

SCRUTINY COMMENTS ON EXAMINATION OF MODIFICATION IN APPROVED MINING PLAN FOR SERKA SERENGDAG BAUXITE MINE OF SHRI UMESH PRASAD AGARWAL, OVER AN EXTENT OF 63.25 HECTARES, LOCATED IN SERKA & SERENGDAG VILLAGES, UNDER BISHUNPUR & GHAGHRA 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 photo copy of lease deed has been enclosed as annexure-1, but the lease map attached to the lease deed is missing, which should be submitted.

(3) The copy of the photo I.D of the applicant enclosed as annexure-2A is not clearly legible; thereby a fresh copy of the same should be submitted.

(4) The copy of the approval letter of the mining plan, dated 06.05.2010 has been enclosed as annexure-4 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.

(5) The land schedule enclosed as annexure-5 has not been authenticated by the competent authority and the same is not acceptable in its present form.

(6) Litho logs for the already drilled DTH boreholes are stated to enclose as annexure-7 but no such annexure is seen in the enclosure side of the document. Moreover, no photograph in support of such drilled DTH holes is enclosed along with the document.

(7) The borehole analysis report has been enclosed as annexure-8 but the date of analysis is missing in the report, which should be indicated for more informative.

(8) The copy of Form-J for drilling the boreholes is stated to be enclosed as annexure-8 but the referred annexure is meant for borehole analysis report. Besides, in enclosure side, numbering of annexure for Form-J is not done. Moreover, the number of boreholes proposed to be drilled also not mentioned in the Form-J. Therefore, the above referred annexure should be revised accordingly.

(9) The chemical analysis report in support of grade of the bauxite & laterite has been enclosed as annexure-10 but the same for sub-grade and rejects is missing, which should be submitted for ease in monitoring.

(10) The reserves/resources calculated in area method has been enclosed annexure-11, 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.

(11) The copy of the TOR has been enclosed as annexure-12; instead a copy of the MoEF clearance should be submitted.

(12) 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, laterite & bauxite has not been furnished. Besides, the location co-ordinates & the cross sections considered for the purpose is missing, which should also be furnished by adding more columns in the tabular annexure. Moreover, the

Contd...2/-

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 relevant plates.

(13) The copy of explosive procurement license has been enclosed as annexure-15 but a copy of the blasters license for carrying out blasting operations has not been enclosed and the same should be submitted.

(14) Few photographs of the existing quarries & dumps have been enclosed as annexure-16 but such quarries & dumps have not been in named /numbered for their identification. Moreover, no photographs in support of support of existing reclamation, plantation, exploration & lease boundary pillars has been enclosed, which should be submitted and the annexure may be revised accordingly.

(15) A copy of the valid consent to operate from Jharkhand State Pollution Control Board has not been enclosed, which should be submitted.

(16) There is a mention that, the mining lease was granted vide letter No. 6661/M, dated 12.11.86 from Deputy Secretary, Govt. of Bihar but the copy of the said letter has not been enclosed, which should be submitted for more informative. (1st para of the introduction chapter at page No. 1)

(17) In 2nd column of item No.6, the proposed status of **scheme of mining** for the period from 2015-16 to 2019-20 has been furnished, instead, reference for modification in the approved mining plan for the aforesaid period should be given. (Page No.3)

(18) The phone/fax & E-mail ID if any may also be indicated in the mine address given in the para under reference for ease in monitoring. [Chapter-II (a)]

(19) The proposed generation status of soil, laterite/murram, quarry waste & total waste for the period from 2008-09 to 2012-13 of the last approved mining plan period has been furnished in 1st table given in the para under reference but the specific achievement thereof on the above account has not been given in 2nd table, which should be furnished for ease in monitoring. [Para 3.3(ii)]

(20) The proposed & achievement status of production for the period from 2008-09 to 2012-13 of the last approved mining plan period has been furnished in tabular form but the location co-ordinates of such production is missing, which should be furnished by adding more columns in the table. [Para 3.3(iii)]

(21) The proposed plantation schedule for each year of the last approved mining plan period & achievement thereof has been furnished in tabular form but location-co-ordinates of such plantation is missing, which should be furnished by adding more columns in the table. [Para 3.3(iv)]

(22) The proposed **land reclamation & rehabilitation** for each year of the last approved mining plan period & achievements thereof has not been clearly indicated, thereby, the exact extent of area already reclaimed & rehabilitated in each year during 2008-09 to 2012-13 should be furnished indicating the location co-ordinates of such reclamation & rehabilitation for clarity. All should be presented in tabular form. [Para 3.3(v)]

(23) The proposed & achievements status of soil, laterite & quarry waste generation for each year of the last approved mining plan period has not been furnished, which should be given and the para may be revised accordingly. All should be presented in tabular form. [Para 3.3(vi)]

(24) The violations pointed out and compliance status thereof during the last five years in the mine should be furnished, instead of giving the annexure reference. All should be presented in tabular form. (Para 3.4)

(25) The meteorological data for the period from January to December has been furnished in tabular form but the data pertains to which calendar year has not been specified. (Page No.16 & 17)

(26) Details of existing quarries available in the lease area have been furnished in tabular form but the working/non-working status of the same is missing, which should be furnished by adding one more column right to the table. [Para 1.0(e)]

(27) Under the heading **Sampling**, there is a mention that, the samples have been drawn from the DTH drilled holes & crushed to uniform size 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.22)

(28) There are 18 nos. of coring boreholes are proposed to be drilled during the year 2016-17 but the proposed depth and location co-ordinates of such holes are missing, which should be furnished by adding more columns in the table given in the para under reference. [Para 1.0(i)]

(29) Existing method of mining has not been discussed as per the heading of the para, which should be furnished mentioning the existing dimension of the quarry(s) & its working/non-working status. In addition to the above, the existing status of dump, reclamation & rehabilitation etc. may also be furnished. Besides, 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 furnished. 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)]

(30) Under the heading **Mining Strategy**, it is mentioned that, the mine is worked by OTFM method, instead the current strategy of mine working should be discussed in detail and the para may be revised accordingly. (Page No. 34)

(31) Under the heading **Bench Design and Formation**, the mining operations are proposed by OTFM pattern and removal of soil, morrum & laterite has been proposed without indicating all specific bench parameters, thereby the para may be revised accordingly. (Page No. 34)

(32) (i) Under the heading **In situ Tentative Excavation**, the proposed status of soil, OB/SB/IB, mineral rejects and production target for next five years have been furnished in tabular form but the location co-ordinates and the cross sections considered for excavation planning is missing in the table, which should be furnished by adding more columns. (ii) The recovery percentage of the bauxite is missing, which should be indicated. In the light of the above, the data furnished in the tabular form should be revised. Accordingly, corresponding incorporations /modifications may also be made in connected paras in the text & relevant plates. [Para 2.0(B)(I)]

(33) Under the heading **Bench Development over next five years**, there is a mention that, the year wise development will be carried out as per the regulation 106 of MMR, 1961, instead the height of the benches should be specified and the para may be revised accordingly. (Page No.35)

(34) 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)]

(35) 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 ease in monitoring. [Para 2.0(f)]

(36) Year wise backfilling proposal has been furnished in 1st table given in the page under reference but the location co-ordinates of such backfilling and quantities of waste materials required for the purpose have not been given and the same should be furnished by adding more columns right to the table. (Page No.53)

(37) The land use after the five year plan period has been furnished in 1st table given in the page under reference, instead the same by end of each year of the ensuing five year period is required to be submitted in separate tables for each year and the para may be revised accordingly. (Page No.54)

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

(39) The rainfall data for the months from January to December has been furnished in tabular form but the data pertains to which specific calendar/financial year has not been indicated. (Page No. 57)

(40) The quantities of topsoil, OB/SB/IB proposed to be generated in each year of the ensuing five year period has been furnished in 2nd& 3rd column of the 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 more columns in the table. (Para 4.0)

(41) Under the heading **Sub-Grade Mineral**, it is mention that, whatever sub-grade materials produced from the mine will be blended with the high grade materials but the quantity of sub-grade materials proposed to be generated in each year of the ensuing five year period has not been given, which should be computed & furnished. Accordingly, the information/data furnished in other places of the document may also be revised. (Page No.60)

(42) The average feed grade of the bauxite is indicated to be +45.78% Al₂O₃ contains but no chemical analysis report in support of such grade has been enclosed. Besides, the cut-off grade of bauxite is indicated to be 42% Al₂O₃, which appears to be not correct, instead the same should be checked and corrected considering the thresh hold value fixed for bauxite. (Para 5.0)

Contd...5/-

(43) Grade wise, buyers specification of bauxite as required by various consuming industries has not been mentioned, which may be discussed. (Para 6.0)

(44) Under the heading **Site Services**, the existing site services available in the mine has been furnished but the proposed status if any may also be furnished and the para may be revised accordingly. (Para 7.0)

(45) The meteorological data for the year 2003 has been furnished in tabular form, which is very old; instead the latest available data for the same should be furnished for clarity. (Page No. 68)

(46) The average rainfall data from January to December has been furnished in tabular form for the year 2008, which is very old, instead the latest available data should be furnished and the table may be revised accordingly. (Page No. 69)

(47) Under the heading **Recreation Facility**, the facilities available to the local people of the surrounding area should be furnished in detail & the para may be revised accordingly. (Page No. 74)

(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, restoration & afforestation for each year 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 has been furnished in 3rd row of the table furnished in the page under reference but the name of the quarries linked in the void formation is missing, which should be furnished. Accordingly, the information furnished for the period from 2016-17 to 2019-20 in page No. 82 to 85 may also be revised. (Para 8.3.5 of page No. 81)

(50) Plate-1 (Key Plan): The details of the deficiencies found on the plate are as follows: (i) The index reference given for other lease area is missing on the plan, which should be marked. (ii) The index reference given for metal road is not matching with that of the plan. (iii) Likewise, the index reference given for forest land with density is not matching with that of the plan portion of the plate. (iv) Direction of flow of nala is missing on the plan portion of the plate. (v) Population of villages falling within 5km radius of the lease area has not been given, which should be furnished. (vi) During the field visit, it is found that, there are few other bauxite mining leases available within 5km radius of the lease area but the same has not been marked on this plate.

(51) Area Plan: (i) Name/ numbering of the plate has not been done as per the contents given for the list of plates. (ii) The index reference given in the plate is not matching with that of the plan portion. (iii) The plan has been signed by the mine owner, which 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.

(52) Plate No. 3 (Surface Plan): (i) The land classification given in front cover of the document on account of agricultural land-Raiyati Land, GM Land-jungle Jhari & GM Land have not been marked with different colour codes, which should be done. (ii) A road is passing almost in east-west direction in the lease area and the same is considered as mine road, which should be checked & notation of the road should be changed accordingly.

(53) Plate No.4 (Geological Plan): A portion of the lease area has been marked with colour green but index reference for the same is missing, which should be furnished. Accordingly, necessary corrections / incorporations may also be made in all other relevant plates submitted along with the document.

(54) Plate No.5 (Development Plan & Sections 2015-16): (i) The excavation planning has been proposed by extending the existing quarry-1 towards northern side, where no exploration has been done and the area has not been proved to be mineralised as per the plate submitted for geological plan. Therefore, the excavation planning should be shifted to some new location, where existence of bauxite has been proved. (ii) Different litho units given for soil, morrum & laterite, bauxite and clay on the development sections are not matching with that of the plan. Moreover, the dump sections for the proposed dump also not drawn. Accordingly, the plate submitted showing the development plan & sections for the years 2016-17 to 2019-20 and other relevant plates including the geological sections should also be revised.

(55) Plate No.10 (Environment Plan): Certain existing features available within 500 meter radius of the lease area have not been marked and the same should be depicted for clarity.

GEOLOGY PART

- 1. The Geo-referenced mining lease map prepared using DGPS shall be superimposed on Geo-referenced vectorised cadastral map. The same shall have to be submitted in compliance to CCOM's circular no. 2/2010, dated 06.04.2010 and its addendum dated 21.09.2011 & 11.06.2014. The above map will be base for preparation of all statutory plans as required under Rule-28 of MCDR, 1988.**

2. Cover page: The document supporting validity of lease up to 28.04.2038 as per MMDR Amendment Act, 2015 has not been submitted as required.

Nothing has been spelt about lapse period of 2013-14 & 2014-15 on the cover page.

3. CHAPTER- I- GENERAL: Item no. (f) . It should be either grant or renewal and not the both.

4. CHAPTER-II- LOCATION AND ACCESSIBILITY:

a) Lease Details:

i. Date of grant of lease (Lease Period/Expiry date): The supporting document regarding Grant of lease has not been furnished.

ii. Document supporting validity of lease upto 28.04.2038 has also to be submitted.

b) Details of applied/lease area with location map:

i. The authenticated lease map does not bear original signature, it is a photocopy. The cadastral map does not show village name as there are two villages involved in the lease area. Moreover, village boundary has also not been shown on the cadastral map. Plot no. 1891, 1897 & plot no. between 409 & 371 has not been shown. Further, the Map/Plan should bear Plate number.

An Area plan showing type of land with access road has also to be submitted. The access road should indicate major location on either end of the road.

All the plans must indicate type of land existing in the lease area.

ii. Existence of public road/railway line if any (Location and approach): The distance of lease area from the village Serka & Serendaghas not been furnished. The type of road (Metalled/Non-Metalled/Seasonal etc.) from lease area to village and railway siding (Lohardaga & Tori) should also be mentioned under the para.

iii. Whether Power Grid existing or not along with its distance from the mine/lease has not been mentioned.

iv. Topo Sheet no. with Lat & Long of Boundary Pillars: 68 nos. of boundary pillars have been shown in Cadastral Map whereas 70 nos. of boundary pillars have been shown in Surface Plan, Geological Plan, Development Plan etc. The same may be reconciled properly.

Location of boundary pillar no. 67 & 68 also differ in Cadastral map & other submitted Plans. The same may be rectified.

Photographs of initial pillar viz. Pillar no. 1-5 and pillar no. 68-70 should be submitted along with pillar no. 28 & 31.

The co-ordinate of boundary pillar no. 28 & 31 are missing in the table showing boundary pillar co-ordinates on page no. 6 & 7 as well as on the Plans/Map.

c) General Location Map: As stated at item no. 3.(b) above. In the enclosed Key Plan (Plate no. 1) the Latitude & Longitude of the lease area given needs to be checked/corrected.

Contd...7/-

5. Chapter-III- DETAILS OF APPROVED MINING PLAN/SCHEME OF MINING:

Para 3.3. Review of earlier approved proposal (if any) in respect of exploration, excavation, reclamation etc.:-

i. Exploration: Page no. 8-9: Form-J, notice of sinking of borehole under Rule-47 of MCDR, 1988 as enclosed in the submitted document has not been received by this office. A copy of the same may be sent to this office for office record. Further, Form- K under Rule 48 of MCDR, 1988 has neither been submitted to this office nor has been incorporated in the ensuing document.

Page no. 9, First Para, What is DTH co-ordinates? The referred Annexure number is not correct.

Annexure-8- Name of the mine has not been given correctly. **Name of prospecting agency has not been given correctly with its address and contact number. If the owner himself has prospecting agency then give complete details of prospecting equipment like number and type of drill machine available with compressor and its capacity. Whether the prospecting agency has been enrolled with IBM or not.**

ii. Mine Development: Proposed- In the first para Soil has been treated as Waste, needs to be corrected. The area contains top soil which has to be preserved for future use. Consequently, the table following the para also needs to be corrected as Soil has been included as total waste generation.

Remarks- The reason submitted for deviation in OB removal from proposal in approved Mining Plan is not justified as the reason submitted do not match with the Geological sections submitted. The reason for deviation can be envisaged from the table showing Bauxite production under para (iii) **“Exploitation”**.

iii. Exploitation- The Bauxite production for the year 2008-09 & 2009-10 has not been reconciled properly. In the table showing Bauxite production, laterite has been added in the Bauxite production. The same should be corrected from the return submitted by the party.

Remarks- The reason submitted for deviation in actual Bauxite production is not justified with the submitted Geological sections.

iv. Afforestation: Quarry no. has not been given in the table for the year 2010-11 to 2012-13 under the para “Status”.

v. Land Reclamation and Rehabilitation: The backfilled area given under “Status” does not match with the Plan. It should be checked and corrected.

vi. Waste Management: Proposed- Topsoil should not be treated as waste (1 st para).

Status- As per proposal the old dump located at the centre of the lease between the grid 200E- 400E and 100N-200N has not been leveled. The same may be spelt in the para.

vii) Control of dust: Page no. 13(Status)- The word lease should be replaced with lessee.

The compliance position of lapse period 2013-14 to 2014-15 has been furnished. When there was no approved proposal then question of “Compliance” is in question. There is no approved document for the period 2013-14 to 2014-15. This should be mentioned on the cover page of the document.

Para 3.4: (Give status of compliance of violation): The copy of violation letter dated 22.03.2011 issued after Task Force inspection has not been enclosed in Annexure-14. Copy of Suspension order dated 21.04.2013 enclosed, is incomplete. Review of compliance of violation pointed out, in tabular form, has not been furnished.

Para 3.5: (Suspension/ Closure/ Prohibitory order): Para should be recasted as wrong information has been given in the para. Photocopy of Suspension order has already been enclosed in Annexure-14.

6. Part- A(Geology & Exploration):

a) Brief description of topography, drainage pattern, vegetation etc:

Drainage : The drainage system (DhobghatNala) as mentioned in the last para has not been shown clearly on the Key Plan(Plateno. 1).

Vegetation: On which side of lease area the Serka PF and Europani PF lie within the buffer zone should be mentioned along with their distance from lease area and Forest density. Besides above, the location of isolated strips of Protected Forest and their distance from lease area with Forest density may also be spelt clearly and if possible be shown on the Key Plan(Plate no. 1). Whether these Forests are within Core zone or Buffer zone shall be spelt clearly.

Forest with tree density 0.46 has not been shown on the Key Plan.

Climate: The date as on the climatological data has been furnished should be mentioned. The maximum & minimum temperature during Summer season has not been furnished.

Contd...8/-

b) Brief description of Regional Geology: i. Page no. 17: Name the area where Deccan Trap has been found as Intrusion in the Chotanagpur Granite Gneiss. The same should be supported with few photographs. In which part of Jharkhand, Bauxite with 18m thickness has been reported may be spelt.

c) Detailed description of Geology of the lease area:

Local Geology: The last two lines may be re-casted properly. When Base has not been not established then Basaltic/Doleritic body should not be shown at the base of the pit section?

Page no.20: Last line of first para is incomplete.

It has been mentioned in the second para that “ the Bauxite deposit in the area are not so extensive and continuous”, which is not conformable with the litholog shown in Annexure-8.

Captive Plant- In the last para of item no. (c), page no. 20, mention has been made of lessee’s Alumina plant. The details of captive plant viz. its location, capacity, input grade of Bauxite, output grade etc. may be spelt in detail.

Since the current document has been submitted for the first time in revised/new format, the detail description of Geology of the lease area such as shape and size of mineral/ore deposit, existing quarry, dump (if any), reclaimed/rehabilitated area, disposition of various litho units indicating structural features if any etc. may be given.

d) Name of prospecting/exploration agency: Name of exploration agency who had carried out exploration work in the lease area with its required details may be submitted. If exploration had been carried out by the lessee himself then the exploration equipment such as drilling rig with its make and number available with the lessee may be given in this para.

e) Details of prospecting/exploration already carried out: (i) The existing new format may be followed for description of this item under 04 sub-heads including **Expenditure incurred in prospecting operation, which has not been furnished.**

Page no. 21:The details of quarries given in the table need some correction such as, Quarry no. 2, the Eastern grid should be E400-800 instead of E400-700.

(ii)Boreholes: Under “DTH exploration already carried out”, the referred Annexure no. for litho log needs to be changed. The total meterage drilled need to be reconciled with the given BH log at Annexure no. 8. The table showing details of boreholes on page no. 21 needs some correction in column “Location” for BH no. 9 & 19.

None of the enclosed analysis report (Annexure-8) have been supported with chemical analysis from NABL accredited laboratory.

In the table on page no. 21 following para“DTH exploration already carried out”total depth of BH-3 may be reconciled. BH no. 4, 9, 14 &19 may not be treated as Negative borehole as per analysis of material of the borehole shown in the table. The Al₂O₃ % in BH no. 12 need to be corrected. The zone (I, II & III) as shown in the Geological Plan need to inserted in the table of Annexure-8 for better understanding.

On the basis of DTH and available existing quarry, the different level of exploration (G1, G2 etc) carried out in the area should be incorporated in a tabular form under the para. The table should include Block no., Co-ordinates, Area covered, No. of DTH, Spacing, No. of samples drawn/analysed, Range of thickness of Bauxite, Grade & Level of exploration.

(iii) Sampling: The referred Annexure no. may be rectified.

(iv) Chemical Analysis: None of the enclosed analysis report in Annexure-8 have been supported with chemical analysis from NABL accredited laboratory. Complete chemical analysis of Ore/Mineral should be furnished with special mention of TiO₂, P₂O₅& V₂O₅.

At least for 10% of total samples may be analyzed in accordance to BIS and reports from NABL accredited /Governmentlaboratory (Ref. Universal format for MP/SoM).

On the basis of single sample analysis from NABL accredited laboratory the grade of Bauxite in the entire lease area can not be assessed.

Page no. 23: The procedure for calculating Weighted Average of Bauxite may be explained.

f) Surface Plan (Plate no. 3): (i) The numbering of boundary pillars marked on the Plan should be as per Ministry of Mines Notification no. G.S.R. 710(E), dated 08.10.2014, item no. 4.(j). The manner of construction and upkeep of boundary pillars should be in accordance to item no. 4 of G.S.R. No. 710(E), dated 08.10.2014 (Ministry of Mines Notification).

(ii) The Index for OB dump and Backfilled area are shown as same. That should be differentiated.

(iii) Different distinct colour code for (+)ve& (-)ve borehole may be used.

(iv) No Parapet wall and Garland drain have been shown on the plan but the same have been shown in the Index of the Plan.

(v) The Safety barrier (10m) of road has not been marked on the plan as well as in the Index.

g) Geological Plan: (Plate no. 4): (i) Item no. (i) to (iv) mentioned above in Surface Plan may also be taken care of in this plan.

(ii) The Proposed surrendered area (Jungle/Jhari area) shown in the plan should be reconciled properly with Surface plan and Cadastral map submitted. Further, the colour code used for proposed surrendered area on the plan does not match with the Index of the Plan. The same should be reconciled properly. Photocopy of related document regarding proposed surrender of lease area should also be incorporated in the document.

(iii) **The influence area considered for Measured and Indicated Mineral Resource should be revised as 50m (25m on all side of B.H) and 10m (from quarry face) respectively. Accordingly the Proved (G1 level) and Probable (G2 level) zone should be revised on the Geological Plan/Sections. Based on revised influence area the reserve/resource calculation should be re-casted.**

h) Geological Sections (Plate no. 4A & 4B): Referred Plate no. may be rectified. **The UNFC code of area considered for different categories of reserve/resource estimation may also be marked on geological cross section.**

In Plate no. 4A all the sections except A2-B2 should be reconciled properly with the plan in respect of proposed surrender area, location of road & nala, position of safety barrier etc..

In Plate no. 4B, all the Geological sections except X6-Y6 should be reconciled properly with the Plan in respect of B.H location, RL of benches, location of road etc.

So many sections have been drawn in Plate no. 4A & 4B but no dump section has been given. The same needs to be incorporated with top and bottom RL of the dump.

i) Future exploration programme: The required table should be as per new guideline. **The GPS co-ordinates (Lat&Long) of the proposed borehole (coring type) need to be supplemented in the para for better correlation with Plan and field.**

j) Reserve Resource as per UNFC: 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 in the sub para "Feasibility Study".

The reserve furnished in the table has not been clarified whether it is Mineable or Insitu.

The table showing different categories of reserve/resource may be placed under item no. (L/I) below.

The Resource figure as per UNFC with respect to the threshold value notified by IBM has not been incorporated in tabular form. Further, area covered under exploration for calculation of resource in context to threshold value may also be given.

k) Detail calculation of reserves/resources: The Botryoidal texture has not been seen in the Bauxite deposit of Jharkhand. The same may be clarified. The type of Bauxite occurring in the lease area may be spelt clearly.

Page no. 27: The grade of Bauxite ore can't be deciphered with the help of single chemical analysis report.

For number of sample analysis to be carried out from NABL accredited laboratory, item no. 1.(e).(iii) of PART-A of the Universal Format for Mining Plan/Scheme of Mining may be referred.

The depletion of reserve as shown in the table may be reconciled properly from the Annual Return submitted by the party. The balance reserve shown in the table after depletion is irrelevant in present context as fresh reserve has been calculated based on borehole influence which has to be re-casted further based on item no. (g)(iii) of Part-A above.

Instead, the increase in reserve due to fresh calculation may be given in a tabular manner under the para giving earlier reserve as per approved Mining Plan and present fresh calculated reserve.

Further, the reserve figure of previous approved document furnished in the table is of Insitu category. Depletion of production from in-situ reserve shall not give correct balance reserve. The same may be taken care of.

METHOD OF ESTIMATION OF RESERVE:

i. First Para (Page no. 27): Total meterage drilled should be reconciled properly with the given BH log at Annexure no. 8.

ii. Page no. 28 (First para)- The influence area considered should be revised as per item no. (g)(iii) of Part-A above.

iii. GRADE: The weighted average calculated based on DTH is not clear. The same may be clarified.

- iv. **Measured and Indicated Mineral Resource category (Page no. 29):** The table needs to be revised based on fresh calculation as per item no. (g)(iii) of Part-A above.
- v. Anticipated life of mine should also be revised based on available Mineable and Recoverable reserve.

(I) Mineral Reserve/Resource: (i) The table showing resource with respect to level of exploration may be modified slightly by including a column of area covered under different level of exploration. The Resource position with reference to threshold value has not been incorporated.

(ii) The sub-para "Feasibility Study" has been repeated. Repeatability of information may be avoided.

(iii) As per present guideline the tonnage factor and recovery factor are to be established through field test. The table showing Reserve/Resource should be placed under this para as a last item after detailing all above items.

7. Item no 2.0 Mining:

i. C) Individual year wise development- Number of benches to be developed in each horizon during each of the five year proposal may be spelt clearly with top and bottom RL of each bench.

ii. The area already covered under excavation before starting of 5 year plan period and area covered under excavation at the end of each of the five (05) year plan period need to be given in the relevant para.

iii. Page- 47 (Machinery deployed): Diameter of Jackhammer drill may be given. Drill rod length of Jackhammer may be furnished in the table showing list of machineries.

iv. Drilling and Blasting (Page no. 48): For Bauxite production, the daily production has been shown as 1188 MT, no. of days to be worked in a year has to be given for calculation of daily production. The Powder factor and Charge per hole calculated may be re-checked as it seem to be on higher side.

v. Storage of Explosive: The validity of Explosive License furnished in Annexure-15 has already expired long back in 1997. Valid explosive license should be incorporated. Blasting permission from DGMS need also to be submitted along with the document.

vi. RECLAMATION AND REHABILITATION (Page no. 52-54): The year wise area to be backfilled should be re-checked with the year wise Development Plan and total area backfilled during 5 year plan period should be checked with Reclamation Plan.

Under the heading "Existing land use pattern", and "Land use after 5 years of plan period", excavated area under quarry and reclaimed area should be given separately.

Under **Existing land use pattern**, the reclaimed area shown as backfilled with green belt and backfilled only should be checked with the relevant plan. As the area shown under backfill does not match with the plan. Accordingly, land use after 5 years plan period should be revised.

vii. Chapter-8, Para 8.2, Impact Assessment:

Page no. 70 & 71- The table showing Existing land use pattern, land use after 5 yrs of plan period should be revised as per above item no. (vi).

viii. Para 8.6: Financial Assurance- In item no. 1 (Area to be excavated), the figure furnished under the column "Area considered as fully reclaimed & rehabilitated" should be revised as per item no. (vi) above.

ANNEXURES:

The Consent letter/Undertaking/Certificate from the applicant has not been submitted as per Part-B of the "Proposed Universal Format For Mining Plan/Scheme of Mining Including Progressive Mine Closure Plan".

GENERAL:

1. All the tables given in the document should be numbered for proper reference.
2. All the Plans must bear date of survey.

PLAN/SECTION:

1. Key Plan (Plate no. 1): The observations as mentioned at Part-A, Para no. 6(a) above may be incorporated in the Key Plan. **The grid drawn on the Key Plan shows 3.45 cm in E-W direction and 3.7 cm in N-S direction. Reason for the same may be clarified.**

2. Area Plan (Plate no. 2): Area Plan has not been submitted.

3. Surface Plan(Plate no. 3): The observations as mentioned at Part-A,Para no. 6(f) above may be incorporated in the Surface Plan.

4. Geological Plan(Plate no. 4):The observations as mentioned at Part-A,Para no. 6(g) above may be incorporated in the Geological Plan

5. Geological Sections: The observations as mentioned at Part-A,Para no. 6(h) above may be incorporated in the Geological Sections.

6. Existing Development Plan may also be submitted for better understanding.

7. (i) Development Plan:(a) 2015-16(Plate no. 5): Existing benches in quarry no. 1 have not been shown.

The corresponding Section C2-D2 need to be reconciled with the plan in respect of plantation area & RL of benches. One more section across C2-D2 need to be incorporated.

(b) 2017-18(Plate no. 7): Existing benches formed during 2016-17 has to be shown on the plan.

(c) 2018-19(Plate no. 8): Backfilling has been shown between grid 125W-250W and 400N-525N but no quarry face has been shown in previous year's i.e 2017-18 development plan.

(ii) Development Sections(Plate no. 6A, 7A, 8A & 9A): All the sections should be reconciled properly with the respective Development Plan in respect of location of boreholes, proposed BH, proposed surrender area, plantation, RL of benches etc.

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