

**Scrutiny comments on the draft Review of Mining Plan of Amtipani – Chirodih Bauxite Mine (130.01 ha.) of M/s Minerals and Minerals Ltd. situated in village - Amtipani, Chirodih & Bahagarha, P.S. – Bishunpur, district – Gumla, Jharkhand State.**

**Introduction:**

1. In opening paragraph it is reported that the mining lease was granted by Govt of India under section 5(1). For grant of mineral concession, the LOI is being issued by State Govt. after prior approval of Central Govt under Section 5(1) of the Act. Statement is to be reconciled and corrected.
2. ML is not through PL route so, details under part c (page 4) should be corrected as not applicable.
3. The co-ordinates of boundary pillar No. BP-8 & BP-9 shown in the surface plan (as on 15.12.2020) & the area plan, submitted with the present document, is not matching with the co-ordinates of the respective boundary pillar, as per the mining leases deed executed with Govt. of Jharkhand on 11.1.2017. Therefore, the document shall be prepared afresh strictly as per the co-ordinates in the mining lease deed with subsequent revision in the chapter on Geology, Mining, PMCP alongwith the relevant plans & sections.

**Geology and Exploration:**

1. Breakup of mineralized and non-mineralised area and further, mineralized area explored under G1/ G2/G3 level need to be checked and corrected in text and plates.
2. As per details tabulated on page 13, only 19 boreholes are falling inside the lease area out of 78 boreholes drilled in Amtipani Blocks. Borehole nos. of these 19 boreholes should be recorded on page 13 suitably.
3. GSI's Report Annexed with document pertains to exploration over bigger block and contain lithologs/Assay data in respect of more than 75 nos. of pits, Trenches and 304 nos. of boreholes. It is very difficult to correlate various subsurface data pertaining to lease area under reference. For better clarity the Lithologs and assay data in respect of all pits and boreholes which are falling inside the lease area under reference should be reconciled from GSI's Report annexed separately so that backup calculation of reserves/resources and production proposals can be correlated precisely.
4. As reserves/resources are re-estimated a fresh in submitted document, so details of balance reserves as furnished on page 16 has no relevance and should be deleted.
5. Thickness of ore zone taken for reserves/resource estimation (refer Annexure 10) not matching with run details as of pit/borehole logs furnished in geological report which is annexed with document. Thickness of ore zone should be corrected in line with run details and reserves estimation/production planning should be corrected accordingly.
6. As per lithologs enclosed in Geological Report no bauxite zone is reported in few boreholes (BH no. 31 E3 etc) yet these boreholes are shown as positive and considered for estimation of reserves. Besides, area under influence of such boreholes has also been proposed for mining during ensuing plan period. Borehole/pit logs should be cross checked and reserves estimation/production planning should be modified and corrected accordingly. Necessary corrections should be done throughout the document wherever applicable.
7. Though the lease area is explored partly under G2 and G3 level. yet resource estimation for inferred category not done. Resource should be categorised under Indicated and Inferred category depending on level of exploration. After applying modifying factors and prefeasibility and/or feasibility study, reserves and resources may be derived. Back up calculation and Prefeasibility and/or feasibility Report are to be attached separately.

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8. In view of above mentioned major shortcomings reserves/resources should be reassessed a fresh and necessary corrections should be done throughout the document wherever applicable accordingly.
9. Details on recovery factor, bulk density (recoverable quantity etc.) has no relevance in summary table (page 20 and same may be discussed in text/footnotes suitably).

**Mining:**

1. Since lease is granted under Section 10 A (2) (c) of the Act, a Mine Development and Production Agreement should have been signed between the lessee and the State Government. Details of such agreement need to be discussed and copy of said agreement is to be attached. Production proposals should be in line with MDPA Agreement.
2. Recovery of saleable ore from ROM is reported at 70%. Estimates of generation of ore and intercalated waste from ROM as reported in column 6 and 7 of table (page 22 and 23) are incorrect. Further, year-wise tonnage details as furnished on page 23 are also incorrect. Five years excavation proposals should be drawn a fresh and necessary corrections to be done throughout the document wherever applicable
3. Ensuing plan period production proposals/ PMCP proposals and conceptual mine planning should be modified in line with scrutiny points nos. 5 and 6 under geology chapter.
4. An undertaking for submission of Recovery test report (from NABL accredited lab) within six months' time from the date of commencement mining operations should be enclosed with final copy.
5. No assumptions/ factor shall be taken for arriving at the waste quantities. Detailed calculations shall be shown to arrive at the ore & waste quantities with clear depiction of the same in all the relevant plans & sections.

**PMCP:**

1. Financial Assurance co-terminus with plan period should be submitted as per provisions laid down under Rule 27 of MCDR 2017.

**Plates:**

1. The lease map of the ML area duly authenticated by the competent authority of the State Govt. shall be submitted.
2. The surface plan, surface geological plan, key plan and environment plan shall be updated strictly as per the extant provisions envisaged under rule 32(1)(a), 32(1)(b), 32(5)(a) & 32(5)(b) of MCDR 2017.
3. An auto-cad file of the Financial Assurance (FA) Plan, Geological Plan, Geological x sections & Conceptual Plan shall be submitted in softcopy. The FA plan shall clearly show the existing & proposed land usages only for different entities (i.e. mining/ dumps etc.) as cited in the FA table in different colours & suitably indexed.
4. The key plan, surface plan & FA plan shall also be signed by the Surveyor of the mines. A copy of his certificate of competency shall be enclosed. The geological plan with x sections shall also be signed by the Geologist of the mine also.
5. Lease Plan based on DGPS survey conducted by authorised agency and authenticated by State authority should be submitted.

Surface Geological Plan and Sections: (i) UPL should be checked and corrected in line with scrutiny comments under text. Sections should be also be corrected accordingly. (ii) The geological x-sections needs to be submitted in a scale of 1: 1000, as the print submitted in the scale of 1: 2000 is totally obscure. (iii) The geological plan and sections shall be signed by the Geologist of the mine also.

6. Production and Development Plan and Sections: All the mine production & development plans/ sections shall show the present/ last position in a lighter shade / dim colour with the proposals for development & production in a darker shade/ dark color with a very clear cut index of it. The spot level of the benches must be clearly indicated. The mine production & development plans/ sections shall also be shown in a scale of 1: 1000.
7. Financial Area Assurance Plan: A Financial Area Assurance Plan showing outlines of area put to use under different heads as tabulated in FA table should be submitted.

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