

**MCDR inspection REPORT**

**Bangalore regional office**

**Mine file No :** KNT/BLR/FE/491/BNG

**Mine code :** 30KAR03182

- (i) Name of the Inspecting : **S006** ) **DR.SURESH PRASAD**  
Officer and ID No.
- (ii) Designation : Regional Controller Mines
- (iii) Accompanying mine : Mr. Santosh Kumar- Manager (AGM, Mines), Mr. Rakesh A  
Official with  
Designation
- (iv) Date of Inspection : 07/07/2023
- (v) Prev.inspection date : 09/03/2023

**PART-I : GENERAL INFORMATION**

1. (a) **Mine Name** : **NANDI IRON ORE MINE**
- (b) **Registration NO.** : **IBM/432/2011**
- (c) Category : A Fully Mechanised
- (d) Type of Working : Opencast
- (e) Postal address :  
State : KARNATAKA  
District : BELLARY  
Village : MALAGOLLA  
Taluka :  
Post office :  
Pin Code :  
FAX No. : 08395250132  
E-mail : sunil.singh@jsw.in  
Phone : 08395250120
- (f) Police Station : SANDUR
- (g) First opening date : 23/04/2018
- (h) Weekly day of rest : SUN
2. Address for : Malagola Village,  
correspondance Sandur Post & Taluk  
Bellary
3. (a) Lease Number :  
(b) Lease area :  
(c) Period of lease :  
(d) Date of Expiry :
4. Mineral worked : IRON ORE Main

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## 5. Name and Address of the

Lessee : JSW STEEL LIMITED  
 JSW Mining office, Near  
 Talur Cross Vidyanagar  
 Post, Toranagallu Sandur,  
 Bellary BELLARY KARNATAKA  
 Phone:9448286155  
 FAX :

Owner : Shri Jayant Acharya Deputy Managing Director  
 BELLARY KARNATAKA  
 Phone: jayant.acharya@  
 FAX :

Agent : SUNIL KUMAR SINGH  
 JSW steel Ltd., Vijayanagar  
 works, Vidyanagar Po,  
 Bellari, Karnataka BELLARY  
 KARNATAKA  
 Phone: 9449598135  
 FAX : 08395250132/142

## Mining Engineer

Name : Rakesh A.S,Full Time  
 Qualification : B.E(MINING)  
 Appointment/ : 01/03/2021  
 Termination date

## Geologist

Name : Nataraj. B.D,Full Time  
 Qualification : M.Sc ( Geology)  
 Appointment/ : 25/02/2022  
 Termination date

## Manager

Name : Santosh Kumar  
 Qualification : FCC  
 Appointment/ : 13/12/2022  
 Termination date

6. Date of approval of Mining	:	MP under 16(1) of MCR 2016	16/02/2017
Plan/Scheme of Mining	:	Modif.of approved Mining Plan	02/06/2020
	:	MP review under 17(1) MCR 2016	17/01/2023

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## PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

## Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	NIL	NA	
1b	Exploration over lease area for geological axis 1 or 2	NIL	13 Boreholes with total Meterage of 600m	8 RC Boreholes of 360m and 5 Core boreholes of 240m
1c	Exploration Agencies and Expenditure in lakh rupees during the year	NIL	Rs. 36.58 Lacs	Rocktech enterprises
1d	Balance area to be explored to bring Geological axis in 1 or 2	NIL	G1= 16.45 Ha Non-Mineralized Area= 4.58 Ha	The entire mining lease has been explored under G1 level.
1e	Balance reserve as on 01/04/20	Minable Reserves: 14668316 MT Geological Resources: 15623686 MT (As on 01.09.2022 based on the Approved RUMP)	Minable Reserves: 14538000 MT Geological Resources: 15493370 MT	As per the AR-2022-23 submitted.
1f	General remarks of inspecting officers on geology, exploration etc			The Mining Lease consists of one Iron Ore band of over 500m in length and width varying between 50-200m. The valley portion is covered with soil cover having float iron ore. The entire Mining Lease is explored under G1 level and out of total extent of 21.03 Ha, 16.45 Ha is proved Mineralized and 4.58 Ha as non-Mineralized.

## Development :

Sl.No.	Item	Proposals	Actual work	Remarks
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2a	Location of development w.r.t.lease area	E/W: 669167 to 669314 N/S: 1660304 to 1660680	E/W: 668927 to 669163 N/S: 1660450 to 1660670	For year 2022-23 the location of development is lagging due to CEC production capping restricting to 4.08 lakh tonnes per annum. However, workings are within the proposed grid intervals.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Total Number of Benches: 8 Ore: 8 Waste: 3	Total Number of Benches: 8 Ore: 8 Waste: 3	-
2c	Stripping ratio or ore to OB ratio	1: 0.08 T/T	1: 0.15 T/T	For year 2022-23
2d	Quantity of topsoil generation in m3	No proposal of Topsoil Generation.	Nil	As and when generated, utilized for plantation.
2e	Quantity of overburden generation in m3	34,165 m3	32,002 m3 (Total Waste Quantity- 64,004 MT)	Actual waste handling is given corresponding to the production carried out 407916 Metric Tonnes (Since CEC approved MPAP is 4.08 Lakh MT/Annum)
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc			The entire Iron Ore deposit in the Mining Lease is developed in one single pit and has systematically opened up the deposit with 3 benches in the Over burden and 8 benches in the Mineral.

## Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	1	1	For year 22-23

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3b	Quantity of ROM mineral production proposed	7,99,899 Metric Tones(as per the Approved Mining Plan)	4,07,916 Metric Tones	Maximum permissible annual production approved by CEC - 4,08,000 Metric Tonnes
3c	Recovery of sailable/usable mineral from ROM production	100%	100%	
3d	Quantity of mineral reject generation	NIL	NIL	No Mineral Reject Generation.
3e	Grade of mineral rejects generation and threshold value declared.	NA	NIL	No Mineral Reject Generation.
3f	Quantity of sub grade mineral generation.	NIL	NIL	-
3g	Grade of sub grade mineral generation	NIL	NIL	-
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanized Method (Crushing & Screening)	Mechanized Method (Crushing & Screening)	Crushing and Screening plant of 200TPH capacity Product size: 0-10mm 10-40mm
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No Proposal	Nil	No such beneficiation study proposed or carried out.
3j	Provision of drilling and blasting in mineral benches	Drilling and Blasting is proposed for mineral benches.	Drilling and Blasting is being carried out for production purpose.	106 (2) (B) Permission obtained from DGMS as per MMR 1961. Explosive Details: Slurry Cartridge with NONEL Initiation System.

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3k	Provision of mining machineries in mineral benches	Proposed Mining Machineries: Excavators-4 (1.6 m <sup>3</sup> -3 no. & 2.6 m <sup>3</sup> -1 no.) Tippers-10(20 tons) Drill-1(100 mm dia) Wheel Loader-3 (2.6 m <sup>3</sup> ) Back hoe loader-1(1.1 m <sup>3</sup> )	Deployed Mining Machineries: Excavators-3 (1.6 m <sup>3</sup> ) Rock breaker -1(2.6 m <sup>3</sup> ) Tippers-8(20 tons) Drill-1(100 mm dia) Wheel Loader-2 (2.6 m <sup>3</sup> ) Back hoe loader -1 (1 m <sup>3</sup> )	106 (2) (B) Permission Obtained from DGMS as per MMR 1961.  The reported machineries were found deployed in the mine on the day of inspection.
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Bench Height- 8m Bench Width- 8m	Bench Height- 8m Bench Width- 8m	
3m	Total area covered under excavation/pits	Proposal 11.33 Ha	10.15 Ha. As on 01.04.2023.	Furnished as per Approved RUMP
3n	Ore to OB ratio for the pit/mine during the year.	1: 0.08 T/T	1: 0.15 T/T	-
3o	Total area put in use under different heads at the end of year	Mining- 11.33 Ha Roads -1.2 Ha Infrastructure - 0.004 Ha WasteDumps- 1.32 Ha Others - 7.176 Ha Total - 21.03 Ha	Mining- 10.15 Ha Roads - 1.45 Ha Infrastructure - 0.66 Ha Waste Dumps-0.12 Ha. Others - 8.65 Ha Total - 21.03 Ha	For year 2022-23 the location of development is lagging due to CEC production capping restricting to 4.08 lakh tonnes per annum. However, workings are within the proposed grid intervals.

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3p	Production of ROM mineral during the last five year period as applicable	2018-19: 4,07,988 2019- 20:4,08,000 2020- 21:7,99,851 2021-22: 7,99,926 2022- 23:7,99,899 (in Metric tonnes)	2018-19: 4,07,999.33 2019-20:4,07,800.00 2020-21:2,07,380.00 2021-22:4,07,911.55 2022-23:4,07,916.00 (in Metric tonnes)  CEC approved MPAP is 4,08,000 Metric Tonnes	CEC approved MPAP for the year 2022-23 is 4,08,000 Metric Tonnes.
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Proposal shown as per Approved Mining Plan

3q	General remarks of inspecting officers on method of mining etc.	The Iron Ore deposit in the Mining Lease is developed by open cast mining as one single pit with 3 benches in the Over burden and 8 benches in the Mineral during the reporting year.
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Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Separate dump for O/B is Proposed	Waste material is temporarily dumped in TD.	Waste material is temporarily dumped in TD at pit bottom as proposed.
4b	Location of topsoil, OB and mineral reject dumps	OB Dump Proposal: E/W: 669167 to 669280 N/S: 1660560 to 1660680	OB Dump location: E/W: 669243 to 669314 N/S: 1660570 to 1660640	Temporary Dumping
4c	Number of dumps within lease area and outside of lease area	Within Lease Area-3 Dumps (1 Temporary Dumping, 2 Inactive Dumps-ID1 & ID2)  Outside Lease Area- Nil	Within Lease Area-1 Dumps (1 Temporary Dumping,  Outside Lease Area- Nil	

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4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Dump lies inside the UPL	Dump lies inside the UPL	
4e	Number of active and alive dumps.	01 No.	01 No.	Within lease area
4f	Number of dead dumps.	-	-	-
4g	Number of dumps established.	-	-	-
4h	Whether Retaining wall or garland drain all along dumps are there.	No proposal	Nil	Retaining Wall (2 nos., total length- 367m) & Garland Drains (2 nos., total length- 403m) along the dumps constructed in the previous years are being maintained.
4i	Length of Retaining wall or garland drain all along dumps	No proposal	NIL	Retaining Wall (2 nos., total length- 367m) & Garland Drains (2 nos., total length- 403m) along the dumps constructed in the previous years are being maintained.
4j	Number of settling ponds	No proposal	NIL	NIL
4k	Specific comments of inspecting officer on waste dump management			Dumping during the reporting year in carried out at the bottom most part of the pit temporarily. The other two inactive dumps ID1 & ID2 are suitably protected with toe walls with garland drains.

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Solid Waste Management - Backfilling:

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Sl.No.	Item	Propasals	Actual work	Remarks
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5a	Status of part or full extraction of mineral from mined out area before starting backfilling.	NIL	NIL	NIL
5b	Area under backfilling of mined out area	NIL	NIL	NIL
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	NIL	NIL	NIL
5d	Total area fully reclaimed and rehabilitated	NIL	NIL	NIL
5e	General remarks of inspecting officers on backfilling and reclamation etc.			No part of the mining pit is exhausted and mineral exists beneath. Therefore, question of reclamation by backfilling does not arise.

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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).	Submission of Annual report on PMCP under rule 23E(2)	Annual PMCP Report for Year 2022-23submitted to IBM Office.	-
6b	Area available for rehabilitation (ha) .	NIL	NA	-
6c	afforestation done (ha).	0.44 Ha Inside lease area	0.44 Ha Inside lease area	Planted in Greenbelt AreaPillar no. B to C

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6d	No. of saplings planted during the year	Inside the lease area: 586	Inside the lease area: 312 Outside the lease: 176	Inside the lease area: Greenbelt Area, Pillar no. Bto C Outside Lease: Avenue plantation.
6e	Cumulative no .of plants	Not specified	Within ML Area- 2868 Nos. Outside ML Area- 631 Nos.	Appears to be correct.
6f	Any other method of rehabilitation	Implementation of Bio-engineering measures for Surface Water and Dump Management as per Approved R&R Plan.	Bio-engineering measures for Surface Water and Dump Management as per Approved R&R Plan are being implemented.	-
6g	Cost incurred on watch and care during the year	NIL	560800	Appears to be correct.
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling ( Lx B x D	NIL	NA	No area is completely mined out in this plan period.
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	NIL	NA	No area is completely mined out in this plan period.
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on on backfilled area	NIL	NA	No area is completely mined out in this plan period.
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	NIL	NA	No area is completely mined out in this plan period.

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6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	NIL	NA	No area is completely mined out in this plan period.
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	NIL	NA	No area is completely mined out in this plan period.
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	NIL	NA	No area is completely mined out in this plan period.
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	NIL	NA	No area is completely mined out in this plan period.
6p	Compliance of environmental monitoring (core zone and 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. (Environment Monitoring Report of January 2023 was checked during inspection at mine site on 07.07.2023.)	Monitoring Agency-Ecomen Laboratories Parameters which are being Monitored: "Ambient Air Quality "Ambient Noise "Surface Water "Dust Fall Measurement "Noise Monitoring (Personal Exposure) "Stack Monitoring "Personal Dust Monitoring "Fugitive Dust Monitoring "Soil Quality Ground Water Quality

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6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	All the proposed PMCP activities are carried out and monitoring of all the environmental parameters are carried out on regular basis and the readings are observed to be within the permissible limits.
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Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	-	-	-
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanical Sorting	Mechanical Sorting	Grade wise and size wise sorting of mineral is done within the mining lease by Dry Crushing and Screening Method Product Size: 0-10mm 10-40mm
7c	Different grade of mineral sorted out at mines.	Yes	Fe<55% Fe>55-58%	ROM Opening Balance: 0.12 MT ROM Production 22-23: 407916 MT  Processed Ore: Lumps: 116253.00 MT Fines: 291662.50MT Total Processed Ore: 4,07,915.50MT
7d	Any beneficiation process at mines	No Proposal	No beneficiation process is carried out within lease area.	-

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7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	The entire ROM above the threshold value is suitable blended within the lease to achieve the product above the cut off grade thereby taking care of the mineral conservation aspect.
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Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	No proposal of Topsoil Generation.	Nil	As and when generated, utilized for plantation.
8b	Concurrent use or storage of topsoil	NA	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.	Separate dumping of overburden is being carried out in the bottom most part of the mine pit temporarily with proposal to rehandle it in future.
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	NA	NA	-
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	NA	NA	-

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8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Green Belt development across safety zone.	Plantation across the safety zone has been carried out to develop green belt.	Out of proposed 586 saplings for plantation within the lease, 312 no are planted WML and 176 nos OML as per AR-22-23.
8g	Survival rate	70-80%	Inside Lease: 90% Outside Lease: 90%	As per AR-2022-23 80% survival reported.
8h	Water sprinkling on roads to control airborne dust	Water sprinkling on roads is proposed to control airborne dust	Water tankers have been deployed for sprinkling on roads to control airborne dust.	No. of Water Tankers:4 no. Capacity: 10000 Litre*2 Nos 8000 Litre*2 Nos
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area			Aesthetic beauty in and around the mine is good due to plantation carried out by the lessee both WML & OML and existence of thick natural forest surrounding the Mine area.

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#### Compliance of Rule 45:

Sl.No.	Item	Proposals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	M.R. Submitted up to: May, 2023 09.06.2023 A.R. Submitted up to: Year 2022-23 30.06.2023		
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	ME: Mr. A.S Rakesh. MG: Mr. Natraj Belgere.	Both the officials were present on the day of inspection.	

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9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Mining: 10.150 Ha Waste disposal: 0.120 Ha Infrastructure :2.110 Others:8.650 Ha.	All as per proposals except Mining which is lagging due to CEC capping of production quantity.
9d	Scrutiny of Annual return on afforestation	312 no,s are planted WML and 176 nos OML as per AR-22-23 with 80% survival rate.	Out of proposed 586 saplings for plantation within the lease, 312 nos are planted WML and 176 nos OML as per AR-22-23.
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	Opening Stock: 0.120 Tonnes. Production: 407916 Tonnes. Closing Stock :0.620 Tonnes.	Appears to be correct.
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Ex Mine Price: Rs.693.36 per tonne. Cost of Production: Rs.693.36 per tonne.	Appears to be correct.
9h	Scrutiny of Annual return on fixed assets	(Rs 278184517)	Appears to be correct.
9k	Scrutiny of Annual return on mining machineries	SHOVEL (HYDRAULIC) 4 TIPPER 8 WHEEL LOADER 2 DOZER 1 BACK HOE 1 ROCK DRILL 1 WATER TANKER 1 CRUSHER 1 of 200TPH	Appears to be correct.

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**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 :****(DR.SURESH PRASAD)**

Indian Bureau of Mines