

Scrutiny comments on the Review of Mining plan along with Progressive Mine Closure Plan of Kujam Bauxite Mine over 76.40 ha of Shri. Gyanchand Prasad Agarwal, in village Kujam of Bishunpur Thana of Gumla District submitted under rule 17(2) of MCR 2016 and 23 of MCDR 2017 for the period from 2020-2021 to 2024-2025.

General:

1. Brief lease history, Status of all statutory clearance obtained or to be obtained and Surface right acquired should be given in introduction along with documentary proof as enclosure. Distance of ML from protected area/ wild life sanctuary etc. to be mentioned accurately in introduction.
2. As per IBM manual for appraisal of mining plan 2014 all the certificate should have the original signature of Lessee and Qualified person who has prepared the mining plan. Whereas in submitted draft copy there is no signature of Lessee & QP in the certificate.
3. The Review of Mining Plan has not been submitted for approval at least one hundred and eighty days before the expiry of the five years period for which it was approved on the last occasion, for mining operations for a period of five subsequent years. Approved Review of Mining plan was valid upto 31.03.2020. Reason for delay in submission to be given.
4. There are typographical mistake while furnishing page number of annexures in the text of various plates, same should be checked. Instead of applicant, it should mention as Lessee and instead of applied area, it should change as lease area in all relevant page.
5. In the certificate, it is mentioned that DGPS has been completed and report has enclosed, whereas no such report is enclosed in the draft mining plan.

Location and accessibility:

1. As per land scheduled enclosed in lease deed, i.e 1.217 hectares are under GM land barren and Road, whereas in cover page it is shown as only 0.56 hectares under GM land. Hence justification is need in this.
2. Page-6 mentioned that area does not have any forest land within lease area, whereas Survey plan and Land Schedule shows that, 2 isolated survey number of Jungal Jardi area inside the lease area. Its need to be explained.

Details of approved Mining plan/ Scheme of Mining:

1. It is reported that no boreholes are drilled against target of 28 boreholes; location of proposed boreholes planned is not indicated. A table for year-wise review of exploration has to be included having number of holes & meterage to be discussed.
2. Proposed and achieved quantity has to be shown in table format. 2019-2020 proposals is not shown and discussed under excavation table. Development quantity has to mention under development table only. Annual return 2018-2019 shows there is nil development, but in submitted draft copy it is mentioned 22800 cu.m of OB/ waste.
3. The year wise production & development quantity should be updated & given till date based on statutory annual/ monthly returns submitted to IBM & deviation should be justified. The proposed & achievement should be mentioned as per approved plan proposal i.e. Latitude & Longitude/ RL etc. & actual workings done should be discussed in tabular form with proper justification.
4. Under review of earlier approved mining plan there is no discussion about quarry waste quantity. How much quantity has been achieved against 100211 cu.m proposed in approved plan to be discussed.
5. Page-14:- During 2018-2019, 22800 cu.m of waste has been generated and no area has been reclaimed, whereas during 2019-2020 it has reclaimed 2.0 hectares with 12750 cu.m of waste it need to be explained.
6. Page-15:- During this approved plan period, it is proposed to plant 5600 saplings, whereas only 700 saplings has been planted during this plan period. Reason for deviation to be discussed. Annual return 2018-2019 shows only 200 saplings has been planted, but in draft copy it is 500 saplings.

- The review of compliance of violation pointed out by IBM during last 5 years is not discussed properly.

Geology:

- The topography of the lease area is not discussed properly. The elevations within the lease area and nature of the land are not discussed properly. Highest RL is mismatching with plan & text.
- Under Geology of the lease area type of the deposit, shape and size of the ore body, structural features if any needs to be discussed.
- Para 1.e: Earlier exploration carried out so far in the lease area should be summarized as per table below and given in the text.

Total Lease area:						
Item of information	Lease area explored as per UNFC norms (in Ha) as on dt...					Remarks/ Comments including reasons for not carrying out the exploration as per UNFC norms.
	Total Lease area = A+B+C+D+E					
	G1 Level	G2 Level	G3 Level	Explored and found non- mineralized with level of exploration (Remarks)	Unexplored lease area	
	A	B	C	D	E	
Area as per level of exploration						
No. of BH Drilled						
No. of BH considered for Resource Estimation.						
Meterage Drilled						
Grid Interval						
Scale of Mapping						
Reserve estimated after above exploration as on dated :						
Remaining Resource after above exploration as on dated:						
Total Reserve/Resource after above exploration as on dated:						

- 31 DTH boreholes have been drilled not in uniform grid. But it is mentioned as 100m x 100m grid interval. Hence it should be change. Depth of Quarry shown in page-21 is differ from field, i.e, Quarry -1A, 1B, 1C are completely backfilled, but it is shown as depth of 3 to 4.5m in text.
- Using single Boreholes or without boreholes or DTH borholes, section has drawn and ore is consider as G-1, as per Minerals (Evidence of Mineral Contents) Rules 2015, it has to consider as resources only. Based on the DTH borehole reserves cannot be estimated. Therefore additional exploration by the way of Core drilling has to be proposed upto depth of mineralization.
- Detailed estimation sheet for reserve and resources need to be furnished showing sectional area as per UNFC category, influence, BD, recovery factor, location on plan & sections etc. The basis of bulk density and recovery factor should be given on the field tests conducted for different grade of minerals. Test result on moisture contents may also be included. Based on Cut-off grade/ threshold value (i.e. revised threshold value) may also be considered for estimation of reserves & resources. Refer Minerals (Evidence of Mineral Contents) Rules 2015 for exploration grid interval to be followed for UNFC reserves & resources estimation.

7. Quarry influences are considered for Reserves estimation, whereas Quarry-1, 1A, 1B, 1C & 4 are backfilled upto the surface level, Quarry-2 first bench influence can't considered because its Topsoil and waste bench. Borehole influences are considered for Reserves estimation by 50m spacing, based on that single borehole will have 10,000m², whereas BH-29, 30 are having 15,000m². Hence reserves & resources are to be re-estimated.
8. Geological reserves & Resources have to be shown in table to compare as per previous approved plan and as of now. Addition or depletion of reserves/ resources to be explains. Depletion of reserves has to be considered based on actual removal of excavation i.e, 2956 tons has been depleted in page-26 and in page-14 it shown as 43751 tons.
9. The complete lease area should be proposed under the plan period to cover under exploration to quantify reserves/ resources with cutoff grade corresponding to threshold value suggested by IBM within two years plan period as per Rule 12(4) of MCDR 2017.
10. Reserves & Resources table are mismatching with page to page. 331 categories have been taken for calculation in page-28, whereas in summary table it is not shown. Explain how the 331 category has converted to 111 categories.
11. Para.1.0 (e)(iii): Summary of the chemical analysis for major radicals discussed in this para are differ in page-31.
12. Para 1.0(j): The area under G-1, G-2, G-3 and G-4 may be given in a tabular form based on the exploration carried out in the past.
13. Para 1.0(l): Mineral resources may be estimated based on the level of exploration, with reference to the threshold value of minerals declared by IBM in tabular form.

Level of Exploration	Resources in Million Tons	Grade
G1- Detailed Exploration		
G2- General Exploration		
G3- Prospecting		
G4- Reconnaissance		

14. Date of Reserves estimated in approved plan is 01.04.2017 and date of Reserves estimated in draft submitted plan is 01.02.2020, in between the above said period, the lessee has excavated more than 38,000 tons of Bauxite ore. Whereas it has depleted only 7539 tons of Bauxite. Hence it needs to be explained.

Mining:

1. Production planning is silent on grade of ore to be produced, cut-off grade for sale of ore, reject generation, sub-grade and its stacking.
2. Present pit dimension with length, breadth, RL, depth, benches in Ore & waste has to be shown in table format for all the existing pits & dump area. Number of Dumps/ stocks of waste, Sub grade/ mineral reject, processed ore etc with size of each dump i.e. L X W X H and total quantity of waste material in the dumps.
3. Proposal of five year development & production, waste management, reclamation & rehabilitation, afforestation are to be shown on individual year-wise plan & sections. Another table or column in existing table may be incorporated indicating B.D. and tonnage for ROM Bauxite.
4. 80% recovery of ore has been proposed during this plan period, whereas recovery % of previous plan period is only 65%. Hence justification is needed for increasing the recovery %.
5. It is proposed to re-handle the Dump-3 (Sub grade) during 2021-22, grade of the dump to be mentioned and purposed of stacking the sub grade to be explained. Total 5 dumps have been proposed for re-handle during this plan period but their usage is not described. Dump quantity is differs from table to table in same page-34.
6. During this proposed plan period all the dumps has been proposed to re-handle during 2021-22 & 2023-24 in page-34. Under land use pattern after 5 years plan periods till showing 0.60 hectares will be under dump.
7. Page-52:- Under land use pattern during 2022-23, 3.59 hectares will be mined out to produce 385382 tons of ore, whereas during 2023-24, it is proposed to produce 374312 tons by mining in 1.03 hectares.

8. Para 2 (f):- Conceptual mine planning may be end of lease period. The chance of enhancement of reserves after exploration may also be mentioned. Generation of Production, wastes and their location of disposal, afforestation and other protective measures during conceptual period have not been discussed. Incorporated tables of proposed mine development, location of disposals of wastes, afforestation and other environmental protective measures during RMP period (i.e. year 2020-21 to 2024-25) need not necessary under this para.
9. Land use pattern shown in Annual Return 2018-2019, area under mining is 15.020 hectares, whereas submission of draft review of mining plan shows 14.12 hectares are mention as area under mining. Its need to be clarifies.

Mine drainage:

1. Minimum and maximum depth of water level is not given based on own monitoring of nearby wells and water bodies or based on studies/ publications of CGWB/ SGWB.
2. Ambiguous statements are used for different sub-para of mine drainage i.e. minimum and maximum depth of water level, quantity & quality of water likely to be encountered (seepage as well as discharge), pumping capacity and Regional & local drainage pattern.
3. Seasonal garland channel has to show in year wise production & development plan and dimension to be mentioned under PMCP table.

Stacking of Topsoil, Mineral Reject and Disposal of waste:

1. Concurrent backfilling, capacity & precaution envisaged have not been explained properly. Backfilling of waste from year to year to be mentioned in text (with ref. to RL of individual area) and total height of the backfilled area year wise with description of the method & manner of disposal of waste should be mentioned.
2. Existing rehabilitation and protective measures taken around backfilled area like Retaining Wall, Garland Drain, Check Dams, Settling tanks, plantation etc. should be given in quantified terms.
3. Page-58:- It is mentioned there is no sub grade material available in the lease area. At present sub grade stock has been formed on western part of lease area to be discussed.

Use of mineral and mineral reject:

1. Requirements of end use industry have to give along the physical & chemical compositions.
2. General discussion of M/s. Hindalco plant is not needed under this chapter.

PMCP:

1. Few photographs of the ground control points, working area, dumps, afforestation on dumps, mineral stacks of different grade, pits and tailing pond showing baseline information as on date may be enclosed. Human settlements and public buildings, places of worship and monuments within core zone have to be given.
2. Page-63:- Proposed plan period is mentioned as only 3 years. Thickness of soil is shown as 1 to 6m.
3. The table in Para 8.3 for year-wise proposals for reclamation & rehabilitation is mismatching with five-year proposals. Separate year-wise proposals are required for applicable items under PMCP. Table given in IBM manual for appraisal of mining plan 2014 is having format for yearly report under rule 26 of MCDR 2017 and it needs suitable modification for year-wise proposals to be included for next five-year period. It is therefore advised to delete the column 'Actual' as well as non-applicable rows for proposals i.e. cumulative number of plants in dump management, afforestation done and cumulative number of plants in management of worked out benches etc.
4. In previous approved Review of mining plan under Financial Assurance table, area considered under excavated is 14.12 hectares, whereas recent draft submission shows 14.12 hectares are under excavated. In between above said period, no additional area has been excavated but produced only 43751 tons of ore and 2 hectares has been reclaimed during 2019-2020.
5. Page-72:- During 2023-24, proposed reclaimed area is 0.93 hectares by backfilling 225324 cu.m of OB & waste, whereas in 2024-25 it was proposed to reclaimed 1.81 hectares by 131113 cu.m of OB & Waste.

PLATES:

1. Cadastral lease map has to be certified from competent officer of state department has to be enclosed.
2. DGPS Plan: the copy of DGPS plan duly authenticated by state government is not submitted. As per CCOM circular no.2/2010, DGPS map shall be superimposed on Geo-referenced vectorised cadastral map is not enclosed. The boundary pillars along with co-ordinates value should be mentioned and authenticated by competent authority of state Government.
3. Key plan:- Land use pattern i.e. forest, waste land, agriculture land etc is not shown as per rule 32(5)(a) of MCDR 2017. The prominent features existing in core and buffer zone to be shown.
4. As per Rule-35(2) of MCDR, 2017, high resolution satellite images obtained from CARTOSAT-2 satellite LISS-IV sensor on the scale of cadastral map, covering the mining lease and an area of 500 meters from the lease boundary, should be submitted along with the document.
5. Environment Plan: Following details may be include i.e. forest land, government land, private land, pits etc within 60m distance and within 500m distance as per rule 32(5)(b) of MCDR 1988. Existing natural vegetation as well as afforestation done over dumps with trees density per hectares is not shown. Refer Para 4.4.4 of IBM manual for appraisal of mining plan 2014. Adjoining lease area of M/s.Hindalco is not shown.
6. Surface Plan: Surface plan is not updated; hence date of surface is 16.01.2020. As per Inspection, quarry and dumps are mismatching with plan and field. 7.5m safety barrier along the lease boundary and road has to be shown in all plan and safety zone also to shown. Surveyor and mines manager signature is need in this plan. Boundary pillars along with its Latitude & Longitude values to be included. Dump ID should be uniform in both plan & text.
7. Surface Geological Plan & sections: All boreholes should be marked with type, diameter, inclination, collar level and depth. Boreholes above pit bottom must be shown by hatched lines in sections. Excavated boreholes are not needed to show. All sections Lateral and vertical extrapolation of maximum 25% beyond the borehole is allowed for G-1/G-2 category; accordingly all the sections may be modified for showing UNFC reserves category. Few sections are having only 2 boreholes and few sections have no boreholes, however category G-1 is consider for reserves. UNFC codes are not marked in Geological plan & sections. Sub surface resources can't be projected on plan under UNFC category. UNFC codes have to be described in text also. Geologist signature is need in this plan and section. Lithology and UNFC codes are incomplete in all sections. Few sections passing outside the lease area, i.e to be marked in the sections. Safety barrier to be mark for the Road/ electrical line passing inside the lease area and it should be considered as resources and to be mark in sections also.
8. Five-year planning: Proposal of plantation, check dams, retaining wall, drainage channel, dump rehandling etc may also be included on the year-wise plan & sections. Section should be drawn as per Geological Section. Other scrutiny comment given in text has to be suitably reconciled. All the yearwise working plan are proposed in un proved area only, i.e, by using quarry-4 influence working has proposed. Working has proposed in Quarry-2 by using 1st bench topsoil influence. Hence the entire working proposal to re-design and to be proposed in the proved reserves block only.
9. Financial Assurance plan: Different colour code has to used for pit, infrastructure, mine road, backfilling etc by showing outlines of the existing working pits, dumps, mineral stacks, roads, virgin unused area etc covering all the items under the financial assurance table as on 01.04.2020 and at the end of 5 year plan period for the purpose of computation of the areas required to be used in that period to verify the financial assurance. Table showing area considered for financial assurance under different activities should be given.
10. Conceptual Planning: It has to be prepared by including five-year block wise proposals for development, waste management, reclamation & rehabilitation, afforestation etc up to the lease period instead of tentative final pit limit at the end of lease period. Longitudinal and transverse sections are required in support of conceptual planning. Other comments may be suitably reconciled.
Conceptual Mine plan upto the end of lease period has to be prepared on the base geological plan and sections considering the present available reserves and resources by showing the excavation, disposal of waste, backfilling of voids, reclamation and rehabilitation, afforestation etc.

Annexure:-

1. The clear and legible copy of the address and identity proof to be enclosed.
2. All the annexure to be properly indexed/numbered/paged and signed by the TQPs.
3. Latest quarterly monitoring report on air, water & noise should be enclosed as per category of the mine for last 2-3 quarter. 2016 data has been enclosed.
4. The copy of original valid BG of requisite amount should be submitted in the form of annexure along with original.
