

**Scrutiny Comments on Examination of Draft Review and Updation of Mining Plan in respect of Venkatagiri Iron ore Mine (ML No. 2551) over an area of 21.73 Ha located in Venkatagiri Village, Sandur Taluk, Ballari District, Karnataka State, Submitted by M/s Lakshmi Minerals for approval Under Rule 17(1) of MCR, 2016**

**GENERAL**

1. No cells may be left blank. Either “Nil” or “Not applicable” may be furnished.
2. If any relevant information pertaining to the ‘calculation’ or ‘supporting information’ or ‘clarification’ may be provided as foot note in the respective table/para.
3. Wherever additional information or supporting document is given in Annexure, Annexure no may be specified in respective paras.
4. Undertaking/Consent letter from the lessee may be digitally signed by the lessee.
5. 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.

**Chapter 1: GENERAL INFORMATION**

6. **Para 1.3.4.2:** SBCB Approval validity is upto 23/04/2022, the same needs to be renewed and copy of the same may be submitted.
7. **Para 1.3.4.5:** Details of Annual Permissible production may be provided in Tabular form and mineral name may be specified.

**Chapter-2: Geology & Exploration**

8. **Para 2.1.4.5 Extent of Weathering/ Alteration:** During the field inspection, it is observed that, all the litho units in the lease area are undergone weathering. The details given in this para may be modified. Lateral & Vertical extent of weathered profile in the lease may be specified.
9. **Para 2.1.4.6: Nature/Form of Mineral:** Lumps and fines ratio of iron ore may be specified in this para.
10. **Para 2.1.4.7 Extent of Mineralization:** The threshold value information provided in this para may be reviewed for its correctness. Lateral and vertical extent of the ore body may be specified clearly specified in this para.

11. **Para 2.1.4.8 Deposit Type:** (i) It is mentioned as bedded Stratiform and Tabular Deposit of regular and irregular habit. If the deposit is of irregular in nature, to prove the mineralized area in G1 level, grid spacing should be 50m or below, hence given information may be reviewed. (ii) Further, there is a float ore in the lease area, the same also to be mentioned in the Deposit Type.
12. **Para 2.2.1.5:** Pit litholog along with Fe grade may be provided in Plate.
13. **Para 2.2.1.10: Chemical Analysis:** The bore hole samples information given in Annexure (CSV/Excel file), the Annexure no. may be specified in this para. Along with the above information, graphical litho log details may be provided in plate, Form J and laboratory certificate may be provided as Annexure.
14. **Para 2.2.1.13 Bulk Density:** Bulk Density Study Results contains only Iron ore, there is no data for Waste rock/OB. Further, methodology adopted for calculation of Bulk Density is not clearly mentioned. Therefore, the Bulk Density study may be carried out as per M(EMC) Rules, 2015 and SOP of CGPB and detailed study report may be enclosed.
15. **Para 2.2.1.14: Area covered under exploration:** Area details provided in his para on different level (G1/G2/G3/G4) of exploration may be verified for with Geological Plan for its correctness. 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.
16. **Para 2.2.2.14:** (i) In the 2nd Table, details of area converted G1 from G2, G3 and G4 level may be given for the plan period i.e. for the year 2021-22. The percentage of increase may be calculated w.r.t. previous plan period. The given information in this para may be reviewed and suitably corrected. (ii) The mineralized area mentioned as 13.61Ha, same may be verified for its correctness.
17. **Para 2.2.4.1 Methodology:** (i) The grade of Hematitic Iron Ore and HSI0 may be verified for its correctness. (ii) Recovery considered for different ore types may be is not clearly specified.
18. **Para 2.2.4.2 Resource Calculation:** (i) Feaverage may be provided in grade column. (ii) Resources may be calculated separately for different ore types viz. float ore, Hematitic Iron Ore and HSI0. (iii) In the calculation, G1, G2, G3 level explored area combinedly calculated, the same may be calculated separately (iii) Foot note on Recovery considered is not clearly specified, the same may be examined and corrected suitably.
19. **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.

20. **Para 2.2.4.4: Threshold Value & Cut off Parameters:** Cut off value of Iron ore mentioned in para 2.2.4.1 is not tallying with information given in this para, the same may be verified and corrected suitably. If HSI0 (Fe 35% to <45%) is going to be blended with high grade Hematitic Iron Ore, the same may be clearly specified.
21. **Para 2.2.4.5: Mining Factors or Assumptions:** Recovery percentage information given in this para is not clear, the same may be reviewed and corrected suitably.
22. **Para 2.2.4.6 The Metallurgical Factors:** The information given in this para is not relevant, same may be reviewed and corrected suitably.
23. **Para 2.2.4.11 and Para 2.2.4.12:** (i) For Calculation of Blocked Resources & Calculation of Reserves, some section line influence are more than 50m and are considered under G1 level, however, this comes under G2, accordingly the UNFC code given may be corrected. (ii) Float ore calculation may be provided as per the format. (iv) As per EC Condition, the ultimate working depth of the mine should be 750m, accordingly Ultimate Pit limit may be drawn and reserve/resources be calculated. Below UPL if the area mineral is proved, same may be considered under blocked resources.
24. **Para 2.2.4.13:** (i) The Reserve/resources as on 01/04/2021 may also be provided, the figures should be inline with the existing approved document and figures given in Annual return. (ii) Updated Reserve/Resources as on 01/02/2022 or 01/03/2022 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 01/02/2022 or 01/03/2022 may be depleted from the Reserves. This Para may also be reviewed in detail and updated as per the comments given Reserve/Resources Calculation.
25. **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 proposed in Para 2.2.5.3 (Pitting) and Para 2.2.5.5 (Drilling) as per the MEMC Rules during the year 2022-2023 itself instead of proposed during 2024-25 to cover the mineralized area into G1 level.
26. **Para 2.2.5.5: Exploratory Drilling** - (i) Only 04 boreholes proposed for the plan period, however, from the Geological map it is observed that, there are

gaps in exploration, hence additional bore holes may be proposed to prove the entire mineralized area in G1 level. Bore holes may also be proposed in the section lines, where holes area ended in Mineralized zone i.e. where Fe 35% and above. **(ii)**In North East Band-1, boreholes may be proposed on section line A-A' and D-D' where no boreholes were drilled/proposed. **(iii)** In North East Band 2, bore holes may be proposed on section line A1-A1' and D-D' to C-C'to check the strike extension of the orebody **(iv)**Details of the proposed boreholes may be given as Annexure and Annexure no. may be specified in Attachment column. **(v)** In the type of borehole, RC drilling is proposed, for getting them to maximize sample recovery and ensure representative nature of the samples, core drilling may be proposed.

- 27. Para 2.2.5.7: Sampling**–Pit sample may be collected for each running meter depth, accordingly, tentative number of samples going to be generated during the course of pitting may be provided in this para.

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

- 28. Para 4.2.2.2: Year Wise Opencast Development:****(i)**Both Hematitic Iron Ore (HIO) and HematiticSiliceous Iron Ore (HSIO) Production details given combinedly, however Bulk Density of these ore types are different. Hence, calculationdetails may be provided in separate table.**(ii)** Details given in Production Associated Mineral may be deleted. **(iii)**Ore to OB ratio has been given, the same has to be corrected and OB to Ore ratio may be provided as per the format.**(iv)** In the Production & development plan, it is observed that, there is a proposal for production in eastern iron ore band (Pit 2), however, production details are not provided in this para. **(v)** Detailed Year-wise Development calculations along with minimum and maximum bench height details may be provided in Annexure also on Production & Development Plan.**(vi)** In the 2nd Table, details of Pit-2 located in the slope (eastern ore band) may also be provided.
- 29. Para 4.3.1: (i)** Slope Stability study of the Mine pit/benches and dump may be undertaken and study report may be enclosed. **(ii)** Bulk Density Study may be undertaken and Report may be enclosed.
- 30. Para 4.3.2: Insitu Mining: (i)** The given information may be modified as per the comments given in para 4.2.2.2 **(ii)** The calculation may be made with OB to Ore Ratio. **(iii)** Avg. grade of iron ore is provided; grade range needs to be provided.
- 31. 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.

**32. 4.7.4: New Stack:**No Proposals given in this Para, if any proposal to Stack the mineral, details may be provided.

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

**33. 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 subparas 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.

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

**34. Para 6.2.2.2Protective Measures:** No Proposal of Retaining Wall and Garland Drain given for the plan period, however, there is a Proposal of construction of 135m retaining wall and 140m garland drain during the year 2021-22, the proposed work is not carried out. Hence, it is advised to propose the construction of retaining wall and garland drain for the plan period. Further, it may be proposed for maintenance of the existing Retaining Wall and Garland Drain in the foot note of the Table. If any new dump proposal, Retaining Wall and Garland Drain may be proposed along the toe of the dumps.

**35. Para 6.2.11: Land Use of Lease Area at the Expiry of Lease Period:** The Area details given in various activities may be verified for its correctness. In the foot note of the table it may be it committed to undertake fencing of mine pits, regrassification of dumps and top OB benches, utility service area etc.

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

**36.** The area utilized for others activities given separately, the same may be combined and total area may be provided.

**37.** Unused area details given in this para may be deleted, only are put to use may be provided.

**38.** Revised bank guarantee as per the Mineral Conservation and Development (Amendment) Rules, 2021 needs to be submitted.

#### **Plates - Hardcopy**

**39. Geological Plan: (i)** Symbology/colour code given for RC and DTH drilling looks similar, different symbol and color may be given for RC and DTH bore

holes. (ii) Strike and Dip of the ore body/other lithologies may be provided. (iii) The Proposed Pitting/trenching and bore holes may be updated as per the comment given in Future exploration. (iv) 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. (v) Cross hatch given for the lithology/ore bands may be removed, the same may be shown in solid color for easy identification of other features on the plan. (This comment is applicable to all the plans & sections)

**40. Production & Development Plan:** The calculation details of Production provided in the plan may be reviewed for its correctness in comparison with the details given in Text.

**Plates soft copy (kml file)**

- 41.** 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.
- 42.** All the plans may also be updated in softcopy (.kml/.shp) as per the comments given in Plates (Hardcopy) and in text.

**ANNEXURE:**

- 43.** 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.
- 44.** Undertaking/Consent letter from the lessee may be digitally signed by the lessee.
- 45.** Copy of Valid Bank Guarantee for the entire plan period as per the amended MCDR Rule 2021 needs to be submitted.
- 46.** Annexure 12, Date of Drilling may be Specified. Radical Analysed mentioned as Fe<sub>2</sub>O<sub>3</sub>, the same may be verified and corrected.
- 47.** 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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