



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 MPM/MAN/30-ORI/BHU/2017-18

दिनांक / Date: 23.03.2018

To

Shri Bajarang Lal Gupta,
7-5-7/4, Sri Randha Raman Kunj,
Panduranga Puram (Near Panduranga Swamy Temple),
Visakhpatnam (Urban), A U Engg. College,
Visakhpatnam-530003, Andhra Pradesh.

Sub: Approval of Modification of Mining Plan of Paikadakulguda Semi-Precious Stone (Cat's Eye) Mine over an area of 40.602 ha in Rayagada district of Odisha of Shri Bajarang Lal Gupta submitted under Rule-17 (3) of Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016.

Ref: - i) Your letter no. nil dated 06.03.2018 received on 12.03.2018.
ii) This office letter of even no. dated 12.03.2018.
iii) This office letter of even no. dated 12.03.2018 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 Modification of Mining Plan along with Progressive Mine Closure Plan has been examined in this office based on site inspection carried out on 17.03.2018 by Shri Sudip Ranjan Mazumdar, Senior Mining Geologist. The deficiencies observed are enclosed herewith as Annexure-I.

You are advised to carry out the necessary modifications in the draft Modification 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 Modification of Mining Plan document.

The para-wise clarifications and the manner in which the deficiencies are attended should invariably be given while forwarding the modified copies of the Modification of Mining Plan. It may be noted that no extension of time in this regard will be entertained and the Modification 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

Scrutiny comments on examination of Modification of Mining Plan of Paikadakulguda Semiprecious stone (Cat's Eye) Mine including PMCP over an area of 40.602 Ha in Rayagada District of Odisha State of Sri Bajarang Lal Gupta, Mining Lessee

INTRODUCTION:

- I. On cover page along with Lessee's address, lessee's e-mail, phone number, mobile number, PIN code and fax no. should also be furnished. The date of expiry of lease should be mentioned in the cover page.
- II. The mobile number of the Qualified Person also to be mentioned in the cover page.
- III. From the cover page, the text content "feasibility study report (under rule 12 of MEMC Rule, 2015)" to be deleted as prefeasibility report has been submitted.
- IV. All the annexure and text to be properly indexed/ numbered/ paged and signed by qualified person. All the certificates/annexures should bear dated signature.
- V. Sequence of para and its numbering as per IBM Manual appraisal MP 2014 has not been covered in text. All the headings as mentioned in the IBM Manual appraisal MP 2014 should be furnished in all chapters in the text.
- VI. It was observed during inspection that the mining lease boundary has not been demarcated by erecting pillars so the CCOM circular no.2/2010 and its addendum regarding geo-referenced mining lease map and Mining Lease boundary pillars should be implemented.
- VII. Summary of proposal at a glance may be furnished before "Introduction" chapter covering Exploration, Excavation, Area Utilization, Stacking, Environmental Protective Measures etc."
- VIII. The consent letter should be furnished in lessee's letter head.
- IX. Authorization in favor of Shri S.C.Nayak, Qualified Person by lessee in his letter head for preparation of Modification of Mining Plan of Paikadakulguda Semiprecious stone (Cat's Eye) Mine including PMCP over an area of 40.602 Ha in Rayagada District of Odisha State should be submitted.
- X. In Page No 2, the reference of Geological Study that forms the basis of estimation of 338 Kg of mineable chrysoberyl under G2 level of exploration should be furnished.
- XI. In page 1, it is mentioned that executed mining lease deed has been registered on 11.01.2017 over an area of 40.602 ha referring plate 1. However, in plate 1, the granted mining lease area is over 40.946 Ha. Again, in the Grant of Mining lease the area mentioned is 41.485 Ha and also in Mining lease deed it has been mentioned under "Background" that grant and execution is over 41.485 ha and not over 40.602 Ha. In mining lease deed, Grant of lease over an area of 40.946 ha is mentioned. The lease authenticated by state government also states an ML area granted over 40.946 Ha area. The relevant document such as mining lease deed over reduced area over 40.602 ha and precise area lease map over 40.602 ha for which modification has been submitted should be submitted along with document and necessary correction to be made.

- XII. Status of all statutory clearances obtained or to be obtained as mentioned in page 2 should be given in the chronological order in tabular format in 'Introduction' Chapter along with documentary evidence, if any.

Chapter 1: General

- I. In page 4, para 1.1, the Email id, PIN Code, Phone number, Mobile number and Fax number should also be mentioned in the table provided in page 4 of the text. The lessee to submit Rule 45 registration number.
- II. In page 4, para 1.4, the reference of the mining lease grant letter number should be mentioned. Need to do necessary correction and modification.
- III. In page 5, Para 1.5, the mobile number of Qualified person should also be mentioned.

Chapter 2: Location and Accessibility

- I. In page no 6, the Telephone-----fax-----email id-----Mobile No. ----- and PIN code should be furnished in the table provided mentioning the name and address of the lessee.
- II. In page no. 7, under para 2.2, the details of lease area should have following information in tabulated format specified below:

Forest		Non-forest	
Forest (specify)	Area (ha)	(i) waste land, (ii) grazing land, (iii) Agriculture land, (iv) others(specify)	Area (ha)

Chapter 3: Details of approved mining plan/scheme of mining

In page 11, para 3.6, the reference of annexure 5, the extent of area over 40.602 Ha is not mentioned in the annexure no.05. The relevant annexure to be enclosed showing the extent of ML area over 40.602 Ha justifying the modification of mining plan.

Chapter 4: Geology and Exploration

- I. In page 13, para 4.2, the reference of regional geology stated should be mentioned.
- II. In page 14, para 4.3, the local stratigraphic succession shown should have a direction showing older to younger formation.
- III. In page 15, under para 4.4, the name and address of the exploration/prospecting agency if any, to be clearly mentioned.
- IV. The UNFC boundaries as per the present status of exploration under MEMC rules 2015 should be demarcated over the Geological Plan and Sections.

- V. The extent of the pit as observed in field is less than shown in plan. Accordingly, necessary corrections to be made.
- VI. The lateral extension considered for G2 and G3 limit of UNFC may be revised based on field evidence based on exposure of pegmatite, the host rock intruded into khondalite and in soil cover. The Reserves and resources should be recalculated as per redefined limit of G2 and G3 boundary. The Geological plan and sections and other relevant plans and sections, text and relevant tables should be changed accordingly.
- VII. There are numerous pits that have been dug in the past illegally and presently either partially or completely filled up with soil along with floats of pegmatite at places, that host cat's eye and khondalite are to be shown. Also, few exposure of pegmatite bands as seen in side wall of pits. The Geological plan and sections to be updated accordingly.
- VIII. With reference to Rule 12 (3) of MCDR, 2017, the future exploration program need to be revised so as to carry out detailed exploration (G1 level) over the entire potentially mineralized area under the mining lease, within a period of five years from the date of opening of the mine after execution of such mining lease. Therefore, the future exploration program to be suitably modified and proposal for exploratory Core Bore-holes to test continuity of host rock at 50m grid interval tracing the continuity of host rock should be proposed. Accordingly, the Geological plan and sections should be revised and updated with proposed boreholes. All such proposal of exploratory workings may be distinctly marked on the geological plan year wise in different colours.
- IX. The depth of the proposed boreholes should be around 50m or adequate enough to justify the lateral and depth extension of the host rock along and across the section lines considering the geology and nature of ore deposit.
- X. The priority of drilling may be revised considering the development program of first five years; area earmarked for overburden dumping and area identified for Cat's eye sorting and picking yard should be proved for non-mineralization before commencement of overburden dumping.
- XI. The proposal for revised future exploration program should be furnished in tabular format indicating number of boreholes, proposed borehole number, section line, borehole coordinates, proposed depth, type of drilling (Core Drilling), inclination, year of drilling etc.
- XII. In the Geological sections, the UPL and benches should be drawn properly. The UNFC boundary/code may be shown properly.
- XIII. In page no. 19, para 4.11, the method of reserve estimation may be further elaborated and justified with supporting documents w.r.t (1) recovery factor (2) Length of influence considered in reserve and resource estimation.
- XIV. In page 24, in the table under para 4.12.4, the term "mineable" from the inferred category resource should be deleted and accordingly relevant corrections shall be made in other portion of text and in calculations.

Chapter 5: MINING

- I. Refer page no. 27 to 28 the tables showing the development proposals. (a) The tables showing the year wise development proposal should describe the Road

design – (1) average width of the road after leaving the berms (2) Ramp gradient (3) Berm Height.

(b) The Quarry development shown in the year wise development proposal should describe the (1) Location of development in UTM coordinate at the end of year (2) Sections considered for development (3) Benches considered for development with RL (4) number of the benches to be developed in pit (5) Direction of development of benches in Pit (6) Dimension of the Pit at the end of the year (Length x Breadth x Depth) to be furnished.

- II. In page no. 28, para 5.1.2, the parameters considered for cat's eye production schedule such as length of influence and Recovery of Cat's eye to be justified and supported with relevant report.
- III. The ROM production proposal submitted in the present submission of modified mining plan should not be less than the production agreement as mentioned in the "Mine development and Production scheduling agreement signed between the lessee and State Government". Else, the present ROM production should be modified in the modified mining plan to meet the ROM production as per agreement. Accordingly, the relevant portion of text, calculation and plans and sections shall be modified.
- IV. In page 29, the format for insitu excavation to be followed as shown below: The excavation details from Pit to be provided. The ROM Production of Cat's eye to be shown in cum and in kg.

Year	Pit no.	Total tentative Excavation (Cum)	Top Soil (Cu m)	OB/SB/IB (Cum)	ROM (Cu m)		Mineral reject	ROM/Waste Ratio
					Ore (Cum)*	Mineral reject (Cum)		
1	2	3	4	5	6	7	8	9
I								
II								
III								
IV								
V								

- V. In page 31, para 5.1.4, apart from the mentioned points in the text, the parameters pertaining to mining method clearly indicating the category of mine, Bench parameters, Drilling, Blasting, Loading and Transportation should also be covered. Accordingly, the para 5.1.4 to be modified incorporating the above stated parameters.
- VI. In page 31, para 5.1.6, the table showing layout of mine workings should also include the following parameters (1) Depth (2) Total No of Benches (3). Bench Height and (4) Bench Width. Accordingly, the table in para 5.1.6 to be modified incorporating the above stated parameters.
- VII. In page 32, 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					

VIII. In page 32, the life of mine has to be recalculated providing all the details. Conceptual Mine planning up to the end of lease period taking into consideration the present available reserves and resources. The following format may be used for showing the detail calculation for life of mine

Total available Reserve and Resource	
Production during five years	
Balance reserve and resource for conceptual period	
Average production per annum	
No of years production will be carried out during conceptual period	
Life of Mine	

- IX. In page 36, the top soil generation should be described properly in tabular format and in text.
- X. Quantum of production and development may be described year wise with no. of benches, mRL, depth of excavation, direction of advancement, location and cross-section area considered.
- XI. Ultimate pit limit should be depicted on all relevant plans & sections.
- XII. Justification for site selection for first five year mining may be furnished.
- XIII. Handling of ROM produced from the mine to be dealt properly till its end use.
- XIV. Stripping ratio to be rechecked.

Chapter 6: Mine Drainage

I. In page 37, para 6.2, the information pertaining to maximum depth of workings may be provided in the tabular format below.

Name of the Quarry	Existing depth in mRL		At the end of plan period (mRL)		At the end of conceptual period (mRL)	
	Top	Bottom	Top	Bottom	Top	Bottom
Pit No						

II. Considering the topography of the mining lease area comprising of valleys, hillocks etc the rainwater management plan, mine water management plan i.e., drainage plan for arresting solid wash off is not incorporated with engineering details. Therefore adequate rainwater and mine water management plan should be prepared incorporating engineering details & material to be used for erection/construction In page 39, the details of arrangement of solid wash off to be provided with their dimension.

Chapter 7: STACKING OF MINERAL REJECT/SUB GRADE AND DISPOSAL OF WASTE:

- I. In page 39, para 7.1, it has been mentioned that there will be no generation of top soil. But it is evident during inspection that there will be top soil generation. Hence, proposal for top soil generation, its usage etc should be mentioned in the text and relevant tables and plans.
- II. In page 39, para 7.2, the area proposed for overburden dumping shall be proved for its non-mineralization through exploration. Accordingly, the priority of drilling has to be proposed so that the area is proved to be barren before overburden dumping.
- I. In page 40, para 7.3, the proposal for dumping may be given in tabulated format as shown below: Further, Build-up of dumps from year to year to be mentioned in text w.r.t. designed capacity of dumps, bottom and top mRL of individual terrace, dump slope, individual terrace height and slope with description of method & manner of disposal of waste should be mentioned.

Year	Total waste to be dumped (in m3)	Location of disposal	Average height of the dump (in m)	Area to be dumped (in m2)	RL up to which dumping to be done	No of terrace	Terrace height	Slope of the terrace

- III. In page 40, the table showing the year wise construction of retaining wall, garland drain and settling tank should have specific proposal up to 5th year. Details of year wise proposal for construction of retaining wall, garland drain, settling tank etc. to be given with their location.
- IV. Before the proposed area is put in use for waste disposal, the area should be proved for non-mineralization. Also the site preparation works such as construction of retaining wall, check dam, plantation around proposed dump must be carried out and be completed well in advance. The area identified for waste disposal should be demarcated in relevant plans and sections.

Chapter 8: USE OF MINERAL AND MINERAL REJECT

- I. In page 41, para 8.3, the special condition no. 05 for gemstone as mentioned in Grant of Mining lease should be mentioned therein.

Chapter 11: PROGRESSIVE MINE CLOSURE PLAN

- I. Environment baseline information may be elaborated.
- II. The proposal to include monitoring of air quality, water quality noise levels etc.
- III. Year wise land degradation under different heads may be furnished.

ANNEXURES

- a. The copy of Mine development and Production scheduling agreement signed between the lessee and State Government to be enclosed.
- b. Photo Identity Card of Lessee with permanent address proof duly signed by lessee.
- c. Few photographs showing Land use of the lease area, environmental status of the area.

PLATES (General):

- i) Show the true north or the magnetic meridian and the date of the letter;
- ii) Show a scale of the plan at least twenty-five centimeters long and suitably subdivided;
- iii) Development Plan and Sections should be prepared in a scale of 1:500 showing the RL of benches clearly as applicable.
- iv) The conventions provided under the Metalliferous Mines Regulations, 1961, shall be used in preparing all plans and sections
- v) All plans and sections should comply with the provisions of Rule 32 of MCDR 2017.
- vi) The plans and sections submitted should bear the certificate that -the plans and sections are prepared based on the lease map authenticated by the state government.
- vii) All plans and sections should be signed with date by Qualified Person.
- viii) The proposed bench mRL to be mentioned in the all plans and sections.
- ix) The UPL should be shown in red colour in all relevant plans and sections.
- x) Date of survey should be given on plan and sections and the same should be signed with date.
- xi) Grid Lines to be shown in all sections - Geological Sections, Development Sections, Conceptual sections, Dump sections etc.
- xii) Existing dump surrounding the pit should be shown in Surface Plan and other relevant plans and sections.
- xiii) The extent of the existing pit may be revised as observed and discussed in field. Accordingly, necessary modifications shall be done in all plans and sections.

Key Plan:

- I. Predominant wind direction may be shown with Wind rose diagram in key plan.
- II. Approach road to lease area should be shown in key plan.

Surface Plan:

- i) Information of boundary pillars in UTM coordinates as well as in Latitude and longitude of all ML boundary points should be depicted in tabulated form on surface plan.
- ii) Few pillars may be correlated with some permanent ground features giving distance and bearing/direction.
- iii) Top and bottom RL of Pits shown in Surface Plan should be mentioned.
- iv) There are numerous pits that have been dug in the past illegally and presently either partially or completely filled up with soil and floats of pegmatite, that host cat's eye and khondalite are to be shown. Also, few exposure of pegmatite bands as seen in side wall of pits. The surface plan needs to be updated accordingly.

Geological Plan & Section:

- i) There are numerous pits that have been dug in the past illegally and presently either partially or completely filled up with soil and floats of pegmatite, that host cat's eye and khondalite are to be shown. Also, few exposure of pegmatite bands as seen in side wall of pits. The Geological plan and sections to be updated accordingly.
- ii) Geological Plan should be updated with revised boreholes proposal as mentioned under future exploration program.
- iii) The redefined UPL and UNFC boundaries along with UNFC code to be shown in Geological Plan and sections.
- iv) In the Geological Plan UNFC boundaries, UNFC codes, explored area, unexplored area, forest area, non-forest area pits and year wise proposed boreholes and trenches in relevant colors should be shown.
- v) The proposed boreholes to be plotted in dotted lines in Geological sections along with Collar Id, RL and proposed closing depth at the bottom of the borehole.
- vi) The year wise proposal for drilling to be shown in different contrasting color in both plans (Geological Plan, Surface plan etc) and Geological sections. The year wise color of the boreholes proposed in Geological plan should match with the plotted proposed boreholes in Geological sections.
- vii) The index of Geological features should be same in both Geological Plan and Geological sections.
- viii) In Geological Plan, cross section lines and longitudinal section line to be shown.
- ix) A longitudinal section of the lease area should be shown.
- x) The UTM and latitude /longitude of ML boundary pillars should be mentioned in Geological Plan.

Development plan & Section:

- i) Composite Development plan and sections should be prepared in scale of 1:500.
- ii) The lithology of the area should be clearly shown in composite development plan and sections.
- iii) Each year development proposal for different blocks should be shown separately in different color. The UPL may be redefined and benching pattern to be made in all development plans and sections. The UPL should be shown in Red colour which should contrast to the year wise development proposal color shown in development plan and sections.
- iv) The RL of the benches should be clearly shown in composite development plan and sections.
- v) Separate dump plan and sections with RL should be submitted.
- vi) The present location of Cat's eye sorting and picking yard is between the two pits Hence, in the interest of mineral conservation and safe and scientific

development of mine the location of the Cat's eye sorting and picking yard should be shifted and its new location should be justified.

Environment plan:

- i) The Environment Plan as prepared should be satisfy the provision as laid down rule 32(5) (b) of MCDR2017.
- ii) The particulars with regard to items (ii), (iv) and (v) of Rule 32(5) (b) shall be applicable only up to sixty meters beyond the boundary of lease area. The same should be demarcated in Environment plan.
- iii) The proposed environment protective measures to be shown in environment plan. The drainage pattern of the lease area also to be shown on the plan.
- iv) Air, water and noise monitoring stations to be shown in the plan.

Reclamation Plan:

- i. Reclamation plan has not been prepared as per guidelines. The necessary modification to be made as discussed in field during inspection.
- ii. Year wise progress of dumping, afforestation using different colour codes for easy understanding may be shown.

Conceptual plan:

- i. Conceptual plan may be prepared considering the direct evidence of host rock. One longitudinal section may also be submitted. Direction of run off from the area based on surface contours may be shown on the plan and the sections.
-