

**INDIAN BUREAU OF MINES  
MINERALS DEVELOPMENT AND REGULATION DIVISION**

**Review and updation of Mining Plan REPORT**

**Jabalpur regional office**

**Mine file No :** MP/CHATARPUR/ROCK PHOSPHATE-3

**Mine code :** 87MPR07001

- (i) Name of the Inspecting : **G005** ) **SANJAY M. GIRHE**  
Officer and ID No.
- (ii) Designation : Regional Mining Geologist
- (iii) Accompanying mine :  
Official with  
Designation
- (iv) Date of Inspection : 10-DEC-19
- (v) Prev.inspection date :

**PART-I : GENERAL INFORMATION**

1. (a) **Mine Name** : **LUHANI 13.20HA. ROCK PHOSP.**
- (b) **Registration NO.** : **IBM/6722/2011**
- (c) Category : A Mechanised
- (d) Type of Working : Opencast
- (e) Postal address :  
State : MADHYA PRADESH  
District : CHHATARPUR  
Village :  
Taluka :  
Post office :  
Pin Code :  
FAX No. :  
E-mail :  
Phone :
- (f) Police Station :
- (g) First opening date : 03-MAR-16
- (h) Weekly day of rest : SUN
2. Address for :  
correspondance :
3. (a) Lease Number :  
(b) Lease area :  
(c) Period of lease :  
(d) Date of Expiry :
4. Mineral worked : ROCK PHOSPHATE Main

5. Name and Address of the  
Lessee : KHAJURAO STONES (INDIA) PVT. LTD.  
6TH KILOMETER, SAGAR ROAD  
CHHATARPUR (MP) CHHATARPUR  
MADHYA PRADESH  
Phone:  
FAX :
6. Date of approval of Mining :  
Plan/Scheme of Mining

## PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

## Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	During the year 2016-17 & 2017-18 total 6DTH boreholes were proposed at 100m grid pattern with 180m cumulative proposed meterage	During the year 2016-17 & 2017-18 no exploration were carried out as proposed.	Violation of Rule 11(1) of MCDR, 2017 was issued for not carried out the exploration as proposed Modified Mining Plan for the period 2016-17 to 2019-20.
1b	Exploration over lease area for geological axis 1 or 2	During the year 2016-17 & 2017-18 total 6DTH boreholes were proposed at 100m grid pattern with 180m cumulative proposed meterage	There were 8 old pits were developed/excavated in the lease area when the mining operation were carried out by Mining Corporation of State M.P. Total G1/G2 explored area-13.20Ha	Further, during PL stage 04 BHs were drilled in the lease area & mineralisation were proved up to 30m depth. In drilled BHs shale mineralisation were also encountered.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Agency and exploration not proposed.	Exploration carried out in the past was done by lessee himself under the supervision of geologist & mining engineer.	Expenditure incurred on previous exploration is not given in the approved document.
1d	Balance area to be explored to bring Geological axis in 1 or 2	During the year 2016-17 & 2017-18 total 6DTH boreholes were proposed to bring geological axis 1 or 2 upto some extents	No exploration carried out. There were 8 old pits were developed/excavated in the lease area when the mining operation were carried out by Mining Corporation of State M.P. Approx area explored under G1= 4.0 Ha rest 9.20 Ha area to be explored.	In approved ROMP for the period 2020-21 to 2024-25, required exploration in compliance with rule 12(4) of MCDR, 2017 & MCMC Rule, 2015 proposed.

1e	Balance reserve as on 01/04/20	Reserves (In Mill Tonne) Proved (111) : Nil..... Probable(122) : 2.74 Million Tonnes Resources(In Mill Tonne) Pre- Feasibility: 0.831 Million Tonnes	Reserves (In Mill Tonne) Proved (111) : Nil..... Probable(122): 2.74 Million Tonnes Resources(In Mill Tonne) Pre-Feasibility: 0.831 Million Tonnes	
1f	General remarks of inspecting officers on geology, exploration etc	NA	NA	The phosphorite in the lease area is associated with chert breccia, dolomite, shale & granite. The strike of the deposit is NW-SE & general dipping varies from 25 to 30 degree towards north east. The P2O5 content in phosphate varies from 18 to 29%.

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Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Working proposed in old quarry 2,3,4 & advance the working face towards NW & SE.	Working carried out at proposed locations.	

2b	Separate benches in topsoil, overburden and minerals (Rule 15)	During the year 2018-19 no fresh development in the Top soil and OB bench was proposed. Three benches were proposed in ore of 5.0m height	No benches in top soil & OB as no proposals. OB/mine waste consist of quartzite, Quartz mica schist & phyllite The phosphate ore working carried out in 3 benches of approx 4-5 meters in height. Working were carried out from 373mRL to 358mRL	Separate benches in OB & in ore were maintained.
2c	Stripping ratio or ore to OB ratio	Proposed stripping ratio for the year 2018-19 was 1:0.42 Tonne/CuM	Actual stripping ration achieved approx 1:0.42 Tonne/CuM	
2d	Quantity of topsoil generation in m3	Not Proposed	Nil	
2e	Quantity of overburden generation in m3	Proposed Overburden generation for the year 2018-19 15236 CuM	Actual Overburden generated for the eyar 2018-19 40050 CuM	
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	NA	Lease area have worked out & pits are developed in follwing manner Quarry-1 (60mx20mx6m) Quarry-2 (10150 Sqm x (3-7m) Quarry-3(5070 Sqm x (4-8m) Quarry-4 (2000 Sqm x (2-4m) Quarry-5 (2527 Sqm x (3-7m) Quarry-6 (40m x10mx1.5m)	Rock phosphate is well exposed in working pits. Previously the lease was worked out the State mining co-orporation.The P2O5 content varies from 18 to 29%. The grade & thickness or ore are maximum in middle portion of the lease area.

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### Exploitation:

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Sl.No.	Item	Propasals	Actual work	Remarks
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3a	Number of pit proposed for production	Working was proposed in Quarry 2,3,4 & advance working face towards NW and SE	Working carried out as per the proposed locations in all four pits.	
3b	Quantity of ROM mineral production proposed	During the year total 99543 M.T. ROM was proposed	During the year total 98600 M.T. ROM was produced	
3c	Recovery of saleable/usable mineral from ROM production	Total 70% recovery saleable mineral from ROM was proposed	Total 70% recovery saleable mineral from ROM was achieved	Phosphorite is associated with chert breccia, ferruginous breccia, dolomite, shale, etc due to this recovery percentage get lowered down.
3d	Quantity of mineral reject generation	Not proposed	Nil, Entire phosphate is being utilized or conserve upto maximum limit as per threshold value.	
3e	Grade of mineral rejects generation and threshold value declared.	Mineral reject generation not proposed during the year 2018-19	No Mineral reject generation as not proposed	
3f	Quantity of sub grade mineral generation.	Not Proposed	Nil	No subgrade encountered as Phosphorite ore consumed entirely up to the threshold value of P2O5 as 5% (Min)
3g	Grade of sub grade mineral generation	Not Proposed	No subgrade encountered as Phosphorite ore consumed entirely up to the threshold value of P2O5 as 5% (Min).	
3h	Manual / Mechanised method adopted for segregating from ROM	Manual sorting of Phosphate upto the saleable & threshold limit proposed	Manual sorting of Phosphate as per the desired grades being carried out	

3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No Proposals	Nil	No beneficiation study proposed for subgrade ore
3j	Provision of drilling and blasting in mineral benches	Drilling by jack hammer and blasting with the help of nitrate mixture was proposed	Drilling by jack hammer and blasting with the help of nitrate mixture was done.	Drilling & blasting parameters Spacing - 2.40 to 2.50m Burden - 2.0 to 2.20m Depth of hole - 2.8 to 2.9m Charge per hole - 7.0kg Powdr factor - 7.0kf/hole Diameter of hole - 48mm
3k	Provision of mining machineries in mineral benches	Atlas Copco Compressor-110CFM Jack Hammer-Dia (33mm) Rock Drill - 200 CFM Loading equipment-16 Tonne Water Tanker-5KL	Mining operations were carried out by deploying following HEMM Atlas Copco Compressor-110CFM Jack Hammer- Dia (33mm) Rock Drill - 200 CFM Loading equipment-16 Tonne Water Tanker-5KL	
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Height of 5m proposed in mineral.	Bench height is maintained as per the proposals	
3m	Total area covered under excavation/pits	Total area as per approved modified mining plan was proposed 3.00Ha under pits excavation	Total area under pits excavation comes to as 3.44 Ha at the end of year 2018-19	

3n	Ore to OB ratio for the pit/mine during the year.	Ore to OB ratio was proposed as 1:0.42 Tonne/CuM	Ore to OB ratio of 1:0.40 Tonne/CuM achieved as proposed	
3o	Total area put in use under different heads at the end of year	Pit area-3.0Ha Waste Dump-1.25Ha Mineral stack-0.25Ha Infrastructure-0.05Ha Road-0.25Ha Others-0.25Ha	Pit area-3.44Ha Waste Dump-1.25Ha Mineral stack-0.25Ha Infrastructure-0.05Ha Road-0.25Ha Others-0.25Ha	
3p	Production of ROM mineral during the last five year period as applicable	Year 2015-16 : 85414 Tonnes Year 2016-17 : 85414 Tonnes Year 2017-18 : 98652 Tonnes Year 2018-19 : 99543 Tonnes Year 2019-20 : 100010 Tonnes	Year 2015-16 : 85414 Tonnes Year 2016-17 : 98652 Tonnes Year 2017-18 : 99543 Tonnes Year 2018-19 : 100010 Tonnes	
3q	General remarks of inspecting officers on method of mining etc.	NA	NA	Opencast mining by fully mechanised means by deploying HEMM. Rock breaker utilization is also proposed. Drilling & blasting is also proposed by less than 100mm dia drill holes.

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#### Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	No Proposals for Top soil & mineral reject during the year 2018-19. Separate dumping for OB proposed.	Overburden waste dumping carried out as per the proposals & marked on suitable plans	

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4b	Location of topsoil, OB and mineral reject dumps	Overburden generation proposed & its disposal on earmarked location towards South-East side was proposed	Overburden generated during the year disposed on earmarked locations & also depicted on relevant plans.	
4c	Number of dumps within lease area and outside of lease area	No Proposals	Only one dump is located towards north-east corner of lease area between ML boundary pillars no-8 to 12. Location of dump-E312900 to E312980 & N2697215 to N2697265	
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Not Proposed	Dumps located well within ultimate pit limit	
4f	Number of dead dumps.	Not Proposed	No dead dumps encountered in lease area	
4g	Number of dumps established.	Not proposed	No dumps established so far	
4h	Whether Retaining wall or garland drain all along dumps are there.	Not Proposed	Limited length of garland drain was observed & its was filled with siltation.	Advised for regular cleaning of drains during inspection.
4i	Length of Retaining wall or garland drain all along dumps	Not Proposed	Length of graind drain is not available.	
4j	Number of settling ponds	Not Proposed	No settling ponds found	
4k	Specific comments of inspecting officer on waste dump management	As such no proposals were given for dump management during the year 2018-19	NA	Only one dumps is observed. As the dump was active hence dump management measures were not taken upto that extent.

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Solid Waste Management - Backfilling:

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Sl.No.	Item	Propasals	Actual work	Remarks
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5a	Status of part or full extraction of mineral from mined out area before starting backfilling.	No Proposals	As per the previous exploration carried out by State Mining Corporation, M.P. mineralisation is proved up to 30mts depth. Full extraction of ore not encountered in any working pits as reported.	
5b	Area under backfilling of mined out area	Not Proposed	During the 5 yrs modified plan period no backfilling is carried out.	Mineralisation is proved up to 30mts depth. Full extraction of ore not encountered in any working pits as reported. Hence, scope of backfilling doesnot exist at this moments
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Generation of top soil & its use not proposed during 2018-19	Nil	
5d	Total area fully reclaimed and rehabilitated	Not Proposed	No reclamation & rehabilitation carried out so far, hence it is not applicable.	
5e	General remarks of inspecting officers on backfilling and reclamation etc.	Not Proposed	During the 5 yrs plan period no backfilling, no reclamation & rehabilitation was proposed. Hence, in view of this no comments to offer	Nil

#### Progressive Mine Clousre Plan:

Sl.No.	Item	Propasals	Actual work	Remarks
6a	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).	To be submitted within prescribed time limit	Report submitted by the lessee in stipulated time.	

6b	Area available for rehabilitation (ha) .	No Proposals	No area is available for rehabilitation as backfilling/reclamation not done in the past.	Ore not exhausted fully in any working pits
6c	afforestation done (ha).	Not Proposed	Nil	
6d	No. of saplings planted during the year	Not Proposed	1500 saplings planted during the year with 70% survival rate	
6e	Cumulative no .of plants	Not Proposed	3200 Nos	
6f	Any other method of rehabilitation	Not proposed	Nil	
6g	Cost incurred on watch and care during the year	Not Proposed	NA	
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling ( Lx B x D	Not Proposed	Nil	
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	Not Proposed	Nil	
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on backfilled area	Not Proposed	Nil	
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	Not Proposed	Nil	

6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	Not Proposed	Nil	
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	Not Proposed	Nil	
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	Not Proposed	Nil	
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	Not proposed	Nil	
6p	Compliance of environmental monitoring (core zone and buffer zone)	Environment monitoring was proposed in core zone and buffer zone at prescribed interval	Air, Water & Noise monitoring carried out by outsourced consultant M/s Cognizance Research India (P) Ltd in core zone and buffer zone at prescribed intervals.	
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	NA	NA	PMCP report in prescribed form submitted and PMCP works were carried out as per the proposals. More thrust need to be given on maximum number of plantation in & around the mine.

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Mineral Conservation:

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Sl.No.	Item	Propasals	Actual work	Remarks
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7a	ROM Mineral dispatch or grade-wise sorting within lease area	99543 MT ROM proposed to be produced	98600MT ROM produced during the year 2018-19. Total 108716 MT dispatched of grade P205 up to 20% after necessary sorting within lease area.	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Manual method of sorting proposed during the year 2018-19	Manual method of sorting adopted	
7c	Different grade of mineral sorted out at mines.	Manual grade wise sorting of ore proposed during the year 2018-19	Manual sorting done for following grades of ore Above 30% P205 Above 25% P205 to 30% P205 Above 20% P205 to 25% P205 upto 20% P205	
7d	Any beneficiation process at mines	Not Proposed	Nil	
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	Mineral Conservation proposed in approved documets		During the course of mining, phosphate ore is being conserved very systematically as efforts were/are being made by lessee to conserve ore upto its threshold value.

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**Environment:**

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	During the year 2018-19 not top soil generation is proposed	Not Applicable	During the year most of the working was proposed in already exavated pits area.
8b	Concurrent use or storage of topsoil	Not Proposed	Nil	

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8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate dumps of overburden/waste rock proposed during the year 2018-119	Dumping of waste rock carried out as per the proposals.
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Use of overburden/waste rock for backfilling was proposed.	Backfilling by overburden/waste rock not done as area for backfilling was not matured during the year.
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Phase wise restoration, reclamation & rehabilitation was proposed during the year 2018-19.	Backfilling by overburden/waste rock not done as area for backfilling was not matured during the year.
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	During the year 2018-19 no plantation was proposed	During the year 2018-19, total 1500 saplings were planted with 75% survival rate.
8g	Survival rate	Not Proposed	Total 1500 saplings were planted with 75% survival rate.
8h	Water sprinkling on roads to control airborne dust	Water spraying on mines haul road, loading, unloading points proposed.	Water sprinkling carried out on the haul road, unloading points as proposed.

8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	NA	NA	Aesthetic beauty in and around mine area was not that much excellent as very scanty plantation were observed in lease area. More thrust need to be given on addition of plantation to enhance asthetic beauty of area.
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Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns			

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**Details of violations observed during current inspection and compliance position of violation pointed out**

Violation observed		Show cause position	
Rule NO.	Issued on Compliance on	Rule NO.	Issued on Compliance on

**Date :**

**(SANJAY M. GIRHE)**

Indian Bureau of Mines