



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/35-ORI/BHU/2019-20

Date: 16.12.2019

सेवामे

Shri Tarini Prasad Mohanty, Mining Lessee,  
At/Po-Joda, Dist- Keonjhar,  
Odisha-758034

विषय: Approval of Review of Mining Plan of Naibaga Iron & Mn Mine along with Progressive Mine Closure Plan (PMCP), over an area of 47.219 ha in Keonjhar district of Odisha State, submitted by Shri Tarini Prasad Mohanty under Rule 17 of MCR, 2016.

- संदर्भ: - i) Your letter No. Nil dated 19.11.2019 received on 25.11.2019.  
ii) This office letter of even no. dated 25.11.2019.  
iii) This office letter of even no. dated 25.11.2019 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 10.12.2019 by Shri Ramkishan R, Senior Assistant Controller of Mines. 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 मीना)

क्षेत्रीय खान नियंत्रक



Copy for kind information and further necessary action to Shri Bishnu Charan Barik, Shri Pravata Kumar Sahoo, L-3/139, Acharay vihar, Bhubaneswar-751013.

(हरकेश मीना)  
क्षेत्रीय खान नियंत्रक

**Scrutiny comment on Review of Mining Plan including PMCP in respect of Naibaga Iron & Mn of  
Shri T.P.Mohanty.**

**GENERAL:**

1. On cover page Mining Lease Number/TC Number/Lease Number, Further, Name, address, e-mail, phone number, fax number of the lessee (Nominated Owner) and qualification details of the QP should be furnished on cover page. The document name may be changed to Review of mining plan instead of scheme.
2. All the certificates/annexures should bear dated signature. Name of nominated owner should be furnished under applicant name. MCDR, 1988 should be replaced with relevant rules of MCDR, 2017.
3. The surface right area granted should be furnished with documentary evidence. Present status of all statutory clearances should be furnished with referring to documentary evidences as annexures. The copy of the qualification & experience certificate in respect of the QP to be enclosed as per Rule 15 of MCR, 2016.
4. The land schedule furnished should be rechecked with authenticated land schedule as per the lease deed document.
5. Year-wise proposals wherever mentioned in the document the respective financial year should be mentioned instead of 1<sup>st</sup> or 2<sup>nd</sup> year. Necessary corrections should be made in relevant text and plans and sections.
6. The document should be prepared as per the IBM Manual on Appraisal of Mining plan 2014, no alteration and deletion should be made in the chapters headings, paras.
7. In the review of last approved mining plan para the year-wise proposals vs achievement regarding the exploration (like no of boreholes drilled should be in a quantified form), excavation, reclamation and rehabilitation, environment management etc., and deviation reasons if any should be furnished.

**GEOLOGY AND EXPLORATION:**

8. The information of drilled BH to be submitted as per following format:

S.No.	Year	BH Id	Easting	Northing	Collar RL	Inclination	BH Depth	Type of BH	No. of samples collected and analyzed	No. of samples analyzed in NABL lab
1			UTM	UTM	mRL					

No of samples analyzed from pitting and trenching should also be furnished and also the total no of samples analyzed in the NABL laboratory should also be furnished with analysis report and certificate enclosed annexures.

9. The information of trial pits should be furnished in a tabular format with grid location and dimensions etc., The samples collected and analyzed in the quarries and trial pits should be furnished in a tabular format as discussed during the field visit. As per guideline of "IBM manual on appraisal of Mining Plan 2014" at least 10% of total samples to be analyzed in accordance to BIS and reports from third party NABL accredited/Government Laboratory. Accordingly, BH wise sample submitted to above laboratory to be given and 10% of total samples to be analyzed from NABL accredited/Government Laboratory.
10. The documentary evidence to be enclosed in support of expenditure incurred in various exploration operation which was carried out right from inception of mine. The respective Form I, J and Form K of already drilled boreholes should be annexed with detailed litholog.
11. The lease area explored under different category of UNFC norms should be recalculated as per Part II point no.4 and part III of Minerals (Evidence of Mineral Contents) Rules, 2015 (MEMC, Rule 21015). The justification for area considered for G1/G2/G3 etc. should be given properly. Accordingly, resource estimation under different level of exploration to be revised. Necessary corrections to be done at all

relevant places of the document and resource estimation. The UNFC justification should be furnished in tabular format for different categories.

12. Adequate proposal of exploration to be given to explore lease area under G1 level of exploration as per MEMC, rule 2015 which should be completed in compliance to the rule 12 (3)&(4) of MCDR, 2017. Accordingly exploration proposal should be modified. only core type drilling of boreholes should be proposed. Additionally, new core boreholes to be proposed in the location adjacent to existing drilled boreholes that have been either terminated in the ore zone or closed prematurely without intersecting the proposed ore zone in depth within G1/G2 area. The depth of the proposed core boreholes should be around 300m or till the end of mineralization/discontinuance of ore body. The proposal to be mentioned. Some additional boreholes along section line 335128, 334928, 334828, 334628 should be proposed to cover the area under G1 level. In addition some more boreholes in the Manganese ore zone should be proposed in grid of 25-50 m or closer interval. As per the existing boreholes the area should be excluded from the explored area and reassessed UNFC boundaries like G1/G2 area boundaries should be depicted on Geological plan and sections including Mn zone.
13. The details of the proposed exploration to be given as per following format:

Sl.No	Year	BH No	Northing	Easting	Collar RL	Core/RC/DTH	Meteage	Inclination	Forest/Non-Forest/diverted Forest	Surface Right/Non-Surface	Purpose of BH
1											
2											
Total						Total BH	Total mts				

14. Recovery and bulk density considered for Iron ore, manganese ore and respective mineral reject/sub grade should be properly justified with documentary evidence.
15. A summary of exploration conducted in the lease area as per UNFC norms should be furnished in the following table.

Total Lease area:							Remarks/Comments including reasons for not carrying out the exploration as per UNFC norms.
Item of information	Lease area explored as per UNFC norms (in Ha) as on dt.					Unexplored lease area	
	Total Lease area = A+B+C+D+E						
	G1 Level	G2 Level	G3 Level	Explored and found non-mineralized with level of exploration (Remarks)			
A	B	C	D	E			
Area as per level of exploration							
No. of BH Drilled							
No. of BH considered for Resource Estimation.							
Meterage Drilled							
Grid Interval							
Scale of Mapping							
Reserve estimated after above exploration as on dated :							
Remaining Resource after above exploration as on dated:							
Total Reserve/Resource after above exploration as on dated:							

16. Further in the calculation of reserves and resources the ore and Mineral reject/Subgrade (between threshold value and cut off grade) to be furnished separately. As per MEMC Rules 2015, For General (G2) and detailed (G1) stages of exploration, the lateral extension of the ore to be considered for



resource assessment shall depend on geological considerations supplemented by geological continuity by mapping or by other means and in any case shall not be more than 50% of the grid spacing of the probe points. Therefore, the projection of resources in the sections should not be more than 50% of the grid spacing. Hence, geological sections have to be modified and section wise resources and reserves have to be re-estimated and new UPL has to be drawn. Accordingly, the resources and reserves are to be updated in all relevant places in the text and in tables.

17. Parameters considered for reserve estimation should be further elaborated. Proper justifications of reserves/resources under various categories of UNFC as shown in the table have to be submitted for different axis should be furnished in tabular format. The reserves and resources should be estimated up to the proven depth of boreholes only. No further influence of litho below the proven depth should be considered. The threshold value and cut-off grade considered for iron and manganese for reserves/resources estimation should be clearly mentioned. Necessary corrections to be made in page no.20 and 21.
18. Feasibility/Pre-Feasibility assessment report should be prepared and submitted as per UNFC guideline considering all technical and economic parameters along with guideline as per CCOM circular 1/2006 and 4/2009 considering all technical, financial and economic parameters described in UNFC guideline and or as per parameter described in M(EMC) rule 2015.

**MINING:**

19. Production table should be furnished as per the format mentioned in IBM Manual on Appraisal of Mining plan 2014.
20. The Year wise stripping ratio should be furnished in t/cu.m format. 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	
Road Design	Gradient of Haul Road	
	Ramp gradient	
	Berm Height	
Quarry Development	Location of Development (Grid)	
	Sections considered for development	
	Number of benches	
	Benches considered for development with RL	
	Length of proposed benches (in m)	
	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)	
	Production of ROM (Ore +Mineral Reject) in MT	

	Total Generation of waste (in Cu.m.)	
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21. Production proposal should be revised as per the revised estimation of reserves. The location proposed for mining should be properly justified. Total excavation quantity considered for calculation of machinery should be checked and rectified as discussed during the field visit.
22. Geological Section wise of proposed ROM excavation quantity in for every year shall be provided. Sections may be equally spaced so that the entire area proposed for excavation may cover. The total excavation, OB/IB/waste, Ore, Mineral reject should be matched with section wise calculations and recover factors considered.
23. Bench width proposed should be properly justified with relevant statutory guidelines considering he width of equipment plying etc.,
24. Existing and proposed equipment/machinery with quantity and capacity should be furnished.
25. Powder factor to be furnished in blasting parameters along-with basis of calculation of furnished powder factors figures should be furnished.
26. Conceptual Mine planning upto the end of lease period taking into consideration the present available reserves and resources describing the excavation, recovery of ROM, Disposal of waste, backfilling of voids, reclamation and rehabilitation showing on a plan with few relevant sections.

**MINE DRAINAGE**

27. Considering the topography of the lease area, it appears that the slope is towards East. Hence, a mine drainage plan to be submitted showing catchment area, flow direction of the water, location of final discharge, arrangement for arresting of solid waste etc. showing retaining wall, garland drain, settling tank, check dam etc.

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

28. The disposal of waste and mineral reject and soil to be furnished as per table furnished in IBM Manual appraisal MP 2014.
29. The details of all the existing dumps, Mineral reject dumps to be furnished in tabulated form .
30. 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

31. The location of dumping/stacking of waste and mineral reject should be proposed in the non mineralized area with due justification of proven area of non mineralization.
32. 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.

**PROCESSING OF ROM AND MINERAL REJECTS:**

33. The material balance chart to be given with the quantity and quality of feed and recovery quantity and quality of the final product. The arrived percentage of recovery of saleable ore and sub grade ore should be justified properly with documentary evidence.

**OTHERS:**

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

**PROGRESSIVE MINE CLOSURE PLAN:**

35. Baseline information of the lease area should be described on the basis of information incorporated in first approved mining plan at the time of grant of ML. Existing base line information to be furnished on the basis of environment monitoring parameter carried out. The environment monitoring data of last one year to be enclosed for ready reference. Further, base line information to be furnished for surrounding 500 meter form lease boundary.
36. . The system for periodical monitoring of environmental parameters like quality of air, water and noise etc., as per relevant statue should be proposed.
37. All the information should be furnished under different para for instance in page no. 69 and 70 the details regarding mined out land, top soil management left blank.
38. Summary of year-wise proposal information table format should be as per the mining plan manual. Do necessary corrections.
39. reclamation and rehabilitation measures should be proposed year-wise for management of dumps, worked out benches, mined out lands, waste lands and any others etc.,
40. FA table should be as per the format provided in Manual. The area degraded due to mining and allied activity to be considered in FA calculation. It should be re-calculated and submitted accordingly

**PLATES (GENERAL):**

1. Magnetic Meridian with declination 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 and sections should be signed with date by certified Surveyor, Qualified Person, Mine Manager, Mining Engineer and Mining Geologist as per provisions of MCDR, 2017 and MMR, 1961. 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.
2. 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.
3. **LEASE PLAN:** The lease plan authenticated by competent authority of state government should be submitted.
4. **KEY PLAN:** The key plan should incorporate all features as mentioned Rule 32 5 (a) of MCDR 2017. The prominent wind direction to be shown by rose diagram in key plan and other relevant plans. The approach road to the lease area should be shown with Co-ordinates of extremity of lease area.
5. **SURFACE PLAN:** All the boundary pillars to be given in UTM too. All the updated boundaries of Fines stack, Waste dump, Mineral reject dumps to be shown on the plan. Surface right area to be shown on the plan with different type of land schedules. All the features have not been shown in the index. Common boundary with other lessees if any should be shown on the plan. The Surface Plan should be prepared to satisfy the provision as laid down rule 32 (1) (a) of MCDR'2017.
6. **GEOLOGICAL PLAN & SECTION:** (i) Geological information to be highlighted in geological plan and section. All drilled BH, quarries and trial pits to be shown with red color and BH nomenclature with black color. (ii) Geo structural information has not been furnished adequately. The litho should be depicted as per the drilled bore holes log.(iii) Limit of estimation should be as per MEMC rule 2015. (iv) The redefined UNFC boundaries and UPL to be shown in Geological Plan and sections. (v) All the geological information to be furnished on geological plan and section based on drilled BH, exposed pit, trial pits etc with their configuration profile (dimensions) like depth. Section lines with nomenclature should be highlighted on the plan. Proposed boreholes should be shown in dotted line. Iron ore mineralization area should be clearly demarcated 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. Plan and section should be drawn on same scale.

7. **DEVELOPMENT PLAN & SECTION:** (i) present pit profile configuration with UPL to be shown with red color and proposed development with some other color. All development sections to be submitted for which development is proposed. (ii) The layout of the haul road for present and future excavation proposal should be properly addressed in line with safe movement of fleet of the machinery. The proposed and existing haul road to be depicted on the development plan. (iii) The proposed and existing bench mRL to be shown clearly over year wise development plan and sections. (iv) Geological information to be furnished on development plan and sections. Development Plan and section should be drawn on a scale of 1:1000. V) gridlines should be marked in development section. Vi) RL of drilled boreholes should be shown on section. Vii) the bench RLs furnished on plans and respective sections should be rechecked.
8. **RECLAMATION PLAN:** All revised year wise proposals as per comments in PMCP chapter to be depicted on the plan.
9. **ENVIRONMENT PLAN:** The Environment Plan as prepared should be satisfy the provision as laid down rule 32 (5) (b) of MCDR'2017. Wind rose diagram should be depicted.
10. **Financial Assurance Area Plan:** The area degraded due to mining and allied activity to be considered in FA calculation. The FA table format should be depicted. It should be re-calculated and submitted accordingly. The existing area and additional area under different heads should be shown properly under different coloured hatching.

**ANNEXURES:**

11. The copy of the qualification & experience certificate in respect of the QP to be enclosed.
12. Copy of latest lease deed executed with copy and also initial executed lease deed with authenticated land schedule should be enclosed.
13. Copy of quality of air, water, soil, noise and other environmental a parameters monitoring report of the last year should be enclosed.
14. All the annexure to be properly numbered/paged and relevant annexure to be signed by Geologist/surveyor/QP etc. It is observed that many of the annexures are not legible. A legible copy of same to be enclosed.
15. A legible copy of photo id, address proof and signature proof of lessee to be enclosed.
16. Copy of previous approved mine plan & scheme of mining letter should be enclosed.
17. 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.
18. Copy of EC, FC, CTO etc. to be enclosed. Environment monitoring data to be enclosed at least for last one year. Copy of surface right order. Certificate of surveyor. Approval letters of last MP/SOMs.
19. Recovery test, bulk density test reports carried out in NABL laboratory should be enclosed.
20. Copy of bank guarantee should be enclosed. Photographs of boundary pillars should be enclosed.

spelling and grammatical mistakes with non-relevant rules observed in the document. which needs to be rectified.

In view of above, wherever necessary correction required to be made.

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