

**Scrutiny comments on the Modification of Mining plan along with Progressive Mine Closure Plan of Gurdari Bauxite Mine (584.19 Ha) of M/s Hindalco Industries Ltd. Located in village Gurdari, Ambakona, Rajadera & Kujam, P.S.- Bishunpur of Gumla district of Jharkhand state submitted under rule 17(3) of MCR, 2016 and rule 23 of MCDR, 2017.**

**General:**

1. On earlier occasion Review of Mining Plan was approved on 20/02/2019 with a condition for submission of Cadastral map based on DGPS survey within six months' time. However, lessee failed to submit said map so far. Cadastral map in compliance to CCOM Circular 2/2010 dually authenticated by State Govt should be submitted with final copy.
2. As per supplementary lease deed executed on 11/4/2017, the lease is spread over an area of 1039.54 ha (2568.70 acres). In submitted document the proposals are drawn over a lease area of 584.19 ha. only. Thus lease area in draft document are not in sync with supplementary lease deed. Chronological events leading to change in lease area should be discussed in brief in Introduction chapter and supporting documents are to be attached. Necessary corrections to be incorporated throughout the document wherever applicable.

**Review of Mining Plan:**

1. As per approved Mining plan it was proposed to work in southern part of the lease area (Kujam, Polpol Ramjharia and Kekarang quarries) during 2019-20 and 2020-21. However, mining operation during said period were done in northern part thus there was site deviation from approved proposals. However, site deviations are not recorded in Review of Mining Plan. Deviation should be recorded and efforts taken by lessee to overcome deviation need to be discussed in brief suitably.
2. Current submission is Modification in approved Review of mining plan. Reason and justification for this submission is to be given under item 3.6 (page 11).

**Geology and Exploration:**

1. Vegetation: Details about vegetation/ forest area, sal trees etc (page 12) is to be checked and corrected.
2. Local Geology: Nature of mineralization and type of deposit with reference to MEMC rule should be mentioned so that reserves/resource estimation and future exploration proposals can be justified.
3. Details of Prospecting: Details of exploration proposals has no relevance and to be deleted. Subhead to be redrafted with highlights of achievements at different phases of exploration.
4. Based on past exploration, breakup of mineralized and non-mineralised area and further, mineralized area explored under G1/ G2/G3 level should be tabulated in text and marked in geological plan.
5. It is reported that lease area has already been explored upto G1 level and no further exploration is proposed. As per submitted geological plan, part of the lease area is still under G2 and G3 level and part of the area is yet to be explored by drilling. Statement is to be corrected. Time bound exploration proposals should be drawn in such a way that entire potentially mineralised area can be explored upto G1 level prior to 26/2/2022.
6. Information as on 2002 has no relevance (refer table on page 19) for current submission and column to be removed. Besides, Information as should be reconciled in line with scrutiny comments at sl. No. 4 above.
7. Reserves/Resources estimation:
  - (i) Summary table on reserves as on 1/4/2020 (page 20) should be replaced with reserves table as furnished in earlier approved document so that calculation of balance reserves can be justified.
  - (ii) It is reported that bulk density has been taken as 2.3 based on laboratory test however, copy of test report not attached.

- (iii) Reserves are re-estimated by borehole area influence method but, in case of many boreholes criteria considered for taking influence do not comply with UNFC norms/MEMC Rules. Further, area already reclaimed has also been taken into account for reserves estimation. Reserves/ are to be reestimated.
- (iv) Resources are to be estimated under Measured, Indicated and Inferred category (depending on level of exploration (G1, G2, G3 categories). After applying modifying factors and conducting feasibility/prefeasibility study, reserves (111, 121,122 category) and resources blocked due to statutory barriers (road, electric line, dwellings etc)/ UPL/UPD/benches etc (211, 221 and 222 etc) may be derived. Back up calculation need to be attached seperately.
- (v) Footnote as per IBM manual of appraisal of Mining Plan 2014 regarding tonnage need to be furnished below the summary table of reserves (page 20).

**Mining:**

- 1. Electric line is passing across the area proposed for mining during 2021-22 but there is no approval for diversion of said electric line. Proposals should be modified and corrected as discussed during inspection.
- 2. In situ tentative excavation:
  - (i) Intercalated waste are part of OB/SB/IB therefore, it should be included in quantity reported in column 5.
  - (ii) Footnote as per IBM manual of appraisal of Mining Plan 2014 for tonnage need to be furnished below the table.
  - (iii) Production of 2019-20 and 2020-21 (page 24 and 25) has no relevance and to be deleted.
  - (iv) Production Proposals should be for entire financial year. Proposals for 2020-21 should be modified and corrected throughout the document wherever applicable.
- 3. Year-wise Proposals:
  - (i) During discussion it was informed that low grade ore are utilized for blending and there is no proposal for stacking of subgrade. Calculation of bench-wise /pit-wise generation of subgrade material as well as blending proposals has no relevance. Necessary corrections are to be done wherever applicable
  - (ii) Year-wise excavation details are to be tabulated as per following format and irrelevant data are to be removed.

Name of Quarry	Lithology	Area of excavation (m2)	Average thickness (m)	Total excavation (m3)	Working Location / Boreholes Reference
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- (iii) It is reported that soil is loaded in dumpers for transporting to OB dumps however, there is no external dumps on ground (page 30). Statement is to be checked and reconciled.

**Stacking of Mineral Reject/ Subgrade material and disposal of waste:**

- 1. Year-wise generation of soil, waste (OB/SB/IB) and subgrade need to be reconciled and corrected in line with scrutiny comments furnished for tentative excavation under mining chapter.

**PMCP:**

- 1. One more column for location of the area proposed backfilling/reclamation (grid co-ordinates) are to be incorporated in table (page 59).
- 2. 2500 saplings are proposed for plantation every year but, area under green belt before and after the plan period remain same (page 59). Information to be reconciled and corrected.
- 3. Financial Assurance: It is reported that 161.17 ha. area is fully reclaimed (page 67). Backfilled area may not be considered as fully reclaimed and rehabilitated. Status of rehabilitation still remains same as was approved on earlier occasion. Data need to be reconciled in line with earlier approved document and FA valid upto plan period need to be submitted accordingly.

**Annexure:**

1. Photocopy of permission for scale relaxation not attached.

**Plates:**

1. Lease Plan: Submitted khasra plan is spread over two sheets and is not to the scale. fails to depict precise.. Plan fails to depict shape of lease area. Besides, khasra details, roads etc. are not legible in submitted plan. Precise area map as per land schedule drawn over single sheet and authenticated by competent authority of State Govt is to be submitted. 0
2. Surface Plan :
  - (i) Surface plan is to be corrected as per scrutiny comments at sl. No. 1 (General). All statutory features are to be drawn precisely and correctly as discussed during inspection. Area for which FMCP has been approved earlier need to be shown.
  - (ii) Disposition of lease area, village road, etc not matching with that shown in khasra plan.
  - (iii) In submitted document, proposals are drawn by quarry wise (village wise). Name of quarry/villages should be recorded distinctly on surface plan.
  - (iv) Electric line passing across the lease area not drawn correctly.
- (3) Surface Geological Plan and Sections: Submitted plan is on 1:10,000 scale and vital features (exploration details, lithology attitude etc) not legible therefore details of exploration and reserves estimation could not be verified with submitted plan and sections. Part plan on 1:2000 scale (refer previous approved document) showing following details should be submitted with final copy-
  - (i) Lithology exposed on surface, pit faces, mineralized/non-mineralised area and mineralized area explored under different level should be marked.
  - (ii) UPL should be drawn under bold line. Positive and negative boreholes, proposed boreholes etc are to be drawn under distinct colour hatching.
  - (iii) Geological Plan and sections are to be signed by Geologist appointed under Rule 55 of MCDR'2017
- (4) Production and Development Plan and Sections: Movement of bench and backfilling faces to be shown. Pit face / backfilling face positions at the beginning and at the end of the year to be marked distinctly.
- (5) Reclamation Plan: Area proposed for rehabilitation/plantation should be marked distinctly.
- (6) Financial Assurance Plan: To be corrected and modified as per scrutiny comments given in text above.
- (7) Environment Plan: Forest land/ agriculture land/ other lease and quarries etc coming inside 60 m and 500 m periphery of the leas area is to be shown.

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