

### MCDR INSPECTION REPORT (2023-24)

S.No.	Particulars	Details
1	Name of the Mine	Narayana Iron and Manganese Ore Mines, ML No.-0012
2	Total Lease Area (Ha) with breakup of Non-forest and forest land	Total Area = 107.51 Ha Non-Forest Land- 2.029 Ha, Forest Land-105.481 Ha,
3	Mine code	30KAR03188
4	IBM Registration Number under rule 45 of MCDR, 1988	IBM/432/2011
5	Name of the lessee, Address, phone, email and fax number	M/s. JSW Steel Ltd. JSW Centre Bandra Kurla Complex, Bandra (East), Mumbai (Suburban), Maharashtra, PIN-400051 Phone - 022-42861000 Email – sunil.singh@jsw.in
6	Village	Narayanpura
7	Taluk/Mandal	Sandur
8	District	Ballari
9	Pin code	583112
10	State	Karnataka
11	Post office	Deogiri
12	Nearest police station	Sandur
13	Nearest Railway station	Ranjithpura
14	Date of Grant of Mining Lease	30.07.2020
15	Date of Execution	30.07.2020
16	Date of opening of Mine	25.09.2020
17	Date of first Renewal, if applicable and its period & expiry	NA
18	Date of second Renewal, if applicable and its period & expiry	NA
19	Date of submission of renewal application if Mining Operations are continuing under deemed extension	NA
20	Name of the Nominated Owner with Address, phone, email, fax number and date of appointment	Mr. Gajraj Singh Rathore M/s. JSW Steel Ltd Narayana Iron and Manganese Ore Mine JSW Mining Office, Near Talur Cross Vidyanagar (Post), Toranagallu, Sandur Taluk, Bellary – Dist, PIN-583275, Karnataka Email – <a href="mailto:gajraj.rathore@jsw.in">gajraj.rathore@jsw.in</a> Date of appointment : 30.05.2023

21	Name of the Mine Agent with Address, phone, email, fax number and date of appointment	Mr. Sunil Kumar Singh M/s. JSW Steel Ltd Narayana Iron and Manganese Ore Mine JSW Mining Office, Near Talur Cross Vidyanagar (Post), Toranagallu, Sandur Taluk, Ballari – Dist, PIN-583275, Karnataka Mob: 9449598135 Email – <a href="mailto:sunil.singh@jsw.in">sunil.singh@jsw.in</a> Date of appointment: 10.08.2020
22	Name of the Mines Manager with Address, phone, email, fax number and date of appointment in mines	Mr. Awadhesh Kumar Rai M/s. JSW Steel Ltd. Narayana Iron and Manganese Ore Mine JSW Mining Office, Near Talur Cross Vidyanagar (Post), Toranagallu, Sandur Taluk, Ballari – Dist, PIN-583275, Karnataka Mob: 9449516158. Email – <a href="mailto:awadheshkumar.rai@jsw.in">awadheshkumar.rai@jsw.in</a> Date of appointment: 01.03.2024
23	Name of the Mining Engineer, Qualification and total experience with Address, phone, email, fax number and date of appointment in mine	Sunil Kumar NA BE (Mining) Total Experience- 9 Years Email – <a href="mailto:sunilkumar.na@jsw.in">sunilkumar.na@jsw.in</a> Date of appointment: 01.08.2024
24	Whether Geologist and Mining Engineer appointed in mines satisfy the rule 42 & carrying out their duties as per rule 43 & 44.	Mr. Girish Kumar BK – Dy. Manager (Geology) M.Sc (Geology) Total experience: 14 years Email – <a href="mailto:bk.kumar@jsw.in">bk.kumar@jsw.in</a> Date of Appointment : 15.06.2022
25	Date of Approval of Mining Plan/Modified Mining Plan with five- year period and specific condition in approval letter, if any.	Date of Approval of Modification to the Approved Mining Plan: 21.12.2020 Letter No.: 279/1105/2019/BNG-934 Five-year Plan Period: 2020-21 to 2024-25 Block Period of Modified Mining Plan: 2020-21 to 2024-25 (Dec 2020 to Mar 2025)
26	Date of Approval of Scheme of Mining/ Modified Scheme of Mining with five-year period and specific condition in approval letter, if any.	NA
27	Mineral(s) granted in lease and proved for mining	Iron Ore and Manganese Ore
28	Method of Mining (Opencast, Underground)	Open Cast
29	Category (Fully Mechanized, Others or Manual)	Fully Mechanized

30	Captive/ Non captive	Non-Captive
31	Date of inspection	23/10/2024
32	Name of accompanying mine officials with designation	Mr. Awadhesh Kumar Rai (Mines Manager) Mr. Sunil Kumar N A (Mining Engineer) Mr. Girish Kumar BK (Dy. Manager, Geology) Mr. Nataraja B D (Manager, Geology) Mr. HSR Krishna Chirukuri (Dy. Manager, Geology) Mr. Sridhar B (Dy. Manager, Survey)

### Exploration

S.N.	Item	Proposals (23-24)	Actual work (23-24)	Remarks
1a	Backlog of previous year	Nil	Nil	-
1b	Exploration over lease area for Geological axis 1 or 2.	No Proposals	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	G1 (Mineralized Area)- 40.77 Ha Non-Mineralized Area- 66.74 Ha
1e	<b>Balance reserves as on <u>01.04.2024</u></b>	Iron Ore-21.46 MMT Manganese Ore-0.493 MMT (as per the last Approved Mining Plan Modification)	Iron Ore-17.38 MMT Manganese Ore-0.465 MMT (as on 01.04.24)	
1f	General remarks of Inspecting officer on geology, exploration etc.	Exploration over the entire mineralized area has been completed by the lessee. Geological report prepared after completion of exploration, there is drastic change in reserve quantity and quality reported by the lessee confirmation of the same subject to the audit of the report by state DMG, Karnataka as per Rule 12 of MCDR.		

### Development

S.N.	Item	Proposals	Actual work	Remarks
2a	Location of development w.r.t. lease area	<p><b><u>For Iron Ore:</u></b> E 677711 to E 678135 &amp; N 1658139 to N 1658622 Sections C-C' to G-G'</p> <p><b><u>For Mn Ore:</u></b> E 677411 to E 677457 &amp; N 1658400 to N 1658475 Sections A-A'</p>	As per approved mining plan proposals worked	
2b	Separate benches in topsoil, overburden and mineral (Rule 15)	<p><b><u>For Iron Ore:</u></b> Ore Benches-3, Waste-2</p> <p><b><u>For Mn Ore:</u></b> Ore Benches-1, Waste-1</p>	Maintained as per proposals in the approved Mining Plan.	No Topsoil Generation
2c	Stripping ratio or ore to OB ratio	<p><b><u>For Iron Ore:</u></b> 1: 0.09 in Tonnes</p> <p><b><u>For Mn Ore:</u></b> 1:1.39 in Tonnes</p>	<p><b><u>For Iron Ore:</u></b> 1: 0.26 in Tonnes</p> <p><b><u>For Mn Ore:</u></b> 1:0.05 in Tonnes</p>	As per field geological condition
2d	Quantity of topsoil generation in m <sup>3</sup>	No Proposal	No Top Soil Generation	
2e	Quantity of overburden generation in m <sup>3</sup>	<p><b><u>For Iron Ore:</u></b> 59050 m<sup>3</sup></p> <p><b><u>For Mn Ore:</u></b> 11,497 m<sup>3</sup></p>	<p>Total OB= 143978.915 m<sup>3</sup></p> <p><b><u>For Iron Ore:</u></b> 1,43798.88 m<sup>3</sup></p> <p><b><u>For Mn Ore:</u></b> 180.03 m<sup>3</sup></p>	As per field geological condition
2f	General remarks of inspecting officer on development of pit w.r.t. type of deposit etc.	Development work carried out as per the approved mining plan.		

### Exploitation

S.N.	Item	Proposals	Actual work	Remarks
3a	Number of pits proposed for production	2 pits proposed for Production.	Production is carried out from 2 pits	As per proposal
3b	Quantity of ROM mineral production proposed	<p><b><u>For Iron Ore:</u></b> 11,11,764.00 Tonnes</p> <p><b><u>For Mn Ore:</u></b> 7,592.00 Tonnes</p>	<p><b><u>For Iron Ore:</u></b> 11,11,506.00 Tonnes</p> <p><b><u>For Mn Ore:</u></b> 7,592.00 Tonnes</p>	As per field geological condition.
3c	Recovery of salable/usable mineral from ROM production	<p><b><u>For Iron Ore:</u></b> 100 %</p> <p><b><u>For Mn Ore:</u></b> 40%</p>	<p><b><u>For Iron Ore:</u></b> 100 %</p> <p><b><u>For Mn Ore:</u></b> 40%</p>	-
3d	Quantity of mineral reject	NIL	NA	-

	generation			
3e	Grade of mineral reject generation and threshold value declared	NIL	NA	-
3f	Quantity of sub- grade mineral generation	NIL	NA	-
3g	Grade of sub-grade mineral generation	NIL	NA	-
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanized Method proposed for segregating from ROM	As per mining plan	
3i	Any analysis or beneficiation study proposed & carried out for sub-grade mineral and reject	No proposal	NA	-
3j	Provision of drilling & Blasting in mineral benches	Provision of drilling & blasting are made in mineral and waste benches.	As per Mining Plan	106 (2) (B) Permission Obtained from DGMS as per the MMR 1961.
3k	Provision of mining machineries in mineral benches	Provision of mining machineries as per proposal: Excavator- 4 Tippers – 18 Hydraulic drill –1 Backhoe loader-1 Wheel loader – 5 Crusher-1, MSP-2, Water Tanker-5	Machineries deployed Excavator- 04 Tippers - 9 Hydraulic drill - 01 Wheel loader- 02 Backhoe Loader-01 Crusher- 01 MSP- 01 Water Tanker- 05	-
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Bench width- 8m Bench Height-8m	Maintained by and large as per the proposed dimension in the mining plan	-
3m	Total area Covered under excavation/pits	40.89 Ha (as per the approved mining Plan for Plan Period)	40.83 Ha (as on 01.04.24)	
3n	Ore to OB ratio for the pit/mine during the year	<b>For Iron Ore:</b> 1: 0.09 in Tonnes <b>For Mn Ore:</b> 1:1.39 in Tonnes	<b>For Iron Ore:</b> 1: 0.26 in Tonnes <b>For Mn Ore:</b> 1:0.05 in Tonnes	As per field geological condition.
3o	Total area put in use under different heads at the end of year	<u>Total area in the plan period:</u> • Mining- 40.89 Ha • Roads -2.31 Ha • Mineral Storage– 1.82 Ha • Waste Dumps-13.51 Ha • Infrastructure- 2.62 Ha • Others – 46.36 Ha	<u>Total area as of 01.04.2024:</u> • Mining- 40.83 Ha • Roads – 3.03 Ha • Mineral Storage – 3.15 Ha • Waste Dumps-12.61 Ha • Infrastructure- 0.92 Ha • Others – 46.97 Ha	

3p	Production of ROM mineral during last five-year period, as applicable	<u>Year</u>	<u>Iron</u>	<u>Mn</u>	<u>Year</u>	<u>Iron</u>	<u>Mn</u>	Mine operations started from FY 2020-21.
		2020-21:	11,11,809	7592	2020-21:	874,778	5800	
		2021-22:	11,11,832	7571	2021-22:	10,07,885	7350	
		2022-23:	11,11,883	7592	2022-23:	10,91,883	7592	
		2023-24:	11,11,764	7592	2023-24:	11,11,506	7592	
	2024-25:	11,11,879	7571	2024-25:	225417.50	0		
		(in Metric Tonnes)		(in MT) (till <b>Sept-2024</b> )				
3q	General remarks of inspecting officer on method of mining etc.	The mine is operated by open-pit mining, which is fully mechanized and utilizes excavator and tipper combination. This method is observed to be suitable for the type of deposit.						

### Solid Waste Management-Dumping

S.N.	Item	Proposals	Actual work	Remarks
4a	Separate dumping of topsoil, OB & mineral reject (Rule 32, 33)	Separate dumping of overburden is proposed.	Separate dumping of overburden is being carried out continuously.	-
4b	Location of topsoil, OB & mineral reject dumps	<u>OB Dump Proposal:</u> E 678221 to E 678353 N 1657266 to N 1657605	<u>OB Dump location:</u> E 678190 to E 678320 N 1657320 to N 1657625	-
4c	Number of dumps within lease area and outside lease area	8 Inactive Dumps and 1 Active Dump	8 Inactive Dumps and 1 Active Dump	-
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Parts of Active Dump are within UPL.	Parts of Active Dump are within UPL.	-
4e	Number of active & alive dumps	Active Dump-1	Active Dump-1	-
4f	Number of dead dumps	8 Inactive Dumps	8 Inactive Dumps	-
4g	Number of dumps stabilized	Nil	NA	-
4h	Whether Retaining wall or garland drain all along dumps are there	Yes	Yes, Details of Existing Retaining Walls: RW(ID-1): 270m RW(ID-2): 440m RW(ID-3): 475m RW-6a(ID-11): 125m RW-6b(ID-11): 150m Details of Existing Garland Drain: GD(ID-1): 270m GD (ID-2): 440m GD (ID-3): 475m GD -6a(ID-11): 127m GD -6b(ID-11): 153m TW-7- 220m TW-8 – 45m	-

			GD-7 – 176m LBCD-1 – 20m LBCD-2 – 27m	
4i	Length of Retaining wall or garland drain all along dump	Nil	TW-7- 220m TW-8 – 45m GD-7 – 176m LBCD-1 – 20m LBCD-2 – 27m	-
4j	Number of settling ponds	Nil	Nil	-
4k	Specific comments of inspecting officer on waste dump management.	Lessee has carried out the R & R structures as per plan.		

### 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	NIL	NA	No area is completely mined-out during this plan period.
5b	Area under backfilling of mined out area	NIL	NA	
5c	Concurrent use of topsoil for restoration or rehabilitation of mined out area (Rule 32)	NIL	NA	No Topsoil Generation
5d	Total area fully reclaimed & rehabilitated	NIL	NA	-
5e	General remarks of inspecting Officer on backfilling, reclamation etc	--		

**Progressive Mine Closure Plan**

S.N.	Item	Proposals	Actual work	Remarks
6a	Whether Annual report on PMCP submitted on time and correctly - Rule 23E (2). Details should be given in the format as given in Annexure-20.	Submission of Annual report on PMCP under rule 23E(2)	Annual PMCP Report for Year 2023-24 is Uploaded in Annual Return Template (G1)	-
6b	Area available for rehabilitation (ha)	NIL	NA	-
6c	Afforestation done (ha)	Proposed in Safety Zone- 1.01 Ha	Achieved 1.974 Ha	Both dump plantation and Safety zone Plantation carried out.
6d	No. of saplings planted during the year	Proposed in Safety Zone- 300	Achieved in lease area -4960	
6e	Cumulative no. of plants	NA	11753	Cumulative no of plants= 11753 (within the lease area)
6f	Any other specific method of rehabilitation	NA	NA	-
6g	Cost incurred on watch & care during the year	NA	NA	-
6h	Compliance on reclamation and Rehabilitation by backfilling (i)Voids available for backfilling (L x B x D)	NA	NA	
6i	Compliance on reclamation and Rehabilitation by backfilling (ii) Void filled by waste/tailings	NA	NA	
6j	Compliance on reclamation and Rehabilitation by backfilling(iii) Afforestation on the backfilled area	Nil	NA	
6k	Compliance on reclamation and Rehabilitation by backfilling(iv) Rehabilitation by making water reservoir	Nil	NA	
6l	Compliance on reclamation and Rehabilitation by backfilling(v) Any other specific means	Nil	NA	
6m	Compliance of Rehabilitation of waste land within lease (i) Afforestation	Nil	NA	-
6n	Compliance of Rehabilitation of waste land within lease (ii) Area rehabilitated (ha)	Nil	NA	-
6o	Compliance of Rehabilitation of waste land within lease (iii) Method of rehabilitation	Nil	NA	-



6p	Compliance of Environmental monitoring (core zone & buffer zone)	Regular Environmental Monitoring of Core and Buffer zone is proposed.	Environmental Monitoring of Core and Buffer zone is being carried out on regular basis.	Monitoring Agency- Ecomen Laboratories Parameters which are being Monitored: <ul style="list-style-type: none"> <li>• Ambient Air Quality</li> <li>• Ambient Noise</li> <li>• Surface Water Quality</li> <li>• Dust Fall Measurement</li> <li>• Noise Monitoring (Personal Exposure)</li> <li>• Stack Monitoring</li> <li>• Personal Dust Monitoring</li> <li>• Fugitive Dust Monitoring</li> <li>• Ground Water Quality</li> <li>• Soil Quality</li> </ul>
6q	General remarks of inspecting officer on PMCP compliance & progressive closure operations	PMCP compliance and progressive closure operations are being satisfactorily carried out as per the proposals.		

### Mineral Conservation

S.N.	Item	Proposals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Grade wise sorting proposed within lease area.	Grade wise sorting is done within lease area.	-
7b	Method of grade-wise Mineral sorting i.e. manual or mechanical	Mechanical	Mechanical	Dry Crushing and Screening Method
7c	Different grade of mineral sorted out at mines	Yes	Fe 45-51%, 51-55% Mn < 25%	-
7d	Any beneficiation process at mines	No Proposal	NA	-
7e	General remarks of inspecting officer on Mineral conservation & beneficiation issues	The iron ore generated in the mine is of low grade, with a reported grade below 55%. The lessee is using this ore in their captive steel plant by beneficiating it, thereby taking care of mineral conservation.		

## Environment

S.N.	Item	Proposals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	No Topsoil Generation.	No Topsoil generated during operations.	Proposed Working Area is already broken.
8b	Concurrent use or storage of topsoil	Nil	NA	-
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate dump for overburden is proposed.	Separate dumping of overburden is being carried out.	-
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Nil	NA	-
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc.)	Nil	NA	-
8f	Baseline information on existence of plantation & additional plantation done (Rule 41)	Proposed plantation in Safety Zone- 300 Nos.	Plantation along barren area and waste dump has been carried out. Achieved plantation in FY 2023-24 is 4960 Nos.	-
8g	Survival rate	Not Specified	87%	-
8h	Water sprinkling on roads to control airborne dust	Water sprinkling on road is proposed to control airborne dust.	Water tankers has been deployed for sprinkling on roads to control airborne dust.	No. of Water Tankers: 5 Capacity: 8000 Litres
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	Aesthetic beauty is good in and around the mine, with the plantation carried out by the lessee as well as the natural greenery around the mine surroundings		

## Compliance of Rule 45

S.N.	Item	COMMENTS		Remarks
9a	Status of submission of Monthly and Annual returns	M.R. Submitted up to September 2024: Submitted on 09.10.24 A.R. Submitted up to FY 23-24 Submitted on 28.06.24		
S.N.	Item	Details GIVEN in A.R.	Observation of I/Officer	Remarks
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mining Engineer- Mr. Sunil Kumar N A Geologist- Mr. Girish Kumar BK Manager- Mr. Awadhesh Kumar Rai	Appointed and are present during the inspection.	
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area,	<b>Total area as of 01.04.2024:</b>	Appear to be correct	

	dumps etc.	<ul style="list-style-type: none"> <li>• Mining- 40.83 Ha</li> <li>• Roads – 3.03 Ha</li> <li>• Infrastructure– 0.92 Ha</li> <li>• Waste Dumps-12.61 Ha</li> <li>• Mineral Storage- 3.15 Ha</li> <li>• Others – 45.52 Ha</li> </ul>		
9d	Scrutiny of Annual return on afforestation	Plantation Within Lease - 4960 nos. Survival Rate: 87%	Appear to be correct	
9e	Scrutiny of Annual return on mineral reject generation (Grade & quantity)	No Mineral Reject Generation	Appear to be correct	
9f	Scrutiny of Annual return on ROM stock and/or graded ore	<b>For Fe:</b> Opening Stock- 279957.500 MT Production: 1111506.00 MT Closing Stock- 519334.50 MT <b>For Mn:</b> Opening Stock- 0.00 MT Production: 7592.00 MT Closing Stock- 6592.00 MT	Appear to be correct	
9g	Scrutiny of Annual return on sale value, Ex. Mine price & production cost	<b>Fe:</b> <b>Lumps:</b> Fe 45-51% - 952.71 ₹/T Fe 51-55%- 0.00 ₹/T <b>Fines:</b> Fe 45-51% -908.74 ₹/T Fe 51-55%- 0.00 ₹/T <b>Mn:</b> Mn < 25% -2298.5 ₹/T	Appear to be correct	
9i	Scrutiny of Annual return on fixed assets	Value of Fixed Assets: ₹. 1048625253.00 Depreciation on Fixed Assets: ₹. 61876955.00	Appear to be correct	
9k	Scrutiny of Annual return on mining machineries	Excavator- 04 Rock Breaker- 01 Tippers – 9 Hydraulic drill – 01 Wheel loader – 02 Backhoe Loader- 01 Crusher- 01 MSP- 01 Water Tanker- 05	Appear to be correct	

ओमकेश मूर्ति एम.जी. | OMKESHA MURTHY M.G.  
क्षेत्रीय खनन भूविज्ञानी | REGIONAL MINING GEOLOGIST