

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

MCDR INSPECTION REPORT

Nagpur regional office

Mine file No : MAH/YTL/LST-70/NGP

Mine code : 38MSH26047

- (i) Name of the Inspecting : **M017**) **ASHISH MISHRA**
Officer and ID No.
- (ii) Designation : Sr. Asst. Contrl. Mines
- (iii) Accompanying mine : Shri Krishna Kumar Rathore, GM (Mines)
Official with
Designation
- (iv) Date of Inspection : 24/06/2019
- (v) Prev.inspection date : 11/02/2019

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **MUKUTBAN LIMESTONE AND DO**
- (b) **Registration NO.** : **IBM/15031/2013**
- (c) Category : A Fully Mechanised
- (d) Type of Working : Opencast
- (e) Postal address :
State : MAHARASHTRA
District : YEOTMAL
Village :
Taluka : ZARIJAMANI
Post office : MUKUTBAN
Pin Code : 445319
FAX No. :
E-mail :
Phone :
- (f) Police Station :
- (g) First opening date : 11/06/2018
- (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 : LIMESTONE Main

5. Name and Address of the

Lessee : M/S RELIANCE CEMENT CO.PVT.LTD.
YEOTMAL MAHARASHTRA
Phone:
FAX :

Manager

Name : SHRI KRISHNA KUMAR RATHOD
Qualification : MINING ENGINEERING
Appointment/ : 10/01/2018
Termination date

6. Date of approval of Mining : Fresh under rule 22 MCR1960 07/07/2009
Plan/Scheme of Mining

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	Mining Plan was approved for fresh grant of lease wherein lease was executed on 15.06.2016. Hence five years proposal period as per the approved Mining Plan was 2016-17 to 2020-21. Proposed exploration upto 2018-19 is as follows: 2016-17- Nil 2017-18- Nil 2018-19- 9 boreholes	Actual exploration carried out in the lease area is as below: 2016-17- Nil 2017-18- 18 Boreholes 2018-19- 58 Boreholes hence, there is no backlog.	
1b	Exploration over lease area for geological axis 1 or 2	G-1 & G-2	G-1: 422.955 ha, G-3: 83.572 ha and Unexplored area: 65.643 ha The area has already been proved by DGM through 221 boreholes (125 boreholes falling in the present lease area). Further, additional 76 boreholes (12 in forest, rest in non-forest) were drilled by the lessee in 2017-18 & 2018-19.	Almost entire potentially mineralized area has been covered under G-1 level exploration. Area considered under G-3 has encountered mainly Dolomite, thus, for Limestone, it has been covered under G-3 and further exploration is proposed for clear demarcation and estimation of Limestone reserves/resources . Unexplored area is mainly lying under the influence of 50 m on either side of the broad gauge railway track passing through the lease area in northern part.

1c	Exploration Agencies and Expenditure in lakh rupees during the year	No clear proposals on expenditure	Actual expenditure over exploration is as below: DGM Prospecting report- Rs 8102592/- Additional exploration through 76 boreholes by the lessee- Rs 4892834/-	
1d	Balance area to be explored to bring Geological axis in 1 or 2	65.643 ha	To cover entire lease area under G-1 level, additional exploration in form of 134 boreholes are proposed in two phases, first phase being 2019-20 to 2020-21 and second phase being 2021-22 to 2025-26.	
1e	Balance reserve as on 01/04/20	Balance reserves/resources as on 01.04.2019 are furnished in actual work details.	111-46.412 MT 211-11.774 MT Total-58.186 MT	
1f	General remarks of inspecting officers on geology, exploration etc		Local geology of the area predominantly comprises of limestone, dolomite and shale. The calcareous lithology of the area is marked by phase changes from Limestone to Dolomitic Limestone to Dolomite. The limestone and dolomite exhibits interbanded disposition while calcitic dolomite occurs in patches. Average Grade is CaO 44.05%, MgO 4.14%, SiO ₂ 9.8%.	There are quality variations and intrusions throughout the Limestone bed occurring in the lease area. Thus, extensive drilling has been carried out and is proposed to optimise the quantitative and qualitative requirements of the Cement Plant.

Development :

Sl.No.	Item	Proposals	Actual work	Remarks
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2a	Location of development w.r.t.lease area	As per the approved Mining Plan in the NE part of the lease area that is Non-forest land falling between sectional grid lines (as per the approved MP) W5 to E6 and N00 to N11.	As per the proposals, working has been started in the proposed location.	Mine has started working after 11.06.2018.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Yes, as per the mining plan, in first year of the operations, soil and OB removal with approximately 10 m bench height is proposed. For mineral Limestone, it is proposed to keep bench height variable from 3.0 m to 10.0 m depending upon the thickness of the deposit.	Separate benches are kept in the top soil, overburden and minerals. As on the date of inspection, there were 2 pits in the lease area having 1.48 ha and 9.52 ha area respectively (total 11 ha) and having one bench in soil, one-two benches in overburden.	Based on the extent of mechanization, exploration results (carried out by the lessee) and occurrence of Limestone bands in the area, overburden bench was kept 2-5 m.
2c	Stripping ratio or ore to OB ratio	Not applicable as mainly top soil/overburden is proposed to be removed in first two years and only Limestone is proposed to be excavated in the rest 3 years period of the approved Mining Plan.	Not applicable, as working has commenced in the year 2018-19 itself. The mine is under development stage in which 11 ha area has been broken through excavation (top soil and overburden). Deepest working level is around 10 m below the surface.	
2d	Quantity of topsoil generation in m3	1.57 million cuM in first two years and Nil from 3rd year onwards.	Approximately 170000 cum in 2018-19 (third year of the proposal period, first year for operation as work commenced in 2018-19)	

2e	Quantity of overburden generation in m3	Approximately 17450 cuM in the first two years and Nil from 3rd year onwards.	Approximately 20105 cuM
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	As per the bore hole logs verified during site inspection, top soil and overburden cover in the non-forest area is very high. Also, geologically the area is not very promising as it is having only low grade limestone/dolomite . Development in the forest area can be commenced only after getting necessary clearances from MoEFCC. Hence, in the present circumstances, development is adequate in the area as on date.	

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Two pits are proposed to be dug in first 5 years of the mining plan period.	Two pits are there covering approximate area of 11 ha.	
3b	Quantity of ROM mineral production proposed	2018-19: 3 MT Limestone	2018-19: Nil	Mine is in deelopment phase as working has started in the year 2018-19 (June'18).
3c	Recovery of sailable/usable mineral from ROM production	100% recovery (blending by operating multiple faces)	Not applicable	Only development has been done yet.
3d	Quantity of mineral reject generation	Nil	Nil	

3e	Grade of mineral rejects generation and threshold value declared.	Not applicable	Nil
3f	Quantity of sub grade mineral generation.	Nil	Nil
3g	Grade of sub grade mineral generation	Not applicable	Nil
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanical crushing and blending of ROM.	Not applicable as no production.
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No such proposals	Nil
3j	Provision of drilling and blasting in mineral benches	Yes, Drilling is proposed with 115 mm dia drills and blasting is proposed by using slurry explosives in cartridge form.	No drilling/blasting was required as only top soil/ soil and loose overburden was excavated through backhoe deployed in the mine.
3k	Provision of mining machineries in mineral benches	Yes	1.2 cum Backhoe-2 Nos., 9 cum Tippers-4 Nos., Dozer (160 HP), Water Tanker (5000 Ltr)- 1 each

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|----|--|---|---|--|
| 3l | Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM | Yes, as per the mining plan, in first year of the operations, soil and OB removal with approximately 10 m bench height is proposed. For mineral Limestone, it is proposed to keep bench height variable from 3.0 m to 10.0 m depending upon the thickness of the deposit. | Separate benches are kept in the top soil, overburden and minerals. As on the date of inspection, there were 2 pits in the lease area having 1.48 ha and 9.52 ha area respectively (total 11 ha) and having one bench in soil, one-two benches in overburden. | Based on the extent of mechanization, exploration results (carried out by the lessee) and occurrence of Limestone bands in the area, overburden bench was kept 2-5 m and it was suitable as per the proposed/actual method of working. |
| 3m | Total area covered under excavation/pits | 55.59 ha area is proposed to be covered under excavation/pits in the 5 years proposal period of the approved mining plan. | 11 ha is covered under excavation | |
| 3n | Ore to OB ratio for the pit/mine during the year. | Not applicable as mainly top soil/overburden is proposed to be removed in first two years and only Limestone is proposed to be excavated in the rest 3 years period of the approved Mining Plan. | Not applicable, as working has commenced in the year 2018-19 itself. The mine is under development stage in which 11 ha area has been broken through excavation (top soil and overburden). Deepest working level is around 10 m below the surface. | |

3o	Total area put in use under different heads at the end of year	At the end of 5 years proposal period of the approved Mining Plan, area under: Excavation- 55.59 ha Top Soil stack-25.50 ha Overburden/Waste Dumps-1.60 ha Infrastructure -0.05 ha Roads-1.71 ha Railways-2.0 ha Green belt- 4.13 ha Plant-0.05 ha Nallah-1.20 ha Total-91.83 ha	As on 31.03.2019, area under: Covered under current (O/C) Workings- 11 ha Covered under Top Soil stack- 2 ha	Method of mining proposed is category A fully mechanized. In the 5th year of the approved Mining Plan, proposed production is 3.75 MT of Limestone. Hence, method of mining is suitable as per the geology, occurrence of mineral and capital expenditure.
3p	Production of ROM mineral during the last five year period as applicable	2016-17: Nil 2017-18: 5 Lakh T	2016-17: Nil 2017-18: Nil	
3q	General remarks of inspecting officers on method of mining etc.			

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
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- 4a Separate dumping of topsoil, OB and mineral rejects (Rule 32,33) Separate dumping of top soil and overburden is proposed. There are no mineral rejects proposed to be generated. Top soil generated has been kept separate. Generated overburden/waste has been utilized in preparation of retaining wall all around the dump/pit/working area.
- 4b Location of topsoil, OB and mineral reject dumps As per the approved mining plan, One Soil Dump is proposed in the NE part between Sectional grids W2 to E2 and N6 to N10, other top soil dump is proposed at W4 to W8 and N6 to S2. OB dump is proposed at W00 to W2 and N4 to N6. No mineral rejects were proposed to be generated, hence, for mineral rejects, information is Nil. Top soil dump is available at the proposed location. Part of top soil has also been utilized for plantation work. OB generated has been utilized in preparation of retaining wall all around the working area/pit and along the toe of the dump.
- 4c Number of dumps within lease area and outside of lease area Two top soil dumps and one overburden/waste dump, all within the lease area One top soil dump is available within the lease area. OB/Waste has been utilized in retaining wall, hence waste dump area is Nil.

4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Dumping is proposed within the limits as almost entire area is mineralized. Backfilling shall be done after exploitation of mineral deposit and top soil shall be utilized for plantation purposes.	As per the proposals, dumps are within the pit limits.
4e	Number of active and alive dumps.	Two top soil dumps and one overburden/waste dump active.	One top soil dump is active. One waste/OB dump is also active but available waste has been utilized for construction of retaining wall. Presently only one top soil dump is there which is active.
4f	Number of dead dumps.	Nil	Nil
4g	Number of dumps established.	No such proposals	Nil
4h	Whether Retaining wall or garland drain all along dumps are there.	Yes	Yes, garland drains and retaining walls are present all along the dump as well as along the working area/pit.
4i	Length of Retaining wall or garland drain all along dumps	Garland Drain- 1120 m Retaining Wall- 400 m	Garland drain- 1800-2000 m Retaining Wall- 1800-2000 m
4j	Number of settling ponds	One	One settling pond is under construction for de-siltation of mine water as well as serving as rainwater harvesting pit. The location of the settling pond is near BP-29 & 30 at grid N2189250 to N2189325 & E274475 to E274550

4k	Specific comments of inspecting officer on waste dump management	Waste dump management aspect is found satisfactory. Presently available waste material has been utilized in construction of retaining wall all along the dump/working area. One siltation pond is under construction that will act as settling pond as well as rainwater harvesting pit. In future, partial backfilling is proposed for mined out pits for which generated waste shall be utilized.
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Solid Waste Management - Backfilling:

Sl.No.	Item	Proposals	Actual work	Remarks
5a	Status of part or full extraction of mineral from mined out area before starting backfilling.	No such proposals in the current proposal period upto 2020-21. In future, partial backfilling is proposed for completely mined out pit.	As per the proposals.	
5b	Area under backfilling of mined out area	No such proposals	Nil	
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	No such proposals	Nil	
5d	Total area fully reclaimed and rehabilitated	No such proposals	Nil	

5e	General remarks of inspecting officers on backfilling and reclamation etc.	Backfilling shall not be feasible for the area as quantum of generated waste will be low. Thus, in future, partial backfilling is proposed after complete exhaustion of minerals.
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Progressive Mine Closure Plan:

Sl.No.	Item	Proposals	Actual work	Remarks
6a	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).	To be submitted on or before 30th June every year depicting work done under PMCP in the preceding year	Yes, lessee has submitted the report.	
6b	Area available for rehabilitation (ha) .	Nil	Nil	
6c	afforestation done (ha).	1.0 ha	1.20 ha	
6d	No. of saplings planted during the year	3000 Saplings	3500 saplings (2800 saplings within the lease area and 700 saplings outside the lease area)	
6e	Cumulative no .of plants	3000 saplings	3500 saplings (2800 saplings within the lease area)	
6f	Any other method of rehabilitation	No such proposals	Nil	
6g	Cost incurred on watch and care during the year	Rs 520000/-	Rs 16.48 Lakhs	
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	No such proposals	Nil	

6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	No such proposals	Nil
6j	Compliance on reclamation and rehabilitation by backfilling (iii) Afforestation on backfilled area	No such proposals	Nil
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No such proposals	Nil
6l	Compliance on reclamation and rehabilitation by backfilling (v) any other specific means.	No such proposals	Nil
6m	Compliance of rehabilitation of waste land within lease (i) afforestation	1.0 ha, 3000 saplings	1.20 ha, 2800 saplings (within the lease area)
6n	Compliance of rehabilitation of waste land within lease (ii) Area rehabilitation (ha)	1.0 ha	1.20 ha
6o	Compliance of rehabilitation of waste land within lease (iii) Method of rehabilitation	Green belt development	As per the proposals

6p	Compliance of environmental monitoring (core zone and buffer zone)	Yes, environment monitoring is proposed to be carried out in core and buffer zone.	Environment monitoring has been done quarterly in core and buffer zone (all nearby villages) for air, water/ground water, noise and soil. For Water/ground Water monitoring was done at 11 sampling locations (including one at Painganga River) For Ambient Air, monitoring has been done at 6 locations For Ambient Noise, monitoring was done at 10 locations and For Soil, monitoring and nalysis of soil was done at one location.	As no blasting was carried out and noise levels were within the permissible limits, ground vibration survey was not required.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.			Under progressive closure, green belt development within and around the lease area has been carried out. Apart from that, environment monitoring has been judiciously done for which all results were seen during the inspection. The data was found within the permissible limits. As the mine has started in June'2018, progressive closure works carried out in the mine were satisfactory.

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Graded ore dispatch to the Captive Cement Plant after crushing and blending.	Nil as the mne is in development phase and no production was carried out in the year 2018-19.	

7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanical crushing and blending of ROM.	Nil	Plant is under installation stage and no production has been carried out in the year 2018-19.
7c	Different grade of mineral sorted out at mines.	Cement Grade Limestone	Nil as no production carried out in the year 2018-19.	
7d	Any beneficiation process at mines	No such proposals	Nil	
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues			Mineral conservation is a crucial issue for the mine as high grade as well as outcropping ore is available in the forest part whereas in the non-forest part, mainly low grade ore or dolomite; or ore with high overburden is available. Hence working multiple faces for on-site blending is proposed in the area. As presently plant is under installation, no production has been carried out, this aspect may be dealt with at the time when mine starts production after getting clearances from MoEFCC.

Environment :

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Yes	Yes, part of the top soil excavated has been utilized for plantation purpose	

8b	Concurrent use or storage of topsoil	Both as top soil generated is proposed for usage in plantation as well as separate storage is also proposed	As per the proposals, part of top soil has been utilized in green belt development and rest of the top soil has been stacked within the lease area for future utilization.
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate dumping of top soil and overburden is proposed. There are no mineral rejects proposed to be generated.	Top soil generated has been kept separate. Generated overburden/waste has been utilized in preparation of retaining wall all around the dump/pit/working area.
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	No such proposals	Nil
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	No such proposals	Nil
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Baseline information has been furnished in the mining plan. Further, additional plantation in form of 3000 saplings per year is proposed to be carried out.	Baseline information is available in the mining plan and EIA/EMP. Further, additional plantation in form of 3500 saplings (2800 within the lease area and 700 outside the lease area) has been carried out by the lessee.
8g	Survival rate	75-80%	80%

8h	Water sprinkling on roads to control airborne dust	Yes, for the purpose, 2 water sprinklers with 12 kL capacity is proposed under extent of mechanization	As on date of inspection, one water tabker with 5 kL capacity was operating for water sprinkling over the haul roads in the working area.	
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area			Top soil is being stacked separately for future usage for plantaion/green belt development. The mine has opened in June'2018 and 3500 saplings with 80% survival have been planted by the lessee in and around the lease area. Thus being so, aesthetic beauty in and around the lease area is satisfactory. general cleanliness in and around the area is quite good.

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	Annual Returns are required to be submitted online before 1st July of every year for preceding year Monthly Returns are required to be submitted online before 10th of every month for preceding month	AR submitted online upto 2018-19 MR submitted online upto May'2019	

9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mining Engineer: Mr. Ashish Kulkarni Geologist: Mr. Sumant Dhanodkar Manager: Mr. Krishnakumar Rathod	Complete and Correct information furnished
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Covered under current (O/C) Workings: 11 ha Used for waste disposal: 2 ha	There was no option for top soil, hence, it was filled in the waste disposal. As per the prescribed format of the return, correct information has been furnished.
9d	Scrutiny of Annual return on afforestation	(i) Number of trees planted during the year: 2800 (within the lease area), 700 (outside the lease area) (ii) Survival rate in percentage : 80% for both within and outside lease plantation	Complete and correct information furnished
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Nil	Correct information furnished
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM: Nil Graded Ore: Nil	Correct information furnished as for 2018-19, no production has been carried out, only development activities are carried out which is reported in the AR for 2018-19
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Sale Value: Nil Ex-mine Price: Nil Cost of production: Nil	Complete and correct information as no production/dispatch has been carried out in 2018-19

9h	Scrutiny of Annual return on fixed assets	Value of Fixed Assets (in Rs): 156397255/- Apart from this, value of Land, plant/machineries and infrastructure has been furnished in the return. As this is the first year of operation, depreciation is Nil.	Complete and correct information has been furnished in the return.
9k	Scrutiny of Annual return on mining machineries	BACK HOE: 1.2 cum capacity, 2 Nos. DOZER: 160 HP, 1 No. TIPPER: 9 cum capacity, 4 Nos. WATER TANKER: 5000 Ltr capacity, 1 No. PUMPS (NON-ELEC.): 100 L/min capacity, 1 No.	Complete and correct information furnished

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 :

(ASHISH MISHRA)

Indian Bureau of Mines