

SCRUTINY COMMENTS ON EXAMINATION OF MODIFICATION IN APPROVED MINING PLAN FOR BAGRU BAUXITE MINE OF SHRI M.M.P.SINGH, OVER AN EXTENT OF 10.12 HECTARES, LOCATED IN BAGRU VILLAGE, UNDER KISKO P.S OF LOHARDAGA DISTRICT OF JHARKHAND STATE, SUBMITTED UNDER RULE 22(6) OF MCR, 1960.

- (1) The DGPS surveyed map/plan in compliance to CCOMs circular No.2/2010 and its addendum dated 21.09.2011 & 11.06.2014 regarding geo-reference cadastral map has not been submitted. Moreover, the undertaking submitted in compliance to the CCOM's circular No. 2/2010 is not acceptable at present.
- (2) On examination of the copy of the lease deed enclosed as annexure-I, it is found that, the full set of the paper connected to the lease deed has not been enclosed. Therefore, the same should be submitted in complete form for more informative. In addition to the above, the authenticated land schedule & the lease map attached to the lease deed may also be submitted.
- (3) A copy of the lease renewal application has been enclosed as annexure-II but the present status of the same has not been furnished, which should be clearly indicated in the text part for more informative.
- (4) The copy of the approval letter of the mining plan, dated 19.05.2008 has been enclosed as annexure-III but the copy of the approval letter of the mining plan / scheme of mining approved after the aforesaid mining plan has not been submitted, which should be furnished if any for clarity.
- (5) Only the copies of the violation letter, dated 04.08.2014, show cause notice, dated 04.12.2014 & reply thereof has been enclosed as annexure-IV, instead the copies of violation letters, show-cause notices issued by IBM and compliance status thereof for the last five years should be submitted for clarity.
- (6) An application made to Jharkhand State Pollution Control Board for obtaining CTO for the period from 01.07.2012 to 30.06.2013 has been enclosed as annexure-V, instead valid consent to operate should obtain and enclose along with the document for clarity.
- (7) The Chemical analysis report indicating the grade of the bauxite in respect of Bagru bauxite mine has been enclosed as annexure-VI but the report is very old, analysed on 18.06.2012, which is not acceptable, instead a fresh report on the above account should be submitted replacing the old one for clarity.
- (8) A copy of the explosive procurement license has not been enclosed as annexure to the document. Moreover, a copy of the blasters license also not submitted.
- (9) A copy of the MoEF clearance has not been enclosed, which should be should be submitted for ease in monitoring.
- (10) In case of individual or partner, a declaration/affidavit should be submitted to know whether he is working in other firms/company/organization etc.
- (11) No photographs in support of the existing quarry(s), dump(s), stack(s), reclamation, rehabilitation, plantation, exploration & lease boundary pillars has been enclosed, which should be submitted for more informative.
- (12) No calculations for the reserves/resources available in the mine has been furnished, which should be computed & furnished as annexure to the document.

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(13) On examination of the contents for list of plates, it is found that, the plates have not been properly titled and numbered, which should be done, while submitting modified copies.

(14) In 3rd para of the introduction chapter, it is mention that, a copy of the approval letter of the scheme of mining dated 12.06.2012 is enclosed as annexure-III but no such copy is seen in the enclosure side, thereby the same should be submitted.

(15) Neither the registration number allotted to the lessee under Rule 45 of MCDR, 1988 has been furnished nor the copy of the letter issued for the same has been enclosed, which should be submitted (Para 1.0)

(16) The full postal address of the mine is missing, which should be furnished. Besides, the mobile number of the applicant furnished in the para under reference appears to be not correct, which should be checked and corrected. [Para 2.0(a)]

(17) The letter reference given for the approved scheme of mining, dated 12.06.2012, appears to be not correct, which should be checked and corrected. Besides, the validity period of the said scheme of mining may also be indicated for more informative. (Para 3.0 & 3.1)

(18) The proposed & actual achievement status of exploration during the year 2012-13 has been furnished in tabular form but the valid reasons for not achieving the proposed exploration should be furnished for clarity. (Para 3.3.1)

(19) Under the heading **Mine Development**, the proposed & actual development status quarry(s) during each year of the last approved scheme of mining period has not been given, instead the proposed & actual achievement thereof on account of Bauxite production has been furnished in tabular form. Therefore, the relevant information as required in the heading of the para should be furnished and necessary corrections/modifications may also be made accordingly. Moreover, the reasons for deviation furnished under the para is not valid for the entire five years period, thereby suitable correction may also be made accordingly. In addition to the above, the achievement made during the lapse year 2014-15, on account of development may also be furnished. (Para 3.3.2)

(20) The proposed & actual waste generation status for each year of the last approved scheme of mining period furnished in tabular form is indicated to be Nil, which is almost impossible. Therefore, the actual achievement status of waste generation in each year of the aforesaid scheme of mining period should be furnished indicating the name of the quarry / location co-ordinates of such waste generation for ease in monitoring. Accordingly, necessary corrections/ modifications may also be made at other places of the modification document. Besides, the achievement made during the lapse year 2014-15, on account of waste generation may also be furnished. (Para 3.3.3)

(21) The item **Exploitation**, is missing in the chapter, thereby the same should be incorporated and the proposed & achievements status of production should be furnished for each year of the last approved scheme of mining period, indicating the location co-ordinates/cross sections considered/name of the quarry(s) involved and reasons for deviation if any for ease in monitoring. Besides, the achievement of production reported during the lapse year 2014-15, may also be furnished. (Chapter 3.0)

(22) The meteorological data for the months from January to December has been furnished in tabular form but the data pertains to which specific calendar years have not been indicated. (Page No. 11)

(23) The rainfall data for the months from January to December has been furnished in tabular form but the data pertains to which specific calendar years have not been indicated. (Page No.12)

- (24) The chemical analysis of the samples drawn from the lease area should be submitted either from a Govt. Laboratory or from a NABL accredited laboratory, instead of mentioning **Not applicable**. [Para 1.0(e)(iii)]
- (25) Existing method of mining has not been mentioned elaborately as per the heading of the para, which should be discussed by furnishing the existing dimension of the quarry(s) indicating the working/non-working status. Moreover, the existing status of dump, reclamation & rehabilitation etc. may also be furnished. The proposed production for the ensuing modification period has been furnished but the proposed method of mining has not been discussed and the same should be furnished in the para under reference mentioning the proposed bench formation status both in overburden & in ore zone and also the proposed status of dumping, reclamation & rehabilitation etc. for clarity. If the existing quarries are proposed to be developed /extended, the same may also be furnished. If the proposed workings are in the virgin area, the reasons for the same may also be furnished with valid reasons. Besides, if the existing dump(s) are proposed to be re-handled, year wise proposals for the same may also be furnished specifying the name of the dump involved in the excavation planning. In the light of the above, the para may be revised. [Para 2.0(A)(a)]
- (26) Under the heading **Insitu Tentative Excavation**, no insitu excavation has been proposed instead, only the dump mining has been envisaged, which alone is not permitted, unless there is certain proposal for insitu excavation in each year of the ensuing modification period. Therefore, the para may be revised accordingly. [Para 2.0(B)(I)]
- (27) (i) The excavation planning for each year of the ensuing modification period has been furnished in tabular form but the name of the quarry(s) involved in the excavation planning and the name of the dump(s) proposed to be re-handled during the aforesaid period is missing, which should be furnished by adding one more column in the table. (ii) The length of influence is considered as 100m in all the cross sections considered for excavation, which is not acceptable, instead the length of influence should be maximum upto 25m since no exploration has been undertaken in the mine so far. (iii) The volume of crude Bauxite has been computed in last column of the table but the percentage recover of Bauxite is not known, which should be furnished based on the recovery test data for clarity. (iv) No information about the waste generation (interacted waste) and sub-grade material has been given & the same should be computed & furnished. (v) What is meant by crude Bauxite? Whether it is ROM Bauxite or it includes the mineral rejects, sub-grade etc. should be specified. (vi) Besides, the status of Topsoil & overburden generation status may also be given in the table. In the light of the above, the table may be revised. (Table No.15)
- (28) In the table, the figures of proposed bauxite production for each year of the ensuing modification period has been furnished in tonnes, whereas, as per the heading the same should have been furnished in m^3 . Besides, how much quantities of dump materials has been proposed to be re-handled and recovery percentage thereof may also be furnished for each year. In the light of the above, the production figures furnished in the table should be revised. Accordingly, corresponding incorporations /modifications may also be made in connected paras in the text & relevant plates. (Table No.16)
- (29) (i) Under the heading **Dump Re-handling**, a mention has been made as **Not applicable**, which is not correct as the insitu formation beneath/beyond the ore dump has to be excavated during each year of the modification period. Therefore, the para may be revised by furnishing the re-handling status of the dumped materials. (ii) The proposed production from the existing ore dump for each year of the ensuing modification period may also be furnished in tabular form indicating the name/location co-ordinates of such dump(s) with proposed recovery based on the recovery test. [Para 2.0(B)(II)]

(30) In 1st row of the table, the height & width of the benches are indicated to be for 1.5m & 2m respectively but the number of benches intended to be formed is missing. Besides, the direction of orientation of benches also not indicated, which should be furnished by adding one more column right to the table. (ii) In 2nd row, the name of the quarry has not been specified. Moreover, the depth of proposed quarry also missing, which should be furnished indicating the location co-ordinates for ease in monitoring. (iii) In 3rd row, the proposed production for 1st year has been indicated to be for 49910 tonnes, which is not possible by manual method of mining. Besides, the total non-forest area available for mining & allied activities are confined to 1.417ha only, thereby the excavation planning should be revised suitably by giving practical approach. In view of the above, the production planning furnished for the rest four years from 2016-17 to 2019-20 may also be revised accordingly. Necessary modifications / incorporations may also be made in corrected paras in the text and relevant plates. [Table No.17 & para 2.0(c)]

(31) (i) The method of mining has been proposed purely by manual means by using manual implements such as pick axes & crowbars but the name of the quarry(s)/location co-ordinates of the proposed workings has not been given, which should be furnished indicating the direction of advancement of quarry faces. Besides, tentative dimension of individual benches proposed to be made in topsoil, laterite/morrum/ore dump & bauxite ore zone may also be specified indicating the bench specifications/parameters. Moreover, the proposed reclamation & rehabilitation status may also be furnished. In the light of the above, the information furnished in para 2.0(e) may also be revised. [Para 2.0(d)]

(32) (i) Under the heading **conceptual mine planning**, the ultimate pit limit has been mentioned to be at 17m depth but the area has not been explored upto that depth, thereby the conceptual depth may be revised upto the existing depth of the existing available quarry. (ii) The bauxite reserves have been estimated for 356845 tonnes but no calculations in support of such huge quantities reserves have been furnished. (iii) The para is meant for conceptual mine planning, whereas, no information regarding the same has been furnished. Therefore, the excavation planning beyond the proposed modification period should be furnished on account of development, production; dumping, reclamation, rehabilitation & afforestation up to the end of the lease period and the para may be revised accordingly. [Para 2.0(f)]

(33) Under the heading exploration, the exploration proposed in **geology & exploration** chapter has been re-produced here, which is uncalled for since no exploration is permitted during the conceptual period. Therefore, necessary revision/modification may be made accordingly. (Page No.29)

(34) No reclamation & rehabilitation has been proposed during the conceptual period and the restoration measures proposed to be adopted by end of the conceptual period should be should be discussed. Accordingly, necessary modifications/incorporations may also be made in connected paras in the text and the relevant plates should be revised. [Para 2.0(f)(v)]

(35) The minimum & maximum depth of water table in the area should be furnished, instead of giving the status of water table in nearby village and the para may be revised accordingly. [Para 3.0(a)]

(36) The quality of water encountered in the area is missing, which should be furnished for more informative. [Para 3.0(c)]

(37) Under the heading **Intercalated waste and waste**, a mention has been made that, there is no waste generation since the exploitation is confined to old ore dump but it is found that, the insitu zone beyond the old ore dump has been proposed to be excavated, thereby the proposed status of waste generation should be furnished. Accordingly, corresponding waste generation status may also be furnished in connected paras of the mining chapter in the document. [Para 4.0(a)]

- (38) Under the heading **Sub-Grade Mineral**, it is mentioned that, the entire bauxite recovery from old ore dump contains $+50\text{Al}_2\text{O}_3$ grade but it is found that, the insitu zone beyond the old ore dump has been proposed to be excavated, thereby the proposed status of sub-grade generation should be furnished. Accordingly, corresponding waste generation status may also be furnished in connected paras of the mining chapter in the document. [Para 4.0(a)]
- (39) The existing dump has been proposed to be re-handled for the purpose of recovery of production but the percentage of such recovery is not known, which should be furnished based on the recovery test. Besides, it is also mention that, no further dumping of the re-handled waste has been proposed and utility status of such waste is not known. Therefore, the para may be revised suitably. Accordingly, necessary modifications/incorporations may be made in para 4.0(c) also. [Para 4.0(b)]
- (40) Grade wise, buyer's specification of Bauxite as required by various consuming industries has not been mentioned, which may be discussed and the chapter may be revised accordingly. (Para 5.0)
- (41) Under the heading **Site Services**, the proposed status for the same has been furnished but the existing site services available in the mine is missing, which should be furnished. [Para 7.0(a)]
- (42) Under the heading **Employment Potential**, a full time Mining Engineer holding degree in mining engineering & a geologist as required under Rule 42 of MCDR, 1988 and a 1st class mine manager as required under MMR, 1961 has not been proposed under employment, which should be done. Besides, the sum total of labour strength on account of un-skilled, semi-skilled & skilled workers has been mentioned to be 169 in number but the modification document has been submitted for category-B, which is not correct, instead the mine should be categories under category-A(OTFM) and the para may be revised accordingly. [Para 7.0(b)]
- (43) Few photographs for existing quarry & dump has been enclosed along with the document without caption and no photographs in support of lease area, boundary pillars, existing exploration, reclaimed area & afforestation etc. has been enclosed, which should be submitted for more informative.
- (44) On examination of the table, it is found that, the extent of area already degraded by mining is mentioned to be nil, whereas an extent of 1.385ha has been degraded by the existing waste dump, which should be checked & the data may be reconciled. Accordingly, corresponding changes may also be made at other places of the document. (Table-30)
- (45) The meteorological data for the months from January to December has been furnished in tabular form but the data pertains to which specific calendar year has not been indicated. Likewise, the rainfall data furnished in table No.26 pertains to which calendar years may also be specified. (Page No.37 & 38)
- (46) The proposed & actual status for items such as dump management, management of worked out benches, reclamation & rehabilitation by backfilling, rehabilitation of waste land within lease and other (specify) has not been given in tabular form for each year of the ensuing modification period, which should be furnished. (Para 8.3)
- (47) The extent of area proposed to be degraded in insitu ore zone/extension of existing quarry(s) in each year of the ensuing modification period should be furnished in addition to the dump workings. Besides, quarry wise reclamation, rehabilitation, restoration & afforestation for each year may also be furnished. All should be furnished in tabular form. (Para 8.3.1)
- (48) As per the proposed labour strength in para 7.0(b), the mine falls under category-A (OTFM), whereas the financial assurance has been computed for category-B mine, which is not correct. Therefore, the calculations financial assurance should be revised accordingly.

(49) Plate No. I (Key Plan): Details of the deficiencies found on the plate are as follows: (i) The features shown on the plan & in the index has not been marked with different colour codes, which should be done for clarity. (ii) The road shown both in index & on the plan with double dotted lines is for village road or for public road has not been specified. If the road is public road, to which important places both end of the road leads to may also be mentioned. (iii) Direction of flow of nala is also missing on the plan portion of the plate. (iv) The population of the villages falling within 5km radius of the lease area also not furnished. (v) Index reference given for monitoring stations is not to be seen on the plan portion of the plate.

(50) The area plan submitted along with the document has not been named /numbered and authenticated by the competent authority of State DMG, therefore, not acceptable in its present form.

(51) Plate No. III (Surface Plan): (i) The index reference given for waste dump is not matching with that of the plan. (ii) Index reference is missing for land classification other than forest land, which should be marked for clarity. (iii) The status of existing quarries available in the lease area has not been depicted, which should be marked both in index as well as on the plan portion of the plate. (iv) Pillar co-ordinates of all lease boundary pillars have not been mentioned, which should be furnished in tabular form. (v) Atleast three permanent ground control points beyond the lease area has not been selected, which should be done and latitude & longitude of these ground control points should also be furnished. Besides, these ground control stations need to be linked with the boundary pillars.

(52) Plate No. V (Year Wise Plan 2015-16 to 2019-20): (i) On examination, it is found that, the excavation planning for each year of the ensuing modification period has been depicted with different colour codes but there is no clarity in the planning and the development sections are not matching with the features shown on the development plan. (ii) The proposed excavation planning has been done in the locations such as untouched portion with no evidence of bauxite occurrence, float ore zone and also in the existing ore dumps without leaving 7.5m safety zone. (iii) Huge production proposed in the text which cannot be achieved if 7.5m safety zone is left out. Therefore, the production planning should be revised by excluding the reserves estimated for the untouched portion. (iv) The recovery of bauxite from the ore dump has not been computed separately in the text. The production planning from float ore also not computed separately and the above facts are not incorporated in the development plan & sections. In view of the above, the entire document including all the relevant plates should be revised.

GEOLOGY PART

1. Cover page : Rule under which document submitted, Land type i,e forest and non-forest area may be corrected. IBM Registration no.,Lapse period, representative photograph are missing from cover page.
2. The DGPS surveyed map/plan in compliance to CCOM circular no 2/2010 and its addendum dated 21.09.2011 & 11.06.2014 regarding geo-refrence cadastral map has not been submitted. Undertaking with regards to maintenance of boundary pillars as per GSR no 710(E) dated 8.10.2014 may be enclosed.
3. Latest Authenticated lease map by Competent Authority Showing nature of Government land including Forest Area/Jangal- jhari etc. In case of Forest/Jangaljhari NOC from the competent authority may be attached.
4. EC, Forest clearance and NOC from pollution control board are to be enclosed.
- 5.Reclamation plan, Financial area assurance plan, few photographs showing land use of the area, environmental status not enclosed.
6. .Latest analysis report of all the quarries analysed from NABL accredited laboratory to be enclosed.
- 7.P-3&4,Range of longitude and latitude to be given.

Page -5, land use pattern table is wrong may be corrected. Plate no –I not enclosed. P-7, When there was production of 163102Mt of bauxite during 2009-10 to 2013-14 how generation of ob/waste was nil may be explained.

8.P-15(e), Details of prospecting/exploration already carried do not match with statements /figure given in other chapters.

9. (p-7) Production figure do not match with data available with IBM.

(e) Non applicability of item nos. (e-i,ii,iii,i) may be justified.

(g) Details to be furnished matching with plate IV.

i) Details of core drilling during 2015-16 has not been furnished and its location in text do not match with plan. GPS coordinates of proposed boreholes to be given.

j) Reserve under UNFC not marked on Geological plan and section. Category IV under UNFC may be clarified. Calculation sheet of Basis of calculation of cut -off grade- 40%, Bulk density -2.3 and recovery factor -100% on the basis of field test need to be enclosed. Photographs and GPS co-ordinates of pits considered for reserve calculation to be enclosed.

Reserve calculation: i) Balance Forest and non-forest area available for reserve estimation after depleting 7.5m safety zone from lease boundary and forest boundary may be given.

5mts from either side of pit boundary may be considered as G1 & further 5 mts may be considered as G2 with exposed quarry bottom as depth.

Reserve may be recasted considering above factors, into Forest reserve and non-forest reserve out of which reserve for dump mining and Bauxite mining, may be given separately.

It is not clear whether total production during plan period 245180MT will be from float zone, Dump mining or bauxite mining.(p-29,26)

Employment of 7 supervisory and 169/194 labourers/per day for production in category 'B' mines may be justified and also provide year wise production and labour employed since opening of mine(P-24,34).

(P-39) Area degraded 0.774ha with reserve 356854tonnes do not match with table-28.

Table -29, is not clear as to how mined out area will remain same during plan period 2015-16 to 2019-20.

Table-30, financial assurance table is not in order as col E & Col G does not match.

Certificates and undertakings are not enclosed as per new guidelines.

There are numerous typographical mistakes, may be corrected.

PLAN

1. All plan & section should prepared as per rule 27(1)(ii) of MCDR 1988 with shown a scale of the plan at least twenty five centimeters long and suitably sub-divided as per rule 27 of MCDR1988.

1. Key Plan-Range of longitude and latitude to be mentioned along with one extra-long. & lat. line.

2. Surface plan- 7.5 m safety zone from forest boundary not marked.

3. Plate no.-4 & 4. (geological plan & Section)

G1&G2 as per UNFC not marked on Geological plan. Plan and section do not match.

4. **Development plans.** Plan and section do not match. Signature of RQP is missing .Year wise development plan do not match with text. Float ore shown on plan, but not discussed in text.

5. Authenticated map, Reclamation Plan, Financial assurance plans are required to be enclosed.

All the pages of annexures enclosed with the document should be attested by the RQP.

