

भारत सरकार
GOVERNMENT OF INDIA
खान मंत्रालय
MINISTRY OF MINES
भारतीय खान ब्यूरो
INDIAN BUREAU OF MINES



**IBM Manual for Appraisal of
Final Mine Closure Plan**
(Exclusively for leases wherein mineral exists and
closure is as per the provisions of Section 8A of
MMDR Amendment Act'2015)

**Nagpur
July 2018**

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A. Regulatory background

Sub-section (1) of Section 18 of the Mines and Minerals (Development and Regulation) Act 1957 empowers Central Government to make such rules as may be necessary for the conservation and systematic development of minerals in India and for the protection of environment by preventing or controlling any pollution which may be caused by prospecting or mining operations. Apart from other matters such Rules can provide guidelines for the disposal or discharge of waste slime or tailings arising from any mining or metallurgical operations carried out in a mine; and the manner in which and the authority by which directions may be issued to the owners of any mine to do or refrain from doing certain things in the interest of conservation or systematic development of minerals or for the protection of environment by preventing or controlling pollution which may be caused by prospecting or mining operations.

Mines and Minerals (Development and Regulation) Amendment Act'2015

1. As per Section 8A (3), All mining leases granted before the commencement of the MMDR Amendment Act'2015 shall be deemed to have been granted for a period of fifty years.
2. As per Section 8A (5), the period of lease granted before the date of commencement of the MMDR Amendment Act'2015 i.e. 12th January'2015, where the mineral is used for captive purpose, shall be extended and be deemed to have been extended upto a period ending on 31st March,2030 with effect from the date of expiry of the period of renewal last made or till the completion of renewal period, if any, or a period of fifty years from the date of grant of such lease, whichever is later subject to the condition that all the terms and conditions of the lease have been complied with.
3. As per Section 8A (6), the period of lease granted before the date of commencement of the MMDR Amendment Act'2015 i.e. 12th January'2015, where the mineral is used for other than captive purpose, shall be extended and be deemed to have been extended upto a period ending on 31st March,2020 with effect from the date of expiry of the period of renewal last made or till the completion of renewal period, if any, or a period of fifty years from the date of grant of such lease, whichever is later subject to the condition that all the terms and conditions of the lease have been complied with.

Mineral Conservation and Development Rules'2017

The following provisions of MCDR 2017 as enumerated below are relevant to the "Final Mine Closure Plan":-

1. As per Rule 21(4), the holder of a ML shall not abandon a mine unless a FMCP duly approved by the competent authority, is implemented, and for this purpose, the lessee shall be required to obtain a certificate from the

authorized officer, as the case may be, to the effect that protective, reclamation and rehabilitation work in accordance with the FMCP or with such modifications as approved by the competent authority have been carried out before abandonment of mine.

2. Rule 22(3) states that 'every holder of a mining lease shall take steps to prepare mine closure plans as per the guidelines and format given by the Indian Bureau of Mines from time to time'.
3. Rule 24 of MCDR provides that the mining lease holder is required to submit a final mine closure plan to the competent authority for approval two years prior to the proposed closure of the mine. Further, the competent authority is required to convey his approval or refusal of the final mine closure plan within ninety days of the date of its receipt to the holder of the mining lease.
4. Rule 25 of MCDR 2017 allows for modifications in the mine closure plan. In this case the lease holder desirous of seeking modifications in the approved mine closure plan, is required to submit to the competent authority for approval setting forth the intended modifications and explaining the reasons for such modifications. The competent authority may approve the modifications or approve with such alterations as he may consider expedient.
5. As enumerated in Rule 26 of MCDR 2017 it is the responsibility of holder of a mining lease to ensure that the protective measures including reclamation and rehabilitation works have been carried out in accordance with the approved mine closure plan or with such modifications as approved by the competent authority. Further the holder of a mining lease is required to submit to the competent authority a yearly report as per the format specified by the Indian Bureau of Mines, before 1st day of July every year setting forth the extent of protective and rehabilitative works carried out as envisaged in the approved mine closure plan, and if there is any deviation, reasons thereof.

Mineral Conservation and Development (Amendment) Rules'2018

In the Mineral Conservation and Development Rules, 2017, in rule 12, after sub-rule (4), the following sub-rule shall be inserted, namely:–

“(4A) In case of mining leases covered under sub-section (6) of section 8A of the Act where the date of expiry of the period of such lease is on 31st March, 2020, the holders of such mining lease shall carry out General Exploration (G2) over the entire mineralised area under the mining lease before the 1st day of April, 2019 and for this purpose:–

(a) submit to State Government and the Indian Bureau of Mines, within forty five days of issue of this notification, a modified mining plan in accordance with the provisions of the Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016 for completion of General Exploration (G2) over the entire mineralised area under the mining lease as required under clause (a) of rule 5 of the Minerals

(Evidence of Mineral Contents) Rules, 2015, in such manner that the plan for exploration is completed before 1st April, 2019, and such plan shall be approved by the Indian Bureau of Mines within thirty days of its submission, with or without any modification;

(b) prepare and submit to the State Government and the Indian Bureau of Mines, a Geological Study Report as required under clause (b) of rule 5 of the Minerals (Evidence of Mineral Contents) Rules, 2015, within one month after completion of exploration work:

Provided that the depth of exploration to be proposed in the modified mining plan for open cast mining shall be up to 300 meters or up to discontinuance of ore body, whichever is earlier, and in case of underground mines, the depth of exploration shall be decided by the Indian Bureau of Mines on case to case basis at the time of approval of such plan, depending upon the geological set up of the area:

Provided further that the State government shall conduct periodical technical audit of approved modified plan either by itself or through an agency nominated by it and in case lease holder fails to perform his duties as so specified, the State Government may, after giving the lease holder an opportunity of being heard, take such action for enforcing compliance, as it deems fit”.

Minerals (Other than Atomic and Hydro-Carbon Energy Minerals) Concession Rule 2016 (In short MCR 2016):

1. As per Rule 21(2) (a), lessee is required to submit documents to evidence of implementation of the approved FMCP for surrender of mining lease.

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B. Guidelines for Final Mine Closure Plan preparation

FMCP in respect of leases expiring in terms of Section 8A of MMDR Amendment Act'2015 shall be submitted two years prior to the lease expiry. All the letters/ formats for approval/ rejection/ bank guarantee etc. and relevant procedures shall be common with that given for the Mining Plan (Refer IBM Manual for Appraisal of Mining Plan). The proposals in the FMCP shall be as per the guidelines enumerated below:-

1. Introduction:

The name of the lease area/mine, lessee, the location and extent of lease area, the type of land within the lease area (forest or non-forest) etc. introductory details shall be provided.

1.1 Statutory obligations:

The legal obligations, if any, which the lessee is bound to implement like special conditions imposed or any directives issued or any statutory or prohibitory order passed by any authority or court of law; describing the nature of conditions, prohibitions and compliance position thereof, shall be indicated here. Any legal issues pending in connection with the lease or any PIL/ Court Case etc. shall be mentioned under the statutory obligations.

(Note:-the copies of relevant documents may be attached as Annexure)

1.2 Closure plan preparation:

The FMCP shall be prepared by a person qualified in terms of Rule 15 of MCR'2016.

1.3 Lease Area Description:

Description of the lease area alongwith the ownership of land and land schedule etc. to be given.

2.0 Geology:

Briefly describe the topography and general geology indicating rock types available, the Chemical constituents of the rocks / minerals and mineral rejects available in the lease area including toxic elements, if any.

2.1 Reserves/Resources:

Updated reserves/resources for in-situ as well as mineralized dumps shall be reported. The area having mineralization shall be secured for any future considerations (no backfilling/dumping of waste should be done on mineralized area). Alongwith in-situ orebody, mineralized dump, mineral rejects (grade or size rejects) stack as available at the mine site, shall also be secured. An account of all mineralized dumps/mineral stacks shall be furnished indicating its quantity, grade, size classification/distribution and shall be shown on all relevant plans mentioning its dimensions (length, breadth and height or Area and height) with appropriate number of sections.

Proposed Exploration in the leases expiring on 31st March'2020 shall be governed by Rule 12(4A) of Mineral Conservation and Development (Amended) Rules'2018.

Exploration in the leases expiring in terms of Section 8A (3) & (5) of MMDR Amendment Act'2015 shall be governed by Rule 12(4) of Mineral Conservation and Development Rules'2017.

For the proposed exploration, alongwith Form 'I' in terms of Rule 47 of MCDR'2017 and Form 'J' in terms of Rule 48 of MCDR'2017, an updated Geological plan of the lease area upon completion of the exploration shall be submitted demarcating the area under different categorization as per UNFC (G1/G2/G3/G4/Non-Mineralized).

3.0 Mining:

- May be given as per the approved Mining Plan document (SOM/ MP/ RMP or MMP) for two years closure period-

4.0 Mineral Beneficiation:

- May be given as per the approved Mining Plan document (SOM/ MP/ RMP or MMP) for two years closure period -

Details of characterization of solid waste and liquid waste shall be furnished alongwith mitigative measures to avoid any environment degradation.

5.0 Closure Plan:

5.1 Baseline Information as given in the Mining Plan

The information given in the approved Mining Plan document (SOM/ Review or Modification) should be furnished.

5.2 Mined-Out Land:

Describe the proposals to be implemented for reclamation and rehabilitation of mined-out land only for those excavations, which have been proved through exploration to have no underlying deposits (as per the exploration results as referred under item 2.1).

5.3 Water Quality Management:

Describe in detail the existing surface and ground water bodies available in the lease areas in terms of IS: 10500 or IS: 2490 (as the case may be) and the measures to be taken for protection of the same, for protection of contamination of ground water from leaching etc. Quantity and quality of runoff mine water shall be indicated and corrective measures proposed to meet the water quality conforming the permissible limits shall also be described. Water balance chart and Report of hydrological study carried out in the area shall be submitted. If there is potential of Acid Mine Drainage the treatment method shall be given to neutralize the acidity of water. Make of water in the lease area based on the average rainfall for last 5 years and catchment area and pumping and other arrangements for dewatering (alongwith annual cost) shall be informed.

5.4 Air Quality Management:

Describe the existing air quality status. The mitigative measures to be taken for prevention of pollution of air from airborne dust particles shall be described.

5.5 Waste Management:

Describe the type, quality and quantity of Waste/overburden dumps available and their disposal practice. If no backfilling is proposed, the manner in which the waste dumps will be stabilized should be described. The protective measures to be taken for prevention of siltation, erosion

and dust generation from these waste materials should also be described. If toxic and hazardous elements are present in the waste material, the protective measures to be taken for prevention of their dispersal in the air environment, leaching in the surface and ground water etc., should be described.

5.6 Top Soil Management:

The stacking of top soil available at the site and its utilization shall be described. During the closure period, top soil may be utilized for plantation for stabilization of the dumps or for any other constructive work.

5.7 Management of Mineral Rejects stacks available in the lease area:

Describe the type, quality and quantity of stacks of mineral rejects (grade and size rejects) available and their disposal practice. If no utilization of mineral rejects is proposed, the manner in which the material will be stacked may be described alongwith protective measures for such stacks.

5.8 Tailing Dam Management:

The steps to be taken for protection and stability of tailing dam, confinement of tailing material and its utilization, arrangement for surplus water overflow alongwith design details, to arrest seepage, structural stability studies, ground water contaminant, if any, shall be given alongwith periodic de-silting proposals. Complete chemical analysis of tailing dam discharge water should be furnished alongwith mitigation measures, if any, necessitates.

5.9 Infrastructure:

The existing infrastructural facilities available such as roads, aerial ropeways, conveyer belts etc. and their future utilization should be evaluated. If retained, the measures to be taken for their physical stability and maintenance should be described. If decommissioning proposed, dismantling and disposal of building structures, support facilities and other infrastructure, electrical equipments and infrastructures such as electric cables, transformers etc. should be described.

5.10 Disposal of Mining Machinery:

The decommissioning of mining machineries and their possible post mining utilization, if any, to be described.

5.11 Safety and Security:

Describe the safety measures already implemented and arrangements proposed in the mine closure plan to prevent access to excavations, surface openings for underground workings etc.

5.12 Disaster Management and Risk Assessment:

This shall deal with action plan for high risk incidences like landslides, subsidence, flood, inundation in mines, fire, seismic activities, tailing dam failure etc. and emergency plan proposed for quick evacuation, ameliorative measures to be taken etc. The capability of lessee to meet such eventualities and the assistance to be required from the local authority may also be described.

Risk assessment shall also be done considering substantial delay in grant of lease through auction from the date of expiry of lease period. Events such as dump failure, erosion, collapsing of pit(s), tailing dam seepage/overflow/failure, underground inundation, water logging into pit(s) and its impact on adjacent mines (especially on underground mines regarding seepage etc.) need to be discussed alongwith its mitigative measures.

5.13 Economic Repercussions of closure of mine and manpower retrenchments:

Manpower retrenchment, compensation, if any, socio-economic repercussions and remedial measures consequent to the closure of mines may be described, specifically stating the following:-

5.13.1 Number of local residents employed in the mine, status of the continuation of family occupation and scope of joining the occupation back.

5.13.2 Compensation, if any, given or to be given to the employees connecting with sustenance of himself and their family members.

5.13.3 Satellite occupations connected to the mining industry – number of persons engaged therein – continuance of such business after mine closes.

5.13.4 Continued engagement of employees in the rehabilitated status of mining lease area and any other remnant activities.

6.0 Time Scheduling for closure:

The details of time schedule of all closure operations as discussed in para 5 may be described here. The manpower and other resources required for completion of proposed job may be described.

6.1 Closure Cost:

Cost to be estimated based on the activities required for implementing the protective and rehabilitation measures.

Maintenance and protective works as envisaged during post closure period shall also be mentioned alongwith annual cost estimates towards pumping duty, ventilation, maintenance of dumps, watch & ward etc.

7.0 Financial Assurance:

Details of Financial Assurance submitted under Rule 27 of MCDR'2017 as given in the last approved/valid Mining Plan document, if any (copy of FA to be enclosed). Otherwise, FA should be submitted alongwith the FMCP document valid upto the lease period.

9.0 Certificate to be issued under Rule 21(4) by the Authorized Officer

Lessee shall submit a report on status of implementation of proposals given in the FMCP on half-yearly basis. The implementation of FMCP proposals shall be checked through periodic inspection preferably at an interval of 6 months from the date of approval of the FMCP and a brief report on implementation status on FMCP proposals should be submitted within 7 days to the RCOM/DCOM (I/C).

The certificate to be issued under Rule 21(4) of MCDR'2017, to the effect that protective, reclamation and rehabilitation work in accordance with the FMCP or Modified Approved FMCP, only after physical

verification of the site through inspection. Inspection for the purpose of issue of certificate shall preferably be a joint inspection by a Mining Engineer and a Geologist alongwith state government officer. The inspection shall be done in the last quarter of lease expiry and the certificate, in the format enclosed as **Annexure-I**, shall be issued within 15 days from the date of expiry of lease.

10.0 Modification in the Approved FMCP:

Reasons for modifications must be explained and the competent authority, after assessing the feasibility/ suitability of such proposals given in the Modifications in the Approved FMCP, may approve the document or approve with such alterations as he may consider expedient.

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C. FORMAT FOR PREPARATION OF FINAL MINE CLOSURE PLAN

Cover Page of the FMCP should give the following Information:-

FINAL MINE CLOSURE PLAN submitted under Rule 24 of Mineral Conservation and Development Rules, 2017*
(*‘in terms of Section 8A (3), (5) or (6) of MMDR Amendment Act’2015’ should also be mentioned)

1. Name of the Mine along with Mining Lease Number/TC Number/Lease Number if any.
2. Name and address of the Mining Lease Holder.
3. Name of the Village, Taluka, District and State where the Mining Lease falls. (In case of multiple villages, indicate the prominent village name(s) with etc.)
4. Area (in ha) of the mining lease with break-up of Forest and Non-forest area).
5. Registration Number allocated by IBM to the lease holder.
6. Category of Mine (A-Fully Mechanised/A-Others/B).
7. Period of Proposals
8. Lease Period and Date of Expiry of the Lease
9. Name of the Qualified Person (QP) and his Qualification who prepared the document.

**Model Certificates / Undertakings/ Consents to be furnished
By Applicant/Lease Holder**

CONSENT LETTER/ UNDERTAKING/ CERTIFICATE

01 The Final Mine Closure Plan/Modified Final Mine Closure Plan in respect of (Name of Mine) Mine over an area of (Area in Ha), in (Village), P.O. (Name of Post office), District (Name of district), (Name of state), bearing Mining Lease No./T.C. No. (if any) submitted under Rule 24/ Rule 25 of MCDR'2017 has been prepared by Qualified Person (QP)(Name of QP).

This is to request the Regional Controller of Mines, Indian Bureau of Mines, -----, to make any further correspondence regarding any correction of the Final Mine Closure Plan/Modified Final Mine Closure Plan with the said qualified person at his address below :-
(Full name of QP and address)

We hereby undertake that all information/ modifications Final Mine Closure Plan/Modified Final Mine Closure Plan by the said qualified person be deemed to have been made with our knowledge and consent and shall be acceptable on us and binding in all respects.

02 It is certified that the **CCOM Circular No-2/2010** has been implemented and a duly authenticated DGPS surveyed cadastral plan is enclosed with the document.

03 It is certified that the Final Mine Closure Plan/Modified Final Mine Closure Plan complies with all statutory rules, Regulations, Orders Made by the Central or State Government, Statutory organization, Court etc. which have been taken into consideration and wherever any specific permission is required the lessee will approach the concerned authorities.

04 "The provisions of **Mines Act, Rules and Regulations** made there under have been observed in the Final Mine Closure Plan/Modified Final Mine Closure Plan over an area of ----- hectares in -----district in -----state belonging to (Name of Mine)**Mine**, and where specific permissions are required, the applicant will approach the appropriate authorities.

05 The information furnished in the Final Mine Closure Plan/Modified Final Mine Closure Plan is true and correct to the best of our knowledge and records.

06 It is to undertake that all the proposals made in Mining Plan approved for the area shall be executed in true spirits. The fact that the lease is going to expire with balance reserves in the lease area shall not cause any distraction in Mineral Conservation, Systematic, Scientific and Sustainable Development of the Mine.

07 It is to undertake that all the measures proposed in this Final Mine Closure Plan /Modified Final Mine Closure Plan will be implemented in a time bound manner as proposed.

Place: **{Name of Owner (in case of Individual)
/Managing Partner (in case of firm)/
Nominated Owner (in case of Company)}**

Date:

**Designation
Name of Company/Organisation**

**Model Certificates to be furnished
By Qualified Person**

CERTIFICATE FROM QP:

The provisions of the Mineral Conservation and Development Rules 2017 made under Section 18 of the Mines & Minerals (Development & Regulation) Amendment Act 2015, have been observed in the preparation of the Final Mine Closure Plan/Modified Final Mine Closure Plan for **(Name of Mine) Mine** over an area of **(area in Ha)**, of M/s **(Name of Owner/ Company/Organization)**, in **(Village name)**, P.O. **(Post office name)**, District **(District name)** of **(State name)** State and whenever specific permissions are required, the applicant will approach the concerned authorities of **Indian Bureau of Mines**. The information furnished in the Final Mine Closure Plan/Modified Final Mine Closure Plan is true and correct to the best of our knowledge.

Place: -----

Date: -----

Signature
(Name of Qualified Person)

Final Mine Closure Plan/Modified Final Mine Closure Plan for (Name of the Mine with ML/TC No) of Shri/Smt./M/s ----- over an area of ----- Ha situated in -----District of -----State.

CHAPTER-I INTRODUCTION AND GENERAL INFORMATION

1.0	PART-A: INTRODUCTION
	A brief introduction of the mine since grant of M.L. <i>In case of the modifications of approved Mine Closure Plan as submitted under Rule 25 of MCDR'2017, reasons for modifications to be enumerated.</i>

1.1	PART-B: GENERAL INFORMATION	
1.1.1	Name of the lessee	
	Address:	
	District:	
	State:	
	Pin Code:	
	Phone& Mobile No:	
	Fax:	
	e-mail:	
1.1.2	IBM Registration Number	
1.1.3	Status of lessee: (Private individual/ Cooperative Association/ Private Company/ Public Company/ PSU etc.)	
1.1.4	Name of partner/ Directors with full address & phone fax & email details	
1.1.5	Mineral(s) which is included in the lease deed	
1.1.6	Mineral(s) which lessee intends to mine	
1.1.7	Name of Qualified Person who prepared FMCP and his qualifications & experience	
	Address-	
	Phone number /mobile number/email	
	Fax Number	

1.2	PART-C: LOCATION AND ACCESSIBILITY OF MINE	
1.2.1	Name of Mine	
1.2.2	Lease No/TC No. & Mine code/ Lease code	
1.2.3	Date of grant of lease and date of Execution of lease	
1.2.4	Period of lease from DD/MM/YYYY to DD/MM/YYYY	

1.2.5	Location of mine Village, Tehsil, Police station - District, PIN				
1.2.6	Postal address for mine				
	Post:-				
	Tehsil/Taluka:-				
	District & State:-				
	Pin Code:-				
	Phone/Mobile:-				
	Fax:-				
	e-mail:-				
1.2.7	Details of lease area -				
		Area (ha)	Type of land	Ownership	Area acquired/ Surface rights/ Consent obtained
	a) Non--Forest area		(Govt. /Pvt.)		
	b) Forest Area				
	Total (a+b)				

1.2.8	Whether the area falls under Coastal Regulation Zone (CRZ)? If yes, details Thereof, alongwith the permission from competent authorities			
1.2.9	Nearest distance from any boundary pillar to the nearby National Park/Wild Life Sanctuary/Protected Area (to be given if located within 10km from the radius of lease area) / Border or Seaboard			
1.2.10	Existence of public road/railway line, if any nearby and approximate distance			
1.2.11	Approach route from District Head Quarters to mine site			
1.2.12	Toposheet No. of Survey of India Map			
1.2.13	Latitude & Longitude of all corner boundary pillars		Latitude (dd mm ss)	Longitude (dd mm ss)
	Pillar no1			
	Pillar no-2			
	Pillar no-3 & so on			

1.3	PART-D: DETAILS OF LAST APPROVED MINING PLAN/ FMCP (in case of Modifications in approved FMCP)			
	Date and reference of last approved MP/SOM/RMP/MMP			
Sl. No.	Type of document & rule under which prepared	Approval letter No. & date	Lease area for which approval given (ha)	Proposal from –to (period of years)

1.4	PART-E: REVIEW OF EARLIER APPROVED PROPSALS GIVEN IN THE MP/SOM/RMP/MMP/FMCP-
-----	--

(Exploration, Development & Reclamation etc) (Note: - 1. Should be for the worked out period of the approved mining plan document only. 2. In case Mining Plan and FMCP period are coinciding, this chapter may be excluded for FMCP. 3. In case of Modified FMCP, review should be given for approved FMCP only. 4. Details to be furnished year-wise in tabular form for each activity.)				
	Items	Proposals	Actual work done	Remarks/ Reasons for deviations , if any
1.4.1	Exploration for Geological axis 1 or 2	Details to be given for Boreholes, Pits and trenches separately.	Details to be given for Boreholes, Pits and trenches separately.	
1.4.2	Number of pits proposed for production			
1.4.3	Location of Excavation	In dd mm ss format (for extremities) or Grid values	In dd mm ss format (for extremities) or Grid values	
1.4.4	Total Quantity of topsoil (m ³):			
	Removed			
	Utilized			
1.4.5	Quantity of overburden/ Waste (m ³):			
	Excavated			
	Backfilled			
1.4.6	Dumped			
	Production of ROM and Graded Ore (Tonnes)			
1.4.7	Total Quantity of Mineral Reject (Tonnes):			
	Generated			
	Utilized			
1.4.8	Stacked			
	Overall Stripping ratio or Ore to OB ratio (T/m ³)			
1.4.9	Total Quantity of Fines (Tonnes):			
	Generated			
	Utilized			
1.4.9	Stacked			

1.4.10	Total Quantity of Tailings/ Slimes (in Tonnes):							
	Generated							
	Utilized							
	Stacked							
1.4.11	Height of benches in Overburden and in Ore (meter)							
1.4.12	Location of topsoil Stack	In dd mm ss format (for extremities) or Grid values			In dd mm ss format (for extremities) or Grid values			
1.4.13	Location of OB	-do-			-do-			
1.4.14	Location of mineral rejects stacks	-do-			-do-			
1.4.15	Location of Fines Stacks	-do-			-do-			
1.4.16	Location of Tailings/ Slimes stacks	-do-			-do-			
1.4.17	Length of Retaining wall & garland drain all along dumps (meter)							
1.4.18	Fencing of Lease Area / Mineralized Area/Mineralized Dumps/Underground Openings (ha area secured)							
1.4.19	Conversion of mined out area into Water Reservoir/ Pisciculture (in ha)							
1.4.20	Backfilling of mined out area	Volume (cuM)	Area (ha)	Height (m)	Volume (cuM)	Area (ha)	Height (m)	
1.4.21	Afforestation (alongwith survival rate) on:	Total no. of saplings with survival rate			Total no. of saplings with survival rate			
	Virgin Area							
	Dumps							
	Backfilled Area							
	Ultimate Benches							
1.4.22	Number of settling ponds with location	In dd mm ss format (for extremities) or Grid values			In dd mm ss format (for extremities) or Grid values			
1.4.23	Number of Rainwater Harvesting pits with location	In dd mm ss format (for extremities) or Grid values			In dd mm ss format (for extremities) or Grid values			
1.4.24	Measures for Control of dust	Free Box for Brief Write Up			Free Box for Brief Write Up			

1.4.25	Measures for Control of Noise and ground vibration	-do-	-do-					
1.4.26	Quality of air	-do-	-do-					
1.4.27	Quality of water	-do-	-do-					
1.4.28	Area proposed to be put to use in last Approved MP/SOM/ RMP/ MMP/FMCP (in case of Modifications in approved FMCP)-							
	Item details	Proposed area (ha)			Actual area (ha)			Remarks
		Forest	Non-Forest	Total	Forest	Non-Forest	Total	
	i) Area under excavation/pits							
	ii) Storage for top soil							
	iii)Waste dump							
	iv) Mineral storage							
	v) Infrastructure – workshop, administrative building etc.							
	vi) Roads							
	vii) Railways							
	viii)Tailing pond							
	ix) Effluent Treatment Plant							
	x) Mineral Separation Plant							
	xi) Township area							
	xii) Others (to specify)							
	xiii) Undisturbed Area							
	xiii) Total in ha							

1.4.29	Give status of compliance of violations pointed out by IBM			
Sl. No.	Date of inspection/ Violation date if based on office record	Violation letter no.	Rule violated (Details of violation)	Compliance status
i)				
ii) & so on				
1.4.30	Whether IBM has suspended the mining operations in the said mine during last five years period? If yes give details below:			
S.No	Date of Suspension of mining operations	Suspension Letter No. & date	Contravention of Rules for which the suspension	Compliance status / Letter No. and Date of revocation of suspension

			order issued	order by IBM

1.4.31	Indicate and give details of any suspension /closure/prohibitory order issued by any Government agency (other than IBM) under any rule or Court of law during the last five years period
1.4.32	Details of revocations order if any -

CHAPTER-II GEOLGY AND EXPLORATION

Details should be in concurrence with the:-

1. **approved Mining Plan/RMP/MMP/SOM or**
2. **approved Modified Mining Plan in terms of Rule 12(4A) of Mineral Conservation and Development (Amendment) Rules, 2018**

2.1	LOCAL GEOLOGY: - Brief description of updated geological information as on date about the lease area, lithological details etc.

2.2	Details of prospecting/exploration carried out in the lease area:							
2.2.1	Updated extent of Geological mapping with scale, surface sampling, Number of pits and trenches; indicating explored depth, spacing etc. along and across the strike/ foliation with reference to geological plan:							
	S. No.	Year of exploration	Number of Pits / Trenches	Explored Depth (M)	Spacing / Grid Interval	Total Area Covered (ha)	Scale of Exploration	
							(G1/G2/G3)	
2.2.2	Updated number of boreholes indicating type (Core/RC/DTH etc.), spacing, and explored depth etc. duly marked on Geological Plan with typical borehole logs and sections:							
	S. No.	Year of exploration	Number of Bore Holes	Type of BH	Explored Depth (m)	Spacing / Grid Interval	Area Covered	Scale of Exploration
								(G1/G2/G3)
2.2.3	Details of samples analysis (as analysed from NABL accredited laboratory or similar accredited laboratory or Govt. laboratory in the last approved MP/RMP/MMP/FMCP period):							
	Type of Sample				Total Samples Collected	Total Samples Analysed		
	(Grab Sample, Bulk Sample, Core Drill Sample, DTH Sample etc.)							
2.2.4	Expenditure incurred in various prospecting/exploration operations (as proposed in the last approved MP/RMP/MMP/SOM/FMCP period):							

2.2.5	Total lease area explored under various categories				
G-Axis			Area (ha)		Depth (meter)
			F	NF	
G1					
G2					
G3					
G4					
Area Unexplored#					-XX-
Non-Mineralized Area					-XX-
Total					\$

#Reasons to be furnished, \$ Maximum Explored Depth

2.2.6	Blocked Resources under various Modifying Factors in terms of item no. 14 of Part-I (Definitions) of MEMC Rules'2015				
	Sl. No.	Modifying Factor	Brief Details of the applicable factors causing blockage of Resources	Blocked Resources (T)	UNFC Category
	1	Technical Factors			
	2	Statutory Factors			
	3	Market or economy related factors			
	4	Others			
	Total Blocked Resources (in T)				

2.3	Balance estimated mineral reserve/ resources in different categories of UNFC are given below:-(To be indicated separately for Forest and Non-forest area) As on			
		UNFC Code	Quantity (T)	Grade
	Proved Mineral Reserve	111		
	Probable Mineral Reserve	121		
		122		
	A. Total Mineral Reserves			
	Feasibility Mineral Resource	211		
	Prefeasibility Mineral Resource	221		
		222		
	Measured Mineral Resource	331		
	Indicated Mineral Resource	332		
	Inferred Mineral resource	333		
	Reconnaissance Mineral Resource	334		
	B. Total Remaining Resources			
	Total Mineral Resources (A+B)			

2.4	Broadly indicate the future programme / proposals for compliance of Rule 63 of MCDR'2017 in regard to 'Preservation of Cores, etc.'
	Brief details regarding preservation of cores, etc. obtained while exploration within the lease area should be given as prescribed under Rule 63 of MCDR'2017.

CHAPTER-III MINING (Details should be in concurrence with the approved Mining Plan/RMP/MMP/SOM)

3.1 YEAR-WISE EXCAVATION PROPOSALS

(a) YEAR WISE DEVELOPMENT & PRODUCTION			
Year	Total ROM (Tonnes)	Total overburden / waste (m ³)	Ore To OB Ratio T / m ³
(1)	(2)	(3)	(4)=(2)/(3)
I			
II			

(b) YEAR-WISE MINERAL REJECTS, FINES & TAILINGS/ SLIMES GENERATION					
Year	Total ROM (T)	Clean/Saleable Ore (T)	Mineral Rejects (T)	Fines (T)	Tailings/ Slimes (T)
(1)	(2)	(3)	(4)	(5)	(6)
I					
II					
Total					

3.2 DUMP WORKING (for the purpose of recovery of mineral) to be given separately for separate dumps under exploitation:						
Year	Dump No./ Dump Identification No.	Year-wise handling (m ³)	Estimated recovery of saleable ROM		Mineral Rejects	
			(m ³)	(T)	(m ³)	(T)
I						
II						
Total						

B.D.=.....T/cuM

3.3 YEAR WISE PRODUCTION -			
Year	ROM Ore from In-situ (Tonnes)	Recovered Ore from dump working (Tonnes)	Total ore production (Tonnes)
(1)	(2)	(3)	(4)
I			
II			
Total			

B.D.=.....T/cuM

3.4 UNDERGROUND MINING	
3.4.1	<p>Underground layout- Attach a note briefly describing the updated underground layout using longitudinal sections / longitudinal vertical projection and level plans where necessary indicating:-</p> <ul style="list-style-type: none"> - sizes and intervals of levels and raises / winzes with proper reasoning - proposed year wise level wise extent of development for two years along with the support system
	<p>Note: Latest updated (maximum 3 months old) underground plan should be enclosed to show the underground layout alongwith mentioning proposed working proposals through dotted lines.</p>

3.4.2	Stope parameters:	
i)	Number of stopes already stoped out	
ii)	Number of stopes already stowed/backfilled	
iii)	Number of stopes under backfilling	
iv)	Number of stopes under preparations	
v)	Number of working stopes	
vi)	Method of stowing/back filling	
vii)	Status of Existing Stopes with Balance Reserves/ Resources	May be furnished as per tables below:

Status of Existing Stopes										
Stope Particulars along with Location of the Stope	Reference of IBM letter for grant of Stopping permission (letter No. and date)	Method of Stopping	Stope Dimension	Resources/Reserves in the Stope (T)			Recovered qty. of ore as on _____, from the Stope (T)			Balance Ore in Stope (T) (g=c-f)
				Total (a=b+c)	Blocked (b)	Mineable (c)	Development (d)	Exploitation (e)	Total (f=d+e)	

Balance Resources/ Reserves in the Stopes as on.....			
Stope Particulars along with Location of the Stope	Balance Ore in Stope (T)		
	*Reserves (g)	*Resources (b)	Total (t=g+b)
Total			

*As per the table above

3.4.3	Mine ventilation: - Attach an updated underground ventilation plan
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CHAPTER-IV STACKING OF TOP SOIL, MINERAL REJECT, FINES, TAILINGS/SLIMES AND THEIR DISPOSAL

4.1	Details of Dumps/Stacks available at the mine site														
Particulars of Dump	Top Soil			OB/ Waste			Mineral Rejects			Fines			Tailings/Slimes		
	Location	Area (ha)	Quantity (cuM)	Location	Area (ha)	Quantity (cuM)	Location	Area (ha)	Quantity (T)	Location	Area (ha)	Quantity (T)	Location	Area (ha)	Quantity (T)
Total	X			X			X			X			X		

4.2 Details of Top Soil, Waste/OB, Mineral Rejects, Fines & Tailings/ Slimes generation during the closure period of two years								
Year	Top Soil (m ³)	OB/ Waste (m ³)	Mineral Reject		Fines		Tailings/ Slimes	
			Quantity (T)	Average Grade	Quantity (T)	Average Grade	Quantity (T)	Average Grade
I								
II								
Total								

4.3 Details of Top Soil and Waste/OB disposal/management during the closure period of two years						
Year	Top Soil (m ³)			OB/ Waste (m ³)		
	Generation	Reuse	Storage	Generation	Backfilling	Dumped
I						
II						
Total						

4.4 Details of Mineral Rejects, Fines & Tailings/ Slimes disposal/management during the closure period of two years												
Year	Mineral Reject				Fines				Tailings/ Slimes			
	Genera tion	Utiliza tion	Storage		Genera tion	Utiliza tion	Storage		Genera tion	Utiliza tion	Storage	
			Quan tity	Loca tion			Quan tity	Loca tion			Quan tity	Loca tion
I												
II												
To tal												

Note:- Location may be given either in dd mm ss format (for extremities) or grid reference or in form of particulars of existing dumps (if applicable)

CHAPTER-V FINAL MINE CLOSURE PLAN

5.1.1	Mined-Out Land: The proposals may be supported with yearly plans and sections depicting yearly progress in the activities for land restoration/ reclamation/rehabilitation, afforestation etc., called “ Reclamation Plan ”.
5.1.2	Safety and Security i.e., Securing the Excavations/ pits/ Underground Openings/ Mineralized Dumps or Mineral Rejects stacks/ Fines stack/ Tailings or Slimes stacks: The lessee should ensure fencing of any excavation endangering fall of persons/cattle etc. in terms of Rule 26 of MCDR’2017. (Grid reference to be mentioned)
5.1.3	Afforestation: Existing afforestation details shall be furnished alongwith proposals on Virgin area, Backfilled area, Dump plantation and plantation on ultimate benches indicating area and number of saplings. (Grid reference to be mentioned)
5.1.4	Topsoil Management: No unstabilized stacks of topsoil should be left at the expiry of lease period. (Either the generated topsoil should be utilized or the stacks should be stabilized and secured.) (Grid reference to be mentioned for storage)
5.1.5	Water Quality Management: In case of proposal for conversion of mined out pit into a water reservoir/ Pisciculture purpose (for completely exhausted part), dimension of the pit(s) alongwith capacity should be furnished in tabular form for

	each pit and such excavations should be fenced to avoid any danger to public safety. Proposal for conversion of mined out pit into water reservoir/ Pisciculture should be suitably supported by a brief calculation for accumulation of water into the pit considering average rainfall in the area, catchment area, drainage direction etc. justifying the capacity of the reservoir and suitability for Pisciculture.
	(Location of monitoring stations to be given)
5.1.6	Air Quality Management:
	(Location of monitoring stations to be given)
5.1.7	Waste Management:
	(Grid reference to be mentioned)
5.1.8	Tailings Dam Management:
	(Grid reference to be mentioned)
5.1.9	Surface subsidence mitigation measures through backfilling of underground mine voids or by any other means and its monitoring mechanism.
	(Grid reference to be mentioned)
5.1.10	A brief about surface features existing within a periphery of 500 m from the lease boundary as per the Rule 32(5)(b) of MCDR'2017.
5.1.11	Infrastructure Details:
	An account of infrastructural facilities available in the ML area should be given in tabular format indicating its details. Any infrastructural facility which is an essential commodity/related to basic need or which absence may cause any degradation of environment or any damage to flora and fauna in and around the ML area or any danger to public safety or public infrastructure like rail, road etc. shall not be decommissioned (dismantling water supply, water treatment plant, power lines etc.) without prior intimation/approval of appropriate authority.
5.1.12	Disposal of Mining Machinery:
	Note: With reference to the extent of mechanization given in the 'Mining' chapter of Approved Mining Plan.
5.1.13	Disaster Management and Risk Assessment:
5.1.14	Economic Repercussions of closure of mine and manpower retrenchments:
5.1.15	Time Scheduling for Closure:
5.1.16	Closure Cost:
5.1.17	Post Closure Monitoring Schedule as envisaged and Estimated Cost:

5.2	The information on protective measures for reclamation and rehabilitation works year wise may be provided as per the following table:						
Items	Details	Proposals					
		I			II		
		F	NF	T	F	NF	T
Dump management	Area available for rehabilitation (ha)						
	Grid reference (North/East)						
	Proposed afforestation Area (ha)						
	Grid reference (North/East)						

	No of saplings						
	Any other method of rehabilitation (specify)						
	Grid reference (North/East)						
	Cost including watch and care during the year						
Management of worked out benches	Area available for rehabilitation (ha)						
	Grid reference (North/East)						
	Proposed afforestation Area (ha)						
	Grid reference (North/East)						
	No of saplings						
	Any other method of rehabilitation (specify)						
	Grid reference (North/East)						
Reclamation and Rehabilitation of Mined Out Area/ Stopes	Void available for Backfilling (Area x D) pit-wise /stope wise (cuM)						
	Grid reference (North/East)						
	Void proposed for backfilling by waste /tailings (cuM)						
	Grid reference (North/East)						
	Area available for rehabilitation (ha)						
	Grid reference (North/East)						
	Proposal for Afforestation on the backfilled area (ha)						
	Grid reference (North/East)						
	No of saplings						
	Rehabilitation by making water reservoir (ha)						
	Grid reference (North/East)						
	Any other means (specify with grid values)						
	Cost including watch and care during the year						
	Rehabilitation of waste land within lease	Area available for rehabilitation (ha)					
Grid reference (North/East)							
Rehabilitation proposed(ha)							
Grid reference (North/East)							
Method of rehabilitation							
Cost including watch and care during the year							
Others	Specify method of rehabilitation						
	Area (ha)						
	Cost including watch and care during the year						
Cumulative	Area rehabilitated (ha)						
	Rehabilitation Cost						

5.3 **Financial Assurance** - Table indicating the break-up of areas in the Mining Lease For Calculation of Financial assurance

Sl. No.	Items	Area put to use at start of FMCP period (ha)			Additional area requirement during FMCP period (ha)			Total area put to use (ha)			Area considered as fully reclaimed & rehabilitated as on start of FMCP period (ha)			Net area considered for calculation (ha)
(a)	(b)	(c)			(d)			(e)=(c+d)			f			(g)=(e-f)
		F	NF	T	F	NF	T	F	NF	T	F	NF	T	
1	Area under mining													
2	Storage for top soil													
3	Waste dump site													
4	Mineral storage													
5	Infrastructure workshop, administrative building etc.													
6	Roads													
7	Railways													
8	Tailing pond													
9	Effluent Treatment Plant													
10	Mineral Separation Plant													
11	Township area													
12	Others (to specify)													
13	Undisturbed Area													
14	Grand Total													

F=Forest, NF=Non-Forest, T=Total

5.4	Financial assurance details -
	Issuing bank, date of issue, validity, BG No. etc. to be provided.

Plans and Sections to be enclosed	
	All the applicable (opencast or underground as the case may be) statutory plans prepared digitally and required in terms of Rule 32 of MCDR'2017 alongwith a plan showing the year-wise proposals for two years of final closure period on preferably 1:2000 scale, fulfilling the requirements of Rule 31 and prepared in terms of Rule 34 of the MCDR'2017 should be enclosed with the document.

List of documents to be Annexed	
1	Copy of lease deed
2	Copy of approval letter for the last approved MP/SOM/RMP/MMP
3	Copy of valid EC/FC clearances from MOEF.
4	Copy of valid consent to operate from SPCB.
5	Few photographs showing Land use of the lease area, environmental status of the area/Ground Control Points/Lease Boundary Pillars
6	Certificate of registration of the company and memorandum of the association
7	Photo Identity Card of Lessee/Nominated Owner with address proof
8	Copy of Board Resolution for declaration of nominated owner as per Mines Act 1952
9	List of members of Board of Directors.
10	Copies of violation letters issued by Indian Bureau of Mines or statutory obligations issued by any other authority during last approved mining plan period
11	Copies of analysis report from NABL accredited laboratory or similar accredited laboratory or Govt. laboratory
12	Copy of Financial Assurance
13	Any other documents in support of the contents of Final Mine Closure Plan

Note:- All the Certificates/ Consents/Undertakings and Annexures to be enclosed at the end of the text part/FMCP format.

MODEL CERTIFICATE TO BE ISSUED UNDER RULE 21(4) OF MCDR' 2017



भारत सरकार
GOVERNMENT OF INDIA
खान मंत्रालय
MINISTRY OF MINES
भारतीय खान ब्यूरो
INDIAN BUREAU OF MINES
..... क्षेत्रीय कार्यालय
..... REGIONAL OFFICE

No.----- Dated -----

CERTIFICATE

In exercise of the powers conferred on me under Sub-Rule (4) of Rule 21 of Mineral Conservation and Development Rules, 2017 delegated vide Notification No. T-43010/CGBM/2014 dated 11th May 2017 and published in the Gazette of India dated 31st May 2017; I, hereby, certify that the protective, reclamation and rehabilitation work in accordance with the Final Mine Closure Plan approved vide letter No.----- dated----- have been carried out in the mining lease over an area of -----Ha in respect of ----- (name of the mine and mineral) mine held by M/s /Shri/Smt. ----- in ----- district in the State of -----.

This Certificate is issued without prejudice to any other laws applicable to the mine/lease area from time to time and also without any prejudice to any other order or direction from any court of competent jurisdiction.

(-----)
Regional Controller of Mines/DCOM (I/C),
Indian Bureau of Mines

To,
M/s /Shri/Smt. -----,
-----,
-----,
-----.

Not On Original:

Copy for kind information to the:

1. The Chief Controller of Mines, Indian Bureau of Mines, Nagpur
2. The Controller of Mines (CZ/EZ/NZ/SZ), MDR Division, Indian Bureau of Mines
3. Director, Directorate of Mines & Geology, (whatever name) Govt. of -----
---, (Address).

(-----)
Regional Controller of Mines/DCOM (I/C),
Indian Bureau of Mines