed that MECL conducted preliminary recconoitre survey for feasibility to take up drilling campaign and team reported that the exploration work couldn't able to commenced due to standing crop.

c) Further MECL conveyed that a team from MECL will revisit the block at the end of October, 2023 to check the ground condition and accordingly inform to the NMET about commencement of the project.

Recommendation of TCC:

The committee noted the current status of the project.

Agenda 55.4.13.Reconnaissance Survey for PGE, Nickel, Cobalt and Gold in Rangapura Block in Hassan District, Karnataka. [Implementing Agency: MECL]

a) The project "Reconnaissance Survey for PGE, Nickel, Cobalt and Gold in Rangapura Block in Hassan District, Karnataka" was approved in 23rd EC Meeting of NMET with an estimated cost of ₹ 2.58 Cr.in 12 months time duration. Accordingly, the sanction order has been issued on 25th March, 2023.

b) It has been conveyed that LSM and sampling and trenching work has been completed and TCC in its 54th meeting has recommended 7 boreholes in this block.

c) Further, it has been communicated that MECL visited the area and reported that the exploration work couldn't able to commence due to cultivation activity of maze, ragi and sugarcane. The harvesting will start around mid of December, 2023.MECL team will revisit the block at the end of November, 2023 to check the ground condition and accordingly inform to the NMET about commencement of the drilling programme.
Further NMDC conveyed

Recommendation of TCC:

The committee noted the current status of the project.

Agenda 55.4.14.Reconnaissance Survey for REE in Pokhar-Chhaili Block in Tehri Garhwal District, Uttarakhand [Implementing Agency: MECL]

a) The project "Reconnaissance Survey for REE in Pokhar-Chhaili Block in Tehri Garhwal District, Uttarakhand" was approved in 30th EC meeting of NMET with an estimated cost of ₹ 105.05 Lakh in 08 months duration.

b) The sanction order has been issued on 26th June, 2023 and date of completion of the project is 25th February, 2024.

c) MECL conveyed that they have conducted preliminary recconoitre survey for feasibility to take up exploration campaign and the team reported that the exploration work couldn't able to commence due heavy rain and land slide. MECL team will revisit the block at the first week of August, 2023 to check the ground condition and accordingly inform about commencement of the project.

d) In view of above TCC suggested that in future, the NEAs/NPEAs should project the timeline after duly considering the actual ground conditions

Recommendation of TCC:

The committee noted the current status of the project.

Agenda 55.4.15. Preliminary Exploration (G3) for Manganese in Rongha Block (38.34 sq.km) District : Nagpur, Maharashtra. [Implementing Agency: DGM Maharashtra]

a) The project "Preliminary Exploration (G3) for Manganese in Rongha Block (38.34 sq.km) District : Nagpur, Maharashtra" was approved in 25thEC meeting of NMET with an estimated cost of ₹ 0.91 Cr. in 15 months.

b) DGM Maharashtra informed that Manganiferous horizons occur as detached lenticular outcrop at the contact of biotite gneiss and muscovite schist. The ore horizon mainly comprised of gondite. Thickness of gondite varies from half meters to 2 meters.

c) DGM Maharashtra further conveyed that 32 nos. of bed rock samples were collected while mapping and chemical analysis of these samples shows Mn ranges from 2.21% to 26.86%, SiO2 ranges from 23.5% to 85.4% and P2O5 ranges from 0.21% to 8.07%. A total of 104 m^3 of trenching was carried out in 5 trenches in Rongha. The details of trench samples are as follows:

S.No.	Trench No.	Analyses of Trench Sample		
		Mn%	SiO_2 %	Fe_2O_3%
1	Trench-1	12.48%	42.61%	15.13%
2	Trench-2	3.97%	65.36%	7.32%
3	Trench-3	7.44%	57.68%	10.17%
4	Trench-4	16.8%	39.53%	12.41%
5	Trench-5	16.8%	39.53%	12.41%

d) It has been informed that detached outcrop of gondite are traceable for over a distance of approx. 4.5 km between Rongha and Lendejari. Manganese horizon also occur as detached outcrop between Khapakhurd and area north of Rongha

e) Further DGM Maharshtrainforemed that drilling permission has been obtained from the forest department.

f) After the detailed deliberation, the committee opined that trenching has been conducted only western part of outcrop occurring between Rongha and Lendejari. Therefore committee recommended 5 Bhs at 800 x 800 m grid for covering 4.5 km detached outcrop of gondite between Rongha and Lendejari.





Recommendation of TCC:

The committee recommended 5 Bhs at 800 x 800 m grid to cover detached outcrop of gondite, traceable for over a distance of approx. 4.5 km between Rongha and Lendejari.

Agenda 55.4.16. Preliminary Exploration (G3) for Limestone in Savalhira block (4.04 sq.km.) District : Chandrapur, Maharashtra. [Implementing Agency: DGM Maharashtra]

a) The project "Preliminary Exploration (G3) for Limestone in Savalhira block (4.04 sq.km.) District : Chandrapur, Maharashtra" was approved in 25th EC meeting of NMET with an estimated cost of ₹ 0.73 Cr. in 15 months.

b) DGM Maharashtra conveyed that detailed geological mapping has been completed and colleted 20 BRS samples, surveying of 4.04 sq.km. area has also been completed. Out of 20 BRS samples, there are 07 Cement grade, 04 BF grade, 01 SMS grade, 03 BGL, and 05 Low grade limestone.

c) DGM Maharashtra further conveyed that at the time of presenting the proposal it is assumed that a Limestone bed with an estimated area of 3.92 sq.km covers the entire block area. Therefore, a borehole plan was proposed with a spacing of 800m x 800m. However, Detailed Geological Mapping reveals the presences of Limestone beds in & around 1.95 sq.km. area only. Hence, the initially proposed grid interval of 800m X 800m is reduced to 500m X 500m.

d) In view of above, the committee opined that majority of samples has CaO more than 42%. Therefore committee agreed for drilling of 5 bhs in 500m x 500 m and also suggested to drill 1 stratigraphic borehole.

Recommendation of TCC:

The committee agreed fordrilling of 5 bhs in 500m x 500 m and also suggested to drill 1 stratigraphic borehole.

Agenda 55.4.17.Reconnaissance survey (G4) for graphite in Thapen-Bazargarh graphite block (116.498 sq. Km) in Kalahandi district of Odisha. [Implementing Agency: OMECL]

a) The project "Reconnaissance survey (G4) for graphite in Thapen-Bazargarh graphite block (116.498 sq. Km) in Kalahandi district of Odisha" was approved in 26th Executive committee meeting of NMET with an estimated cost of ₹ 1.69 Cr. in 15 months duration.

b) It has been conveyed thatgeological mapping of 116.498 sq.km. has been completed at 1:12,500 scale, 40 Lkm of self potential survey has also been completed in 10 zones.the details of SP survey are as follows:

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SP Survey Sub Block	Lines cover ed	Total Coverage	Remarks
Thapen Village	9	7.2 lkm	3 anomalies found
Thapen-N	6	4.8 lKm	Two anomalies found
Thapen-S	5	4.0 lkm	One anomaly found
ThapenTarget 5	3	0.9 lkm	Nil
Taparang	10	8.8 lkm	2 anomalies found
Jodabhand	4	3.2 lkm	One anomaly lound
Singhjharan	6	3.6 lkm	Nil
Raiduni	6	3.6 lkm	One anomaly found
Target 10	4	2.4 lkm	2 anomalies found
Surma Dangar	3	1.8 lkm	Nil
Total		40 lkm	

c) OMC (OMECL) has conveyed that 12 nos. (240 Cum.) of trenches having length 10 m, depth 2m & width 1 m are excavated at different location which are selected on the basis of anomalous zone and outcrop of ore bodies. Out of which, Graphite occurrences are found in 5 trenches.

d) After the detailed deliberation, the committee opined that thapen area is more promising than the other areas. Hence committee suggested to drill 2 Bhs in that area and after review of the 2 bhs., decision on further drilling may be decided.

Recommendation of TCC:

The committee noted the outcome of trenching & SP Survey and recommends 2 bhs in Thapen area and also decided to take decision on further drilling after the outcome of these boreholes.

Agenda 55.4.18.Preliminary exploration (G3) for coal in North of Urtan North block (10.28 sq. km), Sohagpur coalfield, District: Anuppur, Madhya Pradesh. [Implementing Agency: CMPDI]

a) The project “Preliminary exploration (G3) for coal in North of Urtan North block (10.28 sq. km), Sohagpur coalfield, District: Anuppur, Madhya Pradesh” was approved in 27th EC meeting of NMET , held on 10th January, 2023 with an estimated cost of ₹ 345.22 Lakh in 12 months.

b) Accordingly the sanction order has been issued on 3rd February, 2023 and scheduled date for completion of the project is 02nd February, 2024.

c) CMPDI conveyed that 3000 m has been approved for both drilling and borehole geophysical logging. Although 3056 m drilling has been carried out & 3051 m borehole geophysical logging has been carried out to establish the continuity of coal seams occurring in the block.

d) Further, CMPDI conveyed that 250 nos. of Band by Band samples have been collected and sent to laboratory with advice (results are awaited).

e) In view of above, the committee agreed for additional drilling of 56.00 m and additional borehole geophysical logging of 51.00 m

Recommendation of TCC:

The committee approved the additional drilling of 56.00 m withcost ₹ 3,79,400.00/- and additional borehole geophysical logging of 51.00 m with cost ₹28,866.00/-.

Agenda 55.4.19.General Exploration for coal in south of Damuda block, Jharia Coalfield, District: Dhanbad, Jharkhand. [Implementing Agency: CMPDI]

a) The project "General Exploration for coal in south of Damuda block, Jharia Coalfield, District: Dhanbad, Jharkhand" was approved in 24th EC meeting of NMET , held on 18th May, 2022 with an estimated cost of ₹ 11.25 Cr. in 18 months.

b) CMPDI conveyed that 11 bhs have been proposed in the block. Out of which 8 bhs. Have been completed and 2 bhs i.e. Borehole number SJSD-2 & 4, are suspended due to drilling difficulty at the depth of 784.50m & 704.50m respectively. The last seam encountered in the borehole SJSD-2 & 4 is VIII-B & XVIII-DB respectively.

c) CMPDI further conveyed that landowner has refused to allow drilling at the site due to cultivation. Therefore requested the committee for closure of the drilling in these two boreholes for submission of the GR as per scheduled timeline.

d) In view of above, committee agreed for the closure of borehole no. SJSD-2 at depth of 784.50 m & SJSD-4 at a depth of 704.50 m and suggested to submit the report within scheduled timeline.

Recommendation of TCC:

The committee recommended for the closure of borehole no. SJSD-2 at depth of 784.50 m & SJSD-4 at a depth of 704.50 and submission of the report within scheduled timeline i.e. 31st November, 2023.

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Agenda 55.4.20.Preliminary Exploration for Copper ore in Dhanota Block, Jhunjhunu District, Rajasthan [Implementing Agency: MECL]

a) The project "Preliminary Exploration for Copper ore in Dhanota Block, Jhunjhunu District, Rajasthan" was approved in 22nd meeting of Executive Committee held on 22nd December, 2021.

b) On recommendation of TCC, The Executive committee of NMET approved the time extension of 6 months i.e. 23rd July, 2023 for the project.

c) MECL conveyed that the geological report has been submitted for peer review and the comments from peer reviewer are still awaited. Thereafter, the project will submit to next TCC meeting for final review. Therefore, MECL requested for time extension up to 15th September, 2023.

d) In view of above, the committee agreed for time extension upto 15th September, 2023 for submission of geological report to NMET Secretariat.

Recommendation of TCC:

Keeping in view of above, the committee recommended the time extension upto 15th September,2023 for submission of geological report to NMET Secretariat.

Agenda 55.4.21.Preliminary Exploration for Bauxite in the Maduapat-1 Block, District: Lohardaga, Jharkhand. [Implementing Agency: CMPDI]

a) The project "Preliminary Exploration for Bauxite in the Maduapat-1 Block, District: Lohardaga, Jharkhand" was approved in 22nd meeting of Executive Committee held on 22nd December, 2021 with an estimated cost of ₹ 0.43 Cr in 12 months.

b) The sanction order has been issued on 2nd May, 2022. Accordingly the date of completion of the project is 1stMay, 2023.

c) The project again get an time extension for 2 month i.eupto 1st July, 2023 for the analysis of additional 20 samples for REE & Trace elements.

d) CMPDI further conveyed that inMadua Pat-I block, bauxite zones have been delineated and resourceshas been estimated by polygonal method. Resources of bauxite have been categorized under Inferred Mineral Resources (333) and are categorized as below:





- For Bauxite Grade:
    a. A total of **1.397 million tonnes**net in-situ bauxite resource with an average grade of 33.46% Al_2O_3, 5.62% SiO_2, 32.74% Fe_2O_3, 8.01% TiO_2& 19.53% LOI have been estimated in the block in an area of 0.38 sq. km under the cut-off value of 7% SiO2. All the resource belongs to "Inferred Category" (333).

    b. A total of **1.814 million tonnes**net in-situ bauxite resource with an average grade of 33.14% Al_2O_3, 6.33% SiO_2, 32.59% Fe_2O_3, 7.90% TiO_2& 19.41% LOI have been estimated in the block in an area of 0.38 sq. km under the cut-off value of 10% SiO2. All the resource belongs to "Inferred Category" (333).

- For Aluminous Laterite:
    a. A total of **11.666 million tonnes**net in-situ aluminous Laterite resource with an average grade of 34.56% Al_2O_3, 18.15% SiO_2 have been estimated in the block in an area of 1.33 sq. km. All the resource belongs to "Inferred Category" (333).

e) In view of above, committee suggested to calculate the resource of TiO_2 under the cut off value of 5% TiO_2.. Therefore, committee also provided the time extension upto 15th August, 2023 for submission of report to NMET Secretariat.

Recommendation of TCC:

The committee noted the outcome of project and suggested to calculate the resource of TiO_2 under the cut off value of 5% TiO_2. The committee also recommended the time extension up to 15th August, 2023 for submission of geological report to NMET Secretariat.

Additional Discussion:

1. **Preliminary exploration (G3) for limestone in Kiranagi-1 and Kiranagi-2 block Bhima Basin, District: Gulbarga, Karnataka. (Block Area 11.41 sq. km) Implementing Agency:MECL]**

   MECL proposed for additional sampling of 22 primary samples and 3 check samples amounting to an additional cost of ₹ 1.49 Lakhs for the project " Preliminary exploration (G3) for limestone in Kiranagi-1 and Kiranagi-2 block Bhima Basin, District: Gulbarga, Karnataka" which was approved in the 28th EC of NMET.

   Recommendation of TCC:
   The committee suggested submitting the analytical result of some samples to take decision on approval of additional samples in next TCC meeting.

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2. **Additional Cost for DMG Goa for financial assistance for procurement of Machiner/equipment.**

The Executive Committee (EC) of NMET in its 29th meeting held on 31st March 2023 approved ₹ 35,96,000/- to DMG Goa to procure DGPS, Total station and GIS software. An amount of ₹14,38,400/- was also disbursed by NMET as first installment.

The estimated cost approved by NMET for DGPS was ₹16,00,000/- and for Total station was ₹6,96,000/-. However, during the procurement process in GEM portal, the lowest costs received for DGPS was ₹21,59,400/- and for Total station was ₹10,91,500/-.Based on the quotes , DMG Goa requested for additional cost of ₹5,59,400/- for DGPS and ₹3,95,500/- for total station.

Recommendation of TCC:

The committee suggested the additional amount of ₹9,54,900/- may be met through the state fund.

3. **Preliminary Exploration for Coal in West of Tubed block, Auranga CF, Jharkhand[Implementing Agency: CMPDI]**

CMPDI conveyed that Borehole point P-05 in lies in the forest area and therefore requested for shifting of point P-05.

Recommendation of TCC:

The committee agreed for shifting at the boundry of forest area and also suggested to modified the block boundary after taking the influence of the borehole.

4. **Preliminary Exploration for Manganese in Hardatal block, Blangir district, Odisha.[Implementing Agency: DMG Odisha]**

The committee reviewed the project Preliminary Exploration for Manganese in Hardatal block, Blangir district, Odisha by DMG Odisha

Recommendation of TCC:

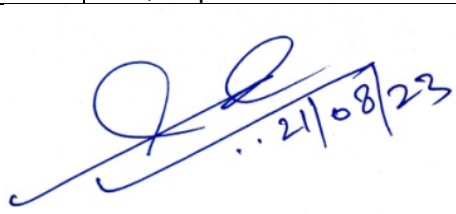
The Committee suggested to complete the project as per the scheduled timeline and suggested to submit separate proposal for G2 stage exploration.

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Minutes of the 55th Technical-cum-Cost Committee (TCC) meeting held on 27th, 28th and 31st July, and Supplementary meeting on 7th August 2023 through video conferencing at New Delhi

S.NO	Name/ Designation	Status	Remarks
1	Dr. S. Ravi, Dy. Director General, SU: Karnataka & Goa, GSI Bangalore.	Chairman, TCC	Through VC
2	Shri Ranjan Kumar Sinha, Controller General (Retd.), IBM	Member	Through VC
3	Shri Hemraj Suryavanshi, Addl. Director General (Retd.), GSI	Member	Through VC
4	Dr. S.K. Kulshrestha, DDG-RMH-III, NER, GSI, Shillong	Member	Through VC
5	Shri S.K. Adhikari, Chief Mining Geologist, IBM, Nagpur.	Member	Through VC
6	Dr. Anjani Kumar, Dy. General Manager (Exploration) &HoD Planning (Retd.), MECL	Member	Through VC
7	Shri Naeem Ahmed, General Manager (Exploration) (Retd.), CMPDI Ltd.	Member	Through VC
8	Shri K.L. Mundra, Head-RMRE, AMD, Hyderabad	Member	Through VC
9	Shri Vivek Kumar Sharma,Director, NMET, Ministry of Mines	Member	Through VC
10	Shri Vinay Pal, Cost Accounts Officer, GSI, Nagpur	Member	Through VC
11	Shri P.K. Maharana, AGM (Finance), NALCO, Bhubaneswar	Member	Through VC
12	Shri Ravi Kumar Gupta General Manager (Finance) HCL, Kolkata	Member	Through VC
13	Shri. Suresh Chander, Director, GSI, WR, Jaipur.	Member Secretary	Through VC





Annexure 1

List of participants attended 55th Technical-cum-cost Committee (TCC) meeting of NMET Dated: 27th, 28th and 31stJuly, 2023, Supplementary meeting on 7thAugust through video conferencing at New Delhi

S.No.	Name/Designation	Email ID	Contact No	Organization
1	Dr. S. Ravi, Dy. Director General, SU: Karnataka & Goa, GSI Bangalore.	s.ravi1@gsi.gov.in	9441138834	Chairman, TCC
2	Shri Ranjan Kumar Sinha, Controller General (Retd.), IBM	sinhark57@rediffmail.com	9421777637	Member TCC
3	Shri Hemraj Suryavanshi, Addl. Director General (Retd.), GSI	hemrajgsi@gmail.com	7477042176	Member TCC
4	Dr. S.K. Kulshrestha, DDG-RMH-III, NER, GSI, Shillong	s.kulshrestha@gsi.gov.in	9413330658	Member TCC
5	Shri S.K. Adhikari, Chief Mining Geologist, IBM, Nagpur.	skadhikari@ibm.gov.in	7588690545	Member TCC
6	Dr. Anjani Kumar, Dy. General Manager (Exploration) &HoD Planning (Retd.), MECL	anjanikumar1957.ak@gmail.com	9975350576	Member TCC
7	Shri Naeem Ahmed, General Manager (Exploration) (Retd.), CMPDI Ltd.	ahmadnaeem17@yahoo.co.in	8588092153	Member TCC
8	Shri K.L. Mundra, Head-RMRE, AMD, Hyderabad	headrmre.amd@gov.in	9414785663	Member TCC
9	Shri Vivek Kumar Sharma,Director, NMET, Ministry of Mines	vksharma.ofb@gov.in	7024570055	Member Ex-office
10	Shri Vinay Pal, Cost Accounts Officer, GSI, Nagpur	vinay.pal@gsi.gov.in	8527368161	Member TCC
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12	Shri Ravi Kumar Gupta General Manager (Finance) HCL, Kolkata	ravi_g@hindustancopper.com	9433274328	Member TCC
13	Shri. Suresh Chander, Director, GSI, WR, Jaipur.	suresh.chander@gsi.gov.in	9493860963	Member Secretary
14	Shri P.Ravindran,DGM (Exploration)	gm.exploration.@mecl.co.in	7907649392	MECL
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22	Shri Saurabh Singh, Senior Manager (Geology)	saurabhvns1234@gmail.com	9329026041	CMPDI
23	Dr. Suman Krishna Sit (General Manager Geology)	suman.sit@odishamining.in	7763807475	OMC Ltd
24	Shri Mihir Kumar Malla (Dy General Manager Geology)	mihr.malla@odishamining.in	9777454069	OMC Ltd
25	Shri S.K. Dutta Advisor	advisorbsmc2023@gmail.com biharmines@gmail.com	9430906082 9771405496	DMG, Bihar
26	Dr. Partha Sarathi Jena Manager (Geology)	partha.jena@nmdc.co.in	9701079075	NMDC, Hyderabad
27	Shri Shiva Kumar M (AGM)	bmed@kioclltd.in	9148743807	KIOCL
28	Shri Mohan Raj D (Consultant)	bmed@kioclltd.in	6366774594	KIOCL
29	Shri Tasser Talar, Director	dgmarunachal@gmail.com	8131924291	DGM A.P
30	Dr. R.K. Mrinalinee Devi, Mining Consultant	mrinalineer@reDiffmail.com	8486677967	DGM A.P
31	Biplob Chatterjee (CEO, Director, Consulant)	biplob.chatterjee@geovale.com	9007706145	Geovale Services Private Limited
32	Dr. Joy Gopal Ghosh (Principal, Geology and Exploration)	jgghosh@outlook.com	9999681366	Geovale Services Private Limited
33	Shri Tuasha Majumder (Sr.Project Manager, Geology and Exploration)	tuasha.majumder@geovale.com	9007215397	Geovale Services Private Limited
34	Shri Abhijit Patra (Sr.Projeet Manager, Exploration)	abhijit.patra@geovale.com	8240949535	Geovale Services Private Limited
35	Shri Dinkar S Senior Geologist	ddpmdmg1@gmail.com	9880759019	Department of Mines & Geology Karnataka
36	Shri Udayaravi M P Geologist	ddpmdmg1@gmail.com	9535847039	Department of Mines & Geology Karnataka
37	Dr. A.V. Keshava Prasad, V.P. (Mineral Exploration)	keshava.prasad@gemcokati.com		GemcoKati Exploration Pvt. Ltd.
38	Shri Subrata Sarkar	subrata.sarkar@gemcokati.com	7044208900	GemcoKati Exploration Pvt. Ltd.
39	Representative from DGM Madhya Pradesh	geologydgm@mp.gov.in	--	
40	Representative from DGM Rajasthan	-	-	

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41	Shri Sanbor E. kharmawlonggeologyist	Sanborkharmawlong@gmail.com	9077079401	DMR Meghalaya resources
42	Representative from DGM Nagaland	geominaga@gmail.com	-	DGM
43	Representative from DGM Maharashtra	dgm@mahadgm.gov.in	-	-
44	Representative from DMM West Bengal	Dir.dmm-wb@nic.in	-	-
45	Shri Joydeep Banerjee	jbanerjee@unitedexploration.co.in	-	United Exploration India Pvt Ltd
46	Ms. Anju C.S., Senior Geologist	nmet.mines@gov.in	8588836933	NMET
47	Ms. Ujjwala Sharma Senior Geologist	nmet.mines@gov.in	8957806004	NMET





ANNEXURE - 2A

Cost Estimate for Preliminary Exploration (G3) for Gold in Kakol block, Haveri, Karnataka
Name of the Exploration Agency - MECL
Total Area - 29.06 sqkm; Nos. of Borehole - 20 ; Completion Time - 12 Months

S.N	Item of Work	Unit	Rates as per NMET SoC		Estimated Cost of the Proposal		Remarks
			SoC- Item -Sl No.	Rates as per SoC	Qty.	Total Amount (Rs)	
Phase-I							
A	**GEOLOGICAL WORK**						
1	**Geological mapping (scale 1:2000 in 5.00 sq.km.) & sampling**						
a	**Charges for one Geologist per day at HQ**	one Geologist per day	1.3a	9,000	60	5,40,000	
b	**Charges for one Geologist per day at field (1 Nos)**	one Geologist per day	1.3b	11,000	180	19,80,000	
c	**Labour (2 Nos/ geologist)**	per Labor day	5.7	494	360	1,77,840	Amount will be reimburse as per the notified rates by the Central Labour Commission or respective State Govt. - whichever is higher
d	**Charges for one Sampler per day (1 Party)**	one sampler per day	1.5.2	5,100	70	3,57,000	
e	**Labour (4 Nos/ geologist)**	per Labor day	5.7	494	280	1,38, 320	Amount will be reimburse as per the notified rates by the Central Labour Commission or respective

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							State Govt. - whichever is higher
2	**Trenching**						
a	**Excavation of Trenches upto 2m depth**	per cu m	2.1.1	3,330	200	6,66,000	
	Sub-Total -A					**38,59,160**	
B	**Petrological samples (Surface &Bh Core Samples)**						
i	**Preparation of thin section**	Nos	4.3.1	2,353	10	23,530	
ii	**Complete petrographic study of thin section**	Nos	4.3.4	4,232	10	42,320	
	Sub-Total -B					**65,850**	
C	**Mineragraphic Studies (Surface &Bh Core Samples)**						
i	**Preparation of polished section**	Nos	4.3.2	1,549	10	15,490	
ii	**Complete minragraphic study of polished Section**	Nos	4.3.4	4,232	10	42,320	
iii)	**Digital Photographs**	Nos	4.3.7	280	10	2,800	
	Sub-Total -C					**60,610**	
D	**LABORATORY STUDIES**						
1	**Chemical Analysis**	-	-	-	-	-	BH depth more than 100m has been considered

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							for deviation.
i)	**Primary samples**						
a	**for Gold by fire assay (200 BRS+ 100 trench+200 BH core)**	Nos	4.1.5a	2,380	500	11,90,000	
ii)	**Check samples**						
a	**for Gold by fire assay (10% External)**	Nos	4.1.5a	2,380	50	1,19,000	
iii)	**Composite samples**						
a	**for Gold by fire assay**	Nos	4.1.5a	2,380	10	23,800	
	Sub-Total -D					**13,32,800**	
Phase-II (After Review)							
E	**Geophysical Survey**						
i	**I.P cum-resistivity, SP., Magnetic (8-10 Line km)**	8-10 Line km	3.4b	14,48,693	2.5	36,21,733	
ii	**Electro magnetic survey (TDEM Sounding)**	Sounding	3.7a	21,197	100	21,19,700	
	Sub-Total E					57,41,433	
F	**DRILLING (After Review)**						
i	**Drilling up to 300m (Hard Rock)**	m	2.2.1.4a	11,500	2000	2,30,00,000	
ii	**BH deviation survey by multi-shot camera**	per m	2.2.6	330	0	-	
iii	**Construction of**	per	2.2.7a		20		





	concrete Pillar (12"x12"x30")	borehole		2,000		40,000	
iv	**Transportation of Drill Rig & Truck associated per drill (to &fro)**	Km	2.2.8	36	4200	1,51,200	Certification in this regard is required to be provided
v	**Monthly Accommodation Charges for drilling Camp (up to 2 Rigs)**	month	2.2.9	50,000	4	2,00,000	
vi	**Drilling Camp Setting Cost**	Nos	2.2.9a	2,50,000	2	5,00,000	Certification that EA has deployed two rigs on this project during drilling period is required to be provided
vii	**Drilling Camp Winding up Cost**	Nos	2.2.9b	2,50,000	2	5,00,000	
viii	**Road Making (Flat Terrain)**	Km	2.2.10a	22,020	4	88,080	Road Making will be considered as per the requirement but not more than the provided kms in the cost sheet. Road Making Charges will be reimbursed accordingly.
ix	**Drill Core Preservation**	per m	5.3	1,590	280	4,45,200	This amount will be reimbursed after successful delivery of the cores to the concerned core libraries/authorities
x	**Bore Hole Fixation and determination of co-ordinates & Reduced Level of the boreholes by DGPS**	Per Point of observation	1.6.2	19,200	20	3,84,000	
	Sub Total F					2,53,08,480	

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G	**Total -(A to F)**					3,63,68,333	
H	**Preparation of Exploration Proposal (5 Hard copies with a soft copy)**	5 Hard copies with a soft copy	5.1	2% of the Cost subject to a maximum of Rs. 5 lakh		5,00,000	This amount will be reimburse after submission of the Hard Copies and the soft copy of the final proposal along with Maps and Plan as suggested by the TCC-NMET in its meeting while clearing the proposal.
I	**Geological Report Preparation**	5 Hard copies with a soft copy	5.2	For the projects having cost exceeding n Rs. 300 lakhs - A minimum of Rs. 9.0 lakhs or 3% of the value of work whichever is more subject to a maximum Rs. 20 lakh.		10,91,050	This amount will be reimburse after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET by the EA.
J	**Peer review Charges**		As per EC decision			30,000	
K	**Total Estimated Cost without GST**					**3,79,89,382**	





L	**Provision for GST (18% of K)**			**68,38,089**	**GST will be reimbursed as per actual and as per the applicable notified rates**
M	**Total Estimated Cost with GST**			**4,48,27,471**	
			Say Rs. in Lakhs	**448.27**	
Note:	**1. If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC.** **2. In case of execution of the project by EA on its own, a Certificate regarding non outsourcing of any component/project is required.**				

ANNUXURE- 2B

TIME SCHEDULE /ACTION PLAN FOR PRELIMINARY EXPLORATION FOR GOLD (G-3) IN KAKOL BLOCK, HAVERI DISTRICT, KARNATAKA

Sl. No.	Activities	Unit	MONTHS											
			1	2	3	4	5	6		7	8	9	10	11	12
1	Geologist Party days (1 Party)	day													
2	Sampling Party days (1 party)	day													
7	Laboratory Studies	Nos.													
8	Geologist Party days (1 Party), HQ	day							Review						
3	Geophysical Survey	day													
4	Core Drilling (2 rigs)	m.													
5	Camp Setting	day													
6	Camp Winding	day													
9	Report Writing	day													

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/ lockdown etc will be additional to above time line.**

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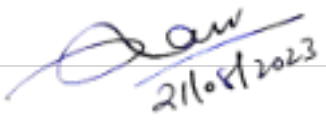
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ANNUXURE 3A

Estimated cost for Reconnaissance Survey (G-4) for REE in Kathiwara Block, Alirajpur District, Madhya Pradesh
Name of the Exploration Agency - MECL
Total block area- 124.00sq km; Completion Time- 12 Months

S. No.	Item of Work	Unit	Rates as per NMET SoC		Estimated Cost of the Proposal		Remarks
			SoC- Item-S. No.	Rates as per SoC	Qty.	Total Amount (Rs)	
1.0	Large scale (LSM) Geological mapping/ Trenching/ Drilling						
a)	Geologist man days (1 No.) for Geological map & Report (HQ)	one Geologist per day	1.2a	9,000	30	2,70,000	
b)	Geologist man days (2 No) for Large scale (LSM) Geological mapping/ sampling (Field)	one Geologist per day	1.2b	11,000	150	16,50,000	
c)	Labour (field) for (Total 4 Nos i.e. 2 workers)	per Labor day	5.7	494	300	1,48,200	Amount will be reimburse as per the notified rates by the Central Labour Commission or respective State Govt. - whichever is higher
d)	Sampler for Stream Sediment/Regolith Labour charge not included	one sampler per day	1.5.2	5100	20	1,02,000	
e)	4 labours/ party (As per rates of Central Labour Commissioner)	per Labor day	5.7	494	80	39,520	Amount will be reimburse as per the notified rates by the Central Labour





							Commission or respective State Govt. - whichever is higher
	Sub-Total - 1.0					**22,09,720**	
2.0	Mineral Investigation						
2.1	Pitting (upto 2.00 m depth)	per cu m	2.1.2	3,800	50	1,90,000	
	Sub-Total - 2.0					**1,90,000**	
3.0	Laboratory Studies						
3.1	Separation of heavy minerals from stream sediment samples of - 2mm size through gravity and magnetic separation	per sample	4.3.6b	13,820	150	20,73,000	
3.2	Heavy Mineral separation by liquid	per sample	4.3.6a	2,380	150	3,57,000	
3.3	Chemical Analysis						
i)	Surface sampling (Stream Sediment/regolith Samples)						
a)	Analysis of stream sediment/ regolith samples for determination of a package by 34 elements by ICP-AES / ICPMS (sequential technique)	per sample	4.1.14	7,731	150	11,59,650	SSS=100, Regolith/pitting=50
ii)	Check Samples (Stream Sediment/regolith Samples) - 10% External					-	
a)	Analysis of one rock/soil sample for determination of a package by 34 elements by ICP-AES / ICPMS (sequential technique)	per sample	4.1.14	7,731	15	1,15,965	
3.4	Whole rock studies (major Oxides by XRF)	per sample	4.1.15a	4,200	10	42,000	

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3.5	Petrological / Mineralographic studies					-	
a)	Preparation of thin section	per sample	4.3.1	2,353	10	23,530	
b)	Complete petrographic study of thin section	per sample	4.3.4	4,232	10	42,320	
c)	XRD analysis	per sample	4.5.1	4,000	10	40,000	
	Sub-Total - 3.0					**38,53,465**	
4.0	**Sub-Total - 1.0 to 3.0**					**62,53,185**	
5.0	Geological Report Preparation	5 Hard copies with a soft copy	5.2	A Minimum of Rs. 2.5 lakhs or 5% of the work whichever is more	1	3,12,659	This amount will be reimburse after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET by the EA.
6.0	Preparation of Exploration Proposal	5 Hard copies with a soft copy	5.1	2% of the Cost subject to a maximum of Rs. 5 lakh	1	1,25,064	This amount will be reimburse after submission of the Hard Copies and the soft copy of the final proposal along with Maps and Plan as suggested by the TCC-NMET in its meeting while clearing the proposal.
7.0	Report Peer Review Charges	lumpsum	As per 30th EC decision	30000	1	30,000	
8.0	Total Estimated Cost without GST (4.0 to 7.0)					67,20,908	





9.0	Provision for GST (18%)					12,09,763	GST will be reimbursed as per actual and as per the applicable notified rate
10.0	**Total Estimated Cost with GST**					**79,30,671**	
					Say, Rs. in Lakhs	**79.31**	
Note:	***1. If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC.*** ***2. In case of execution of the project by EA on its own, a Certificate regarding non outsourcing of any component/project is required.***						

ANNUXURE 3B

Time schedule / Action plan of Reconnaissance Survey (G-4) for REE in Kathiwara Block, Alirajpur District, Madhya Pradesh

S.No.	Activities	MONTHS											
		1	2	3	4	5	6		7	8	9	10	11	12
1	Geological mapping & Sampling													
2	Sample preparation													
3	Analytical work (sample)													
4	Exploratory mining for Pitting													
5	Sample preparation (Pitting)													
6	Analytical work													
7	Geologist at HQ													
8	Geological report													
9	Peer Review													

* Commencement of project will be reckoned from the day the exploration acreage is available along with all statutory clearances

*Time loss on account of monsoon/agricultural activity/forest clearance/ local law & order problems will be addition to above time line.





ANNUXURE 4A

Cost Estimate for Preliminary Exploration (G-3 stage) for Bauxite in Maleta-Bankodi Block, Devbhumi Dwarka District, Gujarat.
Name of the Exploration Agency - CGM Gujarat
Total Area - 13.05 sqkm; Nos. of Borehole - 57 ; Completion Time - 05 Months

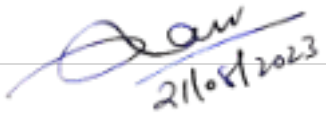
S.N	Item of Work	Unit	Rates as per NMET SoC		Estimated Cost of the Proposal		Remarks
			SoC-Item - Sl No.	Rates as per SoC	Qty.	Total Amount (Rs)	
	I - In-House component						
A	**GEOLOGICAL WORK**						
1	Mapping (1:4000), Borhole logging & Sampling & Report writing						
a	Charges for one Geologist per day at HQ	one Geologist per day	1.3	9,000	30	2,70,000	
b	Charges for one Geologist per day at field	one Geologist per day	1.3	11,000	120	13,20,000	
	Labour			494	240	1,18,560	
d	Charges for one Sampler per day (1 Party)	one sampler per day	1.5.2	5,100	45	2,29,500	
e	Labour Charges (4 Nos)for Sampling Work	per Labor day	5.7	494	180	88,920	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
	Sub-Total A					**20,26,980**	

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B	**LABORATORY STUDIES**					-	
1	Chemical Analysis					-	
a	Primary Sample - For 9 radicals i.e. CaO, MgO, Al2O3, SiO2, Fe2O3, SO3, P2O5, K2O and LOI by XRF	per sample	Rate Proposed by CGM Gujarat	2,841	400	11,36,400	
b	Check samples External(10%) - For 9 radicals i.e. CaO, MgO, Al2O3, SiO2, Fe2O3, SO3, P2O5, K2O and LOI by XRF	per sample	Rate Proposed by CGM Gujarat	2,841	40	1,13,640	
c	Reactive Silica	per sample	4.1.17d	1,500	10	15,000	
d	ICPMS for REE (14 REE elements/radicals)	per sample	4.1.13	5,380	10	53,800	
e	XRD Analysis sample	per sample	4.5.1	4,000	15	60,000	
2	Petrological samples (Bh Core Samples)						
a	Preparation of thin section	per sample	4.3.1	2,353	10	23,530	
b	Study of Thin Section /petrographic studies	per sample	4.3.4	4,232	10	42,320	
c	Specific Gravity	per sample	4.8.1	1,605	10	16,050	
	Sub Total - B					14,60,740	
Total In-House Component - 1 (Sub Total A + B)						**34,87,720**	
II- Outsourced Component							
A	Charges of one Surveyor	day	1.6.1a	8,300	10	83,000	
B	DRILLING						
i	Surface Drilling	m.	2.2.1.1b	6775	855	57,92,625	Copy of the MoC approved rate is





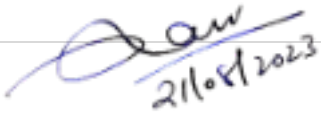
							required
Total Outsourced Component - II						**58,75,625**	reimbursement of outsource component will be made as per Paragraph 3 and item sl. No. 6 (ii) of NMET-SoC. The copy of contract agreement for outsourced component is required to be provided.
Total (In-House and Outsourced Component) - I & II						**93,63,345**	
III	Geological Report Preparation	5 Hard copies with a soft copy	5.2 (ii)	For projects having cost exceeding Rs. 50 lakh but less than Rs. 150 lakh - minimum Rs. 2.5 lakh or 5% of total value of work whichever is more		4,68,167	This amount will be reimburse after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET by the EA.
IV	Preparation of Exploration Proposal (5 Hard copies with a soft copy)	5 Hard copies with a soft copy	5.1 & 28th EC meeting Minutes	2% of the Cost subject to a maximum of Rs. 5 lakh		1,87,267	This amount will be reimburse after submission of the Hard Copies and the soft copy of the final proposal





							along with Maps and Plan as suggested by the TCC-NMET in its meeting while clearing the proposal.
V	Peer review Charges		As per EC decision			30,000	
VI	Tendering Process cost		2.3	2% of the outsourced cost of Rs. 5 lakh whichever is lower		1,17,513	will be reimbursed when copy of signed agreement/tender for outsoure component will be submitted.
VII	Operational Charges		Para 3 and Item No. 6.0 (ii)	For projects having outsourced cost more than Rs. 50 lakh up to Rs. 1 crore - Rs. 5 lakh plus 7.5 % on the balance amount outsourced cost in excess of Rs. 50 lakh.		5,65,672	will be reimbursed as per point 3 and item sl. no. 6 (ii) of NMET-SoC after recalculation when actual cost of outsourcing component will be be provided. The copy of contract agreement for outsourced component and work completion report are also required to reimburse the operational charge
Total Estimated Cost without GST						**1,07,31,964**	





VIII	Provision for GST @18%	19,31,753	GST will be reimburse as per actual and as per applicable notified rate
Total Estimated Cost with GST		**1,26,63,717**	
or Say Rs. In Lakhs		**126.64**	

Note -
1. If any part, mentioned in the in-house component is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC.
2. For in-house component of the project , a Certifiate from the NEA regarding non outsourcing of any component/project is required.
3. In no case, the sum of outsourced cost and operational charges should exceed the cost as per SoC rates of the total outsourced component(s).





ANNUXURE 4B

Time schedule / Action plan of Preliminary Exploration (G-3 stage) for Bauxite in Maleta-Bankodi Block, Devbhumi Dwarka District, Gujarat.

Sl. No.	Activities	Unit	MONTHS				
			1	2	3	4	5
1	m,n	Month					
2	Surface Drilling (2 rigs)	m.					
3	Survey Party days (1 Party)	day					
4	Geologist Party days in field (1 Party)	day					
5	Sampling Party days, Core Sampling (1 party)	day					
6	Laboratory Studies	Nos.					
7	Camp Winding	Month					
8	Geologist Party days in HQ (1 Party)	day					
9	Geological Report Writing with Peer Review	Month					

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.





ANNUXURE 5A

Cost Estimate for Preliminay Exploration (G 3 Stage) For Bauxite in Khaharda-Kenedi Block Devbhumi Dwarka District: Gujarat
Name of the Exploration Agency - CGM Gujarat
Nos. of Borehole - 94 ; Completion Time - 05 Months

S.N	Item of Work	Unit	Rates as per NMET SoC		Estimated Cost of the Proposal		Remarks
			SoC-Item -Sl No.	Rates as per SoC	Qty.	Total Amount (Rs)	
	I - In-House component						
A	GEOLOGICAL WORK						
1	Mapping (1:4000), Borhole logging & Sampling & Report writing						
a	Charges for one Geologist per day at HQ	one Geologist per day	1.3	9,000	30	2,70,000	
b	Charges for one Geologist per day at field	one Geologist per day	1.3	11,000	120	13,20,000	
	Labour			494	240	1,18,560	
d	Charges for one Sampler per day (1 Party)	one sampler per day	1.5.2	5,100	45	2,29,500	
e	Labour Charges (4 Nos)for Sampling Work	per Labor day	5.7	494	180	88,920	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher

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	Sub-Total A					**20,26,980**	
B	LABORATORY STUDIES					-	
1	Chemical Analysis					-	
a	Primary Sample - For 9 radicals i.e. CaO, MgO, Al2O3, SiO2, Fe2O3, SO3, P2O5, K2O and LOI by XRF	per sample	Rate Proposed by CGM Gujarat	2,841	500	14,20,500	
b	Check samples External(10%) - For 9 radicals i.e. CaO, MgO, Al2O3, SiO2, Fe2O3, SO3, P2O5, K2O and LOI by XRF	per sample	Rate Proposed by CGM Gujarat	2,841	50	1,42,050	
c	Reactive Silica	per sample	4.1.17d	1,500	10	15,000	
d	ICPMS for REE (14 REE elements/radicals)	per sample	4.1.13	5,380	10	53,800	
e	XRD Analysis sample	per sample	4.5.1	4,000	10	40,000	
2	Petrological samples (Bh Core Samples)						
a	Preparation of thin section	per sample	4.3.1	2,353	10	23,530	
b	Study of Thin Section /petrographic studies	per sample	4.3.4	4,232	10	42,320	
c	Specific Gravity	per sample	4.8.1	1,605	10	16,050	
	Sub Total - B					**17,53,250**	
Total In-House Component - 1 (Sub Total A + B)						37,80,230	





II- Outsourced Component							
A	Charges of one Surveyor	day	1.6.1a	8,300	15	1,24,500	
B	DRILLING						
i	Surface Drilling	m.	2.2.1.1b	6775	1410	95,52,750	Copy of the MoC approved rate is required
Total Outsourced Component - II						96,77,250	reimbursement of outsource component will be made as per Paragraph 3 and item sl. No. 6 (ii) of NMET-SoC. The copy of contract agreement for outsourced component is required to be provided.
Total (In-House and Outsourced Component) - I & II						**1,34,57,480**	
III	Geological Report Preparation	5 Hard copies with a soft copy	5.2 (ii)	For projects having cost exceeding Rs. 50 lakh but less than Rs. 150 lakh - minimum Rs. 2.5 lakh or 5% of total value of work whichever is more		6,72,874	This amount will be reimburse after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET by the EA.





IV	Preparation of Exploration Proposal (5 Hard copies with a soft copy)	5 Hard copies with a soft copy	5.1 & 28th EC meeting Minutes	2% of the Cost subject to a maximum of Rs. 5 lakh		2,69,150	This amount will be reimburse after submission of the Hard Copies and the soft copy of the final proposal along with Maps and Plan as suggested by the TCC-NMET in its meeting while clearing the proposal.
V	Peer review Charges		As per EC decision			30,000	
VI	Tendering Process cost		2.3	2% of the outsourced cost of Rs. 5 lakh whichever is lower		1,93,545	will be reimbursed when copy of signed agreement/tender for outsoure component will be submitted.
VII	Operational Charges		Para 3 and Item No. 6.0 (ii)	For projects having outsourced cost more than Rs. 50 lakh up to Rs. 1 crore - Rs. 5 lakh plus 7.5 % on the balance amount outsourced cost in excess of Rs. 50 lakh.		8,50,794	will be reimbursed as per point 3 and item sl. no. 6 (ii) of NMET-SoC after recalculation when actual cost of outsourcing component will be be provided. The copy of contract agreement for outsourced component and work completion report are also





							required to reimburse the operational charge
Total Estimated Cost without GST						**1,54,73,843**	
VIII	Provision for GST @18%					27,85,292	GST will be reimburse as per actual and as per applicable notified rate
Total Estimated Cost with GST						**1,82,59,134**	
or Say Rs. In Lakhs						**182.59**	

Note -
1. If any part, mentioned in the in-house component is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC.
2. For in-house component of the project , a Certifiate from the NEA regarding non outsourcing of any component/project is required.
3. In no case, the sum of outsourced cost and operational charges should exceed the cost as per SoC rates of the total outsourced component(s).





ANNUXURE 5B

Time schedule / Action plan of Preliminary Exploration (G-3 stage) for Bauxite in Khakharda-Kenedi Block, Devbhumi Dwarka District, Gujarat.

Sl. No.	Activities	Unit	MONTHS				
			1	2	3	4	5
1	Camp Setting	Month					
2	Surface Drilling (3 rigs)	m.					
3	Survey Party days (1 Party)	day					
4	Geologist Party days in field (1 Party)	day					
5	Sampling Party days, Core Sampling (1 party)	day					
6	Laboratory Studies	Nos.					
7	Camp Winding	Month					
8	Geologist Party days in HQ (1 Party)	day					
9	Geological Report Writing with Peer Review	Month					

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.

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ANNUXURE 6A

Cost Estimate for Preliminary Exploration (G3 Stage) of Limestone in Jodhpur-Satarpar Block
Name of the Exploration Agency - CGM Gujarat
Total Area - 13.87 sqkm; Nos. of Borehole - 11 ; Completion Time - 03 Months

S.N	Item of Work	Unit	Rates as per NMET SoC		Estimated Cost of the Proposal		Remarks
			SoC-Item - Sl No.	Rates as per SoC	Qty.	Total Amount (Rs)	
I - In-House component							
A	**GEOLOGICAL WORK**						
1	Mapping (1:4000), Borhole logging & Sampling & Report writing						
a	Charges for one Geologist per day at HQ	one Geologist per day	1.3	9,000	30	2,70,000	
b	Charges for one Geologist per day at field	one Geologist per day	1.3	11,000	60	6,60,000	
	Labour			494	120	59,280	
d	Charges for one Sampler per day (1 Party)	one sampler per day	1.5.2	5,100	15	76,500	
e	Labour Charges (4 Nos)for Sampling Work	per Labor day	5.7	494	60	29,640	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
	Sub-Total A					**10,95,420**	

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B	LABORATORY STUDIES					-	
1	Chemical Analysis					-	
a	Primary Sample - For 9 radicals i.e. CaO, MgO, Al2O3, SiO2, Fe2O3, SO3, P2O5, K2O and LOI by XRF	Nos	Rate Proposed by CGM Gujarat	2,841	100	2,84,100	
b	Check samples External(10%) - For 9 radicals i.e. CaO, MgO, Al2O3, SiO2, Fe2O3, SO3, P2O5, K2O and LOI by XRF	Nos	Rate Proposed by CGM Gujarat	2,841	10	28,410	
c	XRD sample		4.5.1	4,000	5	20,000	
2	Petrological samples (Bh Core Samples)						
a	Preparation of thin section	Nos	4.3.1	2,353	10	23,530	
b	Study of Thin Section /petrographic studies	Nos	4.3.4	4,232	10	42,320	
3	Bulk Density Determination						
a	Bulk Density	No.	4.1	3,540	5	17,700	
	Sub Total - B					26,06,900	
Total In-House Component - 1 (Sub Total A + B)						**37,02,320**	
II- Outsourced Component							
A	Charges of one Surveyor	day	1.6.1a	8,300	5	41,500	
B	DRILLING						





i	Surface Drilling	m.	2.2.1.1b	6775	165	11,17,875	Copy of the MoC approved rate is required
Total Outsourced Component - II						11,59,375	reimbursement of outsource component will be made as per Paragraph 3 and item sl. No. 6 (i) of NMET-SoC. The copy of contract agreement for outsourced component is required to be provided.
Total (In-House and Outsourced Component) - I & II						**48,61,695**	
III	Geological Report Preparation	5 Hard copies with a soft copy	5.2	For projects having cost upto 50 lakh - minimum 1.5 lakh or 5% of total value of work whichever is more		2,43,085	This amount will be reimburse after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET by the EA.
IV	Preparation of Exploration Proposal (5 Hard copies with a soft copy)	5 Hard copies with a soft copy	5.1 & 28th EC meeting Minutes	2% of the Cost subject to a maximum of Rs. 5 lakh		97,234	This amount will be reimburse after submission of the Hard Copies and the soft copy of the final proposal along with Maps and Plan as suggested by the TCC-NMET in its meeting while clearing the proposal.
V	Peer review Charges		As per EC decision			30,000	

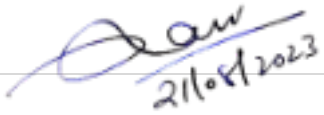




VI	Tendering Process cost		2.3	2% of the outsourced cost of Rs. 5 lakh whichever is lower		23,188	will be reimbursed when copy of signed agreement/tender for outsoure component will be submitted.
VII	Operational Charges		Para 3 and Item No. 6.0 (i)	For projects having cost upto 50 lakh - 10 % of total outsourced cost		1,15,938	will be reimbursed as per point 3 and item sl. no. 6 (i) of NMET-SoC after recalculation when actual cost of outsourcing component will be be provided. The copy of contract agreement for outsourced component and work completion report are also required to reimburse the operational charge
Total Estimated Cost without GST						**53,71,139**	
VIII	**Provision for GST @18%**					**9,66,805**	GST will be reimburse as per actual and as per applicable notified rate
Total Estimated Cost with GST						**63,37,944**	
or Say Rs. In Lakhs						**63.38**	

Note -
1. If any part, mentioned in the in-house component is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC.
2. For in-house component of the project, a Certificate from the NEA regarding non outsourcing of any component/project is required.
3. In no case, the sum of outsourced cost and operational charges should exceed the cost as per SoC rates of the total outsourced component(s).





ANNUXURE 6B

Time schedule / Action plan of Preliminary Exploration (G-3 stage) for Limestone and Bauxite in Jodhpur-Satapar Block, Devbhumi Dwarka District, Gujarat.

Sl. No.	Activities	Unit	MONTHS		
			1	2	3
1	Camp Setting	Month			
2	Surface Drilling	m.			
3	Survey Party days	day			
4	Geologist Party days in field	day			
5	Sampling Party days, Core Sampling	day			
6	Laboratory Studies	Nos.			
7	Camp Winding	Month			
8	Geologist Party days in HQ	day			
9	Geological Report Writing with Peer Review	Month			

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.





ANNUXURE 7A

Cost Sheet of Reconnaissance Survey (G4) for Evaluation of Placer Xenotime Prospect in the Ujol River Basin, (easternside having an area of 350 sq.km.), Gujarat
Name of the Exploration Agency - CGM Gujarat (m/s Geovaleservies Pvt Ltd.
Total Area - 370 sqkm; Nos. of Borehole - 25 ; Completion Time - 12 Months

S.N	Item of Work	Unit	Rates as per NMET SoC		Estimated Cost of the Proposal		Remark
			SoC-Item -Sl No.	Rates as per SoC	Qty.	Total Amount (Rs)	
1	**Mapping Work**						
a	Geologist HQ days	one Geologist per day	1.2a	9,000	35	3,15,000	
b	Geologist man-days fo mapping/sampling (Field days)	one Geologist per day	1.2b	11,000	120	13,20,000	
c	Labor (Field days) (2 workers per geologist)	per Labor day	5.7	494	240	1,18,560	Amount will be reimburse as per the notified rates by the Central Labour Commission or respective State Govt. - whichever is higher
Sub Total - 1						**17,53,560**	
Phase-I							
2	Remote Sensing						
a	Geologist Mandays for Multispectral and DEM	one Geologist per	1.1	9,000	40	3,60,000	include field related visits

	data analysis	day					also
b	Geologists (Field days)	one Geologist per day	1.2	11,000	0	-	
	Sub Total 2					**3,60,000**	
3	GEOLOGICAL WORK						
i	Pitting (upto 2.0 m depth)	per cu.m	2.1.2	12	100	1,200	no of samples:50
ii	Geochemical analysis (200 SSS+50 pit sample)						
a	Heavy Liquid Separation	per sample	4.3.6a	2,380	250	5,95,000	
b	Gravity and Magnetic Separation	per sample	4.3.6b	13,820	250	34,55,000	
c	i) XRF: major oxides	per sample	4.1.15a	4,200	200	8,40,000	
a	Check samples for XRF	per sample	4.1.15a	4,200	20	84,000	
b	ICPMS (34 elements)	per sample	4.1.14	7,731	200	15,46,200	
c	Check samples for ICPMS	per sample	4.1.14	7,731	20	1,54,620	
a	XRD	per sample	4.5.1	4,000	20	80,000	
b	Check samples for XRD	per sample	4.5.1	4,000	2	8,000	
	Sub Total - 3					**67,64,020**	
4	Petrological studies						
a	Preparation of thin section	per sample	4.3.1	2,353	30	70,590	
b	Microscopic study	per sample	4.3.4	4,232	30	1,26,960	





c	Sampler man-day	one sampler per day	1.5.2	5,100	35	1,78,500	
d	Labor (Field day) (4 workers per sampler)	per Labor day	5.7	494	140	69,160	Amount will be reimburse as per the notified rates by the Central Labour Commission or respective State Govt. - whichever is higher
	Sub Total - 4					**4,45,210**	
Phase-II							
5	Geophysics (Phase-2)						
a	VES (S.P. & Shallow electrical resistivity)	per line km	3.3c	60,000	20	12,00,000	
b	GPR Survey	per line km	3.17	30000	10	3,00,000	As per SOC, Charges for GPR Survey will be reimburse as per actual
c	Auger drilling (25 BH) (Outsource)	per meter	02:02:02	4,760	200	9,52,000	
	Sub Total - 5					24,52,000	
6	Geochemical Investigation						
a	i) major oxides XRF	per sample	4.1.15a	4,200	200	8,40,000	
b	Check samples for XRF	per sample	4.1.15a	4,200	20	84,000	





c	ICPMS	per sample	4.1.14	7,731	200	15,46,200	
d	Check samples for ICPMS	per sample	4.1:.5	7,731	20	1,54,620	
e	XRD	per sample	4.5.1	4,000	10	40,000	
f	Check samples for XRD	per sample	4.5.1	4,000	1	4,000	
	Sub Total - 6					**26,68,820**	
7	Petrological studies						
a	thin section preparation	per sample	4.3.1	2,353	25	58,825	
b	Microscopic study	per sample	4.3.4	4,232	25	1,05,800	
c	SEM	per hour	4.4.2	2,940	20	58,800	
d	Sampler man-day	per day	1.5.2	5,100	25.00	1,27,500	
e	Labor (Field days) (4 workers per sampler)	per day	5.7	494	100	49,400	Amount will be reimburse as per the notified rates by the Central Labour Commission or respective State Govt. - whichever is higher
	Sub Total - 7					**4,00,325**	
	Total (Sub Total -1 to 7)					**1,48,43,935**	





8	Preparation of Exploration Proposal	5 Hard copies with a soft copy	5.1	2% of the Cost subject to a maximum of Rs. 5 lakh		2,96,879	This amount will be reimburse after submission of the Hard Copies and the soft copy of the final proposal along with Maps and Plan as suggested by the TCC-NMET in its meeting while clearing the proposal.
9	Geological report preparation	5 Hard copies with a soft copy	5.2	For the projects having cost exceedingn Rs. 50 lakhs but less than Rs. 150 lakh - A minimum of Rs. 2.5 lakhs or 3% of the value of work whichever is more.		4,45,318	This amount will be reimburse after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET by the EA.
10	Report Peer Review		As per EC	Lump sum		30,000	
	Total cost without GST					**1,56,16,132**	





	Provision for GST @ 18%					**28,10,904**	GST will be reimbursed as per actual and as per the applicable notified rate
	Total cost					**1,84,27,035**	
					or Say Rs. in Lakhs	**184.27**	
Note:							
	1. If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. **2. In case of execution of the project by EA on its own, a Certificate regarding non outsourcing of any component/project is required.**						

ANNUXURE 7B

TIME SCHEDULE /ACTION PLAN FOR RECONNAISSANCE SURVEY (G4) FOR EVALUATION OF PLACER XENOTIME PROSPECT IN THE UJOL RIVER BASIN, (EASTERNSIDE HAVING AN AREA OF 350 SQ.KM.), GUJARAT

Sl. No.	Activities	Unit	MONTHS											
			1	2	3	4	5	6		7	8	9	10	11	12
1	Geologist Party days (1 Party)	day													
2	Sampling Party days (1 party)	day													
7	Laboratory Studies	Nos.													
8	Geologist Party days (1 Party), HQ	day							**Review**						
3	Geophysical Survey	day													
4	Core Drilling (2 rigs)	m.													
5	Camp Setting	day													
6	Camp Winding	day													
9	Report Writing	day													

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/ lockdown etc will be additional to above time line.**





ANNUXURE 8A

Cost Estimated of Preliminary Exploration (G3) for Gold in Salaikana Block (3.98 Sq. Km), District: Keonjhar, Odisha
Name of the Exploration Agency - OMC
Total Area - 3.98 sqkm; Completion Time - 12 Months

S.N	Item of Work	Unit	Rates as per NMET SoC		Estimated Cost of the Proposal		Remark
			SoC-Item -Sl No.	Rates as per SoC	Qty.	Total Amount (Rs)	
A	**GEOLOGICAL WORK**						
1	**Geological mapping (1:2000) & sampling**						
a	Charges for one Geologist per day at HQ	one Geologist per day	1.3	9,000	40	3,60,000	
b	Charges for one Geologist per day at field (1 Nos)	one Geologist per day	1.3	11,000	150	16,50,000	
c	Labour (2Nos/ geologist)	per Labor day	5.7	494	300	1,48,200	Amount will be reimburse as per the notified rates by the Central Labour Commission or respective State Govt. - whichever is higher
d	Geophysics HQ (Monitoring and interpreting survey data)	one Geophysicst per day	3.19	9,000	0	0	Included in cost of Geophysical Survey, hence not considered
e	Charges for one Sampler per day (1 Party)	one sampler per day	1.5.2	5,100	13	66,300	

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f	Labour (4 Nos/ sampler)	per Labor day	5.7	494	52	25,688	Amount will be reimburse as per the notified rates by the Central Labour Commission or respective State Govt. - whichever is higher
g	Surveyor	one serveyor per day	1.6.1a	8,300	30	2,49,000	
h	DGPS Survey	Per Point of Observation	1.6.2	19,200	10	1,92,000	
2	**Trenching**						
a	Excavation of Trenches upto 2m depth	per cu m	2.1.1	3,330	40	1,33,200	
	Sub-Total -A					**28,24,388**	
B	**Petrological samples (Surface &Bh Core Samples)**						
i	Preparation of standard thin sections	Nos	4.3.1	2,353	10	23,530	
ii	Complete Petrographic/Ore microscopy Study/Mineragraphic	Nos	4.3.4	4,232	5	21,160	
iii	Preparation of unmounted polished section of rock	per sample	4.3.3	1,185	10	11850	
	Sub-Total -B					**56,540**	
C	**Digital Photograph of thin polished section**						
i	Digital Photographs	Nos	4.3.7	280	10	2,800	
	Sub-Total -C					**2,800**	
D	**LABORATORY STUDIES**						





1	**Chemical Analysis**	-	-	-	-	-	BH depth more than 100m has been considered for deviation.
a	Primary Samples for Gold by fire assay (40 BRS+ 20 trench+40 BH core)	Nos	4.1.5a	2,380	70	1,66,600	
b	Check Sample for Gold by fire assay (10% External)	Nos	4.1.5a	2,380	7	16,660	
c	Gold Analysis by AAS method (MIBK method)	per sample	4.1.6	1557	30	46710	
d	Check Sample AAS method	per sample	4.1.6	1557	3	4671	
	Sub-Total -D					**2,34,641**	
E	**Geophysical Survey**						
i	Induced Polarization (Dipole-Dipole)	line km	3.4a	69,950	20	13,99,000	
	Sub-Total E					**13,99,000**	
F	**DRILLING (After Review)**						
i	Drilling up to 300m (Hard Rock)	m	2.2.1.4a	11,500	1000	1,15,00,000	
	Sub Total F					**1,15,00,000**	
Total -(A to F)						**1,60,17,369**	
G	**Preparation of Exploration Proposal (5 Hard copies with a soft copy)**	**5 Hard copies with a soft copy**	**5.1**	2% of the Cost subject to a maximum of Rs. 5 lakh		**3,20,347**	This amount will be reimburse after submission of the Hard Copies and the soft copy of the final proposal along with Maps and Plan as suggested by the





							TCC-NMET in its meeting while clearing the proposal.
H	**Geological Report Preparation**	**5 Hard copies with a soft copy**	**5.2**	For the projects having cost exceedingn Rs. 150 lakhs but less than Rs. 300 lakh - A minimum of Rs. 7.5 lakhs or 3% of the value of work whichever is more.		**7,50,000**	This amount will be reimburse after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET by the EA.
I	**Peer review Charges**		**As per EC decision**			**30,000**	
J	**Total Estimated Cost without GST**					**1,71,17,716**	
K	**Provision for GST @ 18%**					**30,81,189**	GST will be reimbursed as per actual and as per the applicable notified rate
L	**Total Estimated Cost with GST**					**2,01,98,905**	
			or Say in Lakhs (Rs.)			***201.99***	
Note :							
	1. If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. ***2. In case of execution of the project by EA on its own, a Certificate regarding non outsourcing of any component/project is required.***						

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ANNUXURE 8B

TIME SCHEDULE /ACTION PLAN FOR PRELIMINARY EXPLORATION (G3) FOR GOLD IN SALAIKANA BLOCK (3.98 SQ. KM), DISTRICT: KEONJHAR, ODISHA														
Sl. No.	**Activities**	**Unit**	**MONTHS**											
			1	**2**	**3**	**4**	**5**	**6**		**7**	**8**	**9**	**10**	**11**	**12**
1	Geologist Party days (1 Party)	day													
2	Sampling Party days (1 party)	day													
7	Laboratory Studies	Nos.													
8	Geologist Party days (1 Party), HQ	day							**Review**						
3	Geophysical Survey	day													
4	Core Drilling (2 rigs)	m.													
5	Camp Setting	day													
6	Camp Winding	day													
9	Report Writing	day													
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/ lockdown etc will be additional to above time line.**														





ANNUXURE 9A

Cost Estimated of Preliminary Exploration (G3) for Gold in Dimirimunda Block (5 Sq. Km), District- Keonjhar, Odisha
Name of the Exploration Agency - OMC
Total Area - 5.00 sqkm; Completion Time - 12 Months

S.N	Item of Work	Unit	Rates as per NMET SoC		Estimated Cost of the Proposal		Remark
			SoC-Item -Sl No.	Rates as per SoC	Qty.	Total Amount (Rs)	
A	**GEOLOGICAL WORK**						
1	**Geological mapping (1:2000) & sampling**						
a	Charges for one Geologist per day at HQ	one Geologist per day	1.3	9,000	40	3,60,000	
b	Charges for one Geologist per day at field (1 Nos)	one Geologist per day	1.3	11,000	150	16,50,000	
c	Labour (2Nos/ geologist)	per Labor day	5.7	494	300	1,48,200	Amount will be reimburse as per the notified rates by the Central Labour Commission or respective State Govt. - whichever is higher
d	Geophysics HQ (Monitoring and interpreting survey data)	one Geophysicst per day	3.19	9,000	0	0	Included in cost of Geophysical Survey, hence not considered
e	Charges for one Sampler per day (1 Party)	one sampler per day	1.5.2	5,100	13	66,300	

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f	Labour (4 Nos/ sampler)	per Labor day	5.7	494	52	25,688	Amount will be reimburse as per the notified rates by the Central Labour Commission or respective State Govt. - whichever is higher
g	Surveyor	one serveyor per day	1.6.1a	8,300	30	2,49,000	
h	DGPS Survey	Per Point of Observation	1.6.2	19,200	10	1,92,000	
2	**Trenching**						
a	Excavation of Trenches upto 2m depth	per cu m	2.1.1	3,330	40	1,33,200	
	Sub-Total -A					**28,24,388**	
B	**Petrological samples (Surface &Bh Core Samples)**						
i	Preparation of standard thin sections	Nos	4.3.1	2,353	10	23,530	
ii	Complete Petrographic/Ore microscopy Study/Mineragraphic	Nos	4.3.4	4,232	5	21,160	
iii	Preparation of unmounted polished section of rock	per sample	4.3.3	1,185	10	11850	
	Sub-Total -B					**56,540**	
C	**Digital Photograph of thin polished section**						
i	Digital Photographs	Nos	4.3.7	280	10	2,800	
	Sub-Total -C					**2,800**	
D	**LABORATORY STUDIES**						





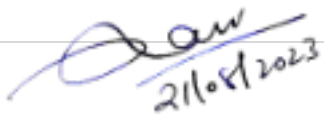
1	**Chemical Analysis**	-	-	-	-	-	BH depth more than 100m has been considered for deviation.
a	Primary Samples for Gold by fire assay (40 BRS+ 20 trench+40 BH core)	Nos	4.1.5a	2,380	70	1,66,600	
b	Check Sample for Gold by fire assay (10% External)	Nos	4.1.5a	2,380	7	16,660	
c	Gold Analysis by AAS method (MIBK method)	per sample	4.1.6	1557	30	46710	
d	Check Sample AAS method	per sample	4.1.6	1557	3	4671	
	Sub-Total -D					**2,34,641**	
E	**Geophysical Survey**						
i	Induced Polarization (Dipole-Dipole)	line km	3.4a	69,950	20	13,99,000	
	Sub-Total E					**13,99,000**	
F	**DRILLING (After Review)**						
i	Drilling up to 300m (Hard Rock)	m	2.2.1.4a	11,500	1000	1,15,00,000	
	Sub Total F					**1,15,00,000**	
Total -(A to F)						**1,60,17,369**	
G	**Preparation of Exploration Proposal (5 Hard copies with a soft copy)**	**5 Hard copies with a soft copy**	**5.1**	2% of the Cost subject to a maximum of Rs. 5 lakh		**3,20,347**	This amount will be reimburse after submission of the Hard Copies and the soft copy of the final proposal along with Maps and Plan as suggested by the





							TCC-NMET in its meeting while clearing the proposal.
H	**Geological Report Preparation**	**5 Hard copies with a soft copy**	**5.2**	For the projects having cost exceedingn Rs. 150 lakhs but less than Rs. 300 lakh - A minimum of Rs. 7.5 lakhs or 3% of the value of work whichever is more.		**7,50,000**	This amount will be reimburse after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET by the EA.
I	**Peer review Charges**		**As per EC decision**			**30,000**	
J	**Total Estimated Cost without GST**					**1,71,17,716**	
K	**Provision for GST @ 18%**					**30,81,189**	GST will be reimbursed as per actual and as per the applicable notified rate
L	**Total Estimated Cost with GST**					**2,01,98,905**	
			or Say in Lakhs (Rs.)			***201.99***	
Note:							
	1. If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. ***2. In case of execution of the project by EA on its own, a Certificate regarding non outsourcing of any component/project is required.***						





ANNUXURE 10A

Estimated cost for Reconnaissance Survey (G-4) for PGE,Gold& REE in Maneri-Sitapala Block, Balaghat District, MP.
Name of the Exploration Agency - DGM, Madhya Pradesh (M/s, Gemcokati Exploration Pvt. Ltd.)
Total block area- 80 sq km; Completion Time- 8 Months

Sl no.	Item of Work	Unit	Rates as per NMET SoC		Estimated Cost of the Proposal		Remarks
			SoC- Item Sl No.	Rates as per SoC	Qty.	Total Amount (Rs)	
1	**Large scale (LSM) Geological mapping/Trenching.**						
1.1	Geologist man days (Field work) for Large scale (LSM) Geological mappin/Trenching	one Geologist per day	1.2b	11,000	120	13,20,000	
1.2	Geologist man days for Geological mappin& Report (HQ)	one Geologist per day	1.2a	9,000	45	4,05,000	
1.3	Labour Charges for field work	per Labor day	5.7	494	240	1,18,560	Amount will be reimburse as per the notified rates by the Central Labour Commission or respective State Govt. - whichever is higher
	Sub-Total (1)					**18,43,560**	
2	**Trenching & Pitting**						
2.1	Trenching	cu.m.	2.1.1	3330	100	3,33,000	
2.2	Pitting	cu.m.	2.1.2	3800	10	38,000	
	Sub Total (2)					**3,71,000**	
3	**Laboratory Studies**						

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3.1	Major Oxides by XRF (+ Laterite analysis for Vanadium)	per sample	4.1.15a	4200	180	7,56,000	BRS:100+Trench:50+ Laterite analysis for Vanadium:30
3.1a	Check samples (10%)	per sample	4.1.15a	4200	18	75,600	
3.2	Gold by Fire Assay	per sample	4.1.5a	2,380	10	23,800	
3.3	REE by ICPMS (34 elements)	per sample	4.1.14	7731	10	77,310	
3.4	PGE of field samples by Ni-S fire assay in magnetic bearing gabbroic sample	per sample	4.1.5d	11,800	100	11,80,000	
3.4a	Check samples (10%)	per sample	4.1.5d	11,800	10	1,18,000	
	Sub-Total 3					**22,30,710**	
4	**XRD Studies for identification of minerals**	per sample	4.5.1	4,000	10	**40,000**	
5	**EPMA (10 Samples)**	per hour	4.4.1	8,540	40	**3,41,600**	
6	**Pertrological/Mineralographic studies**						
6.1	Prepration of standard thin section	per sample	4.3.1	2353	25	58,825	
6.2	Study of thin section for petrography	per sample	4.3.4	4232	25	1,05,800	
6.3	prepration of polished thin section	per sample	4.3.2	1549	20	30,980	
6.4	Study of thin polished section for mineragraphy	per sample	4.3.4	4232	20	84,640	
6.5	Digital photomicrograph of thin polished section	per photo	4.3.7	280	25	7,000	
	Sub- Total (6)					**2,87,245**	
7	**Total (1 to 6)**					**51,14,115**	

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8	**Geological Report Preparation**	**5 Hard copies with a soft copy**	**5.2**	A Minimum of Rs. 2.5 lakhs or 5% of the work whichever is more	**1**	**2,55,706**	This amount will be reimburse after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET by the EA.
9	**Preparation of Exploration Proposal**	**5 Hard copies with a soft copy**	**5.1**	2% of the Cost subject to a maximum of Rs. 5 lakh	**1**	**1,02,282**	This amount will be reimburse after submission of the Hard Copies and the soft copy of the final proposal along with Maps and Plan as suggested by the TCC-NMET in its meeting while clearing the proposal.
10	**Report Peer Review Charges**	**lumpsum**	**As per EC decision**	**30000**	**1**	**30,000**	
12	**Total Estimated Cost without GST (7 to 11)**					**55,02,103**	
13	**Provision for GST @ 18%**					**9,90,379**	GST will be reimbursed as per actual and as per the applicable notified rate
14	**Total Estimated Cost with GST**					**64,92,482**	
					Say, Rs. in Lakhs	**64.92**	

Note: ***1. If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC.***
2. In case of execution of the project by EA on its own, a Certificate regarding non outsourcing of any component/project is required.





ANNUXURE 10B

Time schedule / Action plan of Reconnaissance survey PGE, Gold and REE in Maneri-Sitapala Block (80 sq. km), Balaghat District: M.P. (GemcoKatiExpl. Pvt. Ltd.)										
		1	2	3	4	5	Review	6	7	8
Geological Mapping OF 80 sq km (LSGM) on 1 is 12,000 scale										
Sampling during Mapping										
Trench or Pit (50cu.m) sampling & analysis										
Microscopy and EPMA										
Final Report										





ANNEXURE -11A

Cost Estimate for Preliminary Exploration (G3 Stage) for Limestone in Itga Block , District : Kalaburagi, Karnataka

Total area - 10.60 Sq. Km

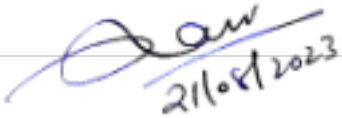
Sl. No	Item Work	Rates as per NMET SoC		Estimated Revised Cost already recommended in 53rd TCC			Revised Cost recommended in 55th TCC		
		Item no in Soc	Unit	Rates as per SoC of NMET	Qty.	Amount (Rs)	Qty.	Amount (Rs)	Remarks
1 - Outsourse Component									
A	**Drilling**								
i	Core Drilling	2.2.1.1b	per m	6,714	450	30,21,300	450	30,21,300	Copy of MoC approved rate is required.
ii	Land / Crop Compansation (in case the BH falls in agreecultural Land)	5.6	Per Bh	20,000	10	2,00,000	10	2,00,000	Amount will be reimburse as per actuals or max. Rs. 20000 per BH with certification from local authorities
iii	Borehole plugging by cement	2.2.7b	per m	150	10	1,500	10	1,500	

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iv	Drill Core Preservation	5.3	per m	1,590	450	7,15,500	450	7,15,500	This amount will be reimbursed as per actual metre of drill cores and after the successful delivery of drilling cores to the concerned core libraries/authorities.
v	**Construction of concrete Pillar (12"x12"x30")**	2.2.7a	Per Bh	2,000	10	20,000	10	20,000	
TOTAL - A						39,58,300		39,58,300	
B	**Sample Work**								
i	**Sampler Charges**	1.5.2	one Sampler per day	5,100	60	3,06,000	60	3,06,000	
ii	**Labour Charges for Sampling work**	5.7	Labour day	477	240	1,14,480	240	1,14,480	
TOTAL - B						4,20,480		4,20,480	
C	**Laboratory Studies**								
I	**Chemical Analysis**								





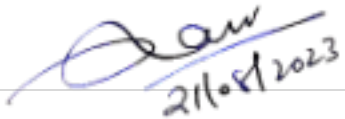
a	**Primary Samples (Major Oxides)**	4.1.15a	Per sample	4,200	450	18,90,000	450	18,90,000	
b	**External Check (10%) (Major Oxides)**	4.1.15a	Per sample	4,200	45	1,89,000	45	1,89,000	
c	**Internal Check (5%) (Major Oxides)**	4.1.15a	Per sample	4,200	23	96,600	23	96,600	
Sub Total (I)						21,75,600		21,75,600	
II	Bulk Density and Petrological Studies								
a	Bulk density	4.1	per sample	3,540	5	17,700	5	17,700	
b	Preparation of thin section	4.3.1	per sample	2,353	10	23,530	10	23,530	
c	Complete Petrographic studies	4.3.4	per sample	4,232	10	42,320	10	42,320	
Sub Total (II)						83,550		83,550	
TOTAL - C						22,59,150		22,59,150	
TOTAL-1 OUTSOURCED COMPONENT (A+B+C)						**66,37,930**		**66,37,930**	Reimbursement of outsource component will be made as per





									Paragraph 3 and item sl. No. 6.0 (ii) of NMET-SoC
2. In-House Component									
A	**GEOLOGICAL WORK**								
i	Geological Party days (1 party) Field	1.3 b	one Geologist per day	11,000	120	13,20,000	120	13,20,000	
ii	Geological Party days (1 party)HQ	1.3 a	one Geologist per day	9,000	60	5,40,000	60	5,40,000	
iii	Labour Charges for Geological work	5.7	Labour day	477	240	1,14,480	240	1,14,480	Amount will be reimburse as per the notified rates by the Central Labour Commission or respective State Govt., whichever is higher
Sub Total A						**19,74,480**		**19,74,480**	
B	SURVEY WORK								

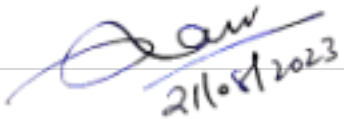




i	Survey Party days (1 party) without Labour for contouring (2m intervel)	1.6.1a	one Surveyor per day	8,300	30	2,49,000	30	2,49,000	
ii	Labour Charges for Survey work	5.7	Labour day	477	120	57,240	120	57,240	Amount will be reimburse as per the notified rates by the Central Labour Commissio n or respective State Govt., whichever is higher
iii	DGPS Survey of Boreholes	1.6.2	per point	19,200	16	3,07,200	16	3,07,200	
Sub Total B						6,13,440		6,13,440	
TOTAL- 2 IN-HOUSE COMPONENT (A to B)						25,87,920		25,87,920	
Total Cost of Outsourced and In-House Component (1 + 2)						92,25,850		92,25,850	
3. Miscellaneous Charges									
i	Preparation of Exploration Proposal	5.1	5 Nos. Hard Copies along with soft copy	2% of approved Project cost subject to Maximum of 5 Lakh which	5 Nos. Hard Copi es alon	1,84,517		1,84,517	EA has to submit the Hard Copies and the soft copy of the

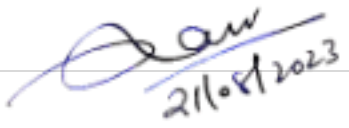
				ever is lower	g with soft copy				final proposal along with Maps and Plan as suggested by the TCC-NMET in its meeting while clearing the proposal.
ii	Peer Review Charges	as per EC decision		10000	1	10,000	2	60,000	
iii	Tendering Process cost for Outsourced component	2.3		2% of cost or 5 lakh which ever is lower		1,32,759		1,32,759	will be reimbursed when copy of the signed agreement/tender for outsoure component will be submitted.
iv	Operational charges for outsourced component	Paragraph 3 (ii)of SoC and Item No. 6.0 (ii)				6,21,258		6,22,845	Will be reimbursed as per point 3 of NMET-SoC after recalculation when actual cost of outsourcing component





									will be be provided. The copy of contract agreement for outsourced component and work completion report are also required to reimburse the operational charge.
v	Geological Report preparation	5.2	5 Nos. Hard Copies along with soft copy	For the projects cost exceeding Rs. 50 Lakhs but less than Rs. 150 lakh : A Minimum of Rs. 2.5 lakhs or 5% of the work whichever is more	5 Nos. Hard Copies along with soft copy	4,61,293		9,22,585.00	EA has to submit the 02 final Geological Reports- in Hard Copies (5 Nos) and the soft copy to NMET.
TOTAL - 3 Miscellaneous Charges						14,09,826		19,22,706	





4 - Total Cost of the project without GST (1 + 2 + 3)						1,06,35,676		1,11,48,556	
Provision for GST (@18%)						19,14,422		20,06,740	GST will be reimburse as per actual and as per notified prescribed rate
5- Total Cost of the project with GST						1,25,50,098		1,31,55,296	
					or say Rs. in Lakh	125.50		131.55	

Note :

1. If any part, mentioned in the in-house component is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC.

2. For in-house component of the project, a Certifiate from the NEA regarding non outsourcing of any component/project is required.

3. In no case, the sum of outsourced cost and operational charges should exceed the cost as per SoC rates of the total outsourced component(s).



