Ministry of Mines
National Mineral Exploration Trust
Minutes of the 60th Technical-cum-Cost Committee (TCC) meeting held on 27th&28thDecember, 2023 through video conferencing

The 60th 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 27th & 28th December, 2023.

Members of TCC-NMET and representatives from MECL, OMC, Odisha, DMG Bihar, KIOCL, CMPDI, DMG Karnataka, DGM Chhattisgarh, DGM, Assam, DMG, Odisha,DGM Maharashtra 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. Besides, he commented on several projects submitted for seeking timeline extension to complete the projects. On this, the chairman was critical and instructed the NEAs and NPEAs to complete the target within stipulated time period and submit GRs for reviews. Further, the chairman advised all the exploration agencies to assess their in-house capabilities while mounting proposals and work components so as to avoid time and cost overrun.

With the permission from the chair, Shri K. Koteswara Rao, Dy.DG (Retd.), GSI and Member, TCC informed the committee that most of the projects from the agencies are proposed in the areas which are either indicated by GSI in the form of Geological Memorandums (GMs) or around the known old workings operated/explored intensively at various stages. He enlightened the NEAs and NPEAs regarding the availability of OGP areas, NGCM and NGPM, NAGPM data of GSI and asked to consult them while mounting new proposals in the Greenfield areas.

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

Agenda 60.1: Technical evaluation of new project proposals:

Agenda 60.1.1 Reconnaissance Survey (G-4 stage) for Gold in Bargur Block, Bargur Belt of Kolar Schist Belt, District- Krisnagiri, Tamil Nadu.
[Implementing Agency: MECL]

a. The Bargur block, situated in Toposheet No. 56 L/6, is a component of the Bargur belt, located at the southern extremity of the Kolar Schist belt. In the Bargur region, two

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ancient workings for gold, namely Sakalagunta and Bangaragunta, have been identified, with reports of gold occurrences by previous workers.

b. In FS 1988-89, GSI had conducted Large Scale Mapping (LSM) followed by Detailed Mapping (DM) in selective areas including trenching and thorough sampling. Chemical analysis of surface samples revealed gold concentrations ranging from 0.1 to 0.9 g/t. Additionally, a quartz vein sample from the Bangaragunta old working dump yielded 12 g/t of gold.
c. Trenching activities carried out by GSI had delineated an auriferous mineralized zone (75m x 0.65m to 4.45m) trending in the N15°-20°W to S15°-20°E direction, displaying gold values ranging from 0.2 to 0.96 g/t. The mineralized rock consists of amphibolite with veins and veinlets of quartz and pegmatite veins.
d. Consequently, GSI established that amphibolite enclosures/bands within migmatites exhibit gold mineralization in the extension of Kolar Schist Belt, recommending further exploration in the region.
e. Given these findings, MECL has proposed a G4 stage exploration program to trace further continuity of mineralisation in the extension areas and locate such possible ore bodies over a larger area to figure out the exact potentiality of the prospect.
f. Committee found that there are amphibolite bands further east of the proposed block and suggested MECL to consult GSI's NGCM and NGPM reports of the area and modify the block incorporating the eastern amphibolite bands. The STM work of Gopalkrishna of GSI in the area should be consulted while incorporating amphibolite bands.
g. Accordingly, MECL modified the block comprising the amphibolite bands.
h. The committee suggested MECL to carryout geophysics and drilling only after the review of the project.
i. The project will be reviewed after 06 months

Recommendation of TCC:

The committee recommends the proposal for approval of EC for "Reconnaissance Survey (G-4 stage) for Gold in Bargur Block, Kolar Schist Belt, District- Krisnagiri, Tamil Nadu" over an area of 157.50 sq.km with an estimated cost of Rs. 250.28 lakh (including GST) within time schedule of 12 months and submission of report as per annexure-2A & 2B .

Agenda 60.1.2 Reconnaissance Survey (G-4 stage) for QPC Hosted Gold mineralization and Copper in Kalasapura Block (119.00 sq. km), District- Chikkamagaluru, Karnataka.

[Implementing Agency: MECL]

a) The proposed Kalasapura (G4) block area belongs to the Bababudan greenstone belt of the Western Dharwar craton. Kalasapura area has reported gold mineralization hosted by quartz pebble conglomerates (QPC) and disseminated copper mineralization in grey massive quartzites

b) The QPC in Kalasapura, an oligomictic type with quartz pebbles, shares lithological and stratigraphic similarities with WitwatersRand conglomerates in South Africa, Jacobina in Brazil, and Terwakan in Ghana—known for economic gold mineralization.
c) Exploratory drilling by GSI in Kalasapura exposed copper mineralization in grey massive quartzites/quartz reef over a continuous strike length of 240m and 420m in the western and eastern blocks establishing a resource of 0.16 m.t. with an average grade of 0.25% Cu.
d) MECL geologists visited the area and verified the presence of QPC horizon with alteration patterns and sulphide-bearing grey quartzites in Kalasapura. Collected bedrock samples yielded copper values of 0.338% and 0.444% Cu.
e) In light of the geological similarities with known deposits and considering the information presented above MECL has proposed the item to ascertain the potential for gold and copper in the larger area.
f) The thickness of the Quaternary Post-Cambrian (QPC) in this region is relatively low. Shri. K.L. Mundra, TCC member and Head-RMRE, AMD, Hyderabad informed MECL that AMD has worked on this QPC and reported U & Th in certain localities.
g) The committee recommended that MECL undertake the task in two stages. The initial phase will involve mapping, trenching, and sampling. If the area appears to be promising, drilling & borehole geophysical logging will be done in the second phase after review. Bedrock channel samples will have to be collected mainly from the QPC.
h) The committee additionally recommended analyzing 10% of the core samples for Uranium (U) and Thorium (Th). MECL may also consider visiting the Atomic Minerals Directorate (AMD) core library if it is accessible.
i) The item will be reviewed after 6 months.

Recommendation of TCC:

The committee recommends the proposal for approval of EC for "Reconnaissance Survey (G-4 stage) for QPC Hosted Gold mineralization and Copper in Kalasapura Block (129.00 sq. km), District- Chikkamagaluru, Karnataka" with an estimated cost of Rs. 152.41 lakh (including GST) within time schedule of 12 months and submission of report as per annexure-3A & 3B.

Agenda 60.1.3 Preliminary Exploration (G-3 stage) for Iron and Manganese ore in Silpunji Block, Jamda-Koira Valley Iron Ore Belt, District- West Singhbhum, Jharkhand. [Implementing Agency: MECL]

a) The Silpunji block is situated in the Survey of India Toposheet no. 73F/8, constituting a part of the West Singhbhum District in Jharkhand.
b) GSI conducted G-4 stage exploration in the Silpunji-Kantoria area during F.S.P 2010-2012 and submitted to DGM, Jharkhand under GM recommending for detailed mapping and drilling to ascertain the deposit and its lateral extent.
c) The DMG, Jharkhand approached MECL to undertake further exploration for iron and manganese in two blocks viz. Bokna and Silpunji in West Singhbhum District, Jharkhand. Relevant information for the preparation of exploration proposals was provided in a letter dated 21.06.2018 (Bhu-Ni-Anve-70/2017/824).

d) Consequently, MECL proposed and modified the proposal (as suggested by the 16th and 18th TCC meetings) for G-3 level exploration for iron and manganese in the Silpunji Block. The project gained approval in the 19th TCC meeting, stipulating it as Phase-I of the proposed G3 level exploration, involving geophysical survey, pitting/trenching and geological mapping on 1:4000 scale. An interim report was suggested to submit after completing Phase-I, which would enable for planning boreholes.

e) The 34th TCC reviewed the interim report, acknowledging encouraging analytical results. The committee recommended for detailed borehole plan suitable for G3 level exploration. In response, MECL prepared Phase-II of the G3 level exploration, comprising exploratory drilling and proposed in the 51st TCC meeting. However, the block was excluded from consideration for G3 level exploration as it had been handed over to the Government of Jharkhand for auction.

f) In a meeting on December 15, 2023, during the Auction Review, the Secretary of Mines proposed upgrading the Silpunji block to G3 level, with a focus on drilling, due to its unsuccessful auction because of inadequate resource availability.

g) Subsequently, on 16.12.2023, MECL and the Department of Mines and Geology (DMG), Jharkhand, convened a meeting. The State Government recommended MECL to formulate a G3 level exploration proposal, encompassing the promising region within the Silpunji block. This proposal involves 10 exploratory boreholes, aligning with the state's goal of auctioning the block within a year.

h) In light of the above facts, MECL has formulated a G3 level exploratory proposal with 10 drill holes.

i) The committee recommended a reduction in the northern area and advised a suitable modification to the block configuration taking into consideration the drilling points. Accordingly MECL reduced the area from 4.9sqkm to 3.00sqkm.

j) Drilling should be carried out with 800 m borehole spacing and the project will be reviewed after 5 months.

Recommendation of TCC:

The committee recommends the proposal for approval of EC for "Preliminary Exploration (G-3 stage)for Iron and Manganese Ore in Silpunji block (phase-II), Jamda-Koira Valley Ironore Belt, District-West Singbhum, Jharkhand" with an estimated cost of Rs. 162.43 lakh (including GST) within time schedule of 10 months and submission of report as per annexure-4A & 4B.

Agenda 60.1.4.Request for 25% Exploration Incentive against Larambha-Kanaital &Pudapadar Bharatbahal Block (G-4 level) for Manganese ore and Graphite, Balangir, Odisha.

[Implementing Agency: MECL]

a) The Larambha-Kanaital & Pudapadar-Bharatbahal Block (G-4 level) for Manganese ore and Graphite in Balangir, Odisha, were approved and awarded to MECL upon the

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recommendation of the 38th TCC and 23rd EC. The approved estimated cost for this exploration endeavor was Rs. 193.51 lakhs. MECL successfully executed the exploration block submitted the final Geological Report

b) During the reconnaissance survey, MECL identified three potential zones of Manganese and Graphite near Larambha, Kanaital, and Bharatbahal areas.

c) Upon the successful completion of G-4 level exploration, MECL submitted two 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 received approval from the Executive Committee in its 32nd meeting on 6th December 2023, based on TCC's recommendation.

d) In accordance with the Office Memorandum dated 3rd September 2023, the Laramba-Kanaital & Pudapadar-Bharatbahal Block, Balangir, Odisha, has been upgraded from G-4 to G-3. MECL estimates a total of 1.32 million tonnes of Manganese ore resource with an average grade of 18.06% Mn at a 10% Mn cut-off and 0.50 million tonnes of graphite resources with an average grade of 4.09% FC at a 2% FC cut-off, classified under the 334 category.

e) Notably, 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.

f) Hence, MECL has requested the 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.

g) According to the NMET OM dated 03.09.2023, an exploration incentive (EI) of 25% of the approved cost of the project for G4 items in Green field areas for gold, base metal, other precious minerals, strategic/ critical minerals and fertilizer mineral will be paid if the block is successfully auctioned or upgraded from G4 to G3 stage subject to approval of Executive Committee, NMET. The Exploration Incentive will be paid on the cost of G4 work completed by the implementing agencies. Such incentive will not be applicable for other category of mineral commodities.

Recommendation of TCC:

The committee opined that even though the said item being upgraded from G4 to G3 stage and reported graphite lenses along with manganese, the area of investigation cannot be considered under green field category as the EGMB has been the part of OGP (brownfield) and several investigations have proved existence of graphite in the province. However, the committee suggests the proposal be submitted to EC with internal discussion at NMET to bring out for more clarity.

Agenda 60.1.5. Preliminary Exploration (G -3 stage) for Iron Ore in Handibhanga Block (Area: 19.50 sq.km), Districts - Keonjhar and Sundargarh, Odisha.

[Implementing Agency: OMCL]

a) The Handibhanga Iron Ore Block constitutes the eastern segment of the Bonai–Keonjhar belt. The identified ore types in this block include Hard Massive Ore (HMO),

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Hard Laminated Ore (HLO), Soft Laminated Ore (SLO), and Lateritic Iron Ore, with a predominant coverage of laterite in the majority of the area.

b) GSI has carried out mapping (1:63,360 scale) in the Malangtoli blocks, revealing various iron ore deposits. Drilling activities were also undertaken in the adjacent blocks of the Handibhanga block.

c) The preliminary exploration (G3) of iron ore in sub-block H of Malangtoli (17.56 sq. km), which is a part of the Handibhanga Block, was executed by the MECL in 2021 and a resource of approximately 59.56 million tonnes has also been estimated. However, MECL couldn't complete drilling in the entire block due to a lack of Forest Clearance.

d) The Department of Steel & Mines, Government of Odisha, has allocated a sub-block of the Malangtoli iron ore block, namely, the Handibhanga iron ore block in Sundargarh and Keonjhar districts, covering an estimated area of 19.500 sq. km for a two-year exploration up to G2 level of UNFC by the erstwhile Odisha Mineral Exploration Corporation Ltd. (OMECL), now known as Odisha Mining Corporation Ltd. (OMC), as per No. 3459/S&M, Bhubaneswar dated 06.04.2023.

e) In line with this, OMC has gathered 45 surface samples from the Handibhanga block, with chemical analysis results indicating iron ore samples with grades reaching up to 68%.

f) Considering the details mentioned above, OMCL proposed the G3 stage exploration to assess the tonnage and grade of iron ore resources in the block, ultimately making the block actionable.

Recommendation of TCC:

The committee observed that MECL has already completed exploration in significant portion of the proposed area and resources have also been estimated. The data available has been adequate enough to auction the block with a scope for further exploration by the prospective lessee himself. Further, it is also noticed that DMG, Odisha has notified the block in the name of OMCL and any exploration activities in the block will have to be treated under commercial project for which NMET doesn't fund. Therefore, the committee recommended OMCL to withdraw the proposal.

Agenda 60.1.6 Pilot Project for estimation of Rare Earth Elements (REE), Rare Metals (RM) and associated strategic minerals in Coal Fly Ash generated from Thermal Power Plant (NTPC) of Kahalgaon, Bhagalpur district, Bihar.

[Implementing Agency: DMG, Bihar]

a) Coal Fly Ash (CFA), typically treated as waste when not utilized, is being recognized as a potential source for various elements, including Rare Earth Elements (REEs).

b) Given the rising demand for energy, the production of CFA is anticipated to increase, underscoring the importance of researching and exploring potential applications for this material.

c) Notably, all types of fly ashes exhibit a generally similar distribution of Rare Earth Elements, with a prevalence of light REEs.

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d) Despite the numerous potential applications for fly ash, on average, only 25% of it is currently utilized. The remaining 75% is regarded as a pollutant and is typically disposed of as waste, as highlighted by studies conducted by Blissett and Rowson in 2012 and Sommerville et al. in 2013.
e) The process of extracting Rare Earth Elements (REEs) from fly ash is deemed significantly less intensive compared to the extraction involved in mining raw materials.
f) Furthermore, Coal Fly Ash (CFAs) encompasses a comprehensive spectrum of REEs, whereas many mines typically have a limited range of these elements. These factors have led numerous companies to explore extraction methods from coal fly ash, examining the potential for coal fly ash processing to emerge as a cost-effective and environmentally friendly alternative to conventional mining,
g) While carrying out Geochemical Mapping in Toposheet no. 72O/8, a fly ash sample from the Ash Utilisation Division of NTPC, Kahalgaon, was collected and analyzed by GSI. The total Rare Earth Element (tREE) value in the sample was found to be 657.91 ppm, with the Light Rare Earth Element (LREE) value at 544.75 ppm and the Heavy Rare Earth Element (HREE) value at 36.16 ppm.
h) Notably, the analyzed samples exhibit a tREE value more than 4.36 times higher than the values found in the Upper Continental Crust. This suggests a significant potential for economic extraction and utilization of Rare Earth Elements from the analyzed fly ash samples.
i) Keeping this factors in consideration, DMG, Bihar conceived the idea to execute a pilot project to decipher the potentiality of REE concentration of CFA from the Ash Pond of NTPC, Kahalgaon which covers approx. 4 sq km area.
j) DMG, Bihar informed that auger drilling and sampling will be outsourced
k) The committee suggested DMG, Bihar to overlay the grid (as planned) on the area of interest to calculate the number of boreholes

Recommendation of TCC:

The committee recommended that the Department of Mines and Geology, Bihar, present the item in the format outlined in the SOP to ensure accurate cost estimation. DMG, Bihar, requested permission to present the NQT details and cost sheet in the next TCC meeting. The committee agreed to this request.

Agenda 60.1.7.Reconnaissance Survey (G4) for Gold and basemetal in Yediyur area, Yediyur - Karighatta schist belt, Mandya district, Karnataka.
[Implementing Agency: KIOCL.]

a) The proposal has been formulated in response to the request from the Department of Mines and Geology (DMG), Government of Karnataka, conveyed through the SGPB meeting, to initiate G4 exploration activities in the Yediyur block by KIOCL.
b) The block is located within the Yediyur – Karighatta schist belt, representing the southern extension of the Chitradurga schist belt. This geological formation is reported to contain gold and copper mineralization linked with banded hematite quartzite and schistose rocks, including amphibolites and basic rocks.

c) In connection with the formulation of the project, KIOCL conducted pre-field studies in the area, revealing brecciated BIF bands, shearing, and emplacement of smoky quartz veins along with alteration zone.
d) Field officers noticed old workings, shearing (within mica schist), brecciation, and alteration minerals, suggesting hydrothermal activity. Surface indicators of copper mineralization such as malachite, azurite, covellite, and chalcopyrite have been noticed within mica schist. Apart from this, suspected gold mineralization in smoky quartz veins was also observed.
e) During the pre-field studies, 10 bedrock samples were collected, with 4 of them yielding gold values of 0.29 g/t, 0.6 g/t, 0.2 g/t, and 0.6 g/t.
f) These findings collectively serve as the base for proposing a reconnaissance survey to map, sample, identify, and delineate potential zones for gold and copper mineralization in the area.
g) The committee noted that, KIOCL has identified two zones (Zone-I and Zone-II) in the area. Therefore, there is no requirement for further stream sediment sampling in the proposed area
h) It is suggested to consult NGCM and NGPM, if available, data of GSI for better clarity.
i) Maximum bedrock samples should be collected as channel samples and restricted within the potential zones delineated instead of random grab sampling.
j) Drilling aspects, i.e. number of boreholes, vertical depth, angle, azimuth and spacing, will be decided after review of the project with chemical analysis.
k) Review of the item will be held in 5 months.

Recommendation of TCC:

The committee recommends the proposal for approval of EC for "Reconnaissance Survey (G4) for Gold in Yediyur area, Yediyur - Karighatta schist belt, Mandya district, Karnataka" with an estimated cost of Rs. 129.17 lakh (including GST) within time schedule of 10 months and submission of report as per annexure-5A & 5B.

Agenda 60.2: Proposal on Financial Assistance for procurement of Machinery/Equipment

Agenda 60.2.1Proposal for procurement of equipment through NMET fund for capacity augmentation in MECL

[Implementing Agency:MECL]

a) Hyperspectral imaging core scanning, an emerging technology which strengthens traditional exploration and ore characterization methods. It integrates into standard core-logging procedures, providing on-site geologists with fast, efficient mineralogical information extraction. The LIBS technology in hyperspectral core scanning combines a geochemical laser ablation sensor with automation, offering real-time analysis with detection limits below 1 ppm for lithium, beryllium, and sodium. This laser-based approach enables comprehensive microanalysis of drill cores, competing with LA-ICP-MS and elemental analyzers. It covers a broad range of elements, including lighter ones.

b) Utilizing hyperspectral core scanning with XRF technology characterizes alteration mineralogy, aiding in targeting mineralized zones. It allows rapid scanning of large drill core volumes, generating spectral signatures for mineralogical mapping. The digitization of cores with mineral mapping aligns with market requirements for expertise enhancement. To ensure optimal performance, it is proposed to include the hyperspectral core scanner with XRF under CAMC for five years post a one-year warranty, outsourcing to the Original Equipment Manufacturer (OEM). This safeguards smooth scanning execution and maximizes production availability.

c) Digitization of core with mineral mapping is the current market requirement and the same is intended for the purpose of expertise diversification and enhancement of MECL

d) Procuring of this equipment will also help us to grab the opportunity of digitalization of approx. 5.0 lakhs meter skeletal core of GSI lying at different core repository and building of technical database with elemental analysis mechanism.

e) The committee perused the proposal and suggested MECL to prepare a detailed proposal, with Proper justification for the procurement of hyperspectral drill core scanner, Details of Technical Capabilities of MECL for running the instruments, Trained manpower strength with MECL to operate the instrument, Present requirement according to the quantum of drill cores generated, Sanctioned proposals with the details of the analytical component in the NQT etc. and submit to NMET for detailed deliberation exclusively with MECL.

f) Accordingly, the MECL submitted the proposal enumerating the points raised above and the same has been reviewed in the 60th TCC (Extended) meeting held on 05.1.2024 through VC.

g) The MECL presented the proposal of procurement of three items under three agenda namely, Agenda-1: procurement of one Hyperspectral Core Scanner with LIBS and Hyperspectral core Scanner with XRF; Agenda-2: Procurement 02 nos. of Gamma Ray Spectrometer; and Agnda-3: Procurement of 01 no. of Wavelength Dispersive X-ray Fluorescence (WDXRF). Presentation was made on the technical specifications of the instruments, objectives, requirement in the organization, technical persons available in MECL, field usage etc.

h) After the presentation by MECL, deliberations were made on the following aspects on the items mentioned under Agenda-1.

   i. Available provision in NMET under which these kinds of costly equipment are procured.
   ii. Can the XRF results obtained from the instrument be considered as the replacement for the conventional lab analysis, if yes, used for resource estimation? What is the accuracy or precision limit?
   iii. Are there agencies in India currently using these instruments?
   iv. Whether the instruments used in the drill sites or stationed at central labs. If stationed at one place, how the drill cores will be carried to the lab for study without disturbing their positions and time lapse? If it is carried to drill sites, in how many projects the machine will be rotated and how delicate the machines are while transporting them through rough roads?

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v. Availability of trained manpower with MECL.
vi. Availability of vendor training while procurement and scope for involving personnel from organizations other than MECL for the training programme.
vii. As these are very costly instruments, i.e.costing more than 30 crores, whether MECL approached other agencies to procure these instruments under Consortium Model which would not only share the costs of the equipment but would also enable to use the instruments to the optimum level by that the redundancy can be avoided.
viii. Availability of amount of drill cores with MECL to utilize the instruments to optimum level. Is there are chance/provision for other organizations to use the facility, if yes, it would be free of costs or payment basis?
ix. The three models presented vary in price from 11.2 crore to 30 crore. Reason for the wide variation of costs and difference in the technical specifications.
x. Road map available with MECL for post purchase maintenance.
xi. For all the deliberations, the Director Technical of MECL along with his team, replied appropriately and assured to enumerate them in the final proposal to be discussed in the next level.
xii. Discussions were also held for the items mentioned under Agenda-2 and Agenda-3 and opined that they can be recommended for purchase as they are very commonly available, less costly and required in modern day exploration activities.

Recommendation of TCC:

After due discussions on various aspects mentioned above, the TCC unanimously opined that the procurement of one Hyperspectral Core Scanner with LIBS and one Hyperspectral core Scanner with XRF would be first of its kind in the country and going to be purely the infusion of new technology in the field of mineral exploration. Introduction of these core loggers are certainly not the replacement for the current practice and neither can replace the conventional chemical analysis but would significantly reduce the time taken for manual logging and load of samples to be analyzed in the chemical labs. Further, the details recorded through the instruments are easy to document, handle, interpret, reproduce, retrieve and store digitally in the NGDR.

The committee suggested MECL to diligently prepare the document addressing all the points/aspects discussed above along with the road map to proliferate the usage of these instruments by other agencies so as to give a fillip to exploration activities in the country. The detailed document for all the three instruments mentioned in Agenda-1, 2 and 3 should be submitted to NMET for taking it up in the forthcoming EC meeting. The cost for the procurement of these instruments, i.e. one Hyperspectral Core Scanner with LIBS, one Hyperspectral core Scanner with XRF; 02 nos. of Gamma Ray Spectrometer and 01 no. of Wavelength Dispersive X-ray Fluorescence (WDXRF) would be 32 crores approx.

Agenda 60.2.2.Financial assistance from NMET funds to procure machinery/laboratory equipment/instruments etc. aimed at enhancing the exploration activities

[Implementing Agency: DMG, Bihar]

a. After the division of Bihar State into Bihar and Jharkhand, the Department of Mines & Geology under the Government of Bihar has conducted limited geological investigations. Presently, the predominant revenue-generating minerals in the state are sand and rocks, serving purposes such as construction and road development.

b. Ministry of Mines, Govt. of India has handed over nine Geological Reports encompassing 10 Mineral Blocks to Bihar state with for auctioning. DMG, Bihar will give priority to auction these blocks and will also undertake several Geochemical Mapping and Mineral Exploration initiatives in the upcoming years.

c. To enhance the infrastructural capabilities of the Department of Mines & Geology and enhance the quality of fieldwork, the DGM, Bihar proposed the acquisition of 30 nos. of handheld GPS devices and 1 total station primarily for mapping purposes.

d. The committee agreed to supply an equivalent number of GPS devices as the count of geologists designated by DMG Bihar as NMET has already approved procurement of 05 nos. of GPS to DMG, Bihar.

e. The committee further communicated that the approval for Total Station/DGPS will be granted, provided there are qualified surveyors with DMG, Bihar either through recruitment or availed through contractual basis to operate the instrument.

Recommendation of TCC:

The committee recommends the proposal for approval of EC for financial assistance from NMET funds to procure 20 numbers of handheld GPS with an estimated cost of Rs. 06 lakh within a timeline of 6 months aimed at facilitating exploration activities in the state.

Agenda 60.3. Review of Ongoing Projects/Completed Project & Timeline Extension

Agenda 60.3: Review of Ongoing Project / Completed Project & Timeline Extension

Agenda 60.3.1 Preliminary Exploration for Coal in DhaskaNaugai block, East of Bisrampur Coalfield, District: Surguja, Chhattisgarh.

[Implementing Agency: CMPDI]

a) The project was approved in supplementary meeting of 23rd Executive Committee held on 16th Match, 2022 with estimated cost of ₹293.58 Lakh and timeline of 12 months. Further, the project got time extension up to 24th November, 2023.

b) CMPDI conveyed that all the vetting comments suggested by the peer reviewer have been incorporated in the Geological Report.

c) CMPDI informed that as per the findings of GSI in nearby Ulia-Gamardih block the G3 stage of exploration has been proposed in the present block. The general strike of the block is almost E-W and dipping towards south.

d) CMPDI further conveyed that the seams are deteriorating towards eastern and south eastern part of UliaGamhardih area and the major north to north-western part of the block remains in the up-thrown part of UliaGamhardih area and also in the up-dip side of coal occurrences, mainly due to fault F1-F1 and F2-F2, resulting in non-occurrences of any potential coal seams/ carbonaceous horizons vis-à-vis occurrences of Lower Barakar and Talchir Formation at very shallower depth in the boreholes drilled in this part of block. Further seam I is not developed in the block and the thickness of seam II is less than 0.90m.

e) The committee has been informed that the block is devoid of any economically potential coal seam and hence not viable for coal mining.

f) Further CMPDI requested for timeline extension upto 31.12.2023 for submission of Geological Report.

Recommendation of TCC:

The committee recommends the time extension upto 31st December, 2023 and agreed for submission of final geological report.

Agenda 60.3.2. Preliminary Exploration for Coal in UliaGamhardih block, East of Bisrampur Coalfield, District:Surguja, Chhattisgarh.
[Implementing Agency: CMPDI]

a) The project was approved in 24th Executive Committee held on 18th May, 2022 with estimated cost of ₹ 231.23 Lakh and timeline of 12 months. Further, the project got time extension up to 30th November, 2023.

b) CMPDI conveyed that all the vetting comments suggested by the peer reviewer have been incorporated in the Geological Report.

c) CMPDI informed the details of Barakar Coal Seams encountered in the block are as follows:

Sequence of Seam / Parting	Depth Range Range of Seam (m)		Thickness (m)		No. of intersections
	Minimum	Maximum	Minimum	Maximum	
II	9.55	79.34	10.95	29.50	3

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II TOP	11.28	98.23	1.47	4.37	4
II MIDDLE	34.90	102.84	2.05	2.92	2
II BOTTOM	16.10	115.10	0.64	20.81	4
I	33.60	173.00	0.60	5.30	8

d) CMPDI further conveyed thatUlia-Gamhardih block covers an area of **39.14 sq**. **km**. and the total Geological Gross Indicated resource estimated in the block is **687.11 million tonnes**. The details are tabulated below:

Seam Name/Thickness Range	**Thickness Range**				
	0.90m to 1.50m	**1.50m to 2.00m**	**2.00m to 5.00m**	**5.00m and above**	**Grand Total**
II	-	-	-	209.87	209.87
IIT	9.19	10.84	26.95	-	46.97
IIM	-	-	21.47	-	21.47
IIB	0.91	1.26	19.79	272.68	294.65
I	5.76	6.49	70.30	31.61	114.16
Grand Total	15.85	18.59	138.51	514.16	687.11

Seam Name/ Grade	**Grade Range**															
	G3	**G4**	**G5**	**G6**	**G7**	**G8**	**G9**	**G10**	**G11**	**G12**	**G13**	**G14**	**G15**	**G16**	**G17**	**Grand Total**
II	-	-	-	-	108.49	-	33.91	-	-	67.46	-	-	-	-	-	209.87
IIT	4.44	6.65	4.31	3.01	3.80	8.36	6.68	2.51	2.11	2.37	2.65	0.07	-	-	-	46.97
IIM	12.15	-	-	-	-	-	-	-	-	9.32	-	-	-	-	-	21.47
IIB	-	-	-	-	-	1.23	30.79	178.63	70.81	13.18	-	-	-	-	-	294.65
I	-	0.32	4.18	15.01	28.02	33.67	12.59	7.38	5.50	3.64	1.69	1.00	0.61	0.37	0.18	114.16
Grand Total	**16.59**	**6.97**	**8.49**	**18.02**	**140.31**	**43.27**	**83.96**	**188.52**	**78.42**	**95.98**	**4.34**	**1.08**	**0.61**	**0.37**	**0.18**	**687.11**

e) CMPDI requested for an additional approval for Land/Crop compensation in the UliaGamhardih block involving Rs.60000/- for 3 boreholes (Rs 20,000 x 3 Borehole).

f) Further CMPDI requested for timeline extension upto 31.12.2023 for submission of Geological Report.

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g) The committee opined that the land compensation was not included in sanction order as the drilling was outsourced. Therefore committee was not agreed for land crop compensation.

Recommendation of TCC:

After discussion, the committee recommends the timeline extension upto 31st December, 2023 and agreed for submission of final geological report. However, approval for Rs. 60, 000/- towards land-crop compensation has been kept on hold as drilling in the project has been executed through outsourced agency for which no provision available with NMET.

Agenda 60.3.3 Preliminary exploration (G3) for Limestone in Itga block, District: Kalaburagi, Karnataka. (Additional Drilling)
[Implementing Agency: DMG Karnataka]

a) DMG Karnataka briefed the progress of the project and informed the house, since limestone bedded deposits were not encountered, BH-KDMGIL-02 was stopped at a depth of 19 meters. Subsequently, an extra borehole was drilled, reaching a depth of 45 meters, leading to additional 19m of drilling.

b) The committee was also informed that among the 430 primary samples collected, analytical results for 218 primary samples and 11 internal check samples have been received. Additionally, 22 external samples have been submitted to GSI, Bengaluru, and we are currently awaiting the results.

c) The committee reviewed the work and found DMG, Karnataka was not adequately prepared with all the necessary documentation of their work. Consequently, DMG, Karnataka was advised to compile and provide the required representations of their activities.

Recommendation of TCC:

The committee asked DMG, Karnataka to submit the analysis along with plates and cross sections in next TCC meeting for taking decision in additional meterage of drilling.

Agenda 60.3.4 Reconnaissance Survey Iron Ore in Rowghat area, District- Kanker, Chhattisgarh. [Implementing Agency: DGM Chhattisgarh]

a) DGM Chhattisgarh presented the quantum of work in the project. The details are as follows:

S.No.	Item of work	Target	Achieveme	Remark
1.	Reconnaissance Geological survey (scale 1:50,000)	150sq km	125.135 sq	
2.	Groove Sampling/Grab Chip Sampling	300 Nos.	305 Nos.	
3.	Petrographic and Minerographic	25 Nos.	26 Nos.	

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	studies			
Laboratory Studies				
	Chemical Analysis			
1.	Primary+ Check Samples			
i	For Primary Samples 6 radicals (Fe%,Mn%,SiO2%,A12O3%,P%,S%)	300 Nos.	305 Nos.	
ii	For Check Samples 6 radicals (Fe%,Mn%,SiO2%,A12O3%,P%,S%)	30 Nos.	30 Nos.	
iii	Analysis of Gold byFire Assay Method	25 Nos.	25 Nos.	Results are awaited
2.	Thin section Preparation	18 Nos.	18 Nos.	
3.	Polished Section Prepration	10 Nos.	08 Nos.	Results are awaited

b) DGM Chhattisgarh informed that on the basis of available data approximately 71.00 Million Tone iron ore is estimated in the area considering approximately 2.84 km2 areas and vertical thickness of 05 meter. Out of 305 nos. samples 186 nos. samples contain Fe% above 45. The average Fe% is 65.53. Out of these186 samples, 141 nos. samples contains higher grade Iron ore (above Fe% 65) with average Fe% 67.24, and 21 nos. sample contain medium grade iron ore (62 to 65 Fe%) with average Fe% 63.44 and 24 samples contain low grade iron ore (45 to 62 Fe%) with average Fe% 57.35. The overall average content of Fe% in 186 samples is 65.53

c) The committee was informed that the geological report of the block has been prepared and submitted to the peer reviewer Shri C.R. Dash, Director (Retd.), GSI. Only analysis of Gold by Fire assay method and Ore Microscopy results could not be incorporated in the report due to pending analysis at GSI, Nagpur for want of funds/Payments.

d) In view of the above, committee suggested to exclude the gold analysis from their plan. Accordingly, the cost quoted in the cost-sheet towards Fire Assay analysis of 20 nos. of samples for gold approved at the time of approval of the project has also to be excluded. Additionally, the DMG, Chhattisgarh can also get the microscopic study done through Geological Survey of India.

e) DGM, Chhattisgarh presented the progress of the work and intimated the house that 25 sqkm area of the proposed block could not be drilled due to local issues. Therefore, DMG requested the committee for 2 months of extension of timeline.

Recommendation of TCC:

The committee suggested to drop the 25 no. of analysis of Gold by Fire assay method and agreed for time extension upto 29th February, 2024 for submission of Geological Report.

Agenda 60.3.5 Reconnaissance survey (G4) for Iron ore in Lengupara block, District: Goalpara, Assam. [Implementing Agency: DGM Assam]

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a) DGM Assam presented the progress of the project and informed the details of the project as follows:

S.No	Nature of work	Target assigned		Work Progress during the current Month October,2023	Cumulative Progress	
1	Geological Mapping (LSM/DM) (sq km)	56 Sq. Km.		Nil	56 Sq Km.	
2	Geophysical Surveys (Gravity,Magnetic,IP, SP &Resistivity) (L Km)/ (sq km)	100 Magnetic stations		Completed	100 magnetic stations done	
3	Technological (a) Surface exploration-pitting/trenching (cu m)	100 Cu. Mtr		Not Yet Started	Not Yet Started	
	(b) Sub Surface Exploration- Drilling (m)	350 meters		Not yet assigned	Not Yet Started	
4	Petrographic/ Mineralo graphic studies a. Petrographic	15 nos.			15 nos. (result awaited)	
	b. Ore Micro-Scopy	5 nos.		Samples submitted to Gauhati University Geological sciences deptt. For analysis	Result awaited (Expected complete analysis report by December 2023)	
5	Chemical analysis (Nos.) (As per approved NQT) 1. (Fe2O3,CaO,MgO, MnO,SiO2,A12O3)etc.	Surface sampling-50 nos.	Total nos.: 275 nos:.		50 samples analysed	105 nos.
		Soil sampling-50 nos.			40 samples analysed	
		Check samples-5 nos.			5 nos. analysed	
		Trench & Pit sampling-100 nos.			Not Yet Started	
		BH core sampling Primary & Check samples-60 nos.			Not yet assigned	
		Composite samples-10 nos.			10 Samples analysed	

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	2. Major Oxides	5 Nos.		5 Nos.
	3. XRD	5 Nos.		Result awaited (Expected complete analysis report by December 2023

b) DGM Assam informed the committee that Chemical analysis shows the average iron (Fe) content in BIFs of the study area is 36.06 %. Pitting and trenching are yet to be done. Further Surface geological investigation unveils a continuous exposure of Banded Iron Formation (BIF) in NE-SW direction. Major magnetic anomaly, contours over the hills of Lengupara village are matching with the mapped BIF. But the Anomaly-I depicts a near circular shape as per geophysical survey report, rather than expected linear high over the BIF outcrops. Similarly, magnetic anomaly III are not depicted in the geological map. Hence inferred BIF zones in the subsurface have to be tested by drilling boreholes in the high anomaly zones. The depth estimates to the causative sources derived over the anomaly zone –I are ranging from 250 to 500 m.

c) The committee opined that Fe concentration does not get enriched in the soil. However, the interpretation of the high magnetic anomaly needs to be drawn. Possibility of Niobium anomaly needs to be checked

d) After the detailed deliberation, the committee suggested to prepare a geological map with sample locations and to consult AMD &GSI for interpretation of data and look for the possible alkaline and ultramafic complexes in the area which are good for niobium and tantalum mineralization.

Recommendation of TCC:

The committee suggested DGM, Assam to prepare geological map with sample locations. The committee also recommended for interpretation of the geophysical anomaly. DGM, Assam may seek guidance from GSI, AMD in this regard. Project should be completed within stipulated timeline.

Agenda 60.3.6 Reconnaissance Survey (G4) for Sillimanite in Samelangsu area (50.00sq.km), District: Karbi- Anglong, Assam.
[Implementing Agency: DGM Assam]

a) DGM Assam presented the progress of the project and informed that as per field observation pocket type occurrence of Sillimanite bearing rocks are seen in many outcrops. Lithologically, the host rocks for occurrence of Sillimanite are Quartz-Sillimanite schist and Gneissic rocks. Two types of granitic rocks are encountered in the area, medium to fine grained Grey Granite and Medium-Coarse grained pink Granite.

b) Further, the committee has been informed that the Al2O3 range is from 7.08 % to 24.48 % in most of the sillimanite bearing rocks, due to which the bands fall in the Grade IV of DGM Assam classification for the sillimanite occurrences in the area.

c) After the detailed deliberation, the committee opined that the data needs to be more systematic and the value of Al2O3 is not encouraging. Therefore, committee suggested for systematic documentation of observation, sanitation of the geological map along with preparation of sample location map showing the chemical data

Recommendation of TCC:

The committee recommended DGM, Assam to properly document the observations and improve the quality of the geological maps through structural data. The committee further suggested to consult GSI for the interpretation of geological and geophysical maps and delineate potential pockets appropriate with the objective of the item. The progress will have to be presented in the next TCC meeting.

Agenda 60.3.7 Reconnaissance Survey (G4) for Limestone in Voteranlagso Area of West Karbi, District: Anglong, Assam.
[Implementing Agency: DGM Assam]

a) DGM Assam presented the progress of the project and informed that 26.96 sq km of area has been surveyed at Voterolangso Limestone block. Limestone is concentrated at the Sukra Nala area in West Karbi Anglong district and in SE part of Kopili River that lies in DimaHasao district. 140 number of samples were submitted for chemical analysis. Sample preparation of 60 Nos of samples is completed and average % of CaO is 39.69%.

b) The committee felt that preparation of the map was not upto the mark and it requires modifications. DGM, Assam may seek guidance from GSI, Assam regarding this.

c) The committee stated its opinion that planning for boreholes should only proceed after ensuring proper documentation and modification of the map.

Recommendation of TCC:

The committee suggested DGM, Assam to consult GSI, SU:Assam, Guwahati for sanitizing the geological map fitting with scale of mapping. The progress will have to be presented in the next TCC meeting to plan for drilling.

Agenda 60.3.8 Preliminary exploration (G3) for amalgamated Limestone blocks in Jevargi area, Kalaburagi district, 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 theproject 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

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b) During the meeting, KIOCL presented the details of the blocks as follows:

Sl	Work components			Unit	KIOCL_23_KA_KLB11		KIOCL_20_KA_KLB07		KIOCL_25_KA_KLB13		KIOCL_21_KA_KLB08	
					TCC approved Qty	Executed Qty	TCC approved Qty	Executed Qty	TCC approved Qty	Executed Qty	TCC approved Qty	Executed Qty
1	Detailed Geological Mapping (1:4,000)			sqkm	**5**	5	**5**	5	**5**	5	**5**	5
2	Survey works	Topographic Survey works (1: 4000 scale with 1m contour interval)		sqkm	**5**	5	**5**	5	**5**	5	**5**	5
3		DGPS Survey works of Base point, Boundary point and Borehole points		nos	**10**	10	**10**	10	**10**	10	**10**	10
4	Drilling works	No of Bore Holes		nos	**5**	5	**5**	5	**5**	5	**5**	5
6		Core Drilling (NQ series @ 45 m per borehole X 5 Bhs per Block)		m	**225**	225	**225**	225	**225**	225	**225**	225
7		Detailed core/ sample logging works		m	**225**	225	**225**	225	**225**	225	**225**	225
8		Drill core preservation (@ 1 borehole per block)		m	**45**	45	**45**	45	**45**	45	**45**	45
9	Lab works Sample analysis 9 radicals (CaO, MgO, Al2O3, SiO2,	Primary Analysis	BRS	nos		9		5		6		6
10			Drill Core	nos	**225**	218	**225**	218	**225**	Under progress (219)	**225**	Under progress (218)
11		Internal Check	Drill Core	nos		23		23		21		23

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	Fe2O3, SO3, P2O5, K2O and LOI) by XRF.	sample analysis (5%)										
12		External Check sample analysis (10%)	Drill Core	nos	45	Under progress	45	Under progress	45	Under progress	45	Under progress
13	Determination of Bulk density			nos	1	1	1	1	1	Carried out lab scale tests	1	Carried out lab scale tests
14	Petro studies	Preparation of Standard Thin section		nos	1	Under progress (IIT Bombay)	1	Under progress (IIT Bombay)	1	Under progress (IIT Bombay)	1	Under progress (IIT Bombay)
15		Complete Petrographic Report		nos	1		1		1		1	
16	Peer review of report			nos	1	-	1	-	1	-	1	-
17	Report preparation			nos	1	Under progress	1	Under progress	1	-	1	-

c) Further KIOCL presented the details of 2 blocks i.e. KIOCL_20_KA_KLB 07 & KIOCL_23_KA_KLB 11. KIOCL conveyed that the exploration work in these blocks have been completed and resources in these two blocks are as follows:

Grade	**KIOCL_23_KA_KLB_11**			**KIOCL_20_KA_KLB_07**			**NET RESOURCES (million tonnes)**		
	Qty	**CaO**	**MgO**	**Qty**	**CaO**	**MgO**	**Qty**	**CaO**	**MgO**
Cement Grade	60.06	44.75	0.22	59.71	46.17	0.08	119.77	45.46	0.15
Cement (Blendable/ Benificiable)	232.35	38.23	0.24	200.67	40.40	0.22	433.02	39.24	0.23

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Limestone with CaO from 34% to 38%	204.70	34.48	0.34	222.52	35.08	0.30	427.23	34.79	0.32
Total/ Weighte Avg	**497.11**	**37.48**	**0.28**	**482.90**	**38.66**	**0.24**	**980.02**	**38.06**	**0.26**

d) The committee suggested to prepare fence diagram to understand proper disposition of the limestone horizon.

Recommendation of TCC:

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

Agenda 60.3.9 Reconnaissance Survey (G-4) for polymetalic mineralization (Au,Cu,Ni,Co) in Dharwar Shimoga Schist Belt of Nagavanda area Dhavangere, Haveri and Shimoga District, Karnataka.
[Implementing Agency: KIOCL]

a) The project was approved in 28th ECmeeting held on 16th March, 2023 with an estimated cost of ₹ 147.63 lakh within a time period of 12 months.
b) KIOCL presented the progress of the work and intimated about mineralization and scanty exposure in the area.
c) KIOCL conveyed that Large Scale Mapping completed covering an area of 63.3 Sq.km on 1:12,500 scale. The mapped area shows Meta ultramafics, Meta basalt, Meta andesite, carbonaceous shale, Phyllite, BIF and quartz veins. Till date, 78 out of 100 bedrock samples have been collected, and analysis is currently underway. For stream sediment samples, 30 have been completed, with analysis still in progress. Additionally, one trench, amounting to 9 cubic meters, has been completed.
d) The committee recommended that, given the current situation, boreholes 1 and 2 should be drilled first. The drilling of other boreholes will be considered later, subject to the identification of mineralization in boreholes 1 and 2.
e) The committee also opined that before commencing the borehole trench sampling may be carried out along the profile of the borehole if exposure is not available.

Recommendation of TCC:

The committee suggested drilling of borehole no. PBH-01 & PBH-02 and submitting the analysis of BRS and Trench in next TCC meeting.

Agenda 60.3.10 Reconnaissance Survey (G4) for Phosphorite, Baryte & REE in Katamadevarahalli Area, Kalburgi Dist, Karnataka.
[Implementing Agency: KIOCL]

a) The project was approved in the 30th EC meeting of NMET on 06.06.2023 with a timeline of 08 months.

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b) The project was reviewed in 59th TCC meeting of NMET held on 28th& 29th November, 2023.

c) In 60th TCC meeting, KIOCL presented the project as “Preliminary exploration (G3) for limestone in in Katamadevarahalli Area, Kalburgi Dist, Karnataka.” and requested to give permission for outsourced drilling component.

d) KIOCL also requested for time extension upto 6 months i.e. 25th August, 2024.

e) Further,the KIOCL apprised the committee that they have encountered limestone in the borehole but not phosphorite. Therefore, it was suggested to include the commodity "limestone" in the title.

f) After reviewing the project, the committee recommended the project as “Preliminary exploration (G3) for limestone in in Katamadevarahalli Area, Kalburgi Dist, Karnataka” with time extension of 6 months.

Recommendation of TCC:

The committee recommended the project as “Preliminary exploration (G3) for limestone in in Katamadevarahalli Area, Kalburgi Dist, Karnataka” with time extension of 6 months. Further, the project got revised cost of ₹69.47 lakh instead of ₹ 76.25 lakhs (including GSI) per annexure-6.

Additional Agenda 60.3.11 Preliminary exploration for Manganese in Hardatal block (1.38 sq. km), District: Balangir, Odisha.
[Implementing Agency: DMG Odisha]

a) The project was approved in 25th EC meeting of NMET with an estimated cost of ₹ 1.52 Cr. within 9 months duration.

b) The 30th EC meeting of NMET held on 06.06.2023 sanctioned ₹ 6, 90,000/- (Rupees Six lakh ninety thousand only) towards additional cost for 60 m of drilling.

c) Considering the additional drilling, DMG, Odisha requested additional analysis of 259 nos of sample.

Recommendation of TCC:

The TCC suggested DMG, Odisha to prepare and submit the proposal justifying the additional drilling and subsequently generated additional samples, their analysis, additional resources estimated in the block to NMET so as to take it up in the EC meeting for approval of additional cost.

Additional Agenda 60.3.12 Reconnaissance Survey (G-4 Stage) for Iron Ore in Gilanguda-Padur Block, District: Gadchiroli, Maharashtra.
[Implementing Agency: DGM Maharashtra (M/s. Gemcokati Exploration Pvt. Ltd.)]

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Additional Agenda 60.3.13 Reconnaissance Survey (G-4 Stage) for Iron Ore in Murwada-Tumarikodi Block, District: Gadchiroli, Maharashtra.
[Implementing Agency: DGM Maharashtra (M/s. Gemcokati Exploration Pvt. Ltd.)]

a) The projects mentioned at Additional Agenda 60.3.12 & 60.3.13 were approved in 30th EC meeting of NMET.

b) The Gemcokati Exploration Private Ltd. presented the progress of the two items and showed the tentative resources of iron ore estimated under 334 category of UNFC on the basis of random grab sampling carried out in the area.

a. The agency informed the assembly that, due to local challenges, mapping could not be conducted in the 1:12500 scale. Parts of the maps were completed using PGRS, and the final map was prepared in the 1:25000 scale. Consequently, the agency requested the committee to consider changing the approved scale of the map from 1:12500 to 1:25000.

b. The committee recommended the inclusion of aero geophysical maps in all reports. In connection with this, Gemcokati Exploration Pvt. Ltd was advised to inquire whether RSAS, GSI maps could be reproduced.

c. The Gemcokati Exploration Private Ltd also requested for time extension upto 15thMarch, 2024.

Recommendation of TCC:

The committee reviewed the project and opined that the geologist field days may be given upto 80 days for mapping on 1: 25000 (for both projects). The committee also recommended for timeline extension for final submission of GR upto 15th March,2024for both projects.

Agenda 60.3.14 Reconnaissance Survey (G-4 stage) for PGE, Chromium, Nickel, Cobalt in Chandiposh Block (111.00 sq.km.), 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) MECL conveyed that the host rocks into which the ultramafic sill intruded includes quartzite, metagreywacke, quartz-mica schist and chlorite schist. The General trend of the ultramafics is NE-SW and dipping towards NW.
c) Further, MECL conveyed that 75 primary samples have been collected. Out of these 75 Samples, 25 Samples are ≥ 200 ppm (Max. 800ppm) Ni and 06 Samples are 200 ppm (Max. 200ppm) Cu. The values for PGE are not yielding encouraging results.
d) The committee assessed that the map does not meet the expected standards, as the data plotted in the map misrepresents the geology of the area. Upon review, the committee verified that the agency was unable to identify the ultramafics.

e) Accordingly, the committee suggested MECL to reshape the map with valid structural data and to prepare a section. MECL was also suggested to emphasize on petrography in order to accurately identify the ultramafics.

Recommendation of TCC:

The committee suggested MECL to carry out adequate petrographic study to characterize the ultramafics in the mapped area. Besides, the geological map should also be improved with proper structural elements. The output will have to be presented in the next TCC meeting.

Agenda 60.3.15 Preliminary Exploration (G-3 stage) for Phosphorite in Kachaldara East Block (5.60 sq.km), District- Jhabua, Madhya Pradesh.
[Implementing Agency: MECL]

a) Kachaldara East (G-3) phosphorite block was recommended by 45th TCC and approved by 27th Executive Committee (EC) of NMET held on 10th January 2023.

b) MECL conveyed that geological mapping is completed with collection of 50 no of bedrock samples. Topographical survey completed for total block area and total 10 no of boreholes (500 mts) were approved at 400m interval and out of this 5 borehole location were falling in forest area for which forest clearance application was submitted on 18/03/2023.

c) MECL further conveyed that 278m of drilling, 145 core samples are generated in 6 no of boreholes and 50 bedrock samples collected and sent to chemical lab MECL, we have received analysis of 31 no of core samples out of which one sample of MKCH-01 has 9.25% P_2O_5 at 35.00 to 36.00.

d) In view of above, the committee opined that the project is technically not suitable. Therefore, the committee suggested to conclude the block with existing exploration data and to submit the GR as per schedule.

Recommendation of TCC:

The committee opined that the project is technically not suitable. Therefore, the committee suggested to conclude the block with existing exploration data and to submit the GR as per schedule.

Agenda 60.3.16 .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.

b) The schedule time for completion of project was 31st December, 2023.

c) MECL requested for 1 month time extension for completion of the project.

d) The committee opined that the project belongs to the National Geochemical Mapping Program, the part of Baseline Geoscience Data Generation Program of the country. All

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the details of the data generated through the work, have to be uploaded on the NGDR Portal launched by Hon'ble Minister of Mines on 19th December, 2023. Therefore the committee asked to submit justification for extension of 1 month in next TCC meeting.

Recommendation of TCC:

The committee asked MECL to submit detailed justification for the inordinate delay in carrying out the chemical analysis as committed in front of the Secretary, MoM. The detailed justification will have to be discussed in the forthcoming EC meeting for extension of timeline for 01 month.

Additional Discussion: Preliminary Exploration (G3) for Bauxite in Majhingamali block, District - Rayagada &Kalahandi, Odisha. [Implementing Agency: OMECL]

a) The Preliminary Exploration (G3) for Bauxite in Majhingamali block, District – Rayagada &Kalahandi, Odisha was approved in 11th EC meeting held in February, 2019 with an estimated cost of Rs. 187.93 Lakh and time period of 12 months.

b) The project got time extension upto December, 2023.

c) OMC appraised the house that the drilling could not commence within the designated timeframe due to local issues. However, the agency has now successfully convinced the locals to permit the initiation of drilling.

d) There is a requirement to drill 41 boreholes in the proposed area, and OMC has requested a 6-month extension for submission of GR.

e) The committee opined that the project was yet to start and project got time extension upto several months. Therefore, committee directed to submit the monthly progress report in each TCC meeting.

Recommendation of TCC:

The committee asked to submit progress of the project in each TCC meeting.The committee acknowledged the circumstances and recommended an extension of the timeline upto 30th June 2024 subject to a detailed action plan sent to NMET by OMC. The committee also recommended for monthly review of the item.

The meeting ended with vote of thanks by Member Secretary, TCC, NMET.

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Annexure 1

Minutes of the 60th Technical-cum-Cost Committee (TCC) meeting held on 27th and 28th December 2023 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	Not Attended
10	Shri. Vivek Kumar Sharma,Director, NMET, Ministry of Mines	Member	Not Attended
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 60th Technical-cum-cost Committee (TCC) meeting of NMET held on 27th and 28th December 2023 through videoconferencing

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. Ravindran, GM (Exploration)	Ravindran.mecl@gmail.com	9407607309	MECL

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14.	Shri. G.S Dhami, GM (Geophysics)	geophy-unit@mecl.co.in	8290610086	MECL
15.	Shri. P.P.Kulkarni DGM (Exploration)	kulkarnip.mecl@gmail.com	8319364061	MECL
16.	Shri. Naveen Kumar Pala Senior Manager (Geology)	naveenpala.mecl@gmail.com	7738368657	MECL
17.	Shri. S. K. Satapathy Manager (Geology)	sksatapathy4u@gmai.com	9993617090	MECL
18.	Shri. M D Dastageer, Manager (Geology)	dastageermd@gmail.com	9560739350	MECL
19.	Shri. SwarupDhara, Manager (Geology)	swarupdhara@gmail.com	9630307282	MECL
20.	Shri. SayandeepChakraborthy , Asst Manager (Geology)	Sayanchak2011@gmail.com	9038956935	MECL
21.	Shri. SaptarshiGhosh, Asst. Manager (Geology)	Saptarshighosh07@gmail.com	9655425135	MECL
22.	Shri. Deepak Kumar Behera, Sr. Geologist	Behera.deepak1991@gmail.com	7742351102	MECL
23.	Shri. MihirMalla, Deputy General Manager (Geology)	mihir.malla@odishamining.in	9777454069	OMC
24.	Shri. TripatiPanigrahi, Sr. Manager (Geology)	tripati.panigrahi@odishamining.in	9437196442	OMC
25.	Shri. Vinod RV, Sr. Manager (Geology),	vinod.rv@odishamining.in	9995901357	OMC
26.	Shri. Subrat Kumar Sahoo, Manager (Geology)	subratk.sahoo@odishamining.in	9658023795	OMC
27.	Shri. S. K. DuttaAdvisor	advisorbsmc2023@gmail.com biharmines@gmail.com	9430906082 9771405496	DMG Bihar
28.	Shri. Shiv Kumar M (AGM)	bmed@kioclltd.in	9148743807	KIOCL
29.	Shri. Mohan Raj D (consultant)	bmed@kioclltd.in	6366774594	KIOCL
30.	Shri. Palani M, SM(ME)	bmed@kioclltd.in	-	KIOCL
31.	Shri. DnyaneshwarGaonkar,	bmed@kioclltd.in	-	KIOCL

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	DM(Geology)			
32.	Dr.Raghwendra Pratap Singh , Senior Manager (Geology)	gmexpl.cmpdi@coalindia.in	9431358716	CMPDI
33.	Shri. B Satish Manager (Geology)	gmexpl.cmpdi@coalindia.in	-	CMPDI
34.	Shri. H. P. Harish, Deputy Director (Plan)	ddpmdmg1@gmail.com	9611951313	DMG Karnataka
35.	Shri. Sanjay K. Kankane, Joint Director	dgm.cg@gov.in	9826753151	DGM Chhattisgarh
36.	Shri. ShaileshVerma, deputy director & regional head Jagdalpur	dgm.cg@gov.in	-	DGM Chhattisgarh
37.	Smt. Barnalee Nath, Joint Director (Geology)	dgmassam@gmail.com	9435104508	DGM Assam
38.	Smt. BornaleeChoudhury, Joint Director.	dgmassam@gmail.com	-	DGM Assam
39.	Shri. KhagenSaikia, Joint Director.	dgmassam@gmail.com	-	DGM Assam
40.	Dr.P.C.Mishra JDG	jointpcmishra66@rediffmail.com	9861465695	DMG, Odisha
41.	Shri.Subrata Sarkar (V.P)	subrata.sarkar@gemcokati.com	7044208900	Gemcokati Exploration Pvt.Ltd.
42.	Dr.Sangeeta Gupta, Superintending Geologist	nmet.mines@gov.in	7408110676	NMET
43.	Ms.Ujjwala Sharma Assistant Manager (Geology)	nmet.mines@gov.in	8957806004	NMET
44.	Dr. Rajesh Sharma, Sr.Geologist	nmet.mines@gov.in	8377851047	NMET
45.	Representative from DGM Jharkhand	director-mines@jharkhandmail.gov.in	-	DGM Jharkhand

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Annexure 2A

Cost Estimates for Reconnaissance Survey (G4) for Gold in Bargur block, Kolar schist Belt, District: Krishnagiri, Tamil Nadu.
[Block area- 157.50 sq. km; Nos. of Borehole- 5; Borehole depth range- upto100m; Schedule timeline- 12 months, Review: after 6 months]

S. No.	Item of Work	Unit	Rates as per NMETSoC 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, (1:12,500 scale) & Trenching , drilling work	157.50 sq.km					
i	a. Charges for Geologist per day (Field) for geological mapping & trenching work, drilling work	day	1.2	11,000	180	19,80,000	
ii	b. Labours Charges; Base rate	day	5.7	504	360	1,81,440	Amount will be reimburse as per the notified rates for unskilled labor by the Central Labour Commissioner or respective State Govt. whichever is higher

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	c. Charges for Geologist per day (HQ)	day	1.3	9,000	50	4,50,000	
	d. Charges for one Sampler per day (1 Party)	one sampler per day	1.5.2	5,100	125	6,37,500	
	e. Labours (4 Nos)	day	5.7	504	500	2,52,000	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
	Sub Total- A					**35,00,940**	
B	**Ground Geophysical Survey**						
1	IP. Induced Polarization (I.P) cum Resistivity S.P and Magnetic (30 Lkm)	8-10 Line Km	3.4b	14,48,693	3	43,46,079	(8 -10 line Km=14,48,693/-) (30LKmcummulative)
3	Geophysicist party days (Field)	per day	3.18	11,000	-	-	
4	c. Labours Charges	Day	5.7	504	-	0	Amount will be reimburse as per the notified rates for unskilled labor by the Central Labour Commissioner or respective State Govt. whichever is higher
5	Geophysicist party	per day	3.18	9,000	15	1,35,000	

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	days (HQ)						
	Sub Total- B					**44,81,079**	
C	**Survey work**						
a	DGPS Survey for BH fixation &RL determination	Per Point of observation	1.6.2	19,200	5	96000	5 Bhs
b	Charges of Surveyor (1 party) for Geophysical survey layout work & Block boundary demarcation	one surveyor per day	1.6.1a	8,300	-	0	
c	Labours Charges for survey work;	day	5.7	504	-	0	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 C					**96,000**	
D	**Trenching/Pitting**						
	a) Excavation of Trenches	per cu.m	2.1.1.	3,330	200	**666000**	
E	**DRILLING (after review)**						
1	Drilling up to 300m (Hard Rock)	M	2.2.1.4a	11,500	500	57,50,000	

2	Borehole deviation Survey by Multishot Camera	M	2.2.6	330	500	1,65,000	
3	Land / Crop Compansation (in case the BH falls in agricultural Land)	per BH	5.6	20,000	5	1,00,000	Amount will be reimburse as per actuals or max. Rs. 20000 per BH with certification from local authorities
4	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	5	10,000	
5	Transportation of Drill Rig & Truck associated per drill (2 rigs)	Km	2.2.8	36	2,400	86,400	1200 km to & fro from Nagpur/ Rig
6	Monthly Accomodation Charges for drilling Camp (up to 2 Rigs)	month	2.2.9	50,000	3	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	Road Making (Flat Terrain)	Km	2.2.10a	22,020	5	1,10,100	Road Making will be considered as per the requirement and Road Making Charges will be reimbursed for max. 5 km.

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10	Drill Core Preservation	per m	5.3	1,590	160	2,54,400	1 bh100m+15mMZx4bhs
	Sub Total E					**71,25,900**	
F	**Borehole Geophysical Logging**	5 Bhs of 350m each	3.12	622.25	500	**3,11,125**	Base Rate Rs.10, 88, 941/1750=622.25per m
G	**LABORATORY STUDIES**						
1	**Chemical Analysis**						
i)	**Geochemical Sampling-Surface samples (Bedrock/Channel /Soil/Stream sediment)**						
	a. Au by Fire Assay	Nos	4.1.5a	2,380	200	4,76,000	
	b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by AAS Method	Nos	4.1.7a&4.1.7b	3,846	200	7,69,200	Rs.2506 for 5 radicals &Rs 335 for each subsequent radical
	c. For PGE by Fire Assay	Nos	4.1.5d	11,800	10	1,18,000	
ii)	**Surface Check samples (10% External)**						
	a. Au by Fire Assay	Nos	4.1.5a	2,380	20	47,600	
	b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by AAS Method	Nos	4.1.7a&4.1.7b	3,846	20	76,920	
	c. For PGE	Nos	4.1.5d	11,800	1	11,800	

iii)	**Trench & Check Samples from Trench**						
	Trench samples						
	a. Au by Fire Assay	Nos	4.1.5a	2,380	150	3,57,000	
	b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by AAS Method	Nos	4.1.7a&4.1.7b	3,846	150	5,76,900	Rs.2506 for 5 radicals &Rs 335 for each subsequent radical
	c. For PGE	Nos	4.1.5d	11,800	-	-	
iv)	**Trench Check samples (10% External)**						
	a. Au by Fire Assay	Nos	4.1.5a	2,380	15	35,700	
	b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by AAS Method	Nos	4.1.7a&4.1.7b	3,846	15	57,690	
	c. For PGE	Nos	4.1.5d	11,800	-	-	
v)	**BH Core samples**						
	a. Au by Fire Assay	Nos	4.1.5a	2,380	100	2,38,000	
	b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by ICPMS-34 elements	Nos	4.1.14	7,731	100	7,73,100	
	c. For PGE	Nos	4.1.5d	11,800		-	

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vi)	**BH Core samples (10%External)**						
	a. Au by Fire Assay	Nos	4.1.5a	2,380	10	23,800	
	b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by AAS Method	Nos	4.1.7a&4.1.7b	3,846	10	38,460	
	c. For PGE	Nos	4.1.5d	11,800	-	-	
2	**Physical & Petrological Studies**						
i	Preparation of thin section	Nos	4.3.1	2,353	10	23,530	
ii	Study of thin section	Nos	4.3.4	4,232	10	42,320	
iii	Preparation of polish section	Nos	4.3.2	1,549	10	15,490	
iv	study of polished section	Nos	4.3.4	4,232	10	42,320	
v	Digital Photographs	Nos	4.3.7	280	10	2,800	
vi	Whole Rock Analysis	Nos	4.1.15a	4,200	10	42,000	
vii	Sp. Gravity	Nos	4.8.1	1,605	5	8,025	
	SEM Studies	per hour	4.4.2	2,940	10	29,400	
viii	EPMA studies	per hour	4.4.1			42,700	

				8,540	5		
						38,48,755	
H	**Total A to H**					**2,00,29,799**	
I	**Geological Report Preparation**	**5 Hard copies with a soft copy**	**5.2**	Exploration cost exceeding 150 lakh but less than 300 lakh: A Minimum of ₹7.5 lakh or 3% of the work whichever is more		**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.
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		**4,00,596**	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**					**2,12,10,395**	
M	**Provision for GST (18% of J)**					**38,17,871**	GST will be reimburse as per actual and as per notified prescribed rate
N	**Total Estimated Cost with GST**					**2,50,28,266**	

				or Say Rs. In Lakhs	**250.28**	
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 NMETSoC and Item no. 6 of NMETSoC. In case of execusion of the project by NEA on its own, a Certifiate 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.**					

Annexure 2B

Time Schedule/ Action plain for Reconnaissance Survey (G4) for Gold in Bargur block, Kolar schist Belt, District: Krishnagiri, Tamil Nadu.															
S. No.			**1**	**2**	**3**	**4**	**5**	**6**		**7**	**8**	**9**	**10**	**11**	**12**
1	Camp Setting	**Months/Days**													
2	Geological Mapping & Sampling	**days**													
3	Geophysical survey	**L.km**													
4	Geophyscist (HQ) for data interpretation & Report	**Days**													
5	Pitting/Trenching	**cu.m**													
6	Surface Drilling (1 rigs)	**m**													
7	Survey work	**days**													
8	Geologist (Field)	**days**													
9	Sampling work	**days**													
10	Camp Winding	**months**													
11	Laboratory Studies	**Nos.**													
12	Report Writing with Peer Review	**months**													

Review for Scout Drilling

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Annexure 3A

Cost Estimates for Reconnaissance Survey (G4) for QPC hosted Gold Mineralisation & Copper in Kalasapura block, District: Chikkamagaluru, Karnataka.

[Block area- 129.00 sq. km; Nos. of Borehole- 6; Borehole depth range- upto50m; Schedule timeline- 12 months, Review: after 6 month]

S. No.	Item of Work	Unit	Rates as per NMETSoC 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, (1:12,500 scale) & Trenching , drilling work	129 sq.km					
i	a. Charges for Geologist per day (Field) for geological mapping & trenching work, drilling work	day	1.2	11,000	150	16,50,000	
ii	b. Labours Charges; Base rate	day	5.7	504	300	1,51,200	Amount will be reimburse as per the notified rates for unskilled labor by the Central Labour Commissioner or respective State Govt. whichever is higher

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	c. Charges for Geologist per day (HQ)	day	1.3	9,000	50	4,50,000	
	d. Charges for one Sampler per day (1 Party)	one sampler per day	1.5.2	5,100	125	637500	
	e. Labours (4 Nos)	day	5.7	504	500	252000	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
	Sub Total- A					**31,40,700**	
B	**Survey work**						
a	DGPS Survey for BH fixation &RL determination	Per Point of observation	1.6.2	19,200	6	115200	
b	Charges of Surveyor (1 party) for Borehole fixation	one surveyor per day	1.6.1a	8,300	5	41500	
c	Labours Charges for survey work;	day	5.7	504	20	10080	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 B					**1,66,780**	
C	**Trenching/Pitting**						
	a) Excavation of Trenches	per cu.m	2.1.1.	3,330	200	**666000**	
D	**DRILLING**						
1	Drilling up to 300m (Hard Rock)	m	2.2.1.4a	11,500	300	34,50,000	
2	Borehole deviation Survey by Multishot Camera	m	2.2.6	330	-	-	
3	Land / Crop Compansation (in case the BH falls in agricultural Land)	per BH	5.6	20,000	6	1,20,000	Amount will be reimburse as per actuals or max. Rs. 20000 per BH with certification from local authorities
4	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	6	12,000	
5	Transportation of Drill Rig & Truck associated per drill (2 rigs)	Km	2.2.8	36	2,600	93,600	2600 km to & fro from Nagpur/ Rig

6	Monthly Accomodation Charges for drilling Camp (up to 2 Rigs)	month	2.2.9	50,000	3	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	Road Making (Flat Terrain)	Km	2.2.10a	22,020	5	1,10,100	Road Making will be considered as per the requirement and Road Making Charges will be reimbursed for max. 5 km.
10	Drill Core Preservation	per m	5.3	1,590	150	2,38,500	
	Sub Total D					**46,74,200**	
E	**Borehole Geophysical Logging**	5 Bhs of 350m each	3.12	622.25	300	**1,86,675**	Base Rate Rs.10, 88, 941/1750=622.25per m
F	**LABORATORY STUDIES**						
1	**Chemical Analysis**						
i)	**Geochemical Sampling-Surface samples (Bedrock /Soil/Stream sediment)**						
	a. Au by Fire Assay	Nos	4.1.5a	2,380	150	3,57,000	
	b. for Cu, Pb, Zn, Ni, Co, Te, Mo and Se	Nos	4.1.7a& b	3,511	150	5,26,650	

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	(AAS Method)						
ii)	**Surface Check samples (10% External)**						
	b) For Au (Gold) by Fire Assay	Nos	4.1.5a	2,380	15	35,700	
	a. for Cu, Pb, Zn, Ni, Co, Te, Mo and Se(AAS Method)	Nos	4.1.7a& b	3,511	15	52,665	
iii)	**Trench & Check Samples from Trench**						
	Trench samples						
	a) For Au (Gold) by Fire Assay	Nos	4.1.5a	2,380	150	3,57,000	
	b). for Cu, Pb, Zn, Ni, Co, Te, Mo and Se(AAS Method)	Nos	4.1.7a& b	3,511	150	5,26,650	
iv)	**Trench Check samples (10% External)**						
	a) For Au (Gold) by Fire Assay	Nos	4.1.5a	2,380	15	35,700	
	b). for Cu, Pb, Zn, Ni, Co, Te, Mo and Se(AAS Method)	Nos	4.1.7a& b	3,511	15	52,665	
v)	**BH Core samples**						
	a) For Au	Nos	4.1.5a	2,380	150	3,57,000	(sample

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	(Gold) by Fire Assay						size:0.50m)
	b). for Cu, Pb, Zn, Ni, Co, Te, Mo and Se(AAS Method)	Nos	4.1.7a& b	3,511	150	5,26,650	
	c) 34 Elements by ICPMS	Nos	4.1.14	7,731	15	1,15,965	
vi)	**BH Core samples (10%External)**						
	a) For Au (Gold) by Fire Assay	Nos	4.1.5a	2,380	15	35,700	
	b). for Cu, Pb, Zn, Ni, Co, Te, Mo and Se(AAS Method)	Nos	4.1.7a& b	3,511	15	52,665	
2	**Physical & Petrological Studies**						
i	Preparation of thin section	Nos	4.3.1	2,353	10	23,530	
ii	Study of thin section	Nos	4.3.4	4,232	10	42,320	
iii	Preparation of polish section	Nos	4.3.2	1,549	10	15,490	
iv	study of polished section	Nos	4.3.4	4,232	10	42,320	
v	Digital Photographs	Nos	4.3.7	280	10	2,800	
vi	Whole Rock Analysis	Nos	4.1.15a	4,200	10	42,000	
vii	Sp. Gravity	Nos	4.8.1	1,605	5	8,025	

	Sub Total F					**32,08,495**	
G	**Total A to F**					**1,20,42,850**	
I	**Geological Report Preparation**	**5 Hard copies with a soft copy**	**5.2**	Exploration cost exceeding 50 lakh but less than 150 lakh: A Minimum of ₹ 2.5 lakh or 5% of the work whichever is more		**6,02,143**	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 Lakhs whichever is less		**2,40,857**	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**					**1,29,15,850**	

M	**Provision for GST (18% of J)**				**23,24,853**	GST will be reimburse as per actual and as per notified prescribed rate
N	**Total Estimated Cost with GST**				**1,52,40,702**	
				or Say Rs. In Lakhs	**152.41**	
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 NMETSoC and Item no. 6 of NMETSoC. In case of execusion of the project by NEA on its own, a Certifiate 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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Annexure3B

Time Schedule/ Action Plain for Reconnaissance Survey (G4) for QPC hosted Gold Mineralisation & Copper in Kalasapura block, District: Chikkamagaluru, Karnataka.

S. No.			1	2	3	4	5	6	Review for Scout Drilling	7	8	9	10	11	12
1	Camp Setting	Months/Days													
2	Geological Mapping & Sampling	days													
3	Pitting/Trenching	cu.m													
4	Scout Drilling (1 rig)	m													
5	Survey work	days													
6	Geologst (Field)	days													
7	Sampling work	days													
8	Camp Winding	months													
9	Laboratory Studies	Nos.													
10	Report Writing with Peer Review	months													

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Annexure 4A

Cost Estimated for Preliminary Exploration (G-3 stage)for Iron and Manganese Ore in Silpunji block (phase-II), Jamda-Koira Valley Ironore Belt, District-West Singbhum, Jharkhand
Total area - 3.00 sq. km; Drilling- 500.00m, Completion time - 10 months, Review:after5months

Sl. No.	Item of Work	Unit	Rates as per NMETSoC 2020-21		Total Cost of the Project		Remarks
			SoC- Item- S. No.	Rates as per SoC	Qty.	Total Amount (Rs)	
1.0	**Geology & Survey**						
1.1	Geologist man days for core logging (Field)/Sampling/topographic survey	days	1.3	11,000	120	13,20,000	
1.2	Unskilled Labour (Field) (2 workers per geologist)	per worker	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
1.3	Survey Party Days for topographic survey	days	1.6.1a	8300	20	1,66,000	

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1.4	Unskilled Labour (Survey) (4 workers per Surveyer)	Days	5.7	504	80	40,320	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
1.5	Sampling man days - Sampler (core sample,) Labour charge not included	day	1.5.2	5,100	69	3,51,900	
1.6	4 labours/ party (Rs 431/day/labour) (As per rates of Central Labour Commissioner) for sampling work	day	5.7	504	276	1,39,104	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
1.7	Determination of co-ordinates and Reduced Level (RL) of boreholes by DGPS including boundary corner points.	Nos.	1.6.2	19200	9	1,72,800	Boreholes 05 Nos. + Block Boundary 04 Nos.
Sub-Total 1						**23,11,084**	
2.0	**Drilling**						
2.1	Drilling -Very hard rock (up to 300m)	m	2.2.1.5a	12,650	500	63,25,000	

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2.2	Land / Crop Compansation (in case the BH falls in agreecultural Land)	per BH	5.6	20,000	5	1,00,000	Asper actual
2.3	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	5	10,000	
2.4	Transportation of Drill Rig & Truck associated per drill (for 2 rig)	Km	2.2.8	36	1600	57,600	1600 Km to and fro for one rig
2.5	Monthly Accomodation Charges for drilling Camp (up to 2 Rigs)	month	2.2.9	50,000	4	2,00,000	
2.6	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	1	2,50,000	
2.7	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	1	2,50,000	
2.8	Road Making (Flat Terrain)	Km	2.2.10a	22,020	5	1,10,100	
2.9	Drill Core Preservation	per m	5.3	1,590	280	4,45,200	
Sub-Total 2						**77,47,900**	
3.0	**Laboratory Studies**						
3.1	Primary + Check Sample - 8 radicals viz. Fe, Mn, Al2O3, SiO2, TiO2, P2O5, S &LOI.	per sample	4.1.15a	4,200	550	23,10,000	
3.3	Bulk Density determination	per sample	4.1	3,540	5	17,700	
Sub-Total 3						**23,27,700**	

4.0	**Geologist man days (1 No.) for geological map & Report (HQ)**	days	1.2	9,000	50	**4,50,000**	
Total (1.0 to 4.0)						**1,28,36,684**	
5.0	**Preparation of Exploration Proposal**	Nos	5.1	2% of the cost or Rs. 5.0 lakh - whichever is lower	1	**2,56,734**	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.
6.0	**Geological Report Preparation**	Nos	5.2	For the projects having cost exceeding Rs. 50 Lakhs but less than Rs. 150 Lakhs: A Minimum of Rs.2.5 lakhs or 5% of the value of work whichever is more and Rs. 3000/-	1	**6,41,834.20**	EA has to submit the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.

				per each additional copy.			
7.0	**Report Peer Review Charges**	**lumpsum**	**As per EC decision**		**1**	**30,000**	
Total Estimated Cost without GST						**1,37,65,252**	
Provision for GST (18%)						**24,77,745**	GST will be reimburse as per actual and as per notified prescribed rate
Total Estimated Cost with GST						**1,62,42,997**	
Say Rs. in Lakhs						**162.43**	
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 NMETSoC and Item no. 6 of NMETSoC. In case of execusion of the project by NEA on its own, a Certifiate 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 Scheduled/ Action Plain for Preliminary Exploration (G-3 stage)for Iron and Manganese Ore in Silpunji block (phase-II), Jamda-Koira Valley Ironore Belt, District-West Singbhum, Jharkhand

S.No.	Activities	MONTHS									
		1	2	3	4	5	Review	6	7	8	9	10
1	Camp setting											
3	Core drilling (2 rig)											
4	Geologist days (Field)											
5	Sampling days, core sampling											
6	Camp winding											
7	Laboratory studies											
8	Geologist days (HQ)											
9	Report writing/ Peer review											

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Annexure 5A

Cost Estimate for Reconnaissance for Gold mineralization in Yediyur Block Yediyur area, Yediyur - Karighatta schist belt, Mandya district, Karnataka

area:50sq.km., time:10 months, Review: In 5 months

Sl	Item of Work	Unit	Rates as per NMETSoC 2020-21					Remarks
			SOC Item No	Qty	Rates as per SOC	Amount (Rs)		
(a)	(b)	(c)	(d)	(f)	(e)	(g)=(e)*(f)		
1	**LARGE SCALE GEOLOGICAL MAPPING WORKS (1:12,500 scale :50sq km)**							with collection of 100 nos of Channel(100m interval) \ BRS sample
1.1	Geologist Party days - Field	days	1.2	100.0	11,000	11,00,000	19,76,600	
1.2	Geologist Party days - HQ		1.2	30.0	9,000	2,70,000		
1.3	Labour charges	days	5.7	200.0	504	1,00,800		
2	**TRENCHING WORKS**							
2.1	Trenching works	cum	2.1.1	100.0	3,330	3,33,000		with 75 nos of analysis
3	**SURVEY WORKS**							
3.1	Fixation of borehole and determination of Co-ordinates and RL by DGPS	days	1.6.2	9.0	19,200	1,72,800		5 BH's and 04 Boundary Points
4	**DRILLING (out sourced-After Review)**							
4.1	Surface Drilling (Hard rock)	m.	2.2.1.4 a	500.0	11,500	57,50,000	57,50,000	Outsourcing components
4.2	Core preservation	m	5.3	150.0	1,590	2,38,500	2,38,500	
5	**LABORATORY STUDIES**							

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5.1	Sample processing works	Sampler charges	days	1.5.2	40.0	5,100	2,04,000	2,84,640	275 nos of samples
5.2		Labour charges	days	5.7	160.0	504	80,640		Amount will be reimbursed for unskilled labour as per the notified rates by the Central Labour Commissioner (Rs.431/- per day) or respective State Govt. whichever is higher
5.3	Sample analysis (34 elements by ICPMS)	Primary	per sample	4.1.14	50.0	7,731	3,86,550	11,43,965	
5.4		External Check (10%)		4.1.14	5.0	7,731	38,655		
5.5	Analysis of Au by Fire assay method	Primary		4.1.5a	275.0	2,380	6,54,500		(75 Trench+ 100 Channel / BRS + 100 BHs)
		External Check (10%)		4.1.5a	27.0	2,380	64,260		
5.6	Petro studies	Preparation of Standard Thin section	nos	4.3.1	10.0	2,353	23,530	1,81,060	
5.7		Complete Petrological Report of rock sample	nos	4.3.4	10.0	4,232	42,320		
5.8		Preparation of Polished Section	nos	4.3.2	10.0	1,549	15,490		

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5.9		Study of polished section for mineragraphy	nos	4.3.4	10.0	4,232	42,320		
5.10		EPMA	per hrs	4.4.1	5	8,540	42,700		
5.1		SEM	hrs	4.4.2	5	2,940	14,700		
6	**Sub Total (1 to 5)**						**95,74,765**	**95,74,765**	
7	Peer review of report		lumpsum		**30thEC**		30,000	30,000	
8	Preparation of Exploration Project Proposal		lumpsum	5.1	5 Hard copies along with Soft copy	2% of approved project or 3.8 lakh which ever is lower	1,91,495	1,91,495	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.
9	Exploration Report (5% of (Sl.no. 1 to 6)			5.2(iii)	5 Hard copies along with Soft copy	For the projects having cost excedingRs 50 lakhs but less than Rs 150 lakhs : A Minimum of Rs.2.5 lakhs or 5% of the value of work whichever is	4,78,738	4,78,738	EA has to submit the final Geological Report in Hard Copies (5 nos) and the soft copy to NMET.

					more			
10	**Sub total (7 to 9)**					**7,00,234**	**7,00,234**	
11	Tendering process cost	One time	2.3		@ 2% of approved project cost or 5 Lakh which ever is lower	1,15,000	6,71,250	Drilling works valuing to Rs.57,50,000/- is proposed to be outsourced
12	Reimbursement of cost incase outsourced components of project		6(ii)			5,56,250		
13	**Total amount in Rs (11 to 12)**					**6,71,250**	**6,71,250**	
14	**Total amount in Rs (6 + 10 + 13)**					**1,09,46,249**	**1,09,46,249**	
14	GST 18%					19,70,325	19,70,325	GST will be reimbursed as per actual and as per notified prescribed rate
15	**Grand Total (with GST 18%)**					**1,29,16,573**	**1,29,16,573**	**Say Rs.129.17 Lakhs**

Annexure 5B

Time Schedule/ Action Plain For Reconnaissance for Gold mineralization in Yediyur Block Yediyur area, Yediyur - Karighatta schist belt, Mandya district, Karnataka.

Sl	Details of Works	1	2	3	4	5	6	7	8	9	10
1	**CAMP SETTING**										
2	**LARGE SCALE GEOLOGICAL MAPPING** (Includes 50 sq km of LSM + 100 nos of Channel/ BRS + 75 cum Trenching)										
	2.1 Geologist Party days (01 Party)										
	2.2 Laboratory Works										
3	**Surface Drilling**										
	3.1 Preparatory works for drilling (Approach road making)										
	3.2 Drilling works (01 rig - 500m)										
	3.3 Geologist Party days (01 Party)										
	3.4 Laboratory Works										
4	**Survey Works**										
	4.1 Survey party days for DGPS survey of Boreholes 5 pts, boundary points 04) - 01 party										
5	**Camp Winding**										
6	**Preparation of Reports and Maps**										

Review

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Annexure 6

Cost Estimated for Reconnaissance Survey (G4) for Phosphorite Baryte & REE and Limestone in Katamadevarahalli Area Kalburgi District: Karnataka

Title modified as "Preliminary exploration (G3) for limestone in Katamadevarahalli Area, Kalburgi Dist, Karnataka."

Approved rate for KD halli Phosphorite								**Prices for KDhalli Limestone Block (G3 Block level for 1 Block: 4sqkm)**						
Sl	**Item of Work**	**Unit**	**Rates as per NMETSoC 2020-21**		**Year 2022-23**				**Rates as per NMETSoC 2020-21**		**Year 2022-23**			
			SOC Item No	**Rates as per SOC**	**Qty**	**Amount (Rs)**		**Item of work**	**SOC Item No**	**Unit Rate**	**Qty**	**Amount (Rs)**		
1	**LARGE SCALE GEOLOGICAL MAPPING WORKS (1:12,500 scale :150.0sq km)**							**DETAILED GEOLOGICAL MAPPING WORKS (1:4,000 scale :4.0sq km)**						
1.1	Geologist Party days - Field	days	1.2	11,000	120.0	13,20,000	**19,80,960**	Geologist Party days - Field	1.2	11,000	150.0	16,50,000	**23,41,200**	**30 additional mandays for DM works of 4 sqkm**
1.2	Geologist Party days - HQ		1.2	9,000	60.0	5,40,000		Geologist Party days - HQ	1.2	9,000	60.0	5,40,000		
1.3	Labour charges	days	5.7	504	240.0	1,20,960		Labour charges	5.7	504	300.0	1,51,200		**60 additional labours for DM works of 4 sqkm**
2	**TRENCHING WORKS**							TRENCHING WORKS						
2.	Trenching works	cum	2.1.2	3,800	50.0	1,90,0	**21,93,**	Trenchin	2.1.2	3,80	0.0	0	**14,03,**	dropped

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1						00	**810**	g works		0			**825**	
3	**SURVEY WORKS**							**SURVEY WORKS**						
3.1	Fixation of borehole and determination of Co-ordinates and RL by DGPS	days	1.6.2	19,200	5.0	96,000		DGPS Survey works	1.6.2	19,200	11	2,11,200		**12 Points : 6BP + 5Bhs**
								Charges for 1 surveyor	1.6.1 a	8,300	25	2,07,500		**TopoSurveyworks (Contouring at 2m interval), bhs fixation,**
4	**DRILLING**							Labour charges	5.7	504	100	50,400		
4.1	Surface Drilling (01 rig - Soft Rock)	m.	2.2.1 .4a	**6,775**	150.0	10,16,250		Surface Drilling (5 boreholes @ 45m per borehole)	2.2.1 .4a	**2,741**	225	6,16,725		**Additional drilling meterage of 75m. (outsouced)**
4.2	Transportation of drill rigs (01 unit x 600 km one way)	km	2.2.8	36	1000.0	36,000								
4.3	Drilling camp setting cost	per drill	2.2.9 a	2,50,000	1.0	2,50,000								
4.4	Monthly accomadation charges for drilling camp	monthly basis	2.2.9	50,000	2.0	1,00,000								

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4.5	Drilling camp winding cost	per drill	2.2.9b	2,50,000	1.0	2,50,000								
4.6	Approach road making for Rugged - Flat terrain	Km	2.2.10a	22,020	3.0	66,060								
4.7	Construction of Concrete pillar (12"X12"X30")	per borehole	2.2.7a	2,000	5.0	10,000								
4.8	Core preservation	m	5.3	1,590	50.0	79,500		Core preservation	5.3	1,590	200.0	3,18,000		
4.9	Land/Crop compensation (in case the BH falls in agriculture land)	per borehole	5.6	20,000	5.0	1,00,000		Land/Crop compensation (in case the BH falls in agriculture land)	5.6	20,000	0.0	0		
5	**LABORATORY STUDIES**													
5.1	Sample processing works	Sampler charges	days	1.5.2	5,100	44.0	2,24,400	**2,62,328**	Sampler charges	1.5.2	5,100	44	2,24,400	**2,68,752**
5.2		Labour charges	days	5.7	431	88.0	37,928		Labour charges	5.7	504	88	44,352	

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5.3	Sample analysis - Phosphate rock	Primary	per sample	4.1.3	4,200	300.0	12,60,000	**14,49,000**	Primary	4.1.15	4,200	272	11,42,400	**13,18,800**	**225 nos of BH samples for Limestone + 12 BRS (LS: Completed)+ 35 nos of Phosphorite(Completed)**
5.4		Internal Check (5%)		4.1.3	4,200	15.0	63,000		Internal Check (5%)	4.1.15	4,200	14	58,800		
5.5		External Check (10%)		4.1.3	4,200	30.0	1,26,000		External Check (10%)	4.1.15	4,200	28	1,17,600		
5.7	Sample for analysis of 34 radials for REE		per sample	4.1.14	7,731	10.0	77,310	**1,60,860**	Sample for analysis of 34 radials for REE	4.1.14	7,731	0.0	0	**72,930**	
5.8	Petro studies	Preparation of Standard Thin section	nos	4.3.1	2,353	10.0	23,530		Preparation of Standard Thin section	4.3.1	2,353	10	23,530		
5.9		Complete Petrological Report of rock sample	nos	4.3.4	4,232	10.0	42,320		Complete Petrological Report of rock sample	4.3.4	4,232	10	42,320		

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6	Determination of bulk density	nos	4.1	3,540	5.0	17,700		Determination of bulk density	4.1	3,540	2	7,080		
8	**Sub Total**					**60,46,958**	**60,46,958**	**Sub Total**				**54,05,507**	**54,05,507**	
7	Peer review of report	lump sum				10,000		Peer review of report				30,000		**Additional cost of Rs.20,000**
9	Preparation of Exploration Project Proposal	lump sum	5.1	2% of approved project cost subject to minimum of ₹ 2 lakh and maximum of ₹ 5 lakh”	5 Hard copies along with Soft copy	**1,20,939**	**4,33,287**	Preparation of Exploration Project Proposal	5.1			**1,08,110**	**4,82,392**	
10	Exploration Report (5% of (Sl 9 + Sl 10))		5.2(iii)	For the projects having cost excedingRs 50 lakhs but	5 Hard copies along with Soft cop	**3,02,348**		Exploration Report (5% of (Sl 9 + Sl 10))	5.2(ii)			**2,70,275**		

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				less than Rs 150 lakhs : A Minimum of Rs.2.5 lakhs or 5% of the value of work whichever is more	y									
11								Tendering process cost for outsourced component	2.3			12,335		**@ 2% of Rs.5,13,877/- towads drilling works**
12								Operational Charges for outsourced component	Para (i) of 6.0			61,673		**@ 10% of Rs.5,13,877/- towads drilling works**
11	**GRAND TOTAL (9 to 11)**					**64,80,245**	**64,80,245**					**58,87,899**	**58,87,899**	

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12	**GST 18%**					**11,66,444**	**11,66,444**					**10,59,822**	**10,59,822**	
13	**Grand Total (with GST 18%)**					**76,46,689**	**76,46,689**					**69,47,721**	**69,47,721**	**69.47 lakh**
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 NMETSoC and Item no. 6 of NMETSoC. In case of execusion of the project by NEA on its own, a Certifiate 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.**													



