



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. MS/FM/05-ORI/BHU/2019-20

दिनांक / Date: 05.07.2019

To

Shri D. R. Patnaik,  
Managing Director,  
M/s Tarini Minerals Pvt. Ltd,  
A/6, Commercial Estate,  
Civil Township, Rourkela,  
Sundargarh, Odisha-769004.

Sub: Review of Mining Plan of Jururi Iron & Manganese Mine over an area of 66.368 ha in Keonjhar district of Odisha of M/s Tarini Minerals Pvt. Limited submitted under Rule-17 (1) of MCR, 2016.

Ref: - i) Your letter no. JIOM-TMPL/MP/2019/19 dated 06.06.2019 received on 17.06.2019.  
ii) This office letter of even no. dated 17.06.2019.  
iii) This office letter of even no. dated 17.06.2019 addressed to the Director of Mines, Govt. of Odisha, copy endorsed to you.

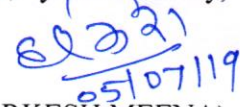
Sir,

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 28.06.2019 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. Shri Pradeept Mohapatra, Qualified Person, At-Unchabali, Post-Bamebari, Joda, Dist-Keonjhar, Odisha, Pin-758034.

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

**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. E-mail, phone & fax no. of lessee has not furnished on cover page. The name of mines alongwith village, tehsil should be furnished.
- II. The proposal on cover page furnished for the financial year 2020-21 however in text it is mentioned 2019-20. It should be rechecked and corrected accordingly.
- III. Date of lease expiry may be furnished with remarks under provision of section 8(A)(6) of MMDR Amendment Act 2015. In introduction chapter history of the lease should be described with documentary evidence and marked with annexure.
- 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. 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-5, Para-2.0, latitude and longitude of all boundary pillars should be furnished in terms of their UTM co-ordinates also. Page-6, para-(a), the validity of lease period as furnished should be rechecked.
- VII. Page-7, Para-3.2, details of last modification should be furnished in light of last modification approved by this office on 27/12/2011.
- VIII. 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.
- IX. All the annexure to be properly indexed/ numbered/ paged and signed by qualified person. All the certificates should bear dated signature.

**GEOLOGY:**

- I. Page-15, Para-(c), detailed description of geology of the lease area such as shape and size of the mineral/ore deposit, disposition various litho-units indicating structural features etc. to be given.
- II. Page-16, Para-(i), it has been described that total 33 nos. of bore holes have been drilled in the lease area however the information of drilled bore holes under erstwhile form-J and form-K not discussed and enclosed in annexure.
- III. Page-17, 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 has not been furnished.
- IV. Page 17: The complete lease area should be proposed to cover under exploration upto depth of mineralization. The proposal of exploration to be given in following format:

Sl.No	Year	BH No	Northing	Easting	Collar RL	Core/RC/DTH	Metage	Inclination	Forest/Non-Forest/ diverted Forest	Surface Right/ Non-Surface	Purpose of BH
1											
2											

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.

- V. 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.

- VI. The details like potentially mineralized area and its extent (coordinate in WGS 84), potentially mineralized area explored (in forest and non-forest area, Govt. land, Pvt. land etc.), remaining area, proposal of exploration to explore remaining potentially mineralized area to be given with justification of adequacy.
- 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-20, Para-3(ii), 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. The estimation of reserve and resources of manganese ore not furnished and marked in sections with UNFC codes. The iron ore mixed with manganese as shown in index not depicted in plan and no calculation has been carried out.
- X. Page-23, 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. In section N2427300 resources under 333 category not shown while in calculation table it is taken in account. 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-31, existing method of mining has not been described properly. The present status of lease alongwith statutory clearances should be furnished.
- II. Page-33, in proposed method of mining development year is mentioned 2020-21 while in tentative excavation year is mentioned 2019-20. The lapsing period of proposal should also described in brief.
- III. 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.
- IV. The sub grade generated during period is proposed within ultimate pit limit therefore proposal should be revised to dump outside the UPL.
- V. Page-39, 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.
- VI. 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.
- VII. The quantity of Sub-grade to be generated during conceptual period and its utilization and future planning for beneficiation may be given.
- VIII. Conceptual mining plan, cumulative waste generation and top soil generation and protective measures have not been described properly.

### Mine Drainage:

It has been observed that a substantial amount of rain water supposed to be passed from the lease area. Hence, 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. The existing dumps should be furnished below alongwith analysis report.

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

- II. 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.
- III. The proposal of dumping may be given in tabulate format as shown below. The year wise build up of dump should be described in details .

year	Waste to be dumped	Dump No	Location of Dumping (Grid)	Proposed area	Proposed dumping RL	No of terrace proposed	Individu al terrace height	Slope of the terrace

- 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-64 &74, area degraded due to fresh mineral reject dump has not been considered separately in FA table. Amount of financial assurance should be calculated as per rule 27(1) of MCDR-2017 and submitted accordingly.
- II. Page-65, monitoring station of air noise and water should be described in text and their locations furnished in tabular form.
- III. Page-68, socio-economics condition of the area should be described with total population, literacy percentage male female ratio etc.
- IV. Updated air, water, noise, ground vibration and soil data with analysis from laboratory done at specified periodicity to be enclosed.
- V. 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.
- VI. 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.
- VII. 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. **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.
- VI. **Geological Plan & Section:** Data related to strike, dip, dip-direction etc. shown clearly. UNFC boundaries of G1, G2.. explored area should be shown clearly. RL of bore holes have not been marked in plan and section. Sections are not matched with bore hole logs.
- VII. **Development plan & Section:** The information of complete lease area should depicted in development plan. 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.
- VIII. **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.
- IX. **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.