

**Scrutiny comments with respect to Review of Mining Plan & Progressive Mine Closure Plan of Ghatkuri Iron Ore Mine (163.90 ha) of M/s General Produce Co. Ltd. for 2018-19 to 2019-20.
(Mining & Others)**

A. TEXT:

01. It has been mentioned on the cover page that Lease extension is upto 31/03/2020, but the Letter from the State Govt. has not been enclosed.
02. Page 42, para 2.0(A) & para 2.0(B), Page 47, Para 2.0(C) & Para 2.0(d) (Working in insitu & Float Zone during 2019-20):-In page 42, para 2.0(A) & Page 47 para 2.0(d) it has been stated that the production will be around 500000 Te per annum, but on page 47, Total production of Insitu zone & Float Zone for the year 2019-20 has been given as 6,41,550 MT. However, the TOR vide letter no. J-11015/415/2013-IA. II(M) dated 29/01/2014 (Annexure 28) is for 0.867 million TPA (ROM). Therefore, the planning may be done for 0.867 million TPA (ROM including Subgrade and Mineral Reject). Accordingly, Mining Chapter may be modified along with Plates.
03. Page 44, para 2.0(B): (a) The Insitu Tentative Excavation Table has not been made as per the Universal Format for preparing Mining Plan. Instead of Mineral Reject, Quarry Waste in Column 7 and Total ROM in Column no. 8 has been written. (b) The figure given in column 8 for the year 2018-19 & 2019-20 is not correct. Mineral Reject Figure in Cum. May be given as per the Universal Format. (c) ROM/Waste Ratio given is not clear. (d) Instead of Insitu & Float, Quarry no. 1&2 may be given. The calculation may be given separately for Quarry 1&2.
04. Page 47, Para 2.0 (C): In the table for calculation of total RO in in situ zone and float zone is not clear. The total ROM should be the sum of column no. 6 & 8 only. It may be reconciled & modified as per scrutiny no. 2 above.
05. Page 47, Para 2.0(d): The production may be proposed as 0.867 million TPA(ROM) as per TOR instead of only 5 lakh tonnes per annum.
06. Page 49 Drilling: Here quarry no. 1 & 2 have been mentioned but it has not been shown in the lay out of mine working in plate no. 6 A & 7A.
07. Page 50 Blasting: In the meterage of drilling per drill (wagon drill) for primary blasting in ore zone year 2017-18 has been mentioned. It should be the year 2019-20. The total volume of the material to be excavated given is not correct. Modified Calculation of total meterage of drilling may be given on the basis of correct volume of excavation for the year 2019-20 as per scrutiny comment no. 2 above.
08. Page 52 Loading (No. of excavators required): The maximum excavation in a year given is not correct. The no. of excavators may be obtained after giving the correct total maximum excavation for the year 2019-20 to be given on page 47 as per scrutiny comment no. 2 above.
09. Page 54, Para 2.0 (f): Conceptual Plan: The mineable reserve for iron ore under 122 category is not tallying with the reserve given on page 29, para 1.0 (j). The life of the mine may be calculated on the basis of ROM(ore + mineral reject) for the year 2018-19 & 2019-20 as per scrutiny comment no. 2. The total production given as 7,00,119 Tonne is not correct because in the present document the production for 2018-19 & 2019-20 have been given as 2,75,544 MT and 641550 MT respectively(Total 9,17,094 MT). This para may be reconciled.
10. Page 54, Para 2.0(f), Page 79, para 8.3.1(The ultimate extent & size of the pit), Page 83 (The land degradation/utilization): The statement that mining lease is valid upto 31.3.2020 may be written only after getting the extension letter from the State Govt. and not at this stage.
11. Page 72, para 7.2: (a): The maximum production may be proposed upto the EC limit for the year 2019-20 i.e. 0.867 million tonne. (b): No. of local employees may be given.

12. Page 76, para 8.2(impact assessment), Page 83, para 8.3.1: Proposed degraded area during two years i.e. 2018-19 and 2019-20 may be given instead of 5 year.
13. Page 83, para 8.3.1(Land degradation/utilisation): Here it has been stated that 51. 317 ha. will be utilized during two year but on page 89, para 8.6 it has been given as 51.397 ha. It may be reconciled.
14. Page 86, 87 para 8.3.5(a): The species of plants to be planted may be given. (b) Yearwise no. & species of plants to be planted in dump area may also be given.
15. Page 89, para 8.6: The net area put on use may be calculated on the basis of the scrutiny comment no. 2 above and Financial Assurance may be submitted @ Rs. 3,00,000 per ha. Area put on use Valid upto 31.3.2020.

B. Annexures:

16. Annexure nos. are not given in some of the annexures.
17. Instead of Pre feasibility report, Feasibility report may be submitted.
18. Annexure-19: The resolution was passed by the board of director of the company on Nov. 17, 2014 which was signed by Shri HridyaNand Singh who resigned from the post of Director vide letter dated 26.8.2015. Therefore, the latest resolution passed by the existing board of directors of the company w.r.t. Shri Upendra Kumar Sutar, Nominated Owner may be given.
19. Annexure-19, 20, 22: In Annexure-22 the date of appointment of Shri Upendra Kumar Sutar, as whole time Director and Nominated Owner has been given as 01.07.2013 but in Annexure-20, Form 32 the date of appointment has been given as 30.09.2013. While in Annexure-19 resolution was passed by Board of Directors on 17.11.2014. It may be reconciled.
20. Annexure-25: Valid certificate of accreditation with respect to Superintendence Co. of India (P) Ltd. may be given along with latest analysis report.

C. PLATES:

21. Key Plan (Plate no.1): (a) The boundary of villages with population has not been shown. (b) The flow direction of Koina river has not been shown prominently. (c) Other adjacent lease area has not been shown. (d) Area monitoring station on the N-W direction within 5 km. area adjoining lease may be given.
22. Surface Plan (Plate 3): a) Geo coordinates for the three ground control points and its latitude and longitude has not been given. For Ground Control Point Bridge of Koina river, culvert, forest clearance may be considered. (b) Latitude and longitude of boundary pillars A, B, C, D, E, F, G, H, I have not been given.
23. Development Plan (Plate 6 A & 7A) & section (Plate 6B & 7B) (a): Quarry no. 1 & 2 may be given for the two places of proposed working during the year 2018-19 & 2019-20. (b) Road upto to top soil dump have not been shown. (c) Waste dump has not been shown.
24. Dump plan & section (Plate 8): a) Latest date of survey may be given. (b) Yearwise no. of plantation to be done in dump area may be given. It should also be given in para 8.3.5 of the text.
25. Environment management plan (Plate-10): Yearwise no. of plantation with species have not been given.
26. Environment Plan (Plate 11) (a) Type of forest has not been mentioned in the index. (b) Topmost RL of the lease area has not been shown. (c) Flow direction of nalla has not been given. (d) The direction in which Chhota Nagra village can be approached by road has not been shown.

D. GEOLOGICAL PART:

1. Cover Page: The area under reference is 163.90 Ha, which falls under Ghatkuri Reserve Forest, Block No. 10, as referred in Annexure-1, lease deed, page no. 1/8, but in Annexure-16, the Mining lease extension letter, dated 17.05.2017 from Secretary, Department of Industries, Mines & Geology, Govt. of Jharkhand, the referred area has been given as 163.60 Ha in Karampada RF, Block no. 15. The matter needs clarification.
2. All the plates/maps submitted should be based on DGPS surveyed map showing grid in UTM mode. As per Rule-35(2) of MCDR, 2017, high resolution satellite images obtained from CARTOSAT-2 satellite LISS-IV sensor on the scale of cadastral map, covering the mining lease and an area of two Kilometers from the lease boundary, should be submitted along with the document.
3. Introduction: In Para I, contradictory statements have been made in line no. 5 & 9.
4. Chapter-1.0(General): (a) Name & address of applicant- The Board Resolution copy submitted as Annexure-19 should be signed by Company Secretary with name and date of signature.
(b) Status of applicant: The table showing Board of Directors should include as on date status along with date of appointment of respective directors and contact nos.
(c) The lease is for Iron and Manganese Ore but under this Para only “Iron” has been mentioned. Whether, Manganese ore will be mined or not is not clear. The same needs to be clarified.
5. Chapter-2.0(Location & Accessibility): Period/Expiry date- Annexure no. should also be referred. The supplementary lease deed also needs to be incorporated.
Annexure-18: The Annexure-4, submitted along with letter no. GPC/GIOM/ML/DMO/17-18, dated 02.06.2017 also needs to be incorporated.
- 5.1 Annexure-20(Form-32): The date of appointment of Sri U.K.Sutar and Sri N.K.Sarda given as 30.09.2013 & 23.09.2013 respectively whereas the same has been given as 01.07.2013 & 13.05.2009 in Annexure—22. The same needs to be clarified. The designation of Sri K.K.Nanda, given in Form DIR-12(under Annexure-20) & in Annexure-22, needs to be reconciled.
- 5.2 Para 2(c) i. General Location Map: In the enclosed Key Plan (Plate no. 1), the referred Topo sheet nos. should be mentioned on the Plan to delineate the parts covered under different Topo sheets. The new Topo Sheet nos. in open series should also be mentioned on the Key Plan as well as in the Para. In the Key Plan, the location name of Environment Monitoring stations need to be mentioned. The location of area i.r.o Lat/Long and tree density of Forest area should also be given on the Key Plan. The location of adjoining leases should also be marked on the Key Plan.
ii. Lease Plan (Map no. 3): The lease boundary point no. “J” is missing. The permanent features of village tri-junction need to be explained.
iii. The lease plan (Plate no. 2) should also bear B.P co-ordinates.
6. Chapter 3.0, Details of approved Mining Plan: Nothing has been mentioned about the compliance of condition no. (xi), (xiii) & (xiv) of the approval letter contained in Annexure-12.
7. Part-A, 1.0(Geology & Exploration): (a)Topography: What is “HMO”. The part of lease area having highest elevation point as mentioned in the Para needs to be corrected. The no. of mounds on the hill top, mentioned in the Para should be corrected.
Climate: The Min. and Max. temperature during Summer and Winter season respectively may be mentioned.
(b) Regional Geology: Name the formation above Unconformity, overlying the Singhbhum Granite may be mentioned.

(c) Geology of lease area: The reference has been given of Nala Section, the same should be supported with few photographs.

7.1 Description of different formation: Para 1.0.1, the amount of dip and its direction should be reconciled properly with the plan.

(i) Para 1.0.1.5 (Insitu Iron ore at hill top): The statement made in the first line does not seem to be inconformable w.r.t. submitted Geological Plan (Plate no. 4). Clear photographs of continuity of in-situ iron ore zone, on the Western part of lease area as shown in the Geological Plan, need to be incorporated as Annexure. The dimension and area covered under this zone also needs to be mentioned in the Para.

(ii) Para 1.0.1.6 & 1.0.1.7 (Float ore & Iron ore with Laterite): Whether the terminology used “Iron ore with Laterite” refers to Lateritic Iron ore or something else may be clearly depicted. The dimension of both the zones along with area covered in different continuity/part should be given in the para.

(d) Name of Prospecting agency: Since no exploration work was carried out hence information under this para is irrelevant., If lessee will carry out in-house exploration in future then equipments the lessee has for such exploration job needs to be mentioned along with type of drilling to be carried out, core size to be used etc.

(e) Details of prospecting already carried out: (i) What type of exploration actually carried out in the lease area needs to be mentioned in the para. The dimension of pits opened in the area as mentioned in Para-I of Introduction chapter and as shown in the Geological Plan (Plate no. 4) needs to be mentioned in the para.

(iii) Sampling: At least two samples of Ferrogenous Shale should be analyzed to ascertain the Fe-content of the material. Sl.no. should be given in the table for sample analysis on page no. 25. There is a mismatch of sample no. between page no. 25 and Annexure-23. The annexure no. mentioned on sample analysis page should be suitably and properly numbered for better understanding.

It should be better if chemical analysis of in-situ zone, float ore zone and lateritic zone of iron ore be given separately for ease of reference followed by chemical analysis of Mn-ore.

(iv) Expenditure incurred: The reason for non-expenditure towards exploration may be given briefly.

(f) Surface Plan (Plate no. 3): (i) There is mismatch between the symbol used for Forest compartment boundary in the plan with that of Index of the Plan.

(ii) The water flow direction in the nala should be shown with arrow mark.

(iii) The no. of mounds on the hill top, mentioned in para 1. (a) of Part-A (Geology & Exploration) should be reconciled properly with the Surface Plan.

(iv) The grid of the plan should be in UTM mode and not in local grid since DGPS survey of the area has been carried out. The survey points should be shown on the plan along with TBM.

(v) The BP co-ordinates should be given on the plan.

(g) Geological Plan (Plate no. 4): (i) The UTM grid value should be given instead of local grid value.

(ii) The colour index used for Section line and Nala are almost identical. Different colour code should be used for clarity.

(iii) The dip amount and direction of different litho units shown on the plan do not match with that mentioned in para 1.0.1 (Part-A, Geology & Exploration) of the text part.

(iv) The 4 nos. of proposed BHs over Ferrogenous Shale needs clarification over its necessity.

- (v) The Quartzite/Quartz shown on the plan between the grid value 500E-1300E and 100N-600S, needs to be mentioned whether it is a part of Iron Ore Group (IOG) i.e BHQ/BHJ or Quartzite body of some other formation.
- (vi) In the lithological index of the plan the nomenclature of two litho units viz. (a) Iron ore with laterite & (b) Floats of lateritic iron ore are confusing. Whether the previous one stands for in-situ lateritic iron ore or something else, may be clarified.
- (vii) The UPL for 2 years plan period (2018-19 and 2019-20) should be shown and accordingly Sections should be rectified.
- (viii) Out of 8 nos. of scattered exposures of in-situ iron ore shown on the plan only in one spot the trend of in-situ ore body has been shown. In remaining 7 spots the trend of ore body should also be shown as all the in-situ exposures are not less than 20m in length.
- (ix) Collar RL of proposed BHs need to be given and same should be marked on the respective Geological section.
- (x) Based on quarry influence reserve could have been brought to 111 category for in-situ & float iron ore zone and thus delineating 111 zone around the six quarries, shown in the Geological Plan.
- (xi) Strike-Dip symbol has been used in Phyllite body which is not correct. Since Phyllite is a metamorphic rock, foliation trend should be shown.
- (h) Geological Section (Plate no. 5A, 5B & 5C): (i) The proposed BHs should be marked on the sections along with the location of pits (those are intersected by section line).
- (ii) Spot RLs should be given on the sections.
- (iii) The basis for considering thickness of different formations shown on the sections need to be explained. The basis for consideration of Probable(122) and Resource(333) zone thickness of in-situ & float iron ore needs to be explained.
- (iv) The UPL should be redefined as per observation made at para no. g(vii) above.
- (v) The Index of the lithological section should be properly nomenclated for in-situ and float iron ore. The index should be in conformable with the UNFC code used on the sections & plan. The lithological index should also bear the UNFC code of the category of Reserve/Resource.
- (i) Future exploration programme: (i) The proposed BHs given on page no. 28 in tabular form should be supplemented with lat/long of the BHs instead of local grid along with collar RLs.
- (ii) The necessity of giving 4 BHs over Ferrogenous Shale on the Eastern part of the lease area is not clear, it may be given a re-thinking.
- (j) Reserve & Resource as per UNFC: (i) The basis for considering exploration under G2 level, on page no. 29, last para, needs to be clarified.
- (ii) The Reserve/Resource shown on page no. 29 in a tabular form should be as on date. The lateritic ore reserve/resource figure is missing in the table. The Resource figure as per UNFC w.r.t Threshold value notified by IBM has not been incorporated in the table on page no. 29. Further, the area considered for calculation of reserve/resource for different types of ore including that of threshold grade need to be incorporated in a separate table.
- (iii) The parameters considered for reserve/resource calculation viz. recovery factor, bulk density of different types of ore should be based on field test (Ref. para 4.1.4.1(ii) of chapter-4 of IBM manual for appraisal of Mining Plan). The calculation part should be incorporated in the relevant chapter of text part.**

- (iv) The thickness considered for Reserve/Resource estimation i.r.o in-situ, float and lateritic iron ore should be spelt clearly with justification and supporting evidence.
 - (v) The table on page no. 29 shows a column of 45-58% Fe. What type of ore it is, whether it in-situ float or lateritic iron ore need to be clarified.
 - (vi) There are two rows of Inferred Mineral Resource (333) in the table on page no. 29, the same may be corrected.
 - (k) Detail calculation of Reserve/Resource: (i) The bulk density for lateritic iron ore and float ore will not be same. The same needs to be re-calculated.
 - (ii) The basis for considering 5m thickness for in-situ & float ore for reserve/resource calculation should be explained and supported with documentary evidence. For float ore zone the thickness can not be considered as 5m. The same should be re-calculated and reserve/resource position needs to be re-casted.
 - (iii) All the calculation tables should be supported with UNFC code.
 - (iv) Calculation for Pre-Feasibility Mineral Resource under 222 category needs also to be incorporated.
 - (v) Nomenclature of type of ore should be uniform in text, plan & section, viz. Iron ore with laterite, it should be "Lateritic Iron ore".
 - (vi) The reserve & resource figure of different types of ore should be given separately and finally one composite table showing reserve/resource of in-situ, float & lateritic iron ore should be incorporated considering new parameters viz. thickness of float ore zone, bulk density of lateritic ore etc.
 - (vii) What constitutes IW/Reject, needs to be spelt clearly. The chemical analysis of Reject material should also be submitted along with the document.
 - (viii) On page no. 41, the reserve/resource of Bauxite has been mentioned, the same needs to be corrected. The table given on page no. 29 & 41 should be reconciled after fresh calculation.
8. Chapter-4(Disposal of waste): (i) Keeping in view the gradient of the lease area (about 60⁰) and type of waste to be generated (solid brecciated boulders/pebbles/rubbles), the height of retaining wall should be more than 1.5m to arrest the wash off of dump material during heavy rain.
- (ii) Year wise development of OB: During 2018-19 & 2019-20, there will be generation of quarry waste, how it will be accommodated has not been shown in the table on page no. 63.
- (iii) There is mismatch of information between table of in-situ tentative excavation on page no. 44 and that given on page no. 64, summary of proposed excavation of OB & IW from in-situ float zone, under chapter-4.
- (iv) Para no. C (Attach a note): The proposed dump height of 15m on a sloping area having gradient of about 60⁰ will not be feasible. The dump height should be reduced and type of dumping to be adopted should also be spelt.
9. **General:**
- (i) All tables and annexures should be properly numbered.
 - (ii) All enclosed photographs should be clear and legible.
 - (iii) All Plans should bear UTM grid and BP co-ordinates.