# INDIAN BUREAU OF MINES
# MINERALS DEVELOPMEMT AND REGULATION DIVISION

## MCDR INSPECTION REPORT

## Nagpur regional office

**Mine file No :** MAH/CND/LST- 4/NGP **Mine code : 38MSH08001**

(i) Name of the Inspecting Officer and ID No. : **M017 ) ASHISH MISHRA**

(ii) Designation : Sr. Asst. Contrl. Mines

(iii) Accompaning mine Official with Designation : SHRI GAJENDRA SINGH, AGENT, SHRI SOUDIP GHOSH, MINES

(iv) Date of Inspection : 04/10/2018

(v) Prev.inspection date : 29/09/2017

**PART-I : GENERAL INFORMATION**

1. (a) **Mine Name** : **NAOKARI**

**(b) Registration NO.** : **IBM/441/2011**

(c) Category : A Mechanised

(d) Type of Working : Opencast

(e) Postal address

State : MAHARASHTRA
District : CHANDRAPUR
Village : NAOKARI
Taluka : KORPANA
Post office : AWARPUR CEMENT WORK
Pin Code : 442917
FAX No. : 07173- 266341
E-mail : amathawale@adityabirla.com
Phone : 07173- 266330

(f) Police Station : GADCHANDUR

(g) First opening date : 21/04/1982

(h) Weekly day of rest : SUN

2. Address for correspondance : P.O.- AWARPUR CEMENT PROJECT,
DISTT. - CHANDRAPUR (MS) 442 917

3. (a) Lease Number : MSH0007
(b) Lease area : 1030.58
(c) Period of lease : 50
(d) Date of Expiry : 11/02/2030

4. Mineral worked : SHALE Associated
LIMESTONE Main

5. Name and Address of the

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| Lessee | : | M/S ULTRATECH CEMENT LTD.<br>CHANDRAPUR MAHARASHTRA<br>Phone:<br>FAX : |
| Owner | : | SHRI V.T.MOORTHY<br>UNIDENTIFIED TAMIL NADU<br>Phone:<br>FAX : |
| Agent | : | SHRI A.M.ATHAWALE<br>CHANDRAPUR MAHARASHTRA<br>Phone:<br>FAX : |

Mining Engineer

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| Name | : | SHRI D.D. MAHULE,Full Time |
| Qualification | : | BE MINING |
| Appointment/ Termination date | : | 26/09/2006 |

Geologist

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| Name | : | Shri C.N.Joshi,Full Time |
| Qualification | : | M.Sc.Tech.(Applied Geology) |
| Appointment/ Termination date | : | |

Manager

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| Name | : | SHRI R.V.SAMBREY |
| Qualification | : | DIP. MINING |
| Appointment/ Termination date | : | 04/07/2006 |

6. Date of approval of Mining Plan/Scheme of Mining : 

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| Modif.of approved Mining Plan | 18/12/2000 |
| Modif.of approved Mining Plan | 16/12/2003 |
| Mining Scheme rule 12 MCDR1988 | 28/07/2005 |
| Mining Scheme rule 12 MCDR1988 | 21/01/2011 |
| Mining Scheme rule 12 MCDR1988 | 12/06/2015 |

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

| Sl.No. | Item | Proposals | Actual work | Remarks |
|---|---|---|---|---|
| 1a | Backlog of previous year | 20 Boreholes were proposed to be drilled in 2016-17 to 2017-18 period with 1000 m drilling meterage | 20 Boreholes were drilled in 2017-18 at 100m X 100m grid interval with 1000 m of drilling meterage | |
| 1b | Exploration over lease area for geological axis 1 or 2 | G1 | G1 | 295 ha area out of total 1030.58 ha area is mineralised and complete area has already been explored under G1 Axis of UNFC. |
| 1c | Exploration Agencies and Expenditure in lakh rupees during the year | Exploration by lessee himself. | Exploration was carried by lessee himself with approximate expenditure of Rs 20 lakhs. | |
| 1d | Balance area to be explored to bring Geological axis in 1 or 2 | Nil | Nil.<br>Block A is having 421 boreholes out of which 49 boreholes have encountered ore below proved depth upto 101mRL (considered proved depth for the block is 122mRL) and Block B is having 313 boreholes out of which 90 boreholes have encountered ore below proved depth upto 100mRL (considered proved depth for the block is 137mRL) | Exploration over potentially mineralized area under G1 axis has already been completed. Mineralized area has already been proved upto G1 level by drilling 734 core boreholes in 100 m X 100 m grid. The area has been divided into two blocks-<br>Block A- Proved depth 122mRL<br>Block B- Proved depth 137mRL |
| 1e | Balance reserve as on 01/04/20 | | Balance Reserves as on 01.04.2018:<br>111- 193 MT<br>121- 136 MT<br>211- 152 MT<br>Total- 481 MT | |

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| 1f | General remarks of inspecting officers on geology, exploration etc | | The Lithological sequence of rocks, in the deposit area in order of occurrence from top to bottom is as below:<br>1.Overburden Soil (OBS)<br>2.Sandstone<br>3.Green Shale<br>4.Argillaceous Limestone<br>5.Limestone with sub-grade bands<br>6.Black shale<br>7.Purple Shale | Exploration carried out in the lease area is up to the mark as per the geology and occurrence of the ore within the lease area. Main issue pertaining to the lease area is Sulphur content in the Limestone which is +0.75% in some cases because generation of SOx is an environmental hazard and with new MoEF guidelines for the generation of SOx in force, lessee is using block modelling and other softwares for mine planning to optimize the utilization of resources. |

Development :

| Sl.No. | Item | Propasals | Actual work | Remarks |
|---|---|---|---|---|
| 2a | Location of development w.r.t.lease area | Block A: From 170-163mRL (2 benches) in North West direction, From 190-184 mRL (1 bench) in North West direction, Block B: From +209-173mRL (5 benches) in North & North East direction | Actual development is as per the proposals but width to be developed is lagging due to lower production in comparison to the proposals. | |

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| 2b | Separate benches in topsoil, overburden and minerals (Rule 15) | Yes | Yes | Total 8 benches in OB/Waste and 8 benches in ore are being developed separately. Top soil from 209mRL and above as well as 200 to 209mRL (Block B) is being utilized simultaneously for plantation purposes. |
| 2c | Stripping ratio or ore to OB ratio | 1:0.255 | 1:0.332 | For 2017-18, Ore production: 3612470 T OB removed: 1198925 T |
| 2d | Quantity of topsoil generation in m3 | 50523 T | 32956 T | Complete top soil generated has been utilized for plantation purpose. |
| 2e | Quantity of overburden generation in m3 | 1666177 T (685075 cum) | 1198925 T | |

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| 2f | General remarks of inspecting officers on development of pit w.r.t. type of deposit etc | | The Limestone occurs in the form of an asymmetrical anti-clinal fold the axial plane of which strikes in a NW-SE direction up to ML 30 beyond which it trends in a NE-SW direction. The Limestone plunges towards NW with an amount of about 18°. Analysis of strike and dip readings suggest that the strike of the deposit is around N67°30'W and S67°30'E between ML-0 and ML-30 further east of which the strike changes to N7° 30' E and S7° 30' W. Several benches are being worked simultaneously. | Limestone occurring in the area is having geological disturbances in form of faults / clay and shale partings / dolomitic contaminations and is also having high 'S' content at places. Due to this, lessee is using ore modelling softwares like SURPAC so that excavations can be optimized for desired development and production. Accordingly bench height is considered as 7m in Block-A and 9m in Block-B. Development was found adequate in the area with respect to the geology and type of deposit. |

Exploitation:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|---|---|---|---|---|
| 3a | Number of pit proposed for production | Two number of pits were proposed for production. | Two pits-one each in Block A and B are there for development as well as production. | |
| 3b | Quantity of ROM mineral production proposed | 7299997 T | 3612470 T | |
| 3c | Recovery of sailable/usable mineral from ROM production | 89-90% | 100% | Complete ROM has been dispatched to the cement plant after crushing and grading. |
| 3d | Quantity of mineral reject generation | Nil | Nil | |

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| 3e | Grade of mineral rejects generation and threshold value declared. | Not Applicable | Nil | No mineral rejects are generated, instead, screen rejects, high silica and Sulphur containing material, dolomitic limestone having high MgO that are below threshold and considered as rejects/waste. Dolomitic limestone, High Silica/Sulphur containing material, screen rejects and waste are being dumped separately. |
| 3f | Quantity of sub grade mineral generation. | Nil | Nil | Due to optimization and grade control, Sub-grade, if any, generated during excavation is being dispatched and no separate sub-grade stack is available. |
| 3g | Grade of sub grade mineral generation | Not Applicable | Nil | |
| 3h | Manual / Mechanised method adopted for segregating from ROM | Mechanized mechod throgh crushing and screening | As per the proposals. | |

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| 3i | Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects. | There is no Mineral Beneficiation technique adopted except dry crushing and screening. | Earlier, Fractional analysis study of ROM was conducted for different quality of material from Block A and Block B. The ROM was screened through various sizes of sieves, viz. 200 mm, 75 mm, 50 mm, 25 mm, 10 mm and 6 mm. The weight of material after each screening was done and also a representative sample was collected and analyzed for chemical constituents. The study determined that at - 6mm fraction of material contribute high silica and high sulphur to the Limestone. | With the rejection of - 6mm fraction fines, the quality of residual Limestone is increased substantially and sub grade Limestone will be utilized which would have been un-utilized otherwise. |
| 3j | Provision of drilling and blasting in mineral benches | Yes, As per the proposals, Drilling will be carried out to a depth of 8m in Block-A and 10 meters in Block-B in two rows with 6m spacing and 4m burden. Blasting is done by slurry explosive of 125mm dia cartridge-6.25 kg each and 40cm in length in conjunction with ANFO (94% fertilizer grade ammonia and 6% diesel by weight). | As per the proposals. | 4 DTH drills-model IBH 10 (2 Nos.), model IDM 30 & IDM 40 (1 Nos. each) are available. Explosive storage facility is available at mine site (magazine) with valid storage licence. |

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| 3k | Provision of mining machineries in mineral benches | Category 'A' mechanized working is there in the mine and list of machinery deployed is given in 'Actual Work' column. | DTH Drill (2) IBH 10<br>DTH Drill (1) IDM 30<br>DTH Drill (1) IDM 40<br>Hydraulic Excavators (6)-L & T 300CK-4m3<br>Hydraulic Excavators (1)-EX 12000-6.5m3<br>Rock breaker (1)-PC200-20T<br>Wheel loader (1)-HM 2071-7.1m3<br>Dumpers (10)-TATA EH600-35T<br>Dumper (2)-BH 35-35T<br>Dumper (2)-CAT 773E-60T<br>Dozer with Ripper (2)-CAT D8R-4m x 2m<br>Water Sprinkler (2)-HM 1035-20KL<br>Water Sprinkler (2)-WS28-28KL<br>Explosive Van (1)-TATA-10T/(1)-ASHOK LEYLAND-10T<br>Diesel Tanker (1)-Ashok Ley-6KL<br>Lube Van (1)-TATA 709-6T (As proposed) | Proposals and actuals are same. |
| 3l | Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM | Yes | Yes | Mining operations in the lease area are highly mechanized. As per the geology of the area & machineries deployed, bench height proposals are suitable for working. |
| 3m | Total area covered under excavation/pits | As on 01/04/2015, area under pits is 180.81 ha with proposals for additional area requirement of 56.28 ha aggregating to 237.09 ha upto 2019-20. | As per the Annual returns, actual area under the pits for the year ending on 31/03/2018 is 201.661 ha. | |
| 3n | Ore to OB ratio for the pit/mine during the year. | 1:0.255 | 1:0.3 | |

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| 3o | Total area put in use under different heads at the end of year | As on 01/04/2015: Area under pits: 180.81 ha Area under Top soil storage: 18.23 ha Area under Dumping: 23.60 ha Area under Mineral storage: 4.91 ha Area under buildings: 6.16 ha Area under Road: 6.62 ha Area under Green Belt: 46.10 ha Unused area: 744.15 ha Total: 1030.58 ha | As on 31/03/2018: Area under pits: 201.661 ha Area under Top soil storage: 18.23 ha Area under Mineral storage: 2.45 ha Area under Waste Dumping: 38.95 ha Area under Buildings: 6.16 ha Area under Road: 7.62 ha Area under Green Belt: 48.10 ha Unused area: 707.409 ha Total: 1030.58 ha | Waste Dump Reclaimed area: 22.99 ha |
| 3p | Production of ROM mineral during the last five year period as applicable | 2017-18: 7299997 T 2016-17: 7300000 T 2015-16: 7299998 T 2014-15: 4700000 T 2013-14: 4700000 T | 2017-18: 3612470.000 T 2016-17: 3132373.100 T 2015-16: 3208344.000 T 2014-15: 3031612.000 T 2013-14: 3091720.000 T | |
| 3q | General remarks of inspecting officers on method of mining etc. | | | Method of mining is Category A mechanized which is suitable as per the production proposals/requirement and captive investments. |

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) | Yes | Yes | Top Soil, OB/Waste and rejects having mineral content below threshold value (High silica, high Sulphur and Dolomitic Limestone) are being dumped separately. |
| 4b | Location of topsoil, OB and mineral reject dumps | Top Soil: North side of both Blocks A & B, Western side of Block A, Bunds on either side of Canal and Northern and Western side of Block A Dolomitic Limestone Dumps: North of Block A, North of Block B and SW of Block A, apart from this, one protective bund near Magazine is proposed for 2016-17 with 1050 m length High S High Silica: Proposed in NW of Block B near Magazine Screen Rejects/Fines: Proposed in N of Block B Shale Dumps: North of Block B and within pit in Block A | Top Soil: 4 Dumps and 7 Top Soil Bunds (2 Dumps in the North side of both Blocks A & B- Palgaon Dump-I & II and 2 dumps in the Western side of Block A- Gugus Dump-I & II, Bunds on either side of Canal and Northern and Western side of Block A) Dolomitic Limestone Dumps: 3 Dumps- North of Block A, North of Block B and SW of Block A and one protective bund near Magazine with 1000 m length approximately Other dumps as per the proposals. | In pit dumping of shale is being done in Block A to meet the requirement of Kiln feed for clinker making. This facilitates on-site blending of shale with Limestone and so excavated (blended) material is loaded in the Dumpers and transported to the Crusher. |
| 4c | Number of dumps within lease area and outside of lease area | All dumps within lease area. | Top Soil: 4 dumps and 7 bunds are within lease area Dolomitic Limestone, Shale, High Silica High S, Shale etc. all dumps are within the lease area. | |

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| 4d | Location of dumps w.r.t. ultimate pit limit (Rule 16) | All dumps are proposed outside the pit limits | Presently dumps are outside the pit limits based on the exploration carried out in the area. | Dumps are proposed mainly in the Shale, Dolomitic Limestone etc. (non-mineralized) zone proved in the exploration results. |
| 4e | Number of active and alive dumps. | Top Soil: 1<br>Dolomitic Limestone: 2<br>Shale: 1 and active inpit dumping<br>High S High Silica: 1<br>Screen Rejects: 1 | Top Soil: 1 Active Dump in the North of Block B (Palgaon Dump-II)<br>Dolomitic Limestone: 2 Active dumps- 1 SW of Block A and 1 in N of Block B<br>Shale: 1 in North of Block B and active inpit dumping in Southern part of Block A<br>High S High Silica: 1 Active dump in NW of Block B<br>Screen Rejects: 1 Active dump in N side of Block B | |
| 4f | Number of dead dumps. | Top Soil: 3 Inactive/Dead Dumps, 7 dead/inactive Top Soil Bunds<br>Dolomitic Limestone: 1 | Top Soil: 3 Inactive/Dead Dumps-2 in the West of Block A (Gugus-I & II) and 1 in North of Block A (Palgaon Dump-I), apart from this, 7 dead/inactive Top Soil Bunds (On either side of Canal and NW of Block A)<br>Dolomitic Limestone: 1 Dead/Inactive dump- North of Block A<br>Shale: Nil<br>High S High Silica: Nil<br>Screen Rejects: Nil | All inactive / Dead dumps are fully stabilized through plantation. |
| 4g | Number of dumps established. | Top Soil: 3 Inactive/Dead Dumps, 7 dead/inactive Top Soil Bunds<br>Dolomitic Limestone: 1 | Top Soil: 3 Inactive/Dead Dumps-2 in the West of Block A (Gugus-I & II) and 1 in North of Block A (Palgaon Dump-I), apart from this, 7 dead/inactive Top Soil Bunds (On either side of Canal and NW of Block A)<br>Dolomitic Limestone: 1 Dead/Inactive dump- North of Block A<br>Shale: Nil<br>High S High Silica: Nil<br>Screen Rejects: Nil | The dumps and bunds are stabilized by plantation. One Top Soil dump in the west of Block A (Gugus-I) has one terrace and rest of the stabilized Top Soil dumps and one Dolomitic Limestone dump have two terraces. |

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| 4h | Whether Retaining wall or garland drain all along dumps are there. | Yes. | Yes. | Fresh dumping of High Silica High S, Screen rejects etc. done in the N part of Block b near magazine, therefore, a protective bund has been constructed by Dolomitic Limestone with approximately 10000 m length. Apart from this, garland drains, retaining walls as well as protective bunds are constructed by the lessee to avoid any wash-off or degradation of land. |
| 4i | Length of Retaining wall or garland drain all along dumps | For the year 2017-18: Garland Drain: proposed for 400 m in N part of Block A Retaining Wall: proposed for 400 m in N part of Block A | For the year 2017-18: Garland Drain: Constructed for 2000 m in N part of Block A & Block B Retaining Wall: Constructed for 500 m in N part of Block A | |
| 4j | Number of settling ponds | Two Settling Tanks | As per the proposals, Two settling tanks are there in the North of Block A having dimensions 20mx10mx3m each in the year 2016-17 itself. | The water encountered during mining activity is pumped out & utilized for various purposes in the mine. The excess water collected in the water sump at the bottom of the pit is discharged into settling tank on the north side of the "A" Block and the overflow is discharged after proper treatment to the Bop Nallah. |

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| 4k | Specific comments of inspecting officer on waste dump management | Waste dump management is found proper at the mine site as all inactive dumps are stabilized and all dumps have proper protective features like garland drains and retaining walls. Mineral bearing waste like screen rejects, dolomitic Limestone and high silica high Sulphur containing waste are being dumped separately for any future usage. |

## Solid Waste Management - Backfilling:

| 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 such proposals. | No backfilling proposed or done as mine is under exploitation and no part has been exhausted. | |

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| 5b | Area under backfilling of mined out area | Nil | Nil | Presently, none of mining blocks are exhausted of mineral. Up to the end of the conceptual period no reclamation and rehabilitation as such is envisaged. It was proposed to convert the mining pit as a reservoir to hold the water. No portion of the pit was proposed for backfilling. It was proposed to use the water in the reservoir for cultivation purposes and source of water for the adjoining area. |
| 5c | Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32) | No such proposals | Not applicable | Top soil is being used for plantation over dumps or waste land. |
| 5d | Total area fully reclaimed and rehabilitated | No such proposals | Not applicable | |

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| 5e | General remarks of inspecting officers on backfilling and reclamation etc. | Backfilling is not proposed upto the conceptual period. It is proposed to convert the pit into water reservoir at the end of mine-life. Average Rainfall for the area is around 1200 mm and considering lease shape and size (1030.58 ha), catchment area shall be good for conversion into a water reservoir. Reclamation of already stabilized dumps and green belt development has been done for around 70 ha area. |

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). | Yes | Yes | |

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| 6b | Area available for rehabilitation (ha) . | There is no proposal for reclamation and rehabilitation of the mining pit, as the mineral is available further depth in the existing pits. Further, plantation over matured dumps and green belt plantation is proposed under rehabilitation which is 5.0 ha for 2015-16 to 2019-20. | 1.0 ha Dump plantation has been done in the year 2017- 18. No mined out area is available for rehabilitation. | |
| 6c | afforestation done (ha). | 1 ha | 1 ha | |
| 6d | No. of saplings planted during the year | 2000 | 3040 | Plantation done with 3040 saplings over 1.0 ha area on the Dolomitic Limestone dump in the North of Block A. Apart from this 500 saplings also planted outside the lease area. |
| 6e | Cumulative no .of plants | Not Available | Total 180469 saplings have been planted till 2017-18 out of which 156077 saplings/trees are alive with survival rate of around 86%. | |
| 6f | Any other method of rehabilitation | No | Nil | |

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| 6g | Cost incurred on watch and care during the year | Rs 40 Lakh | Total Rs 80.09 Lakhs were spent with break-up as given below:<br>Dust, Noise, Vibration study and monitoring-Rs 10.23 Lakh<br>Dust suppression measures in mines-Rs 55.52 Lakh<br>Env Protection measures at Crusher-Rs 0.20 Lakh<br>Plantation & care-Rs 11.25 Lakh<br>Garland Drains, Retaining wall etc.-Rs 2.89 Lakh |
| 6h | Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling ( Lx B x D | Nil | Nil |
| 6i | Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings | Nil | Nil |
| 6j | Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on backfilled area | Nil | Nil |
| 6k | Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir | Nil | Nil |
| 6l | Compliance on reclamation and rehabilitation by backfilling (v)any other specific means. | Nil | Nil |

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| 6m | Compliance of rehabilitation of waste land within lease (i)afforestation | Nil (Plantation proposed over dumps) | Nil | Total 48.10 ha of waste land has been converted into Green belt by the year 2015-16. |
| 6n | Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha) | Nil | Nil | |
| 6o | Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation | Nil | Nil | |
| 6p | Compliance of environmental monitoring (core zone and buffer zone) | Yes | Environment monitoring is being done for core zone and buffer zone as per MoEF guidelines in this regard and its report is being submitted to this office. | |
| 6q | General remarks of inspecting officers on PMCP compliance and progressive closure operations etc. | | | Garland drains, retaining walls, check dams, bunds, settling tanks etc. all protective measures are planned and executed under the PMCP activities. Available matured dumps are reclaimed and rehabilitated through terracing and plantation. Environment monitoring is being done as MoEF guidelines in the core and buffer zone. Annual report under PMCP and report for environment monitoring are being submitted. Overall PMCP compliance was found good for the area. |

Mineral Conservation:

| Sl.No. | Item | Propasals | Actual work | Remarks |
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| 7a | ROM Mineral dispatch or grade-wise sorting within lease area | Grade-wise sorting and dispatch after crushing and screening. | As per the proposals, ROM is crushed and screened. Then it is dispatched to the Cement Plant. | |
| 7b | Method of grade-wise mineral sorting i.e. manual or mechanical. | Mechanical Crushing and screening. | As per the proposals. | |
| 7c | Different grade of mineral sorted out at mines. | Only one: Cement Grade Limestone | As per the proposals. | |
| 7d | Any beneficiation process at mines . | Crushing and screening. | Crushing and screening. | |
| 7e | General remarks of inspecting officer on Mineral conservation and beneficiation issues | | | The area is having clay and shale partings and grade of Limestone occurring in the area is varying. therefore, various grades are mined to control the quality of final product and also to ensure mineral conservation. Further, High silica High S containing, and Dolomitic Limestone are being stacked separately for any future use. Screen rejects/fines that mainly contribute for high 'S' content are being stacked separately. Shale is being dumped inpit in Block A for grade optimization. |

Environment:

| Sl.No. | Item | Propasals | Actual work | Remarks |
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| 8a | Separate removal and utilization of topsoil (Rule 32) | Yes | Black cotton soil is occurring at top with approximate thickness of 0.5 m. This top soil has been and is being stacked separately for any future usage. Also, top soil is being utilized for carrying out afforestation activities over the dumps and waste land available in the lease area. | |
| 8b | Concurrent use or storage of topsoil | Both-concurrent use and storage. | Top soil generated is being stored at earmarked location as mentioned in this report previously. If required, top soil is being used concurrently for plantation. | |
| 8c | Separate dumps for overburden, waste rock, rejects and fines (Rule 33) | Yes | Yes | |
| 8d | Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use | No | No | Mineral has not exhausted from the pit and hence, restoration of land by backfilling has not been proposed. At the conceptual stage, it is proposed to convert the pit into water reservoir and restoration of land is not proposed even upto conceptual stage. |

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| 8e | Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc) | Phased reclamation and rehabilitation in form of Dump stabilization and plantation over 5.0 ha dump area was proposed in the Approved SOM for the period 2015-16 to 2019-20. | Reclamation and rehabilitation is being done by terracing and Dump plantation of matured dumps as well as by Green belt development in the non-mining zone and Waste land within the lease area. In the year 2017-18, 1.0 ha of plantation by 3040 nos. of saplings was done with 95% survival rate over the Dolomitic Limestone dump in the N of Block A. | |
| 8f | Baseline information on existence of plantation and additional plantation done (Rule 41) | Yes | Yes | EIA study has been done and submitted. |
| 8g | Survival rate | 95% | 95% | Overall survival rate is 86% |
| 8h | Water sprinkling on roads to control airborne dust | Yes | Yes | As per the extent of mechanization, two water sprinklers are deployed in the mine for water sprinkling to control the airborne dust. |

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| 8i | General remarks of inspecting officer on aesthetic beauty in and around mines area | Plantation has been done judiciously so that aesthetic beauty of the area shall remain maintained. Green belt has been developed on either side of canal in the non-mining (blocked) zone and also in the periphery of the lease area. Pit is being used as a sump and for rain water harvesting which is beneficial. Overall, except normal degradation of the area due to mining, aesthetic beauty is good. |

Compliance of Rule 45:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|---|---|---|---|---|
| 9a | Status of submission of Monthly and Annual returns | | AR submitted online upto 2017-18<br>MR submitted online upto September 2018 | |
| 9b | Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager | Mining Engineer: Shri Anil D Kawale<br>Geologist: Shri Rama Krushna Mishra<br>Manager: Shri Soudip Ghosh | Correct information as per office records. | |

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| 9c | Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc. | Covered under current (O/C) Workings: 201.661 ha<br>Reclaimed/Rehabilitated: 0<br>Used for waste disposal: 38.95 ha<br>Occupied by Infrastructre & roads: 12.78 ha<br>Other Purpose (top soil): 18.23 ha<br>Work done under progressive mine closure plan during the year: 1.0 ha | Correct information furnished as per available items. |
| 9d | Scrutiny of Annual return on afforestation | Number of trees plated for the year 2017-18:<br>Within lease area: 3040 nos., Survival Rate: 95%<br>Outside lease area: 500 nos. Survival rate: 90% | Correct information for within lease plantation. Outside lease area plantation could not be verified. |
| 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 | For Limestone: ROM: Opening and Closing stocks-Nil ROM Production- 3571573 T Graded Ore: Opening and Closing stocks-Nil Production & Dispatch- 3571573 T For Shale: ROM: Opening Stock-1039478 T, Closing Stock- 998591 T, ROM Production- Nil Graded Ore: Opening and Closing stocks-Nil Production & Dispatch- 40897 T | Shale is being blended with Limestone and dispatched to plant. Hence total dispatch is 3612470 T from the mine head. |
| 9g | Scrutiny of Annual return on sale value, Ex. Mine price and production cost | Sale Value: Nil as it is a captive mine. Ex. Mine Price: Rs 208.05 per T (Limestone)/ Rs 181.65 per T (Shale) Production Cost: Rs 208.05 per T | Correct Information furnished. |
| 9h | Scrutiny of Annual return on fixed assets | Value of Fixed Assets: Rs 268373451/- | Detailed description furnished. |
| 9k | Scrutiny of Annual return on mining machineries | Details pertaining to Mining Machinery is furnished under Part-V (5). | Correct information furnished as per the extent of mechanization given in the approved SOM. |

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

| Violation observed | | | Show couse position | | |
|---|---|---|---|---|---|
| Rule NO. | Issued on | Compliance on | Rule NO. | Issued on | Compliance on |

**Date :**

(**ASHISH MISHRA**)

Indian Bureau of Mines