



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



BY REGD POST
Phone: 0674-2352463
Tele Fax: 0674-2352490
E-mail: ro.bhubaneswar@ibm.gov.in
Plot No.149, Pokhariput
BHUBANESWAR-751020

No. MS/FM/11-ORI/BHU/2019-20

Date: 27.08.2019

सेवामे

Shri D R patnaik, Managing Director,
M/s Tarini Minerals (P) Ltd,
A/6, Commercial Estate,
Civil Township, Rourkela,
Sundargarh-769004, Odisha

विषय: Approval of Review of Mining Plan of Jururi Iron & Manganese Mine along with Progressive Mine Closure Plan (PMCP), over an area of 66.368 ha in Keonjhar district of Odisha State, submitted by M/s Tarini Minerals (P) Ltd under Rule 17 of MCR, 2016.

- संदर्भ: - i) Your letter No. TMPL/MP/2019-19 dated 30.07.2019 received on 14.08.2019.
ii) This office letter of even no. dated 14.08.2019.
iii) This office letter of even no. dated 14.08.2019 addressed to Director of Mines, Government of Odisha copy endorsed to you.

महोदय,

This has reference to the letter cited above on the subject. The draft Review of Mining Plan along with Progressive Mine Closure Plan (PMCP) has been examined in this office based on earlier site inspection carried out on 28.06.2019 by Shri Dayanand Upadhyay, Senior 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 1 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 or JPG format in resolution of 100x100 pixels on same CD)** with financial assurance under Rule 27 of MCDR 2017 of the Review of Mining Plan 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 final 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
(हरकेश मीमा)

क्षेत्रीय खान नियंत्रक

Copy for kind information and further necessary action to Shri Pradeept Mohapatra, P.O. Box No-1, At-Unchabali, Po- Bamebari, Via- Joda, Dist-Keonjhar, Odisha- 758034.

(हरकेश मीना)

क्षेत्रीय खान नियंत्रक

Scrutiny comment of Review of Mining Plan including PMCP in respect of Jururi Iron & manganese mine, Area 66.368 ha. of M/s Tarini Minerals Pvt Ltd in Keonjhar district of Odisha State.

GENERAL:

- I. In introduction chapter history of the lease should be described with documentary evidence and marked with annexure.
- II. A latest list of board of directors duly certified by competent authority along with address/contact nos. to be enclosed. Latest resolution w.r.t. nominated owner to be submitted.
- III. The proposal on cover page furnished for the financial year 2019-20 however 5 month of proposed period has already been lapsed therefore it may mentioned in remarks that proposal will implemented from date of approval.
- IV. The lease was declares lapse by State Govt. vide letter no. 4003/SM, dated 02/05/2015 however the present status of lease and order passed by State Govt. and supplementary lease deed if any have not been furnished.
- V. 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.
- VI. Page-8, Para-3.1, the scheme of mining under rule 12 of MCDR 1988 should be replaced with review of mining plan.
- VII. Page-8, Para-3.2, details of last modification should be furnished in light of last modification approved by this office on 27/12/2011.
- VIII. Page-9, in review of approved proposal causes of deviation should be furnished with declaration of lapsing of lease with date.
- IX. The CCOM circular no.2/2010 and its addendum should be implemented.
- X. Sequence of paragraph and its numbering as per IBM Manual Appraisal MP 2014 has not been covered in text. In location and accessibility chapter the land details, existence of public road, railways, topo sheet no. etc are not furnished as per manual.
- XI. All the annexure to be properly indexed/ numbered/ paged and signed by qualified person. All the certificates should bear dated signature.

GEOLOGY:

- I. Page-16, detailed description of regional geology has not been furnished. Structural features like dip strike etc. to be given.
- II. Page-18, Para(e), the details of exploration carried since inception of mining operation to be given in tabulated form i.e. year, BH number, Location (Coordinate), nature of BH (Core/DTH), Depth (max-Min), mineralized/non-mineralized, Inclination etc. The relevant forms for intimation of borehole and borehole logs to be submitted as annexures.
- III. Copy of form I and J as per MCDR, 2017 to be enclosed for all the drilled BH for ready and future reference as per Rule 47 and 48 of MCDR, 2017 and the same should be signed by the Geologist appointed under MCDR, 2017. Litho units as depicted in geological plan & section should be matched with the bore hole logs.
- IV. Page-19, details of sample analysis of drilled bore holes is not enclosed and not described in text. The expenditure incurred in various prospecting and exploration activities to be furnished.
- V. Page-21, Para-(i), it has been observed from geological section that bore holes are terminated in ore zone. Therefore future exploration program should be furnished to know the depth ward continuity of ore. All the drilled and proposed BH to be depicted on the Geological section along with RL and its actual and proposed depth for better referencing.

- V. Page-24, total geological section drawn and number of geological section considered for reserve/resource estimation and their interval should be furnished.
- VI. The complete bore hole logs of drilled holes have not been submitted. Out of 33 bore holes only 08 nos. of bore hole logs submitted and the information submitted in logs are not complete. The bore holes ID as furnished are not matched with plan and sections.
- VII. The Geological boundaries of exploration limit i.e. G1/G2/G3 etc. are not marked as per Minerals Evidence of Mineral Contents Rules 2015. Accordingly, the reserves/resource estimation calculation, geological plan and Sections need to be revised. Summary table of lease area explored not furnished with total bore holes drilled with total meterage.
- VIII. Page-25, it is mentioned that for safe side recovery percentage of saleable, sub grade and intercalated waste are considered 80%, 15% and 5% respectively. The recovery percentage should be based on past mining activity carried out and through recovery test.
- IX. Geological sections are not prepares in line with geological plan. Surface profile, information of drilled and proposed bore holes, ore zone and litho units have not been furnished properly. Bore holes logs as per erstwhile form-K has not been maintained. In view of incomplete information as furnished in sections reserve and resources as furnished has not been verified.
- X. Page-27-31, the reserve and resources is not furnished as per Minerals Evidence of Mineral Contents Rules 2015. The inferred resources under 333 category should be revised as per MEMC rules. The estimation of OB/waste has not been furnished in cross-sections. The litho units furnished in the sections are not matched with bore logs. Geological information at the end of the bore holes not furnished and UPL is not correctly drawn prevailing the mineralization.
- XI. 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.
- XII. 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-41, The present status of lease alongwith statutory clearances should be furnished. The lapsing period of proposal should also described in brief.
- II. Page 42, the sub grade should be replaced with mineral reject. The average grade of mineral reject should be furnished. All the sub grade dumps should be specified with their quantity and grade and certified by surveyor.
- III. Page-45, the bulk density of mineral reject and percentage of recovery of saleable/usable ore with ROM to be furnished with documentary evidence.
- IV. The old dumps in the lease area are lying in the mineralized zone and under ultimate pit limit. Therefore re-handling proposal of the old dumps should be addressed.
- V. The sub grade generated during period is proposed within ultimate pit limit therefore proposal should be revised to dump outside the UPL.
- VI. Page-50, salient features of the proposed method of working has not been described properly. The nos. of benches in ore & OB, top & bottom RL, nos. of quarries proposed may be described.
- VII. The details of existing dumps have not been bifurcated with waste dumps and sub grade dumps. All dumps should be specified with their location. All the sub grade dumps should be specified with their quantity and grade alongwith analysis report.
- VIII. The quantity of Sub-grade to be generated during conceptual period and its utilization and future planning for beneficiation may be given.
- IX. Conceptual mining plan, cumulative waste generation and top soil generation and protective measures have not been described properly.

Mine Drainage:

Considering the topography of the mining lease area comprising of valleys, hillocks etc. the rainwater management plan, mine water management plan for arresting solid wash should be described. A mine drainage

plan to be submitted showing flow direction of the water, location final discharge, arrange of arresting of solid waste etc.

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

- I. In page no.62, the nature and quantity of top soil and mineral reject to be described along description of with overburden / waste. The information on top soil and mineral rejects to be provided in following format.

Year	Top Soil (cum)		Overburden		Mineral Rejects	
	Reuse/spreading	Storage	Backfilling	Storage	Blending	Beneficiation

- II. Page-63, the site for storage of mineral reject and yearwise progress of OB/waste dump has not been furnished. The yearwise waste and total mineral reject generation and their utilization are not furnished in table.
- III. It should be ensured that the area proposed dumping should be proved non mineralised. Therefore before dumping the exploration proposal should be furnished in proposed dumping area in 2018-19.
- IV. The details of sub grade 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.

PROGRESSIVE MINE CLOSURE PLAN:

- I. Page-72& 79, existing land use pattern and proposed as furnished in table is not matched with final table of FA calculation depicted at page no.-109. In final table of FA at page no.-94 net area considered under mining is not correctly furnished. Amount of financial assurance should be calculated as per rule 27(1) of MCDR-2017 and submitted accordingly.
- II. Page-73-75, monitoring station of air noise and water should be described in text and their locations furnished in tabular form.
- III. Page-77, The description of human settlements and village within the lease area should be furnished.
- IV. Page-87, socio-economics condition of the area should be described with total population, literacy percentage male female ratio etc.
- V. Updated air, water, noise, ground vibration and soil data with analysis from laboratory done at specified periodicity to be enclosed.
- VI. 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.
- VII. 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.
- VIII. Year wise plantation covering number of saplings to be planted, location and area covered may be furnished.

FEASIBILITY STUDY REPORT:

Financial analysis is not carried out as per UNFC guidelines. It should be carried out based on real time cost. Viability of the project should be analyzed up to the ultimate depth considering following points: Capital cost, Cashflow forecast, Investment cost, Inflation forecast, Operating cost, Sensitivity studies, RR, IRR, NPV for the project life, cost of operation, Closure cost and Rehabilitation cost etc.

PLATES:

- I. All plans and sections should be signed with date by certified Surveyor, Qualified Person, Mine 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 is not marked as per UNFC. RL of bore holes have not been marked in plan and section. Sections are not prepared in line of geological plan. Surface profile, litho information ore zone, existing benches have not been furnished. The geological sections should be synchronized with bore hole logs.

Development plan & Section: The information of complete lease area should depicted in development plan i.e existing and proposed bench RL, bore holes and their RL etc. Development section has not submitted alongwith development plan. Direction of advance to be shown in plan and section. The location of mineral reject dump should be marked as suggested during field visit.. Retaining wall and garland should be marked clearly with colour codes. UPL should be shown in red colour.

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