



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. MP/OTFM/09-ORI/BHU/2017-18

Date: .08.2017

To

✓ Shri Sanjeev Kapoor, Vice President,
M/s Bhushan Steel Ltd,
41, HIG BDA, Jaydev Vihar,
Bhubaneswar-751013

Sub: Approval of Mining Plan of Kalamang West (Northern Part) Mine along with Progressive Mine Closure Plan (PMCP), over an area of 92.875 ha in Keonjhar & Sundargarh district of Odisha State, submitted by M/s Bhushan Steel Ltd under Rule 13 of MCR, 2016.

Ref: - i) Your letter No. Nil dated 17.07.2017.
ii) This office letter of even no. dated 20.07.2017.

Sir,

This has reference to the letter cited above on the subject. The draft of Mining Plan along with Progressive Mine Closure Plan (PMCP) has been examined in this office based on site inspection carried out on 29.07.2017 by Shri Dayanand Upadhyay, Assistant Controller of Mines & 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 Mining Plan along with Progressive Mine Closure 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 in Auto CAD compatible format or JPG format in resolution of 100x100 pixels on same CD)** of the 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 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 Mining Plan along with Progressive Mine Closure Plan. It may be noted that no extension of time in this regard will be entertained and the Mining Plan along with Progressive Mine Closure 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.

Yours faithfully,

(HARKESH MEENA)

क्षेत्रीय खान नियंत्रक / Regional controller of Mines

Scrutiny comments on examination of Mining Plan of Kalamang West (Northern Part) Iron Ore Block over an area of 92.875 Ha in Sundargarh and Keonjhar District of Odisha State of M/s Bhushan Steel Ltd.

General

1. On cover page Company address, e-mail, phone and fax no. may be furnished. On cover page OTF category has been mentioned while in text fully mechanized is proposed. It may be corrected. Company address, e-mail, phone and fax no. may be furnished on cover page.
2. In Letter of Intent issued by State Govt. the lease area is mentioned 92.0 ha while in text it is mentioned 92.875 ha. It may be clarified.
3. Lessee is a company. Hence, all certificates, undertakings, consent letter etc. should be signed by the nominated owner of the mine only.
4. Extract from the minutes of the Board of director meeting of Bhushan Steel Ltd held on 20th September 2014 hereby nominated Shri Neeraj Singal as a Vice chairman and Managing Director of the Company while Shri Sanjeev Kapoor authorized by him to sign the document but "Power of Attorney" has not been given in favor of him. Accordingly the mining plan should be signed by authorized signatory.
5. Sequence of para as per IBM Manual appraisal MP 2014 has not been covered in text.
6. All the annexure to be properly indexed/ numbered/ paged and signed by qualified person. All the certificates should bear dated signature. Typographical error should be corrected.

Geology and Reserve:

7. In the future exploration program, the Geological Mapping to be proposed over the total lease area of 92.875 Ha on 1: 2,000 or larger scale for detailed exploration (G1) stage.
8. With reference to Rule 12 (3) of MCDR, 2017, the future exploration program need to be revised so as to carry out detailed exploration (G1 level) over the entire potentially mineralized area under the mining lease, within a period of five years from the date of opening of the mine after execution of such mining lease. The grid spacing of boreholes for iron ore should be proposed at 50 meter or at closer interval as the iron ore deposit in this block characteristically belongs to stratiform and tabular deposits of irregular habit.
9. Proposal for drilling may also be furnished in demarcated non-mineralized area.

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10. Year wise exploration programme should be demarcated over the Geological Map in suitable color index and the quantification for the same in terms of year wise drilling proposal should be incorporated under future exploration program in the mining plan text.
11. The proposed borehole locations along with Borehole Id, Bore hole Collar RL and estimated closing depth to be shown in the Geological Sections.
12. The existing forest, non-forest and mineralized zone boundary should be shown over the Geological map in contrasting colours.
13. Prefeasibility study report should be enclosed for justification of the UNFC categories of reserves and resources.
14. In page 28, category wise updated reserves as per UNFC should indicate the resources/reserves between threshold and cut-off grade.
15. The reserves & resources of different ore types with grade should be shown in tabulated format.
16. Longitudinal Sections should be enclosed.
17. In the page no.23, the heading "Summary of Geological Reserve" should be replaced with "Summary of Geological Resources".
18. The summary of boreholes drilled with total nos. of boreholes, grid interval, and minimum and maximum borehole depth with level of exploration to be shown in tabulated format.
19. The contour in the Plans submitted does not match with the contour of the Geological Map prepared by GSI.
20. As per IBM Manual of Mining plan 2014, the para like details of sample analysis, indicating type of samples, expenditure incurred in various prospecting operation, surface plan of lease area and their scale, geological section prepared have not been described.
21. The detail of category wise explored area furnished in tabular form (ref. page no.21) is not in prescribed format.

Mining:

22. Page-29, para2.0, proposed method of mining has not been described properly. The nos. of benches in ore & OB, top & bottom mRL, Machinaries proposed, stripping ratio may be described.

23. In Page-32-36, yearwise development as furnished in tabular form has not been described with top and bottom mRL, length & width of quarry, quarry area etc. In the development and production tables bench wise, year wise area of excavation and average thickness of the excavation or average area of cross section of bench and its average advance is to be given along with RL of bench with direction of advance at the end of the year.
24. Page-37, year wise tentative excavation as given in tabular form has not been furnished with recovery factor, bulk density, average grade of saleable ore, average grade of sub grade ore and cut-off grade of mine.
25. The cut-off grade of mine may justify with economical parameters and market demand.
26. Justification for site selection for first five year mining to be given.
27. Page-37, In table sub grade may replace with mineral reject and inter burden may deleted.
28. Page-38, In mine design parameters the bench height proposed 6m and width 10-12m and UPL has been marked with ultimate pit slope of 35 degree. On the basis of these parameters it is observed from geological section that large quantity of reserve has been falls out of UPL which is against the scientific development and conservation of mineral. Since it is fully mechanized mines under proposal therefore it is advised that the bench height may propose 10m and UPL 45 degree with berm width in hanging benches so that maximum reserves could be cover under UPL.
29. Conceptual mining plan, cumulative waste generation and top soil generation and protective measures have not been described properly.
30. Ultimate pit limit should be depicted on all relevant plans & sections.

Mine Drainage:

31. Adequate rainwater management plan or drainage plan along with arrangement for arresting solid wash off etc. should be prepared and incorporated in the document in view of environmental protection.

Stacking of Mineral Reject/Subgrade and Disposal of Waste:

32. Proposed Sub-grade dump and waste dump may describe with its location along with mRL in text. The top mRL of all above to be depicted clearly on plans.
33. 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 slop, individual

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terrace height and slope with description of method & manner of disposal of waste should be mentioned.

34. The proposal for construction of retaining wall, garland drain may furnish year wise in different color codes in terms of their length width and height.
35. Before the proposed area is put in use for waste disposal and subgrade/mineral reject dumping, the area should be proved for non-mineralization.

Others:

36. Existing manpower both direct and contractual has to be mentioned in the text.
37. An organizational chart has to be provided for risk assessment study to whom communication to be made in case of any accident.

PROGRESSIVE MINE CLOSURE PLAN:

38. Page 72, area likely to be degraded may be modified as per instruction given in the field.
39. Year wise proposed no. of saplings have not been furnished with location and area covered in ha.
40. Amount of financial assurance should be calculated as per rule 27(1) of MCDR-2017 and submitted accordingly.
41. Under impact on land, cumulative land degradation at present, at the end of proposal period and at the end of conceptual period may be given.
42. Mitigation measures of impacts associated with mining i.e. mainly related to air, water, noise, vibration, land, aesthetics etc. are not given properly. The same to be elaborated.

Plates

43. The precise area lease plan/cadastral plan authenticated by the state government have not been submitted.
44. DGPS plan duly certified from competent authority has not been submitted.
45. The plans and sections submitted do not bear the certificate that --the plans and sections are prepared based on the lease map authenticated by the state government.
46. All plans and sections shall show a scale of the plan at least twenty five centimeters long and suitably subdivided. All plans & sections prepared shall follow the conventions mentioned under MMR 1961.

47. Wind direction may show through wind rose diagram in key plan and environmental plan.
48. All plans and sections should be signed with date by certified Surveyor, Qualified Person, Mine Manager and Mining Geologist.
49. Boundary grids to be shown in all plans and sections.
50. Magnetic Meridian and date of observation of should be given on all relevant plans.
51. The legend of bore holes may be corrected. Lithology should be depicted in suitable index apart from numerals. Index/legends in all the plans & sections should be re-checked.
52. Surface plan needs to be updated with existing surface features as discussed in field. Information of boundary pillars in UTM coordinates as well as in Latitude and longitude of all ML boundary points should be depicted in tabulated form on surface plan. Few pillars may be correlated with some permanent ground features giving distance and direction. Different land use may be shown with color codes.
53. The lithology should be marked over the non-mineralized portion as shown in Geological Plan (ref.Plate -IV)
54. In the Geological Plan (ref.Plate -IV), the index showing the boreholes of G3/G2 Stage to be replaced with "Drilled Boreholes".
55. Development plan should prepare in 1:2000 scale. As discussed during the filed visit, the profiles of development/geological sections are not matching with the plans at places. Verify and rectify.
56. The Environment Plan as prepared should be satisfied the provision as laid down rule 32(5) (b) of MCDR2017. Surface features of adjacent mine has not been shown in buffer zone. The proposed and existing environment protective measures to be shown in environment plan. The drainage pattern of the lease area also to be shown on the plan.
57. In the Financial Assurance plan area of each individual land i.e. land degradation due to mining activity and processing unit etc. at the end of plan period may be shown separately on this plan with highlighted boundaries and different color codes for FA calculation.
58. Reclamation plan, year wise progress of dumping, stacks, afforestation using different color codes for easy understanding may be shown.
59. Conceptual plan may be prepared considering mineralization as revealed from the borehole logs. One longitudinal section may also be submitted. Direction of run off from the area based on surface contours may be shown on the plan and the sections.

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