

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

MCDR INSPECTION REPORT

Nagpur regional office

Mine file No : MAH/NAG/MN-314/NGP

Mine code : 40MSH14037

- (i) Name of the Inspecting : **M017**) **ASHISH MISHRA**
Officer and ID No.
- (ii) Designation : Assistant Controller Mine
- (iii) Accompanying mine : Shri M. D. Chaurasia, Mining Engineer in-charge
Official with
Designation
- (iv) Date of Inspection : 10/03/2017
- (v) Prev.inspection date : 15/02/2010

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **BHANDARBODI (4.86 H)**
- (b) **Registration NO.** : **IBM/5159/2011**
- (c) Category : B Manual
- (d) Type of Working : Opencast
- (e) Postal address :
State : MAHARASHTRA
District : NAGPUR
Village :
Taluka :
Post office :
Pin Code :
FAX No. :
E-mail :
Phone :
- (f) Police Station :
- (g) First opening date : 01/08/2007
- (h) Weekly day of rest :
2. Address for :
correspondance :
3. (a) Lease Number : MSH0348
- (b) Lease area : 4.86
- (c) Period of lease : 20
- (d) Date of Expiry : 18/01/2027
4. Mineral worked : MANGANESE ORE Main

5. Name and Address of the

Lessee : M/S TRIMURTY COMMERCIAL PVT. LTD.
NAGPUR MAHARASHTRA
Phone:
FAX :

Owner : SHRI YASHWANT SANGLA
4TH FLOOR, POONAM PLAZA,
CIVIL LINES, NAGPUR (MS)
NAGPUR MAHARASHTRA
Phone:
FAX :

6. Date of approval of Mining : Fresh under rule 22 MCR1960 29/05/2006
Plan/Scheme of Mining : Mining Scheme rule 12 MCDR1988 16/05/2012

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	Nil	Nil	No exploration has been proposed in the approved SOM for the period 2012-13 to 2016-17. Exploration has been proposed in the conceptual stage by 2 boreholes to prove depth persistancy. The area has already been explored by the lessee through 8 boreholes with a total meterage of 409 m in April'2011.
1b	Exploration over lease area for geological axis 1 or 2	G-1 & G-2	As per the proposals	G-2 reserves have been considered in depth persistancy as the maximum intersection level is 283 mRL whereas G-2 reserves have been considered upto 271 mRL (G-1 upto 291 mRL). Hence mineable reserves as per MEMC Rules'2015 may be considered for G-1 category only.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Nil	Nil	No exploration done in the year.

1d	Balance area to be explored to bring Geological axis in 1 or 2	Nil	Nil	As the area has been explored by means of 8 boreholes drilled in the dip direction, complete area may be considered under G-1 for the existing deposit. Exploration may be required for depth persistancy which has also been proposed at the conceptual stage in form of 2 boreholes.
1e	Balance reserve as on 01/04/20	Asper the Approved SOM (considering reserves and proposed production), Balance reserves as on 01/04/2016 should be: 121-68193.9 T 122-63000 T Blocked Resources (211)-32418 T	Asper the Approved SOM and Annual returns for the respective years (considering reserves and actual production), Balance reserves as on 01/04/2016 are: 121-99235 T 122-63000 T Blocked Resources (211)-32418 T	Mine has reported Nil production in 2012-13 to 2013-14. As per 1b, reserves reported under 122 have not been considered while calculation of depletion of reserves.

1f	General remarks of inspecting officers on geology, exploration etc	Main orebody is inform of Mn band occurring in the lease area in EW strike direction and in between 200N to 300N covering entire lease area. Dip is around 45 degrees towards S and average thickness is 3.0 m. Alongwith this, with the development of pit, float ore zone having 1.5 to 2m thickness also found to be ocuring below the soil cover of around 3 m in the lease area having average recovery of 15%. Average grade range is 30-47% Mn content has been reported in the SOM based on the exploration.
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Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Deleopment has been proposed in form of Lateral extension (exploitation of Float Ore) as well as deeping of existing pit (exploitation of Mn vein) located in between 200N to 300N and 150E to 380E.	Only small work could be done in the lateral extension/deepening of the existing pit as production remained intermittent for 2016-17 (910 T production in 4 months working) and the mine was closed due to prohibitory orders of PNB since 06/10/2016. In 2015-16 also, quite less production was done in comparison to the prposals. Accordingly, development is very less.	

2b	Separate benches in topsoil, overburden and minerals (Rule 15) Yes	As per the proposals.	Separate bench in top soil of 3 m is formed to facilitate exploitation of Float ore zone of 1.5-2 m occurring below the soil. Thereafter, separate benches are there in the OB and mineral.
2c	Stripping ratio or ore to OB ratio	Stripping ratio for bedded ore for 2015-16 shall be 1:2.2 Recovery from float ore is proposed to be 15%	Overburden removal not reported in the Annual returns. Also no records could be verified as the records and office was sealed by the bank authorities.
2d	Quantity of topsoil generation in m3	Soil generation for 2015-16: 1620.1 cuM 2016-17: 935 cuM	One soil dump was found in the Northern boundary but quantity generated during the year could not be verified due to the reasons mentioned in 2c.
2e	Quantity of overburden generation in m3	OB (other than soil): 2015-16: 18540.2 cum 2016-17: 22372 cum	Overburden removal not reported in the Annual returns. Also no records could be verified as the records and office was sealed by the bank authorities.

2f General remarks
of inspecting
officers on
development of
pit w.r.t. type
of deposit etc

Pit is well developed in the lease area having around 15 m D and spread all along the strike of the orebody. During the inspection, it was advised to mention the necessary data in the returns so that development part could be verified from the submitted returns. Lateral extension is being proposed to exploit the float ore and thus pit is expanded to exploit bedded ore from deeper horizons. Orebody is not steep and is located in the Northern part of the lease area supporting development aspect.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
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3a	Number of pit proposed for production	One existing pit to be extended laterally and vertically.	With reference to the proposals lateral and vertical extension of the existing pit has been done but not upto the quantum as proposed.	As on date of inspection, the mine was not working due to prohibitory orders of PNB dated 06/10/2016. All the documents, office and stacks etc. were sealed by the bank and thus at many places, data could not be verified. Pit, benches, dumps, mineral stack etc. was seen during site inspection and found as per the locations proposed but as the extent of development and production was lower due to intermittent/no working in the mine, accordingly changes were observed.
3b	Quantity of ROM mineral production proposed	2015-16: 8898.3 T 2016-17: 7963 T	2015-16: 1882 T 2016-17: 910 T	
3c	Recovery of sailable/usable mineral from ROM production	90% recovery for bedded deposit with 5% sub-grade and 5% mineral rejects	As per the proposals.	Sub-grade and rejects dumps seen in NW boundary. Wherever possible, sub-grade is being blended and sold.
3d	Quantity of mineral reject generation	5% of the ROM For 2015-16: 444.02 T For 2016-17: 397.1 T	Could not be verified.	
3e	Grade of mineral rejects generation and threshold value declared.	Below 10% Mn	As per the proposals.	Sub-grade is above threshold and Mineral rejects are below threshold values.
3f	Quantity of sub grade mineral generation.	5% of the ROM. For 2015-16: 446 T For 2016-17: 398 T	Could not be verified.	All the stacks/ office etc. were sealed by bank authorities.

3g	Grade of sub grade mineral generation	Mn 10-23% Fe 9-12% SiO ₂ 25-35% P 0.3-0.35%	As per the proposals but could not be verified.	
3h	Manual / Mechanised method adopted for segregating from ROM	Manual	Manual	
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	Jigging	As per the proposals	After manual screening, Jigging of -6+3mm size material is being done to recover mineral content and to ensure mineral conservation.
3k	Provision of mining machineries in mineral benches	Yes- Wagon drill Excavator Dumpers 20-35T capacity Tractor/Trolley Water Tanker Pumps for dewatering etc.	As per the proposals.	
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Yes	Yes. category of the mine is 'A' with semi mechanized method of mining (other than fully mechanized). Thus 6 m bench height as proposed and maintained is suitable. For float ore working, bench height is being kept as 2 m which is suitable for that zone.	
3m	Total area covered under excavation/pits	Area under the pits is proposed to be 1.039 ha at the end of 2016-17.	Approximately 1 ha area is covered under the working pit.	
3n	Ore to OB ratio for the pit/mine during the year.	1:2.2	More or less as per the proposals as informed by the accompanying official but it could not be confirmed in absence of records.	

3o	Total area put in use under different heads at the end of year	Area under pits: 1.039 ha Area under top soil dump: 0.031 ha Overburden/wsa te dump: 0.96 ha Mineral storage: 0.1 ha Infrastructure : 0.01 ha Roads: 0.235 ha Green Belt: 0.206 ha Total 2.581 ha	Area under pits: 1.0 ha Approximately: Area under top soil dump: 0.01 ha Overburden/wsa te dump: 0.50 ha Mineral Storage: 0.2 ha Infrastructure: 0.01 ha Roads: 0.2 ha Green Belt: 0.1 ha Total 2.02 ha	In the Annual returns for 2015-16, incorrect data is mentioned.
3p	Production of ROM mineral during the last five year period as applicable	2015-16: 8898.3 T 2014-15: 8442.8 T 2013-14: 7852 T 2012-13: 7676 T 2011-12: 1428 T	2015-16: 1882 T 2014-15: 54 T 2013-14: Nil 2012-13: Nil 2011-12: Nil	

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.	

- 4b Location of topsoil, OB and mineral reject dumps Sub-grade dump As per the proposals. in the NW corner of the lease area, Rejects and Soil dumps separately in the Northern part within 7.5 m Non-mining Zone, Two existing dumps-One in the NE corner of the lease (8-9 m) height and other in SW corner (5 m height), One More Waste dump proposed in NW
- 4c Number of dumps within lease area and outside of lease area All dumps within the lease area. It was proposed to obtain a land outside the lease area for dumping but could not be done after Hon'ble Supreme Court order. 1 Top soil, Mineral rejects, Subgrade and Mineral Stack 3 Waste dumps (2 old and one new) As per the proposals.

4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Within pit limits	Within the pit limits as no area is available outside the pit limits.	For expansion of the pit, complete lease area shall be required, thus presently pit limit holds as total lease area excluding 7.5 m non-mining zone. Waste dumps are located in the hangwall and footwall side within the zone that may be required for expansion of the pit as no area is available beyond the pit limits.
4e	Number of active and alive dumps.	All active dumps.	All dumps are active. Though 2 old waste dumps are present but these are not dead dumps.	
4f	Number of dead dumps.	Nil	Nil	
4g	Number of dumps established.	Nil	Nil	
4h	Whether Retaining wall or garland drain all along dumps are there.	Yes	Yes	
4i	Length of Retaining wall or garland drain all along dumps	Garland drain and retaining wall of around 100 m was proposed in the NW corner	Garland drain and retaining wall constructed for around 50-60 m in the NW corner of the lease area.	
4j	Number of settling ponds	Nil	Nil	
4k	Specific comments of inspecting officer on waste dump management			Pit expansion may require the waste dumps present in the lease area to be handled multiple times. Therefore, it was suggested to exploit systematically so that simultaneous backfilling of waste can be practiced.

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 such proposals	Not done.	The exploitation of mineral in the leasearea is yet to reach its economic depth, hence no proposals for backfilling are incorporated.
5b	Area under backfilling of mined out area	Nil	Nil	Backfilling of float ore exploited zone is being done but that too is temporary as further expansion of pit will require conversion of whole area into one single pit as suggested in the conceptual plan.
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	No, Separate stacking is proposed for future usage.	As per the proposals.	
5d	Total area fully reclaimed and rehabilitated	Nil	Nil	
5e	General remarks of inspecting officers on backfilling and reclamation etc.			No backfilling is proposed in the 5 years period expiring on 31/03/2017 or even no proposals are there at the conceptual stage as the generated waste quantum shall be very high. Instaed, at the conceptual stage, the area is proposed for construction of a water reservoir.

Progressive Mine Clousre Plan:

Sl.No.	Item	Propasals	Actual work	Remarks
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6a	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).		Report on 45 points new format submitted. Hence no violation considered as it contain all the information required as per the Rule.	
6b	Area available for rehabilitation (ha) .	Nil	Nil	
6c	afforestation done (ha).	0.206 ha area to be planted on cumulative basis	0.1 ha area is under plantation	Due to intermittent working, targets could not be achieved. It was suggested to cover the backlog in subsequent proposals.
6d	No. of saplings planted during the year	25 trees	12 saplings	
6e	Cumulative no .of plants	200 saplings approximately	Approximately 75 saplings	
6f	Any other method of rehabilitation	No such proposals	Nil	
6g	Cost incurred on watch and care during the year	Rs 2500/- for plantation and Rs 30000/- for Monitoring	Rs 1000/- approximately only on plantation.	Monitoring could not be done due to non-working of the mine and prohibitory orders.
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 on backfilled area	No such proposals	Nil	

6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No such proposals in the 5 years proposal period. In the conceptual stage, converting the mined out pit into water reservoir is proposed.	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	Afforestation is done in 7.5 m non-mining zone in Northern part of the lease area and was proposed for Southern part of the lease area within 7.5 m non-mining zone.	Plantation has been done in the southern part but less number of saplings were planted. For existing plantation done in the Northern part, survival was found low.	
6n	Compliance of rehabilitation of waste land within lease (ii) Area rehabilitation (ha)	No such proposals	Nil	
6o	Compliance of rehabilitation of waste land within lease (iii) Method of rehabilitation	No such proposals	Nil	
6p	Compliance of environmental monitoring (core zone and buffer zone)	Proposed for core zone for Air, Water and Noise .	Not done due to non-working of the mine and prohibitory orders.	As per the approved SOM, sample locations are set in the Eastern boundary at three separate locations for Air, Water and Noise but no environment monitoring has been done.

6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	PMCP proposals are in the form of green belt building, construction of garland drain , retaining wall, pitching of waste dumps and environment monitoring only. Mine has worked very less in comparison to the proposals. thus the proposals could not be complied in letter and spirit.
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Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Graded Mineral Dispatch after grade-wise sorting within the lease area	As per the proposals, grade-wise dispatch	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Manual	Manual screening and sorting alongwith Manual Jigging for beneficiation.	
7c	Different grade of mineral sorted out at mines.	Below 25% and Above 25% and Below 35%	As per the proposals.	Though the lease area has reported to have +40% Mn content ore, the amount so occuring is very less. Sub-grade and lower grade mineral is being blended to obtain the grades as reported in the returns.
7d	Any beneficiation process at mines	Manual Jigging after Manual screening	Manual jigging is being practiced for +6-3 mm material.	

7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	As per the threshold value of the mineral, +10-23% Mn content material is being stacked as sub-grade and is being sold after suitable blending with higher grades. +23% Mn content material is readily saleable. -6+3 size constituents are further recovered after screening and manual jigging. -10% Mn content is being stacked as Mineral rejects. Hence 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 of the top soil alongwith its storage has been proposed.	As per the proposals.	Actual achievements are quite less.
8b	Concurrent use or storage of topsoil	No such proposals	Nil	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Yes	Yes, being practiced and dumped at earmarked locations as mentioned previously in the report.	

8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	No such proposals	Nil	No proposals are there for restoration of the land. Instead, stabilization of the dumps and conversion of mined out pit into water reservoir is proposed at the conceptual stage.
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	No such proposals	Nil	As the pit developed is yet to attain its economical depth/ultimate pit depth, no reclamation of pits/dumps is proposed.
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Yes	Baseline information is given in the approved Mining Plan/Scheme of Mining.	
8g	Survival rate	80%	Around 30-40%	
8h	Water sprinkling on roads to control airborne dust	Yes	Not verified as the mine was not under operation during the inspection.	Extent of mechanization include the provision of 'Water Tanker'. Also accompanying official informed that while the mine was working, water tanker used to operate twice a day in the working areas, dumps and roads.

8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	As the mine is not under opertaion, aesthetic beauty is satisfactory in the area. The area is having a cluster of mines andmany of them are not working. There are plantations done by the lessee in the lease area and the lease boundary is fenced also. thus proper safety measures have also been adopted 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 by the lessee upto 2015-16 (offline) Monthly returns submitted by the lessee upto March'2017 (Offline)	Returns have been submitted online due to inaccessibility of userid and passwords to login and submit online returns due to prohibitory orders by PNB (Mine office has been sealed).

9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mining Engineer in charge: Shri M. D. Chaurasia Geologist in charge: Shri M. S. Waghmare	Shri M. S. Waghmare, reported as Geologist is a Mining Engineer and the appointment is not suitable.	It was found that earlier, Late Shri S. V. Gokhale was appointed as Geologist and after he passed away, Shri M. S. Waghmare, who has working experience in Mine Planning, was appointed for interim period till geologist could be appointed by the lessee. Later, the mine has been sealed by PNB and thus no appointment could be done. As soon as the operations resume in the mine, suitable person shall be appointed as per Rule 55(3) of MCDR'17.
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Area already abandoned and exploited: 1.5 ha Area covered under pits: 1.5 ha	Incorrect information has been given.	Suitable action may be taken under Rule 45(7) of MCDR'17 and state govt. may be intimated to take actions accordingly.
9d	Scrutiny of Annual return on afforestation	Nil.	12 Saplings planted as per the information provided by the accompanying official.	Action as per Rule 45(7) of MCDR'17
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Nil	Nil	

9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM- Opening Stock: 797.685 T/ Production: 1882 T/ Closing Stock: 1391.975 T Graded Ore- Opening Stock: 797.685 T/ Production: 1882 T/ Dispatch: 1287.705 T/ Closing Stock: 1391.975 T	Duplicacy in ROM and Graded ore. ROM stock is Nil. Only graded ore is available in the stacks.	Action as per Rule 45(7) of MCDR'17
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Ex-mine Price for Below 25% has been given as Rs 1876/- Production cost has been given as Nil.	Production cost should have been given by the lessee and it should not be Nil where production has been reported.	Action as per Rule 45(7) of MCDR'17
9h	Scrutiny of Annual return on fixed assets	Not Given	Not given in the returns	Action as per Rule 45(7) of MCDR'17
9k	Scrutiny of Annual return on mining machineries	Given but not in full. Only 1 pump has been mentioned under the item (Part-IV)	Incomplete information mentioned.	Action as per Rule 45(7) of MCDR'17

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