

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

MCDR INSPECTION REPORT

Nagpur regional office

Mine file No : MAH/NAG/MN--2/NGP

Mine code : 40MSH14002

- (i) Name of the Inspecting : **M017**) **ASHISH MISHRA**
Officer and ID No.
- (ii) Designation : Sr. Asst. Contrl. Mines
- (iii) Accompanying mine : Shri R. U. Singh, Agent
Official with
Designation
- (iv) Date of Inspection : 20/03/2020
- (v) Prev.inspection date : 19/09/2019

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **BELDONGRI**
- (b) **Registration NO.** : **IBM/5711/2011**
- (c) **Category** : **A Other than Fully Mech.**
- (d) **Type of Working** : **Underground**
- (e) **Postal address**
- State : **MAHARASHTRA**
- District : **NAGPUR**
- Village : **BELDONGRI**
- Taluka : **PARSEONI**
- Post office : **SATUK**
- Pin Code : **441106**
- FAX No. : **N.A.**
- E-mail : **N.A.**
- Phone : **07102 - 246160**
- (f) **Police Station** : **RAMTEK**
- (g) **First opening date** : **01/07/1962**
- (h) **Weekly day of rest** : **SAT**
2. **Address for** : **3, MOUNT ROAD EXTENSION**
correspondance **NAGPUR**
3. (a) **Lease Number** : **MSH0076**
- (b) **Lease area** : **26.66**
- (c) **Period of lease** : **60**
- (d) **Date of Expiry** : **30/06/2022**

MSH0077
12.99
48
31/03/2020

4. Mineral worked : MANGANESE ORE Main

5. Name and Address of the

Lessee : M/S MANGANESE ORE (INDIA) LTD.
3, MOUNT ROAD EXTENSION
POST BOX NO. 34, NAGPUR
(MP) NAGPUR MAHARASHTRA
Phone:
FAX :

Owner : DEEPANKAR SHOME
1-A, MOIL BHAVAN KATOL ROAD
NAGPUR NAGPUR MAHARASHTRA
Phone:
FAX :

Agent : A. V. MASADE
MUNSAR MINE RAMTEK NAGPUR
NAGPUR MAHARASHTRA
Phone:
FAX :

Mining Engineer

Name : SUDHIR PATHAK, Full Time
Qualification : AMIE
Appointment/ : 23/06/2008
Termination date

Geologist

Name : M BHANSE, Full Time
Qualification : M.SC.
Appointment/ : 06/09/2005
Termination date

Manager

Name : R.P. CHOUDHARY
Qualification : DIPLOMA IN MINING
Appointment/ : 17/04/2008
Termination date

6. Date of approval of Mining : Renewal under rule 22 MCR1960 29/04/2003
Plan/Scheme of Mining Mining Scheme rule 12 MCDR1988 24/09/2003
Mining Scheme rule 12 MCDR1988 23/07/2008

Mining Scheme rule 12 MCDR1988
MP review under 17(1) MCR 2016

24/07/2013
04/07/2017

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	2 winzes from underground were proposed to be drilled from 148 mRL to 48 mRL (100 m depth) in the approved Review of mining Plan period 2017-18 to 2021-22	Nil for the year 2018-19	Proposed underground winzed were to be drilled at the location Ch 00 and ch 150 whereas the levels aren't exposed at the Chainages to drill the winzes. Present working is at Ch-50 to Ch+150 and Ch-50 to Ch-250 between the levels 193 mRL to 148 mRL. For the purpose, a violation was earlier issued on 08/02/2017 that was complied on 24/02/2017. As on the date of inspection, both winzes have been completed and hence, the proposal stands compied.
1b	Exploration over lease area for geological axis 1 or 2	G-1	G-1	Laterally the area has been proved through 15 boreholes and the orezone has been identified alongwith delineation of orebody. Presently, orebody is proved upto a depth of 148 mRL (Top RL was 309 m).
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Nil	Nil	Winzes were proposed to be developed by MOIL however, being exploratory mining, its cost is included in cost of production.
1d	Balance area to be explored to bring Geological axis in 1 or 2	Nil	Nil	

1e	Balance reserve as on 01/04/20	Balance reserves/reserves are given under actual work details.	111- 68034 T 121- 47250 T 211- 42902 T 221- 54960 T Total: 213146 T	
1f	General remarks of inspecting officers on geology, exploration etc	The ore zone at beldongri mine occurs in the form of lenticular shape, central portion being the thickest (upto 35) and trending NE-SW. the dip is towards south ranging between 45 degree to 70 degree. The ore body is plunging in south west direction at an avg angle of 21 degrees. Structurally the deposit is not very complicated, only a few small faults and lineation plunges have been observed. The faults are normal faults and displacement is very small.	The orezone in the area has been proved through 15 boreholes upto 148 mRL. Exploration is proposed in form of exploratory mining through 2 winzes that may be done after the development of 148 mRL level and below at Ch 00 and Ch 150. As on the date of inspection, both winzes have been developed.	

Development :

Sl.No.	Item	Proposals	Actual work	Remarks
2a	Location of development w.r.t.lease area	For 2017-18 to 2021-22, development was proposed as Hangwall drive at crosscuts 2 & 5 with 70 m, Winzes at Ch 00 & Ch -150 with 60 m & Ore Drive at Ch 100 & Ch-250 with 90 m (total 220 m). In the year 2018-19, proposed development was 479 cum.	In the year 2018-19, actual development was crosscut with 12 m & winze with 13 m. Crosscut 2 & Winze at Ch 00 have been under development activities and the developments were as per the proposals.	
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Not applicable as it is an underground mine	Not applicable as it is an underground mine	

2c	Stripping ratio or ore to OB ratio	Not applicable as it is an underground mine	Not applicable as it is an underground mine	
2d	Quantity of topsoil generation in m3	Not applicable as it is an underground mine	Not applicable as it is an underground mine	
2e	Quantity of overburden generation in m3	Not applicable as it is an underground mine	Not applicable as it is an underground mine	
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc			Developments were as per the proposals made in the approved Mining Plan document. Waste generation was Nil as the developments were made in the orebody. Type of deposit is steeply dipping between 45 degree to 70 degree. Also the area is structurally very disturbed. Underground proposals are suitable for systematic development of the deposit.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Not applicable as it is an underground mine	Not applicable as it is an underground mine	Working is proposed in between 148 mRL to 193 mRL i.e., one level is under development and active stoping operations.
3b	Quantity of ROM mineral production proposed	2018-19: 32000 T	2018-19: 26383 T	Apart from this, 5538 T of ore was recovered from mineralized dumps.

3c	Recovery of saleable/usable mineral from ROM production	75% of ROM is proposed as saleable mineral, for 2018-19, the quantity is 24000 T	100% ROM was saleable	For the purpose, a violation letter was issued on 18/03/2019 as per the observations made in the scrutiny of monthly returns of Dec'18. As per the response submitted, Low Grade high Silica (LGHS) and Fines were readily saleable in the market during the year that led to 100% recovery. Compliance for the violation has been done on 30/08/2019 after verification of the facts with sale invoices.
3d	Quantity of mineral reject generation	15% of ROM	Nil	Reasons elaborated under item 3c
3e	Grade of mineral rejects generation and threshold value declared.	-10% Mn (Waste rock), Threshold value is +10% Mn	Nil	
3f	Quantity of sub grade mineral generation.	10% of ROM	Nil	Reasons elaborated under item 3c
3g	Grade of sub grade mineral generation	+10% - 20% Mn	Nil	
3h	Manual / Mechanised method adopted for segregating from ROM	Manual sorting	Manual sorting for grade-wise stock and dispatch	
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	Not applicable as it is an underground mine	Not applicable as it is an underground mine	Drilling and blasting in the underground is proposed using 33 mm dia jack hammer drills with 800 mm, 1200 mm & 1600 mm length variations. Drilling pattern is wedge cut & Blasting is being carried out by small dia explosives.
3k	Provision of mining machineries in mineral benches	Not applicable as it is an underground mine	Not applicable as it is an underground mine	The mine is semimechanized. Air compressor operated jack hammer drills are being used underground. Tubs are manually operated for hoisting of ore. Over surface, front end loaders and dumper trucks are used for dump workings as well as transportation of minerals/waste. Water tanker etc are deployed as auxiliary equipments.
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Not applicable as it is an underground mine	Not applicable as it is an underground mine	Level interval between two levels is 45 m which is suitable as per the occurrence of mineral deposit in the area.
3m	Total area covered under excavation/pits	Existing area under pit: 4.075 ha (Old pit) Additional area proposed: Nil (only underground mining)	Area under pit: 4.075 ha	
3n	Ore to OB ratio for the pit/mine during the year.	Not applicable as it is an underground mine	Not applicable as it is an underground mine	

3o	Total area put in use under different heads at the end of year	Area put to use under different heads as on 31.03.2019 is given in actual work details:	Area under: Excavation/pits: 4.075 ha Overburden Dumps: 10.779 ha Mineral storage: 0.08 ha Infrastructure: 2.045 ha Roads: 0.894 ha Township Area: 3.64 ha Total: 21.513 ha	Out of overburden dumps area of 10.779 ha, 6.663 ha area has been reclaimed and rehabilitated through plantation. Hence, net area under waste dumps is 4.116 ha.
3p	Production of ROM mineral during the last five year period as applicable	2017-18: 32000 T 2016-17: 35064 T 2015-16: 30238 T 2014-15: 30996 T 2013-14: 37363 T	2017-18: 25270 T 2016-17: 32401 T 2015-16: 30056 T 2014-15: 30939 T 2013-14: 31719 T	
3q	General remarks of inspecting officers on method of mining etc.			Method of mining is underground with semi-mechanized operations and method of stoping is overhand cut and fill. The deposit is being worked at level 148 mRL to 193 mRL between Ch -50 to Ch 150 and Ch -50 to Ch -250. Level interval is 45 m and size of underground openings are selected so that it remain stable throughout the workings.

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)	Not applicable as it is an underground mine	Not applicable as it is an underground mine	Underground waste generated while mining is mostly backfilled in the underground voids. Mineral rejects are dumped as waste as it is having mainly waste rock. However, for 2018-19, no mineral rejects or waste is generated.
4b	Location of topsoil, OB and mineral reject dumps	Top Soil Dump:: Nil OB/Waste Dumps: Dead Stabilized dumps at N 5200 to N 5800 & E 4800 to E 5100 and N 5400 to N 5600 & E5100 to E5300, Active Waste dump at N 5600 to N5800 & E5100 to E5400 Sub-grade Dumps: N 5550 to N5650 & E 5350 to E 5450, N5650 to N5750 & E5000 to E5100	As per the proposals	
4c	Number of dumps within lease area and outside of lease area	Top Soil: Nil Waste Dump: 3 dumps (dead and stabilized), 2 dumps active Sub-grade stacks: 2 All within the lease area	As per the proposals	
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Not applicable as it is an underground mine	Not applicable as it is an underground mine	
4e	Number of active and alive dumps.	2 Dumps are active and alive	As per the proposals	
4f	Number of dead dumps.	3 Dumps are dead	As per the proposals	

4g	Number of dumps established.	3 dead dumps are already stabilized through plantation	As per the proposals	
4h	Whether Retaining wall or garland drain all along dumps are there.	Yes	Garland drains and retaining wall constructed along the toe of the dumps. Additionally, concrete wall has been erected along the lease boundary.	
4i	Length of Retaining wall or garland drain all along dumps	No specific proposals	Around 1500 m of garland drains and retaining wall constructed along the toe of the dumps.	
4j	Number of settling ponds	No such proposals	Nil	
4k	Specific comments of inspecting officer on waste dump management			Waste dump management aspect is satisfactory for the mine. Out of total 10.779 ha area covered by waste dumps, 6.663 ha area has been reclaimed and rehabilitated through plantation (western part of the lease area). garland drains and retaining walls are also erected as protective measures.

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.	Not applicable as it is an underground mine	Not applicable as it is an underground mine	
5b	Area under backfilling of mined out area	Not applicable as it is an underground mine	Not applicable as it is an underground mine	

5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Not applicable as it is an underground mine	Not applicable as it is an underground mine	
5d	Total area fully reclaimed and rehabilitated	Not applicable as it is an underground mine	Not applicable as it is an underground mine	
5e	General remarks of inspecting officers on backfilling and reclamation etc.			Not applicable as it is an underground mine

Progressive Mine Clousre Plan:

Sl.No.	Item	Propasals	Actual work	Remarks
6a	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).	To be submitted on or before 30th June every year depicting work done under PMCP in the preceeding year	Yes	
6b	Area available for rehabilitation (ha) .	Nil	Nil	Most of the area is under mining or allied activities. 3.64 ha area is under township. thus available area for rehabilitation is Nil. Dump plantation shall be done upon maturity of dumps.
6c	afforestation done (ha).	0.10 ha for the year 2018-19	In-filling plantation over waste dumps was carried out.	Total area under plantation is 6.663 ha (waste dump)
6d	No. of saplings planted during the year	2018-19: 100 saplings	2018-19: 1000 saplings	
6e	Cumulative no .of plants	Not available as the mine is quite old and no specific proposals were there at earlier stages	19186 saplings within the lease area and 8050 saplings outside lease area	

6f	Any other method of rehabilitation	No such proposals	Nil
6g	Cost incurred on watch and care during the year	Approximately Rs 200000/-	Rs 2.88 Lakhs including SDF
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	Not applicable as it is an underground mine	Not applicable as it is an underground mine
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	Not applicable as it is an underground mine	Not applicable as it is an underground mine
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on backfilled area	Not applicable as it is an underground mine	Not applicable as it is an underground mine
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	Not applicable as it is an underground mine	Not applicable as it is an underground mine
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	Not applicable as it is an underground mine	Not applicable as it is an underground mine
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	No such proposals	Nil
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)	Environment monitoring is proposed to be carried out as per the guidelines of MOEFCC in this regard.	Environment monitoring was done for air, water, noise and ground vibrations in the core and buffer zone. Reports were seen during site inspection and all the parameters were within the permissible limits. Surface subsidence is also being monitored regularly.	
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.			PMCP activities are being carried out as per the proposals. 6.663 ha area has already been afforested and infilling plantations is being done. Shaft for underground workings is located at pit bottom of old working pit & at conceptual stage, the area is proposed to be converted into a water reservoir.

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Dispatch of graded mineral after manual sorting of ROM	Dispatch of graded mineral after manual sorting of ROM and recovered mineral from dump	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Manual sorting	Manual sorting	

7c	Different grade of mineral sorted out at mines.	(a) Below 25% Mn (b) 25% to below 35% Mn (c) 35% to below 46% Mn	As per the proposals	
7d	Any beneficiation process at mines	No such proposals	Nil	
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues			Mineral conservation aspect has been covered satisfactorily for the mine. ROM is proposed to be graded into saleable ore, mineral rejects & sub-grade. Subgrade is proposed to be utilized in future as per the requirements. In the year 2018-19, entire fines and low grade minerals were also saleable. No subgrade is left underground and all such material is proposed to be brought to surface.

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Not applicable as it is an underground mine	Not applicable as it is an underground mine	
8b	Concurrent use or storage of topsoil	Not applicable as it is an underground mine	Not applicable as it is an underground mine	

8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Not applicable as it is an underground mine	Not applicable as it is an underground mine	Underground waste generated while mining is mostly backfilled in the underground voids. Mineral rejects are dumped as waste as it is having mainly waste rock. However, for 2018-19, no mineral rejects or waste is generated.
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Not applicable as it is an underground mine	Not applicable as it is an underground mine	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Not applicable as it is an underground mine	Not applicable as it is an underground mine	Out of overburden dumps area of 10.779 ha, 6.663 ha area has been reclaimed and rehabilitated through plantation.
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Baseline information given in the mining plan. Additional plantation in form of 100 saplings are proposed every year for 3 years out of 5 years approved proposal period.	1000 saplings were planted as in-filling plantation over the dumps in the year 2018-19. Overall 19186 saplings have been planted within the lease area and 8050 saplings outside lease area.	
8g	Survival rate	80%	81.2% (overall), 90% for the year 2018-19	

8h	Water sprinkling on roads to control airborne dust	Water sprinkling is proposed on the surface over the proposed working area for allied activities. As the working is underground, the same is not applicable for exploitation of mineral.	Water sprinkling was done over OCF, dumps etc. with 5883 Ltr water tanker deployed in the mine.
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area		Apart from normal degradation due to mining, aesthetic beauty is satisfactory in the area. Lessee has planted around 19000 saplings out of which around more than 15000 are surviving. further, working is mostly underground due to which, surface is not that much affected.

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 Feb'20	

9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mining Engineer: SHRI KAMLESH FULZELE Geologist: SHRI DEBNATH MOHANTA Manager: SHRI P.S. SANKARAIHAH	Complete and correct information furnished	
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	As per AR 2018-19, Area covered under OC workings: 4.075 ha Area under Waste disposal: 4.116 ha Reclaimed/Rehabilitated: 6.663 ha Occupied by plant, infrastructure, roads etc: 6.579 ha Other (Mineral storage): 0.08 ha	Actual Area under various heads as on 31.03.2019: Excavation/pits: 4.075 ha Overburden Dumps: 10.779 ha Mineral storage: 0.08 ha Infrastructure: 2.045 ha Roads: 0.894 ha Township Area: 3.64 ha Total: 21.513 ha	Out of overburden area of 10.779 ha, 6.663 ha area has been reclaimed and rehabilitated through plantation & net area under waste dumps is 4.116 ha. Hence, correct information furnished.
9d	Scrutiny of Annual return on afforestation	Number of saplings planted: 1000 Survival rate: 90%	Correct information furnished. The plantation was carried out over dumps.	
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Mineral rejects: Nil	Correct information furnished.	

9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM: (a) Underground workings: Opening & closing stocks: Nil, Production: 26383 T (b) Dump Workings: Opening & closing stocks: Nil, Production: 5538 T Graded Ore: (a) Below 25% Mn: Opening Stock- 523 T, Production- 5538 T, Dispatch-5854 T, Closing Stock-207 T (b) 25% to below 35% Mn: Opening Stock- 42 T, Production-467 T, Dispatch- 329 T, Closing Stock- 180 T (c) 35% to below 46% Mn: Opening Stock- 1690 T, Production- 25916 T, Dispatch-25864 T, Closing Stock- 1742 T	Complete and correct information furnished
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9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Sale value: (a) Below 25% Mn: Rs 14100354.25/- (b) 25% to below 35% Mn: Rs 2031268.50/- (c) 35% to below 46% Mn: Rs 376002215.04/- EMP: (a) Below 25% Mn: Rs 2408.78/- per T (b) 25% to below 35% Mn: Rs 6158.34/- per T (c) 35% to below 46% Mn: Rs 14537.93/- per T Cost of production: Rs 5413.41/- per T	Complete information furnished.	EMPreported in the returns is being examined during scrutiny of returns on monthly basis for correctness in ASP.
9h	Scrutiny of Annual return on fixed assets	Value of fixed assets: Rs 158516826/- Apart from this, value of land, plant, buildings etc. have been given in detail alongwith depreciation.	Complete information furnished	
9k	Scrutiny of Annual return on mining machineries	Details of mechanization and machineries deployed in the mine has been given	The details are as per the extent of mechanization given in the approved Mining Plan document.	

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