



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. RMP/A/43-ORI/BHU/2019-20

Date: 31.01.2020

सेवामे

Shri Shrinibash Sahoo, Managing Partner,
M/s Tarini Minerals, House No-96,
Station Road, At/Po- Barbil,
Dist- Keonjhar, Odisha-758035

विषय: Approval of Review of Mining Plan of Nuagaon Manganese Mine along with Progressive Mine Closure Plan (PMCP), over an area of 7.85 ha in Sundargarh district of Odisha State, submitted by M/s Tarini Minerals under Rule 17 of MCR, 2016.

- संदर्भ: - i) Your letter No. 01/TM/NM/IBM/2020 dated 07.01.2020 received on 13.01.2020.
ii) This office letter of even no. dated 13.01.2020.
iii) This office letter of even no. dated 13.01.2020 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 site inspection carried out on 22.01.2020 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 जीमा)
क्षेत्रीय खान नियंत्रक

Copy for kind information and further necessary action to Shri Pradeept Mohapatra & Shri Susanta Maharana, M/s Tarini Minerals, House No-96, Station Road, At/Po- Barbil, Dist- Keonjhar, Odisha-758035.

(हरकेश मीना)
क्षेत्रीय खान नियंत्रक

Scrutiny comment of Review of Mining Plan including PMCP in respect of Nuagaon Manganese mine, Lease area 7.85 ha of M/s Tarini Minerals in Sundargarh district of Odisha State.

GENERAL:

- I. E-mail, phone & fax no., complete address of lessee and qualified person, location of mines i.e village, tehsil, district etc should be furnished on cover page. The submission of review of mining plan should be under rule 17(2) of MCR 2016.
- II. In introduction chapter brief history of the mines, surface right, present status of lease and reason of lapsing of 5 years proposal with justification etc should be described along with execution of supplementary lease deed if any in light of MMDR (Amendment) Act and 2015 and documentary evidence marked with annexure. Tarini Minerals is registered under partner firm therefore alongwith with partnership deed the resolution of partner regarding authorized signatory should be furnished and same to be enclosed in annexure.
- III. Page-5, para-1(a), office address has not been furnished with e mail, phone and fax number. Partnership deed as enclosed in not legible and nomination of signing authority is enclosed.
- IV. Page- 8 & 9, in review of earlier approved proposal the reason of deviation should be properly justified in remarks column and justification of lapsing of 5 year proposal should also be furnished.
- V. Page-7, the co-ordinates of boundary pillar should also be furnished in UTM along with latitude and longitude.
- VI. 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.
- VII. The annexure submitted are not legible and properly indexed. 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, disposition of various litho units indicating structural features of lease area are not correctly furnished. The shape and size of ore body should be furnished. The strike, dip, dip-direction should be shown in bold color in geological plan.
- II. The details of total lease area explored under UNFC have to be furnished in the tabular format provided below.

Total Lease Area: Ha						
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)	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:.....						

- III. Page-17, the lease area explored under different category of UNFC norms as shown in table is incorrect and should be recalculated as per the provision of Minerals (Evidence of Mineral Contents) Rules, 2015. The justification for area considered for G1/G2/G3 etc. have not been furnished as per the provision of MEMC Rules'2015.
- IV. In page 18, Para (iii), the details of the sample analysis indicating type of sample should be given in tabulated format and nos. of sample analysis from NABL/Govt. lab out of total sample should be furnished alongwith annexure.
- V. Page-19, Para-(i), the complete lease area should be proposed to cover under exploration under G1 level upto end of mineralization as per provision of rule 12(4) of MCDR2017. The proposed bore holes should be maintained spacing of 50mX50m interval following the proper grid so that complete lease area covered under G1 level of exploration. The year wise proposal for drilling to be shown in different contrasting color in both Geological Plan and Geological sections.
- VI. The proposal for drilling under future exploration program should be furnished in tabular format indicating year of drilling, proposed borehole numbers, number of boreholes, section line, proposed borehole coordinates, proposed closing depth, type of drilling (Core Drilling), inclination etc. 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.
- VII. In the Geological plan, the boundary of UPL has not been marked. In the Geological plan and sections, the UPL should be drawn properly considering the mineralization over the lease area. The UNFC boundary/code should be properly shown.
- VIII. Page-19, Para-j, the method of reserve estimation may be further elaborated and justified w.r.t recovery factor, Bulk density, Length of influence, nos. cross sections and bore holes considered in reserve and resource estimation. Necessary supporting documents to be furnished with respect to bulk density and recovery factor considered for manganese ore.
- IX. Page19-24, Para-k, the reserve and resources has not been furnished as per Minerals Evidence of Mineral Contents Rules 2015. The mineralization shown in geological! plan and section is regular in nature while as per field observation as discussed during field it is pocket deposit. Therefore all the plan and sections should be revised as per exposure of the ore deposit and estimation of reserve and resources should be carried out accordingly. The justification of UNFC should be furnished.
- X. Page-24, in the text feasibility report has been mentioned while in annexure pre- feasibility report has been enclosed. It should be re-checked and rectified.
- XI. 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.

MINING:

- I. Page-26, existing method of mining should be described in brief with date and reason of discontinuity of mining operation.
- II. Justification for area proposed for mining should be furnished with prevailed on mineralization in the lease area.
- III. Page-27, Para-3.0, proposed method of mining should be furnished in light of development plan i.e production capacity, nos. of pits proposed for production, site selection of waste/ mineral reject dump.
- IV. The ROM production has been proposed from 2019-20 where therefore it is to be clearly indicated that the proposed ROM production should be prospective after getting all statutory clearances.
- V. 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)	

- VI. Page-32, in insitu tentative excavation, the recover factor and cut-off grade should be furnished and it should be supported with documentary evidence.
- VII. The insitu tentative excavation calculation of proposed ROM production as furnished should be revised after correcting the development plan and section prevailed on mineralization as suggested in geology chapter.
- VIII. In conceptual mining plan, cumulative waste generation, backfilling and protective measures should be furnished properly. Restoration of safety zone, dead dump and slope of the dump may describe.

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

- I. It should be ensured that the area proposed dumping should be proved non mineralized. Therefore exploration proposal in 2019-20 should be proposed to prove the area non mineralized area before the dumping of waste/mineral reject
- II. The proposed location of mineral reject should be furnished with terraces to minimize the land degradation. 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.
- III. 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

- IV. The extent/location of the proposed dumps to be given also mentioned whether within UPL or not. Also give the details of the existing dumps (top soil, waste dump, mineral reject dump) within the lease area in tabulated form comprising dump number, designed capacity, present quantity, remaining quantity, bottom RL and top RL.
- 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 the SG dumps to be given.
- VI. 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	Individual terrace height	Slope of the terrace

PROGRESSIVE MINE CLOSURE PLAN:

- I. Page-55, Para-8.1, the baseline information should be described properly incorporating buffer zone of the lease area.
- II. Page-65, the information on protective measures for reclamation and rehabilitation works year wise as furnished in para-8.3.6 the plantation proposed in safety zone have not been furnished.
- III. Monitoring station of air, noise and water should be described in text and their locations furnished in tabular form.
- 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, 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.

PLATES:

- I. All the plan and sections should be signed with date by certified surveyor, qualified person, mines manager and mining geologist. The plans and sections submitted bear the certificate that --the plans and sections are prepared based on the lease map authenticated by the state government.
- 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. Approach road to the ML to be shown. Lease boundary line should be marked with red color followed by long and dot line.
- IV. Existing and proposed bench RL to be mentioned in the all plans and sections. The UPL should be shown in red color in all relevant plans and sections. Magnetic Meridian and date of observation of should be given on all relevant plans.

Surface Plan: Surface right, pillar co-ordinates and existing bore holes should be shown in 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 is to be shown by contours and spot RL in surface plan. All the existing mineral reject dumps, mineral stacks, OB dumps should clearly notified with nos. and their RL.

Geological Plan & Section: UPL is not marked in geological plan prevailed on mineralization. Geological Plan and Geological section should be followed same color codes. The Proposed bore holes with their depth should be marked in sections. Data related to strike, dip, dip-direction etc. shown on the geological plan in bold color. In the Geological Plan UNFC boundaries of G1, G2 .. area has not been furnished as per MEMC Rules 2015. Mineralization and litho units not furnished correctly in geological plan and section. In sections UNFC codes should be re-checked and corrected accordingly. Some of the indexes are missing, it should be re-checked.

Development plan & Section: Existing and proposed RL of benches/dumps should be mention clearly in development plan and section. Retaining wall and garland should be marked clearly yearwise with colour codes. UPL should be shown in red colour.

Environment plan: The Environment Plan as prepared should be satisfy the provision as laid down under 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 area also to be shown on the plan. Contours should be shown in core zone.

Conceptual plan: Conceptual plan and section 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.