



भारत सरकार GOVERNMENT OF INDIA
खान मंत्रालय MINISTRY OF MINES
भारतीय खान ब्यूरो INDIAN BUREAU OF MINES
क्षेत्रीय खान नियंत्रक के कार्यालय
OFFICE OF THE REGIONAL CONTROLLER OF MINES



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No. RMP/A/17-ORI/BHU/2019-20

दिनांक / Date: 14.10.2019

To

Shri Vivek Gupta, Director &
Nominated Owner, M/s Steel
Authority of India Limited,
Ispat Bhawan, Lodi Road,
New Delhi-110003.

Sub: Review of Mining Plan of Kalta Iron Ore Mine (TODA RF, ML-139) over an area of 25.981 ha in Sundargarh district of Odisha of M/s Steel Authority of India Limited (SAIL) submitted under Rule-17 (2) of MCR, 2016.

Ref: - i) Your letter no. SAIL/DRML/2019-20/807 dated 17.09.2019 received on 30.09.2019.
ii) This office letter of even no. dated 30.09.2019.
iii) This office letter of even no. dated 30.09.2019 addressed to the Director of Mines, Govt. of Odisha, copy endorsed to you.

Sir,

This has reference to the letters cited above on the subject. The draft Review of Mining Plan along with Progressive Mine Closure Plan has been examined in this office based on site inspection carried out on 04.10.2019 by Shri Sudip Ranjan Mazumdar, Senior Mining Geologist. The deficiencies observed are enclosed herewith as Annexure-I.

You are advised to carry out the necessary modifications in the draft Review of Mining Plan in the light of the contents vide Annexure-I and submit **three (3) firm bound and two (2) soft copies of the document text in CD in a single MS Word file (the drawing/plates should be submitted in Auto CAD compatible format and JPG format in resolution of 100x100 pixels on same CD)** with financial assurance under Rule 27 of MCDR' 2017 within 15 (fifteen) days from the date of issue of this letter for further necessary action. If the total page of annexures exceeds 50 (Fifty) then it should be submitted as separate volume. But reference of these annexures must appear in the Review of Mining Plan document. The plates are also to be submitted in separate volume.

The para-wise clarifications and the manner in which the deficiencies are attended should invariably be given while forwarding the modified copies of the Review of Mining Plan. It may be noted that no extension of time in this regard will be entertained and the Review of Mining Plan will be considered for rejection if not submitted within above due date. It may also be noted that if the deficiencies are not attended completely, the submission would be liable for rejection without further correspondence.

भवदीय / yours faithfully,

(HARKESH MEENA)

क्षेत्रीय खान नियंत्रक / Regional Controller of Mines

Copy for kind information and necessary action to:

1. Shri Peter Dang, DGM Geology, M/s Steel Authority of India Limited, Raw Material Division, Kalta Iron Mines, At/Post-Tensa, Dist-Sundargarh, Odisha-770042.
2. Dr. R. K. Naik, Sr. Manager (Geology), Raw Material Division, M/s Steel Authority of India Limited, 02nd Floor, Modernization Building, Rourkela Steel Plant, Dist-Sundargarh, Odisha-769011.

(HARKESH MEENA)

क्षेत्रीय खान नियंत्रक / Regional Controller of Mines

Scrutiny comment on Review of Mining Plan including PMCP of Kalta Iron Mine of M/s Steel Authority of India Limited over an area of 25.981 Ha in Sundergarh district of Odisha

GENERAL:

1. Sequence of paragraph, formats and its numbering as per IBM Manual Appraisal MP 2014 has not been covered in text. All the headings as mentioned in the IBM Manual Appraisal MP 2014 should be furnished in all chapters in the text.
2. Mine code furnished in the document is incorrect. Need to rectify the same.

GEOLOGY AND EXPLORATION:

3. In para 1(c), the terms Direct Ore, Hard beneficiable ore and soft beneficiable ore should be omitted. Further, in para 1(e), the details of prospecting carried out within ML-139 (over an area of 25.981 Ha) should only be furnished. Information furnished with respect to other lease area should be omitted.
4. In para 1 (i), under future exploration program, the statement "the present modification to the modified mining plan has been prepared" is incorrect and should be corrected. The future exploration program should be modified to the extent that considering the irregular habit of ore exposures the grid spacing of the proposed boreholes should be 100 m (along strike) x 50m (along dip direction/along section lines). Further, the depth of the proposed bore holes should be 300m or till the end of mineralization. The proposal for exploration should be modified accordingly and the exploration should be completed by 2021-22. Check analysis of at least 10% samples have not been proposed from third party NABL accredited laboratory. Necessary corrections to be done.
5. The lease area explored under different category of UNFC norms as shown in table in page no 29 is incorrect and should be recalculated as per the provision of Part II point no.4 and part III of Minerals (Evidence of Mineral Contents) Rules, 2015 (MEMC, Rule 21015) and as discussed during field inspection. The area under Block A should be categorized under G3 level of exploration as per UNFC. The justification for area considered for G1/G2/G3 etc. have not been furnished as per the provision of MEMC Rules'2015. Necessary corrections to be done at all relevant places of the document and resource estimation.
6. Reserves and resources have not been calculated as per the provision of MEMC Rules, 2015. Based on the provision of MEMC Rules 2015, the reserve furnished for Block-A is incorrect should be under G3 Resources. Necessary corrections to be done in calculation of reserve and resources under different UNFC codes at all relevant places in text and tables in the document. Pre-feasibility study report should be prepared and submitted instead of feasibility study report. Necessary changes in the UNFC codes should be made in text/tables/plates etc. Justification of reserves and resources under various UNFC codes have not been furnished in tabulated format as per UNFC guidelines. The reserve and resources figures in page 34 and 35 are different. Need to recheck and rectify the same. Note 2 furnished in page 35 should be omitted as the rationale should be mentioned under justification of UNFC codes and considering the prefeasibility study report.
7. In the calculation of OB in Geological and mining chapter only in-situ volume should be considered. The column showing swell volume should be omitted. Necessary corrections to be done.

MINING:

8. Justification for site selected for mining has not been furnished with respect to exploration, mineral conservation and subsequent development.
9. In para 2. (A) (a), (d), the proposed method of mining has not been discussed/elaborated in detail with respect to mining operation like deep hole drilling and blasting (in Ore, Mineral Reject and in Overburden), excavation, loading and transport with help of mining machineries etc. Need to describe in detail. List of existing and proposed mining machineries should be furnished in tabulated format.
10. In para 2.A (b)(1), the total of in-situ excavation figs have not been furnished in the format specified in IBM appraisal of MP 2014 both in cum and in tones in separate table. Further, the calculation of mineral reject as "Nil" should be rechecked and corrected.

11. The year wise excavation proposal should be given in the following format separately for each year.

Particular for the year:.....		
Bench Geometry	Height (in m)	
	Width (in m)	
	Individual bench slope angle	
Quarry Development	Location of Development in UTM coordinate	
	Cross-sections considered for development	
	Benches considered for development with RL	
	RL of the quarry floor at the end of the year	
	Direction of advancement	
	Dimension of the quarry at the end of the year including existing benches	
	Overall quarry slope angle	
	Production of Saleable ore (in MT)	
	Generation of Mineral rejects ore from quarry (in MT)	
	Total Production of ROM (Ore +Mineral Reject) in MT	
Volume of waste generation (in cum)		

12. In para 2 (A)(e) and in para 4(c) and in all relevant places, it should be mentioned that waste will only be dumped in the proposed waste dumping site only if the area is proved to be barren after completing the proposed exploration.
13. The proposed areas for various mine activities like waste dumping sites, mineral storage areas, mineral rejects area, any other should be addressed in detail with nomenclature of the same in relevant plans and section either temporary or permanent. The same should be reflected in FA calculation.
14. In conceptual planning the life of the mine, ultimate pit limits should be recalculated considering the end of lease period only. Life of mine should be calculated considering the revised estimation of reserves and resources. Life of mine should be calculated over an lease area including both Block A and Block B.

STACKING OF MINERAL REJECT/SUB GRADE AND DISPOSAL OF WASTE:

15. In para 4 (a), only the existence of waste dump within the lease area, if any should be discussed. All the calculation of waste generation and its disposal should be done on insitu volume of waste. Further, in the table in page 58, the breakup of waste used for backfilling the disturbed safety zone, storage and its utilization as proposed for road making should be furnished in tabulated format with respect to total insitu volume of waste generation. Necessary changes of insitu volume of waste generation and its disposal should be made in all relevant places in the document. In page 60, the dimension in terms of length, width and height of retaining wall and garland drain has not been mentioned.
16. The proposal for dumping may be given in tabulated format as shown below: Further, Build-up of dumps from year to year to be mentioned in text w.r.t. designed capacity of dumps, bottom and top mRL of individual terrace, dump slope, individual terrace height and slope with description of method & manner of disposal of waste should be mentioned. The method of waste dumping should be in retreating manner. The year wise buildup of dump should be described.

Year	Waste to be dumped (in m ³)	Dump No	Location of dumping (coordinates)	Proposed area (m ²)	Proposed dumping mRL.	No of terrace proposed.	Individual Terrace height	Slope of the terrace

PROCESSING OF ROM AND MINERAL REJECTS:

17. In para 6 (b), material balance chart with a flow sheet or schematic diagram of the processing procedure indicating feed, product, recovery, and its grade at each stage of processing has not been furnished. Need to provide the same.

OTHERS:

18. In para 7(b), employment of mining engineer and geologist as per provision of rule 55 of MCDR 2017 has not been mentioned. Further, status of existing and proposed statutory personnel should be mentioned. Need to do necessary correction.

PROGRESSIVE MINE CLOSURE PLAN:

19. In the tables for year wise proposal the dimension of retaining wall and garland drain in terms of length, width, height/depth for construction and maintenance in subsequent years have not been mentioned. Further, total numbers of saplings to be planted have not been furnished.
20. The existing road in block A has not been shown in the plan. The same should be shown and its area should be calculated under heads "road". Accordingly, net area considered for FA calculation should be rechecked and corrected. The additional amount of bank guarantee need to be submitted.

PLATES (GENERAL):

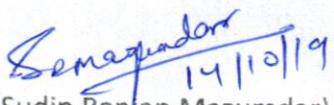
1. **KEY PLAN:** The key plan should incorporate all features as mentioned Rule 32 5 (a) of MCDR 2017. The project site shown should be omitted from the plan. The mining lease area have not been shown in plan and its index. Need to do necessary correction.
2. **SURFACE PLAN:** The Surface Plan should be prepared to satisfy the provision as laid down rule 32 (1) (a) of MCDR'2017. The road passing through Block A has not been shown in the plan.

GEOLOGICAL PLAN & SECTION: (i) The redefined UNFC boundaries and UPL to be shown in Geological Plan and sections (ii) The index shown in plan has not been referred in its index and also there is mismatch in index (iii) the road passing through block A has not been shown in the plan (iv) The Geological Plan should be prepared to satisfy the provision as laid down rule 32 (1) (b), (c) and (d) of MCDR'2017. Plan and section should be drawn on same scale. (v). UNFC codes shown in the geological sections are incorrect (vi) Revised exploration proposal should be shown in plan and section. (vii) Plate No of Geological section does not match with the plate no shown in list of plates. Need to do necessary corrections

3. **DEVELOPMENT PLAN & SECTION:** (i) Individual year wise development plan and sections should be submitted.
4. **ENVIRONMENT PLAN:** The environment plan has not been prepared as per the provision laid down in rule 32 (5) (b) of MCDR'2017.
5. **FINANCIAL ASSURANCE AREA PLAN:** The existing road in block A has not been shown in the plan. The same should be shown and its area should be calculated under heads "road". Accordingly, net area considered for FA calculation should be rechecked and corrected. The additional amount of bank guarantee need to be submitted.
6. **CONCEPTUAL PLAN AND SECTION:** The index shown in plan and section does not match with its index. Need to rectify the same.

ANNEXURES:

1. All the annexure to be properly numbered/paged and relevant annexure to be signed by QP etc. It is observed that many of the annexures are not legible. A legible copy of same to be enclosed.
2. Copies of financial assurance in form of bank guarantee have not been submitted.


(Sudip Ranjan Mazumdar)
Senior Mining Geologist