

Scrutiny comments on the Modified Mining Plan of Rakha Copper Mine (785.091 Ha) of M/s Hindustan Copper Ltd. situated in Singhbhum (E) district of Jharkhand State

Text:

General Information:

1. The mine is closed since last two decades and all means of entry to the mine were closed due to safety reasons. Proposals as envisaged in the submitted document can't be verified in field during the course of inspection. A brief mine history to be given since its execution till date duly enclosing supporting copy of documents in respect of various permissions acquired since execution of the ML in a tabular format. The date of last survey based on which the proposals have been drawn to be recorded in all the plates.
2. It appears that the present document has been submitted in view of the proposed extension of the lease period. Therefore the document shall be submitted citing appropriate rule.
3. The document shall be strictly prepared as per the format circulated vide CCOM circular No. 1/ 2021 alongwith subsequent FAQ informed to you vide email dt. 9.9.2021. No deviation/ editing/ change in format shall be allowed in the document. However, any additional information as desired in this scrutiny which is not included in the format shall be supplemented as Annexure duly referenced in the Text part.

1.1 : Lease Details : Tehsil and Village details of the lease area are missing. Besides, five years block period of the submitted document and details of first extension of lease period is also found to be missing.

1.1.2: Mining Plan Submission Criteria Details: It is reported that Dy. Commissioner, East Singhbhum, Govt. of Jharkhand has recommended extension of lease period upto 28/8/2041. However, neither the copy of State Govt.'s letter issued to lessee nor copy of the executed supplementary lease deed for extension of the lease period is enclosed with the draft copy. **In absence of it, the submitted Mining plan will not be processed further. Therefore, a copy of said letter should be enclosed during the final submission.**

1.2: Land Ownership Details : Details on type of land, nature of land is missing and should be tabulated.

1.3.4: Statutory Compliances: Validity of EC should be checked and corrected.

Geology and Exploration:

2.1.2: Details of Physiographic features and Infrastructures available in and around the lease/block area: Details on human settlements, grazing land/ burial ground or cremation ground etc are missing. Further, status of physiographic features and infrastructure occurring inside the lease area and outside the lease area (within 5 km periphery) should be recorded appropriately in 2nd and 3rd column respectively.

2.1.4.3: Lithology, Petrographic & Mineralogical Description for Major, Associated & Indicator Minerals : Details on ore mineralogy, mineralization and alteration, paragenesis etc as discussed on page 13 and 14 of earlier approved document should be inserted suitably.

2.1.4.8: Attitude of the ore body (dip and strike) as tabulated here not matching with details as recorded under subhead 2.1.4.2 and need to be checked and corrected accordingly.

2.2.1: Summary of the Previous Exploration during Last Plan Period:

- (i) Under introductory remarks it may be categorically indicated that mine remains closed since (date) and U/G exploration could not be taken up during last plan period. In subsequent paragraphs, details of surface boreholes drilled during said period may be discussed in brief.
- (ii) Entire section/tables (refer item 2.2.1.1 to 2.2.1.12 etc) are blank without any justified reasons. In case, there is no activity, space may be filled up suitably as NIL/ NA, as applicable. Before final submission, the documents should be checked thoroughly to ensure that no rows/column/cell to remain blank. In case any cell is blank it should be justified suitably.

- (iii) Details of geological mapping by GSI in 1968-69 as discussed under item 2.2.1.1 has no relevance and to be removed from here and placed suitably under subhead 2.2.2.
- (iv) Under item 2.2.1.6 it is stated that “as the mine is already an old u/g mine, definition drilling will be carried out to delineate the lodes during the development of the mine”. Statement should be removed from here and placed suitably under future exploration proposal suitably.
- (v) Chemical analysis of core / non-core samples may be uploaded as CSV file which normally include 5 Nos. of file. The collar file, survey file and geology log file, assay file and RQD should be enclosed as per footnote under item 2.2.1.9.

2.2.4.1: Methodology :

- (i) Regarding type of deposit it is reported that (refer item 2.1.4.8), Rakha Cu deposit falls under category II (Lenticular bodies of all dimensions including bodies occurring en echelon, silicified linear zones of composite veins). The MEMC rules, 2015, stipulates that, minimum borehole spacing for G1 category along strike may be kept 50-25m or closer, for G2 100-50m or closer and for G3 category the bore-hole spacing along strike may be kept 200-100m or closer interval. In the submitted document, above mentioned parameters of MEMC Rules have not been adhered.
- (ii) Further, under item 2.2.4.1 it is mentioned that “in areas where consecutive two payable borehole intersections are at a distance of 300 m along dip and 150 m to 200 m along strike, the reserves in these are categorized under 331 categories. Reserves lying up to 50m along dip and 60m along strike from the extents of 331 categories are categorized in 332 categories and where consecutive borehole intersections are more than 300m apart along dip and 150 to 200m along strike are categorized in 332 categories. Drill reserves lying up to 25 m along dip and 30 m along strike from the extents of 332 categories are categorized in 333 categories”. Thus reserves estimations are not in compliance to provisions laid down in MEMC Rules 2015 and need to be re-assessed a fresh.
- (iii) Section 2.2.4.2 : Type of land should be recorded.
- (iv) In section 2.2.5.1 it is stated that “Geological Cross Section Method at 0.5% Cu cut-off and Level Plan Method at 0.5% Cu cut-off has been taken for Conversion of Mineral Resource to Mineral Reserve”. The statement spells nothing about the subject matter and to be removed. In this section, a brief note on type of deposit and level of exploration (G1, G2, G3 and G4 categories) with reference to MEMC Rules, need to be discussed. Based on level of exploration the geological resources should be categorized under Measured (331), Indicated (332), Inferred (333) and reconnaissance (334) categories. After applying modifying factors and conducting feasibility/prefeasibility study as applicable, reserves under (111, 121,122 category) and remaining resources under (211, 221, 222 etc) may be derived.
- (v) **Production and development proposals should be restricted within the area/level upto which reserves has been established i.e. upto proved and probable category of reserves only.**
- (vi) Various factors and assumptions for conducting a pre-feasibility/feasibility study as required under items 2.2.5.3, to 2.2.5.7 is to be discussed in brief so that conversion of resources into reserves can be justified.
- (vii) Section-wise detailed calculation of blocked resources (refer item2.2.5.9) and reserves (refer item 2.2.5.10) should be furnished in same line as furnished for resource calculation in item 2.2.4.2.
- (viii) Section 2.2.5.11 : For forest column Nil reserves (111) and resources (211) are reported but in grade column certain value has been reported. The same needs to be checked.

2.2.6: Future Exploration Proposal : Most of the tables (refer item 2.2.1.1 to 2.2.1.12 etc) are blank without any proposals. Rule 12(4) of MCDR’2017 stipulates that “in case of existing leases, entire potentially mineralised area should be explored upto G1 level before 26/2/2022. Proposals should be

drawn in such a way that potentially mineralised area can be explored upto G1 level before above time frame.

Mining:

4.2.2.1: Mode of entry:

- (i) During inspection it was noted that mine entry points were closed due to safety reasons. For clarity in documentation, mine entry details should be furnished **Block wise** in the same manner as was dealt in earlier approved documents.
- (ii) The mine remains closed since more than two decades and system of winding/hoisting as reported in draft document are not in place as on date. Time bound proposals for erection the of required equipment and machineries should be discussed in brief suitably. **Production and development proposals can be envisaged only after erection of winders. Entire proposals should be modified accordingly.**

4.2.2.2: METHOD & SEQUENCE OF STOPPING:

- (i) Method and sequence of stoping should be discussed in brief and in same line as was furnished in earlier approved document.
- (ii) The mine remains closed since more than two decades and there is no working stope as on date. Details on working stopes as tabulated should be checked and corrected accordingly.

4.2.2.3: SUPPORT OF THE WORKING: Details on underground support plan, approved SSR etc are not filled up and respective fields are blank. Copy of geo-technical study report of rock mass conducted by CMRI as mentioned in the report has not been attached.

4.2.2.5: YEAR WISE UNDERGROUND DEVELOPMENT:

- (i) Proposal for sinking of three new shafts (Production shaft of 7m dia, Service shafts of 6.5 m dia and East ventilation shaft), deployment of LPDT etc has been envisaged during current year. Envisaged proposals are unrealistic in current circumstances and need to be modified.
- (ii) The mine remains closed since more than two decades, all entry points remain closed due to safety reasons. Infrastructures engaged in winding/hoisting of men and materials have been dismantled. Opening of entry points, erection of shafts and procurement of equipment and machineries, dewatering etc are time consuming phenomenon and underground operations may not be resume within the envisaged short span.
- (iii) In view of above facts, proposal for erection of infrastructures and dewatering may be incorporated in initial three years period, and proposals for mining by way of development of drivages during next two years period. Stopping proposals may be incorporated in subsequent Review of Mining plan. Therefore entire proposals should be modified and corrected accordingly.
- (iv) Details on U/G development as furnished in table is not matching with year wise proposals shown in plan and sections. Nomenclature/ ID i.r.o area proposed for development should be recorded precisely in line with proposal shown in respective plates.
- (v) Same Bulk Density has been accounted for calculation of tonnage of Ore and waste which is incorrect.
- (vi) Cumulative Production of ROM as well as waste during specific year should be shown by inserting additional rows. Precise location of development should be recorded in column P and be marked suitably in respective plan and sections.

4.2.2.7: STOPE WISE PRODUCTION: Proposal should be modified as per comments stated above under section 4.2.2.5.

4.4.1: Machine Requirement Summary: Blank spaces are to be filled up.

4.7: Waste Management: Proposal for disposal of generated waste has not been discussed.

5.1: Sustainable Mining and SDF Implementations in Compliance of Rule 35 of MCDR'2017:

- (i) Number of Beneficiaries should be mentioned under item 5.2.1.4 to 5.2.1.10 and energy consumption pattern should be mentioned under item 5.2.1.13.
- (ii) Total amount of submitted BG is not matching with BG computed by system. It should be clarified.

Review of Previous Proposals: Review should be for last five years period.

Annexure:

1. The validity of lease period has expired on 28/8/2021. Copy of State Govt.'s letter for extension of lease period beyond 28/8/2021 is not attached. Also copy of supplementary lease deed executed, if any, is not attached.
2. Feasibility/ Pre-feasibility Report should be prepared afresh as per provisions laid down in MEMC Rules.
3. Necessary corrections as stated above under various chapters should be attended suitably in feasibility report.

Plates:

1. Submitted plates are not signed by QP and many plates are not readable as text figures are not aligned with drawing. Further, copy of many plates was not available for examination at the time of inspection. These issues were communicated during inspection and it was assured that one complete set of corrected and duly signed copy of plates will be made available within two days however, the same is not received in this office, till date. This shows a casual approach in preparation and submission of mining plan document. Corrected and duly signed plates should be submitted with final copy.
2. Lease Plan: Precise area map based on DGPS survey in compliance to CCOM Circular 2/2010, duly authenticated by competent authority of State Govt. has not been submitted.
3. Surface Plan : Mining Plan was submitted on 18/8/2021 and date of survey is recorded as 17/8/2018. Such voluminous and technical document may not be prepared within one day. Date of survey need to be corrected.
4. Geological Plan and Sections:
 - (i) Section should be drawn from one end to another end of lease area. Sections should be on natural scale.
 - (ii) Mineralized/ non-mineralised area, area explored under G1/ G2/ G3 should be marked.
 - (iii) Geological Sections should be as per section lines drawn in geological plan. UNFC codes of reserves/resources should be recorded on geological sections. Longitudinal section should be drawn and submitted with final copy.
 - (iv) Geological Plan and sections are to be signed by Geologist appointed under Rule 55 of MCDR'2017
5. Production and Development Plan and Sections:
 - (i) Plan not matching with section and also not synchronous with the proposals envisaged in text. Plan and sections should be modified and corrected in line to the scrutiny comments recorded under text part.
 - (ii) Stopped out block as well as proposed block not demarcated in submitted plan and sections.
 - (iii) Although year-wise development both in ore and waste are demarcated under distinct hatching, yet it is little bit confusing. To avoid confusion, year may be mentioned in plan over the area proposed for development in specific year.
6. PMCP Plan: Area proposed for plantation not demarcated precisely. The existing landuse & proposals shall be clearly colour coded w.r.t FA table.
7. Conceptual Plan and sections: Proposal year on plan is recorded as 2013-14 to 2015-16. Sections were not submitted with draft copy. Plan and sections to be prepared as per guidelines and to be incorporated in the final submission.

8. Reclamation Plan: A reclamation plan should be submitted duly envisaging the manner of disposal of waste generated while driving the proposed decline & other drivages in waste rock. The protective measures envisaged on the surface, if any, for its management shall be clearly demarcated on the same with year wise break-up. The year wise plantation proposed shall also be shown clearly. The year wise figures shall be shown & clearly quantified in the plate itself.
9. Environment Plan: The environment plan should depict features as envisaged under rule 32(5)(b) of MCDR,2017.
10. Key plan: The key plan should depict all the features envisaged under rule 32(5)(a) of MCDR,2017.
11. Level wise working plan and sections: The required plan and sections were not submitted with the draft copy. Plan and sections to be prepared as per the guideline and to be incorporated in the final submission.