

SCRUTINY COMMENTS ON EXAMINATION OF MODIFICATION IN THE APPROVED MINING PLAN OF PAKHAR BAUXITE MINE OF M/S HINDALCO INDUSTRIES LTD., OVER AN EXTENT OF 115.13 HECTARES, LOCATED IN MOUZA PAKHAR, UNDER KISKO P.S OF LOHARDAGA DISTRICT OF JHARKHAND STATE, SUBMITTED UNDER RULE 22(6) OF MCR, 1960.

(1) In the certificates from RQP, the name of the village in which the mine is located is missing and the same should be given for clarity.

(2) 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.

(3) The lease area shown in the lease sketch attached to the lease deed enclosed as annexure-2 has not been coloured with red as per the index.

(4) Only the copy of the violation letter, dated 01.10.2013 & reply thereof has been enclosed as annexure-3, 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 more informative.

(5) The list of board of directors has been enclosed as annexure-4 but the 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.

(6) The Form J for commencement of exploration in Pakhar bauxite mine, over an 115.13ha has been enclosed as annexure -5 but it is found that, the number of boreholes proposed to be drilled is missing in the above referred Form J. Besides, the Form K showing the actual drilling status of the boreholes also not submitted. Therefore, the very purpose of enclosing such information is not known.

(7) The litho logs of the already drilled boreholes have been enclosed as annexure-6 but the boreholes are coring or non-coring type has not been specified. Moreover, no photograph of the borehole logs has been submitted.

(8) The borehole analysis data in respect of unspecified extent of Pakhar deposit dated 22.12.1966 of M/s Indian Aluminium Company has been enclosed as annexure-6, which is very old & not acceptable for reserves/resources estimation under UNFC. Therefore, the status of exploration already done specific to Pakhar bauxite mine, over an extent of 115.13ha only need be furnished if any.

(9) The reserves/resources have been calculated by the area method as indicated in annexure-7, considering the old existing boreholes only but the existing quarries available in the lease area has not been taken into account for the purpose. Therefore, the reserves/resources should be computed by cross sectional method, considering the length of influence and depth of bauxite occurrence in the existing quarries/boreholes for clarity.

(10) The excavation planning for the period from 2015-16 to 2019-20 has been computed & enclosed as annexure-9 but the length, width and number 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 70% 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 for clarity. Likewise, the waste generation is indicated to be 30% 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 relevant plates.

(11) The ambient air quality analysis report in respect of Pakhar bauxite mines/Pakhar plateau has been enclosed as annexure-10 but the surface water analysis, soil analysis and ground water & vibration analysis report has not been enclosed, which should be submitted for ease in monitoring.

(12) Calculations of mining machinery requirement has been enclosed as annexure-12 but on examination, it is found that, the excavator requirement for bauxite mining in Amtipani lease area of M/s HINDALCO Industries Ltd., has been furnished, which should be checked and corrected accordingly.

(13) The summary of year wise proposal for item No.8.3 for each year of the ensuing modification period has been enclosed as annexure-14 but the dimension (L x B x D) of the void available for backfilling should be furnished, quarry wise in 3rd row of the all the tables given in the above referred annexure for clarity.

(14) The chemical analysis report in support of the grade of the bauxite, grade of sub-grade and quarry waste from Sun-Tech has been enclosed as annexure-18 but the copy of the NABL accreditation certificate issued in favour of Sun-Tech has not been submitted.

(15) No photographs in support of lease area, existing exploration, working quarry, reclaimed area, dumping & afforestation etc. has been enclosed as annexure to the document, whereas, the same is stated to be enclosed as annexure-16 as per the contents for list of annexures.

(16) The photo copy of the bank guarantee valid from 01.08.2015 to 31.03.2017 has been enclosed as annexure-19 but the modification document has been submitted for the period from 2015-16 to 2019-20, thereby a valid bank guarantee matching to the ensuing modification period should be submitted replacing the enclosed one for clarity.

(17) Shri A.K. Agarwala has signed the modification in the approved mining plan in his capacity as the Director cum nominated owner but a board resolution nominating Shri Agarwala as owner of the aforesaid mine has not been enclosed. For information, unless a person has been nominated as the owner of the said mine, he cannot sign a document in his individual capacity or by designation. Therefore, a board resolution nominating Shri A.K. Agarwala as the owner of Pakhar Bauxite Mines, over an extent of 115.13ha of M/s HINDALCO Industries Ltd., should be submitted as required under the statute.

(18) On examination of the index given for list of plates, it is found that, the plates submitted for conceptual sections have not been properly numbered, as per the list of plate enclosed along with the document.

(19) In 1st para of the introduction chapter, there is a mention that, the mining plan was approved on 18.12.1995, over an extent of 134.27ha for renewal of mining lease but nothing has been given about the original lease period for which the lease was granted & executed in the 1st occasion, which should be furnished. In addition to the above, the block period for which the lease was renewed may also be indicated for more informative.

(20) In 2nd para of the introduction chapter, it is mention that, the 1st scheme of mining was approved on 31.01.2001 & the 2nd scheme of mining on 08.09.2006, followed by modification in the approved scheme of mining on 26.04.2007 but the copies of the such approval letters has not been enclosed along with the document, which should be submitted for clarity.

- (21) In 3rd para of the introduction chapter, it is mention that, the lease renewal application was submitted, over an extent of 115.13ha, whereas, the mining plan was submitted & got approved over an extent of 134.27ha but the reason for such deviation has not been given and the same should be furnished. Moreover, the copy of the lease renewal application and lease deed executed in the fresh in the first instance also not enclosed & the same may also be submitted for clarity.
- (22) On examination of 4th para of the introduction chapter, a reference for renewed lease deed, over an extent of 115.13ha has been enclosed as annecure-2 and the renewal deed was executed on 17.07.2008 w.e.f 19.07.1996 but no final mine closure plan for the surrender portion of 19.14ha has not been submitted to IBM for approval so far.
- (23) In para (a) of chapter-II, the lease period for fresh grant of mining lease is mentioned to be for 30 years from 19.07.1966 to 18.07.2096, which appears to be not correct, thereby the same should be checked and corrected accordingly.
- (24) The approved modification status of the scheme of mining dated 30.06.2011 has been given but no information about the approved modification of the scheme of mining dated 26.04.2007 has been furnished and the same may be submitted for more informative. (Para 3.2)
- (25) There is a mention that, infilling bores are proposed to be drilled during the last approved scheme of mining period but the year wise proposed drilling status for the same is missing, which should be furnished. Besides, there are 6 nos. of boreholes were drilling during the aforesaid period but year wise achievement status thereof has not been given. Moreover, the location co-ordinates of already drilled boreholes and coring/none coring status also not specified, which should be furnished. All should be presented in tabular form. Accordingly, corresponding incorporations/ modifications may also be made at other places of the document. In addition to the above, he remarks given for deviation given in the para under reference should be revised. [Para 3.3(i)]
- (26) It is found that, during the last approved scheme of mining period, the mining operations were proposed by fully mechanised methods, whereas, the present modification in the approved mining plan has been submitted by category-A(Other Than Fully Mechanised) means, thereby the categorisation of the mining operations should be revised accordingly. Besides, the location co-ordinates/cross sections considered/name of the quarry(s) involved in the proposed developmental activities also not given, which should be furnished. In the light of the above, the achievements in developmental activities reported during each year of the last approved scheme of mining period may also be furnished indicating the reasons for deviation if any for ease in monitoring. [Para 3.3(ii)]
- (27) The waste generation proposed in each year of the last approved scheme of mining period and achievement thereof has been furnished in tabular form but the name of the quarry(s)/location co-ordinates/cross sections considered for waste generation in each year has not been given, which should be furnished by adding more columns right to the table given in the pages under reference. (Page No. 8 & 9)
- (28) The production proposed in each year of the last approved scheme of mining period and achievement thereof has been furnished in tabular form but the name of the quarry(s)/location co-ordinates/cross sections considered for production in each year has not been given, which should be furnished by adding more columns right to the table given in the para under reference for ease in monitoring. [Para 3.3(iii)]
- (29) It is mention that, during the last approved scheme of mining period, an extent of 0.62ha of area was proposed under plantation by 1000 saplings, instead number of saplings & extent of area proposed

to utilised for plantation during each year of the aforesaid period should be furnished indicating the location co-ordinates of such plantation. Accordingly, the achievements thereof on above account in each year of the last approved scheme of mining may also be furnished. All should be presented in tabular form. Accordingly, necessary incorporations/ modifications may also be made in connected paras in the document for ease in monitoring. [Para 3.3(iv)]

(30) Under the heading **Reclamation and Rehabilitation**, the proposed status of reclamation & rehabilitation and achievements thereof in each year of the last approved scheme of mining period has not been clearly indicated, which should be furnished, mentioning the name of the quarry/ location co-ordinates of such activities for clarity. All should be presented in tabular form. [Para 3.3(v)]

(31) The violations pointed out and compliance status thereof during the last five year in the mine should be given and the para may be revised accordingly. (Para 3.4)

(31) 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.14)

(32) The dimension of all the existing quarry(s) has not been furnished in the para under reference, which should be indicated and the para may be revised accordingly. [Para 1.0(e)]

(33) There are 27 nos. of boreholes are proposed to be drilled during the year 2015-16 but the location co-ordinates of such holes are missing, which should be furnished for ease in monitoring. [Para 1.0(i)]

(34) There is a mention that, the lease is due for renewal from 18.07.1966, which should be checked and corrected. Moreover, the existing method of mining is stated to be by mechanised means 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)]

(35) In 2nd column of the 2nd table, the dimension of the quarries has been furnished but the depth such quarries are missing, which should be indicated. Similarly, the dimension of the reclaimed area has been furnished in 3rd column of the table but thickness of such backfilling is missing & the same may be given. Moreover, the location co-ordinates of the quarries & reclaimed area has not been given, which should be furnished by adding more columns in the table. (Page No.26)

(36) In 2nd column of the 3rd table, the dimension of the existing dumps has been furnished but the actual height of such dumps is missing, which should be given. Besides, the location co-ordinates of such dumps has not been given, which should be furnished by adding one more column in the table for ease in monitoring. (Page No.26)

(37) 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.27)

(38) Under the heading **Mining Strategy**, it is mentioned that, the mine is worked by **opencast mechanised method**, whereas, in the front cover, the document has been submitted for mining by **Other Than Fully Mechanised** means, thereby the para may be revised accordingly. (Page No. 27)

(39) Under the heading **Bench Design and Formation**, the development & other mining activities are proposed simultaneously, whereas, no specific information/ data in the following accounts has been furnished in a specified manner: (i) Removal of soil & overburden has been proposed but the bench formation status for the same has not been given, which should be furnished, indicating all the bench parameters. (ii) The bauxite ore production has been proposed after the removal of overburden, which is not true, instead the benches in overburden & in ore zone can be developed simultaneously followed by concurrent backfilling/reclamation of the worked out areas. (iii) Dump re-handling in block-B has been proposed during the years 2015-16 & 2016-17 but no specific information about the existing status of the dump has been given, thereby the name of the dump(s) & its location co-ordinates proposed to be re-handled should be furnished indicating its size/capacity & quantities of waste materials proposed to be re-handled in each year of the aforesaid years should be given. (iv) Besides, the proposed utilisation status of the re-handled materials and location-co-ordinates of the intended backfilling may also be furnished. In the light of the above, the para may be revised accordingly. All should be presented in tabular form. (Page No.27)

(40) (i) Under the heading **Insitu 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) There are three nos. of quarries are proposed under excavation planning during the years 2015-16, 2018-19 & 2019-20, which is not permitted, instead only one or two quarries should be proposed and the excavation planning should be revised. (iii) 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)]

(41) Re-handling of two existing dumps are proposed during the years 2015-16 & 2016-17 in the table given in the para under reference but the location co-ordinates of such dumps are missing, which should be furnished by adding one more column right to the table. Moreover, the proposed utilisation status of the re-handled materials may also be specified. If the re-handled waste material is intended to be utilised for backfilling/reclamation, the location co-ordinates & dimension of the void proposed for backfilling may also be indicated for ease in monitoring. [Para 2.0(B)(II)]

(42) 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)]

(43) Detailed calculations of drilling & blasting matching to the excavation planning have not been furnished, which may be submitted. Besides, OMS & powder factor of the explosives may also be computed & furnished. (Page No. 34)

(44) 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. 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 more informative. [Para 2.0(f)]

(45) In 2nd row of the 2nd table, the ultimate pit depth is indicated to be 12-15m, which should be checked and corrected. (Page No.36)

(46) Year wise backfilling proposal for the ensuing modification period has been furnished in 2nd table given in the page under reference but the cross sections considered for such backfilling is missing, which should be furnished by adding one more column right to the table for ease in monitoring. (Page No.37)

(48) The land use pattern after the five year period has been furnished in table no.2 of 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.38)

(49) In 3rd column of the table, the proposed plantation schedule for each year of the ensuing modification period has been furnished but the location co-ordinates of such plantation is missing, which should be furnished by adding one more column right to the table. (Page No. 39)

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

(51) 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. 41)

(52) The quantities of soil proposed to be generated in each year of the ensuing modification period has been furnished in 2nd column of the 1st 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)]

(53) Extent of area proposed to be reclaimed in each year during the ensuing modification period has been furnished in 2nd 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(b)]

(54) 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. 43)

(55) 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. (Page No. 46)

(56) 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)

(57) Under the heading **Man Power Deployment**, a 1st 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.47)

(58) 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. 54)

(59) 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)

(60) Dimension (L x B x D) of the void available for backfilling should be furnished, quarry wise in 3rd row of the tables furnished in the pages under reference. Besides, in 4th row of the table, rehabilitation status of waste dump may also be indicated. (Page No. 59 to 63)

(61) The name, address & phone/Fax of the contact person, who will be responsible to deal with the matter arises during emergency has been furnished but the nearest fire station, Hospital and police station has not been given & the same should be indicated. (Para 1.3 at page No. 64)

(62) 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. 66)

(63) Plate-1 (Key Plan): The details of the deficiencies found on the plate are as follows: (i) The index reference given for metal road, village road, footpath & nala etc. are not to be seen on the plan portion of the plate, which should be clearly demarcated on the plan for ease in monitoring. (ii) The index reference given for forest land with density is not matching with that of the plan. (iii) Besides, the population of the villages falling within 5km radius of the lease area has also not been clearly marked on the plan portion of the plate.

(64) Authenticated Lease Area Plan: (i) The plate has not been named /numbered as per the contents for list of plate. (ii) The legend given for lease area is not matching with that of the plan portion of the plate. (iii) The plan has been signed by the agent of mines, which also cannot be considered as authenticated lease map, thereby the map should be signed only by the competent authority of State DMG, Jharkhand for its authenticity.

(65) Plate. 3A & 3B (Surface Plan): (i) Separate plates for block A & block B of the lease area has been submitted, instead a single plate for the purpose should be submitted. (ii) During the filed visit, it is found that, the quarry-1, located in block-B has been extended upto the 7.5m safety barrier near boundary pillar BP-53, which should be reclaimed & photographs in support of such reclamation should be enclosed. All the relevant plates submitted along with the document should be revised accordingly. (iii) The major portion of the already excavated area in quarry-1 has been reclaimed but the actual status of the same has not been depicted on this plate. Likewise, the major portion of the existing dumps-1 & 2 has been re-handed by extending the quarry-4 towards further south-eastern side but the actual position of quarry-4 and existing dumps 1 & 2 have not been depicted, thereby all the relevant plates submitted along with the document should be updated accordingly. Besides, necessary incorporations/modifications may also be made in connected paras in text part of the document for ease in monitoring. (iv) Permanent reference points for block-B have not been furnished. Therefore, atleast three permanent ground control points situated outside the lease area should be selected 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. (v) Surveyors signature is missing on the plate, which should be signed by a competent surveyor.

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