Ministry of Mines
National Mineral Exploration Trust
Minutes of the 61st Technical-cum-Cost Committee (TCC) meeting held on 30th & 31st January, 2024 and 07th February, 2024 through video conferencing

The 61st meeting 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, NMET on 30th & 31st January, 2024 and 07th February, 2024.

Members of TCC-NMET and representatives from IBM; MECL; OMC, Odisha; KIOCL, Karnataka; CMPDI; MPSMC; FAGMIL, Rajasthan; CGM, Gujarat; DGM, Chhattisgarh; DGM, Uttar Pradesh; Geo Marine Solution Pvt.Ltd; Ecomen Laboratories Pvt.Ltd; Maheshwari Mining Pvt.Ltd. and M/s. Gemcokati Exploration Pvt. Ltd. have attended the meeting through their respective VC modes.

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

Shri C. Parthasarathi, 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].

Dr. S. Ravi, DDG, GSI and Chairman, TCC, welcomed the members of TCC and participants representing various Notified Exploration Agencies [NEAs]/ Notified Private Exploration Agencies [NPEAs]. In his opening remarks, the chairman advised the NPEAs and NEAs to submit the proposals on time so as to equip the members to come prepared for the meeting.

With the permission from the chair, Dr. E.V.S.S.K Babu, Chief Scientist, CSIR-NGRI and Member of TCC opined that the agencies proposing to for Capital goods procurements with NMET fund should clearly enumerate the detailed information on Need analysis, their capabilities, how the new acquisition would help their organization as well as the country with reference to Mineral exploration, Stakeholder Connect & Commitments, Possibilities of Consortium for avoiding duplication and optimum utilization of valuable capital resources, availability of trained HR to handle the adoption of new technologies, deployment timeline, Estimated Cost of the equipment, Return of Investment, Cost-Benefit Analysis, Road Map for future sustenance etc.

Shri. Santosh Adhikari, Chief Mining Geologist, IBM and Member, TCC Suggest the Chairman, TCC that considering the work load, NMET may develop a Software for submission of proposals and evaluation by the TCC members which would standardize the work components in the NQT, Similarly for Submission of reports also a standard format may be developed in the software and all reports can be submitted in the NMET portal through the software. Others members of the TCC too expressed the similar opinions for efficient monitoring of the NMET funded projects.

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

Agenda 61.1: Technical evaluation of new project proposals:

Agenda 61.1.1 Preliminary Exploration for Bauxite, Titanium and Associated Minerals (G-3 Stage) Siskari Pat Block, District: Lohardaga, Jharkhand.
[Implementing Agency: MECL]

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a. The proposed block is a part of Chhotanagpur Gneissic Complex and there is an existing running Pakhar Bauxite Mine by M/s Hindalco Industries Ltd towards the south of the proposed block.
b. GSI, MECL, CMPDI, concerned DMG have already carried out detailed exploration work (G3/G2 stage) in and around the proposed area. Existence of considerable thickness of round 4-6m of bauxite has also been reported.
c. MECL conducted a field visit in the Siskari Pat block and its neighboring mine areas, uncovering bauxite occurrences reaching up to 25 meters in thickness in nearby pits. Additionally, observations indicated the presence of a Laterite/Bauxite profile within the Siskari Pat block. Chemical analysis of field samples showed promising levels of high Alumina (Al_2O_3) and Titanium (TiO_2), coupled with low Silica (SiO_2) content, ranging between 39-54%, 7-11%, and 1-4%, respectively.
d. Hence, after detailed studies and discussions with state government, MECL finds the area promising and a G3 stage exploration may be carried out to assess the potentiality of the prospect for Laterite/Bauxite, titanium &associated minerals in the Siskari pat Block.
e. The TCC committee reviewed the proposal and commented on possibilities for increasing the block size. MECL informed the committee that the area cannot be expanded further as either sides of the proposed block happened to be of steep cliff and may pose practical difficulty.
f. The committee agreed with the proposal and suggested to complete the project with limited drilling.

Recommendation of TCC:

The committee recommends the proposal for the approval of EC for "Preliminary Exploration for Bauxite, Titanium and Associated Minerals (G-3 Stage) Siskari Pat Block, District: Lohardaga, Jharkhand" over an area of 0.28 sq.km with an estimated cost of Rs. 74.20 lakh (including GST) within time schedule of 06 months and submission of report as per Annexure 2A & 2B. The item will be reviewed after 3 months.

Agenda 61.1.2 Reconnaissance Survey (G-4 Stage) for Lithium, Rare Metals and REE Mineralization in Kalvapalli Block, Peninsular Gneissic Complex-Ii, District: Nalgonda&Suryapet, Telangana.

[Implementing Agency: MECL]

a) The proposed area is mainly covered by Archean Peninsular Gneissic Complex with sporadic outcrops of the Dharwar Supergroup.
b) MECL consulted the NGCM report of toposheet no. 56P/09 generated by Geological Survey of India and noted that lithium values over the Peninsular Gneissic Complex rocks were notably anomalous. GSI collected 32 stream sediment samples from Kalvapalli Block which revealed Li values ranging from 9 ppm to 2284 ppm. Among the 32 samples, 7 exhibited lithium concentrations exceeding 100 ppm.
c) Moreover, The Kalvapalli Block exhibits a high concentration of REE of 771 ppm and the stream sediment sample taken from a location approximately 7 km west of the block showcases the highest total REE concentration of 915 ppm. Given the

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substantial presence of Li and REE, MECL has initiated the exploration proposal at G-4 level for the Kalvapalli block.

d) Furthermore, Y. Singh in "*Lithium Potential of the Indian Granitic Pegmatites*" has reported that Lithium-bearing minerals such as Spodumene and Hiddenite (LiAl(SiO3)2) have been identified within the pegmatites of the Kabbur area. Similar geological formations are observed in the proposed Kalvapalli Block where pegmatites and quartz veins which have intruded the PGC-II yielding maximum Li value of 2284 ppm

e) Expanding upon this information MECL has proposed G4 stage item. Upon review, it was found that the block has 100% overlap with GSI's exploration block and thus the TCC committee suggested to drop the item.

Recommendation of TCC:

Item dropped due to overlap with GSI's block.

Agenda 61.1.3 Preliminary Exploration (G-3 Stage) [Phase-I] for Gold in Kudrekonda Area by Geophysical Survey, Shimoga Schist Belt, HonnaliTaluk, Devanagere District, Karnataka.

[Implementing Agency: MECL]

a) Honnali gold fields in the Shimoga Schist Belt, comprising two main auriferous zones: Kudrekonda and Palavanahalli. These areas have a history of underground mining since 1880 by different companies like Honnali Gold Mining Company and Palavanahalli Gold Mining Company which reported erratic behavior of the lodes.

b) Kudrekonda block area has been selected after consulting all the available previous geological, ground geophysical &Heliborne geophysical surveys data (low altitude EM data), following the advisories by EC of NMET.

c) GSI has conducted thorough investigations in and around the specified area and has reported 0.24 to 0.77 g/t over a width of 3 m trench near the proposed area.

d) During 2016-17, GSI conducted a geophysical survey in the Palavanahalli-Holalur areas, employing a 700-meter profile interval. This survey identified three mineralization zones including Kudrekonda.

e) According to NGPM data, the area exhibits low magnetic anomalies and moderate Bouguer gravity within the block area, indicating favorable conditions for gold mineralization. Therefore, additional detailed exploration is deemed necessary in this area.

f) An integrated ground geophysical survey is necessary for the Kudrekonda block area as it has not been covered by Heliborne geophysical survey. Ground geophysical survey (TDEM, MT and Deep IP) will be helpful in identifying deeper extensions, continuity, and the location of gold-bearing ore zones.

g) The item was reviewed by the TCC and approved it with a suggestion to carry out detailed mapping on 1:1000 scale and geophysical surveys (IP, EM & MT) in the line of proposed grid pattern.

Recommendation of TCC:

The committee recommends the proposal for the approval of EC for "Preliminary Exploration (G-3 Stage) [Phase-I] for Gold in Kudrekonda Area by Geophysical Survey, Shimoga Schist Belt, Honnali Taluk, Devanagere District, Karnataka" over an area of 2.74 sq.km with an estimated cost of Rs. 244.68lakh

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(including GST) within time schedule of 12months and submission of report as per annexures3A & 3B.The item will be reviewed after04 & 08 months.

Agenda 61.1.4. Preliminary Exploration (G-3) for Manganese and Graphite in Bharatbahal Block (2.00 Sq. Km Area) District: Balangir, Odisha.
[Implementing Agency: MECL]

a) The proposed item (G-3) is an upgradation of the G4 stage item carried out by MECL in Larambha-Kanaital and Pudapadar Bharatbahal block where five potential areas had been identified, Bharatbahal manganese and graphite block being one of them.
b) Within the proposed block, three mineralized zones have been identified with cumulative strike length of 979m and average width is 15m. Two prominent NNE-SSW trending zones are significant in the central area. Sixteen bedrock samples were collected, with 15 containing over 10% Mn, reaching a peak of 38.13%. Graphite FC% ranges from 4.74% to 6.56%.
c) During G4 stage, five boreholes were drilled in the proposed block and the resources of 1389281.64 tonnes with 18.02 % Mn at 10% cut off and 516817.62 tonnes of graphite with 4.21 FC% (cut off: 2%) have been estimated.
d) The proposed exploration programme will establish the lateral and vertical continuity of the mineralization with higher confidence level.
e) The committee suggested MECL to workout modalities to auction the block with G4 level of exploration itself. For which MECL informed the house that there is no separate report available with MECL for auction and hence asked for G3.
f) The proposal was reviewed by the TCC and felt the drilling target should be rationalized drastically. It was suggested to restrict drilling only up to first level in 05 nos. of borehole.

Recommendation of TCC:

The committee recommends the proposal for the approval of EC for "Preliminary Exploration (G-3) for Manganese and Graphite in Bharatbahal Block (2.00 Sq. Km Area) District: Balangir, Odisha" over an area of 2.00 sq.km with an estimated cost of Rs. 137.78lakh (including GST) within time schedule of 08 months and submission of report as per annexures4A & 4B. The item will be reviewed after04 months.

Agenda 61.1.5. Preliminary Exploration (G-3) for Limestone in Alda Block, Raipur &Balodabazar-Bhatapara Districts, Chhattisgarh.
[Implementing Agency: DGM Chhattisgarh]

a) The proposed block belongs to Chandi Formation of Raipur Group of Chhattisgarh Super Group of rock and falls in part of SOI toposheet no 64 G/14.
b) The Geological Survey of India (GSI) has conducted investigations in and around the proposed area, revealing occurrences of dolomite and limestone.
c) Additionally, the DGM, MP has undertaken detailed exploration for cement-grade limestone in in Ameri-Pendri, Basin block, Nawapara-Bhatbhera-Sarponga block and Rani-Jarod block during the field seasons of 1990-91, 1991-92, and 1992-93.

d) During recent past, DMG carried out reconnaissance survey in and around the proposed area. The CaO, MgO and SiO2 content of the collected samples during the survey are 39.25 to 52.04, 0.16 to 3.22 and 1.43 to 14.96 respectively.
e) The proposed area lies in the southwestern part of the ongoing Nawapara (North) block project in District Balodabazar Bhatapara, where the DGM is currently conducting G-3 stage exploration.
f) The project was reviewed by the TCC and found the drilling plan not proposed in the line of MEMC Rules and thus asked to modify both the block and borehole points.
g) Accordingly, the DGM, Chhattisgarh modified the block to 10.25 sq.km and plotted the boreholes at 800 x 800 m grid spacing and 400m influence from the block boundary. The committee approved the proposal subject to comments from GSI and MECL on overlapping if any. DMG, Chhattisgarh should submit the revised proposal for getting comments from GSI and MECL.

Recommendation of TCC:

The committee recommends the proposal for the approval of EC for "Preliminary Exploration (G-3) for Limestone in Alda Block, Raipur & Balodabazar-Bhatapara Districts, Chhattisgarh" over an area of 10.25 sq.km with an estimated cost of Rs.159.78lakh (including GST) within time schedule of 10 months and submission of report as per annexures- 5A& 5B. The item will be reviewed after 05 months.

Agenda 61.1.6 Reconnaissance Survey (G4 Stage) for Limestone in Dhanokhar Nagod Block, Panna &Satna Districts, Madhya Pradesh.

[Implementing Agency: The MP State Mining Corporation Ltd (MPSMCL)]

a) The proposed block belongs to Bhander Group of rocks of VindhyanSupergroup which is bestowed with limestone resources.
b) GSI has carried out investigation in and around the area and reported presence of limestones.
c) Recently, MPSMCL has completed field visit in the area and collected representative samples with 9 samples showing CaO content ranging from 49.59% to 52.99%.
d) Furthermore, there are 2 ongoing limestone mines towards the western side of the proposed block.
e) Expanding upon this, MPSMCL formulated the item to carry out mapping, trenching and sampling.
f) The item was reviewed by TCC and suggested to carry out mapping on 1:12500 scale in an area of 101 sq.km along with few Pits & trenches and scout boreholes. DGPS survey is not required.

Recommendation of TCC:

The committee recommends the proposal for the approval of EC for "Reconnaissance Survey (G4 Stage) for Limestone in Dhanokhar Nagod Block, Panna & Satna Districts, Madhya Pradesh." over an area of 101 sq.km with an estimated cost of Rs. 78.74 lakh (including GST) within time schedule of 09 months and submission of report as per annexure-6A & 6B.The item will be reviewed after03 months.

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Agenda 61.1.7 Reconnaissance Survey (G4 Stage) for Limestone in Gunaur Pali Block, Panna District, Madhya Pradesh.
[Implementing Agency:MPSMCL]

a) The proposed block belongs to Bhander Group of rocks of Vindhyan Supergroup which is bestowed with limestone resources.
b) GSI has carried out investigation in and around the area and reported presence of limestones. Adjoining western part of the proposed area is being explored by GSI.
c) Recently, MPSMCL visited the field area, recorded several limestone exposures and collected representative samples with 7 samples showing CaO content ranging from 48.47% to 54.87%.
d) Furthermore, there are 2 ongoing limestone mines (M/s Jaykeychem Ltd, & M/s Spring Way Mining Ltd.) towards the western side of the proposed block.
e) Expanding upon this, MPSMCL formulated the item to carryout mapping, trenching and sampling.
f) The item was reviewed by TCC and suggested to carry out mapping on 1:12500 scale along with few Pits & trenches and scout boreholes. DGPS survey is not required.

Recommendation of TCC:

The committee recommends the proposal for the approval of EC for "Reconnaissance Survey (G4 Stage) for Limestone in Gunaur Pali Block, Panna District, Madhya Pradesh" over an area of 75sq.km with an estimated cost of Rs. 52.99 lakh (including GST) within time schedule of 09 months and submission of report as per annexures7A & 7B.The item will be reviewed after 03 months.

Agenda 61.1.8 Reconnaissance Survey (G4 Stage) for Limestone in Mahewa Gunaur Block, Panna &Satna Districts, Madhya Pradesh.
[Implementing Agency: MPSMCL]

a) The proposed block falls in SOI toposheet no: 63D/3 and belongs to Bhander Group of rocks of Vindhyan Supergroup which is bestowed with limestone resources.
b) GSI has carried out investigation in and around the area and reported presence of limestones. Adjoining western part of the proposed area is being explored by GSI.
c) Recently, MPSMCL visited the field area, recorded several limestone exposures and collected representative samples which yield positive values and are of cement grade and above.
d) Furthermore, there are 2 ongoing limestone mines towards the western side of the proposed block.
e) Expanding upon this, MPSMCL formulated the item to carryout mapping, trenching and sampling.

Recommendation of TCC:

The item was not reviewed as MPSMC did not come prepared.

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Agenda 61.1.9.Preliminary Exploration (G-3) for limestone in Dhanokhar Moharo Block, Panna &Satna Districts, Madhya Pradesh.
[Implementing Agency:MPSMCL]

a) The proposed block falls in SOI toposheet nos: 63D/6 & 63D/7and it belongs to Bhander Group of rocks of VindhyanSupergroup which is bestowed with limestone resources.
b) GSI has carried out investigation in and around the area and reported presence of limestones. Adjoining western part of the proposed area is being explored by GSI.
c) Recently, MPSMCL has carried out field visit in the proposed area. During the field visit, numerous limestone exposures were identified and several samples were collected for analysis. These samples were analyzed at laboratories operated by the Indian Bureau of Mines (IBM) and the Directorate of Geology and Mining (DGM). All samples tested positive and were found to be of cement grade or higher quality.
d) Furthermore, there are 2 ongoing limestone mines towards the western side of the proposed block.
e) Expanding upon this, MPSMCL formulated the item to carryout mapping, trenching and drilling.

Recommendation of TCC:
The item was not reviewed as MPSMC did not come prepared.

Agenda 61.1.10.Heliborne Time Domain Electromagnetic (TDEM) and Magnetic Surveys over the selected blocks at Sundargarh, Jharsuguda, Sambalpur, Deogarh, Angul and Kendhujhar Districts in Odisha.
[Implementing Agency:OMC]

a) The proposed areas belong to North Odisha Geological Domain, Singhbhum mobile belt, Rengali province and falls in SOI toposheet nos: 64N16, 73C1, 73B3, 73B4, 73B8, 73B7, 73B11, 73B8, 73B12, 73G6, 73G7, 73C10, 73C14, 73G2, 73G3, 73G7.
b) RSAS, GSI Bangalore, has identified blocks H1-5 to H1-9 using Aeromagnetic and Radiometric data interpretation for Odisha. These blocks are scheduled for a closely spaced aeromagnetic survey.
c) Further analysis of legacy reports, Aero Geophysical Magnetic data, and field surveys by OMC has led to the identification of an additional block named OM-1 in Keonjhar district, particularly focusing on gold mineralization.
d) OM-1 displays a sinuous magnetic anomaly indicating the presence of basic metavolcanics and potentially adjoining intermediate to felsic metavolcanics, likely containing segments of Banded Iron Formations (BIF). This block exhibits ENE-WSW regional structural features with significant deformation along the greenstone belt. Notably, the known gold mineralized areas of Gopur and Rangadigh are situated within OM-1.
e) To improve spatial resolution, especially considering magnetite's association with the gold mineralization event, a heli-TDEM (heliborne Time-Domain Electromagnetic survey) is proposed for the target blocks. This method aims to map conductive horizons within the schists and further characterize granitic contacts. Additionally, it may identify Au-associated sulphide minerals like pyrite if they exhibit good connectivity.
f) The item was reviewed on 30.1.2024 and suggested OMC to submit clarifications on,

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i. Whether the specifications of the project are agreed by Geological Survey of India? If so, kindly provide the details thereof.
ii. Whether the area has been explored by Geological Survey of India or Atomic Mineral Directorate? If no, kindly provide the details thereof.
iii. Whether the area is suitable for carrying out the Heliborne Time Domain Electromagnetic (TDEM) and Magnetic Surveys? Kindly provide the detailed justification for each proposed block (a suitable date and link will be communicated soon for making the presentation via video conferencing).

g) The committee also suggested OMC to put all the tender related process in abeyance till the approval from Executive Committee of NMET is accorded for the project.
h) Upon receipt of the clarification on the points mentioned above from OMC, the proposal was again reviewed on 07.02.2024 by the TCC along with experts from RSAS of GSI and AMD, Hyderabad.
i) The committee sought clarity from OMC on the line interval proposed, non-involvement of NGCM, NGPM and other mapping data of GSI in the block, methodology of execution, possible depth up to which interpretation expected etc. As many queries raised by TCC could not be comprehended, the OMC was suggested to present the item again in the forthcoming TCC meeting.

Recommendation

The item is not recommended to EC for approval and suggested OMC to resubmit for the forthcoming TCC meeting to review again.

Agenda 61.1.11.Preliminary Exploration (G-3) for Potash in Kalu-Garabdesar Block (area 15 Sq. Km), Bikaner District, Rajasthan.
[Implementing Agency:FAGMIL]

a) The Kalu-Garabdesar block is located in the Lakhasar sub basin in the Nagaur-Ganganagar Basin, Rajasthan.
b) The entire area of the block is covered with thick aeolian sand/alluvial sediments. As a result, the subsurface geology of the area has been inferred from the borehole intersections.
c) GSI has estimated Potash and Halite resources in three sub basins i.e. Satipura, Bharusari and Lakhasar.
d) MECL has estimated a net resource of 25MT at 5% K cut-off in Lakhasar sub-basin and the distribution of Resource in Plan reveals that the potash bearing zones are continuous in North, South and Eastern direction of the sub-basin
e) The proposed Kalu block lies towards north east of Lakhasar sub basin and the item has been proposed aimed at confirming the presence of Potash in the region.
f) The exploration efforts in the Kalu Block for Potash have pinpointed a targeted area spanning 67 square kilometers.
g) FAGMIL has proposed to drill a network of 24 boreholes at an approximate grid spacing of 800 meters by 800 meters, effectively covering the entirety of the designated block.
h) The item was reviewed by TCC and felt lack of expertise/competency with FAGMIL to execute the program. Besides, overlapping issues with blocks explored by GSI and MECL has not been addressed. Further, cost quoted for drilling is also not as per approved SOC of NMET.

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i) The committee opined that, if possible, FAGMIL may propose a collaborative item with MECL so as to develop in-house expertise in the field of potash mineral exploration.

Recommendation of TCC:

The committee does not approve this proposal and suggested FAGMIL to consult the legacy data of GSI pertaining to the area and propose smaller block with suitable work components so that FAGMIL can develop core competency/expertise in mineral exploration.

Agenda 61.1.12.Preliminary Exploration (G -3 stage) for Limestone in Chhasra Block, Kachchh District, Gujarat.

[Implementing Agency:CGM Gujarat]

a) The proposed block belongs to Gaj Formation which unconformably rests on the Paleocene sediments and consists of variegated clays, fossiliferous limestone, gypseous shale and bentonitic clays.
b) The limestone found is mostly dirty creamy white coloured and the rock is hard and compact.
c) GSI has carried out mapping around the area and reported presence of limestone
d) CGM officials has also carried out field visit in the proposed area and the CaO content of 36nos of grab samples ranges from 34.51% to 48.37%.
e) In order to establish the resource, CGM Gujarat has proposed the item.
f) The item was reviewed by TCC and suggested CGM, Gujarat to modify the block boundary so as to avoid the major water bodies where in drilling not possible. Accordingly, the number of boreholes will also vary.

Recommendation of TCC:

The committee recommends the proposal for approval of EC for "Preliminary Exploration (G -3 stage) for Limestone in Chhasra Block, Kachchh District, Gujarat" over an area of 35.37sq.km with an estimated cost of Rs. 174.05lakh (including GST) within time schedule of 06months and submission of report as per annexures 8A & 8B.The item will be reviewed after 03 months.

Agenda 61.1.13.Preliminary Exploration (G -3 stage) for Limestone in Vayor Block, Kachchh District, Gujarat.

[Implementing Agency:CGM Gujarat]

a) The proposed block belongs to Khari nadi Formation & Gaj Formation. Gaj Formation consists of variegated clays, fossiliferous limestone, gypseous shale and bentonitic clays. The limestone of Khari Nadi Formation is mostly dirty creamy white coloured and the rock is hard and compact.

b) Geological Survey of India (Field season-1982-83) has done geological mapping on 1:50000revealing the geological potential for limestone in the area.
c) GSI has carried out mapping around the area and reported presence of limestone.
d) Recently, CGM officials has carried out field check in the proposed area and Collected grab samples. Cao content 15 Nos. of samples yielded 34.26% to 47.65% suggesting the area to be promising.

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e) In order to check the continuity of the limestone body and to establish the resource, CGM Gujarat has proposed the item.
f) The item was reviewed by TCC and raised its concern over the high content of SiO2 in samples which showed higher percentage of CaO. Besides, the committee suggested CGM, Gujarat to work out the possibilities of drilling minimum number of boreholes (i.e. 05 boreholes in 100 hectare) as provisioned in the MEMC (Amendment) Rules, 2021

Recommendation of TCC:

The committee recommends the proposal for approval of EC for "Preliminary Exploration (G -3 stage) for Limestone in Vayor Block, Kachchh District, Gujarat" over an area of 20.68sq.km with an estimated cost of Rs. 94.28 lakh (including GST) within time schedule of 06months and submission of report as per annexure 9A & 9B The item will be reviewed after 03 months.

Agenda 61.1.14.Preliminary Exploration (G-3 stage) for Limestone in Jadva Block, Kachchh District, Gujarat.

[Implementing Agency: CGM Gujarat]

a) The proposed block belongs to Fulra Formation. This formation is mainly composed of dirty white, cream and yellowish foraminiferal limestones with some clays in the lower part.
b) The limestone of this formation are packed with variety of larger foraminiferas.
c) Geological Survey of India (Field season-1982-83) has done geological mapping on 1:50000revealing the geological potential for limestone in the area.
d) GSI has carried out mapping around the area and reported presence of limestone.
e) Recently, CGM officials has carried out field check in the proposed area and collected grab samples. Cao content 10Nos of samples yielded 45.89% to 51.82% suggesting the area to be promising.
f) In order to check the continuity of the limestone body and to establish the resource, CGM Gujarat has proposed the item.
g) The item was reviewed by TCC and suggested CGM, Gujarat to expand the block boundary up to the boundary of block with J.K.Cement. Accordingly, the number of boreholes will also vary.

Recommendation of TCC:

The committee recommends the proposal for the approval of EC for "Preliminary Exploration (G-3 stage) for Limestone in Jadva Block, Kachchh District, Gujarat." over an area of 10.30sq.km with an estimated cost of Rs.60.98 lakh (including GST) within time schedule of 06months and submission of report as per annexures 10A & 10B. The item will be reviewed after 03months.

Agenda 61.1.15.Preliminary Exploration (G3) for vanadium and titanium in Beach & Dune sands of Dandi-Onjal-Surwada Block in Navasari and Valsad Districts, Gujarat.

[Implementing Agency:CGM Gujarat (M/ S Geo Marine Solutions Private Ltd.)]

a) The proposed are falls in parts of SOI Toposheet No. 46D/13&14
b) GSI conducted an initial evaluation of heavy minerals along the Gujarat coast, spanning from Dumas in Surat District to Tithal in Valsad District. Significant

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concentrations of ilmenite, titanomagnetite, and magnetite were observed in the beach and dune sands within specific regions. Additionally, promising levels of vanadium were detected in titanomagnetite, indicating encouraging prospects.

c) The primary economic heavy mineral components identified in the beach and dune sediments of the area are ilmenite and magnetite. These minerals are believed to originate from the Deccan Basalt and associated rocks spread across a wide expanse in the hinterland. Specifically, beach sediments along a limited stretch west of Dandi and the mouth of the Purna River exhibit particularly high concentrations of ilmenite.
d) The bulk sediments from Gulf of Khambhat contain up to 28.5% of heavy minerals with an average of 12.5%. Within the heavy minerals, more than 50% are opaque in nature represented by titanomagnetite, magnetite and ilmenite. Laboratory studies like SEM–EDX, EPMA, XRD indicated presence of Vanadiferous titanomagnetite as well as the vanadium mineral phase, melanovanadate. Hence, it is inferred that the vanadiferous titanomagnetites in the Gulf of Khambhat are possibly drained from Deccan basalt mainly through the Rivers of Narmada and Tapti (GSI).
e) In summary, the sediment's opaque minerals primarily consist of ilmenite, titanomagnetite, and magnetite, suggesting a multimetal (Ti-V) deposit potential.
f) Consequently, a 2.17 sq.km area between the mouths of the Purna River and the Par River has been delineated, primarily encompassing shoreline dunes, to assess the vanadium and titanium potential in beach and dune sands. This area is divided into sectors named Dandi, Onjal, and Surwada, collectively forming the Dandi-Onjal-Surwada Block, selected based on GSI data and recommendations.
g) The proposal was reviewed by TCC and suggested Geo Marine Solutions Pvt.Ltd to adhere to the provisions of MEMC Rules, 2015 while planning for sampling and drilling.
h) Although CGM Gujarat requested for change of title but the committee suggested to retain the same title.

Recommendation of TCC:

The committee recommends the proposal for approval of EC for "Preliminary Exploration (G3) for vanadium and titanium in Beach& Dune sands of Dandi-Onjal-Surwada Block in Navasari and Valsad Districts, Gujarat" with an estimated cost of Rs. 86.28lakh (including GST) within time schedule of 12monthsand submission of report as per Annexure 11A & 11B and review after 06 month

Agenda 61.1.16.Reconnaissance Survey (G4 Stage) for Base Metal and Gold Prospect in Mailar Area, Lalitpur District, Uttar Pradesh.
[Implementing Agency:DGM, Uttar Pradesh (M/s. Geovale Services Pvt. Ltd.)]

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Agenda 61.1.17.Reconnaissance Survey (G4 Stage) for Cu-Mo-Au-Tellurides in Pachwara-Bhanesh Region, Jhansi District, Uttar Pradesh.[Implementing Agency:DGM, Uttar Pradesh (M/s. Geovale Services Pvt. Ltd.)]

Both the items have not been reviewed as Geovale Services Pvt. Ltd. did not present the proposals.

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Agenda 61.1.18.Reconnaissance Survey (G4 Stage) for Iron Ore (Block-A) around Chakdiya&Kushaniya area Dist: Sonbhadra, Uttar Pradesh. [Implementing Agency:DGM, Uttar Pradesh (M/s. GeoExporePvt Ltd.)]

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Agenda 61.1.19.Reconnaissance Survey (G4 Stage) for Iron Ore (Block-D) around Jogali, Jungel and Karwaniya areas Dist: Sonbhadra, Uttar Pradesh. [Implementing Agency:DGM, Uttar Pradesh (M/s. GeoExporePvt Ltd.)]

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Agenda 61.1.20.Reconnaissance Survey (G4 Stage) for Iron Ore (Block-E) around Chandauli, Deokhar and Kharara areas Dist: Sonbhadra, Uttar Pradesh.[Implementing Agency:DGM, Uttar Pradesh (M/s. GeoExporePvt Ltd.)]

a) The proposed target areas aim to exploit the Banded Hematite Chert/Jasper (BIF) formations within the Agori Formation of the Mahakoshal Belt and the areas are parts of SOI toposheet no. 64L/14
b) Within this region, the Geological Survey of India (GSI) has conducted, or is currently conducting, exploration work across various blocks. These proposals are mainly based on GSI's G3 stage exploration in Block-B, focusing on iron ore deposits in the Bharhari area of Sonbhadra district, Uttar Pradesh. The identified iron-bearing ores include hematite, limonite, and goethite.
c) GSI has estimated a total resource of 10.77MT with avg grade of 34.50% Fe (at 30% Fe cut-off)
d) Geophysical surveys conducted during the FS:2009-12 period covering the southern region of the area. Results revealed notable gravity and magnetic anomalies in this area. Additionally, Modak et al. (2015) delineated five sub-parallel bands of Banded Hematite Chert in this region.
e) Considering these findings, GeoExplore has proposed exploration blocks: Block A (area: 6.48 sq. km), Block D (area: 9.30 sq. km), and Block E (area: 6.80 sq. km) in the southern part of the designated area.
f) All the three proposals were reviewed by TCC and suggested GeoxporePvt.Ltd to either increase the block area in each block or merge the blocks to either one or two blocks so as to have optimum area for G4 level of exploration.
g) Accordingly Geoexpore modified the proposals and proposed a single area for G4 stage exploration around Chakdiya ,Kushniaya, Jobra and Tusgaon Area", Sonbhadra District – Uttar Pradesh.

Recommendation of TCC:

The committee recommends the proposal for the approval of EC for "Reconnaissance Survey (G4) for Iron ore in Mahakoshal Group around Chakdiya ,Kushniaya, Jobra and Tusgaon Area", Sonbhadra District – Uttar Pradesh" over an area of 18.56 sq.km with an estimated cost of Rs. 95.41lakh (including GST) within time schedule of 09months and submission of report as per Annexure 12A & 12B The item will be reviewed after 04months.

Agenda 61.2. Financial assistance from NMET funds to procure machinery/ laboratory equipment/instruments etc. aimed at enhancing the exploration activities. [Implementing Agency: CGM, Gujarat]

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a) The Executive Committee of NMET in its 31st meeting held on 12.09.2023 had approved ₹56.9 Lakhs towards procurement of machinery/ laboratory equipment/instruments etc to Commissionerate of Geology and Mining, Gandhinagar, Govt. of Gujarat.
b) Further, CGM Gujarat has submitted an additional list of equipments for upgradation of Petrology and Mineral Chemistry laboratory (PMC) of Gujarat with an with an estimated cost of ₹ 493.5 Lakhs.
c) The committee evaluated the proposal and after detailed discussions agreed to recommend the following items to CGM Gujarat:

S.no.	Item	Quantity	Estimated Cost (₹) In Lakh	Total Estimated Cost (₹) In Lakh
1	Millipore water purification system	1	16.2	16.2
2	Digital Viscometer	1	10	10
3	Photometer	1	2	2
4	Ph-meter	1	0.5	0.5
5	Bomb calorimeter	1	5	5
6	UV-Visible Spectrophotometer	1	7	7
7	Analytical Weighing Balance	5	1	5
8	Platinum Crucible	30	1	30
9	Shaking table	1	10	10
10	Jaw crusher	2	10	20
11	High capacity microwave sample digestion unit	1	27	27
12	Certrifugal concentrator	1	3	3
13	Fluorescent spectrometer	2	5	10
14	Automated sieve shaker Digital recorder with ultrasonic sieve cleaner	2	6	12
15	Rotary sample divider	1	2	2
16	XRD Equipments	As Required	14	14
17	ICPMS	1	150	150
18	Fusion Bead machine	1	20	20
19	Muffle Furnace	3	1	3

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20	Proximate Analyzer	1	5	5
21	Air Oven	2	2	4
22	Rock cutting Polishing and mounting unit	1	42	42
23	Stereo zoom microscope	1	15	15
24	Digital Electronic Weighing Scale	2	0.50	1
			Total	**413.7**

Recommendation of TCC:

The committee recommended the proposal for approval of EC towards procurement of equipments/ softwares for CGM, Gujarat with estimated cost of ₹ 413.70 lakh as detailed at para (b) above, to enhance the exploration activities in the state.

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.

Project Evaluation for In-Principle Approval

Agenda 61.3.1: Preliminary Exploration (G3 Stage) for PGE around Hanumalapur and Tavarekere Villages, Dist: Davangere, Karnataka.

a) The proposed area is situated within sections of SOI Toposheet No. 48 O/13.
b) The proposed blocks comprise the southeastern edge of the Shimoga schist belt in the western Dharwar craton, dating back to the Archaean age. This area is characterized by a meta-volcano sedimentary suite of rocks, which unconformably overlay the basement granitic-gneiss of the Peninsular gneissic complex.
c) As per the GSI report on exploration for PGE mineralization in Hanumalapura (Block – A), it pertains to the Tavarakere, Masanikere, and Magyathahalli areas within Davanagere district, Karnataka (E-1 stage, FS: 2005-2008).
d) The GSI mineral belt map delineates PGE deposits surrounding the Tavarekere, Masanikere, Hanumalapur, Gangur, and Antragange areas of Shimoga and Chikmagalur Districts, Karnataka.
e) The NMET sought opinion from GSI and DMG, Karnataka on the block and the same is given below.

GSI reply:

Block-1: It was part of GSI's Exploration Block carried out during 2007-08 in which DM (Part) on 1:1000 scale along with BRS/ Channel Sampling have been completed. The work was aborted mid-way due to local agitation.

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Block-2: Lies to the north of Hanumalapur PGE block of FS 2006-08. This block was an outcome of LSM work by Shetty et al. and demarcated as Block-D. Though BRS sample from the block showed anomalous value of PGE, further exploration was not proposed by GSI as the block falls within Reserved Forest (RF.)

DMG, Karnataka reply:

DMG, Karnataka has not carried out any exploration work here and there is no ongoing projects.

f) The proposal was reviewed by TCC and asked Ecomen Pvt.Ltd to make a visit to the area whether the locals can be convinced including permission from forest department.

Recommendation of TCC:

The item is not recommended as of now and suggested Ecomen Pvt.ltd to explore the viability for exploration.

Agenda 61.3.2: Reconnaissance Survey (G-4) for REE & RM in Block A in Chatra district, Jharkhand.

[Implementing Agency: M/s. Maheshwari Mining Pvt. Ltd.]

a) The proposed area falls within sections of SOI Toposheet No. 72H/04. Within the NGCM program, the Geological Survey of India has identified anomalous values for total Rare Earth Elements (REE) from ten stream sediment samples collected in this region.

b) Among these samples, two exhibited concentrations exceeding 1300 ppm, four fell within the range of 1000 to 1300 ppm REE, and four ranged from 900 ppm to 1000 ppm.

c) Consequently, a G4 stage program is recommended for this area to investigate the rock types responsible for the anomalous concentrations of REE in the stream sediment samples.

d) Considering the proximity of the area to the margin of the Bihar Mica Belt, where numerous pegmatite bodies with higher contents of lepidolite mica and spodumene have been reported, the search will also encompass higher concentrations of Li, Cs, Rb, Nb, and Ta, in addition to REE.

e) The NMET sought opinion from GSI on the block and the same is given below.

GSI Reply:

i. In this area, GSI has carried out one basemetal exploration during the FS year 1962-63 for Lead ore in Hesatu and Mahabank area of Hazaribagh district of Jharkhand (erstwhile Bihar State) where the mineralization in the area is confined to pyroxene plagioclase granulite and the minerals noted are galena, chalcopyrite, and pyrite. Malachite stains are also present in the area. Other than this, there is no other exploration activity has taken up in this area.

ii. No ongoing exploration/reconnaissance projects related to REE & RM and any other mineral/commodity in the proposed area have been taken up. Two STM projects of FS 2023-24 have been taken up in the area which are under progress

iii. After the completion of two STM projects of FS 2023-24, the proposed area is feasible or not for taking up the REE & RM exploration can be said.

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f) The item was reviewed by TCC and suggested Maheshwari Mining Pvt.Ltd to submit the detailed proposal for further discussion.

Recommendation of TCC:

The committee conveys in-principle approval for the project and recommends Maheshwari Mining Pvt.Ltd to submit the detailed project to NMET for further review.

Agenda 61.3.3: Reconnaissance Survey (G-4) for REE & RM in Block B in Hazaribag district, Jharkhand.

[Implementing Agency: M/s. Maheshwari Mining Pvt. Ltd.]

a) The proposed area lies within SOI Toposheet No. 72H/07.

b) Under the NGCM program, the Geological Survey of India conducted stream sediment sampling in this region, yielding analytical results for Rare Earth Elements (REE) that exhibit three clusters with values ranging from 977.69 ppm to 1445.79 ppm.

c) Consequently, a G4 stage program is recommended to explore for any REE-rich host rock within the Bihar Mica Belt. The Bihar Mica Belt is known for its abundance of pegmatite bodies containing significant quantities of lepidolite mica and spodumene. These minerals may contribute to the concentrations of lithium and associated rare metals found in the area.

d) The NMET sought opinion from GSI on the block and the same is given below.

GSI Reply:

1. In the proposed area, GSI has carried has carried out one Li, Cs and REE & RM exploration in the Tilaiya block, Koderma district, Jharkhand during FS 2022-23 where the Li value ranges from 11.74 ppm to 94.38 ppm, Cs value ranges from 0.43 ppm to 64.63ppm. Thorium value ranges from 18.02 ppm to 289ppm. Highest value of Hf is observed to be 124 ppm in stream sediment samples.
2. GSI has also carried out one basemetal exploration i. e. Lead in Nayatanr, Koderma and Hazaribad districts of Jharkhand (Erstwhile Bihar state) during FS 1964-65 where no occurrence of lead around Nayatanr. However, large number of mica workings exists in the area.
3. In the proposed area, GSI has carried has carried out one Li, Cs and REE & RM exploration in the Tilaiya block, Koderma district, Jharkhand during FS 2022-23. No exploration activities for other mineral/commodity in the proposed area have been taken up.
4. Based on Li, Cs and REE & RM exploration in the Tilaiya block, Koderma district, Jharkhand during FS 2022-23, not very promising values have been recorded in the area. The details of the Li observed values for the Li ranges from 11.74 ppm to 94.38 ppm, Cs value ranges from 0.43 ppm to 64.63ppm. Thorium value ranges from 18.02 ppm to 289ppm. Highest value of Hf is observed to be 124 ppm in stream sediment samples.

e. The item was reviewed by TCC and suggested Maheshwari Mining Pvt.Ltd to modify the block by extending towards east as the western part is having an overlap with GSI's G4 item and submit the detailed proposal for further discussion.

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Recommendation of TCC:

The committee conveys in-principle approval for the project and recommends Maheshwari Mining Pvt. Ltd to submit the detailed project to NMET for further review.

Agenda 61.3.4: Reconnaissance Survey (G-4) for Graphite in Graphite in Block A in Pachmahal district, Gujarat.

[Implementing Agency: M/s. Maheshwari Mining Pvt. Ltd.]

a) The proposed are falls in parts of SOI Toposheet No. 46F/11
b) In 1973-74, Moitra, S.K reported the occurrence of graphitic schist, alongside quartzite and mica schist, in an area spanning from Narukot to Jaban up to Vadek in the Panchmahal district. Moitra recommended further exploration for graphite in this region.
c) As a result, a G4 stage program is being proposed to search for and assess graphite within an area covering 107 square kilometers around Narukot, Jaban, and Vadek.
d) The item was reviewed by TCC and not been recommended as the area is falling within the Eco-sensitive zone.

Recommendation of TCC:

The committee does not recommend item.

Agenda 61.3.5: Reconnaissance Survey (G-4) for Basemetalsin Block B in Banaskantha district, Gujarat.

[Implementing Agency: M/s. Maheshwari Mining Pvt. Ltd.]

a) The proposed are falls in parts of SOI Toposheet No. 45D/11
b) An area of 136 square kilometers is earmarked for G4 stage investigation aimed at identifying copper and associated sulphides along the Kui-Chitrasani shear zone surrounding Dungarpura in Banaskantha district.
c) Reports indicate the presence of galena, sphalerite, and chalcopyrite stringers within sheared chert bands in this area. In some locations, the shear zone is obscured by soil cover, where geophysical techniques could provide valuable insights into subsurface mineralization.
d) The item was reviewed by TCC and not been recommended as the area is falling within the Eco-sensitive zone.

Recommendation of TCC:

The committee does not recommend the item.

Agenda 61.3.6: Reconnaissance Survey (G-4) for Glauconite in Dhamni-Piparwasi-Simliya area in Sheopur district, Madhya Pradesh.

[Implementing Agency: M/s. Maheshwari Mining Pvt. Ltd.]

a) The proposed area falls within parts of SOI Toposheet No. 54G/5. Geologically, the study area mainly comprises rocks of the Vindhyan Supergroup, ranging from Mesoproterozoic to Late Neoproterozoic age. The area is primarily characterized by the Rewa Group and Bhander Group of rocks.

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b) Previous studies have identified glauconitic sandstone near Dubera, along the Koplinadi section, Koplihor, Dham, as well as near Agra along the Kunwarinadi bank.
c) NGCM conducted by the Geological Survey of India on a 1:50,000 scale in parts of Shivpuri and Morena districts, M.P., within Survey of India toposheet no. 54G/05, revealed K2O values ranging from 1.45% to 3.30% in glauconitic sandstones.
d) Considering the above findings and previous research, a favorable geological setup is anticipated for glauconite mineralization in the area. Therefore, it is considered worthy of further exploration at the G4 stage.

GSI Reply:

i. Proposed block does not fall/overlap within the block boundary/coordinates of areas of past Reconnaissance/ Exploration work carried out by SUMP, GSI, CR and DGM, Bhopal.
ii. No exploration/ reconnaissance projects is being explored in current FSP/ proposed next FSP from SUMP, GSI, CR and DGM, Bhopal related to Glauconite and any other mineral/commodity in the proposed area.
iii. No Composite License or Mining Lease for either Major or Minor minerals in the proposed block

e. The item was reviewed by TCC and recommended Maheshwari Mining Pvt.Ltd to visit the field area and carry out few sampling and submit the detailed report with some values.

Recommendation of TCC:

The committee conveys in-principle approval for the project and recommends Maheshwari Mining Pvt.Ltd to submit the detailed project to NMET along with sample values for further review.

Agenda 61.3.7: Reconnaissance Survey (G-4) for Graphite in Block A in Upper Subansari district, Arunachal Pradesh.

[Implementing Agency: M/s. Maheshwari Mining Pvt. Ltd.]

a) The proposed are falls in parts of SOI Toposheet No. 82L/4
b) Graphite is reported from Taliha-Dupit, Kojinnala area, Riga-Saluk-Dochuk area, Pabka area, Mo-Mara area of Upper Subansiri district by Eros Ezung, P etal.in 2016-17.
c) Keeping in view the result of Taliha-Dupit area, an area to the south bounded by the cardinal points which are referred above, is proposed in Upper Subansiri district to carry out G4 Stage investigation for graphite.

Recommendation of TCC:

The item is not recommended as it falls within the GSI's explored block.

Agenda 61.3.8: Reconnaissance Survey (G-4) for Graphite in Block E in Lohit district, Arunachal Pradesh.

[Implementing Agency: M/s. Maheshwari Mining Pvt. Ltd.]

a) The proposed are falls in parts of SOI Toposheet No. 82P/15
b) Baral& Tiwari (1974-75) conducted mapping in the vicinity of Ashupani and Mayapahar in Lohit district, establishing the stratigraphic succession. Subse`quently, in the following year, Baral&Saha (1975-76) identified quartz-

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graphite schist and graphite schist associated with grey phyllite, spanning a width of 800 meters near the 92 km post on the Roing-Hunli Road section. The visual estimation of graphite content was determined to be 20% Fixed Carbon.

c) Minor occurrences of garnetiferous quartz graphite schist have also been observed near the 70 km post on the Roing-Hunli road section and to the east of Kronli village.
d) Based on the aforementioned reports, an area covering 83 square kilometers around Mayi hill on the Roing-Hunli road is proposed for G4 investigation targeting graphite deposits.
e) The TCC reviewed the proposal and suggested Maheshwari Mining Pvt. Ltd. to modify the block boundary, after excluding the GSI's explored area, and submit the detailed project with some chemical values.

Recommendation of TCC:

The committee conveys in-principle approval for the project and recommends Maheshwari Mining Pvt. Ltd to submit the detailed project to NMET along with modified block boundary and sample values for further review.

Agenda 61.3.9: Reconnaissance Survey (G-4) for Graphite in Block F in Lohit district , Arunachal Pradesh

[Implementing Agency: M/s. Maheshwari Mining Pvt. Ltd.]

a) The proposed are falls in parts of SOI Toposheet No. 82P/16
b) Baral& Tiwari (1974-75) mapped the area around Ashupani and Mayapahar in Lohit district & built up the stratigraphic succession. In the subsequent year Baral&Saha (1975- 76) reported quartz-graphite schist and graphite schist associated with grey phyllite for a width of 800m near 92 km post on the Roing-Hunli Road section. The visual estimation of graphite content was given 20% Fixed Carbon.
c) Minor occurrences of garnetiferous quartz graphite schist have also been noted near 70km post on Roing-Hunli road section and east of Kronli village.
d) On the basis of above reportings an area for 91.4 sq km around Mayi hill on Roing-Hunli road is proposed for G4 investigation for graphite.
e) The TCC reviewed the proposal and suggested Maheshwari Mining Pvt. Ltd. to carry out preliminary survey and collect some samples and submit the detailed project with some chemical values.

Recommendation of TCC:

The committee conveys in-principle approval for the project and recommends Maheshwari Mining Pvt.Ltd to submit the detailed project to NMET along with some sample values for further review.

Agenda 61.3.10: Reconnaissance Survey (G-4) for Graphite in Ranibandh Graphite in Bankura district, West Bengal.

[Implementing Agency: M/s. Maheshwari Mining Pvt. Ltd.]

a) The proposed area falls within parts of SOI Toposheet No. 73J/13 and is situated in the Bankura district of West Bengal.
b) It lies within the geological belt positioned between Dalmavolcanics and the Tamar-Porapahar Shear Zone. The lithological units mapped in this area by

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Lahiri and Singh (1991-92 to 1992-93) predominantly consist of quartz-sericite schist, occasionally interspersed with carbonaceous schist and garnetiferousmicaschist. Additionally, numerous elongated lithounits of calc silicates are found within low-grade schistose rocks as enclaves.

c) Recent reports by geologists from MMPL indicate the presence of a graphite band extending over a strike length of 500 meters, identified through limited outcrops. Analytical results from seven samples show varying fixed carbon content, ranging from 6.32% to 8.26% FC.
d) On the basis of current findings and previous research, a favorable geological setting is anticipated for graphite mineralization in the area. As such, the area is deemed suitable for G4 stage exploration targeting graphite deposits.
e) The TCC reviewed the proposal and suggested Maheshwari Mining Pvt. Ltd. to submit the detailed project report.

Recommendation of TCC:

The committee conveys in-principle approval for the project and recommends Maheshwari Mining Pvt. Ltd to submit the detailed project to NMET for further review.

Agenda 61.3.11: Reconnaissance Survey (G-4) for Lithium and associated in Chhuri-Jenjara Block, Korba District Chattisgarh.
[Implementing Agency: M/s. Maheshwari Mining Pvt. Ltd.]

a. The proposed are falls in parts of SOI Toposheet No. 64J/11
b. Natarajan et al (1985-86) reported the occurrence of lepidolite in leucocratic muscovite granite from Garhtara, suggesting the potential presence of tin mineralization from the same source. Recent investigations by the GSI for lithium in the Garhatara area, also provides insightful data.

c. BRS shows lithium content in the granitoids ranging from 10 to 2000 ppm. Specifically, in homophanusleucogranite, lithium content ranges from 25 to 2000 ppm, in granitic pegmatite from 160 to 600 ppm, and in pegmatite from 10 to 440 ppm. Channel samples display lithium content ranging from 40 ppm to 1000 ppm.
d. Further analysis conducted by LA-Q-ICP-MS indicates higher lithium content in pink micas, ranging from 1000 ppm to 4000 ppm, and in golden brown micas at 1000 ppm.
e. EPMA study confirms the presence of REE phases like apatite, monazite, xenotime, and churchite in all samples of homophanusleucogranite. Additionally, it identifies the presence of Nb-Ta phase in a sample of homophanusleucogranite. XRD analysis of heavy minerals separated from colluvial sediments reveals the presence of REE phases such as cebaite [Ba3(Nd,Ce)2(CO3)5F2] and monazite in two samples.
f. The proposed area of Chhuri and Jenjara, located immediately south of the Kathghora Block, is characterized by similar types of granites and pegmatites, suggesting the potential for similar mineralization patterns.

g. The TCC reviewed the proposal and suggested Maheshwari Mining Pvt. Ltd. to submit the detailed project report.

Recommendation of TCC:

The committee conveys in-principle approval for the project and recommends Maheshwari Mining Pvt.Ltd to submit the detailed project to NMET for further review.

Agenda 61.4 Review of ongoing/completed Projects and Time Extension

Agenda 61.4.1. Agenda Preliminary Exploration (G-3 stage) for Limestone, Bauxite and Fire Clay in Piparhat-Kubri Block (2.51 sq. km), District- Satna, Madhya Pradesh [Implementing Agency: MECL]

a) MECL informed that the project was approved in 27th meeting of EC held on 10th Jan 2023. Sanction order was issued on 3rd April, 2023 with timeline of 9 months.

b) MECL informed that the cumulative Net in-situ Resources (333+334) by cross-section method is 76.11 million tonnes with average grade of 42.72% Cao, 5.03% MgO, 10.41% SiO2. Summary of Grade wise Resource for Limestone. with average grade estimated by Cross Sectional method is given below:

Resource details	Gross Geological Resources (tonnes)	Net in-situ Resources (tonnes)	Average Quality		
			CaO %	MgO %	SiO_2 %
Total Inferred Resources (333) of Cement grade Limestone	28881095.77	23104876.62	47.04	3.58	6.68
Total Reconnaissance Resources (334) of Cement grade Limestone	20028971.51	16023177.21	47.17	3.55	6.54
Total Inferred Resources (333) of Blendable grade Limestone	21188499.33	16950799.46	39.88	6.30	13.02
Total Reconnaissance Resources (334) of Blendable grade Limestone	4307443.76	3445955.01	39.55	6.48	13.17
Total Inferred Resources (333) of Threshold grade Limestone	13166379.51	10533103.60	35.95	7.32	17.03
Total Reconnaissance Resources (334) of Threshold grade Limestone	7559583.58	6047666.87	35.98	6.13	14.50
Total Resources in Tonnes (333+334)	**95131973.46**	**76105578.77**	**42.72**	**5.03**	**10.41**
Total Resources in Million Tonnes (333+334)	**95.13**	**76.11**			

c) Further, MECL requested for time extension upto 15th February 2024 for submissionof the GR.

d) The committee reviewed the GR and pointed out errors in resource figure in the table. Accordingly suggested to modify the figure and also suggested to assess the the laterite for Al2O3 content.

Recommendation of TCC:

The committee agreed for the submission of GR after incorporation of the modifications suggested. The committee also recommended timeline extension up to 15th February 2024 for submission of final GR (FGR).

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Agenda 61.4.2. Preliminary Exploration (G-3 stage) for Limestone in Kiranagi-1 and Kiranagi- 2 Block (11.41 sq. km), District- Gulbarga, Karnataka [Implementing Agency: MECL]

a) MECL informed that Preliminary exploration (G3) for limestone in Kiranagi-1 and Kiranagi-2 block Bhima Basin, District: Gulbarga, Karnataka was approved in the 28th EC meeting of NMET held on 16th March 2023.The sanction order was issued on 27th March 2023 with 10 monthstimeline.

b) MECL conveyed that 10 boreholes drilled during the projects. All boreholes were drilled up to 45m and closed in Limestone.

c) The resource details of Kiranagi 1 is as given below:

Category UNFC Code	Cement Grade Mill. Tons.	Blendable Grade Mill. Tons.	Blendable/ Threshold Grade Mill. Tons.	Threshold Grade Mill. Tons.	Total Mill. Tons.	Percentage
Inferred - 333	156.55	22.88	2.66	55.24	237.34	54.83%
CaO% MgO% SiO_2%	49.13 0.54 9.96	43.89 0.67 17.09	42.28 0.45 20.26	40.56 0.60 23.31	46.56 0.57 13.67	
Reconnaissance - 334	124.98	27.90	0.61	42.03	195.51	45.17%
CaO% MgO% SiO_2%	49.14 0.54 9.96	43.88 0.67 17.12	42.28 0.45 20.26	40.66 0.55 23.63	40.66 0.55 23.63	
Total	281.53	50.78	3.27	97.27	432.85	100.00%
CaO% MgO% SiO_2%	49.14 0.54 9.96	43.88 0.67 17.10	42.28 0.45 20.26	40.60 0.58 23.45	46.55 0.56 13.93	

d) The resource details of Kiranagi 2 block is as given below:

Category UNFC Code	Cement Grade Million Tons.	Threshold Grade Million Tons.	Total Million Tons.	Percentage
Inferred - 333	5.34	283.09	288.43	56.20%
CaO% MgO% SiO2%	47.26 0.45 13.57	39.08 0.57 27.30	39.13 0.57 27.16	
Reconnaissance - 334	12.98	211.80	224.78	43.80%
CaO% MgO% SiO2%	47.26 0.45 13.57	39.21 0.56 26.97	39.67 0.56 26.21	
Total	18.32	494.89	513.21	100.00%
CaO% MgO% SiO2%	47.26 0.45 13.57	39.13 0.57 26.68	39.42 0.56 26.68	

e) Further, MECL requested for time extension upto 15th February 2024 for submission of the GR.

f) The committee suggested that the MEMC rules should be followed while calculating the resource and suggested modifications.

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Recommendation of TCC:

The committee agreed for the submission of GR after incorporation of the modifications suggested and recommended timeline extension up to 5th March, 2024.

Agenda 61.4.3. Reconnaissance Survey (G-4) for Phosphorite in Ram KaMunna Block (40.00 sq. km), District- Banswara, Rajasthan [Implementing Agency: MECL]

a) MECL informed that Reconnaissance Survey (G4) for Phosphorite in Ram KaMunna Block, Banswara District, Rajasthan was approved in 27th EC held on 10th January 2023 and OM received on 6th February 2023 with timeline of 12 months i.e. 5th February 2024.
b) MECL conveyed that chemical analysis has been carried out after completion of exploration and the geological report is ready for submission of Peer review.
c) MECL informed that P2O5 concentration in these samples ranges from minimum 0.01% to maximum 10.36%. Only 3 samples indicated P2O5 are showing more than 5% collected from dolomite. The maximum value of 10.36% P2O5 has been recorded in the Phosphatic dolomite collected from south of GangartalaiMoti village.
d) MECL requested for time extension upto 15th February 2024 for submissionof final GR.
e) The item was reviewed and the committee suggested for proper interpretation of geological map, plotting of structural data and plan for some trenches to establish the contact and also suggested to close the item as the results are not encouraging.

Recommendation of TCC:

The committee agreed for the submission of GR for Peer Review after attending to the modification suggested in the geological map. The committee also recommended timeline extensionup to 5th March, 2024.

Agenda 61.4.4. Reconnaissance Survey (G-4) for Glauconitic Sandstone in Pindra SW Extension Block (40.00 sq. km), District- Satna, Madhya Pradesh[Implementing Agency: MECL]

a) MECL conveyed that the project was approved in the 27th Executive Committee (EC) of NMET held on 10th Jan 2023 with 12 months' time line . The sanction order was issued on 6th February 2023.
b) It was informed that during the field exploration, geological map was updated on 1:12500 scale, exploratory core drilling on 1600 x 1600 m grid was carried out with meterage of 472m in 10 number of scout bore holes. About 247 primary drill core samples were generated with commensurate check, composite samples.
c) MECL conveyed that as thickness of glauconitic sandstone was greater than anticipated, sample number's increased. Hence MECL sought approval for additional samples of 56 nos costing about MECL informed that resource was estimated by Cross section and polygon method and net resources were calculated at 20% correction from gross resources

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Method of Estimation	Resource in Million Tonnes		Average Quality for Glauconitic sandstone			
	Gross resources	Net resources	K_2O (%)	Fe_2O_3 (%)	Al_2O_3 (%)	SiO_2 (%)
Cross Section Method	2397.54	1918.03	6.98	14.55	48.68	13.74
Polygon Method	2364.17	1891.33	6.91	14.56	46.57	13.79
Difference	33.37	26.69				

d) MECL requested for time extension upto 5th March 2024 for submission of the GR.
e) The committee noted the outcome of the project and agreed for additional cost of 2.3 lakh for the additional samples.

Recommendation of TCC:

The committee approved the additional cost of 2.3 lakhs (Annexure 13) towards for the additional samples and recommended time extension up to 5th March 2023 for GR submission

Agenda 61.4.5 Preliminary Survey (G-3) for Limestone in Piapriya-Nayakheda and Semariyakalan-Baheriya Block (10.00 sq. km), District- Narasinghapur, Madhya Pradesh [Implementing Agency: MECL]

a. MECL informed that the project was approved in the 30th EC meeting held on 6th June 2023 with 8 monthstimeline.
b) MECL conveyed that the approved core samples in the project were 250 nos, however owing to thickness of limestone zone, 406 no of primary samples had been generated during exploration with commensurate check samples.MECL requested for approval of excess samples i.e. 150 primary core samples, 23 no of check samples i.e. 173 nos. with additional cost is Rs 10.35 lakhs.
c) MECL also informed that date for submission of Geological report is 25th February 2024 and requested time extension up to 31st March 2024 for GR submission. MECLhad informedthat there was a delay in commencement of exploration in the block owing to standing soya/sugarcane crops.
d) The item was reviewed by TCC and additional core samples and subsequent chemical analysis proposed were assessed and recommended as the thickness of the limestone was very high than initially anticipated.

Recommendation of TCC:

The committee approved additional cost of 10.35 lakhs(Annexure 14) for the additional samples and recommended time extension up to 31stMarch 2024 for GR submission.

Agenda 61.4.6 Preliminary Survey (G-3) for Gemstone in and around Neelam Khan area (5.00 sq. km), District- Kishtwar, Jammu & Kashmir [Implementing Agency: MECL]

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a) MECL informed that approval for Preliminary Exploration (G3) for Gemstones in Neelam Khan area, Kishtwar District, J & K was communicated through sanction order dated 16th May 2024 with 36 months'timeline.
b) MECL informed that exploration activities of Phase-1 include detailed geological mapping (1:2000 scale) and topographical survey over 5.00 sq.km extent supported with Primary sampling of host rock mineralization and talus/scree/slope wash sampling for secondary deposit of Blue sapphire & Ruby respectively.
c) MECL informed that based on Geological mapping (1:2000 scale) and surface geochemical sampling (bedrock/channel) 3 nos. of zones were identified, where pegmatite veins intruded into the actinolite-tremolite/anthophyllite schist.
d) 45 nos. of Placer samples were processed, out of which 29 nos. of samples are positive which holding corundum, green and yellow tourmaline, lepidolite were found in placer samples. The weight ofcorundum found ranges between 10 carat (only 1 grain) to less than a carat. Apart from Blue corundum, MECL also reports Green& yellow tourmaline and lepidolite from the placer samples.
e) MECL conveyed that all portals of underground mines were damaged and collapsed, so it had not been possible to enter the underground mines. Further, highly non-accessible terrain and the lack of working windowdue to rains/ snowfall are the mainconstrains of for carrying out the project.
f) The committee reviewed the progress of the item and suggested MECL to carry out microscopic study to characterize the gems identified in the area and properly assess the bulk samples to size wise classify the gemstones.

Recommendation of TCC:

The committee noted the progress and recommended MECL to properly comprehend the report and conclude the report with concrete recommendations to state DGM so that the block can be auctioned with the existing study.

Agenda 61.4.7 Preliminary Survey (G-3) for Diamond (Phase-I) in Tikamgarh cluster comprising of four sub-blocks A to D (Total area of cluster 109.68 sq. km), District- Tikamgarh, Madhya Pradesh [Implementing Agency: MECL]

a) MECL informed that Preliminary Survey (G-3) for Diamond (Phase-I) in Tikamgarh cluster comprising of four sub-blocks A to D (Total area of cluster 109.68 sq. km), District- Tikamgarh, Madhya Pradesh was approved in 24th EC Meeting held on 18th May 2022 with 15monthstimeline.Sanction order was issued on 01st June 2022.
b) MECL presented the proposed quantum of work and the acheieved targets as given below:

Item	Approved NQT					Achieved Quantum				
	Block A	Block B	Block C	Block D	Total	Block A	Block B	Block C	Block D	Total
Geological Mapping (1:2,500)	10.96 sq km.	78.21 sq km.	2.35 sq km.	20.16 sqkm.	91.68 sq.km	10.96 sq km.	78.21 sq km.	2.35 sq km.	20.16 sq km.	91.68 sq.km
Stream Sediment Sampling (-2mm)	06 no's	30 no's	04 no's	11 no's	53 no's	06 no's	30 no's	04 no's	11 no's	53 no's
Bedrock Samples	03 no's	10 no's	02 no's	05 no's	20 no's.	03 no's	10 no's	00 no's	05 no's	18 no's.
None of the Stream Sediment Sample returned with Positive KIM's. No signature found in the ground of intrusions of any ultramafic body										

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c) MECL conveyed that Geological mapping on 1:12,500 scale and total 53 Stream sediment and 18 Bedrock samples were collected.After heavy media separation of 53 stream sediment samples 46 samples selected for EPMA study. 10 to 13 grains were selected from each samples and sent for EPMA.
d) MECL informedthat Kimberlitic Indicators were absent in both Stream Sediment and Bedrock samples.
e) MECL requested to extend the timeline upto 31st March 2024 , for submission of the Geological Report. MECL mentioned that in the 58th TCC held on 30th -31st October 2023 proposal was put-up in for timeline extension due to delay in EPMA results and the request was deferred until after receipt of the laboratory results.
f) In view of the above, the committee opined that since the results are not encouraging, MECL may conclude the projects and submit GR.

Recommendation of TCC:

The committee reviewed the project and in the absence of encouraging results, asked MECL for submission of GR. The committee recommended time extension up to 15th March 2024.

Agenda 61.4.8 Reconnaissance Survey (G-4 stage) for PGE, Nickel & Chromite in Chandiposh Block, District- Sundargarh, Odisha[Implementing Agency: MECL]

a) The project was approved in 27th EC meeting of NMET with an estimated cost of ₹ 89.90 lakh within 12 months duration.
b) In the 60th TCC, committee has suggested MECL to carry out adequate petrographic study to characterize the ultramafics in the mapped area and the geological map to be improved with proper structural elements.
c) MECL conveyed the results of chemical analysis and modifications in the geological map and requested for time extension up to 31st March 2024.
d) The committee reviewed the project and suggested MECL to properly demarcate the alteration zones along with samples locations in the Interpreted geological Map.

Recommendation of TCC:

The committee agreed for submission of GR and recommended time extension upto 31st March 2024.

Agenda 61.4.9. Geochemical analysis of 4966 GGCMP samples [Implementing Agency: MECL]

a) The project was approved in 31st EC meeting held on 12th September, 2023 with at estimated cost of ₹ 11.34 Cr with schedule of completion of project on 31st December, 2023.
b) In the 60th TCC meeting held on 27th and 28th December 2023, MECL requested for 1 month time extension for completion of the project.
c) The committee asked MECL to submit detailed justification for the inordinate delay in carrying out the chemical analysis as committed in the forthcoming EC meeting for extension of timeline for 01 month.
d) Now, MECL has further requested fortimeline extension upto 31stMarch 2024.

e) The committee mentioned that as per the direction from Secretary, Mines time extension upto 29th February 2024 may be recommended to EC for completion of the project. In case of non-compliance within the 29th February 2024, the samples willbe diverted to CGM Gujarat forchemical analysis.

Recommendation of TCC:

The committee recommended timeline extension only up to 29th February 2024 for completion of Geochemical analysis of 4966 GGCMP samples by MECL.

Agenda 61.4.10 Preliminary Exploration (G3) for Amalgamated Limestone (Block-3; KIOCL_25_K_KLB13) in Jevargi area, District: Kalaburagi, Karnataka [Implementing Agency: KIOCL]

a) The project was approved in 28th EC meeting held on 16th March, 2023. The details of the 4 blocks included in the project are given below.

Sl .No.	Block ID	Extent(in sqkm)
1	KIOCL_20_KA_KLB 07	5.00
2	KIOCL_21_KA_KLB 08	5.00
3	KIOCL_23_KA_KLB 11	5.00
4	KIOCL_25_KA_KLB 13	5.00
	Total	20.00

b) During the meeting, KIOCL presented the details of the block KIOCL_25_KA_KLB 08 as follows:

BRS Sample Analysis (Block id KIOCL_25_KA_KLB 13)

Sl. No.	Sample	Easting	Northing	Elevation	LOI	CaO	MgO	SiO_2	Al_2O_3	Fe_2O_3
1	20BRS 08	696301	1882867	427	36.76	46.59	1.18	10.05	1.81	1.36
2	20BRS 11	693855	1884382	377	28.82	33.47	1.08	30.38	2.67	1.13
3	20BRS 13	695802	1884439	397	30.58	38.16	0.96	24.40	1.98	1.39
4	20BRS 14	697173	1884453	401	28.35	35.45	1.19	29.92	1.62	1.23
5	20BRS 16	694330	1883887	402	27.44	32.34	1.05	31.96	4.68	1.10
6	20BRS 17	695249	1884428	395	28.73	32.25	1.70	31.26	3.02	0.60
					Avg	36.38	1.19			

Summary of Resources (in million tonnes)

Grade	G3 (333)			G4(334)			Cumulative			Net Resources (after deducting 5%)		
	Qty	CaO	MgO	Qty	CaO	MgO	Qty	CaO	MgO	Qty	CaO	MgO
Cement Grade	52.42	43.74	0.68	49.63	43.56	0.67	102.05	43.65	0.68	96.95	43.65	0.68
Cement(Blendable/ Beneficiable)	75.12	39.91	0.65	64.54	39.54	0.64	139.66	39.74	0.64	132.68	39.74	0.64
Limestone with CaO from 34% to 38%	162.10	35.26	0.74	182.50	35.12	0.73	344.77	35.19	0.74	327.53	35.19	0.74
Total	**289.72**	**38.00**	**0.71**	**296.76**	**37.49**	**0.70**	**586.48**	**37.74**	**0.70**	**557.16**	**37.74**	**0.70**

Recommendation of TCC:

The committee noted the outcome of these blocks and suggested to submit geological reports for external peer reviewers.

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Agenda 61.4.11 Preliminary Exploration (G3) for Amalgamated Limestone (Block-4; KIOCL_21_K_KLB08) in Jevargi area, District: Kalaburagi, Karnataka [Implementing Agency: KIOCL]

a) During the meeting, KIOCL presented the details of the block KIOCL_21_KA_KLB 08 as follows:

BRS Sample Analysis (Block id KIOCL_21_KA_KLB 08)A

Sl. No.	Sample	Easting	Northing	Elevation	LOI	CaO	MgO	SiO_2	Al_2O_3	Fe_2O_3
1	20BRS 01	694657	1883128	411	25.41	30.84	1.41	35.94	4.30	1.19
2	20BRS 02	694186	1882635	407	29.40	34.64	0.79	24.17	9.58	0.72
3	20BRS 03	693235	1882810	389	32.85	37.20	0.95	20.08	6.94	0.97
4	20BRS 04	694238	1881636	421	30.09	34.91	0.73	21.71	9.61	0.28
5	20BRS 05	694025	1881294	418	32.11	36.12	0.79	19.56	9.90	0.75
6	20BRS 06	695010	1881704	425	31.05	35.61	1.81	19.55	10.30	0.33
					Avg	**34.89**	1.08			

Summary of Resources (in million tonnes)

Grade	G3 (333)			G4(334)			Cumulative			Net Resources (after deducting 5%)		
	Qty	CaO	MgO	Qty	CaO	MgO	Qty	CaO	MgO	Qty	CaO	MgO
White Cement	23.78	48.19	0.70	27.07	48.19	0.70	50.85	48.19	0.70	**48.31**	48.19	0.70
Cement Grade	183.11	45.77	0.77	207.12	45.73	0.77	390.23	45.75	0.64	**370.72**	45.75	0.64
Cement(Blendable/ Beneficiable)	21.49	40.01	0.84	28.39	40.05	0.84	49.88	40.03	0.84	**47.38**	40.03	0.84
Limestone with CaO from 34% to 38%	32.82	34.55	0.92	39.16	34.60	0.91	71.99	34.57	0.91	68.39	34.57	0.91
Total	**261.21**	**44.11**	**0.79**	**301.74**	**43.97**	**0.79**	562.94	44.03	0.70	534.80	44.03	**0.70**

Recommendation of TCC:

Thecommittee noted the outcome of these blocks and suggested to submit geological reports for external peer reviewers.

Agenda 61.4.12 Reconnaissance survey (G4) for graphite in Thapen-Bazargarh graphite block (116.498 sq. Km) in Kalahandi district of Odisha. [Implementing Agency: OMC]

a) OMC conveyed that Reconnaissance survey (G4) for graphite in Thapen-Bazargarh graphite block (116.498 sq. Km) in Kalahandi district of Odisha was approved in the 26th EC meeting held on 25th August 2022 for a period of 11 months. The sanction order was issued on 20th September 2022.

b) OMC conveyed the Outcome of SP survey and SP value as follows:

SP Survey Sub block	SP Value mV	Target Name
Thapen Village	-96	1) THP_1_P1
	-70.5	2) THP_1_P2
	-58	3) THP_1_P3
Thapen South	-126.1	4) THP_2
Thapen North	-83	5) THP_3_P1

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	-86.2	6) THP_3_P2
Jodhabhand	-113.5	7) BZG_1
Raiduni	-64.3	8) BZG_2
Target 10	-44.4	9) BZG_3_P1
	-37.9	10) BZG_3_P2
Taparang	-66.9	11) BZG_4_P1
	-47.2	12) BZG_4_P2

c) OMC communicated that 12 nos. (240 Cum.) of trenches having length 10, depth 2m & width 1 m were excavated at different location Graphite occurrences are found in 5 trenches out of 12 trenches.Further, 2 boreholes (95 meterage) have been completed.
d) On the basis of the anomalous zone from SP survey, trenching and chemical analysis report; 07 nos. of borehole have been proposed for drilling.
e) OMC requested for extension of 6 months to complete the project.
f) Considering the low SP values, the committee opined that further work may not be carried out in the block . The committee suggested to conclude project and submit GR .

Recommendation of TCC:

The committee suggested to submit the GR and recommended time extension upto15th March 2024.

Agenda 61.4.13 Preliminary Exploration (G3) for graphite in Lamer-Panga Block- A (13.99 sq. Km) in Kalahandi district of Odisha. [Implementing Agency: OMC]

a) OMC conveyed that Preliminary Exploration (G3) for graphite in Lamer-Panga Block- A (13.99 sq. Km) in Kalahandi district of Odisha was approved in the 27th EC meeting held on 10th January 2023 for a period of 16 months.
b) OMC informed that Geological mapping (1:4000 scale) has been completed over the total area of 13.99 Sq Km. Lithounits like Granite gneiss, Khondalite, Quartzite and Charnockite are encountered in 13.99 sq. km during course of mapping and graphite occurrence pits are also observed within this block. A total10 line km of SP survey has been done in the block.
c) OMC conveyedthat 22 nos. of surface samples have been analysed and the FC% varies from varies from 3.95 to 44.57.
d) On the basis of the anomalous zone from SP survey, graphite occurrences and chemical analysis report of surface samples; 18 nos. of boreholes have been proposed for drilling.
e) The committee noted progress of work and suggested review of the project after 2 months

Recommendation of TCC:

The committee noted progress of work and suggested review of the project after 2 months.

Agenda 61.4.14 Preliminary Exploration (G3) for graphite in Lamer-Panga Block- B (12.994 sq. Km) in Kalahandi district of Odisha [Implementing Agency: OMC]

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a) OMC conveyed that Preliminary Exploration (G3) for graphite in Lamer-Panga Block- A (13.99 sq. Km) in Kalahandi district of Odisha was approved in the 27th EC meeting held on 10th January 2023 for a period of 14 months.
b) OMC informed that geological mapping (1:4000 scale) has been completed over the total area of 12.994 Sq Km and encountered lithounits like Granite gneiss, Khondalite,, Quartzite, Charnockite in 12.994 sq. km. proposed area. Graphite occurrence pits are observed within the block.
c) OMC conveyed that 30 line km of SP survey has been done in the block and Chemical analysis of 21 nos. of surface samples have been carried out and and the FC % varies from 34.88 % to 3.63 %.
d) On the basis of the anomalous zone from SP survey, graphite occurrences and chemical analysis report, 13 nos. of boreholes have been proposed for drilling.
e) The committee noted progress of work and suggested review of the project after 2 months

Recommendation of TCC:

The committee noted progress of work and suggested review of the project after 2 months.

Agenda 61.4.15 Preliminary Exploration for Coal in North of Rajathari block, Penchkanhan Coalfield ,Chhindwara, Madhya Pradesh [Implementing Agency : CMPDI]

a) CMPDI informed that the project Preliminary Exploration for Coal in North of Rajathari block, Penchkanhan Coalfield Chhindwara, Madhya Pradesh was approved in 24th EC on 18th May 2022 with 20 monthstimeline.The sanction order was issued on 2nd June 2022.
b) CMPDI conveyed the drilling status in the field as below:

Sl. No.	Proposed Point	Borehole No.	Proposed Depth	Closing/ Current Depth	Remarks
1	P-3	CMPNR-01	880.00	880.00	No Coal Seam Encountered, Coal Seam Expected Beyond 1000m
2	P-4	CMPNR-02	900.00	674.00	No Coal Seam Encountered, Repeated attempt but borehole could not be succeeded due drilling difficulty in Motur .
3	P-8	CMPNR-03	1000.00	698.00	Temporarily Suspended
4	P-14	CMPNR-04	950.00	837.00	No Coal Seam Encountered, Coal Seam Expected Beyond 1000m
5	P-10	CMPNR-05	1000.00	789.00	No Coal Seam Encountered, Coal Seam Expected Beyond 1000m
6	P-7	CMPNR-06	870.00	956.00	All the coal seams Encountered
7	P-11	CMPNR-07	950.00	950.00	No Coal Seam Encountered, Coal Seam Expected Beyond 1000m
8	P-18	CMPNR-08	1000.00	1000.00	No Coal Seam Encountered, Coal Seam Expected Beyond 1000m
9	P-6	CMPNR-09	870.00	776.00	All the coal seams Encountered
10.	P-5	CMPNR-10	850.00		Running Borehole

c) CMPDI requested for closure of Borehole No. CMPNR-2(P4),CMPNR-4(P14) & CMPNR-5(P-10) due to drilling difficulty in Motur formation, as repeated attempt

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for drilling could not succeeded. Also the lithologs of these boreholes suggest that the coal seams are expected beyond 1000m.

d) CMPDI sought permission to complete borehole no CMPNR-10(P5) & CMPNR-3(P8) on the basis of positive outcome of these two borehole, only proposed borehole no P-9 may be taken.

e) Further CMPDI requested for time Extension of 6 months required owing to delay in award of Tender due to govt. directive for compulsory tendering through GEM portal and difficulty in drilling in Motur Formation.

Recommendation of TCC:

The committee noted progress of work and agreed for completion of 3 boreholes suggested by CMPDI. The committee recommended timeline extension of 6 months upto1st August 2024.

Agenda 61.4.16 Preliminary Exploration for Coal in Garhpat block, Lohardaga district Jharkhand [Implementing Agency : CMPDI]

a) CMPDI informedthat the project was approved in the the 26th EC meeting held on 25th August 2022 for 12 months. in the 32nd EC held on 12th December 2023, time extension was approved upto 31st Decemeber 2023.

b) CMPDI informed that drilling has been completed and the analytical results of the samples are pending.Further, due to lack of law and order issue mapping is yet to be complted in the area.

c) Considering the above, CMPDI requested fortime extension up to 31st March 2024.

d) Analysis Result one rock/ soil sample for determination of a package by 34 elements by ICP-AES /ICPMS (sequential technique) – Borehole No – CMGP-03 (P-03):

Li	Be	Sc	Cr	Co	Ni	Ga	Ge	Rb	Sr	Y	Zr	Nb	Mo	In	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Ta	W	Th	U
PPM																																	
12.21	1.57	23.91	0.06%	29.5	27.17	47.03	0.09	19.11	26.81	42.67	0.04%	11.55	3.19	BDL	91.47	19.01	89.07	4.23	16.23	2.49	0.66	2.7	0.42	2.34	0.57	1.66	0.32	1.96	0.35	0.75	0.34	29.93	12.4
7.39	1.27	30.2	0.03%	22.36	29.33	54.18	0.25	13.71	26.53	53.48	0.05%	10.27	3.42	BDL	59.42	21.73	0.09%	4.47	18.32	2.19	0.63	3.12	0.43	2.49	0.56	1.79	0.33	2.03	0.28	0.28	0.28	24.07	15.89
7.75	1.05	20.35	0.02%	21.01	20.64	48.43	0.0	13.59	26.56	56.59	0.05%	54.13	3.24	BDL	55.26	23.53	0.09%	4.17	16.24	2.4	0.66	3.15	0.42	2.71	0.61	2.01	0.37	2.34	0.31	5.73	0.74	33.27	14.67
5.79	1.25	40.35	0.02%	26.99	28.39	48.71	0.42	9.79	22.54	52.92	0.05%	40.27	3.37	BDL	53.55	22.94	0.09%	4.72	18.49	2.66	0.61	3.42	0.48	2.48	0.58	1.88	0.31	1.88	0.25	5.59	0.55	25.05	10.39
4.9	1.5	53.71	0.03%	24.22	25.94	70.25	0.43	5.53	25.09	52.37	0.13%	53.23	3.55	BDL	42.3	50.52	0.02%	7.15	24.24	3.59	0.66	4.19	0.57	2.95	0.64	1.84	0.29	1.8	0.24	8.73	4.32	21.53	8.28
3.82	1.1	53.19	0.03%	20.69	19.52	65.93	0.34	3.35	25.6	7.19	0.12%	62.14	3.24	BDL	36.15	39.51	0.02%	7.15	23.27	3.59	0.6	3.33	0.42	2.04	0.4	1.22	0.21	1.35	0.19	7.66	3.66	18.1	6.83
6.42	1.05	43.69	0.04%	20.94	20.26	55.55	0.42	3.93	27.94	7.24	0.15%	73.03	3.24	BDL	32.49	32.64	0.01%	6.43	23.23	3.44	0.67	3.24	0.45	2.13	0.4	1.19	0.2	1.3	0.19	6.66	3.62	19.99	6.69
7.92	0.47	30.75	0.03%	19.83	27.54	60.95	0.38	4.87	34.24	3.32	0.13%	65.84	2.55	BDL	32.24	47.35	0.02%	5	20.75	4.3	0.62	3.6	0.33	2.57	0.47	1.25	0.24	1.36	0.19	8.73	3.91	19.23	5.97
4.82	0.55	30.9	0.03%	14.25	17.19	50.64	0.46	4.59	20.81	5.61	0.15%	73.67	2.35	BDL	21.52	75.03	0.05%	10.89	27.31	3.66	0.74	4.25	0.52	2.54	0.44	1.33	0.22	1.33	0.19	8.69	3.56	16.55	5.34
7.5	1.08	39.07	0.03%	15.82	28.83	60.34	0.69	3.04	48.89	3.07	0.13%	72.89	2.34	BDL	19.54	0.61%	0.03%	19.23	39.18	5.37	1	5.08	0.73	3.52	0.62	1.64	0.22	1.53	0.18	40.73	7.35	19.69	5.44
8.94	0.47	37.27	0.03%	15.1	28.3	77.93	0.55	2.97	45.28	3.05	0.14%	58.93	1.93	BDL	23.55	0.61%	0.03%	14.88	38.54	5.43	0.88	5.7	0.73	3.57	0.69	1.39	0.2	1.29	0.19	8.52	3.3	19.58	5.01
7.29	0.7	39.2	0.03%	17.59	28.58	79.04	0.53	3.23	48.17	3.83	0.13%	53.67	1.97	BDL	25.13	61.23	0.02%	12.29	35.26	5.42	1.07	5.07	0.73	3.73	0.69	1.39	0.21	1.23	0.18	8.07	5.16	17.91	4.67
10.59	0.65	33.75	0.02%	22.75	49.12	74.72	0.6	6.47	54.58	3.03	0.12%	57.05	2.23	BDL	44.29	71.53	0.02%	14.06	40.23	6.26	1.06	5.97	0.83	3.9	0.74	1.6	0.22	1.26	0.19	23.17	3.82	20.25	5.01
6.73	0.57	31.29	0.03%	17.39	49	66.03	0.66	4.3	62.63	10.32	0.13%	62.84	2.24	BDL	33.53	0.61%	0.03%	20.64	61	8.04	1.55	8.6	1.23	10.12	2.6	1.67	0.28	1.47	0.2	8.39	3.5	21.06	6.49
7.79	0.65	30.59	0.03%	19.15	44.09	65.37	0.72	3.45	52.17	12.29	0.13%	62.83	2.48	BDL	34.44	0.61%	0.03%	17.41	53.34	8.55	1.51	8	1.24	10.33	2.59	1.66	0.25	1.49	0.21	5.21	2.59	20.27	4.14
9.22	0.73	32.83	0.03%	21.52	48.37	66.35	0.73	5.33	53.46	53.89	0.14%	53.03	2.6	BDL	29.19	0.61%	0.03%	17.98	51.6	8.09	1.46	8.12	1.22	10.58	2.63	1.63	0.28	1.79	0.24	4.69	2.07	23.28	5.09
9	0.49	27.5	0.02%	19.49	33.89	63.74	0.67	2.28	36.23	69.44	0.15%	63.42	2.97	BDL	66.75	79.1	0.03%	13.64	37.1	6.29	1.21	5.79	0.75	3.82	0.6	1.07	0.23	1.39	0.2	4.59	1.92	16.61	4.23
5.72	0.55	26.47	0.02%	14.79	41.54	63.25	0.58	2.55	37.15	51.54	0.12%	60.67	2.1	BDL	15.8	94.62	0.02%	13.26	35.1	5.44	1.08	5.79	0.73	3.51	0.55	1.57	0.24	1.54	0.2	4.33	3.01	18.02	4.64
6.55	0.7	27.19	0.03%	11.81	31.82	61.14	0.61	1.72	62.1	28.24	0.14%	75.35	1.74	BDL	55.24	0.84%	0.08%	10.67	0.12%	21.63	4.75	20.75	2.51	25.21	1.43	2.85	0.57	3.37	0.46	8.13	5.66	21.65	4.96
1.84	0.22	14.64	0.03%	19.74	15.93	30.22	0.19	3.59	10.67	15.66	0.07%	40.42	0.55	BDL	80.71	51.04	40.6	4.14	12.11	1.72	0.38	2.21	0.32	2.75	0.57	1.76	0.33	1.98	0.31	4.16	2.39	27.56	2
1.74	1.18	33.31	0.03%	20.56	16.6	13.9	0.58	1.66	11.32	61.55	0.09%	6.8	1.47	BDL	52.13	34.95	66.68	5.14	16.15	3.25	0.66	3.5	0.52	3.23	0.74	2.2	0.37	2.33	0.32	2.55	51.91	19.49	2.8
2.72	1.57	10.16	62.11	9.03	5.72	41.04	0.71	67.48	11.85	49.28	0.09%	48.1	0.73	BDL	55.22	61.07	0.08%	13.75	44.45	8.66	0.61	5.45	1.42	10.62	1.57	4.55	0.75	4.37	0.63	3.09	26.15	0.01%	6.66
0.7	1.6	0.27	84.79	19.27	16.02	30.05	0.67	117.42	20.66	52.11	0.05%	27.4	1.16	BDL	3.23%	61.03	0.02%	19.4	55.29	11.73	0.78	10.62	1.63	15.11	1.71	4.61	0.1	3.67	0.65	BDL	5	96.67	6.69

e) Committee assessed the progress of work and asked CMPDI to submit the geological map.Further, based on the encouraging outcome, committee agreed for REE analysis as approved .

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Recommendation of TCC:

The committee noted progress of work and agreed for REE analysis as approved. The committee asked to submit the geological map. The committee also recommended time extension upto 31st March 2024 for completion of the project.

Agenda 61.4.17. Reconnaissance Survey (G-4) for Iron Ore in Gopaltola Area, Dist.Rajnandgaon, Chhattisgarh. [Implementing Agency: DGM Chhattisgarh]

a) The committee informed that the project was approved in the 11th EC Meeting on 07. 02. 2019.The sanction order was issued by NMET on 12.02.2019.
b) DGM Chhattisgarh informed that Forest permission was receivedfor 41.34 Km^2area on 25.01.2023. Exploration work was initiated in the area from 16.02.2023.
c) The committee was also that in the 56th TCC meeting held on 31st August and 1st September 2023, TCC had approved the relocation of 04 boreholes. DGM Chhattisgarh also informed that the forest permission for the 04 relocated boreholes is under progress.
d) In view of the above, DGM Chhattisgarh requested for time extension upto 30.07.2024

Recommendation of TCC:

The committee recommended time extension upto 30th July 2024 and asked DGM Chhattisgarh to provide justification for the delay in project completion before the next EC meeting of NMET.

Agenda 61.4.18 Extension of timeline for 03 projects of IBM for procurement of Mineral Processing equipment, characterization and analysis instruments for MMPL, Nagpur and RMPL, Bengaluru [Implementing Agency: IBM]

a) TCC was informed that IBM received Sanction Orders from NMET on 02.06.2022 for Project-I - Procurement of two Chemical Analysis Instruments with timeline of 12 months. However, in the 30th EC meeting of NMET on 06.06.2023, the timeline for purchase of ICP-MS was extended upto 01.02.2024 and WD-XRF was extended upto 01.03.2024.
b) IBM informed that fresh bidding was made for ICP-MS on 29.12.2023 and the tendering process is in progress. However, after initial duration of 21 days, there was 01 participation and hence, the bid has been extended for 10 days.IBM informed that 08 months extension of timeline is required to complete the procurement process.
c) In case of Project-II & III, NMET vide OM dated 09.02.2023, approved Procurement of laboratory scale mineral processing equipments, characterization and analysis instruments for modern mineral processing laboratory for MMPL, Nagpur and RMPL, Bengaluru with estimated cost of ₹1180 Lakh and 760 Lakh respectively. The scheduled date of completion is 08.02.2024.
d) IBM informed that in case of Procurement of laboratory scale mineral processing equipments, characterization and analysis instruments in MMPL&PP, IBM, Nagpur, 06 items have been procured and purchase 09 items are in progress. In case of the 13 items approved for RMPL, IBM, Bengaluru 03 items have been

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procured and purchase of 10 items are in progress. IBM requested for 08 months extension of timeline is required to complete the procurement process

e) However, owing to the minimum local content issue (Grant of exemption received from Ministry of Mines on 02.06.2023), unreasonableness of bid price and kack of participation of experience bidder, IBM requested time extension of 01 month to 4 months extension where orders have been placed and items are going to be received and installed after end date of the project and 06 months to 08 months extension of timeline for the items which are under process.

Recommendation of TCC:

The committee agreed recommended the following:

- ***Time extension of 08 months upto 08.10.2024 for Procurement of Inductively Coupled Plasma- Mass Spectrometer (ICP-MS) through NMET fund.***
- ***Time extension of 8 months upto 08.10.2024 for Procurement of laboratory scale mineral processing equipments, characterization and analysis instruments for modern mineral processing laboratory, IBM, Nagpur.***
- ***Time extension of 8 months upto 08.10.2024 for Procurement of laboratory scale mineral processing equipment's, characterization and analysis instruments for Regional Mineral Processing Laboratory, Bengaluru***

Agenda 61.4.19 Reconnaissance Survey (G-4) for Iron Ore in Alenga-Nendwadi Block, Gadchiroli District, and Maharashtra[Implementing Agency: DGM Maharashtra (M/S. Gemcokati Exploration Private Ltd.]

a) The project was approved in the 30th EC meeting ofNMET held on 6th June 2023 with timeline of 6 months.

b) The Gemcokati Exploration Private Ltd informed that the peer review of the GR has been completed and is ready for submission

c) The committee was informed 4 CL blocks were curved out of the block with 70.17675mt resource estimated for mineralized ore body.

Name of Block	Resource	Discount 20%	Float Ore
Alenga-Nendwadi	70.17675	56.14	17.2011

Recommendation of TCC:

The committee noted the outcome of the block and agreedfor submissionof GR to NMET.

Agenda 61.4.20 Reconnaissance Survey (G-4 Stage) for Iron Ore in Tadgaon-Wateli Block District: Gadchiroli, Maharashtra [Implementing Agency: DGM Maharashtra (M/S. Gemcokati Exploration Private Ltd.]

a) The project was approved in the 30th EC meeting ofNMET held on 6th June 2023 with timeline of 6 months.

b) The Gemcokati Exploration Private Ltd informed that the peer review of the GR has been completed andis ready for submission.

c) The committee was informed 3 CL blocks were curved out of the block with 47.77mt resource estimated for mineralized ore body.

Name of Block	Resource	Discount 20%	Float Ore
Tadgaon-Wateli	47.77	38.21	37.84

Recommendation of TCC:

The committee noted the outcome of the block and agreedfor submission of GR to NMET.

Agenda 61.4.21 Reconnaissance Survey (G-4 stage) for Iron Ore in Marampalli-Jinjgaon Block (90 sq.km), District: Gadchiroli, Maharashtra [Implementing Agency: DGM Maharashtra (M/S. Gemcokati Exploration Private Ltd.]

a) The project was approved in the 30th EC meeting ofNMET held on 6th June 2023 with timeline of 6 months.
b) The Gemcokati Exploration Private Ltd informed that the peer review of the GR has been completed and is ready for submission
c) The committee was informed 3 CL blocks were curved out of the block with 22.944mt resource estimated for mineralized ore body.

Name of Block	Resource	Discount 20%	Float Ore
Marampalli-Jinjgaon	22.944	18.35	10.26

Recommendation of TCC:

The committee noted the outcome of the block and agreedfor submission of GR to NMET.

Agenda 61.4.22 Reconnaissance Survey (G4) for Iron Ore in Gilanguda-Padur Block (65 Sq.Km), District: Gadchiroli, Maharashtra [Implementing Agency: DGM Maharashtra (M/S. Gemcokati Exploration Private Ltd.]

a) The project was approved in the 30th EC meeting ofNMET held on 6th June 2023 with timeline of 6 months.
b) The Gemcokati Exploration Private Ltd informed that the peer review of the GR has been completed andis ready for submission.
c) The committee was informed 8 CL blocks were curved out of the block with 169.0395mt resource estimated for mineralized ore body.

Name of Block	Resource	Discount 20%
Gilanguda-Padur	169.0395	135.231

Recommendation of TCC:

The committee noted the outcome of the block and agreed for submission of GR to NMET.

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Agenda 61.4.23 Reconnaissance Survey (G-4) for Iron Ore in Murwada-Tumarikodi Block (85 Sq. Km), District: Gadchiroli, Maharashtra [Implementing Agency: DGM Maharashtra (M/S. Gemcokati Exploration Private Ltd.]

a) The project was approved in the 30th EC meeting ofNMET held on 6th June 2023 with timeline of 6 months.
b) The Gemcokati Exploration Private Ltd informed that the peer review of the GR has been completed andis ready for submission.
c) The committee was informed 8 CL blocks were curved out of the block with 244.29825 mt resource estimated for mineralized ore body.

Name of Block	Resource	Discount 20%	Float Ore
Murwada-Tumarikodi	244.29825	195.432	20.3902

Recommendation of TCC:

The committee noted the outcome of the block and agreedfor submission of GR to NMET.

Agenda 61.4.24 Reconnaissance survey for Limestone in Sangmania Block, Dist. Satna, Madhya Pradesh[Implementing Agency: MPSMC]

a) MPSMC informed that the 14th EC of NMET on 09.09.2019 approved the project Reconnaissance survey for Limestone in Sangmania Block, Dist. Satna, Madhya Pradesh.
b) MPSMC conveyed DGM initiated the work in field Season 2019-20 & work was completed in field season 2020-21 and handed over the report to Directorate of Geology and Mining (DGM).
c) MPSMC apprised that drilling of 239 m (one rig, 6 boreholes: 3 in A sub block, 1 in B sub block and 2 in C sub block) was completed and 228.84 Million Tons (G4) of cement grade limestone resource was assessed .
d) MPSMC informed that initially all work was stopped due to corona lockdown and requested time extension upto 15th February 2024 submission of GR.
e) Considering that the project has been completed and the block is in the process of auction, the committee decided to recommend the time extension .the committee asked MPSMC to provide a detailed justification for the inordinate delay in project.

Recommendation of TCC:

The committee recommended time extension upto 15th February 2024 for submission of the GR and asked MPSMC to submit a detailed justification for the delay in project completion before the next EC meeting of NMET.

Additional Discussion

Agenda 61.5. Exploration Incentive against Larambha-Kanaital&PudapadarBharatbahal Block (G-4 level) for Manganese ore and Graphite, Balangir, Odisha [Implementing Agency: MECL]

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a) In the 60th TCC meeting held on 27th and 28th December 2023, MECL requested for release of funds in its favor as an Exploration Incentive (EI), amounting to 25% of the approved cost for the Larambha-Kanaital&Pudapadar-Bharatbahal Block in Balangir, Odisha. The Larambha-Kanaital&Pudapadar-Bharatbahal Block (G-4 level) for Manganese ore and Graphite in Balangir, Odisha, were approved to in the 23rd EC with estimated cost of 193.51 lakhs.
b) On the successful completion of G-4 level exploration, MECL submitted three proposals for upgradation to G-3 level exploration for the Larambha and Kanaital Blocks in Balangir, Odisha, during the 59th TCC held on 28th and 29th November 2023. These proposals were approved in the 32nd Executive Committee meeting on 6th December 2023, based on TCC's recommendation.
c) Further, MECL in the 61st TCC meeting of NMET has submitted proposal for G-3 level exploration for the Bharatbahal, Balangir, Odisha. This is being recommended by TCC in the upcomimg 33rd EC meeting of NMET.
d) MECL conveyed that as per Office Memorandum dated 3rd September 2023, the Laramba-Kanaital&Pudapadar-Bharatbahal Block, Balangir, Odisha, has been upgraded from G-4 to G-3.
e) Hence, MECL requested an Exploration Incentive (EI), amounting to 25% of the approved cost for the Larambha-Kanaital&Pudapadar-Bharatbahal Block in Balangir, Odisha.
f) The committee observed that that as per the recent amendment of the Mines and Minerals (Development and Regulation) Amendment Act 2023 dated 9th August 2023, Graphite has been categorized as Critical and Strategic minerals under Part D.

Recommendation of TCC:

In view of the abovethe committee recommended 25% Exploration Incentive against Larambha-Kanaital&PudapadarBharatbahal Block (G-4 level) for Manganese ore and Graphite, Balangir, Odisha to MECL.

The meeting ended with vote of Thanks to the chair

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Annexure 1

Minutes of the 61st Technical-cum-Cost Committee (TCC) meeting held on 30th and 31stJanuary2024 & 7th February 2024 through video conferencing

S.No.	Name/ Designation	Status	Remarks
1	Dr. S. Ravi, Dy. Director General, SU: Karnataka & Goa, GSI Bangalore.	Chairman, TCC	Through VC
2	Shri. I.R. Kirmani, ADG (Retd.), GSI.	Member	Through VC
3	Shri. HemrajSuryavanshi, Addl. Director General (Retd.), GSI	Member	Through VC
4	Shri. K. Koteswara Rao, Dy.D.G. (Retd.) GSI.	Member	Through VC
5	Dr. S. K. Kulshrestha, DDG-RMH-III, NER, GSI, Shillong	Member	Through VC
6	Shri. S.K. Adhikari, Chief Mining Geologist, IBM, Nagpur.	Member	Through VC
7	Dr.E.V.S.S.K.Babu, Scientist (G), NGRI.	Member	Through VC
8	Shri. K.L. Mundra, Head-RMRE, AMD, Hyderabad	Member	Through VC
9	Shri. A.R. Sengupta, Director (IFD), Ministry of Mines.	Member	7th Feb
10	Shri. Vivek Kumar Sharma,Director, NMET, Ministry of Mines	Member	7th Feb
11	Shri. P.K. Maharana, DGM (Finance), NALCO, Bhubaneswar	Member	Through VC
12	Shri. Ravi Kumar Gupta General Manager (Finance) HCL, Kolkata	Member	Through VC
13	Smt. Vandana, Cost Accounts Officer, RSAS, Bangalore, GSI.	Member	Through VC
14	Shri. C. Parthsarathi, Director, GSI&Member Secretary, TCC- NMET, GSI, Bengaluru	Member Secretary	Through VC

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List of participants attended 61st Technical-cum-cost Committee (TCC) meeting of NMET held on 30th and 31stJanuary 2024 & 7th February 2024 through video conferencing

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. I.R. Kirmani, ADG (Retd.), GSI	irkirmani@yahoo.com	9414014723	Member TCC
3.	Shri. HemrajSuryavanshi, Addl. Director General (Retd.), GSI	hemrajgsi@gmail.com	7477042176	Member TCC
4.	Shri. K. Koteswara Rao, Dy.D.G. (Retd.) GSI.	kkrao1957@gmail.com	9000117969	Member TCC
5.	Dr. S. K. Kulshrestha, DDG-RMH-III, NER, GSI, Shillong	s.kulshrestha@gsi.gov.in	9413330658	Member TCC
6.	Dr.E.V.S.S.K. Babu, Scientist (G), NGRI.	evsskbabu@ngri.res.in	9441535852	Member TCC
7.	Shri. K.L. Mundra, Head-RMRE, AMD, Hyderabad	headrmre.amd@gov.in	9414785663	Member TCC
8.	Shri. S.K. Adhikari, Chief Mining Geologist, IBM, Nagpur.	skadhikari@ibm.gov.in	7588690545	Member TCC
9.	Shri. P.K. Maharana, DGM (Finance), NALCO, Bhubaneswar	pmaharana@rediffmail.com	8500669500	Member TCC
10.	Shri. Ravi Kumar Gupta General Manager (Finance) HCL, Kolkata	ravi_g@hindustancopper.com	9433274328	Member TCC
11.	Smt. Vandana, Cost Accounts Officer, RSAS, Bangalore, GSI.	vandana@gsi.in	8660939235	Member TCC
12.	Shri. C. Parthsarathi, Director, GSI&Member Secretary, TCC- NMET, GSI, Bengaluru	c.parthasarathi@gsi.gov.in	9483186932	Member Secretary
13.	Shri. P.S. Rathore Director	dgmj&k@gmail.com	-	DMG J&K
14.	Shri Dhaval Patel, IAS Commissioner of Geology & Mining	Commissioner-cgm@gujarat.gov.in	7923254151	CGM, Gujarat
15.	Dr. A. S. Rawat, State Geologist,	dranandrawat99@gmail.com	7005386045	DGM,A.P
16.	Shri Debjit Banerjee Geologist	-	9614303305	West Bengal

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17.	Shri NiravBarot Senior Geologist	ad-tech-cgm@geologistgujarat.gov.in	9727706356	CGM, Gujarat
18.	Shri Gurpreet Singh Senior Geologist	ad-tech-cgm@geologistgujarat.gov.in	9269626071	CGM, Gujarat
19.	Shri Gaurav Trivedi (Chemist)	ad-tech-cgm@geologistgujarat.gov.in	-	CGM, Gujarat
20.	Shri R.P. Singh Geologist	dgmupexp@gmail.com	9621045793	DGM, U.P.
21.	Shri Kailash Dongre	dgm.cg@gov.in	9424282791	DGM Chhattisgarh
22.	Shri S.K Kankane, Joint Director,	dgm.cg@gov.in	9826753151	DGM Chhattisgarh
23.	Dr. R.K. Mrinalinee Devi, Mining Consultant, Deptt.	mrinalineerk@rediffmail.com.	8486677967	DGM,A.P
24.	Shri Kumar AmitabDept Director	geo-geology@jharkhandgmail.gov.in	9431196469	DGM Jharkhand
25.	Shri Suresh Chander, Director, TC	suresh.chander@gsi.gov.in	9493860963	GSI, SU: Arunachal Pradesh
26.	Shri Saugata Dutta Director, (TC) SU:WBAV	Saugatadutta@gsigov.in	-	GSI
27.	Dr. Dillip R. Kanungo Chief Ore Dressing Officer & Director (OD) I/C	codo@ibm.gov.in	8237047897	IBM
28.	Shri P. Ravindran (GM Exploration)	ravindran.mecl@gmail.com	9407607309	MECL
29.	Shri P.P. Kulkarni (DGM Exploration)	kulkarnip.mecl@gmail.com	8319364061	MECL
30.	Shri Shrikant Sharma Senior Manager (Geology)	shrikant.mecl@gmail.com	9131229758	MECL
31.	Shri E. Kuppusamy Sr. Manager (Geology)	kuppuekambaram@gmail.com	7776958086	MECL
32.	Shri Naveen kumar Pala (Senior Manager (Geology)	naveenpala.mecl@gmail.com	7738368657	MECL
33.	Shri S. K. Satapathy Manager (Geology)	sksatapathy4u@gmail.com	9993617090	MECL
34.	Shri MD Dastageer Manager (Geology)	dastageermd@gmail.com	9560739350	MECL
35.	Shri SwarupDhara Manager (Geology)	swarupdhara@gmail.com	9630307282	MECL
36.	Shri Vikashkumar Manager (Geology)	vikgeo@gmail.com	9110065089	MECL
37.	Shri VikashRanjan	vikashraj.ranjan@gmail.com	7763085178	MECL

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	Manager (Geology)			
38.	Shri R.P. Singh Manager (Geologist)	Gm.exploration.cmpdi@gmail.com	8987789047	CMPDI
39.	Shri Hemant YerpudeMines Forman	mpsmc@mp.gov.in	983662100	MPSMC
40.	Shri Niraj Kumar Chowdhary Appointed Consultant	mpsmc@mp.gov.in	9179084301	MPSMC
41.	Shri Shiva Kumar M, AGM(ME) ME Dept	-	-	KIOCL
42.	Shri Mohan Raj D, Consultant, ME Dept	-	-	KIOCL
43.	Shri. Anusrita Thakur, Dy. Manager Geology	anusrita.thakur@maheshwaree.com	8637329784	MMPL
44.	Shri. TufanBhowmik, Geologist	tufan.bhowmik@maheshwaree.com	7602994286	MMPL
45.	Shri. Rajyashree Nandi, Sr. Geologist	rajyashree.n@maheshware.com	8777545967	MMPL
46.	Shri. Medha Sarkar, Geologist	medha.sarkar@maheshware.com	9051641517	MMPL
47.	Shri. Shravya Mehta, Geologist	shravya.mehta@maheshware.com	8349962239	MMPL
48.	Shri. JayaprakashByadarahalli, Geologist	jayaprakash.byadarahalli@ecomen.in	7411132685	Ecomen Laboratories Pvt.Ltd
49.	NinshinMoidu/ Sr. Geologist	ninshin.moidu@ecomen.in	9895060470	Ecomen Laboratories Pvt.Ltd
50.	Shri. SekharKakkalapalli, Sr. Geologist	sekhar.kakkalapalli@gmail.com	9032074670	Ecomen Laboratories Pvt.Ltd
51.	Dr. Fareeduddin, Advisor	fareedromani@gmail.com	9886402487	GeoExpore Pvt. Ltd
52.	Dr.yerriswamyPateel, director	vpateel@geoexpore.com	9980118930	GeoExpore Pvt. Ltd
53.	Shri. Channamallikarjun B Patil, Director	cm@geoexpore.com	9980554498	GeoExpore Pvt. Ltd
54.	Dr. K.N. Radhika, Sr. Geologist	radhika@geoexpore.com	9886300105	GeoExpore Pvt. Ltd
55.	Shri. H.R. Arvinth Kumar, Assistant Geologist	arvinth@geoexpore.com	8077860054	GeoExpore Pvt. Ltd
56.	Shri. Shrinivas. Y, Assistant geologist	shrinivas@geioexpore.com	7411747650	GeoExpore Pvt. Ltd
57.	Shri Bharat Chandra	bharat.sahoo@odishamining.in	9438887784	OMC

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	Sahoo, GM (Exploration)			
58.	Shri MihirMalla, DGM (Geo)	mihir.malla@odishamining.in	9777454069	OMC
59.	Shri SumantaSahu, AGM (Geo)	sumanta.sahu@odishamining.in	9668365885	OMC
60.	Dr. LingarajSahoo, Sr. Manager (Geo)	lingaraj.sahoo@odishamining.in	9437603370	OMC
61.	Shri. Subrata Sarkar, VP	subrata.sarkar@gemcokati.com	8059524600	NPEA-Gemcokati
62.	Shri. Naveen Tobria, Sr. Geologist	geology@gemcokati.com	8059524600	NPEA-Gemcokati
63.	Shri. Sagar Ranjan Satpathy Geologist	geology@gemcokati.com	8249035643	NPEA-Gemcokati
64.	Shri. P.Praveenkumar Director	praveen@geomarinesolution.in	8277363919	GMSPL Mangalore
65.	Shri. A.C. Dinesh Chief Technology Officer	oed@geomarinesolutions.in	9038534560	GMSPL Mangalore
66.	Shri. SubrataSarkar,VP	subrata.sarkar@gemcokati.com	7044208900	NPEA-Gemcokati
67.	Shri Naveen Tobria, Sr. Geologist	geology@gemcokati.com	8059524600	NPEA-Gemcokati
68.	Shri. RanjanSatpathy Geologist	geology@gemcokati.com	8249035643	NPEA-Gemcokati
69.	Shri Brigadier Amar Singh Rathore, Chairman & Managing Director	cmd@fagmil.nic.in	7525012180	FAGMIL
70.	Shri Rajendra Singh Rathore, General Manager	gm@fagmil.nic.in	9461107326	FAGMIL
71.	Shri AnkushSaxena, Sr. Manager (Mining)	dgm-min@fagmil.nic.in	9413221576	FAGMIL
72.	Shri SaranshSrivastav Geologist	Fagmilrp@gmail.com	9649889955	FAGMIL
73.	Shri P.Praveen Kumar Director	praveen@geomarinesolutions.in	8277363919	Geo Marine Solutions Pvt. Mangalore
74.	Shri A.C. Dinesh Chief Technology Officer	oed@geomarinesolutions.in	9038534560	Geo Marine Solutions Pvt. Mangalore
75.	Ms. Sangeeta Gupta Superintending Geologist	nmet.mines@gov.in	8005763199	NMET
76.	Ms. Anju C.S., Senior Geologist	nmet.mines@gov.in	8588836933	NMET
77.	Ms. Ujjwala Sharma , Assistant manager	nmet.mines@gov.in	8957806004	NMET
78.	Shri Rajesh Sharma, Senior Geologist	nmet.mines@gov.in	8377851047	NMET

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Annexure 2A

Estimate Cost For Preliminary Exploration for Bauxite, Titanium and Associated Minerals (G-3 Stage) Siskari Pat Block, District: Lohardaga, Jharkhand.
Total Area - 0.28 sq km; Nos. of Boreholes - 05 ; Completion Time - 06 Months; Review: after 03 Months

S.No	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item -Sl No.	Rates as per SoC	Qty.	Total Amount (Rs)	
A	**GEOLOGICAL WORK**						
1	**Geological mapping (1:4000), Borehole logging & Sampling & Report writing**						
a	Charges for one Geologist per day at HQ	day	1.3	9,000	30	2,70,000	
b	Charges for Geologist party per day at field	day	1.3	11,000	120	13,20,000	
c	1 party Labour (2 Nos each party)	day	5.7	504	240	1,20,960	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner 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	21	1,05,188	
e	Labours (4 Nos)	day	5.7	504	83	41,832	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
2	**Survey (on 1:2000 Scale)**						

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a	Surveyor: Topographical survey & surface contouring at 2m interval (1:4000)	day	1.6.1a	8,300	15	1,24,500	
b	Bore Hole Fixation and determination of co-ordinates & Reduced Level (RL) of the boreholes and demarcation of lease hold boundary points by DGPS	Per Point of observation	1.6.2	19,200	25	4,80,000	05 BH point & 20 Boundary points
c	2 party Labour (4 Nos each party)	day	5.7	504	60	30,240	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
	SUB-TOTAL A					**24,92,720**	
B	**MINERAL INVESTIGATION**						
1	**Pitting &Trenching**						
a	Pitting for determination of bulk density (1mx1mx1m)-2 nos.	per cu. m	2.1.2	3800	2	7,600	
2	**DRILLING**						
a	Dry Core Drilling up to 30-50 m (05 BHs, NQ size)	m	2.2.1.1b	6,775	170	11,51,750	Out of 05 BHs; 04 of 30 m depth to be drilled up to lithomarge and 01 Bhupto 50 m i.e. basement
b	Land / Crop Compensation (in case the BH falls in agricultural Land)	per borehole	5.6	20,000	5	1,00,000	Amount will be reimbursed as per actuals or max. Rs. 20000 per BH with certification from local authorities.
c	Construction of concrete Pillar (12"x12"x30")	per point	2.2.7a	2,000	25	50,000	05 BH points & 20 Boundary points
d	Transportation of Drill Rig & Truck associated per drill	Km	2.2.8	36	1,700	61,200	Distance from: Nagpur to block (To

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							& fro)
e	Monthly Accommodation Charges for drilling Camp	month	2.2.9	50,000	2	1,00,000	
f	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	1	2,50,000	
g	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	1	2,50,000	
h	Road Making (Rugged/Hilly Terrain)	per km	2.2.10b	32,200	7	2,25,400	Road Making will be considered as per the requirement and Road Making Charges will be reimbursed accordingly.
i	Drill Core Preservation	per m	5.3	1,590	170	2,70,300	
	SUB-TOTAL B					**24,66,250**	
C	**LABORATORY STUDIES**						
1	**Chemical Analysis**						
i)	**Primary samples**						
a	Analysis for 5 radicals i.e. Al2O3, SiO2, Fe2O3, TiO2&LOI	Nos	4.1.15a	4,200	150	6,30,000	
ii)	**Check samples:External(10%)**						
a.	Analysis for 5 radicals i.e. Al2O3, SiO2, Fe2O3, TiO2&LOI	Nos	4.1.15a	4,200	15	63,000	
iii)	**Composite samples**						
a.	Analysis for 7 radicals, viz. Al_2O_3 , SiO_2 , Fe_2O_3, TiO_2, V_2O_5, P_2O_5&LOI	Nos.	4.1.15a	4,200	-	-	
b.	Analysis for 14 radicals, viz. Al_2O_3, SiO_2, Fe_2O_3, TiO_2, V_2O_5, P_2O_5, LOI, MnO, CaO, MgO, K_2O, Na_2O, SO_3& Organic carbon.	Nos.	4.1.15a	4,200	-	-	
iv)	**Analysis for Bauxite**						
a.	Combined determination of Tri hydrate Alumina (THA-40°c) and Mono hydrate Amumina (MHA-240°c) & Reactive Silica	Nos.	4.1.17a	6,700	-	-	
b	Determination of Bond Work Index	Nos.	4.1.17e	10,000	-	-	

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	Sub-Total -1					**6,93,000**	
2	**Physical & Petrological Studies**						
i)	XRD studies for identification of minerals (Random)	Nos.	4.5.1	4,000	5	20,000	
ii)	ICP-AES/ICP-MS (sequential technique) sample package for 34 elements i.e. 16 other elements viz. Li,Ga,In,Be,Ge,Mo,Cr,Ta,W,Ba,Co,Rb,Sr,Zr,Nb,Ni ;16 REE viz. La,Ce, Pr,Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu,Sc,Y; 02 Actinides viz. U,Th.	Nos.	4.1.14	7,731	14	1,08,234	
iii)	Preparation of thin section	Nos.	4.3.1	2,353	5	11,765	
iv)	Complete Petrographic Studies	Nos.	4.3.4	4,232	5	21,160	
v)	Preparation of polished thin section	Nos.	4.3.2	1,549	5	7,745	
vi)	Complete Minerographic Studies	Nos.	4.3.4	4,232	5	21,160	
	Sub-Total -2					**1,90,064**	
3	**Geotechnical Laboratory**						
i.	Bulk Density	No.	4.1	3,540	2	7,080	
	Sub Total- 3					**7,080**	
	SUB-TOTAL C					**8,90,144**	
D	**Total - A to C**					**58,49,114**	
E	**MISCELLANEOUS CHARGES**						
1	**Preparation of Exploration Proposal (5 Hard copies with a soft copy)**	5 Hard copies with a soft copy	5.1	2% of the aaproved project cost or Rs.5 Lakhs whichever is lower		1,16,982	EA has to submit 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

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2	**Geological Report Preparation**		5.2	ii		2,92,456	EA has to submit the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET
3	**Peer review Charges**		As per EC decision			30,000	
	Total Estimated Cost without GST					**62,88,551**	
	Provision for GST (18%)					11,31,939	GST will be reimbursed as per actual and as per notified prescribed rate
	Total Estimated Cost with GST					**74,20,491**	
	Say in Lakhs (Rs.)					***74.20***	

Note:	
1	**Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.**
2	**In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.**
3	**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. In case of execution of the project by NEA on its own, a Certificate regarding non outsourcing of any component/project is required.**
4	**Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.**

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Annexure 2B

Time Schedule/ Action Plain For Preliminary Exploration for Bauxite, Titanium and Associated Minerals (G-3 Stage) Siskari Pat Block, District: Lohardaga, Jharkhand.

Sl. No.	Activities	Unit	MONTHS						
			1	2	3		4	5	6
1	Camp Setting	Nos.							
2	Geologist Party days in Field (1 Party)	day							
3	Survey Party days (1 Party)	day							
4	Core Drilling (1 rig)	m.				Review			
5	Sampling Party days, Core Sampling	day							
6	Camp Winding	Nos.							
7	Laboratory Studies	Nos.							
8	Geologist Party days in HQ (1 Party)	day							
9	Report Writing & Peer review	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 clearence/local law & order problem/ lockdown etc will be additional to above time line.**								

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Annexure-3A

Estimate cost for Preliminary Exploration (G-3 Stage) [Phase-I] for Gold in Kudrekonda Area by Geophysical Survey, Shimoga Schist Belt, Honnali Taluk, Devanagere District, Karnataka. (Time schedule: 12 months; Review: After 4 & 8 months)

S. No.	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item - Sl No.	Rates as per SoC	Qty.	Amount (Rs)	
A	**Geological Mapping Other Geological Work & Surveying**						
1	Geological mapping, (1:1000 scale) & Surface samples (Bedrock/Channel/soil)	2.74 sq.km					
i	Charges for one Geologist- Field	day	1.2	11,000	120	13,20,000	
ii	Charges for one Geologist per- HQ	day	1.2	9,000	30	2,70,000	
iii	Labours (2 Nos)	day	5.7	504	240	1,20,960	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
iv	d. Charges for one Sampler per day (1 Party)	one sampler per day	1.5.2	5,100	4	21,038	
v	e. Labours (4 Nos)	day	5.7	504	17	8,316	
2	**Survey work**						
a	DGPS survey for Block Boundary	Per Point of observat	1.6.2	19,200	-	0	As per TCC decision

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		ion					
b	Charges of Surveyor (1 party) for Topographical survey	one surveyor per day	1.6.1a	8,300	30	249000	
c	Labours Charges for survey work;	day	5.7	504	120	60480	Amount will be reimburse as per the notified rates for unskilled labor by the Central Labour Commissioner or respective State Govt. whichever is higher
	Sub Total- A					**20,49,794**	
B	**GEOPHYSICAL SURVEY**						
i	IP Survey	Line km	3.4a	69,950	30	20,98,500	
ii	Electro Magnetic survey (profiling/sounding)	Sounding	3.7a	21,197	360	76,30,920	
iii	Magneto-Telluric (MT) survey (250x250grid)	stations	3.8	1,98,386	36	71,41,878	Rs. 119031/6 stations=198386 per station
iv	Charges for one Geophysicist per day at field (Geophysicist for 6 months)	day	3.18	11,000		-	
v	Labours (2 Nos)	day	5.7	504	-	-	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
vi	Charges for one Geophysicist per	day	3.18	9,000	30	2,70,000	

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	day at HQ						
vii	Surveyor Work	days	1.6.1a	8,300		-	
viii	Labours (4Nos)	day	5.7	504	-	-	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
	Sub Total- B					**1,71,41,298**	
C	**LABORATORY STUDIES**						
1	**Chemical Analysis**						
i)	**Geochemical Sampling-Surface samples (Bedrock /Channel/Soil)**						
	a. Au by Fire Assay	Nos	4.1.5a	2,380	30	71,400	
	b) 34 Elements by ICPMS	Nos	4.1.14	7,731	30	2,31,930	
ii)	**Surface Check samples (10% External)**						
	a. Au by Fire Assay	Nos	4.1.5a	2,380	3	7,140	
2	**Physical & Petrological Studies**						
i	Preparation of thin section	Nos	4.3.1	2,353	5	11,765	
ii	Study of thin section	Nos	4.3.4	4,232	5	21,160	
iii	Preparation of polish section	Nos	4.3.2	1,549	5	7,745	
iv	study of polished section	Nos	4.3.4	4,232	5	21,160	
v	Digital Photographs	Nos	4.3.7	280	5	1,400	
	Sub Total- C					**3,73,700**	
	Total A to C					**1,95,64,792**	

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E	**Geological Report Preparation**		**5.2**	For the projects having cost exceeding 150 lakhs but less than 300 lakh:- A minimum of 7.5 lakh or 3% of the work whichever is more and Rs 3000/- for each additional copy.		7,50,000	Reimbursement will be made after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
F	**Peer review Charges**		**As per EC decision**			30,000	
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 or Rs. 5 Lakhs whichever is lower		3,91,296	EA has to submit 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	**Total Estimated Cost without GST**					**2,07,36,087**	
I	**Provision for GST (18% of I)**					37,32,496	GST will be reimburse as per actual and as per notified prescribed rate
J	**Total Estimated Cost with GST**					**2,44,68,583**	***Rs. 244.68 Lacs***
Note:							
1	**Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.**						

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2	In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.
3	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. In case of execution of the project by NEA on its own, a Certificate regarding non outsourcing of any component/project is required.
4	Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.

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Annexure-3B

Time Schedule/ Action Plain for Preliminary Exploration (G-3 Stage) [Phase-I] for Gold in Kudrekonda Area by Geophysical Survey, Shimoga Schist Belt, HonnaliTaluk, Devanagere District, Karnataka. (Time schedule- 9 months)

S. No.		Months/Days	1	2	3	4	Review	5	6	7	8	Review	9	10	11	12
1	Camp Setting	months														
2	Detailed Geological mapping (1:2000 scale) & Surface sampling	months														
3	Ground Geophysical Work (TDEM, IP, MT)	months														
4	Survey work	months														
6	Camp winding	months														
7	Laboratory studies	months														
8	Report Writing with Peer Review	months														

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Annexure 4A

Estimate cost for Preliminary Exploration (G-3) for Manganese and Graphite in Bharatbahal Block District: Balangir, Odisha [Block area- 2.00 sq. km; Nos. of Borehole- 09; Borehole depth range- 50-100m; Schedule timeline- 08 months Review: After 4 Months]

S. No.	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item - Sl No.	Rates as per SoC	Qty.	Amount (Rs)	
A	**GEOLOGICAL WORK**						
1	**Geological Mapping (1:2000), Borehole logging, sampling & Report writing**						
i	Charges for one Geologist- Field	day	1.2	11,000	120	13,20,000	
ii	Charges for one Geologist - HQ	day	1.2	9,000	30	2,70,000	
iii	2 labours/ party (Rs 504/day/labour) (As per rates of Central Labour Commissioner)	day	5.7	504	240	1,20,960	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
iv	Core Sampling -1 Samplers Labour charge not included	day	1.5.2	5,100	35	1,78,500	
v	4 labours/ party (Rs 504/day/labour) (As per rates of Central Labour Commissioner)	day	5.7	504	140	70,560	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is

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							higher
2	**Survey (on 1:2000 Scale)**						
i	Bore Hole Fixation and determination of co-ordinates & Reduced Level of the boreholes by DGPS and boundary coordinates	Per Point of observation	1.6.2	19,200	9	1,72,800	09 BHs
ii	Charges of Surveyor	one surveyor per day	1.6.1a	8,300	30	2,49,000	Contouring and Mapping
iii	Labours Charges for survey work; Base rate - Rs.504	day	5.7	504	120	60,480	Amount will be reimburse as per the notified rates for unskilled labor by the Central Labour Commissioner or respective State Govt. whichever is higher
	Sub Total- A					**24,42,300**	
B	**DRILLING**						
i	Drilling upto300m (Hard Rock) (1 rig)	m	2.2.1.4a	11,500	500	57,50,000	09 Bhs
ii	Borehole deviation Survey	m	2.2.6	330	-	-	
iii	Land / Crop Compansation	per BH	5.6	20,000	9	1,80,000	Amount will be reimburse as per actuals or max. Rs. 20000 per BH with certification from local authorities

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iv	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	9	18,000	
v	Transportation of Drill Rig & Truck associated per drill	Km	2.2.8	36	1,050	37,800	Distance: Nagpur to Block; To & Fro; Certification in this regard is required to be provided
vi	Monthly Accomodation Charges for drilling Camp (up to 3 Rigs)	month	2.2.9	75,000	3	2,25,000	
vii	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	1	2,50,000	
viii	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	1	2,50,000	
ix	Approach Road Making (Flat Terrain)	Km	2.2.10a	22,020	3	66,060	Road Making will be considered as per the requirement and Road Making Charges will be reimbursed later
x	Core Preservation: One complete borehole plus mineralised cores of all the remaining Bhs	m	5.3	1,590	250	3,97,500	This amount will be reimbursed after successful delivery of the cores to concerned libraries/authorities
	Sub Total- B					**71,74,360**	
	Trench	**per cu m**	**2.1.1**	**3330**	**90**	**2,99,700**	
C	**LABORATORY STUDIES**						
1	**Chemical Analysis**						
i	**Primary & Check samples for Maganese**						

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	a. Primary Samples for 6 radical (Mn, SiO2, P2O5, Fe2O3, MnO2 and Insolubles)	Nos	4.1.7a + 7b	2,841	160	4,54,560	BH-135, Trench-25
	b-Internal (5%) Check samples for 6 radical (Mn, SiO2, P2O5, Fe2O3, MnO2 and Insolubles)	Nos	4.1.7a + 7b	2,841		-	
	c-External(10%) Check samples from NABL Lab for 6 radical (Mn, SiO2, P2O5, Fe2O3, MnO2 and Insolubles)	Nos	4.1.7a + 7b	2,841	16	45,456	
ii	**Primary & Check samples for Graphite**						
	a. Proximate Analysis for Graphite (Ash, Moisture, V.M. and F.C.) for Primary Samples	Nos	4.1.16	3,000	70	2,10,000	BH-45, Trench-25
	b Proximate Analysis for Graphite (Ash, Moisture, V.M. and F.C.) for Internal (5%) Check Samples	Nos	4.1.16	3,000	-	-	
	c Proximate Analysis for Graphite (Ash, Moisture, V.M. and F.C.) for External (10%) Check Samples NABL Lab	Nos	4.1.16	3,000	7	21,000	
	ICPMS 34 elements	Nos.	4.1.14	7,731	5	38,655	
iii	**Composite samples for Manganese**	Nos	4.1.7a + 7b	2,841	-	-	
iv	**Primary sample analysis for Cobalt**	Nos	4.1.7b	335	-	-	
v	**Composite samples for Graphite**	Nos	4.1.16	3,000	-	-	
vi	**Total Sulphur (S)**	Nos	4.2.14	1,900	-	-	
vii	**Primary sample analysis for Vanadium**	Nos	4.1.7b	335	-	-	
viii	**Carbon isotope analysis by Mass Spectrometer**	Nos	4.6.1	25,340	-	-	
ix	**Raman Spectroscopy**	Nos		25,340	5	1,26,700	Price not available in SoC, NMET. Will be reimbursed as per actual cost

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							through outsourcing.
2	**Physical & Petrological Stusies**						
i	Preparation of thin section	Nos	4.3.1	2,353	5	11,765	
ii	Complete petrographic study report	Nos	4.3.4	4,232	5	21,160	
iii	Preparation of polished section	Nos	4.3.2	1,549	5	7,745	
iv	Complete mineragraphic study report	Nos	4.3.4	4,232	5	21,160	
v	Digital Photographs	Nos	4.3.7	280	5	1,400	
vii	Specific gravity studies	Nos	4.8.1	1,605	5	8,025	
	Sub Total- C					**9,67,626**	
D	**Total A to C**					**1,08,83,986**	
E	**Geological Report Preparation**		**5.2**	For the projects having cost exceeding Rs. 50 lakhs and less than Rs. 150 lakhs - A minimum of Rs. 2.5 lakhs or	ii	5,44,199	Reimbursement will be made after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.

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				5% of the value of work whichever is more			
F	**Peer review Charges**		**As per EC decision**			30,000	
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 or Rs. 5 Lakhs whichever is lower		2,17,680	EA has to submit 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	**Total Estimated Cost without GST**					**1,16,75,865**	
I	**Provision for GST (18% of I)**					21,01,656	GST will be reimburse as per actual and as per notified prescribed rate
J	**Total Estimated Cost with GST**					**1,37,77,521**	***or Rs. 137.78 Lakhs***
Note:							
1	Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.						

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2	In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.
3	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. In case of execution of the project by NEA on its own, a Certificate regarding non outsourcing of any component/project is required.
4	Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.

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Annexure 4B

Time Schedule/ Action Plain for Estimated cost for Preliminary Exploration (G-3) for Manganese and Graphite in Bharatbahal Block District:Balangir, Odisha

S. No.	Particulars	Months	1	2	3	4	Review	5	6	7	8
1	Camp Setting/ mobilization	Months									
2	Survey days	days									
3	Trenching	days									
4	Drilling (3 rigs)	m									
5	Geologist days	days									
6	Sampling days	days									
7	Camp winding	Months									
8	Laboratory Studies	days									
9	Geologist days, HQ	days									
10	Report Writing with Peer Review	days									

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Annexure 5A

Estimate Cost For Preliminary Exploration (G-3) for Limestone in Alda Block, Raipur & Balodabazar-Bhatapara Districts, Chhattisgarh.
Total Area - 10.25 sq km; Nos. of Borehole - 16 ; Completion Time - 10 Months,

S. No.	Item of work	Unit	Rates as per NMET SoC 2020-21		Total		Remarks
			SoC Item - S. No.	Rates as per SoC	Qty.	Amount	
A.	**GEOLOGICAL WORK: Geological Mapping & Contouring(1:4000)**						
1	Survey Party Days (1 party)	Day	1.6.1a	8300	60	498000	
2	Labour charges for Survey work	Per Labour	5.7	504	240	120960	
3	Geologist Party Days (1 Party) Field	Day	1.3	11000	90	990000	
4	Geologist Party Days (1 Party) HQ	Day	1.3	9000	30	270000	
5	Labour charges for Geological Field work	Per Labour	5.7	504	180	90720	
6	Core Sampling Party Days - (2 Parties)	Day	1.5.2	5100	91	464100	
7	Labour for Sampling	Per Labour	5.7	504	364	183456	
	Sub Total A					**2617236**	
B.	**DRILLING**						
1	Surface drilling (2 rigs)	Meter	2.2.1.1b	5242	800	4193600	16 bhs
2	Road making (flat terrain)	Per km	2.2.10a	22020	10	220200	As per actual

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3	Transportation (2 rigs)	Per km	2.2.8	36	600	21600	Distance: Regional office To Block (To & Fro)
4	Monthly Accommodation charges for drilling camp	Monthly basis	2.2.9	50000	4	200000	
5	Camp Establishment cost	Per Drill	2.2.9a	250000	2	500000	
5	Camp Winding	Per Drill	2.2.9b	250000	2	500000	
6	Drill core preservation	per m	5.3	1590	600	954000	
7	Transportation Charges of core boxes	Per km	2.2.8	36		0	
	Sub Total B					**6589400**	
C.	**LABORATORY STUDIES**						
a	4.1	per sample	3.1	3540	5	17700	
b.	Chemical Analysis						
1	Primary + Check Samples						
	(i) Primary Samples 7 radicals (CaO%, MgO%, SiO_2, Al_2O_3, Fe_2O_3%, P2O5, &LOI)	per sample	4.1.15a	4200	660	2772000	BRS: 20+bh : 640
	(ii)For Check Samples 7 radicals (CaO%, MgO% SiO_2, Al_2O_3, Fe_2O_3%,P2O5, &LOI)	per sample	4.1.15a	4200	66	277200	
	(iii) Mineral Physics Study (XRD)	per sample	4.5.1	4000	0	0	
	Study of Petrological study	per sample	4.3.4	4232	5	21160	
	preparation of standard thin section	per sample	4.3.1	2353	5	11765	
	Sub Total C					**3099825**	

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	Land/crop compensation	Per BH	5.6	16	20000	320000	As per actual; certificate
	Sub Total D					**320000**	
E.	**Total A + B + C + D**				-	**12626461**	
F.	Peer review					**30000**	
	Preparation of exploration proposal	One Number (5 Hard copies along with soft copy)	5.1	2% of the project cost or Rs 5 lakh whichever is lower	1	2,52,529	
	Geological Report Preparation	Copy per 5 Hard copies of report along with soft copy	5.2	ii	1	6,31,323	
	Grand Total E+F					**13540313**	
	GST 18%					2437256	
	Grand Total: with GST 18%					**15977570**	
						Rs.159.78 Lakhs	

Note:	
1	Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.
2	In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.
3	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. In case of execution of the project by NEA on its own, a Certificate regarding non outsourcing of any component/project is required.
4	Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.

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Annexure 5B

Time Schedule/ Action Plain for Preliminary Exploartion (G-3 Stage) of Alda Limestone Block Distict Raipur & Balodabazar-Bhatapara

		Months										
S.No.	Work components	1	2	3	4	5	Review	6	7	8	9	10
1	Camp setup											
2	Geological mapping											
3	Surveying (One party)											
4	Drilling											
5	Sample preparation											
6	Geologist one party days											
7	Analytical work (core + rock samples)											
8	Camp winding											
9	Geological report											

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Annexure 6A

Estimate Cost for Reconnaissance Survey (G4 Stage) for Limestone in Dhanokhar Nagod Block, Panna & Satna Districts, Madhya Pradesh.
Area: 101 Sq.km Time : 9 Months Review: 3 Months

Sr No	Work / Activity	SoC Para	Unit	Charges / Cost (Rs)	Quantity	Amount (Rs)
1	Large scale Geoloical mapping (1:12500)		Charges for one Geologist per day			
a	Geologist (Field) per day	1.2a	Field	11000	120	1320000
b	Labour for Geologist	5.7		504	240	120960
c	Geologist (HQ) per day	1.2b	HQ	9000	30	270000
2	Pitting & Trenching	2.1				
a	Excavation of Pit	2.1.1	per Cu. M	3800	40	152000
3	Drilling in soft rock (Outsourced)	2.2.1.1b	per m	6775	250	1693750
4	Sampler	1.5.2	Charges for one sample per day	5100	51	260100
5	Labour for sampler	5.7		504	204	102816
6	Laboratory Studies	4.0				
a	primary analysis (XRF Method)	4.1.15a	per sample	4200	370	1554000
b	Check Sample (Internal 5%)	4.1.15a	per sample	4200		0
c	Check Sample (External 10% by XRF Method	4.1.15a	per sample	4200	37	155400
d	Composite Samples (10%) (CaO, MgO, Al2O3, SiO2, Fe2O3, SO3, P2O5, Mn2O3, TiO2, K2O, Na2O & LOI)	4.1.15a	per sample	4200	0	0
e	Additional 2 radicals SO3 & P2O5	4.1.7b	per sample	670	0	0
g	XRF Studies (Major oxides) - Composite Samples	4.1.15a	per sample	4200	0	0
7	Petrological Studies	4.3				

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(i)	Preparation of standard thin section of rock	4.3.1	per sample	2353	10	23530
(ii)	Digital photomicrograph of thin polished section	4.3.7	per sample	280	20	5600
(iv)	Complete Petrographic / Ore Microscopic Study / Mineragraphic report of rock samples	4.3.4	per sample	4232	10	42320
8	Geotechnical Studies	4.80	per sample			
a	Insitu Bulk density	4.1.10	per sample	3540	0	0
b	Bed moisture determination	4.11a	per sample	1246	0	0
c	Decrepitation test for limestone/dolomite	4.7.3	per sample	1200	0	0
9	Drill Core Preservation	5.3	per m	1590	200	318000
	Sub Total					**6018476**
10	Preparation of Exploration Proposal	5.1	One Number (5 Hard Copies) alon with soft copy	2% or 500000, whichever is low	1	120370
11	Geological Report Preparation	5.2	Cost per 5 hard copies of report along with soft copy	ii	1	300924
12	Tendering Process (2% or 5 lakhs, whichever is less)	2.3				33875
13	Operational Charges	6.0				169375
14	Peer Review		**As per EC decision**			30000
	Sub Total					**6673019**
	GST @ 18%					1201143
	Total					**7874163**
	Rs. In lacs					**78.74**
Note:						

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1	Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.
2	In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.
3	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. In case of execution of the project by NEA on its own, a Certificate regarding non outsourcing of any component/project is required.
4	Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.

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Annexure 6B

Time schedule/ Action paln for Reconnaissance Survey (G4 Stage) for Limestone in Dhanokhar Nagod Block, Panna & Satna Districts, Madhya Pradesh.

Sr No	Activities	Unit	Months									
			1	2	3	Review	4	5	6	7	8	9
1	Camp Mobilization & Setting	Months										
2	Geological & Toporaphical Survey Work	Months										
3	Pitting & Trenching	Months										
4	Core Drilling, Core Logging,	Months										
5	Sample Preparation & Analysis	Months										
6	Geological Report preparation	Months										
7	Report Study, enlisting of various modification & Final Copy of the report	Months										

Note:-

1	Commencement of Project may be reworked from the day of exploration area is available with all Statutory Clearance.
2	Time loss due to monsoon / agricultural activity / forest clearance / local law & order problem(s) may be additional to the above time line.

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Annexure 7A

Estimate Cost for Reconnaissance Survey (G4 Stage) for Limestone in Gunaur Pali Block, Panna District, Madhya Pradesh. Area: 75 sq.km.; No of Bhs:3; time: 9 months; Review: After 3 Months

S. No	Work / Activity	SoC Para	Unit	Charges / Cost (Rs)	Qunatity	Amount (Rs)
1	Large scale Geoloical mapping (1:12500)		Charges for one Geologist per day			
a	Geologist (Field) per day	1.2a	Field	11000	100	1100000
b	Labour for Geologist	5.7		504	200	100800
c	Geologist (HQ) per day	1.2b	HQ	9000	30	270000
2	Pitting & Trenching	2.1				
a	Excavation of Pit (15 nos)	2.1.1	per Cu. M	3800	30	114000
3	Drilling in soft rock (Outsourced)	2.2.1.1b	per m	6775	150	1016250
4	Sampler	1.5.2	Charges for one sample per day	5100	29	147263
5	Labour for sampler	5.7		504	116	58212
6	Laboratory Studies	4.0				
a	primary analysis (XRF method)	4.1.15a	per sample	4200	210	882000
b	Check Sample (Internal 5%)	4.1.15a	per sample	4200	0	0
c	Check Sample (External 10% &NABL)	4.1.15a	per sample	4200	21	88200
d	Composite Samples (10%) (CaO, MgO, Al2O3, SiO2, Fe2O3, SO3, P2O5, Mn2O3,	4.1.15a	per sample	4200	0	0

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	TiO2, K2O, Na2O&LOI)					
e	Additional 2 radicals SO3&P2O5	4.1.7b	per sample	670	0	0
g	XRF Studies (Major oxides) - Composite Samples	4.1.15a	per sample	4200	0	0
7	Petrological Studies	4.3				
(i)	Preparation of standard thin section of rock	4.3.1	per sample	2353	10	23530
(ii)	Digital photomicrograph of thin polished section	4.3.7	per sample	280	20	5600
(iv)	Complete Petrographic / Ore Microscopic Study / Mineragraphic report of rock samples	4.3.4	per sample	4232	10	42320
8	Geotechnical Studies	4.80	per sample			
a	Insitu Bulk density	4.1.10	per sample	3540	0	0
b	Bed moisture determination	4.11a	per sample	1246	0	0
c	Decrepitation test for limestone/dolomite	4.7.3	per sample	1200	0	0
9	Drill Core Preservation	5.3	per m	1590	130	206700
	Sub Total					**4054875**
10	Preparation of Exploration Proposal	5.1	One Number (5 Hard Copies) alon with soft copy	2% or Rs. 500000, whichever is low	1	81097
11	Geological Report Preparation	5.2	Cost per 5 hard copies of report along with soft copy	1.5 lakh or 5% of the work, whichever	1	202744

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				is more &Rs 3000/- per each additional copy		
12	Tendering Process (2% or 5 lakhs, whichever is less)	2.3				20325
13	Operational Charges	6.0				101625
14	Peer Review		**As per EC decision**			30000
	Sub Total					**4490666**
	GST @ 18%					808320
	Total					**5298986**
	Rs. In lacs					**52.99**
Note:						
1	Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.					
2	In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.					
3	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. In case of execution of the project by NEA on its own, a Certificate regarding non outsourcing of any component/project is required.					
4	Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.					

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Annexure 7B

Time Schedule / Action Plan for Reconnaissance Survey (G4 Stage) for Limestone in Gunaur Pali Block, Panna District, Madhya Pradesh.

Sr No	Activities	Unit	Months								
			1	2	3	Review	4	5	6	7	8	9
1	Camp Mobilization & Setting	Months										
2	Geological & Toporaphical Survey Work	Months										
3	Pitting & Trenching	Months										
4	Core Drilling, Core Logging,	Months										
5	Sample Preparation & Analysis	Months										
6	Geological Report preparation	Months										
7	Report Study, enlisting of various modification & Final Copy of the report	Months										

Note:-

1. Commencement of Project may be reworked from the day of exploration area is available with all Statutory Clearance.
2. Time loss due to monsoon / agricultural activity / forest clearance / local law & order problem(s) may be additional to the above time line.

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Annexure 8A

Estimate Cost for Preliminary Exploration (G -3 stage) for Limestone in Chhasra Block, Kachchh District, Gujarat
Area: 35.37sq.km. Time: 6 Months Review: after 3 Months no. of bh: 45

S. No.	Item of Work	Unit	Base	Financial Year (2023-24)		
			Rate	Esc.Rate	Qty.	Amount
			1.4.90	(Rs)		(Rs)
A	**DRILLING (Outsourced)**					
1	Surface Drilling (2 Rigs)	m.	2.2.1.1b	6775	900	6097500
2	Transportation	Km.	2.2.8	36	0	0
3	Accomodation	One time / Drill		50000	0	0
4	Camp Setting / Winding	Drill/ month		250000	0	0
5	Road Making (Hilly Terrain)	Km		0	0	0
	Sub Total A					**6097500**
	Drill CorePreservation	**per m**	**5.3**	**1590**	**800**	**1272000**
B	**GEOLOGICAL WORK Mapping(1:4000)**					
1	Survey Party Days (1 party)	day	1.6.1a	8300	20	166000
	Labour	per day	5.7	504	80	40320

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	Geologist Party days (HQ)	per day		9000	30	270000
2	Geologist Party days (1 party)	day	1.3b	11000	60	660000
	Operational Charges	per day	5.7	504	120	60480
3	Core Sampling Party days(1 party)	day	1.5.2	5100	110	561000
	Labour	per day	5.7	504	440	221760
	Sub-Total B					**1979560**
C	**LABORATORY STUDIES**					
a	**Chemical Analysis**					
1	Primary + Check Samples					
	primary analysis (XRF Method)	Nos	4.1.15a	4200	800	3360000
	ii) External Check Samples (XRF Method)	Nos	4.1.15a	4200	80	336000
	iii) For additional 2 Radicals SO3&P2O5	Nos				
2	Composite Samples					
	i) for 12 radicals (CaO, MgO, Al_2O_3, SiO_2, Fe_2O_3, SO_3,P_2O_5, Mn_2O_3, TiO_2,K_2O, Na_2O&LOI,)	Nos		4851	0	0
b	**Physical Analysis**					
1	X-RD Studies on composite	Nos		4000	0	0
2	Spectroscopic Studies	Nos		24360	0	0
3	Preparation of thin section	Nos	4.3.1	2353	5	11765
4	Petrographic Studies	Nos	4.3.4	4232	5	21160
	Digital MicroPhotograph	Nos	4.3.7	280	10	2800

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5	bulk Density	Nos	4.1	3540	5	17700
	Sub-Total C					**3749425**
	Total A+B+C					**13098485**
D	**EXPLORATION REPORT - 5% of (A+B+C)**			5.2		654924
E	**PROPOSAL PREPARATION - 2% of approved project cost or 3.8 lakh whichever is lower**			5.1		261970
	Peer Reviewer Charges					30000
	Tender Process					121950
	Operational Charges					582313
						14749641
	GST 18%					2654935
	GRAND TOTAL A to D					**17404577**
	Rs. In lakhs					**174.05**
Note:						
1	Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.					
2	In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.					
3	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. In case of execution of the project by NEA on its own, a Certificate regarding non outsourcing of any component/project is required.					
4	Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.					

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Annexure 8B

Time Schedule/ Action Plan for Preliminary Exploration (G -3 stage) for Limestone in Chhasra Block, Kachchh District, Gujarat

Sl. No.	Activities	Unit	MONTHS						
			1	2	3		4	5	6
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							

Review

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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Annexure 9A

Estimate Cost for Preliminary Exploration (G -3 stage) for Limestone in Vayor Block, Kachchh District, Gujarat.
Area: 20.68sq.km. Time: 6 Months Review: after 3 Months no. of bh: 18

S.No.	Item of Work	Unit	Base	Financial Year (2023-24)		
			Rate	Esc.Rate	Qty.	Amount
			1.4.90	(Rs)		(Rs)
A	**DRILLING (Outsourced)**					
1	Surface Drilling (2 Rigs)	m.	2.2.1.1b	6775	450	3048750
2	Transportation	Km.	2.2.8	36	0	0
3	Accomodation	One time/ Drill		50000	0	0
4	Camp Setting / Winding	Drill/ month		250000	0	0
5	Road Making (Hilly Terrain)	Km		0	0	0
	Sub Total A					**3048750**
	Drill CorePreservation	**per m**	**5.3**	**1590**	**400**	**636000**
B	**GEOLOGICAL WORK Mapping(1:4000)**					
1	Survey Party Days (1 party)	day	1.6.1a	8300	30	249000
	Labour	per day	5.7	504	120	60480
	Geologist Party days (HQ)	per day		9000	30	270000

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2	Geologist Party days (1 party)	day	1.3b	11000	45	495000
	Labour	per day	5.7	504	90	45360
3	Core Sampling Party days(1 party)	day	1.5.2	5100	55	280500
	Labour for sample preparation	per day	5.7	504	220	110880
	Sub-Total B					**1511220**
C	**LABORATORY STUDIES**					
a	**Chemical Analysis**					
1	**Primary + Check Samples**					
	primary analysis (XRF Method)	Nos	4.1.15a	4200	400	1680000
	ii) External Check Samples (XRF Method)	Nos	4.1.15a	4200	40	168000
	iii) For additional 2 Radicals SO3&P2O5	Nos				
2	**Composite Samples**					
	i) for 12 radicals (CaO, MgO, Al_2O_3, SiO_2, Fe_2O_3, SO_3,P_2O_5, Mn_2O_3, TiO_2,K_2O, Na_2O&LOI,)	Nos		4851	0	0
b	**Physical Analysis**					
1	X-RD Studies on composite	Nos		4000	0	0
2	Spectroscopic Studies	Nos		24360	0	0
3	Preparation of thin section	Nos	4.3.1	2353	5	11765
4	Petrographic Studies	Nos	4.3.4	4232	5	21160
	Digital MicroPhotograph	Nos	4.3.7	280	10	2800

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5	bulk Density	Nos	4.1	3540	5	17700
	Sub-Total C					**1901425**
	Total A+B+C					**7097395**
D	**EXPLORATION REPORT - 5% of (A+B+C)**			5.2		354870
E	**PROPOSAL PREPARATION - 2% of approved project cost or 3.8 lakh whichever is lower**			5.1		141948
	Peer Reviewer Charges					30000
	Tender Process					60975
	Operational Charges					304875
	GRAND TOTAL A to D					**7990063**
	GST 18%					1438211
						9428273.93
	Rs. In lacs					**94.28**
Note:						
1	Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.					
2	In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.					
3	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. In case of execution of the project by NEA on its own, a Certificate regarding non outsourcing of any component/project is required.					
4	Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.					

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Annexure 9B

Time Schedule/ Action Plan for Preliminary Exploration (G -3 stage) for Limestone in Vayor Block, Kachchh District, Gujarat.

Sl. No.	Activities	Unit	MONTHS						
			1	2	3	Review	4	5	6
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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Annexure 10A

Estimate Cost for Preliminary Exploration (G-3 stage) for Limestone in Jadva Block, Kachchh District, Gujarat.
Area:10.30sq.km. Time: 6 Months Review: after 3 Months no. of bh: 14

S.No.	Item of Work	Unit	Base	Financial Year (2023-24)		
			Rate	Esc.Rate	Qty.	Amount
			1.4.90	(Rs)		(Rs)
A	**DRILLING (Outsourced)**					
1	Surface Drilling (2 Rigs)	m.	2.2.1.1b	6775	280	1897000
2	Transportation	Km.	2.2.8	36	0	0
3	Accomodation	One time / Drill		50000	0	0
4	Camp Setting / Winding	Drill/ month		250000	0	0
5	Road Making (Hilly Terrain)	Km		0	0	0
	Sub Total A					**1897000**
	Drill Core Preservation	per m	5.3	1590	250	397500
B	**GEOLOGICAL WORK Mapping(1:4000)**					
1	Survey Party Days (1 party)	day	1.6.1a	8300	20	166000
	Labour	per day	5.7	504	80	40320
	Geologist Party days (HQ)	per day		9000	30	270000
2	Geologist Party days (1 party)	day	1.3b	11000	30	330000
	Labour	per day	5.7	504	60	30240
3	Core Sampling Party days(1 party)	day	1.5.2	5100	35	178500

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	Labour for sample preparation	per day	5.7	504	140	70560
	Sub-Total B					**1085620**
C	**LABORATORY STUDIES**					
a	**Chemical Analysis**					
1	Primary + Check Samples					
	primary analysis (XRF Method)	Nos	4.1.15a	4200	250	1050000
	ii) External Check Samples (XRF Method)	Nos	4.1.15a	4200	25	105000
	iii) For additional 2 Radicals SO3&P2O5	Nos				
2	Composite Samples					
	i) for 12 radicals (CaO, MgO, Al_2O_3, SiO_2, Fe_2O_3, SO_3,P_2O_5, Mn_2O_3, TiO_2,K_2O, Na_2O&LOI,)	Nos		4851	0	0
b	**Physical Analysis**					
1	X-RD Studies on composite	Nos		4000	0	0
2	Spectroscopic Studies	Nos		24360	0	0
3	Preparation of thin section	Nos	4.3.1	2353	5	11765
4	Petrographic Studies	Nos	4.3.4	4232	5	21160
	Digital MicroPhotograph	Nos	4.3.7	280	10	2800
5	bulk Density	Nos	4.1	3540	5	17700
	Sub-Total C					**1208425**
	Total A+B+C					**4588545**
D	**EXPLORATION REPORT - 5% of (A+B+C)**			5.2		229427
E	**PROPOSAL PREPARATION - 2% of approved project cost or 3.8 lakh**			5.1		91771

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	whichever is lower					
	Peer Reviewer Charges					30000
	Tender Process					37940
	Operational Charges					189700
	GRAND TOTAL A to D					**5167383**
						930129
						6097512
					Total	**60.98**

Note:	
1	Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.
2	In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.
3	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. In case of execution of the project by NEA on its own, a Certificate regarding non outsourcing of any component/project is required.
4	Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.

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Annexure 10B

Time Schedule/ Action Plan for Preliminary Exploration (G-3 stage) for Limestone in Jadva Block, Kachchh District, Gujarat.

Sl. No.	Activities	Unit	MONTHS						
			1	2	3		4	5	6
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							

Review

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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Annexure 11A

Estimate Cost for Preliminary Exploration (G3) for vanadium and titanium in Beach & Dune sands of Dandi-Onjal-Surwada Block in Navasari and Valsad Districts, Gujarat.
Area: 2.17 sq.km. Time: 12 Months; Review: After 6 Months

S. No.	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item -Sl No.	Rates as per SoC	Qty.	Total Amount (Rs)	
A	**Geological Mapping Other Geological Work & Surveying**						
	Geological mapping, (1:4000 scale) & Trenching , drilling work	2.17 sq km					
i	a. Charges for Geologist per day (Field) for geological mapping & trenching work, drilling work	day	1.3b	11,000	75	8,25,000	
ii	b. Labours Charges	day	5.7	504	150	75,600	As per
	c. Charges for Geologist per day (HQ)	day	1.3a	9,000	90	8,10,000	
	Sub Total- A					**17,10,600**	
C	**Survey work**						
a	DGPS Survey for topographic mapping, BH fixation &RL determination	day	**1.6.1a**	8,300	25	207500	
c	Labours Charges for survey work; 2 labourers	day		504	50	25200	As per

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	per day						
	Sub-Total C					**2,32,700**	
D	**Trenching/Pitting**						
	a) Excavation of Pits (upto2m)	per cu.m	**2.1.2**	3,800	73	277400	
E	**DRILLING (after review)**						
1	AUGER Drilling up to 10m	m	**2.2.2**	4,760	100	4,76,000	10 bhs
4	Construction of concrete Pillar (12"x12"x30")	per borehole	**2.2.7a**	2,000	10	20,000	
5	Transportation of Drill Rig & Truck associated per drill	Km	**2.2.8**	36	1,204	43,344	to & Fro
6	Monthly Accomodation Charges for drilling Camp	month	**2.2.9**	50,000	1	50,000	
7	Drilling Camp Setting Cost	Nos	**2.2.9a**	2,50,000	1	2,50,000	
8	Drilling Camp Winding up Cost	Nos	**2.2.9b**	2,50,000	1	2,50,000	
9	Sampler charges	day	**1.5.2**	5,100	34	1,70,850	
	Labours Charges		**5.7**	504	134		
10	Drill Core Preservation	per m	**5.3**	1,590	100	1,59,000	
	Sub Total E					**16,96,594**	
G	**LABORATORY STUDIES**						

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	Sieve and hydrometer analysis after removal of salt and organic content and drying			2,000	-	-	As per NABL LAB rates
1	**Chemical Analysis**						
	Separation of heavy minerals from sediment samples of 2mm size through gravity and two level magnetic separation (BH and Pit samples)		**4.3.6b**	13,820	173	23,90,860	bh:100&pit:73
ii)	Surface Check samples (10% External)		**4.1.14**	7,731	9	69,579	
	b. For Fe, V, Ti,Cr, Sc and REE by ICPMS-34 elements	Nos	**4.1.14**	7,731	86	6,64,866	
2	**Physical Studies**						
i	XRD studies	Nos	**4.5.1**	4,000	10	40,000	
	Sub total G					**31,65,305**	
H	**Total A to H**					**68,05,199**	

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I	**Geological Report Preparation**	**5 Hard copies with a soft copy**	**5.2**	ii		3,40,260	Reimbursement will be made after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
J	**Peer review Charges**		**As per EC decision**			30,000	
K	**Preparation of Exploration Proposal (5 Hard copies with a soft copy)**	**5 Hard copies with a soft copy**	**5.1**	2% of the Cost or Rs. 5.0 Lakhs whichever is less		1,36,104	EA will be reimbursed 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.
L	**Total Estimated Cost without GST**					**73,11,563**	

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M	**Provision for GST (18% of J)**	13,16,081	GST will be reimburse as per actual and as per notified prescribed rate
N	**Total Estimated Cost with GST**	**86,27,644**	
	Rs. In Lakhs	**86.28**	
Note:			
1	Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.		
2	In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.		
3	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. In case of execution of the project by NEA on its own, a Certificate regarding non outsourcing of any component/project is required.		
4	Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.		

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Annexure 11B

Time Schedule/ Action plan for Preliminary Exploration (G3) for Vanadium and Titanium in Beach & Dune sands of Dandi-Onjal-Surwada Block in Navasari and Valsad Districts, Gujarat.

S. No.	Activities	1	2	3	4	5	6		7	8	9	10	11	12
1	Camp Setting													
2	Geological Mapping & Sampling													
5	Pitting/Trenching													
6	Surface Drilling (1 rigs)AUGER													
7	Survey Party													
8	Geologist Man days							Review						
9	Sampler Man days													
10	Camp Winding													
11	Laboratory Studies													
12	Report Writing with Peer Review													

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Annexure 12A

Estimate Cost for Reconnaissance Survey (G4) for Iron ore in Mahakoshal Group around Chakdiya,Kushniaya, Jobra and Tusgaon Area", Sonbhadra District – Uttar Pradesh
Total Area: 18.56 Sq.Km - Mapping 1:12,500 Scale; No. of bh:05; time:9 months; review: after 4 months

Sl.No	Item of work	Unit	NMET SoC-Item - Sl No.	NMET Rates (2020)	Qty	Amount INR
A	**GEOLOGICAL WORK**					
i	Geologist Party days H Q	Days	1.3	9000	30	270000
ii	Geologist Party days -Field	Days	1.3	11000	90	990000
iii	Labourers (2 Nos.)	Days	5.7	504	180	90720
iv	Sampler Party days(Bed rock/ soil/ stream) and Core sampling (1party)	Days	1.5.2	5100	31	158100
v	Labour for Sampling	Days	5.7	504	124	62496
						1571316
B	**GROUND GEOPHYSICAL SURVEY**					
i	a.Magnetic Survey (25-30 LineKm) with 200 m spacing)	No of Station	3.2a	1800	0	0
vii	Expert Charges for Geophysicist (HQ)	Per Day	3.18	9000	0	0
viii	Geophysicist-Monitoring of Geophysical Investigation (Field)	Per Day	3.19	11000	0	0
ix	Labourers (Rs 477/day/labour) Geophysical Survey(4Nos)	Days	5.7	477	0	0
C	**SURVEY**					
i	Survey Party Days (1 party)	Days	1.6.1a	8300	0	0

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ii	DGPS Survey- Demarcatiion of boundary, Fixation of Boreholes,determinatin of coordinates& Reduced Level (Including Labbourer		1.6.2	19200	0	0
iii	Labourers (Rs 477/day/labour) for Survey Party (4 Nos)	Days	5.7	477	0	0
						0
	SubTotalA+B+C					**1571316**
D	**PITTING & TRENCHING**					
ii	**Trenching(1m x 2mx 10 m) (5 Nos)**	Per Cu.M	2.1.1	3330	100	333000
	SubTotal D					**333000**
E	**DRILLING (Out sourced)**					
i	Surface Drilling (2 Rigs) (30 m vertical depth) 5 scout Bhs.	mts.	2.2.1.5a	12650	300	3795000
ii	Drill core preservation charges- "One complete borehole plus mineralised cores of all the BHs of the Block, all cost included	per Mts.	5.3	1590	150	238500
iii	Approach Road making for Rugged/Hilly terrain	per Km.	2.2.10b	32200	0	0
iv	Land Compensation	Per Borehole	5.6	20000	0	0
v	Construction of concrete Pillar (12" x12"x30")	Per Borehole	2.2.7a	2000	0	0
	SubTotal E					**4033500**
F	**LABORATORY STUDIES**					
	a.Chemical analyses	Nos				
	(i) Primary Samples (Bed rock/ soil/ stream/core) for 5 Radicals Fe, Al2O3, P2O5	Per sample	4.1.15a	4200	225	945000

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	&SiO2, LOI (XRF technique)					
	(iii) Check Samples (Bed rock/ soil/ stream) (10%)	Per sample	4.1.15a	4200	23	96600
	Primary + Check Sample					
	a)Primary Samples (Drill core)for 5 Radicals Fe, Al2O3, P2O5&SiO2,LOI	Per sample	4.1.15a	4200		0
	(b)Check Samples-5Radicals Fe, Al2O3, P2O5&SiO2, LOI(20%)	Per sample	4.1.15a	4200		0
	c)Composite Samples for 5 Radicals Fe, Al2O3, P2O5, &SiO2, LOI	Per sample	4.1.15a	4200		0
	d. Whole Rock Analyses	Per sample	4.1.15a	4200		0
	b.Petrography studies					
	a) X-RD Studies	Per sample	4.5.1	4000	0	0
	b)ICP -MS studies (34 trace elements)	Per sample	4.1.14	7731	0	0
	c) Preparation of thin sections	Per sample	4.3.1	2353	10	23530
	d)Complete petrographic /ore microscopic study/Mineragraphic studies	Per sample	4.3.4	4232	10	42320
	e)Preparation of Polished Sections	Per sample	4.3.2	1549	10	15490
	f)Complete ore microscopic study/Mineragraphic studies	Per sample	4.3.4	4232	10	42320
	SubTotal F					**1165260**

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G	**GEOTECHNICAL STUDIES**					
	a)Specific Gravity Determination	Per Sample	4.8.1	1605	0	0
	b)Bulk density	Per Sample	4.10	3540	0	0
	SubTotal F					**0**
	Total A+B+C+D+E+F+G					**7103076**
H	**PREPARATION OF EXPLORATION PROPOSAL (5+1 Softcopy)**	Per Project	5.1		1	142062
I	**PEER REVIEW**	As per EC committee				30000
J	**GEOLOGICAL REPORT PREPARATION 5+5 HARD COPIES + 2 SOFTCOPY (@5%)**	Per Porject	5.2		1	355154
	Tender Processing Cost					75900
	Operational Charges					379500
	TOTAL A to J					**8085691**
	GST 18%					1455424
	Total with GST 18%					**9541116**
	Rs. In lacs					**95.41**

Note:	
1	Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.
2	In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.
3	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. In case of execution of the project by NEA on its own, a Certificate regarding non outsourcing of any component/project is required.
4	Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.

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Annexure 12B

Time Schedule/ Action Plan for Reconnaissance Survey (G4) for Iron ore in Mahakoshal Group around Chakdiya,Kushniaya, Jobra and Tusgaon Area", Sonbhadra District – Uttar Pradesh

S. No.	Item of Work	1	2	3	4		5	6	7	8	9
1	Forest Permission										
2	Geological Mapping,-(18.56 Sq.Km.) (1:12,500 SCALE)										
3	Bed Rock Sampling (BRS), 75 nos.										
4	Chemical Analysis of BRS					Review					
5	Pitting/Trenching and sampling 5 Nos./100 cu.m, 25 Nos. samples										
6	Chemical Analysis of P/Ts samples										
7	Drilling of Scout borewells (5 Nos.), core sampling and analysis, 75 Nos. samples										
8	Geological Report Writing with Peer Review and submission										

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Annexure 13

Estimated cost for Reconnaissance Survey (G4) for Glauconitic Sandstone in Pindra SW Extension Block, Satna District, Madhya Pradesh
Total Area - 38.28 Sq. Km; Completion Time - 12 Months

Sl. No.	Item of Work	Unit	Rates as per NMET SoC 2020-21		Total Cost of the Project		Remarks
			SoC-Item- S. No.	Rates as per SoC	Qty.	Total Amount (Rs)	
1.0	**Geology & Survey**						
1.3	Sampling man days - Sampler (Geochemical/Trenching/Pitting) Labour charge not included	day	1.5.2	5,100	7	35,700	
1.4	4 labours/ party (Rs 431/day/labour) (As per rates of Central Labour Commissioner) for sampling work	day	5.7	431	28	12,068	Amount will be reimburse as per the notified rates by the Central Labour Commissioner (Rs. 431/- per day) or respective State Govt. whichever is higher
Sub-Total 1						**47,768**	
3.0	**Laboratory Studies**						
3.1	Primary + Check Sample - 4 radicals viz. K_2O, SiO_2, Al_2O_3&Fe_2O_3	per sample	4.1.7a	2,506	53	1,32,818	47 primary, 6 check

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3.2	Chemical Analysis (Composite) for 12 radicals viz. K_2O, Na_2O, CaO, MgO, Al_2O_3, SiO_2, Fe_2O_3, SO_3, P_2O_5, Mn_2O_3, TiO_2, and LOI.	per sample	4.1.7a	4,851	3	14,553	
Total Estimated Cost without GST						**1,95,139**	
Provision for GST (18%)						**35,125**	GST will be reimburse as per actual and as per notified prescribed rate
Total Estimated Cost with GST						**2,30,264**	
Say Rs. in Lakhs						**2.30**	

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. 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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Annexure 14

Estimated cost for Preliminary exploration (G-3) for Limestone in Simariyakalan-Baheria Limestone Block, Narsinghpur District, Madhya Pradesh
Total Area - 10 Sq. Km; Completion Time - 08 Months

Sl. No.	Item of Work	Unit	Rates as per NMET SoC 2020-21		Total Cost of the Project		Remarks
			SoC-Item- S. No.	Rates as per SoC	Qty.	Total Amount (Rs)	
1.0	**Geology & Survey**						
1.3	Sampling man days - Sampler (Geochemical/Trenching/Pitting) Labour charge not included	day	1.5.2	5,100	22	1,12,200	
1.4	4 labours/ party (Rs 431/day/labour) (As per rates of Central Labour Commissioner) for sampling work	day	5.7	431	88	37,928	Amount will be reimburse as per the notified rates by the Central Labour Commissioner (Rs. 431/- per day) or respective State Govt. whichever is higher
Sub-Total 1						**1,50,128**	
3.0	**Laboratory Studies**						
3.1	Primary + Check Sample - 4 radicals viz. CaO, MgO, Al2O3SiO_2, Fe_2O_3, SO_3, P_2O_5,K_2O&LOI by XRF.	per sample	4.1.15a	4,200	173	7,26,600	47 primary, 6 check

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Total Estimated Cost without GST	**8,76,728**	
Provision for GST (18%)	**1,57,811**	GST will be reimburse as per actual and as per notified prescribed rate
Total Estimated Cost with GST	**10,34,539**	
Say Rs. in Lakhs	**10.35**	

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. 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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