



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/16-ORI/BHU/2019-20

Date: 24.10.2019

सेवामे

Shri Vivek Gupta, Director (RM&L) & Nominated Owner,
M/s Steel Authority of India Ltd,
Ispat Bhawan, Lodhi Road,
New Delhi-110003

विषय: Approval of Review of Mining Plan of Barsua-Kalta-Taldih Iron Mine (ML-130) along with Progressive Mine Closure Plan (PMCP), over an area of 2486.383 ha in Sundargarh district of Odisha State, submitted by M/s Steel Authority of India Ltd under Rule 17 of MCR, 2016.

- संदर्भ: - i) Your letter No. SAIL/DRMI/2019-20/250 dated 13.09.2019 received on 26.09.2019.
ii) This office letter of even no. dated 26.09.2019.
iii) This office letter of even no. dated 26.09.2019 addressed to Director of Mines, Government of Odisha copy endorsed to you.

महोदय,

This has reference to the letter cited above on the subject. The draft Review of Mining Plan along with Progressive Mine Closure Plan (PMCP) has been examined in this office based on site inspection carried out on 20.10.2019 by Shri S R 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 1 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 or JPG format in resolution of 100x100 pixels on same CD)** with financial assurance under Rule 27 of MCDR 2017 of the Review of Mining Plan 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 final 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.

(हरकेश मीमा)

क्षेत्रीय खान नियंत्रक

Copy for kind information and further necessary action to Shri Dibyajyoti Deepak Kumar, Center for Engineering & Technology, M/s Steel Authority of India Ltd, 4th Floor, RDCIS Lab Building, Po-Doranda, Ranchi-834002.


(हरकेश मीना)
क्षेत्रीय खान नियंत्रक

DFA

Scrutiny comment on Review of Mining Plan including PMCP of Barsua-Taldih-Kalta Iron Mine of M/s Steel Authority of India Limited over an area of 2486.383 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, formats as mentioned in the IBM Manual Appraisal MP 2014 should be furnished in all chapters in the text.
2. The mining lease area over 2486.383 Ha is a single mining lease (ML-130) therefore its should have single mine code. The lessee needs to surrender two numbers of mine codes and retain one mine code for ML-130. Need to do necessary correction.
3. In Para 1 (a), the name and address for correspondence of nominated owner with contact details such as telephone no, fax no, email id etc. have not been furnished along with information submitted. Need to submit the same.
4. All the categories/grade of Ore above cutoff grade should be termed as "Ore" and between threshold value and cutoff grade as "Mineral Reject". The term "subgrade" should be replaced by "mineral rejects". Necessary corrections to be done at all places in text, table and plates.
5. The tables have not been numbered and index of list of tables have not been furnished.
6. In Para 3.3, review of earlier approved proposal in respect of exploration, excavation, reclamation, environment etc. furnished is incorrect. Further, review have not been given year wise from 2015-16 to 2019-20 (up to Sep'2019) along with reason for deviation. The column should 1st year/2nd years and subsequently should be deleted. Need to do necessary corrections.

PART-A: (1). GEOLOGY AND EXPLORATION:

7. In para 1 (a), the topography along with maximum and minimum RL, drainage pattern, vegetation, climate and rainfall data of the mining lease area should only be furnished. In Para 1.e (iii), the summary of total samples collected and analyzed along with justification for 10% of total samples analyzed in accordance to BIS and reports from NABL accredited/other government laboratory have not been furnished.
8. In Para 1 (i), future exploration proposal should be modified to the extent that the depth of proposed boreholes should be up to 300 meters or up to discontinuance of ore body, whichever is earlier. The proposal for exploration should be over the period of two years only i.e. 2020-21 & 2021-22. Status of exploration in potentially mineralized area has not been furnished. Reason for G2 level of exploration proposal has not been furnished. The details of the proposed boreholes should be furnished in the following tabulated format in Barsua-Taldih-kalta area

Year of drilling	Section No	Proposed BH No	Northing	Easting	Collar RL	Core/RC/DTH	Proposed Depth of BH (in meter)	Inclination	Forest/ Non Forest/ Diverted Forest area	Surface Right/ Non-Surface right area	Surrendered area applied/ retained area

9. Justification of UNFC codes has not been furnished complying the UNFC norms in tabulated format. In page 42, the grade of iron ore of 3 t/m³ of bulk density should be rechecked and corrected.
10. In all the tables of reserves and resource estimated the reserve/resource as on date.... has not been furnished.

PART-A: (2). MINING:

11. Justification for area proposed for mining in all the three blocks has not been given with respect to exploration, mineral conservation etc.

12. In page 78 and 114, the details of mineral processing facilities within the lease area should only be mentioned like crushing and washing plant etc. In some cases, the unit operation is mentioned but capacity is missing. Need to recheck and correct the information furnished in the table for existing HEMM and auxiliary equipments.
13. Justification of equipment should be based on maximum excavation quantity to be handled in five year excavation proposal. Information of existing and proposed machineries with capacity should be proposed. Necessary correction in the calculation need to be done.
14. In Kalta Block-A, the proposed development area has fines stack. Therefore, proposal for rehandling of fines has to be proposed for development. Need to do necessary correction.
15. The description of the existing pits/waste dumps/Mineral rejects stacks in the following table to be furnished. Their nomenclature should be also reflected in relevant plans and sections.

Existing Pits:

Block/ Pit	Location (Grid)		Size of Pit (in m)		Surface area covered (in Ha)	Top RL (m)	Bottom RI (m)	No of benches		
			Length	Breadth				Ore	MR	OB
	Northing	Easting								

Existing Waste Dumps/Mineral reject dumps/stacks:

Name of the waste dump/ mineral reject dump	Location (Grid)		Top RL (in m)	Bottom RL (in m)	No of terrace	Area Occupied (in Ha)
	Northing	Easting				

16. Details of existing fines stacks indicating its location, quantity etc. should be furnished in tabulated format.
17. 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. Section wise and RI wise calculation of excavation of OB/IB/waste, Ore, Mineral reject to be furnished by cross sectional method calculation.
18. Year wise development and production plan should be furnished in the following tabulated format.

Particular for the year...	
Bench Geometry	Height (in m)
	Width (in m)
	Individual bench slope angle
Quarry Development	Location (Quarry Name)
	Extent of Development (in UTM coordinate)
	Sections considered for development
	Number of benches
	Benches considered for development with RL
	Top RL
	Bottom RL
	Direction of advancement
	Dimension of the quarry at the end of the year including existing benches
	Area occupied (in sq. m)
	Overall quarry slope angle
Production of Ore (in MT)	

	Generation of Mineral rejects ore from quarry (in MT)	
	Production of ROM (Ore+Mineral Reject) in MT	
	Total Generation of waste (in cum)	

3. **MINE DRAINAGE:** In para 3 (b), the max and min depth of working should be given in following tabulated format.

Name of the Quarry	At the end of plan period (mRL)		At the end of conceptual period (mRL)	
	Top	Bottom	Top	Bottom

4.0 STACKING OF MINERAL REJECT /SUB GRADE MATERIAL AND DISPOSAL OF WASTE

19. The nature/ type of mineral reject and waste material have not been described or classified. Necessary corrections to be done. In para 4(c), the waste generation quantity does not match with the proposal for waste generation. Necessary corrections to be done. The disposal of waste and mineral reject and soil to be furnished as per table furnished in IBM Manual appraisal MP 2014.
20. Justification of proposed waste dumping sites w.r.t to status of exploration, non-mineralization and outside the UPL have not been furnished. Dump plan and sections should be modified to the extent that sub surface lithology has not been shown.
21. 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 m3)	Dump No	Location of dumping (coordinates)	Proposed area (m2)	Proposed dumping mRL.	No of terrace proposed.	Individual Terrace height	Slope of the terrace

22. Existing as well as proposed protective measures like retaining wall, garland drain, check dams etc., should be furnished in tabular format with details of location, length, dimensions etc., a separate table should be given showing the year wise construction of retaining wall, garland drain and settling tank having specific proposal. Details of year wise proposal for construction of retaining wall, garland drain, settling tank etc. to be given with their location. Proposal for protective measures have not been submitted around mineral reject dumps and waste dumps.
23. Area proposed for backfilling has not been justified for exhaust of minerals through sections showing sub surface lithology. Need to submit necessary justification.

PROCESSING OF ROM AND MINERAL REJECTS:

24. A 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 within the lease area only should be furnished. The processing facilities limited within the lease area of ML-130 should be described only. The tailings generated due to washing within the lease area cannot be dispose outside the lease area of ML-130. Need to modify processing proposal accordingly in all relevant text part of the document.

OTHERS:

25. Information in respect to the existing and proposed manpower right from management level to unskilled labor both on role and contractual has to be mentioned separately in the text.

PROGRESSIVE MINE CLOSURE PLAN:

26. The air, water and noise monitoring stations and their frequency of monitoring have not been furnished in tabulated format. All water discharge points from lease area to external should be monitored. Accordingly, monitoring proposal to be submitted. Further, Gap plantation along the safety zone should be furnished.
27. All the paragraphs should be addressed in detail under PMCP chapter as per IBM Manual Appraisal MP 2014. The present land use pattern should be furnished as per the format of FA table of different heads.
28. In FA table the different heads should be kept as per the format specified in IBM manual appraisal 2014. The area under different heads of FA table should be properly shown in different hatching with present area and additional area in FA plan.
29. In para 8.6, the consideration of 9.624 Ha area as fully reclaimed and rehabilitated is incorrect and should be part of net area considered for FA calculation. Accordingly financial assurance should be calculated as per provision of rule 27 of MCDR 2017. The required amount of valid bank guarantee should be submitted.

PLATES (GENERAL):

1. Magnetic Meridian and date of observation should be given on all relevant plans. Date of survey should be given on all plans and sections and signature should bear date of signature. All plans & sections prepared should follow the conventions mentioned under MMR 1961. All plans and sections shall show a scale a scale of the plan at least twenty five centimeters long and suitably subdivided. The plans and sections submitted should bear the certificate that - the plans and sections are prepared based on the lease map authenticated by the state government. The index should be kept same in all the plans and sections.
2. All plans and sections to be submitted in UTM grid. The orientation of plans and sections as per UTM North should be rechecked and corrected.
3. **KEY PLAN:** The key plan should incorporate all features as mentioned Rule 32 5 (a) of MCDR 2017. The approach road to the lease area, 5 Km boundary and wind rose diagram etc. has not been shown.
4. **SURFACE PLAN:**
 - (i) Forest, Non-forest and surface right area to be shown in surface plan. The Surface Plan should be prepared to satisfy the provision as laid down rule 32 (1) (a) of MCDR'2017.
 - (ii) The DGPS surveyed latitude-longitude and UTM coordinates of all the boundary pillars have not been furnished in tabulated format. The plan should be updated based on the recent survey. Nomenclature of waste dumps and mineral reject dumps have not been shown.
5. **GEOLOGICAL PLAN & SECTION:**
 - (i) Part Geological plan and sections to be shown in 1: 2000 scale. The lithology of the unexplored lease area should be rechecked and corrected.
 - (ii) Cross section lines with nomenclature have not been shown on the geological plan. The Geological Plan should be prepared to satisfy the provision as laid down rule 32 (1) (b), (c) and (d) of MCDR'2017
 - (iii) Scientific correlation of geological section has not been done as per the provision of MEMC, Rules 2015. In Geological plan and sections, the areas shown as blank should be filled with relevant lithology. UNFC codes, UPL should be shown in Geological sections.
6. **DEVELOPMENT PLAN & SECTION:**
 - (i) Development plan and sections should be revised based on updated geological map and sections. Existing and proposed OB an mineral rejects dumps should be shown. The nomenclature of the dumps should be done.

- (ii) Index of the UPL shown in plan and section and those shown in index is different.
- (iii) The proposed and existing bench mRL to be shown clearly over year wise development plan and sections. Geological information (lithology) has not been furnished on the area proposed for development in year wise development plan and sections. Plan and section should be drawn on same scale on 1: 2000.
- (iv) Existing and proposed protective measures and plantation should be shown in different colors around all waste dumps and mineral reject dumps. Index of safety zone boundary and surface right area should have distinct color.
- (v) Year-wise development plan and section should be separately submitted on same scale. Color index of the year wise proposal should be modified as discussed in during field inspection.

7. DUMP PLAN AND SECTION

- (i) Dump plan and sections should be modified to the extent that sub surface lithology have not been shown. Section showing reclamation of mined out pit through backfilling should be submitted with due justification of exhaust of minerals.

8. ENVIRONMENT PLAN:

The environment plan has not been prepared as per the provision laid down in rule 32 (5) (b) of MCDR'2017. Adjacent lease boundaries within 500m of lease boundary have not been shown.

9. RECLAMATION PLAN:

Existing and proposed protective measures and plantation should be shown in different colors along all waste dumps and mineral reject dumps. Backfilling proposal should be shown clearly. Index of safety zone boundary and surface right area should have distinct color.

10. FINANCIAL ASSURANCE AREA PLAN:

The area degraded due to mining and allied activity and waste dump sites to be considered in FA calculation. The existing area and additional area under different heads should be shown properly under different colored hatching.

ANNEXURES:

1. Few photographs showing Land use of the lease area, environmental status of the area have not been furnished.
2. Chemical analysis report from govt Laboratory or third party NABL laboratory should be submitted certifying the grade of existing waste dump and mineral stacks as furnished in page no 79 & 80.
3. Identity and address proof of lessee should be furnished. Details of Qualified person like experience and qualification as per provision of rule 15 of MCR 2016 should be furnished.
4. Copy of quality of air, water, soil, noise and other environmental a parameters monitoring report of the last year should be enclosed.
5. All the annexure to be properly numbered/paged and relevant annexure to be signed by qualified person etc. It is observed that many of the annexures are not legible. A legible copy of same to be enclosed.
6. The details of all the BH to be annexed year wise BH wise. The lithology of the borehole logs should match with the lithology shown in Geological sections.
7. Copy of valid bank guarantee has not been enclosed. Photographs of boundary pillars should be enclosed.
8. Copies of Form J and Form K of all drilled boreholes have not been submitted.
9. The chemical analysis results of borehole samples from NABL accredited laboratory have not been submitted.
10. NABL accreditation certificate of the laboratory has not been furnished.

(Sudip Ranjan Mazumdar)
Senior Mining Geologist