

**SCRUTINY COMMENTS ON EXAMINATION OF MODIFICATION IN APPROVED MINING PLAN FOR AMTIPANI BAUXITE MINE OF M/S RAJHANS REFRACTORIES (P) LTD., OVER AN EXTENT OF 64.62 HECTARES, LOCATED IN AMTIPANI VILLAGE, UNDER BISHUNPUR P.S OF GUMLA DISTRICT OF JHARKHAND STATE, SUBMITTED UNDER RULE 22(6) OF MCR, 1960.**

(1) The DGPS surveyed map/plan submitted showing UTM data instead of GPS data 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) The copy of the approval letter of the mining plan, dated 21.09.2012 has been enclosed as annexure-1 but the copies of the approval letters of the mining plan/scheme of mining approved in different occasions prior to the approval of aforesaid mining plan may also be submitted for more informative.

(3)The photo copy of the memorandum& article of association in favour of Rajhans Refractories Private Ltd., has been enclosed as annexure-4 to the document but the copy of certificate of incorporation in favour of the aforesaid company has not been enclosed, which should be submitted.

(4) The list of two directors has been enclosed as annexure-5 but the full postal address, phone/fax/e-mail id of none of the directors has been furnished. Therefore, a fresh list of the board of directors should be submitted incorporating the above information for ease in monitoring. Moreover, in last page of memorandum& article of association of the company, the name & address of seven shareholders are given but none of the shareholders are included in the list of directors. Therefore, the list of directors should be revised accordingly.

(5) The copy of the minutes of board meeting held in the office of Directors of M/s Rajhans Refractories (P) Ltd., on 23.09.2012 has been enclosed as annexure-6 to the document, wherein Shri Gaurish Sachdeva has been appointed as Director of the company and he is authorised to sign all the necessary documents of the company but he has not been nominated as owner of Amtipani bauxite mine of M/s Rajhans Refractories Pvt. Ltd.For information, unless a person has been nominated as the owner of the said mine, he cannot sign the document in his individual capacity or by designation. Therefore, the above resolution should be replaced by a fresh one, incorporating the name of all the shareholders as directors, as required under the statute.

(6) A copy of the unsigned letter addressed to the Divisional Forest Officer, Ranch West Division has been enclosed as annexure-9, which will not serve the purpose, instead a copy of the forest diversion approved by the competent authority should be submitted.

(7)Litho logs for the already drilled boreholes are enclosed as annexure-10 but the holes are coring or non-coring type has not been mentioned. Besides, it is not known when such holes were drilled and no form J for drilling such holes is enclosed. Moreover, no photograph of the borehole logs has been submitted. In the light of the above, the annexure should be revised suitably.

(8) The borehole analysis report from TCRC has been enclosed as annexure-11 but the date of analysis is missing in the report. Besides, the NABL accreditation certificate issued in favour of TCRC has already expired on 17.03.2013;thereby a valid accreditation should be submitted for its authenticity.

(9) The measured mineral resources around the drilled DTH holes are computed & enclosed as annexure-12 but the existing quarries available in the lease area has not been taken into account for the purpose.Besides, the reserves/resources have been calculated in the area method, instead the same may be computed by cross sectional area method considering the length of influence and depth of bauxite occurrence in the existing quarries/boreholes for clarity.

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(10) The excavation planning for the period from 2015-16 to 2019-20 has been computed & enclosed as annexure-13 but the length & width of benches proposed in topsoil, morrum, laterite & bauxite has not been furnished, which may be mentioned. Besides, the location co-ordinates & the cross sections considered for the purpose is missing, which should be furnished by adding more columns in the tabular annexure. Moreover, the recovery of bauxite ore is considered as 80% but the basis on which such recovery is considered should be justified with valid reasons. So, also the grade of the recoverable bauxite may be furnished supported by authenticated chemical analysis report. Likewise, the waste generation is indicated to be 20% but the basis for such generation has been considered also not mentioned, which should be furnished indicating the grade of such waste material. Accordingly, necessary corrections/modifications may also be made in connected paras in the text and relevant plates.

(11) A copy of TOR has been enclosed as annexure-14; instead a copy of the MoEF clearance should be submitted.

(12) An application has been made to Jharkhand State Pollution Control Board for obtaining CTO on 18.05.2012 as per the enclosed annexure-15; instead a valid consent to operate from JHSPCB should be submitted for ease in monitoring.

(13) An agreement has been made with 2<sup>nd</sup> party M/s Hiralal Agencies Pvt. Ltd., for carrying out blasting operations in the mine and a copy of the agreement has been enclosed as annexure-17 but the copy of the explosive procurement license issued by the competent authority in favour of the 2<sup>nd</sup> party has not been enclosed, which should be submitted. Besides, a copy of the blasters license issued by the competent authority for carrying out blasting operations may also be submitted.

(14) Few photographs in support of working quarry & haul road has been enclosed as annexure-13 but the name of the quarries and their location co-ordinates are not given, which should be furnished. Besides, no photographs in support of existing exploration, dumping, afforestation, reclamation, rehabilitation & boundary pillars have been submitted and the same should also be enclosed for more informative.

(15) The photo ID of the applicant along with Permanent & present address should be submitted with documentary proof as the same has not been enclosed.

(16) The chemical analysis report in support of grade of the bauxite has not been enclosed as annexure to the document. Therefore, a chemical analysis report in support of the grade of bauxite is required to be obtained either from Govt. Laboratory or from NABL accredited laboratory and enclose along with the modification document to ascertain the grade of the bauxite ore.

(17) The ambient air quality analysis report in respect of Amtipani bauxite mine has not been enclosed, which should be submitted. Besides, the flue gas, effluent, soil, surface water, noise level monitoring reports may also be submitted for more informative.

(18) A feasibility report of the mine has not been enclosed along with document and the same should be submitted for ease in monitoring.

(19) In case of individual or partner, a declaration/affidavit should be submitted to know whether he is working in other firms/company/organization etc.

(20) A copy of the valid Bank Guarantee matching to the ensuing modification period of five years has not been enclosed and the same should be submitted for ease in monitoring.

(21) In 5<sup>th</sup> para of introduction chapter, it is mentioned that, the modification in the mining plan has been submitted for extension of lease period for further 50 years, which appears to be not correct, thereby the para may be revised accordingly.

(22) In para (a) of chapter-II, the postal PIN code is missing in the mine address, which should be furnished. Besides, the phone/fax/e-mail if any may also be indicated.

(23) The developmental activities proposed & achievements status thereof during each year of the last approved mining plan period has not been given, which should be furnished indicating the location co-ordinates/cross sections considered/name of the quarry(s) involved and reasons for deviation if any for ease in monitoring. (Page No.6)

(24) Under the heading **Exploitation**, the proposed & achievements status thereof during each year of the last approved mining plan period has not been given, which should be furnished 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 proposed & actual method of mining/categorisation may also be furnished for more informative. Rest of the things should be erased. (Page No.7)

(25) The meteorological data for January to December has been furnished in tabular form but the information/data pertains to which calendar year has not been specified, which should be updated accordingly. (Page No.12)

(26) The dimension of all the existing quarries have been furnished but the working/non-working status for the same has not been given and the same should be furnished. Besides, status of many trial pits have been given but no photographs in support of such trial pits has been submitted, which should be enclosed for more informative. [Para 1.0(e)]

(27) Under the heading **Sampling & analysis**, there is a mention that, the samples were drawn from each DTH hole & crushed to a uniform size followed by coning & quartering but the manner in which the samples are collected and analysed has not been clearly indicated, which should be discussed and the para may be revised accordingly. (Page No.18)

(28) The analytical result of bauxite samples has been furnished in tabular form but an authenticated chemical analysis report in support of the same has not been enclosed along with the document. (Page No.18)

(29) There are 23 nos. of boreholes are proposed to be drilled during the years 2016-17 & 2017-18 but the location co-ordinates of such holes are missing, which should be furnished indicating the coring/non-coring status of such holes for ease in monitoring. [Para 1.0(i)]

(30) The existing method of mining is stated to be by mechanised means (OTFM) but the details of the same has not been given as per the heading of the para, which should be discussed. Besides, the existing status of dump, reclamation & rehabilitation etc. may also be furnished. In addition to the above, the proposed method of mining furnished in the para under reference may also be revised by furnishing the proposed bench formation status both in overburden & in ore zone, dumping, reclamation & rehabilitation etc. for clarity. If the existing quarries are proposed to be developed /extended, the same may also be mentioned. If the proposed workings are in the virgin area, the reasons for the same may also be furnished with valid reasons. In the light of the above, the para may be revised. [Para 2.0(A)(a)]

(31) Under the heading **Proposed Mining Method**, nothing has been given about the bench formation status in soil, morrum and/or laterite and bauxite ore zone. Besides, the height, width & length of individual benches may also be furnished indicating the bench specifications/parameters for more informative. (Page No.24)

(32) Under the heading **Bench Design and Formation**, there is a mention that, the height of the benches are usually kept below 6m in consonance with DGMS permission granted, instead the height of the benches proposed to be developed in overburden & bauxite ore zone in Amtipani lease over an extent of 64.62ha should be specified and the para may be revised accordingly. (Page No.25)

(33) (i) Under the heading **In situ Tentative Excavation**, the proposed status of overburden removal, generation of waste & production target for the period from 2015-16 to 2019-20 has been furnished in tabular form but the bench/RL of the excavation planning has not been given, which should also be furnished by adding one more column in the table. (ii) The recovery percentage of the bauxite & waste generation is missing, which should be furnished. Accordingly, corresponding incorporations /modifications may also be made in connected paras in the text & relevant plates. [Para 2.0(B)(I)]

(34) In 1<sup>st</sup> table, the name of the quarries involved in excavation planning has been furnished but the location co-ordinates and cross sections considered for the purpose is missing, which should be mentioned by adding one more column right to the table for ease in monitoring. (Page No. 26)

(35) The name of the quarry(s)/location co-ordinates of the proposed workings should be furnished indicating the direction of advancement of quarry faces. Besides, the tentative dimension of the benches proposed to be made in topsoil, laterite/morrum & bauxite ore zone may also be specified. All should be presented in tabular form. In the light of the above, the information furnished in para 2.0(e) may also be revised. [Para 2.0(d)]

(36) The calculations of drilling & blasting have been furnished but OMS & powder factor of the explosives is missing, which should be computed & furnished. (Page No. 38)

(37) 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 etc. up to the end of the lease period. Besides, it is also found that, the occurrence of bauxite is found below the lairs of topsoil, morrum/laterite but the same has not been discussed in the refer para. Therefore, the factual information about the topsoil, morrum/laterite is required to be furnished indicating, the quantities of topsoil, morrum/laterite proposed to be generated by end of the conceptual period supported by calculations for ease in monitoring. [Para 2.0(f)]

(38) The land use pattern after plan period has been furnished in 4<sup>th</sup> table given in the page under reference; instead the extent of area proposed to be degraded in each year of the ensuing modification period should be furnished in separate tables. Accordingly, corresponding changes may also be made at other places of the document for ease in monitoring. (Page No.41)

(39) Minimum & maximum depth of the water table during monsoon and summer seasons should be furnished. [Para 3.0(a)]

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

(41) The meteorological data for January to December has been furnished in tabular form but the information/data pertains to which calendar year has not been specified, which should be updated accordingly. (Page No. 46)

(42) The quantities of soil & morrum proposed to be generated in each year of the ensuing modification period has been furnished in 2<sup>nd</sup> column of the 1<sup>st</sup> table given in the para under reference but the location co-ordinates/cross sections considered for the purpose is missing, which should be furnished by adding one more column right to the table. [Para 4.0(a)]

(43) Under the heading **Sub-Grade Mineral**, the proposed generation status of sub-grade materials in each year of the ensuing modification period is missing, which should be computed & furnished and the para may be revised accordingly. (Page No. 48)

(44) The screening facilities proposed to be adopted in the mine have been discussed in the para but the flow sheet for the same is missing, which should be submitted for more informative. (Para 6.0)

(45) Under the heading **Site Services**, the existing site services available has been furnished but the proposed status for the same has not been furnished, which should be furnished. (Para 7.0)

(46) Under the heading **Man Power Deployment**, a 1<sup>st</sup> class mine manager as required under MMR, 1961 has not been proposed under employment, which may be incorporated and the para may be revised accordingly. (Page No.51)

(47) Under the heading **Recreation Facility**, the facilities available to the local people of the surrounding area should be furnished & rest of things should be erased. (Page No. 58)

(48) Quarry wise extent of area proposed to be degraded in each year of the ensuing five year period should be furnished. Besides, quarry wise reclamation, rehabilitation & afforestation for each year of the aforesaid period may also be furnished. All should be furnished in tabular form and rest of the things should be erased. (Para 8.3.1)

(49) Dimension (L x B x D) of the void available for backfilling should be furnished, quarry wise in 3<sup>rd</sup> row of the tables furnished in the pages under reference. (Page No. 66)

(50) Updated status of bank guarantee should be furnished under the heading **Computation of financial assurance** and necessary corrections may also be made accordingly. (Page No. 71)

(51) Plate No. 1 (Key Plan): The details of the deficiencies found on the plate are as follows: (i) The index reference given for core zone is suspected to be for lease area, thereby the notation should be changed accordingly. (ii) The index reference given for road with double dotted red 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 indicated. Besides, the index reference given for footpath is not matching with that of the plan. (iii) Direction of flow of nala is missing on the plan portion of the plate. (iv) The index reference given for forest land with density is not matching with that of the plan. (v) Population of the villages falling within 5km radius of the lease area has also not furnished in the plan portion of the plate. (vi) 25cm long scale also not marked on the plate.

(52) Plate-3 (Surface Plan): (i) Numbering of few pillars is missing on the plan, which should be furnished and pillar co-ordinates of all such pillars may also be indicated. (ii) The pillar numbers BP-1, BP-3 & BP-73 are considered as GCP-1, GCP-2, GCP-3 & GCP-4 respectively, which is not correct. Therefore, at least three permanent ground control points situated outside the lease area should be selected and latitude & longitude of these ground control points may be furnished. Besides, these ground control stations need to be linked with the boundary pillars. (iii) Date of survey of the area is indicated to be on 19.10.2014; thereby updated status of the land degradation as on date of submission of the document should be furnished. (iv) Besides, Surveyors signature is missing on the plate, which should be signed by a competent surveyor. In the light of the above, all other relevant plates may also be revised.

(53) Plate-4 (Geological Plan): Separate index reference for proved zone, probable zone & ultimate pit limit has been marked, which is not correct under UNFC norms, thereby proved & probable zones marked on this plate should be erased retaining ultimate pit area. Accordingly, corresponding modifications may also be made on the plate submitted for geological sections.

(54) Plate-5 (Development Plan & Section 2015-16): The section line 1-1<sup>1</sup> drawn on the plate is not matching with that of the plan portion of the plate and the same should be checked & re-drawn. Besides, the dump sections for proposed topsoil dump & waste dump are missing, which should be drawn. Moreover, the index reference given for morrumis not to be seen on the plan. Accordingly, necessary incorporations/modifications may also be made in other relevant plates submitted along with the document.

(55) Plate-7 (Development Plan & Section 2017-18): A metal road is passing through the proposed Q-7 as found during the field visit of the area, thereby the excavation planning in the proposed location is not permitted. Therefore, the excavation planning should be shifted to some other new location in non-forest area. Accordingly, necessary incorporations / modifications may also be made in connected paras in the text and relevant plates may also be revised.

(56) Plate-8 & 9 (Development Plan & Section 2018-19 & 2019-20): A metal road is passing through the proposed Q-6 & Q-9 & the location is adjacent to the village site as found during the field visit of the area, thereby the excavation planning in the proposed location is not permitted. Therefore, the excavation planning should be shifted to some other new location in non-forest area. Accordingly, necessary incorporations / modifications may also be made in connected paras in the text and relevant plates may also be revised.

(57) Plate No.10 (Environment Plan): Certain existing features available within 500 meter radius of the lease area have not been clearly marked and the same should be depicted & the plate should be revised accordingly.

### **GEOLOGY PART**

**Cover page:** The lease period and expiry of lease period have not been mentioned on the cover page as per requirement. Present status of grant of extension of lease may be spelt in context to MMDR amendment 2015 with supporting document.

### **PART-A**

#### **1.0 Geology and Exploration:**

**Authenticated lease area map:** Plot no. 2067 & plot no. 2275(P) are not included in the lease deed but are shown in the lease map and Area Plan (Plate no. 2).

#### **1.(a) Brief description of topography, drainage pattern etc.:**

**Topography:** The highest & lowest RL of the lease area should be verified from the enclosed Surface plan (Plate no. 3). Topography of lease area has also to be discussed in detail, instead, topography of the plateau has been discussed in length.

**Drainage:** There are 3 nallas flowing along middle of the lease which have not been mentioned. The slope of the area mentioned should be corrected.

**Vegetation:** The para needs to be corrected as the area has got thick vegetation and there are number of Sal trees in the area. In the last approved document it was mentioned that "within 800 mts of lease area forest exists", now in the present document the distance reduced to 500mts. The same may be reconciled. Within the lease area Jungle/Jhari(Forest) exists, that has not been mentioned. The enclosed Key Plan(Plate no. 1) does not show tree density of the Forest area. The colour code of forest area shown in the index does not match with that shown in the Key Plan.

**Climate:** The hottest and coldest months during the year are also to be mentioned with the minimum and maximum temperature during the period.

**Relative humidity:** The maximum and minimum humidity during all 4 seasons should be mentioned.

**1.(b). Regional Geology:** The para needs to be corrected as there are spelling mistakes and some information like "thickness of Bauxite deposit ranges from 1-18m", "Granite gneiss in association ..... is the **main source rock** in the area" are to be revised.

**1.(c).** The para number should be corrected. The Trial Pit section needs also to be incorporated in the para.

**1.(d). Name of Prospecting/exploration agency:** The information furnished need to be corrected.

**1.(e).Details of Prospecting/Exploration already carried out:** The period of DTH drilling carried out along with number of DTH given in the lease area should be mentioned in the para. Copy of Form-J submitted under Rule-47 of MCDR, 1988 shall also have to be incorporated along with the document. The collar RL of DTH given in Annexure no. 10 should be reconciled properly with the Geological Plan (Plate no. 4). Trial Pit no. 3A shown on the SW edge of lease area has not been mentioned in the list of Quarry and Trial Pits (Page no. 16). The lithology for trial pit no. 1A, 2A, 2C & 4B (page no. 17) need to be reconciled properly with the Geological Plan as the Plan shows occurrence of Bauxite in these trial pits.

**DTH exploration already carried out:** The grid of DTH hole as mentioned in the para does not match with the Geological Plan, it should be corrected.

**Sampling & Analysis:** How the weighted average has been calculated in the given table needs to be explained. The analysis report submitted at Annexure no. 11 does not show analysis of P<sub>2</sub>O<sub>5</sub> and V<sub>2</sub>O<sub>5</sub>, the same also need to be incorporated. Further, the analysis report does not show the date of receipt of samples & date of report. The NABL accreditation certificate has also become invalid.

**1.(f). Surface Plan (Plate no. 3):** The Surface plan, Geological Plan etc.should be prepared in accordancewith latest circulars and guidelines. The numbering of lease boundary pillar has not been made as per Ministry of Mines notification no. GSR 710(E), dated 08.10.2014, item no. 4(j). The boundary pillars have not been constructed as per guideline given in above notification no. GSR 710(E), dated 08.10.2014. The TBM should be clearly shown on all the Plans with RL. The Ground Control Points (G.C.P) shown in Surface & Geological Plan are not as per laid down procedure. The Fore bearing and Back bearing of all 3 GCP from a single lease boundary pillar need to be given. The bearing should be of 360° circle in a clockwise manner. Date of survey is one year back, the Surface Plan needs to be updated.

**1.(g). Geological Plan (Plate no. 4):** The above observations should be taken care of in this plan also. Area explored under different level of exploration has not been marked on the Geological Plan as per guideline. Date of survey has not been mentioned.

**1.(h). Geological Section(Plate no. 4A):** All the Geological sections should be reconciled properly with the Plan. The Proved & Probable zone has not been marked on the sections. The UNFC code for area considered for different categories of reserve/resource estimation has not been marked on the geological sections as per guideline.

**1.(i). Future exploration programme:** The GPS co-ordinates of all the 23 proposed boreholes should be furnished in the para. **The exploration programme should be proposed in virgin non-forest land** and not in the virgin forest area where no exploration work can be carried out before forest clearance. The exploration programme should be re-scheduled accordingly.

**1.(j). Reserve/Resource as per UNFC:** The para has to be modified as per guideline. The basis of reserve estimation as on 01.04.2015 has to be spelt. The DTH log furnished in Annexure no. 10 reveals that the area has almost uniform thickness of Bauxite. In that case Cross Sectional Method of reserve estimation should be adopted. Reserve estimation based on threshold value has to be calculated when cut-off grade has been kept at (+) 30% Al<sub>2</sub>O<sub>3</sub>. **The table showing Reserve/Resource figure should be given under para 1.(i).**

As per guideline, the feasibility/pre-feasibility study report along with financial analysis for economic viability of the deposit as specified under the UNFC field guideline has not been incorporated along with the document.

**1.(i). Mineral Reserve/Resource:** The para needs to be revised as per guideline giving resource with grade and area covered under different level of exploration(G1, G2, G3 & G4). **The reserve/resource given under para 1.(j) should be furnished under this para.**

**GENERAL: Part-B: The Certificates/Undertakings/Consent letter has not been submitted as per Universal Format for Mining Plan/Scheme of Mining including PMCP.**

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

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