

**Scrutiny Comments on Examination of Draft Review and Updation of Mining Plan in respect of Jaisingpur Iron ore Mine (ML No. 2545) over an area of 34.14ha located in Jaisingpur Village, Sandur Taluk, Ballari District, Karnataka State, Submitted by M/s Lakshmi Minerals for approval Under Rule 17(1) of MCR, 2016**

**GENERAL**

1. Refer Minerals (Other than Atomic and Hydro Carbons Energy Mineral) Concession (Fourth Amendment) Rules, 2021 published vide Ministry of Mines, Gazette Notification G.S.R. 775(E) dated 2<sup>nd</sup> November 2021. In accordance with Sub-Rule (2) of Rule 17 of MCR, 2021 lessee has to submit the Draft RUMP 180 days before expiry of the plan period. The document has not been submitted in stipulated time. Hence, lessee needs to pay Rs.2,000/- per day penalty for late submission.  
-In the instant case, the soft copy along with the processing fee is submitted to this office online on 15/01/2022 and it is 74 days late from the date of said Notification. You are therefore advised to pay penalty @ **Rs2,000/- per day X 74 days i.e. Rs. 1,48,000/-** (Rupees One lakh forty eight thousand Only). The penalty may be paid by Demand Draft drawn in favour of Drawing & Disbursing Officer, Indian Bureau of Mines, Bangalore.
2. No cells may be left blank. Either “Nil” or “Not applicable” may be furnished.
3. If any relevant information pertaining to the ‘calculation’ or ‘supporting information’ or ‘clarification’ may be provided as foot note in the respective table/para.
4. Wherever additional information or supporting document is given in Annexure, Annexure no may be specified in respective paras.
5. Undertaking/Consent letter from the lessee may be digitally signed by the lessee.
6. Serial Numbers of all the chapters and sub paras should be as per the prescribed format. This may be verified and maintained as per the formats issued on FAQ on New Mining Plan format vide letter No.R-11011/1/IBM-M-A-MP/2012-CCOM-Vol-II dated 08/09/2021.

**Cover Page**

7. The title of the document should be given as “Review and Updation of Mining Plan including Progressive Mine Closure Plan” submitted under Rule 17 (1) of MCR, 2016 and Under Rule 23 of MCDR, 2017.
8. Details of As per IBM circular no. is not required, same may be deleted
9. As per New Mining Plan template, there are only Two Categories A (Mechanized) and B (Manual), Hence OTFM abbreviation may be deleted and mentioned as Mechanized.
10. Lease valid period (date) may be specified

11. Lease area as per CEC and as per lease deed may be specified. This comment is also applicable to para 1.1.

## **Chapter 1: GENERAL INFORMATION**

12. Para 1.3.4.1 The ROM quantity mentioned in this para is not tallying with referred and enclosed EC. Same may be verified for its correctness and updated.
13. Para 1.3.4.2: SBCB Approval validity is upto 23/04/22, the same needs to be renewed and copy of the same may be submitted.
14. Para 1.3.4.3: Forest Clearance area is not matching with actual lease area, clarification may be given at the foot note of the table.
15. The details of permissible Annual Production as per CEC approval letter along with CEC approval letter number and date. may be given as Para 1.3.4.5 and supporting document may be provided as Annexure

## **Chapter-2: Geology & Exploration**

16. **Para 2.1.2:** (i) Details of Mining leases within 5km from periphery of the lease boundary mentioned in others. (ii) Villages within 5km from periphery of the lease boundary may be mentioned in the Human Settlement.(iii) Name of the SH/NH may be specified along with distance.
17. **Para 2.1.4:** Local Geological sequence may be provided and thickness range of the float ore may be mentioned.
18. **Para 2.1.4.3:** Field occurrence of all the lithologies may briefly be explained in this para.
19. **Para 2.1.4.5** Extent of Weathering/ Alteration: During the field inspection it is observed the phyllite below float ore is highly weathered and at some places laterization observed. Further, float ore is a product of weathering and disintegration product of Iron ore reef. Float ore has undergone residual weathering. Hence, the details given in this para may be reviewed and corrected.
20. **Para 2.1.4.6:** Nature/Form of Mineral: Lumps and fines ratio of iron ore may be specified in this para.
21. **Para 2.1.4.7** Extent of Mineralization: (i) Along with the lateral extent, vertical extent of the float ore may be specified. (ii) In the lease area, some places weathered phyllite is exposed and there is no float ore present on top of it. Hence, phyllite area may be deducted while mentioning the lateral extent of the float ore.
22. **Para 2.2.1:** Name of the exploration agency may be specified
23. **Para 2.2.1.5 Pitting: (i)** The depth and running meter information given for the Pit ID TP-67 is not correct and same may be verified and corrected. (ii) From the Pit details it is observed that, for the entire depth of the pit only one sample is collected and analyzed, which is not correct. Meter-wise samples has to be collected and analyzed. Further, all the pits are ended in mineralized zone, there is no information

of bottom pit lithology in the Pit, and detailed lithologies of the pit may be provided. This comment is also applicable to para 2.2.2.5.

24. **Para 2.2.19 Sampling:** There are only pit sample details given in Para 2.2.1.5, however, 75 number of samples collected and analyzed given in this para, the same need to be verified and corrected.
25. **Para 2.2.1.13 Bulk Density:** Bulk Density Study is not conducted, for the calculation of Reserve/Resources bulk density considered may be specified in the foot note of the para. Bulk Density study may be carried out as per M(EMC) Rules, 2015 and SOP of CGPB and detailed study report may be enclosed.
26. **Para 2.2.1.14:** Area covered under exploration: **(i)** It is mentioned as entire 34.14Ha lease area is mineralized and explored under G1 level, which is not correct, there is small part of phyllite in the lease area, same may be taken into account of non-mineralized. **(ii)** From the Geological Plan, it is observed that, the pit interval in general is about 100m x 100m and some pits are 100m x 80m interval. As per MEMC Rule 2015, for G1 level of exploration, the grid interval of the Pit should be 100m along the trend and 50m across. Hence, most part of the area explored comes under G2 level. Hence, the given information may be reviewed in detail and updated in this para and respective calculations, Plans and sections may be updated. **(iii)** Mineralized area, non-mineralized area and area explored under different level (G1/G2/G3/G4) exploration may be marked on the Geological plan with polygon (area) feature and area details may be given in the Geological Plan.
27. **Para 2.2.2.14:** (i) The area details given in first table may be reviewed; only the area explored under different level of exploration during previous plan period may be given. (ii) In the 2<sup>nd</sup> Table, details of area converted G1 from G2, G3 and G4 level may be given for the plan period and percentage of up gradation in exploration during plan period may be specified.
28. **Para 2.2.3 Ore Body geometry & Grade:** Mineralized area may be specified in foot note in sq. meter.
29. **Para 2.2.4.1 Methodology:** (i) Bulk Density considered for float ore and waste may be specified in this para (ii) UNFC classification details are provided in para 2.2.4.10, hence, the same may be deleted in this para. (iii) Recovery considered for the float ore may be specified. (iv) Average depth of 2.89 m for blocked reserves and 3.48m for Proved Reserves considered for calculation of Reserve/Resources and Reserve/Resources calculated by area method by multiplying the average depth, which is not appropriate. From the pit information it is observed that, depth of the float ore body ranges from 1 to 5.8m, for better results, the calculation may be made by cross sectional method by taking influence of adjacent pit information. Hence, the information given in this para may be revised.
30. **Para 2.2.4.2 Resource Calculation:** (i) Average grade of Fe may be provided in grade column. (ii) As mentioned in Para 2.2.4.1, the calculations may be made by Cross-sectional method.

31. **Para 2.2.4.3** Mineral Resources estimate for conversion of Mineral Reserves: Factors of level of exploration, feasibility study and economic factors considered may also be specified in this para.
32. **Para 2.2.4.4:** Threshold Value & Cut off Parameters : (i) Hematitic ore may be corrected as Hematitic Iron Ore; (ii) The cut of grade may be mentioned as Fe 45%.
33. **Para 2.2.4.5:** Mining Factors or Assumptions: **(i)** In the Mining Factors, Overall pit slope, Ultimate Pit Depth, benches height and other mining factors if any may be provided.
34. **Para 2.2.4.11 and Para 2.2.4.12:** (i) Average grade of Fe may be provided in grade column. (ii) As mentioned in Para 2.2.4.1, the calculations may be made by Cross-sectional method. (iii) Reserves blocked in Safety Zone and 50m buffer zone of Public Road may be separately estimated. (iv) Foot note information of para 2.2.4.12 may be reviewed, the RMP submitted is updated, hence, reserve/resources may be updated close to the date of Plan submission date.
35. **Para 2.2.4.13:** (i) The Reserve/resources given as on 01/04/2021 should be in line with the existing approved document and figures given Annual return. (ii) Average Fe grade may be given in grade column. (iv) Updated Reserve/Resources as on 01/12/2021 or 01/01/2022 may be provided in this para by adding additional table. If any exploration carried out and Reserve/Resources updated after 01/04/2021, the same may be briefly explained before providing the updated Reserve/Resources. The quantity of ore mined from 01/04/2021 to 01/12/2021 may be depleted from the Reserves. This Para may also be reviewed in detail and updated as per the comments given Reserve/Resources Calculation.
36. **Para 2.2.5: Future Exploration Proposal:** As per Rule 12(4) of amended MCDR, 2021, in the case of existing mining leases, *“Detailed exploration (G1 level) over the entire potentially mineralized area under the mining lease shall be carried out in the manner specified in the Minerals (Evidence of Mineral Contents) Rules, 2015 within a period of five years from the date of commencement of these rules.”*. Hence, it is advised to propose the exploration activities as per the MEMC Rules to cover the mineralized area into G1 level. Non-mineralized area need to be proved by geological mapping, exploratory pitting/trenching.
37. **Para 2.2.5.1 Geological Mapping:** (i) Area details may be provided for all the years. (ii) The information given in the foot note of the table is irrelevant, same may be deleted. In the foot note it may be mentioned that updation of geological map based on exploration work and mine pit it information.
38. There are no proposal of Pitting and trenching, as per the comments given in Para 2.2.1.14, the mineralized area is not fully explored under G1 level, Hence, proposals of trenching/pitting may be made to explore the the entire mineralized area under G1 level during the proposed plan period.
39. **Para 2.2.5.7: Sampling** - Tentative no. of samples going to be generated from Pits and Trenches may be specified in this para. The samples may preferably proposed meter-wise.

### **CHAPTER-3: MINERAL BENEFICIATION/PROCESSING**

40. **Para 3.1: Mineralogy of the ROM Ore/ Mineral** - (i) Approximate Mineral percentage Valuable Mineral name Hematite is mentioned as 90%, which is not correct. The average grade is less than 60%, the hematite percentage in the ROM is also to be less, the given information may be reviewed and suitably corrected. Further in the local geology, goethite and limonite occurrence is mentioned, same also to be mentioned in the Valuable mineral column.
41. Para 3.3.1: Product size is mentioned as 40mm; however in the flowchart it is mentioned as -40mm, the same may be verified and corrected.
42. **Para 3.5.3 Product Quality:** Different Product size range and grade may be specified in this para.
43. **Para 3.9: Water Balance Chart:** As per the EC condition, the water generated from the silt settling pond may be used for dust suspension, plantation activities. Accordingly source of water may be proposed. There is no proposal of water usage for plantation, same may be proposed.

### **Chapter -4: MINING METHOD (OPENCAST)**

44. **Para 4.1.1 and 4.1.2:** Method of mining mentioned as OTFM, same may be corrected as Mechanized.
45. **Para 4.2.1.1: (i)** Area and dimension details of Pit given in this para may be verified for its correctness and suitably modified. **(ii)** Only one active pit details mentioned, however in the field inspection it is observed four isolated shallow pits in the lease area, details of the along the pit with status may be provided in this para
46. **Para 4.2.1.2: (i)** Dump Id of Waste Dump (ID-1) and Sub-grade dump (ID-2) are not shown on Plan. All the dumps should be clearly demarcated on plans and dump ID may be given. **(ii)** Dump location details (UTM grid) given in this para are not correct, location falls outside the lease boundary. The same may be verified and correct co-ordinate of waste dump location may be provided.
47. **Para 4.2.2.1 Bench Parameters: (i)** Cells in the Maximum slope angle column are merged, same may be unmerged and details may be provided in all the cells. **(ii)** Number of benches in mineral mentioned mineral is not correct; the same may be verified in Production & Development Plan and Section and suitably corrected in all the years. **(iii)** Plate no. of Year-wise Production & Development Plan & Section are not correct, same may be corrected as Plate-5a, 5b, 5c, 5d, 5e and Plate 6a, 6b, 6c, 6d, 6e.
48. **Para 4.2.2.2: Year Wise Opencast Development: (i)** The comments given in Para 4.2.2.1 may be considered wherever it is applicable. **(ii)** Details given in Bench column may be verified and corrected. **(iii)** The OB volume and quantity mentioned mainly consists of intercalated waste/inter burden/side burden. Hence in the foot not of the table, it may be mentioned as 'OB volume and quantity mainly consists of intercalated waste/inter burden/side burden'. **(iv)** No information given in

recovery column, details may be provided. **(iv)** Cells of Location of advancement are merged, same may be unmerged and pit-wise & Year-wise location of advancement may be provided. **(v)** As per the Mining Plan Template, the stripping ratio is OB to Ore; hence the details given in this para may be verified and corrected. **(v)** Detailed calculation along with bench height may be provided in Annexure and also on Production & Development Plan.

49. **Para 4.3.1: (i)** Bulk Density Study may be undertaken as per MEMC rule/SOP of CGPB and Report may be enclosed.
50. **Para 4.3.2: Insitu Mining: (i)** the calculation may be made with OB to Ore Ratio. **(ii)** Avg. grade of iron ore is provided; grade range needs to be provided.
51. **Para 4.3.4:** Combined quantity of HIO and HSIO may be also be provided in this para.
52. **Para 4.4: Machine Calculation: (i)** Material handling per day, per shift and per hour not tallying with total proposed quantity (given in para 4.3.2) to be handled per Year. Only ROM is considered in calculation, the same may be verified and suitably modified in all the calculations of sub-paras of para 4.4. **(ii)** Shift time is mentioned as 7 hour, however in calculation of handling required per hour mentioned taken as 8 hour, which is not correct, the time should be maximum working hour of the shift/day.
53. **Para 4.4.2:** Bucket fill factor mentioned in this para is high, the same may be given as 0.7 and accordingly all calculations may be modified.
54. **Para 4.6.1: Managerial:** Details given in Particulars column is not correct, the same may be reviewed and suitably corrected.
55. **Para 4.6.5:** There is no proposal for unskilled worker, same may be proposed.
56. **Para 4.6.6:** proposed Material to be handled per shift is not correct, same may be corrected as per Total material handling information given in para 4.3.2
57. **Para 4.6.7:** Only details of Supervision Manpower may be given in this para, remaining viz. semiskilled worker, driver, operator etc may be deleted. As per the format, (-) Shortage / (+) Excess details of supervisory manpower may also be provided.
58. **4.7.1: Existing Dump:** No details provided in this para, all the details of existing dump in the lease area may be provided as per the format.
59. **4.7.2: New Dump:** (i) There is no proposal for new dumps, in the foot note it may be mentioned as waste generated will be concurrently backfilled.
60. **4.7.4: New Stack:** No Proposals given in this Para, if any proposal to Stack the mineral, details may be provided.
61. **Use of Minerals: (i)** Direct Selling through e-auction may be specified in Proposed Use of Mineral. **(ii)** Fe grade range and average grade may be provided in Chemical Specification.

## **CHAPTER-5: SUSTAINABLE MINING**

62. **Para 5.1:** Compliance of Vishakha Committee Mentioned as 'Not Applicable', for the statement justification may be provided.

63. **Para 5.2: CSR Initiatives:** Keeping in view the main objective of reinvesting the benefits derived from the extraction of minerals as per Sustainable Mining and SDF Implementations, It is advised to review the 'Nil' proposals made under sub paras 5.2.1.6: Efforts made towards Providing Hygiene & Sanitation to Local Communities & 5.2.1.10: Any other steps taken for improving the Socio-Economic Standard of Local communities.
64. **Para 5.2.1.13: Efforts for green energy:** It is advised to make some provision for consumption of green energy at the mine.

## **CHAPTER-6: PROGRESSIVE MINE CLOSURE PLAN**

65. **Para 6.1 Status of Land:** Area under Mining Operations and dump during the existing plan period is given as 7Ha and 0.10Ha, however, the same area has been given in the proposed plan period at the beginning of the year. There is no change in the area, the same need to be verified for its correctness.
66. **Backfilling:** In the foot note it may be mentioned that, concurrent backfilling will be carried out in the proposed pit, after exhaust of the float ore in the area.
67. **Para 6.2.2.2 Protective measures:** No Proposal of Retaining Wall and Garland Drain given for the plan period, as per EC condition, 4(A)(iv), garland drain and retaining wall may be proposed along the pit and dump, hence this para may be reviewed and proposal may be made as per EC condition.
68. **Para 6.2.3.2:** UTM grid of Green belt proposed location may also be provided in location column. If green belt, proposed on the backfilled area, the same need to be specified.

## **CHAPTER-7: FINANCIAL ASSURANCE/PERFORMANCE SURETY**

69. The area adjacent to the road 50m buffer zone may be mentioned in the year-wise land utilization table.
70. Revised bank guarantee as per the Mineral Conservation and Development (Amendment) Rules, 2021 needs to be submitted.

## **CHAPTER-8: REVIEW OF PREVIOUS PROPOSALS**

71. **Para 8.1.1: (i)** there is no change in the land area utilization area at the beginning of the plan period and actual area utilized in the plan period, the same may be clarified. **(ii)** w.r.t. proposed area of land utilization and achievement, deviation is 100%, however it is mentioned as 38.9%, the same may be rectified. **(iii)** Reasons for deviation mentioned as 'No mining activity during 2017-21', the reason for no mining may also be provided.
72. **Para 8.2.1 Exploration: (i)** the information given in the G-axis up gradation may be reviewed w.r.t. MEMC Rule, 2015 accordingly achievement in up gradation in G-axis may be specified.

73. **Para 8.2.2: (i)** Generated waste while ROM recovery may be specified. (ii) Reasons for deviation cells are merged, the same may be unmerged and details may be provided. **(ii)** Details of dumping site of waste may be given as per the format.
74. **Para 8.2.2.2:** Lessee has commenced production in 2021-22, however, there is no change in the lateral and vertical extent at the proposed excavation location. Same may be reviewed and corrected as per the updated surface plan information.
75. **Para 8.2.6:** Reason deviation in production may be specified.

### **Plates – Hardcopy**

76. All the plans should be updated as per the scrutiny comments wherever applicable.
77. **Surface Plan: (i)** Waste Dump ID and Pit ID may be mentioned **(ii)** Pit and dump area may be clearly demarcated on the plan. **(iii)** Symbology of Road cutting is given similar to the working benches; same may be modified with different symbol/color and may be given in Index. **(iv)** Between section line BB' and CC' a stream abruptly ends; the same may be rectified as per ground truth information. **(v)** Temple given in the index not shown on the plan, same may be verified and corrected.
78. **Geological Plan: (i)** The Proposed Pitting/trenching and bore holes may be updated as per the comment given in Future exploration. **(ii)** Mineralized/non-mineralized area and area explored under G1/G2/G3/G4 may be marked on the plan and area details may be given in tabular form.
79. **Geological Cross Section: (i)** Shale has shown below the float ore under Inferred Resources (333 UNFC Category). However, the existence of iron ore mineral in the shale is not established. Further, backfilling is proposed on the shale after mining of float ore, this is contradictory; hence, same may be reviewed and suitably modified. **(ii)** UNFC code given on the sections may be suitably corrected as per the level of exploration carried out. **(iii)** In the Geological, in Index, Soil with iron ore and BHQ mentioned combinedly, however in Geological Section Iron ore and BHQ given separately. Further, in the text, soil quantity and volume shown as 'nil' however soil mentioned in the Index. This may be verified and suitably corrected.
80. **Production & Development Plan:** (i) Dump boundaries may be clearly demarcated on the plan. (ii) Year-wise exploration activity (pitting, trenching & drilling locations) may be shown on the plan. (ii) Proposed R & R activity and Plantation location information (UTM grid) may be provided in tabular form. (iii) Section-wise Production & Development calculation may be provided in tabular form. (iv) Year-wise production & development extent grid co-ordinates may be provided.
81. **Progressive Mine Closure Plan:** (i) Year-wise R & R structures may be dimensions and plantation proposal details along with location details (UTM grid) may be provided in tabular form. (ii) Year-wise concurrent backfilling location (UTM grid) may be provided.



**Plates soft copy (kml file)**

- 82.** Each map (**Geological Plan, Surface Plan, Production & Development Plan, Progressive Mine Closure Plan etc**) should contain lease boundary, surface feature information etc details. All the features should contain basic attribute data which is required to identify the layer/proposal etc. The .kml files submitted should be corrected suitably and submitted with all layer information as per legend given in hard copy in shape file / kml file format.
- 83.** All the plans may also be updated in softcopy (.kml/.shp) as per the comments given in Plates (Hardcopy) and in text.
- 84.** Key Plan of the area may be provided.

**ANNEXURE:**

- 85.** The numbering of annexure has not been sequentially maintained as per the format. Numbering of annexure to be specifically maintained as per the format. Any additional annexure enclosed may be followed after annexure no 18 with corresponding details. All the annexure as mentioned in above scrutiny comments of different chapters to be enclosed. Also, corrections in the annexure, as mentioned above in scrutiny comments of different chapters to be incorporated and corrected annexure to be enclosed.
- 86.** Undertaking/Consent letter from the lessee may be digitally signed by the lessee.
- 87.** Copy of Valid Bank Guarantee for the entire plan period as per the amended MCDR Rule 2021 needs to be submitted.
- 88.** All the annexure to be properly numbered/ paged and relevant annexure to be signed by QP. The Page no range should be accordingly given in list of Annexure. All the annexure should be legible.

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