



भारत सरकार GOVERNMENT OF INDIA
खान मंत्रालय MINISTRY OF MINES
भारतीय खान ब्यूरो INDIAN BUREAU OF MINES
क्षेत्रीय खान नियंत्रक के कार्यालय
OFFICE OF THE REGIONAL CONTROLLER OF MINES



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No. RMP/A/37-ORI/BHU/2019-20

दिनांक / Date: 12.12.2019

To

Shri M. D. Rustagi,
Director & Nominated Owner,
M/s Rungta Sons (P) Limited,
Main Road, Barbil, Dist-Keonjhar,
Odisha – 758035.

Sub: Review of Mining Plan of Kusumdihi-Kamando Bauxite & Manganese Mine over an area of 43.067 ha in Sundargarh district of Odisha of M/s Rungta Sons Private Limited submitted under Rule-17 (1) of MCR, 2016.

Ref:- i) Your letter no. RSPL/ED/GEO/2019-20/1346 dated 26.11.2019.
ii) This office letter of even no. dated 27.11.2019.
iii) This office letter of even no. dated 27.11.2019 addressed to the Director of Mines, Govt. of Odisha, copy endorsed to you.

Sir,

This has reference to the letters cited above on the subject. The draft Review of Mining Plan along with Progressive Mine Closure Plan has been examined in this office based on site inspection carried out on 03.12.2019 by Shri Dayanand Upadhyay, Sr. Assistant Controller of Mines. The deficiencies observed are enclosed herewith as Annexure-I.

You are advised to carry out the necessary modifications in the draft Review of Mining Plan in the light of the contents vide Annexure-I and submit **three (3) firm bound and two (2) soft copies of the document text in CD in a single MS Word file (the drawing/plates should be submitted in Auto CAD compatible format and JPG format in resolution of 100x100 pixels on same CD)** with financial assurance under Rule 27 of MCDR' 2017 within 15 (fifteen) days from the date of issue of this letter for further necessary action. If the total page of annexures exceeds 50 (Fifty) then it should be submitted as separate volume. But reference of these annexures must appear in the Review of Mining Plan document. The plates are also to be submitted in separate volume.

The para-wise clarifications and the manner in which the deficiencies are attended should invariably be given while forwarding the modified copies of the Review of Mining Plan. It may be noted that no extension of time in this regard will be entertained and the Review of Mining Plan will be considered for rejection if not submitted within above due date. It may also be noted that if the deficiencies are not attended completely, the submission would be liable for rejection without further correspondence.

भवदीय / yours faithfully,

(HARKESH MEENA)

क्षेत्रीय खान नियंत्रक / Regional Controller of Mines

Copy for kind information and necessary action to:

1. Dr. S. K. Dash & Shri Soujatya Sarangi, Qualified Person, M/s Rungta Sons (P) Limited, Rungta Office, Main Road, Barbil, District-Keonjhar, Odisha-758035.

(HARKESH MEENA)
क्षेत्रीय खान नियंत्रक / Regional Controller of Mines

Scrutiny comment of Review of Mining Plan including PMCP in respect of Kusumdihi Kamando Bauxite & Manganese mine, Area 43.067 ha. of M/s Rungta Sons (P) Ltd in Sundargarh district of Odisha State.

GENERAL:

- I. On cover page, Review of Mining Plan submitted under Rule 17(2) of Minerals (Other than Atomic and Hydro Carbons of Energy Minerals) Concession Rules, 2016 should be furnished alongwith other text parts & certificates etc. The break up of forest area and diversified forest area to be furnished. E-mail, phone & fax no. of qualified persons should also be furnished on cover page.
- II. In introduction chapter history of the mines like discontinuance of working operation, suspension, declaration of lapsing and order of their revival etc should be described with documentary evidence and marked with annexure.
- III. Page-2, The stage forest clearance area furnished 18.053 ha while on cover page total forest area is mentioned 18.023 ha. It should be re checked and corrected.
- IV. Page-4 & 5, Para-2.0, the lease area bounded by latitude and longitude should be furnished. The UTM co-ordinates of boundary pillars should also be furnished with latitude and longitude.
- V. Page no.-7, Para 3.1, the date of approved mining plan/review of mining plan should be given in tabulated format as below:

Sl. No	Mining Plan / Review of Mining Plan etc.	Submitted Under (Rule Reference)	Approval Letter No. & Date	Period	Valid up to

- VI. Para-3.3.1 to 3.5, in review of approved scheme of mining year wise proposed exploration with actual to be furnished. The reason of deviations as furnished are not justifiable with the document submitted as the forest clearance has been already obtained.
- VII. The experience of qualified person should be clearly stated in supervisory capacity in the field of mining as per provision of rule 15(b) of Minerals (Other than Atomic and Hydro Carbons of Energy Minerals) Concession Rules, 2016.
- VIII. Sequence of paragraph and its numbering should be covered as per IBM Manual Appraisal MP 2014.
- IX. All the annexure to be properly indexed/ numbered/ paged and signed by qualified person. All the certificates should bear dated signature.

GEOLOGY:

- I. The structural features of the lease area are not correctly furnished. The litho units shown in geological plan and sections are not supported with bore hole logs and not matched with each other.
- II. Page-11, Para-4(b), the regional geology as described not represent the structural features and deposition bauxite ore. Therefore regional geology should be revised considering structural features and deposition ore types in the area.
- III. Table-4.3, the summary of exploration of lease area should be furnished in following table:

Total Lease Area: Ha						Remarks/ comments including reasons for not carrying out the exploration as per UNFC norms
Item of Information	Lease area explored as per UNFC norms (in Ha) as on dt.....					
	Total lease area = A+B+C+D+E					
	G1 Level	G2 Level	G3 Level	Explored and found non-mineralized with level of exploration (Remarks)	Un-explored lease area	
A	B	C	D	E	F	

Area as per level of exploration										
No. of BH drilled										
No. of BH considered for Resource										
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:.....										

- IV. Page-13, Para-(ii), it has been described that total 08 nos. of DTH have been drilled in the lease area however information of bore holes drilled has not been submitted under erstwhile form-J and K.
- V. Page-14, the area furnished under G1 level of exploration is not correct. The area depicted under G2 level is not supported with bore holes. Similarly area depicted under G4 level is not supported with any data. In remarks column it is furnished that the lessee waited for forest clearance however it has been observed that stage-II forest clearance has been already obtained by lessee. It should be re-checked and corrected accordingly.
- VI. Page-15, Para-(iii), , details of total sample collected and number of sample analysis from private lab and from NABL accredited/Government Laboratory should be described and bore hole wise analysis report to be enclosed in annexure.
- VII. Page 16, Para-(i): The complete lease area should be proposed to cover under G1 level exploration by core drilling upto end of mineralization. The proposal of exploration to be given in following format:

Year	BH no.	Northing	Easting	Collar RL	Core/DTH	Meterage	Inclination	Forest/Diversified forest/non fores	Surface right/non surface right	Purpose of bore holes

- All the proposed BH to be depicted in Geological section along with mRL and its proposed depth for better referencing. At the end of the table cumulative number of proposed BH in forest area, non-forest area, diverted forest area, Surface right area and non -surface right area to be given.
- VIII. The UNFC boundaries as per the present status of exploration under MEMC rules 2015 should be demarcated over the Geological Plan and Sections. The lithology shown in the borehole log should match with the lithology shown in geological sections. Number of bores holes considered for reserves/resource estimation should be furnished. Accordingly, the reserves/resource estimation calculation, geological plan and Sections need to be revised.
 - IX. Page-19, the threshold value considered for reserve/resource estimation is +30% Al₂O₃. It is observed that a capping of Aluminous Laterite (+20% Al₂O₃) is present in the lease area. The revised threshold value also prescribes mineral content for Aluminous Laterite i.e. +20% Al₂O₃. Therefore reserve/resource should be re-estimated considering the threshold value +20% Al₂O₃ for Aluminous Laterite.
 - X. In page-.23, the method of reserve estimation may be further elaborated and justified with supporting documents w.r.t recovery factor, Bulk density and, Length of influence considered, cut off grade and average grade in reserve and resource estimation. In text the recovery factor is mentioned 40% of total ore zone while in calculation table it is 45%. The recovery factor considered is not justifiable with

geological sections. The bulk density considered 1.3T/cu.m for reserve/resource estimation is not justifiable. Necessary supporting documents to be furnished with respect to bulk density and recovery factor considered.

- XI. Page-19-25, the reserve and resources is not furnished as per Minerals Evidence of Mineral Contents Rules 2015. The resource/reserve estimated under 332/122 category is not supported with bore holes data. The influence of ore body as shown in geological section is not correctly furnished as no any bore holes exist in that area. The resources estimated of manganese ore is not furnished with UNFC code. The grade of manganese ore is not furnished and their analysis report is not enclosed in annexure. The influence considered for resource estimation is not matched with geological section and resource not correctly quantified.
- XII. The nos. of samples analyzed from NABL accredited laboratory or Government laboratory have not furnished with documentary evidence. As per guideline of "IBM manual on appraisal of Mining Plan 2014" at least 10% of total samples to be analyzed in accordance to BIS and reports form NABL accredited/Government Laboratory.
- XIII. Reporting of Mineral Resources in the format prescribed in Part IV-A of Minerals (Evidence of Mineral Contents) Rules, 2015 to be submitted.

MINING:

- I. Page-42, existing method of mining has not been described properly. The present status of lease alongwith statutory clearances should be furnished and pits details to be furnished as below.

Name of pit	Location	Length	Breadth	Depth	Top mRL	Bottom mRL	No. of benches in ore/No. of benches in OB	Pit slope	Area backfilled	Area reclaimed & rehabilitated

- II. In proposed method of mining under para-5, proposal should not be furnished with words 'or & either'. A specific proposal should be furnished.
- III. Waste dumping has been proposed on waste dump no 1 and 2. Since the dump no.-2 is fall within UPL therefore no further dumping will be permissible on waste dump no. 2 and its re-handling/shifting should be proposed.
- IV. The yearwise excavation program presented through development sections are not matched with geological sections. It may be corrected and table-5.5 of tentative excavation program may be revised accordingly.
- V. Page-29, in the geological plan overlying material is furnished aluminous laterite while in insitu tentative calculation OB has been furnished which is to be rechecked and rectified.
- VI. In table 5.1 the grade of mineral reject is furnished 30-40% Al₂O₃ while threshold value of aluminous laterite is notified 20% of Al₂O₃. Therefore grade of mineral reject should be considered 20-40% Al₂O₃ as the cut off grade of mine is considered +40% Al₂O₃.
- VII. Page-30, para-(c), Year wise development and production plan should be furnished in the following tabulated format.

Particular for the year...	
Bench Geometry	Height (in m)
	Width (in m)
	Individual bench slope angle
Quarry Development	Location (Quarry Name)
	Extent of Development (coordinates)
	Sections considered for development
	Number of benches

	Benches considered for development with RL	
	Top RL	
	Bottom RL	
	Direction of advancement	
	Dimension of the quarry at the end of the year including existing benches	
	Area occupied (in sq.m)	
	Overall quarry slope angle	
	Production of Ore (in MT)	
	Generation of Mineral rejects ore from quarry (in MT)	
	Production of ROM (Ore + Mineral Reject) in MT	
	Total Generation of waste (in cum)	

VIII. Page 49, briefly the layout of mine workings, pit road layout, the layout of faces and sites for disposal of overburden/waste along with ground preparation prior to disposal of waste, reject etc. The layout of faces to be shown in the following tabulated format.

Name of Pit	Description	1st Year	2nd year'	3rd year	4th Year	5th Year
	Face RL					
	Length of Face					
	Direction of advancement					
	Length of advancement					

- IX. Page-35, para-5.3, the proposed machineries as furnished is not supported with calculation of total requirement of machineries with their capacity based on total handling of ore and waste.
- X. Back filling proposal as furnished in development plan has not been explained text. In development section CC' and C1C1' and in composite development plan & section backfilling not shown. Exhausted area to be backfilled by OB/Waste to be specified with RL and area on year to year basis with description of the method & manner of disposal of waste.
- XI. Before backfilling of the quarry as proposed, it should be ensured the exhaustion of ore body in terms of their depth & extension in the interest of mineral conservation. It should also be ensured that during backfilling original sequence of lithology of the lease area to be maintained.
- XII. The quantity of Sub-grade to be generated during conceptual period and its utilization and future planning for beneficiation may be given.
- XIII. Page-40, the life of mine has to be calculated providing all the details. Conceptual Mine planning up to the end of lease period taking into consideration the present available reserves and resources. The conceptual plan and section as submitted is not furnished correctly prevailed on mineralization.

STACKING OF MINERAL REJECT/SUB GRADE AND DISPOSAL OF WASTE:

I. The existing mineral reject dumps should be furnished below alongwith analysis report.

Name of Dump	Location (Grid)	Length(m)	Width(m)	Area Occupied	Total volume (cu.m)	Total quantity(T)	Grade

- II. It should be ensured that the area proposed dumping should be proved non mineralised. The Dump-2 is lying within UPL therefore its handling proposal to furnished.
- III. The location of dumping proposal of mineral reject generated during mining has not been described in in text.
- IV. The details of mineral reject dumps and their analysis report should be submitted and discussed for their future use on the basis of their physical and chemical properties.

- V. Details Existing and proposed retaining wall, garland drain, settling tank etc. to be given yearwise with their location. Location of sub-grade storage along with year to year development of to be given. Retaining wall and garland drain should be proposed and clearly shown in development plan.

PROGRESSIVE MINE CLOSURE PLAN:

- I. Page-65, Para-11.3 & 11.3.1, back filling proposal of exhausted quarry-1 has not been explained properly. The proposed backfilling, reclamation and re-habilitation to be carried out should be furnished as below:

Year	Pits/ Quarries	Area beginning of year(ha)	Additional degraded during year(ha)	Area to be reclaimed by backfilling(ha)	Area rehabilitated by plantation (ha)	Balance area at the end of year

- II. Monitoring station of air, noise and water should be described in text and their locations furnished in tabular form.
- III. Updated air, water, noise, ground vibration and soil data with analysis from laboratory done at specified periodicity to be enclosed.
- IV. Under impact on land, cumulative land degradation at present, at the end of proposal period and at the end of conceptual period may be given referring to conceptual mining plan.
- V. Mitigation measures of impacts associated with mining i.e. mainly related to air, water, noise, vibration, land, aesthetics etc. are not given properly. The same to be elaborated.
- VI. Year wise plantation covering number of saplings to be planted, location and area covered may be furnished.

FEASIBILITY STUDY REPORT:

Financial analysis should be carried out based on real time cost. Viability of the project should be analyzed considering following points: Capital cost, Cash flow forecast, Investment cost, Inflation forecast, Operating cost, Sensitivity studies, IRR, NPV etc.

PLATES:

- I. All the plan and sections should be signed with date by certified surveyor, qualified person, mines manager and mining geologist.
- II. All plans and sections shall show a scale of the plan at least twenty five centimeters long and suitably subdivided. All plans & sections prepared shall follow the sign conventions mentioned under MMR 1961.
- III. Wind direction may show through wind rose diagram in key plan and environmental plan. Approach road to the ML to be shown.
- IV. Existing and proposed bench RL to be mentioned in the all plans and sections. The UPL should be shown in red colour in all relevant plans and sections. Magnetic Meridian and date of observation of should be given on all relevant plans. Approach road to the ML to be shown.
- V. At some places the colour codes as furnished in plans are not matched with index and some of the index is missing.

Surface Plan: Few pillars may be correlated with some permanent ground features giving distance and direction. Different land use may be shown with colour codes. Virgin area to be shown by contours and spot RL in surface plan. Forest & Non forest area, Surface right acquired area etc. should be marked clearly.

Geological Plan & Section: Data related to strike, dip, dip-direction etc. shown clearly. UNFC boundaries of G1, G2.. explored area should be revised as discussed and UNFC codes of reserve and resources revised accordingly. RL of bore holes have not been marked in plan and section. Further, litho units and ore zone should be depicted on plan and section based on surface exposure, exploration data.

Development plan & Section: Direction of advance to be shown in plan and section. Existing and proposed RL of benches/dumps should be mention clearly in development plan and section. Development sections are not prepared in line of geological sections. Vertical grid is to be marked in every section. Retaining wall and garland should be marked clearly yearwise with color codes. UPL should be shown in red color.

Reclamation Plan: Proposal of backfilling, yearwise site OB dump, mineral storage, retaining wall and garland drain and afforestation using different colour codes for easy understanding should be furnished.

Environment plan: The Environment Plan as prepared should be satisfy the provision as laid down rule 32(5) (b) of MCDR2017. The proposed and existing environment protective measures to be shown in environment plan. The drainage pattern of the lease is also to be shown on the plan. Contours should be shown in core zone.

Conceptual plan: Conceptual plan may be prepared considering mineralization as revealed from the borehole logs. Direction of run off from the area based on surface contours may be shown on the plan and the sections.