

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

MCDR INSPECTION REPORT

Nagpur regional office

Mine file No : MAH/NAG/MN-318/NGP

Mine code : 40MSH14045

- (i) Name of the Inspecting : **M017**) **ASHISH MISHRA**
Officer and ID No.
- (ii) Designation : Assistant Controller Mine
- (iii) Accompanying mine : **SHRI MUKESH KUMAR**
Official with
Designation
- (iv) Date of Inspection : 06/03/2017
- (v) Prev.inspection date : 11/10/2012

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **BHANDARBODI (4.63 HA.)**
- (b) **Registration NO.** : **IBM/863/2011**
- (c) Category : B Manual
- (d) Type of Working : Opencast
- (e) Postal address
- State : MAHARASHTRA
- District : NAGPUR
- Village : Bhandarbodi
- Taluka : Ramtek
- Post office : Bhandarbodi
- Pin Code : 441106
- FAX No. : 0712-2550689
- E-mail : gagansial@gmail.com
- Phone : 0712-2550626, 2550689
- (f) Police Station :
- (g) First opening date : 14/10/2011
- (h) Weekly day of rest :
2. Address for :
correspondance
3. (a) Lease Number : MSH0390
- (b) Lease area : 4.63
- (c) Period of lease : 50
- (d) Date of Expiry : 27/11/2061
4. Mineral worked : MANGANESE ORE Main

5. Name and Address of the

Lessee : M/S PAVRI KYANITE MINES
CIMMCO HOUSE, A -
1,INDRASAGAR, RAVINDRANATH
TAGORE MARG CIVIL LINES,
NAGPUR NAGPUR MAHARASHTRA
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	Not Available.	Mining plan for fresh grant was approved on 12/02/2009 and lease was executed on 01/10/2010. Therefore, validity of the Mining Plan was expired on 31.03.2015 after which no document has been submitted. Hence proposals are not available. earlier in the Mining Plan, lessee has proposed to drill 3 boreholes against which 4 boreholes were drilled in 2012-13.	Violation of Rule 11(3) and (4) already issued vide letter no. MAH/NAG/Mn-318/NGP dated 25/05/2017 for non submission of subsequent document after the expiry of mining Plan on 31.03.2015. As on date of inspection, mine was not working and after examination of returns, it was found that mine is closed since 2014-15.
1b	Exploration over lease area for geological axis 1 or 2	G-1	G-1 level	The area has been explored by 4 boreholes and 3 pits were formed in the area. With the influence of all these excavations and boreholes, complete area falls under G-1 category. For depth persistancy beyond 40 m, further exploration shall be required after reaching that depth. Due to this, resources have been estimated under G-3 (4860 T) considering depth continuity.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Not available	As no valid document is available, proposal for the year has been mentioned as not available. Previously 4 boreholes were drilled by the lessee but expenditure is not available.	

1d	Balance area to be explored to bring Geological axis in 1 or 2	Nil	Nil	Complete mineralized area covered under G-1.
1e	Balance reserve as on 01/04/20	Not available as on 01.04.2016	As per annual returns for 2015-16, reserves as on 01.04.2016 are: 111-12825 T 121-8235 T Total Reserves-21060 333-4860 T Total Resources-25920 T	
1f	General remarks of inspecting officers on geology, exploration etc			The mineralized area has been proved upto G-1 level by the lessee through exploration and pitting. Presently mine is not under operations due to higher production cost and lower sale value. The area is having average grade range of 18-33% Mn content.

Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Not available	Nil as mine has not worked since 2014-15	Existing development is in form of three pits located in the central part of the lease area.

2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Yes	Yes	There is a cover of 1 m soil which was excavated for the development area and stored in the NW corner of the lease area. Waste dump is located in between the pits. An existing old dump (available at the time of grant of lease) is available in the northern part of the lease area (in North from Pit-1). Mineral stacks are available in the SW part of the lease area.
2c	Stripping ratio or ore to OB ratio	Not available	Nil as the mine is not under operation.	Previously, Ore:OB ratio proposed was around 1:3.15 for 2014-15 But till date, mine has removed overburden of approximately 200 T in the year 2011-12 with Ore:OB around 1:2.22. Afterwards, working has been done intermittently in ore only.
2d	Quantity of topsoil generation in m3	Not available	Nil as mine is not under operation.	Top soil was removed in the year 2011-12 in a very small quantity only which is stored near NW corner of the lease boundary.
2e	Quantity of overburden generation in m3	Not available	Nil	Mine is not under operation

2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	Mine is not under operation hence no development has taken place. Through exploration and as per the pits, one ore body is occurring in the central part of the lease area of 2.5 m thickness and dipping at an angle of around 45 degrees towards South. the pits may be joined in future and extended towards southern boundary in the hangwall side for exploitation and northern part may be used for dumping, mineral stacking and other ancilliary activities.
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Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Not available	Nil	There are three pits having 4-5 m depth made in the lease area in the central part of the lease area.
3b	Quantity of ROM mineral production proposed	Not available	Nil	

3c	Recovery of saleable/usable mineral from ROM production	Not available	Nil	As per the mining plan, saleable ore recovery has been considered as 90% of the ROM with 10% as mineral rejects. The same has been verified from the AR of 2011-12 wherein 809.4 T of ROM and 80 T of Mineral rejects have been reported.
3d	Quantity of mineral reject generation	Not available	Nil	
3e	Grade of mineral rejects generation and threshold value declared.	Not available	Nil	Cut-off for the mine is around 20% Mn content and Mineral rejects are mainly having 10-18% Mn with 35-40% SiO ₂ .
3f	Quantity of sub grade mineral generation.	Not available	Nil	As per the mining plan, Rom is sub-divided into Saleable Ore having 90% of the ROM and rest 10% is Mineral rejects. there is no sub-grade reported for the mine.
3g	Grade of sub grade mineral generation	Not available	Not applicable in light of 3f.	
3h	Manual / Mechanised method adopted for segregating from ROM	Not available	Not applicable as mine is not under operation.	Previously, manual sorting of ROM ore was being practiced.
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No	No	90% of the ROM is readily saleable and rest 10% is having very high silica. beneficiation of the mineral rejects content shall become uneconomic hence not practiced in the mine.

3j	Provision of drilling and blasting in mineral benches	Yes	Yes	In the Mining Plan, drilling is proposed by compressed air Jack Hammer drill of 34 mm dia and 1.5 m depth.
3k	Provision of mining machineries in mineral benches	No	Only tractor trolley for the transportation of ore after blasting and manual sorting of the blasted ROM.	As the mine was not under operations, the same could not be verified.
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	3 m bench height in ore/OB	As per the proposals.	As per the category of the mine, benches were found upto the satisfaction level for 'B' category mine.
3m	Total area covered under excavation/pits	Not available	1 ha area is covered under the three existing pits as per the AR for 2015-16.	
3n	Ore to OB ratio for the pit/mine during the year.	Not available	Not applicable as the mine has not worked for the year.	
3o	Total area put in use under different heads at the end of year	Not available	As per the Annual returns for the year 2015-16: Are covered under pits: 1.0 ha Area under waste disposal: 0.2 ha Area under infrastructure and roads: 0.2 ha Total : 1.4 ha	
3p	Production of ROM mineral during the last five year period as applicable	2015-16: Not available 2014-15: 2361 T 2013-14: 2475 T 2012-13: 2286 T 2011-12: 2100 T	2015-16: Nil 2014-15: 20 T 2013-14: 335.50 T 2012-13: 1890 T 2011-12: 809.4 T	
3q	General remarks of inspecting officers on method of mining etc.			Method of mining is Category 'B' manual which could not be verified as the mine was not under operation. Bench height is as per the method of mining.

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Yes	As per the proposals given in the approved Mining Plan.	Separate dumping of top soil, OB and mineral rejects were proposed and done at the mine which was verified during the site inspection.
4b	Location of topsoil, OB and mineral reject dumps	Top Soil dump in the NW corner of the lease area, waste/OB dump in the northern part of the lease and mineral rejects in the SW corner within 7.5 m non-mining zone.	As per the proposals.	
4c	Number of dumps within lease area and outside of lease area	All dumps within the lease area for top soil, OB/waste, saleable mineral and rejects	One small top soil dump, One small old dump in the northern side of Pit 1, One small waste dump near the Pit 2, One rejects dump in the SW part within 7.5 m non-mining zone and mineral stacks in the SW part was verified during the site inspection- all within the lease area.	
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Outside the pit limits.	Waste/OB dump within the pit limits. Rest all outside the pit limits. (mineral stck is within the pit limits but it is temporary).	As of now post exploration, complete area is explored. Central part is having the orebody dipping at 45 degrees towards South. Developments shall go mainly in the hangwall direction and for pit expansion, waste/OB dump needs to be rehandled. Top soil and rejects dumps are within 7.5 m non-mining zone hence outside the pit limits.

4e	Number of active and alive dumps.	All active dumps.	All dumps are active and no inactive or dead dumps are available.	
4f	Number of dead dumps.	Nil	Nil	
4g	Number of dumps established.	Nil	Not applicable in light of 4f.	
4h	Whether Retaining wall or garland drain all along dumps are there.	No proposal	No retaining wall or garland drain found along the dumps at the site.	
4i	Length of Retaining wall or garland drain all along dumps	Nil	Not applicable in light of 4h.	
4j	Number of settling ponds	Nil	Nil	
4k	Specific comments of inspecting officer on waste dump management			Waste dump existing at the mine site need to be rehandled and shifted outside the pit limits. Also dump plantation has been done in the past and due to non-working, the dumps are automatrically stabilized.

Solid Waste Management - Backfilling:

Sl.No.	Item	Propasals	Actual work	Remarks
5a	Status of part or full extraction of mineral from mined out area before starting backfilling.	No proposal	Nil	
5b	Area under backfilling of mined out area	Nil	Nil	

5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	No concurrent usage was proposed in the approved Mining Plan. Stacking of top soil for future usage is proposed.	As per the proposals given in the approved mining Plan.	
5d	Total area fully reclaimed and rehabilitated	Nil	Nil	
5e	General remarks of inspecting officers on backfilling and reclamation etc.			Mining lease has been granted in 2010-11 and since then only intermittent mining has been done. Therefore, presently no area has been matured for reclamation and rehabilitation activities or backfilling. It shall be done after exhaustion of the reserves or after reaching the economical depth. Till then, only afforestation on the dump slopes and in the eastern boundary within 7.5 m zone is proposed and carried out.

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).		No report submitted.	Report of 45 points as per the format has been submitted having complete information of the lease area. hence no violation was considered.
6b	Area available for rehabilitation (ha) .	Nil	Nil	

6c	afforestation done (ha).	Not Available	Nil for the year 2015-16.	A total of 250 nos. of trees were proposed to be planted in the Mining Plan proposal period against which some plantation on the dump slopes and in the eastern boundary was observed during the inspection. It was suggested to cover the backlog in the future proposals.
6d	No. of saplings planted during the year	Not Available	Nil	
6e	Cumulative no .of plants	250 as per the Mining Plan	Approximately 50.	Backlog was advised to be covered in the future proposals.
6f	Any other method of rehabilitation	No	No	
6g	Cost incurred on watch and care during the year	Not Available	Nil	No monitoring activities done during the year.
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 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.	No	No
6m	Compliance of rehabilitation of waste land within lease (i) afforestation	In the 7.5 m non-mining zone in eastern part of the lease area-plantation was proposed over an area of 0.625 ha with planting 250 saplings in the Mining Plan proposal period.	Plantation done on dump slopes and 7.5 m non-mining zone in Eastern part. Exact area could not be derived but around 50 saplings are alive in total.
6n	Compliance of rehabilitation of waste land within lease (ii) Area rehabilitation (ha)	0.625 ha	Approximately 0.1 ha
6o	Compliance of rehabilitation of waste land within lease (iii) Method of rehabilitation	Afforestation	Afforestation within 7.5 m non-mining zone in the Eastern part.
6p	Compliance of environmental monitoring (core zone and buffer zone)	Not Available	Not done for the year 2015-16.

6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	Due to intermittent working, PMCP proposals could not be implements as whole. In the PMCP, only proposal was in form of pitching and afforestation. Both works have been done partially. During the inspection, it was suggested that the backlog should be covered in the future proposals as well as provision of garland drain and retaining wall should be made. Further, environment monitoring of the parameters like air, water and noise should be done as per MoEF gudelines.
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Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Grade-wise sorting within the lease area.	As per the proposals.	Annual returns for the last five year period were verified.
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Manual	Manual	
7c	Different grade of mineral sorted out at mines.	Below 25%	Below 25%	As per the reserves and geology chapter, 18-33% Mn content is available which is blended to form below 25% stock.
7d	Any beneficiation process at mines .	No	No	

7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	Mineral rejects were found stacked separately for any future usage. Upto 18% Mn content material was being used/blended to form the saleable grade i.e. below 25% Mn stock while the actual cut-off as per the mining plan is 20% Mn. Therefore, Mineral conservation aspect has been taken care of by the lessee.
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Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Separate removal and storage of top soil was proposed in the approved Mining Plan	As per the proposals of the Mining Plan	As working has been intermittent, only a little development work has been done after the lease grant in the year 2010-11. During inspection one small top soil dump in the NW corner of the lease area was verified.
8b	Concurrent use or storage of topsoil	No	No	Only stcking was proposed for future usage.
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Yes	As per the proposals.	
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	No such proposal	Nil	Backfilling of waste is proposed at the conceptual stage.

8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	No	Nil	Mining was started in the lease area on 14.10.2011 and since then very less working could be done by the lessee due to various reasons. Restoration of the pits and excavation is proposed to be taken up at the conceptual stage.
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Yes	Yes	Baseline information has been given in the approved Mining Plan.
8g	Survival rate	100%	20%	Due to intermittent working and non-operation since 2014-15, survival of the plant could not be ensured while during the inspection, backlog was suggested to be covered in future proposals.
8h	Water sprinkling on roads to control airborne dust	Yes	Nil	As the mine was not under operation, there was no such issue of airborne dust. It was informed by the lessee that during the operational period, water sprinkling was done in the working areas and on the roads once a day.

8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	Mine is not under operation since 2014-15. Further, lease was granted on 01.10.2010 and working started on 14/10/2011 after which very less working has been done which can be verified with the proposed and actual production details. Due to this aesthetic beauty is good in the area. Most of the mines in the area are not under operation. The area is having bushes, shrubs and plantations done by the lessee.
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Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns		Annual returns submitted online for 2015-16 Monthly returns submitted online upto May'2017	Compliance of Rule 45
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mining Engineer in-charge: Mr. Gulab Gadle Geologist in-charge: Nil	Mining Engineer in-charge: Mr. Gulab Gadle Geologist in-charge: Nil	Previously Late Shri S. V. Gokhale was a pert time geologist appointed for the mine as required for category 'B' mine but after he expired, no geologist could be appointed as the mine was not in operation. As soon as the mine re-opens, appointment of geologist shall be done as per Rule 55(3) of MCDR'2017.

9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	As per the Annual returns for the year 2015-16: Are covered under pits: 1.0 ha Area under waste disposal: 0.2 ha Area under infrastructure and roads: 0.2 ha Total : 1.4 ha	Correct information given.
9d	Scrutiny of Annual return on afforestation	Nil	Nil
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Nil	As mine has not worked, generation of Mineral rejects is Nil.
9f	Scrutiny of Annual return on ROM stock and/or graded ore	As per the Annual Returns for 2015-16: ROM- Stocks and production is NIL Graded Ore: For below 25% Mn: Opening Stock- 1422.395 T/ Production and Dispatch-NIL/ Closing Stock- 1422.395 T	Correct information has been mentioned. Graded Mineral stock seen during site inspection.
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	As no sale occurred, Ex-mine price is mentioned as Nil	It was advised to go through the modifications done in MCDR Rule 45 regarding ex-mine price in cases where no sale is occurred. Therefore, in the column, either ASP published by IBM (for non-captive mines where no dispatch occurred) or Cost of production (for captive mines) should be entered.
9h	Scrutiny of Annual return on fixed assets	Given in Annual Returns	Correct information given

9k	Scrutiny of Annual return on mining machineries	Nil	Nil	Mine is not under operation.
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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
MCDR17	Rule 11(3)	26/05/2017			
MCDR17	Rule 11(4)	26/05/2017			

Date :
(ASHISH MISHRA)

Indian Bureau of Mines