

## MCDR INSPECTION REPORT

**General**

S N	Particulars	Details
1	File no.	MCDR-MiFLOFE/17/2022-BBS-IBM_RO_BBS
2	Name of the Inspecting Officer	Shri Vikram Prakash Deshpande
3	Name of the Mine	Patabeda Iron Mines of MGM Minerals Ltd.
4	Total Lease Area (Ha) with breakup of Non-forest and forest land	28.397 Ha. Non-Forest-1.311 Ha. DLC Forest-27.086 Ha.
5	Mine code	30ORI13051
6	Date of Inspection	29.07.2024
7	Name of official accompanying inspection	Mr. H. S. Pattanayak (Agent) Mr.C.Sahoo (Mines Manager) Mr. H. S. Pattanayak (Mining Engineer) Mr. M K Patra (Geologist) Mr.M R Swain(Surveyor)
8	IBM Registration Number under rule 45 of MCDR, 1988	IBM/290/2011
9	Name of the lessee, Address, phone, email and fax number	MGM Minerals Ltd. At: Patabeda, Po: Malda, District: Sundargarh (Odisha). Fax No.- 06742596390 Phone No.-06742596400 E-mail: info@mgmmin.in
10	Village	Patabeda
11	Taluka/Mandal	Bonai
12	District	Sundargarh
13	Pincode	770048
14	State	Odisha
15	Post office	Malda
16	Nearest police station	Koira
17	Nearest Railway station	Joroli
18	Date of Grant of Mining Lease	04.02.2006
19	Date of Execution	08.03.2006
20	Date of opening of Mine	01.11.2006
21	Date of first Renewal, if applicable and its period & expiry	NA
22	Date of second Renewal, if applicable and its period & expiry	NA
23	Date of submission of renewal application if Mining Operations are continuing under deemed extension	NA
24	Name of the Nominated Owner with Address, phone, email, fax number and date of appointment	Shri P.L. Mohanty 65, Forest Park Mob No: 9937022800 <a href="mailto:plm@mgmmin.in">plm@mgmmin.in</a> Date of Appointment:17.04.2021
25	Name of the Mine Agent with Address, phone, email, fax number and date of appointment	Mr. H.S.Pattanayak Joda Tower, P J Motor Building, Bansapani Road, Joda, Keonjhar(Odisha). 758034. Mob. No : 7440015201 <a href="mailto:gm.mines@mgmmin.in">gm.mines@mgmmin.in</a> Date of Appointment:17.04.2021

26	Name of the Mines Manager with Address, phone, email, fax number and date of appointment in mines	Mr.Chaturbhuj Sahoo At: Patabeda, Po: Malda, Dist: Sundargarh Mob. No.: 07440015203 Mail id : dgm.mines@mgmmin.in  Date of Appointment:17.04.2021 Qualification: MTech. in Mining Engineering & 1st class Mines Manager Certificate of Competency (Metal Restricted).
27	Name of the Mining Engineer & Geologist, Qualification and total experience	Mining engineer Qualification Date of appointment Address phone/email Mr. H.S.Pattanayak Qualification: BE in Mining Engineering & 1st class Mines Manager Certificate of Competency (Metal Restricted). Experience :28 years DOJ:15.07.2024 At-Bhatta Sahi,Keonjhar , Po-Keonjhar Bazar,Dist-Keonjhar758002(Odisha) mail : <a href="mailto:gm.mines@mgmmin.in">gm.mines@mgmmin.in</a>
		Geologist Qualification Date of appointment Address phone/email Mr. Manas Kumar Patra (Geologist). Msc. in Geology, Experience :15 years, DOJ: 04.07.2023 Mob : 07440015210, mail : <a href="mailto:mgr_geo.mines@mgmmin.in">mgr_geo.mines@mgmmin.in</a>
28	Whether Geologist and Mining Engineer appointed in mines satisfy the rule 42 & carrying out their duties as per rule 43 & 44.	Yes, (Mining Engineer), Employment Registration No.: 005 (Geologist) Employment Registration No.: 839
29	Date of Approval of Review of Mining Plan/Modified Mining Plan with five-year period and specific condition in approval letter, if any.	1. III(B)SM-6/2002-2735/SM /04.02.2006 for the period of 01.04.2006 to 31.03.2011-Mining Plan. 2. MPM/OTF-MECH/11-ORI/BHU/2007-08 /26.10.2007 for the period 01.04.2008 to 31.03.2011-Approved mining plan modification. 3. RMP/A/29-ORI/BHU/2020-21/18.11.2020 for the period 2021-22(01.04.2021) to 2025-26(31.03.2026)- Review of mining plan. 4. MRMP/A/29/ORI/BHU/2021-22/26.11.2021 for the period 2021-22(01.10.2021) to 2025-26(07.03.2026)- Modification of mining plan
30	Date of Approval of Scheme of Mining/Modified Scheme of Mining with five-year period and	1. 314(3)/2010-MCCM(CZ)/MS-48 Dtd. 01.04.2011 for the period 01.04.2011 to 31.03.2016-Scheme of mining 2. MS/FM/07-ORI/BHU/2013-14, Dtd:, 04.06.2014 for the period 01.04.2014 to 31.03.2016-Modification of scheme of mining 3. MS/FM/34-ORI/BHU/2015-16, Dtd:;

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	specific condition in approval letter, if any.	28.03.2016 for the period 01.04.2016 to 31.03.2021- Modification of scheme of mining 4. MS/FM/34-ORI/BHU/2017-18, Dtd., 18.11.2020 for the period 01.04.2018 to 31.03.2021- Modification of scheme of mining
31	Mineral(s) granted in lease and proved for mining	Iron ore
32	Method of Mining(Open cast, Underground)	Open Cast.
33	Category (Fully Mechanized, Others or Manual)	Fully Mechanized.
34	Captive/Non Captive	Non-Captive.
35	Environment Clearance grant date & limit of EC	SEIAA/7722 , DATE-03.01.2020 Valid Upto : 07.03.2026.(co-terminus with lease)
36	CTO	CONSENT ORDER NO 4324/IND-ICON-5427 Dt.28.03.2024 and valid up to 07.03.2026

**Exploration**

S.N.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year(2020-21)& (2021-22 )	NIL	NIL	
1b	Exploration over lease area for Geological axis 1 or 2.	NIL	NIL	
1c	Exploration Agency & Expenditure in lakh Rupees during the year	NIL	NIL	
1d	Balance area to be explored to bring Geological axis in 1 or 2	NIL	NIL	
1e	Balance reserves as on 01.04.2023 (in tonnes)	A. Mineral Reserve 1. (111)-7134556 2. (121)-0 3. (122)-0 B. Remaining Resource 1. (211)-1313865 2. (221)-0 3. (222)-0 4. (331)-0 5. (332)-0 6. (333)-0 7. (334)-0 Total (A+B)-8448421	A. Mineral Reserve 1. (111)-5914556 2. (121)-0 3. (122)-0 B. Remaining Resource 1. (211)-1313865 2. (221)-0 3. (222)-0 4. (331)-0 5. (332)-0 6. (333)-0 7. (334)-0 Total (A+B)-7228421	
1f	General remarks of inspecting officer on geology, exploration etc.	The Patabeda deposit forms a part of the Singbhum-Keonjhar Bonai group of iron ore. The main rock types found in these mines are Laterite, Hematite (Massive, Hard Laminated, Soft laminated), BHJ/BHQ. In the ML area, iron ore found as mainly hard massive laminated and soft laminated variety. The strike of the ore body/host rock is along NE - SW and the dip is due NW varying from 350 to 450. All Mineralized zone has been explored in G1 level.		

**Development**

S.N.	Item	Proposals	Actual work	Remarks
2a	Location of development w.r.t. lease area	E331671-E331989, N2426728-N2427031	E331679-E331936, N2426723-N2427021	MRL 690 to MRL 600
2b	Separate benches in topsoil, overburden and mineral (Rule 15)	Separate benches in mineral proposed	Separate benches in mineral maintained	

2c	Stripping ratio or ore to OB ratio (T/T)	1: 0.054	1: 0.048	No Significant Change
2d	Quantity of topsoil generation in m <sup>3</sup>	No top Soil generation proposed during reporting year	No top Soil generation generated during reporting year	
2e	Quantity of overburden/waste generation in m <sup>3</sup>	73407	58881.82	
2f	General remarks of inspecting officer on development of pit w.r.t. type of deposit etc.	In all there are 02 pits within the lease out of which Mining in was confined to one pit viz. Quarry-1 Benches have height of 10m and width of 15m.		

### Exploitation

S.N.	Item	Proposals	Actual work	Remarks
3a	Number of pits proposed for production	1	1	Quarry-1 having size L(399m)xW(296m) x D(105m)
3b	Quantity of ROM production	1350760.00 mt	1220000.0000 mt	Less production due to demand in plant. Reduced rate of production has been envisaged in modification of RMP which under process hence no violation of Rule 11(1) of MCDR 2017 has been pointed.
3c	Recovery of salable/usable mineral from ROM production	1111687.00 MT	1091890.000 MT	
3d	Quantity of mineral reject generation	239072.5MT	256080 MT	
3e	Grade of mineral reject generation and threshold value declared	45% Fe to below 55% Fe	45% Fe to below 55% Fe	
3f	Quantity of sub-grade mineral generation	1231035.25 MT	715535 MT	
3g	Grade of sub-grade mineral generation	45% Fe to 55% Fe	45% Fe to 55% Fe	
3h	Manual / Mechanized method adopted for segregating from ROM	Mechanized method proposed for segregating from ROM	Mechanized method adopted for segregating from ROM	
3i	Any analysis or beneficiation study proposed & carried out for sub-grade mineral and reject	No beneficiation study proposed.	No beneficiation study carried out	
3j	Provision of drilling & blasting in mineral benches	Drilling and Blasting proposed in mineral benches.	Drilling and Blasting carried out in mineral benches.	Deep hole drilling (115mm dia), spacing-3.25m, burden-2.5m, Depth-10.5m & Blasting with 83mm dia cartridge slurry/emulsion explosive with

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				NONEL & electric detonator.
3k	Provision of mining machinery in mineral benches	Use of HEMMs is proposed in Mineral Benches.	Mechanized O/C mining is carried out with engaging HEMMs in mineral benches	Excavation done by back hoe (2.6 Cu.m) and 30 tonne dumper. (Shovel-Dumper combination)
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Height of the benches proposed to be maintained as 10m.	Height of the benches broadly maintained as proposed.	
3m	Total area covered under excavation/pits	13.27Ha	13.27Ha	1. Mining – 12.90 ha. 2. Excavated area reclaimed-0.367 ha.
3n	Ore to OB ratio for the pit/mine during the year(T/T)	1: 0.054	1: 0.048	No Significant Change
3o	Total area put in use under different heads at the end of year	For the year 2023-24: 1. Mining - 13.270 ha. 2. Dumping - 3.451 ha. 3. Mineral storage - 3.09 ha. 4. Infrastructure - 1.888 ha. 5. Mineral separation - 0.41 ha. 6. Construction of road- 1.55ha. 7. ETP -0.012 ha. 8. Others(Safety zone & - 4.726 ha. ----- Total Area – 28.397 ha	For the year 2023-24: 1. Mining – 12.90 ha. 2. Dumping - 3.451 ha. 3. Mineral storage - 3.09ha. 4. Infrastructure - 1.888ha. 5. Mineral separation Plant - 0.41ha 6. Excavated area reclaimed- 0.367 ha. 7. Construction of road-1.55ha. 8. ETP -0.012 ha. 9. Others(Safety zone & Plantation area.)- 4.726 ha ----- Total Area – 28.389 ha	
3p	Production of ROM mineral during last five-year period, as applicable			
	Year- 2019-20	1499990.000MT	828700.00 MT	
	Year- 2020-21	1499990.000 MT	1301500.00 MT	
	Year- 2021-22	1323495.500 MT	1205000.00 MT	
	Year- 2022-23	1350960.000 MT	1220000.00 MT	
	Year-2023-24	1350760.00 MT	1220000.00 MT	
	Total	7025195.5 MT	5775200 MT	
3q	General remarks of inspecting officer on method of mining etc.	The mining method adopted is opencast method by shovel-dumper combination and is same as proposed.		

Solid Waste Management-Dumping

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S.N	Item	Proposals	Actual work	Remarks
4a	Separate dumping of topsoil, OB & mineral reject (Rule 32, 33)	Yes	Done as per proposal.	No top soil.
4b	Location of topsoil, OB & mineral reject dumps	Top Soil - NA OB/Waste (N2427040,E331657 to N2427160,E331827) Mineral Reject (N2426700,E332111 to N2426720,E332098)	Top Soil – NA OB/Waste (N2427041,E331795 To N2427151,E331713) Mineral Reject (N2426674,E332147 to N2426726,E332099)	
4c	Number of dumps within lease area and outside the lease area	3 nos of dumps inside the mines, No dump outside the mining lease.	3 nos of dumps inside the mines, No dump outside the mining lease.	
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Outside UPL	Outside UPL	

### **Solid Waste Management-Backfilling**

S.N.	Item	Proposals	Actual work	Remarks
5a	Status on part or full extraction of mineral from mined out area before starting backfilling	Full extraction	Full extraction of mineral before starting of back filling.	
5b	Area under backfilling of mined out area	0.45 Ha	0.367 Ha	
5c	Concurrent use of topsoil for restoration or rehabilitation of mined out area (Rule 32)	No such proposal	Not done	
5d	Total area fully reclaimed & rehabilitated	Nil	Nil	
5e	General remarks of inspecting officer on backfilling, reclamation etc	During inspection it was observed that only 81% of the proposed backfilling was completed during the FY 2023-24. However, Violation of Rule 11(1) of MCDR 2017 was not pointed out to the lessee as the backlog of backfilling is proposed to be covered in the modification of the Review of Mining Plan is under process.		

### **Progressive Mine Closure Plan**

S.N	Item	Proposals	Actual work	Remarks
6a	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).	Before 1 <sup>st</sup> July every year.	Submitted on 28.06.2024	Along with Annual return-2023-24
6b	Area available for rehabilitation (ha).	NA	NA	
6c	afforestation done (ha).	Gap Plantation	North Dump & Gap Plantation	

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6d	No. of saplings planted during the year	2750	3961	
6e	Cumulative no. of plants	NA	29916	
6f	Any other method of rehabilitation	No other method of rehabilitation proposed	No other method of rehabilitation adopted	
6g	Cost incurred on watch and care during the year	NA	NA	Done departmentaly
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	4500 m <sup>2</sup>	3670 m <sup>2</sup>	
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	NA	NA	
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on backfilled area	NA	NA	
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	NA	NA	
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	NA	NA	
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	NA	NA	
	Compliance of rehabilitation of waste land	NA	NA	

6n	within lease (ii)Area rehabilitation (ha)			
6o	Compliance of rehabilitation of waste land within lease (iii) Method of rehabilitation	NA	NA	
6p	Compliance of environmental monitoring (core zone and buffer zone)	Environmental monitoring in Core zone and buffer zone proposed as per MOEFCC and SPCB guidelines	Monthly and Quarterly monitoring of AAQ, Water Quality and Noise Level are being carried out by third party M/s Superintendence India.	All Environmental parameters found to be within permissible limits
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	The retaining wall and garland drain are well maintained along the dumps and regular monitoring of environmental parameters is being done.		

### Mineral Conservation

S.N.	Item	Proposals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Grade wise mineral sorting within lease area.	Grade wise mineral sorting within lease area carried out.	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical	Mechanical method of mineral sorting proposed	Mechanical method of mineral sorting carried out	mineral reject blended with high grade ore.
7c	Different grade of mineral sorted out at mines	<u>Grade-wise production:</u> Fines 51% to below 55% 55% to below 58% 58% to below 60% 60% to below 62% 62% to below 65% CLO 60% to below 62% (CLO 10-40mm) 62% to below 65% Fe (5-18 mm)		
7d	Any beneficiation process at mines	No beneficiation process proposed	No beneficiation process carried out	
7e	General remarks of inspecting officer on Mineral conservation & beneficiation issues	No beneficiation of ore is done except grade-wise sorting which is carried out at the mine site itself. The grade-wise sorted material is transported via trucks to the vendors.		

### Environment

	Item	Proposals	Actual work	Remarks
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S.N.				
8a	Separate removal and utilization of topsoil (Rule 32)	No proposal for the reporting year.	Not done	
8b	Concurrent use or storage of topsoil	NA	NA	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate Dump for waste proposed	Separate Dump for waste maintained	North dump (active)
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	No proposal for the reporting year.	Not done	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc.)	NA	NA	
8f	Baseline information on existence of plantation & additional plantation done (Rule 41)	2750	3961	Additional 1067 no.s plantation done outside mining lease area
8g	Survival rate		90%	
8h	Water sprinkling on roads to control airborne dust	Water sprinkling on roads to control airborne dust proposed.	Permanent sprinkling system is installed in haulage road and water tanker also routinely used. Regular water sprinkling is being done with one 12 KL & one 6 KL mobile water tanker used. Sweeping machine (Vacuum Cleaner) used to clean the concrete road. Use of mist cannon to control dust	
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	Aesthetic beauty in & around mines area is well maintained. The lessee is implementing the PMCP proposal and has carried out adequate plantation. Sprinkling of water on Haul roads and transport roads using water tanker is done to suppress the dust.		

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**Compliance of Rule 45**

S.N.	Item	Observation of I/Officer		Remarks
9a	Status of submission of Monthly and Annual returns	MR submitted upto July 2024 Annual return submitted on 28.06.2024 for the year 2023-24		
	Item	Information as per AR	Observation	
	Scrutiny of Annual return for information	Mines Manager-Shri Chaturbhuj Sahoo Mining Engineer-Shri P.K.	Mines Manager-Shri Chaturbhuj Sahoo Mining Engineer-Shri P.K.	

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9b	on Mining Engineer, Geologist and Manager	Sathpathy Mining Geologist: Shri Manas Patra	Sathpathy Mining Geologist: Shri Manas Patra	
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	For the year 2023-24) Mining – 12.90 ha. Dumping - 3.451 ha. Mineral storage - 3.09ha. Infrastructure - 1.888ha. Mineral separation Plant -0.41ha Excavated area reclaimed- 0.367 ha. Construction of road-1.55ha. ETP -0.012 ha. Others(Safety zone & - 4.726 ha. Plantation area.) ----- Total Area – 28.389 ha	Broadly as per proposal	
9d	Scrutiny of Annual return on afforestation	5028 nos planted in both inside & outside the lease area during the year 2023-24	Appears to be correct	
9e	Scrutiny of Annual return on mineral reject generation (Grade & quantity)	1,27970.00 mt generated during the year 2023-24	Appears to be correct	
9f	Scrutiny of Annual return on ROM stock and/or graded ore	Total RoM stock at the end of the year is 186500mt & the closing stock of graded ore is as follows:  1. Fines 51% to below 55% Fe=366.870 mt 2. 55% to below 58% Fe =48194.384mt 3. 58% to below 60% Fe=17812.670 mt 4. 60% to below 62% Fe=8240.250 mt 5. 62% to below 65% Fe=25794.461mt 6. CLO 60% to below 62% (CLO 10-40mm)= 0.00 mt 7. 62% to below 65%Fe (5-18 mm size CLO)= 16309.200 mt 8. 65% and above Fe (5-18mm size CLO)= 3313.459 mt	Appears to be correct	

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9g	Scrutiny of Annual return on sale value, Ex. Mine price & production cost	<p>Total Sale value- Rs. 5754224886.19</p> <p><u>Ex-mine price:</u></p> <p>Lump-Below 55%Fe - Rs.0.00</p> <p>Lump-55% to below 58%Fe- Rs.0.00</p> <p>Lump-58% to below 60%Fe- Rs.0.00</p> <p>Lump-60% to below 62%Fe- Rs. 0.00</p> <p>Lump-62% to below 65%Fe- Rs. 0.00</p> <p>Lump-65% and above -Rs. 0.00</p> <p>Fines- 51- 55% Fe -Rs. 3052.85</p> <p>Fines-55% to below 58%Fe -Rs3654.16</p> <p>Fines-58% to below 60%Fe -Rs. 4573.09</p> <p>Fines-60% to below 62%Fe -Rs. 5069.33</p> <p>Fines-62% to below 65%Fe -Rs.5698.47</p> <p>Fines-65% and above - Rs.0.00</p> <p>CLO Below 62% Fe (CLO any size)- Rs.5647.87</p> <p>62% to below 65% Fe (5-18 mm size CLO)-6896.49</p> <p>62% to below 65% Fe (10-40mm size CLO)-0.00</p> <p>62% to below 65% Fe ( CLO others)-0.00</p> <p>65% and above Fe (5-18mm size CLO)- 7210.06</p> <p>Production Cost / mt - Rs.1931.89</p>	Appears to be correct.	
9h	Scrutiny of Annual return on fixed assets	Fixed assets -Rs. 108330144.00	Appears to be correct	
9i	Scrutiny of Annual	<p>Back-Hoe(Hydraulic)- 2.6cum-1no.</p> <p>Back-Hoe (Hydraulic)- 2.1cum-1no.</p> <p>Back-Hoe (Hydraulic)- 1.3cum-1no</p> <p>Back-Hoe (Hydraulic)- 1.2cum-1nos.</p> <p>Back-Hoe (Hydraulic)- 0.65cum-1no.</p> <p>Wheel Loader-4cum-2no.</p>	Appears to be correct.	

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	return on mining machineries	Wheel Loader -2.7cum-1no. Front End Loader -0.26cum- 1no. Dumper-30Tonnes-9nos. Water Tanker-16KL-1no. Water Tanker-12KL-2no. Water Tanker-6KL-1no. Blast hole drill-115mm-1 no. Fixed Crusher-240TPH-1no. Mobile Screen Plant - 250TPH- 1no.		
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