Ministry of Mines
National Mineral Exploration Trust

Minutes of the 30th Technical-cum-Cost Committee (TCC) meeting held on 8th and 9th June, 2021 through videoconferencing at Geological Survey of India, DGCO, A-II Pushpa Bhawan, New Delhi

The 30th meeting of Technical-cum-Cost Committee [TCC] of National Mineral Exploration Trust [NMET] was held under the chairmanship of Shri Janardan Prasad, Additional Director General, Geological Survey of India [ADG, GSI], and Chairman, TCC, NMET on 8th and 9th June, 2021 at GSI, DGCO, A-II Pushpa Bhawan, New Delhi through videoconferencing. The TCC members and representatives of Exploration Agencies [EAs] participated through their respective VC nodes. The list of participants is at **Annexure-1**.

Dr. L. P. Singh, Director, GSI and Member Secretary, TCC-NMET, welcomed Shri Janardan Prasad, ADG, GSI & Chairman, TCC; Members of the TCC, participants representing various EAs. He briefly outlined the project proposals submitted by EAs for consideration of 30th TCC meeting.

Shri Amit Saran, Director, NMET informed that by end of FY 2020-21, a total amount of Rs. 967 Cr has been sanctioned from NMET for implementation of various projects on different mineral commodities throughout the country. He further conveyed that the expenditure of about Rs. 319 Cr has been made till March, 2021 and EAs need to expeditiously deploy their resources for optimum utilisation of sanctioned budget.

Shri Janardan Prasad, ADG, GSI and Chairman, TCC welcomed the participants and opined that there should be uniformity in the various work components envisaged for exploration of a particular mineral commodity and EAs need to propose the work components accordingly. He expressed that a generalised guidelines may be adopted for evaluation of various work components in particular project. The proceeding of meeting was initiated as per circulated agenda.

The agenda-wise discussion followed.

30.1: Technical evaluation of new project proposals:

BASEMETAL

30.1.1. Reconnaissance Survey (G4) for Copper in Chalima Block (28.08 sq km area) District- Giridih, Jharkhand.

a) Based on the evaluation of geological work carried out by GSI, MECL has proposed to take up reconnaissance survey (G4 stage) in the Chalima block. Remote sensing geophysical survey combined with geological mapping surface sampling and pitting/ trenching work have been proposed to take up for assessment of the disposition of the mineralized zones and structural features of the block along with grade of mineralisation.
b) Geologically the area is exposed by the rocks of granite gneisses and schists. The trends of pegmatites and quartz veins are discordant with the foliation and concordant

at places. Pegmatites are confined to the northern part of the area. Granite appears to bear an intrusive relationship with the country rock and include numerous xenoliths which have retained their schistose character, and are conformable with foliation of adjacent schist.

c) MECL has submitted that the copper mineralisation has been indicated by the presence of Malachite and Azurite stains in the area. In the adjoining Baraganda block the Baraganda Copper Company had carried out underground mining by sinking five shafts in five levels in the mineralised zone.
d) It has been submitted that the copper mineralisation has been found in the hill near Geyjadih, which is situated about 3km south west of Baraganda. MECL has submitted that there are four mineralized zones in the Geyjadih area, and three old-working are also present. The mineralization is apparently similar to that of Baraganda mines. Specks and bunches of chalcopyrite and encrustations of peacock ore were found in the country rock.

Based on the detailed deliberations on the project, the Committee opined that though there is mineralisation in the adjoining area [Baraganda block- NE part], however no indication of mineral occurrences has been reported from the proposed area. The Committee suggested to collate all the available geoscience data and collect/ analyse some of the samples, if required, to justify the presence of mineralisation in the area. Based on which a G4 stage exploration program can be taken up as per MEMC rule. A revised proposal may be submitted in the next TCC meeting.

30.1.2. Reconnaissance Survey (G4) for Copper, lead, zinc & gold in Bagwari, Sukwari Block (44.75 sq km) District- Sidhi, Madhya Pradesh.

a) Geologically the area is represented by the granite gneisses and schists with intrusion of basic and ultrabasic rocks at the base. Gneisses are overlain by Mahakoshal Group of rocks followed by Semri Group of Vindhyan Supergroup. The area between the two lineaments trending ENE-WSW within Mahakoshal Group is the zone of interest for various mineral commodities.
b) It has been submitted that the mineralisation of copper and baryte is associated with the shearing. The intrusion might have played a role in creation of open cavities and voids in the fissile country rocks as well as shallow fractures within granites. The sporadic nature of baryte occurrences together with its shallow depth and distinct boundaries with host rocks suggest that the baryte veins might have originated due to fractures and cavity filling. The association of chalcopyrite and baryte with malachite, azurite, quartz and siderite indicates an intermediate temperature condition of deposition. The pitting carried out by GSI has suggested that the mineralisation in the area is sporadic in nature with presence of granite body within one meter depth from surface.
c) It has been submitted that copper upto 1000ppm, lead 150ppm and zinc up to 300ppm have been reported in the area from stream sediment samples collected by GSI.
d) The NMH-II, GSI has conveyed that the 60% area of proposed project falls within the approved ongoing project of GSI. NMH-II, GSI suggested that the adjoining area will be covered through the extrapolation of acquired geoscience data from the ongoing project and there may not be requirement of G4 stage exploration in the proposed block.

The committee suggested to drop the project to avoid any duplication and also suggested EAs to consult the concerned state unit office of GSI before conceiving any project to avoid duplication.

GOLD and REE

30.1.3. Reconnaissance Survey (G4) for Gold, PGE & REE in Karadihalli Block, Northern extension of Nuggihalli Schist Belt, District- Hassan and Chikmagalur, Karnataka.

a) After detailed deliberations on the project the committee opined that the gold and REE exploration may not be clubbed into one project as the target host rock may be different for both the commodities.
b) The block may not be suitable for REE exploration as host rock do not depicts any signatures of TREE. The only NGCM data indicating anomalous values of REE may not be sufficient for significant outcome, however, the encouraging results of bed rock /whole rock sample would be required for justification of conceiving G4 stage exploration project for REE. All available geoscience data needs to be incorporated in the background information. Few samples may be analysed to strengthen the project for its suitability for gold exploration as per MEMC rule.
c) Committee opined that the proposal on gold exploration may be proposed over the schist belt excluding the granite body.

The committee suggested to resubmit the proposal in next TCC after attending suggested modification in the project.

30.1.4. Preliminary Exploration (G3) for Copper ore in Singhana-Muradpur West intervening Block, District- Jhunjhunu, Rajasthan.

a) The project proposal was discussed in the 29th TCC meeting and Committee had suggested to resubmit the proposal in the next TCC meeting after carrying out study on suitability of auction of all three blocks in the area.
b) Regarding suitability of auctioning of blocks, the DGM, Rajasthan has submitted that about 80% portion of Singhana & Singhana extension block falls within the mining lease of HCL, entire block of Singhana extn. Ph.I falls within the habitat of Singhana village, and 5% area of Singhana extn. Ph.II fall within the Aravalli hills whereas the Muradpur block is free for auctioning. The exploration over the Singhana - Muradpur intervening block will be useful for auctioning of entire auctionable block.
c) The DGM, Rajasthan suggested that some magnetite samples also need to be analysed from the area and to be included in the proposal.
d) MECL has conveyed that about 42.68MT copper resource with average cut-off grade of 1.42%Cu is present in total 10 blocks in the area.
e) After detailed deliberations the Committee suggested to resubmit the proposal by including the following details:
    i. The proposal should include all available geoscience data collected during G4 stage exploration with special emphasis on the zone(s) of mineralisation.
    ii. The proposal should have provision for collection of magnetite samples, as suggested by DGM, Rajasthan.
    iii. Total 200 samples will be collected from the entire area.
    iv. Initially there will be provision of five boreholes with 100m vertical depth. After review of the outcomes the further decision on other boreholes will be taken.

The committee suggested to resubmit the proposal after attending the modifications suggested at para e (i) to (iv) above.

EMERALD and REE

30.1.5. Reconnaissance Survey (G4) for Emerald and REE in Barala-Kaklana Block (97.00 sq km), District- Ajmer, Rajasthan.

30.1.6. Reconnaissance Survey (G4) for Emerald and REE in Bubani-Budhol Block (90.00 sq km) District- Ajmer, Rajasthan.

30.1.7. Reconnaissance Survey (G4) for Emerald and REE in Rajgarh-Mangaliyawas Block (155.00 sq km) District- Ajmer, Rajasthan.

MECL has withdrawn all the three proposals [30.1.5 to 30.1.7] on Emerald and REE citing reasons that these proposals were discussed with DMG Rajasthan and DMG Rajasthan has suggested some modifications. MECL has conveyed that the modified version of the proposals will be submitted in next TCC. The committee noted the submission of MECL.

30.1.8. Reconnaissance Survey (G4) for copper and associated minerals in Hidder-Bodal Block (50.35 sq km), District- Rajnandgaon, Chhattisgarh.

The Chhattisgarh Mineral Development Corporation Ltd. (CMDC) has withdrawn their proposal and conveyed that the proposal will be submitted in the next TCC after incorporating some modifications.

COAL

30.1.9. General exploration (G2) for coal in Marwatola Sector-I & II Block, Sohagpur Coalfield, District: Umaria, Madhya Pradesh.

30.1.10. General exploration (G2) for coal in Marwatola Sector-III & IV Block, Sohagpur Coalfield, District: Umaria, Madhya Pradesh.

a) The Sohagpur Coalfield is the main coal bearing area of South Rewa Gondwana Basin. In 2008, MECL had carried out regional exploration [G3 stage] in the Marwatola Block (Marwatola Sec- I, II, III, IV, V & VI) and drilled 78 boreholes of MSM series. Total 13 correlatable coal seams have been observed in the block and a resource of about 516 MT coal at various grades [Gross Calorific Grade] as detailed below was established:

Resource in MT	GCV Grade	Resource in %
17.9645	G1-G3	3.48
85.4177	G4-G5	16.55
235.0659	G6	45.53
120.9405	G7-G8	23.43
41.3435	G9-G10	8.01
10.0339	G11-G12	1.94
5.4856	G13-G14	1.06
516.2516		**100**

b) It is pertinent to mention that, as per the decision of 17th EC meeting, it was decided that the new project proposals for coal may be considered for approval if the resource falls under coking or non-coking coal grade of G1 to G10. In the said Marwatola block [Sector I to VI] about 66% resource fall between G1 to G6 grade and rest falls in G7 to G14.
c) It has been conveyed that a total of 14 and 8 coal seams/ carbonaceous horizons in Marwatola sector I & II and Marwatola Sector III & IV respectively have been recorded in the area. The general strike of the coal seams varies from almost NNW-SSE and NNE-SSW in the eastern part and the strike takes a swing to become almost E-W in the north eastern part of the block. The coal bed exhibits gentle to flat dip varying from 2^{o} to 6^{o}.
d) Based on the outcome of G3 stage exploration, the CMPDI has proposed to take up G2 stage exploration in the Marwatola sector I & II and Marwatola Sector III & IV blocks.
e) After detailed deliberations, the committee suggested that NGPM [gravity] data from GSI may be considered for demarcation of structural features of coal blocks. Committee also advised to submit the modified version of the maps, lithologs by including all available geoscience data available with various agencies. The maps and lithologs should be prepared in a proper legible manner.

The Committee recommended the proposals for approval of

(a) General exploration (G2) for coal in Marwatola Sector-I & II Block, Sohagpur Coalfield, District: Umaria, Madhya Pradesh with estimated cost of Rs. 701.63 Lakh including GST in time schedule of 18 months for carrying out the proposed work and submission of report as per Annexure-2A & 2B.

(b) General exploration (G2) for coal in Marwatola Sector-III & IV Block, Sohagpur Coalfield, District: Umaria, Madhya Pradesh with estimated cost of Rs. 511.99 Lakh including GST in time schedule of 16 months for carrying out the proposed work and submission of report as per Annexure-3A & 3B.

30.1.11. Preliminary exploration (G3) for coal in Pawanchora Central Block, Wardha Valley Coalfield, District: Chandrapur, Maharashtra.

a) Wardha Valley Coalfield spread over an area of 4,130 sq km in parts of has assumed importance by virtue of its location to meet the Chandrapur and Yeotmal districts of Maharashtra. The Wardha Valley Coalfield have been is characterized by the presence of one thick coal seam varying in thickness from 15 m to 20 m that splits into two or three sections as Top & Bottom or Top, Middle & Bottom. These correlatable sections are separated by well-defined parting. Pawanchora Central block is located in the north eastern part of the Wardha valley coal field.

b) CMPDI has proposed to take up G3 stage exploration over an area of 124 sq km in Pawanchora central block, out of which 6 sq km area is under forest cover. The overall resource grade in the Pawanchora Central block varies from G7-G11 grade of GCV.

c) The DGM, Maharashtra conveyed that the depth of coal seams are almost at a depth of 1000m which may not be economically feasible to auction the block.

The committee suggested to resubmit the revised project on Preliminary exploration (G3) for coal in Pawanchora Central Block, Wardha Valley Coalfield, District: Chandrapur, Maharashtra with following modifications:

(a) The forest cover area to be excluded from the proposal,

(b) All available geophysical data, especially NGPM, needs to be incorporated in proposal,

(c) Based on the analyses of NGPM [gravity data], the 2D seismic data acquisition in the block may be proposed, to study the presence of any basinal high which may bring a part of coal seam at shallow depth.

(d) Initially five boreholes may be proposed in the area based on 2D seismic data interpretation,

(e) Areas with higher elevation needs to be demarcated to optimise the drilling meterage.

30.1.12. Preliminary exploration (G3) for coal in Pawanchora West Block, Wardh Valley Coalfield, District: Chandrapur, Maharashtra.

a) Wardha Valley Coalfield spread over an area of 4,130 sq km in parts of has assumed importance by virtue of its location to meet the Chandrapur and Yeotmal districts of Maharashtra. The Wardha Valley Coalfield have been characterized by the presence of one thick coal seam varying in thickness from 15 m to 20 m that splits into two or three sections as Top & Bottom or Top, Middle & Bottom. These correlatable sections are separated by well-defined parting. Pawanchora Central and Pawanchora west, with shared boundary, are located in the north eastern part of the Wardha valley coal field.

b) CMPDI has proposed to take up G3 stage exploration over an area of 67 sq km in Pawanchora west block, out of which 33 sq km (~40%) falls under forest cover. The overall resource grade in the Pawanchora West block varies from G7-G11 grade of GCV.

c) The DGM, Maharashtra conveyed that the depth of coal seams are almost at a depth of 1000m may not be economically feasible to auction the blocks.

The committee recommended not to take up Preliminary exploration (G3) for coal in Pawanchora West Block, Wardha Valley Coalfield, District: Chandrapur, Maharashtra.

30.2. Review of exploration work for the ongoing projects

30.2.1. Review of General exploration (G2) for Copper in Tonda block, Eastern Khetri Copper Belt, District- Jhunjhunu, Rajasthan.

a) The project was recommended in 24th TCC meeting held on 07th, 08th and 09th October, 2020 with estimated cost of Rs. 650.39 Lakh and approved in 17th EC meeting held on 05th November, 2020.

b) The TCC recommended that the geophysical survey, geophysical logging along with systematic drilling with maximum 200m vertical depth of intersection may be taken up by MECL.

c) MECL conveyed that the drilling in nine boreholes out of 13 boreholes have been completed till date. MECL has proposed to shift the borehole location of four boreholes [PBH-01, PBH-06, PBH-07 and PBH-08] due to forest cover and village settlement. It has been conveyed that a total of 245m additional drilling will be required to intersect

the mineralised zone from the revised borehole locations. Details are given in **Annexure-4A**

d) During the review, MECL also informed that geophysical logging need to change from spectral gamma probe to natural gamma probe. The details are given in **annexure-4B.**

e) There is also change in borehole deviation survey from Multishot Borehole Deviation Camera to Borehole Deviation Sonde. The details are given in **annexure-4C**.

The committee agreed about the change of the work components and suggested to carry out the work accordingly. The committee also approved additional cost of Rs. 38,26,740/- including GST.

30.2.2. General exploration (G2) for Copper in Naila Ki Dhani Copper Block, Eastern Khetri Copper Belt, District- Jhunjhunu, Rajasthan.

a) The project was recommended in 24th TCC meeting held on 07th, 08th and 09th October, 2020 with estimated cost of Rs. 807.59 Lakh and approved in 17th EC meeting held on 05th November, 2020.

b) MECL presented the work done and informed that geophysical logging need to change from spectral gamma probe to natural gamma probe. The details are given in **annexure-5A.**

c) There is also change in borehole deviation survey from multishot borehole deviation camera to borehole deviation Sonde. The details are given in **annexure-5B**.

The committee agreed about the change of the work components and suggested to carry out the work accordingly.

30.2.3. Preliminary Exploration (G3) for Iron Ore in

i. Malangtoli Iron Ore (D-sub block), Districts- Sundargarh & Kendujhar, Odisha.

ii. Malangtoli Iron Ore (E-sub block), Districts- Sundargarh & Kendujhar, Odisha.

iii. Malangtoli Iron Ore (G-sub block), Districts- Sundargarh & Kendujhar, Odisha.

a) Earlier, Executive Committee, during its 9th meeting held on 8th Aug, 2018, had approved the project proposals [Malangtoli sub-block D, E & G] based on the following recommendations of 15th TCC [4th and 5th July, 2018]:

i. As there is no schedule of rate for drilling of Iron in the MECL's Schedule of charges, the committee suggested that the drilling may be through outsourcing to private parties and the rate to be charged for drilling shall be actual outsourcing rate basis and the handling charges.

ii. G-3 level of Exploration in Sub Block-D of Malangtoli Iron Ore Block, with a total of 1000m drilling in 10 Bhs alongwith associated geological & Laboratory Studies at an estimated cost of Rs. 210.89 Lakh to be completed in a time schedule of 12 months including the final report submission.

iii. G-3 level of Exploration in Sub Block-E of Malangtoli Iron Ore Block, with a total of 1000m drilling in 10 Bhs along with associated geological & Laboratory Studies at an estimated cost of Rs 199.21 Lakh to be completed in a time schedule of 12 months including the final report submission.

iv. G-3 level of Exploration in Sub Block-G of Malangtoli Iron Ore Block, with a total of 1000m drilling in 10 Bhs alongwith associated geological & Laboratory

Studies at an estimated cost of Rs 210.88 Lakh to be completed in a time schedule of 12 months including the final report submission.

b) MECL has conveyed that about 90% area of all the three blocks ('D', 'E' and 'G') falls under the forest cover and forest clearance in respect of sub block 'D' and 'G' have been received on 08.03.2021 and forest permission for block E is still pending. Now, MECL has proposed to take up the drilling work through in-house resources instead of through pre-approved outsourcing.

The committee expressed its concern over the considerable delay in initiation of Malangtoli Iron Ore [D, E & G] project. The committee was of the view that the exploration work is to be completed as per pre-approved TOR accorded by EC in its 9th meeting held on 8th Aug, 2018 and submit the report at the earliest.

30.3. Timeline extension of projects.

30.3.1. Multi Sensor Aerogeophysical Survey [Block-11].

a) GSI has conveyed that the contract of data acquisition over block 11 was awarded to M/s McPhar International Pvt. Ltd., India, with a timeline of 30.09.2020. Time extension for the project has been extended twice [upto 31.12.2020 and again upto 31.03.2021].

b) It has been informed that field data acquisition, data compilation, processing, integration and interpretation have been completed and data report finalisation is in process. The draft report has been circulated to experts and was discussed in the stakeholder's workshop on 2.6.2021. The comments /recommendations received on the draft report are being incorporated. GSI has informed that the report will be finalised by 30.6.2021 and requested for a time extension up to June, 2021.

The committee recommended for approval by EC for the timeline extension up to 30.6.2021 for completion of work and submission of hard copy of final report.

30.3.2.

(i) General exploration (G2) for limestone in Mandipadu Limestone Block, Dachepalli (M), District- Guntur, Andhra Pradesh **[Implementing agency: MERIT, AP].**

(ii) General exploration (G2) for limestone in Mutyalampadu-Tangeda Limestone Block, Dachepalli (M), District- Guntur, Andhra Pradesh **[Implementing agency: MERIT, AP].**

(iii) General exploration (G2) for limestone in Tangeda Limestone Block, Dachepalli (M), District- Guntur, Andhra Pradesh **[Implementing agency: MERIT, AP].**

(iv) General exploration (G2) for limestone in Ramapuram Limestone Block, Dachepalli (M), District- Guntur, Andhra Pradesh **[Implementing agency: MERIT, AP].**

a) TCC in its 29th meeting held on 11th and 12th March, 2021 recommended for timeline extension upto 31.07.2021. The recommendation is pending for approval of EC.

b) MERIT, AP informed that due to Covid-19 pandemic, the analytical results of the some of the samples are yet to be received from the chemical laboratories and it is expected that the analyses will be received by 31.10.2021. MERIT has requested for a timeline extension up to 31.10.2021.

The Committee recommended for approval by EC for the timeline extension up to 31.10.2021 for completion of all pending work and finalisation of report for all the four blocks.

30.3.3. General exploration (G2) for Iron Ore in BRH Iron Ore Mines, NEB Range M/s RMMPL, ML No. 2010, District- Ballari, Karnataka. [Implementing agency: MECL]

a) The project was recommended in 12th TCC meeting held on 08th and 9th January, 2018 and approved in 6th EC meeting held on 11th January, 2018 with estimated cost of Rs. 1004.16 Lakh with time schedule of 13 months.

b) MECL informed that forest permission was received on 29th July, 2020 and exploration work commenced on 10th August, 2020.

c) It has been conveyed that the exploratory drilling of about 2101m (22 boreholes) against the target of 3495m (33 boreholes) have been completed so far by MECL. The drilling has been suspended in month of February, 2021.

d) It has been informed that approach roads to remaining 11 boreholes is damaged and new vegetation and forest cover have been grownup. Therefore, to approach remaining 11 boreholes, new road and forest permission for the extended period will be required. Revised forest permission has been applied by MECL in January, 2021.

e) MECL has requested a timeline extension for completion of project without a definite time period.

The Committee was concerned to note that, due to considerable delay in completion of the work, forest cover has regrown for which fresh forest permission is required. The Committee suggested to get forest permission at the earliest and submit the proposal to TCC for a definite timeline extension. The timeline extension will be granted after review of the work done.

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

List of TCC members attended 30th Technical-cum-Cost Committee (TCC) meeting of NMET held on 08th and 09th June, 2021 through videoconferencing at Geological Survey of India, DGCO, A-II Pushpa Bhawan, New Delhi

S. No.	Name/Designation	Status	Remarks
1	Shri Janardan Prasad, ADG & HoD, SR, GSI, Hyderabad	Chairman, TCC, NMET	Attended via videoconference
2	Shri Ranjan Kumar Sinha, Controller General (Retd.) Indian Bureau of Mines, Noida	TCC Member	Attended via videoconference
3	Shri P. Tarafdar, Dy. Director General (Retd.) Geological Survey of India, Kolkata	TCC Member	Attended via videoconference
4	Dr. Manoranjan Mohanty, Dy. Director General (Retd.) Geological Survey of India, Bhubaneshwar	TCC Member	Attended via videoconference
5	Shri Naeem Ahmad, General Manager-Exploration (Retd.), CMPDI Ltd., Aligarh	TCC Member	Attended via videoconference
6	Dr. Anjani Kumar, Dy. General Manager (Exploration) & HoD-Planning (Retd.), MECL, Nagpur	TCC Member	Attended via videoconference
7	Dr. J. V. Ramarao, Dy. Director General (GP) [Retd.], Geological Survey of India, Hyderabad	TCC Member	Attended via videoconference
8	Shri B. Saravanan, Additional Director, Atomic Minerals Directorate for Exploration and Research, Hyderabad	TCC Member	Attended via videoconference
9	Dr. L. P. Singh, Director, Geological Survey of India, DGCO, New Delhi	Member Secretary, TCC, NMET	Attended in person
10	Shri Amit Saran, Director, NMET, MoM	TCC Member	Attended via videoconference
11	Shri Ravi Kumar Gupta, Deputy General Manager (Finance), HCL, Kolkata	TCC Member	Attended via videoconference
12	Shri P. K. Maharana, Dy. General Manager (Finance), NALCO, Bhubaneshwar	TCC Member	Attended via videoconference
13	Shri Vinay Pal, Assistant Cost Account Officer (Finance), Geological Survey of India, DGCO, New Delhi	TCC Member	Attended in person

Annexure-1

List of participants attended 30th Technical-cum-Cost Committee (TCC) meeting of NMET held on 08th and 09th June, 2021 through videoconferencing at Geological Survey of India, DGCO, A-II Pushpa Bhawan, New Delhi

S. No.	Name/Designation	Email ID	Contact No	Organisation
1	Shri Janardan Prasad, ADG & HoD, SR, GSI, Hyderabad	janardan.prasad@gsi.gov.in	7763800788	Chairman, TCC
2	Shri Ranjan Kumar Sinha, Controller General (Retd.) IBM, Noida	sinhark57@rediffmail.com	9421777637	Member, TCC
3	Shri Pradipta Tarafdar, DDG (Retd.) GSI, Kolkata	tarafdar.pradipta@gmail.com	9503088847	Member, TCC
4	Shri Manoranjan Mohanty, DDG (Retd.) GSI, Bhubaneshwar	manoranjanmoha@gmail.com	9483511287 8249014425	Member, TCC
5	Dr. J. V. Ramarao, DDG (GP) (Retd.) GSI, Hyderabad	rarajammi@gmail.com	9440691284	Member, TCC
6	Shri Anjani Kumar, (Retd.), MECL, Nagpur	anjanikumar1957.ak@gmail.com	9975350576	Member, TCC
7	Shri B. Saravanan, Additional Director, AMD, Hyderabad	addldir-op2.amd@gov.in	8987571606	Member, TCC
8	Shri Amit Saran, Director & HoD, NMET	amit.saran@nic.in	9717647259	Member, TCC
9	Dr. L. P. Singh, Director, GSI, New Delhi	nmet-tcc@gov.in	9490748249	Member Secretary, TCC
10	Shri P. K. Maharana, DGM (F), NALCO, Bhubaneshwar	pmaharana@rediffmail.com	8500669500	Member, TCC
11	Shri Vinay Pal, ACAO, GSI, New Delhi	palvinay009@gmail.com	8527368161	Member, TCC
12	Shri Debkumar Bhattacharya Dy. Director General	debkumar@gsi.gov.in		GSI, RSAS, Bangalore
13	Dr. Deshraj Trivedi, Senior Geologist	nmet-tcc@gov.in	9419244294	NMET
14	Shri Subhash Kumar, Senior Geologist	nmet-mines@gov.in	9868302624	NMET
15	Smt. Ujjwala Sharma, Senior Geologist	nmet-mines@gov.in	8957806004	NMET
16	Shri K. K. Kaushik, HOD, (Exploration)	gm-exploration@mecl.co.in		MECL, Nagpur
17	Shri V. K. Srivastava, GM (Exploration)	gmexpl.cmpdi@coalindia.in	8987788782	CMPDI
18	Dr. R. P. Singh, Mnager (Geology)	gm.exploration.cmpdil@gmail.com	8987789047	CMPDI
19	Shri V. Ravi Chand, Dy. Director, Mines and Geology	ceo.merit@gmail.com		MERIT, AP
20	Ms. Anjali	director@mahadgm.gov.in		DGM, Maharashtra
21	Director (Mines)	director-mines@jharkhandmail.gov.in		DGM, Jharkhand
22	Shri Alok Prakash Jain, Suptdg. Geologist, Jaipur	supgeo.jaipur@rajasthan.gov.in	9413301260	DGM, Rajasthan
23	Shri Sunil Kumar Verma, Suptdg. Geologist, Ajmer	supgeo.ajmer@rajasthan.gov.in	9414248396	DGM, Rajasthan

Annexure-2A

Estimated cost of project General exploration (G2) for coal in Marwatola Sector-I & II Block, Sohagpur Coalfield, District: Umaria, Madhya Pradesh.

S. No.	Item Work	Item no in Soc	Unit	Rates as per SoC of NMET	Rate (Rs)	Qty.	Amount (Rs)	Remarks
Outsourced operations								
A	**DRILLING**							
1	Drilling (As per MoC Rate 2020-21)	2.2.1.1b	m	5,619	5,619	6,680	3,75,34,920	Copy of MoC approved Rate is required
B	**GEOPHYSICAL STUDIES**							
1	Borehole Geophysical logging (As per MoC Rate 2020-21)	3.11	m	656	697	6,680	46,55,960	Copy of MoC approved Rate is required
								reimbursement of outsource component will be made as per Para 3 of NMET-SoC
					Total cost of outsourcing component		**4,21,90,880**	
In-House operations								
I- Field work								
A	**GEOLOGICAL WORK**							
1	Survey Work (Field Work & Monitoring)-1 surveyor	1.6.1b	Day	8,300	8,300	30	2,49,000	
2a	Geological Party days-Field (Field Work & Monitoring)- 1 Geologist	1.5.1b	Day	11,000	11,000	150	16,50,000	
2b	Geological Party days-HQ (Data processing & Report Preparation)- 1 Geologist	1.5.1b	Day	9,000	9,000	60	5,40,000	
						Sub Total- A	**24,39,000**	
B	**GEOPHYSICAL STUDIES**							
2a	Geophysict Party days-Field (Field Work & Monitoring)- 1 Geophysict	3.19	Day	11,000	11,000	15	1,65,000	
2b	Geophysict days-HQ (Data processing & Report Preparation)- 1 Geophysict	3.19	Day	9,000	9,000	10	90,000	
						Sub Total- B	**2,55,000**	
						Sub Total (A+B)	**26,94,000**	

II- Laboratory Studies								
1	**Band By Band Analysis**							
a	Ash+Moisture	4.2.6	per sample	700	700	180	1,26,000	
b	House Keeping	4.2.1	per sample	115	115	180	20,700	
2	**Overall analysis**							
a	Proximate analysis	4.2.7	per sample	935	935	180	1,68,300	
b	Moisture at 60% RH & 40C	4.2.8	per sample	1,010	1,010	180	1,81,800	
c	GCV	4.2.11	per sample	1,505	1,505	180	2,70,900	
d	Sample preparation & House Keeping	4.2.3	per sample	795	795	180	1,43,100	
3	**Special Test**							
a	Ultimate analysis	4.2.17	per sample	9,945	9,945	18	1,79,010	
b	Total Sulphur	4.2.14	per sample	1,900	1,900	18	34,200	
c	Distribution of Sulphur	4.2.15	per sample	3,695	3695	18	66,510	
d	HGI including sample preparation	4.2.18	per sample	3,805	3,,805	18	68,490	
e	AFT (Ash Fusion Temperature)	4.2.20	per sample	2,745	2,745	18	49,410	
f	Ash analysis	4.2.25	per sample	325	325	18	5,850	
4	**Petrographic analysis**							
a	Pellet preparation	4.3.14a	per sample	1,160	1,160	10	11,600	
b	Quantification of Maceral composition	4.3.14b	per sample	10,060	10,060	10	1,00,600	
c	Quantification of Microlithotype composition	4.3.14c	per sample	20,000	20,000	10	2,00,000	
d	Maceral Analysis (with photomicrography)	4.3.14e	per sample	25,000	25,000	10	2,50,000	
e	Microlithotype Analysis (with photomicrography)	4.3.14g	per sample	25,000	25,000	10	2,50,000	
e	Mean Ro%	4.3.14j	per sample	16,345	16,345	10	1,63,450	
5	**Phsico Mechanical Studies (Geotechnical)**		Per bh	34,00,000	34,00,000	1	34,00,000	Approved MoC rate is required
6	**Trace Element /REE Studies ICPMS (1 bhs)**	4.1.14	per sample	7,731	7,731	15	1,15,965	
					Laboratory Studies Total		**58,05,885**	
III- Miscellaneous Charges (Departmental)								
a	Core Preservation (1 borehole)	5.3	Per m	1,590	1,590	860	13,67,400	This amount will be reimbursed after successful delivery of the cores to concerned libraries/authorities
b	DGPS Survey of boundary, borehole points (15 boreholes & 10 boundary point)	1.6.2	per point	19,200	19,200	25	4,80,000	

c	Land crop compensation	5.6	Per bh	20,000	20,000	15	3,00,000	Amount will be reimbursed as per actuals or max. Rs. 20,000 per BH with certification from local authorities
d	3 D ore body modelling using Minex software	5.4		25,00,000	25,00,000	1	2500,,000	will be reimbursed as per actual
e	Preparation of Exploration Proposal	5.1	lump sum	3,80,000	3,80,000	1	3,80,000	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.
f	Peer review			10,000	10,000	1	10,000	
g	Outsourcing process cost	2.3	lump sum	5,00,000	5,00,000	1	5,00,000	will be reimbursed when copy of signed agreement/tender for outsourced component will be submitted.
h	Operational charges for CMPDI	Point 3 (iii)of SOC		15,00,000	15,00,000	1	15,00,000	will be reimbursed as per point 3 of NMET-SoC after recalculation when actual cost of outsourcing component will be provided.
	Miscellaneous Charges Total						**70,37,400**	
	Total cost for in-House component (I to III)						**1,55,37,285**	
	Total cost for outsource and in-House component						**5,77,28,165**	
	Geological Report preparation (3% of work value)	5.2					17,31,845	EA has to submit the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
	Total Cost of the project without GST						**5,94,60,010**	
	Provision for GST (@18%)						1,07,02,802	GST will be reimburse as per actual and as per notified prescribed rate

	Total Cost of the project with GST	**7,01,62,812**	**Or Say Rs. 701.63 Lakh**

Note - If any part mentioned in the in-house component is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. For in-house component of the project, a Certificate from the NEA regarding non outsourcing of any component/project is required.

1) Above rate of drilling, GPL, Chemical, Physicomechanical are budgeted rates.

2) There are numerous items in chemical analysis. The CIMFR rates will be applied for actual payment.

3) For Physicomechanical studies, a lump sum provision has been made. Actual may vary as per requirement. MoC approved rates will apply.

4)For Drilling & Geophysical the approved rates of MoC for FY 2020-21 has been taken other rates are as per approved SoC rates.

5) GPL rates is Rs 697/- per meter of minimum 8 parameters, the break up is as follow

	Probe	**SoC item No**	**Rate 2020-21 (in Rs)**
1	Base Log	3.11a	162
2	Dual Density	3.11d	110
3	Natural Gamma	3.11h	96
4	Caliper	3.11g	20
5	SPR	3.11i	41
6	Sonic	3.11k	131
7	Deviation	3.11m	96
8	Resistivity	3.11c	41
	Total		**697**

6) Overall Analysis of 100% of Boreholes.

7) Lump sum rate of Rs. 25.00 Lakh has been considered for 3D Ore Body Modeling.

8) Lump sum amount of Rs. 10,000 has been considered for Peer Review.

Annexure-2B

Time Schedule/Action Plan for General exploration (G2) for coal in Marwatola Sector-I & II Block, Sohagpur Coalfield, District: Umaria, Madhya Pradesh																			
S. No.	**Activities**																		**Remarks**
		Months	1	2	3	4	6	7	8	9	10	11	12	13	14	15	16	17	18	
1	Outsourcing	Months																		3 Months
2	Mobilizing	Months																		1 months
3	Drilling (Nos of rigs-3 rigs)	Months																		6680 in 15 Bh
4	Borehole Geophysical logging	Days																		6680 in 15 Bh
5	Survey Party days (1 Party)	Days																		30 Days
6	Geologist Party days, Field (1 Party)	Days																		150 Days
7	Geophysict Party days, Field (1 Party)	Days																		15 Days
8	Laboratory Studies (Band By Band)	Nos.																		180 sample
9	Laboratory Studies (Overall)	Nos.																		180 Sample
10	Laboratory Studies (Special)	Nos.																		18 Sample
11	Laboratory Studies (Petrography, Trace element & Geotechnical)	Nos.																		18 Sample
12	Geologist Party days, HQ (1 Party)	Days																		60 Days
13	Geophysict Party days, HQ (1 Party)																			10 Days
14	3 D Modiliing	Months																		4 Months
15	Report Writing & Peer Review	Months																		6 Months
	Total Time Period of Completion of Project-	*18 months from Sanction of Project.*																		

Annexure-3A

Estimated cost of project General exploration (G2) for coal in Marwatola Sector-III & IV Block, Sohagpur Coalfield, District: Umaria, Madhya Pradesh.

S. No.	Item Work	Item no in Soc	Unit	Rates as per SoC of NMET	Rate (Rs)	Qty.	Amount (Rs)	Remarks
Outsourced operations								
A	**DRILLING**							
1	Drilling (As per MoC Rate 2020-21)	2.2.1.1b	m	5,619	5,619	4,620	2,59,59,780	Copy of MoC approved Rate may is required
B	**GEOPHYSICAL STUDIES**							
1	Borehole Geophysical logging (As per MoC Rate 2020-21)	3.11	m	656	601	4,620	27,76,620	Copy of MoC approved Rate may is required
					Total cost of Outsourcing component		**2,87,36,400**	reimbursement of outsource component will be made as per Para 3 of NMET-SoC
In-House Operation								
I- Field Work								
A	**GEOLOGICAL WORK**							
1	Survey Work (Field Work & Monitoring)-1 surveyor	1.6.1b	Day	8,300	8,300	25	2,07,500	
2a	Geological Party days-Field (Field Work & Monitoring)- 1 Geologist	1.5.1b	Day	11,000	11,000	120	13,20,000	
2b	Geological Party days-HQ (Data processing & Report Preparation)- 1 Geologist	1.5.1b	Day	9,000	9,000	45	4,05,000	
					Sub Total- A		**19,32,500**	
B	**GEOPHYSICAL STUDIES**							
2a	Geophysict Party days-Field (Field Work & Monitoring)- 1 Geophysict	3.19	Day	11,000	11,000	13	1,43,000	
2b	Geophysict Party days-HQ (Data processing & Report Preparation)- 1 Geophysict	3.19	Day	9,000	9,000	7	63,000	
					Sub Total- B		**2,06,000**	
					Field Work Total (A+B)		**21,38,500**	
II- Laboratory Studies								
1	**Band By Band Analysis**							

a	Ash+Moisture	4.2.6	per sample	700	700	130	91,000	
b	House Keeping	4.2.1	per sample	115	115	130	14,950	
2	**Overall analysis**							
a	Proximate analysis	4.2.7	per sample	935	935	130	1,21,550	
b	Moisture at 60% RH & 40C	4.2.8	per sample	1,010	1,010	130	1,31,300	
c	GCV	4.2.11	per sample	1,505	1,505	130	1,95,650	
d	Sample preparation & House Keeping	4.2.3	per sample	795	795	130	1,03,350	
3	**Special Test**							
a	Ultimate analysis	4.2.17	per sample	9,945	9,945	13	1,29,285	
b	Total Sulphur	4.2.14	per sample	1,900	1,900	13	24,700	
c	Distribution of Sulpher	4.2.15	per sample	3,,695	3,695	13	48,035	
d	HGI including sample preparation	4.2.18	per sample	3805	3,805	13	49,465	
e	AFT (Ash Fusion Temperature)	4.2.20	per sample	2,745	2,745	13	35,685	
f	Ash analysis	4.2.25	per sample	325	325	13	4,225	
4	**Petrographic analysis**							
a	Pellet preparation	4.3.14a	per sample	1,160	1,160	5	5,800	
b	Quantification of Maceral composition	4.3.14b	per sample	10,060	10,060	5	50,300	
c	Quantification of Microlithotype composition	4.3.14c	per sample	20,000	20,000	5	1,00,000	
d	Maceral Analysis (with photomicrography)	4.3.14e	per sample	25,000	25,000	5	1,25,000	
e	Microlithotype Analysis (with photomicrography)	4.3.14g	per sample	25,000	25000	5	1,25,000	
e	Mean Ro%	4.3.14j	per sample	16,345	16,,345	5	81,725	
5	**Phsico Mechanical Studies (Geotechnical)**		Per bh	34,00,000	34,00,000	1	34,00,000	Approved MoC rate is required
6	**Trace Element /REE Studies ICPMS (1 bh)**	4.1.14	per sample	7,731	7,731	15	1,15,965	
						Laboratory Studies Total	**49,52,985**	
III. Miscellaneous Charges (Departmental)								
a	Core Preservation (1 borehole)	5.3	Per m	1,590	1,590	480	7,,63,200	This amount will be reimbursed after successful delivery of the cores to concerned libraries/authorities

b	DGPS Survey of boundary, borehole points (13 boreholes & 7 boundary point)	1.6.2	per point	19,200	19,200	20	3,84,000	
c	Land crop compensation	5.6	Per bh	20,000	20,000	13	2,60,000	Amount will be reimbursed as per actuals or max. Rs. 20000 per BH with certification from local authorities
d	3 D ore body modelling using Minex software	5.4		25,00,000	25,00,000	1	25,00,000	will be reimbursed as per actual
e	Preparation of Exploration Proposal	5.1	lump sum	3,80,000	3,80,000	1	3,80,000	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.
f	Peer review			10,000	10,000	1	10,000	
g	Outsourcing process cost	2.3	lump sum	5,00,000	5,00,000	1	5,00,000	will be reimbursed when copy of signed agreement/tender for outsourced component will be submitted.
h	Operational charges for CMPDI	Point 3 (iii)of SOC		15,00,000	15,00,000	1	15,00,000	will be reimbursed as per point 3 of NMET-SoC after recalculation when actual cost of outsourcing component will be provided.
	Miscellaneous Charges Total						**62,97,200**	
	Total cost for in-House component (I to III)						**1,33,88,685**	
	Total Cost for outsource and in-House component (1 & 2)						**4,21,25,085**	
	Geological Report preparation (3% of work value)	5.2					12,63,753	EA has to submit the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
	Total Cost of the project without GST						**4,33,88,838**	
	Provision for GST (@18%)						78,09,991	GST will be reimburse as per actual and as per notified prescribed rate
	Total Cost of the project with GST						**5,11,98,828**	**Or Say Rs. 511.99 Lakh**
	Note - If any part mentioned in the in-house component is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. For in-house component of the project, a Certificate from the NEA regarding non outsourcing of any component/project is required.							

Note- 1) Above rate of drilling, GPL, Chemical, Physicomechanical are budgeted rates.

2) There are numerous items in chemical analysis. The CIMFR rates will be applied for actual payment.

3) For Physicomechanical studies, a lump sum provision has been made. Actual may vary as per requirement. MoC approved rates will apply.

4)For Drilling & Geophysical the approved rates of MoC for FY 2020-21 has been taken other rates are as per approved SoC rates.

5) GPL rates is Rs 601/- per meter of minimum 7 parameters, the break up is as follow

	Probe	**SoC item No**	**Rate 2020-21 (in Rs.)**
1	Base Log	3.11a	162
2	Dual Density	3.11d	110
3	Natural Gamma	3.11h	96
4	Caliper	3.11g	20
5	SPR	3.11i	41
6	Sonic	3.11k	131
7	Resistivity	3.11c	41
	Total		**601**

6) Overall Analysis of 100% of Boreholes.

7) Lump sum rate of Rs. 25.00 Lakh has been considered for 3D Ore Body Modeling.

8) Lump sum amount of Rs. 10,000 has been considered for Peer Review.

Annexure-3A

Time Schedule/Action Plan for General exploration (G2) for coal in Marwatola Sector-III & IV Block, Sohagpur Coalfield, District: Umaria, Madhya Pradesh																			
S. No	**Activities**																		**Remarks**
		Months	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1	Outsourcing	Months																	3 Months
2	Mobilising	Months																	1 months
3	Drilling (Nos of rigs-3 rigs)	Months																	4620 in 13 Bh
4	Borehole Geophysical logging	Days																	4620 in 13 Bh
5	Survey Party days (1 Party)	Days																	25 Days
6	Geologist Party days, Field (1 Party)	Days																	120 Days
7	Geophysict Party days, Field (1 Party)	Days																	13 Days
8	Laboratory Studies (Band By Band)	Nos.																	130 sample
9	Laboratory Studies (Overall)	Nos.																	130 Sample
10	Laboratory Studies (Special)	Nos.																	13 Sample
11	Laboratory Studies (Petrography, Trace element & Geotechnical)	Nos.																	1 month
12	Geologist Party days, HQ (1 Party)	Days																	45 Days
13	Geophysict Party days, HQ (1 Party)																		7 Days
14	3 D Modiliing	Months																	4 Months
15	Report Writing & Peer Review	Months																	6 Months
	Total Time Period of Completion of Project-	*16 months from Sanction of Project*																	

Annexure-4A

Details of borehole wise excess meterage required and additional cost in Tonda Block, Eastern Khetri Copper Belt, District- Jhunjhunu, Rajasthan

S. No.	Proposed BH No.	Proposed Borehole				shifted Borehole				Excess Meterage (m)	Difference in RL of Intersection (m)	Additional Drilling Cost (Rs.)		
		Azimuth	Angle	RL of Intersection (m)	Depth (m)	Azimuth	Revised Angle	Revised RL of Intersection (m)	Revised Depth (m)			For Drilling up to 300m (@ Rs.11,500)	For Drilling from 301 to 600 m (@ Rs. 12,420)	Total
1	PBH-01	N47°W	55°	275	170.00	N47°W	45°	175	290.00	120.00	100.00	13,80,000	-	13,80,000
3	PBH-06	N47°W	55°	100	400.00	N47°W	45°	75	425.00	25.00	25.00	-	3,10,500	3,10,500
4	PBH-07	N47°W	55°	175	350.00	N47°W	45°	75	430.00	80.00	100.00	-	12,42,000	12,42,000
5	PBH-08	N47°W	55°	150	370.00	N47°W	45°	125	390.00	20.00	25.00	-	3,10,500	3,10,500
Total					**1290.00**				**1535.00**	**245.00**		**13,80,000**	**18,63,000**	**32,43,000**
													GST 18%	**5,83,740**
													Total	**38,26,740**

Annexure-4B

Borehole wise details of geophysical logging completed partially by spectral gamma probe and partially by natural gamma probe in Tonda Block, Eastern Khetri Copper Belt, District- Jhunjhunu, Rajasthan

Sl. No.	Borehole No.	Tota Depth of Boreholes (m)	Rate of Spctral gamma as per new SoC of NMET in Rs. per metre	Rate of Natural gamma as per new SoC of NMET in Rs. per metre	Approved cost for spctral gamma in Rs. (@164)	Spectral Ggamma Probe				Natural Ggamma Probe				Total Cost in Rs. (A+B)
						Depth (m)			Cost in Rs. (@164) (A)	Depth (m)			Cost in Rs. (@90) (B)	
						From	To	Difference		From	To	Difference		
1	MTC-01	208.00	164.00	90.00	34112.00	0.00	102.00	102.00	16728.00	102.00	208.00	106.00	9540.00	26268.00
2	MTC-02	330.00			54120.00	0.00	156.00	156.00	25584.00	156.00	330.00	174.00	15660.00	41244.00
3	MTC-03	310.00			50840.00	0.00	156.00	156.00	25584.00	156.00	310.00	154.00	13860.00	39444.00
4	MTC-04	200.00			32800.00	0.00	100.00	100.00	16400.00	100.00	200.00	100.00	9000.00	25400.00
Total Cost at Approved Rate (Rs.)					**171872.00**								**Actual claim (Rs.)**	**132356.00**

Annexure-4C

Borehole wise details of deviation survey carried out by Borehole Deviation Sonde in Tonda Block, Eastern Khetri Copper Belt, District- Jhunjhunu, Rajasthan

Sl. No.	BH. No.	Depth (m)	Deviation Instrument	Approved rate for deviation survey by Multishot Borehole Deviation Camera in Rs. Per metre	Rate for deviation survey by Borehole Deviation Sonde as per new SoC of NMET in Rs. per metre	Approved Cost (Rs.)	Actual Cost (Rs.)	Difference (Rs.)
1	MTC-01	206.00	Borehole Deviation Sonde	330.00	90.00	67980.00	18540.00	-49440.00
2	MTC-02	329.00	Borehole Deviation Sonde			108570.00	29610.00	-78960.00
3	MTC-03	309.00	Borehole Deviation Sonde			101970.00	27810.00	-74160.00
4	MTC-04	199.00	Borehole Deviation Sonde			65670.00	17910.00	-47760.00
5	MTC-06	139.00	Borehole Deviation Sonde			45870.00	12510.00	-33360.00
6	MTC-07	224.00	Borehole Deviation Sonde			73920.00	20160.00	-53760.00
7	MTC-08	319.00	Borehole Deviation Sonde			105270.00	28710.00	-76560.00
8	MTC-09	169.00	Borehole Deviation Sonde			55770.00	15210.00	-40560.00
Total						**625020.00**	**170460.00**	**-454560.00**

Annexure-5A

Borehole wise details of geophysical logging completed partially by spectral gamma probe and partially by natural gamma probe in Naila Ki Dhani Block, Eastern Khetri Copper Belt, District- Jhunjhunu, Rajasthan

S. No.	Block	Borehole No.	Tota Depth of Boreholes (m)	Rate of Spctral gamma as per new SoC of NMET in Rs. per metre	Rate of Natural gamma as per new SoC of NMET in Rs. per metre	Approved cost for spctral gamma in Rs. (@164)	Spectral Ggamma Probe				Natural Ggamma Probe				Total Cost in Rs. (A+B)
							Depth (m)			Cost in Rs. (@164) (A)	Depth (m)			Cost in Rs. (@90) (B)	
							From	To	Difference		From	To	Difference		
1	NAILA KI DHANI	MNDC-01	320.00	164.00	90.00	52480.00	0.00	159.00	159.00	26076.00	159.00	320.00	161.00	14490.00	40566.00
Total Cost at Approved Rate (Rs.)						**52480.00**	**Actual claim (Rs.)**								**40566.00**

Annexure-5B

Borehole wise details of deviation survey carried out by Borehole Deviation Sonde in Naila Ki Dhani Block, Eastern Khetri Copper Belt, District- Jhunjhunu, Rajasthan

S. No.	BH. No.	Geophysical Logging Depth (m)	Deviation Instrument	Approved rate for deviation survey by Multishot Borehole Deviation Camera in Rs. Per metre	Rate for deviation survey by Borehole Deviation Sonde as per new SoC of NMET in Rs. per metre	Approved Cost (Rs.)	Actual Cost (Rs.)	Difference (Rs.)
1	MNDC-01	319.00	Borehole Deviation Sonde	330.00	90.00	105270.00	28710.00	-76560.00
2	MNDC-02	108.00	Borehole Deviation Sonde			35640.00	9720.00	-25920.00
3	MNDC-03	106.00	Borehole Deviation Sonde			34980.00	9540.00	-25440.00
5	MNDC-05	269.00	Borehole Deviation Sonde			88770.00	24210.00	-64560.00
6	MNDC-06	266.00	Borehole Deviation Sonde			87780.00	23940.00	-63840.00
7	MNDC-07	109.00	Borehole Deviation Sonde			35970.00	9810.00	-26160.00
8	MNDC-08	112.00	Borehole Deviation Sonde			36960.00	10080.00	-26880.00
9	MNDC-10	94.00	Borehole Deviation Sonde			31020.00	8460.00	-22560.00
10	MNDC-11	259.00	Borehole Deviation Sonde			85470.00	23310.00	-62160.00
11	MNDC-12	279.00	Borehole Deviation Sonde			92070.00	25110.00	-66960.00
12	MNDC-13	259.00	Borehole Deviation Sonde			85470.00	23310.00	-62160.00
Total						**719400.00**	**196200.00**	**-523200.00**