

Scrutiny comments on examination of Review of Mining Plan with PMCP in respect of Advona Toleamati-E-Galliguro Mine (T.C.No. 87 of 1953) of Sociedade Timblo Irmaos Limitada rep. by Panduronga Timblo Industrias over an area of 48.2207 Ha. situated in Shigao Village, Dharbandora Taluka, South Goa District of Goa State submitted under Rule 17(1) of MCR'2016.

Text:

GENERAL

1. As per Rule 17(2) of MCR,2016, the lessee needs to submit Mining Plan for subsequent 05 years period, 180 days before the expiry of last approved Mining Plan. In this case, Last approved Mining Plan (5 years period) is going to be expired on 31.03.2017. However, this review Of Mining Plan document was submitted only on 15.02.2016, i.e. just 45 days before the the expiry of Last approved Mining Plan (5 years period). Reason for so much Delay in submitting this document to be described with justification.
2. Lessee is a partnership firm i.e. Socied. Timblo Irm. Ltda., Rep. by Pandurang Industrieds Ltd. Partnership deed of firm enclosed is not legible. Copy of Photo id of Lessee/firm partners enclosed are also not legible.
3. As per Partnership deed, the lessee firm is having 04 partners. However, copy of resolution of partners regarding authorization of one partner as nominated owner of the mine is not enclosed.
4. Undertaking/certificate/consent etc. should be signed by the nominated owner/authorized partner or by all partners.
5. Introduction: Brief lease history, Status of all statutory clearance obtained or to be obtained and Surface right acquired etc. only should be given in introduction along with documentary proof as enclosure. Hydrological report etc. to be given under Mine Drainage Chapter.
6. Review: Details i.r.o. forest clearance not to be mentioned. Review to be revised with reason of non-working of the mine.

GEOLOGY

7. Exploration carried out so far should be corroborated with documentary evidence in respect of name of agency, order for the work, cost involved, and payment details by the lessee etc. with copy of form J & K maintained as per rule 47 & 48 of MCDR and Photographs of Core samples/boxes to be enclosed as evidence. All details of exploration carried out should also be certified by the concerned geologist of the mine.
8. Para 1.e: Details of All exploration carried out till date i.e. nos. Of Core BHs, meterage drilled to be given here with year of exploration carried out along with detailed report and standard borehole logs in annexure.

9. Para 1.e: Earlier exploration carried out so far in the lease area should be summarized as per table below and given in the text.

<i>Total Lease area:</i>						
Item of information	Lease area explored as per UNFC norms (in Ha) as on dt...					Remarks/Comments including reasons for not carrying out the exploration as per UNFC norms.
	<i>Total Lease area = A+B+C+D+E</i>					
	G1 Level	G2 Level	G3 Level	Explored and found non-mineralized with level of exploration (Remarks)	Unexplored lease area	
	A	B	C	D	E	
Area as per level of exploration						
No. of BH Drilled						
No. of BH considered for Resource Estimation						
Meterage Drilled						
Grid Interval						
Scale of Mapping						
<i>Reserve estimated after above exploration as on dated :</i>						
<i>Remaining Resource after above exploration as on dated:</i>						
<i>Total Reserve/Resource after above exploration as on dated:</i>						

10. As per guideline of “IBM manual on appraisal of Mining Plan-2014”. *Entire mineralized area should be analyzed meter wise with 10% of check samples. (At least for 10% of total samples may be analyzed in accordance to BIS and reports from NABL accredited/other government laboratory).*
11. Documentary proof for chemical analysis of BHs samples and bulk density/T.F. & recovery factor considered for reserve estimation to be submitted. It should be from NABL accredited lab. or Govt. lab.
12. Reserve & remaining resources are not estimated correctly and properly. With reference to geological Plan and sections, it is observed that reserve & resources under different UNFC codes are even marked over the waste material i.e. clay etc. in many sections. The same needs to be corrected and reserve/resource to be re-computed afresh based on UNFC guideline. Reserve/resource figures to be given in million tonnes
13. The Mine is under category of A-FM and complex nature of deposit is there. Hence, Reserves/resources should be estimated both in slice plan method and cross-sectional method and variance, if any, to be analyzed and backup calculation of reserve/resource estimation to be given.

14. The Mine is A-FM, a detailed feasibility Study report should be enclosed. In the UNFC feasibility study, following important parameters to be dealt with in respect of economic viability:-
- Assessment of IRR (Internal Rate of Return) for the project life.
 - IRR based on operating cost, reclamation/ rehabilitation cost, closure cost and other important parameters as per UNFC guidelines for the life of the project on the basis of ore body geometry, i.e. depth, width, length etc. as considered for reserve/ resource estimation.
 - Cash flow statement for the period considered for assessment of IRR.
 - Sensitivity analysis on cash flow due to market changes, i.e. cost of operation, sale price etc.

MINING

15. Page 50: Mine is reported non-working since long. Whereas, it is mention that, at present mine is being operated by O/c. The same to be corrected and Existing & Proposed mining method to be described properly with Sequence of different mining operations.
16. Para b) As per guideline of “IBM manual on appraisal of Mining Plan-2014”, a NOTE to be added below the proposed year wise excavation summary Table (given in Cubic m), before arriving the year-wise tentative tonnage, considering recovery % and Bulk-Density based on time series data and few samples test.
17. Pit Bench Geometry and its design parameters to be described as per Technical circular of DGMS and MMR,1961.
18. In extent of mechanization, Optimum selection of machineries to be carried out and calculation of adequacy of equipments to be carried out in scientific way. Loading machinery should be selected match with hauling units.
19. Para b & C ref. With Development plan & sections:- year-wise excavation/development plan is not proposed in systematic and scientific way. Entire one year excavation is planned in one corner of the existing pit confining to area of about 120mx120m only. Further, the layout of the proposed extension of the pit is not made consistent and conforming with the existing pit benches profile. As the mine is fully mechanized one and deployment of HEMMs are proposed, the same is not considered to be safe, scientific and practical. Hence, year-wise excavation/development plans to be re-designed in safe and scientific manner.
20. In view of above, entire mining chapter to be re-casted.

MINE DRAINAGE

21. Mine is having hilly & undulating terrain with large catchment area and substantial quantity of rain water to be flowing through the lease area. One river is also exist adjacent to the lease area. However, adequate rainwater management plan i.e. drainage plan along with arrangement for arresting solid wash off is not incorporated. Therefore, adequate rainwater management plan i.e. drainage plan along with arrangement for arresting solid wash off should be prepared and incorporated in this document in view of environmental protection.

HANDLING OF MINERALS REJECT/ SUB-GRADE AND DISPOSAL OF WASTE

22. Para b & C ref. with Development plan & sections:- Dumping ground and waste dump design are not proposed in safe and scientific way. Waste dumping ground is selected over top of the hill at about 80 mRL, which is about 25m to 30m above the surface/road level and full of greenery (naturally grown trees). From this 80 mRL hill top, further heightening of this dump of about 23 m i.e. upto 103 mRL and its lateral extension all around the hill is proposed. Around this hill, roads and Nalla are also present. In view of this, the waste dump as proposed is not considered to be safe, scientific and environment friendly. Hence, selection of dumping ground and waste dump design to be carried out in safe, scientific and environment friendly manner.
23. Before any area brought into use for waste disposal, site preparation works; like, construction of retaining wall, check dam, plantation around proposed dump must be carried out and be completed well in advance. Hence, Specific proposal for stabilization, reclamation & rehabilitation by plantation, coir matting etc. at proposed waste dump should be given year to year basis in quantified terms supported with plan/sections.
24. Build up of dump from year to year to be mentioned in text (with ref. to RL of individual terrace) and total height of the individual dump year wise along with description of the method & manner of disposal of waste.
25. Proposal for protective works to be carried out year wise around waste Dumps (precautions envisaged for confinement of the dumps) i.e. Retaining wall, garland drain, check dam, settling ponds, plantation, geo-textiling etc. should be given with design details & materials to be used for its construction ,taking in to consideration the average rain fall in the area.
26. In view of above, entire this chapter needs to be re-casted.

PROGRESSIVE MINE CLOSURE PLAN

27. Environmental Base line information & EIA : Base line data collected & assessment done by which agency, period of data collection & assessment and whether it is conforming to the norms of MoEF, should be clarified.
28. Mitigation measures of impacts associated with mining i.e. mainly related to air, water, noise, vibration, land, aesthetics etc. are to be elaborated. Specially to mitigate air pollution, arrangement of fixed/semi permanent type water sprinkle to be proposed over the permanent haul road stretch.
29. Para 8.6 : F.A. table to be given as per the guideline of “IBM manual on appraisal of Mining Plan-2014”.

Enclosure:-

30. Annexure given are not paged and also along with Annexure nos., page nos. are not mentioned in the Index. All the annexure to be properly indexed, numbered & paged and signed by the TQPs.

Plates:-

31. All plans to be prepared based on recent and accurate survey and to be correct as per existing surface features & mine profile. All Stocks/Dumps of Waste, ROM, processed ore etc. should be shown over the plan and given in text vis-à-vis that is actually available on the site. Such plans should be prepared and certified by the qualified person.
32. RQP No's not be mentioned, Qualified persons only to be written over the plans.

33. Surface: Many surface features like villages, pucca houses, irrigation projects/canal etc. present within the lease area are not shown over the surface plan. All surface features present as on date of survey needs to show over.
34. Geological plan: boreholes to be distinct, rest layers to go in background. Over geological plan & section, Reserve & resources should be computed and categorized strictly as per UNFC guideline and different UNFC code of resource/reserve should be indicated over geological plan & section. Do Over geological plan & section, Reserve & resources should be computed and categorized strictly as per UNFC guideline and different UNFC code of resource/reserve should be indicated over geological plan & section. Color of year wise PBH should be different from drilled boreholes. Siliceous ore should not be included in UNFC category 111 as it is not reported to be saleable. In Section 800 siliceous ore color is not correct, its matching with c-45. Color combination to be changed. Quantities given in the reserves/resources table is also not matching with sections; needs to be corrected.
35. Development plan & sections:- At Section 550-proposal to exhaust the left out ore to be given first and then back filling to be proposed. Text to be modified accordingly
36. Reclamation plan : Protective measures-drains to be shown distinctly and to be shown with two lines. All the protective measures within the ML to be shown .
37. Environmental plan : proper water drainage to be shown for channelizing rain water along with the protective measures within 500 m range.
38. PMCP table (chapter 8.3) to be given as of the submission date of the document.
39. Financial assurance Plan : all existing and proposed features to be marked. In others head, canal area to be given. All protective measures also to be considered.
 - Page-17:- Proposed Boreholes meterage is mismatching with total metergae.
 - Geological reserves & Resources have to be shown in table to compare as per previous approved plan and as of now. Addition or depletion of reserves/ resources to be explained. The quantity of Powdery ore under 111 category is mismatching with page-40.
 - Detailed estimation table for reserves & resources as per UNFC has to be given in text. Minerals (Evidence of Mineral Contents) Rules 2015 has to be followed for exploration grid interval for UNFC reserves & resources estimation. Beyond & below the depth of boreholes, it should be considered as resources as per above said rule.
 - Minerals (Evidence of Mineral Contents) Rules 2015 for exploration grid interval to be followed for reserves & resources estimation as per UNFC. As per rule 200-100m or closer interval of borehole spacing along strike for G-2 and 100m or closer interval of borehole spacing along strike for G-1 category of irregular bodies to be considered.
 - Geological sections are not updated based on the borehole logs, i.e, in section 700E, there is no availability of C-60 grade, but in the reserves table it has shown. Similarly same issue rises in other sections also.
 - 26 No of Boreholes has been proposed during previous plan period and not achieved because of forest clearance. Now the same no of boreholes has been proposed in the same area without obtaining any clearance from forest.
 - Instead of 02.04.2016, it should be shown as 01.04.2017 in the Exploration table and it is to be same for reserves estimation also. Entire Exploration table has to be re-checked and estimate the balance reserves for 01.04.2017.
 - Additional exploration is to be proposed to know the continuity of ore in depths as

well as to complete the exploration as per UNFC norms. Many sections are not having sufficient Boreholes and many boreholes are incomplete to find out the contact zone.

- In Geological plan & section, the colour index for different type of ore has to show by different colours. It's very difficult to distinguish the ore in present plan.
- Geological sections and longitudinal section are not coinciding with each other, i.e, Borehole-93 in section 450E has 24m Phyllitic clay but in longitudinal section it has only 12m. similarly other boreholes are need to be re-check.
- Yearwise Production & Development plan has to be re-draw, because in many section there is no availability of ore and only proposed in clay.