

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

MCDR inspection REPORT

Bangalore regional office

Mine file No : KNT/BLR/Fe-493/BNG

Mine code : 30KAR03184

- (i) Name of the Inspecting : **S19**) **SANDEEP KUMAR SINGH**
Officer and ID No.
- (ii) Designation : Assistant Controller Mine
- (iii) Accompanying mine : Shri Awadesh Kumar Rai, AGM(Mines), Shri Raghavendra
Official with
Designation
- (iv) Date of Inspection : 18/02/2021
- (v) Prev.inspection date :

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **BHADRA IRON ORE MINES**
- (b) **Registration NO.** : **IBM/432/2011**
- (c) **Category** : **A Fully Mechanised**
- (d) **Type of Working** : **Opencast**
- (e) **Postal address**
- State : **KARNATAKA**
- District : **BELLARY**
- Village : **ITTANAHALLI**
- Taluka : **SANDUR**
- Post office : **TARANAGAR**
- Pin Code : **583119**
- FAX No. : **8395-250132**
- E-mail : **PANDEY.BINAY@JSW.IN**
- Phone : **8395-250120-30**
- (f) **Police Station** : **SANDUR**
- (g) **First opening date** : **05/06/2019**
- (h) **Weekly day of rest** : **SUN**
2. **Address for** : **ITTANAHALLI VILLAGE**
correspondance : **TARANAGAR POST**
: **BALLARI-583119**
3. (a) **Lease Number** :
- (b) **Lease area** :
- (c) **Period of lease** :
- (d) **Date of Expiry** :
4. **Mineral worked** : **IRON ORE** **Main**

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 : DR. VINOD NOWAL
DY.MANAGING DIRECTOR, M/S
JSW STEEL LIMITED, NANDI
IRON ORE MINE, BELLARY
BELLARY KARNATAKA
Phone:
FAX :

Agent : B P PANDEY
M/S JSW STEEL LIMITED NANDI
IRON ORE MINE BELLARY
BELLARY KARNATAKA
Phone: 9448286155
FAX :

6. Date of approval of Mining :
Plan/Scheme of Mining

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	No proposals	Nil	Mine operations commenced on 05.06.2019.(Auctioned block)
1b	Exploration over lease area for geological axis 1 or 2	No proposals	32 bore holes with total meterage of 1461 m drilled during the year 2019-20	Nil
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Not mentioned	Rs 70.73 lakhs expenditure incurred for exploration activities during the year 2019-20	As reported by the Lessee.(Rs. 4841.6 per metre exploratory drilling cost. Total exploratory drilling meterage for the year 2019-20 is 1461 m.)
1d	Balance area to be explored to bring Geological axis in 1 or 2	Not mentioned	G-1-34.42 ha, G-2-1.53 ha. The remaining area excluding the waste dump area(AD-1) of (39.93+6.85-3.07=43.71 ha) is G-3 area. G-3 area approx(including Block-I & II) is 50.87 ha.	As reported by the Lessee. Total Lease area 130.53 ha(as per CEC)
1e	Balance reserve as on 01/04/20	12,575,414 million tonnes of iron ore including both Block-I & II with average grade 58.76 % for Block-I & 51.56 % for Block-II as on 5.06.2019	11,325,664 tonnes of iron ore as on 1.04.2020.	As per AR 2019-20.
1f	General remarks of inspecting officers on geology, exploration etc	-	-	The record of the 32 boreholes drilled during the year 2019-20 were not found, maintained in Form-'J' during the site inspection. Violation issued under Rule 48(1).

Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Block-I- Development for Block-I proposed in Sec S2-2', S3-3', S4-4', S5-5', S6-6', S7-7', S8-8'. N- 1670620 to 1669900 & E- 675000 to 675600 Block-II Development for Block-II proposed from SS3-SS3' & SS7-SS7'.	Actual development carried out Block-I Sec S2-2', S3-3', S4-4', S5-5', S6-6', S7-7', S8-8'. Block-II SS3-SS3' & SS7-SS7'.	Development carried out within the proposed extent.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Separate benches proposed in OB & mineral.	Separate benches maintained in OB & mineral	Overburden-10 bench, Mineral-5 bench. (Block-I)
2c	Stripping ratio or ore to OB ratio	1:3.95(in tons)	1:0.65(in tons)	Ore- 1249750 tons Waste- 822900 tons. Violation issued
2d	Quantity of topsoil generation in m3	No proposal	Nil	Nil
2e	Quantity of overburden generation in m3	29,69,789 Cum of overburden proposed	4,11,450 Cum of Overburden handled.	(As per AR, 2019-20). Violation issued
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	-	-	Against the proposed overburden of 29,69,789 cu.m, only 4,11,450 cu.m of overburden has been handled for the year 2019-20, thereby leading to 86% less OB handling and development than the approved proposal. Violation issued

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
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3a	Number of pit proposed for production	Two pits proposed. (Block-I & Block-II)	Actual working carried out in two pits. (Block-I & Block-II)	Nil
3b	Quantity of ROM mineral production proposed	15,00,000 tons of ROM proposed	12,49,750 tons of ROM achieved.	(As reported in AR 2019-20). The CEC production limit is 1.25 MMTPA & EC production limit is 1.25 MMTPA during the year 2019-20.
3c	Recovery of sailable/usable mineral from ROM production	100 % proposed	100 % achieved	Nil
3d	Quantity of mineral reject generation	No proposal	Nil	Nil
3e	Grade of mineral rejects generation and threshold value declared.	No proposal	Nil	Nil
3f	Quantity of sub grade mineral generation.	No proposal	Nil	Nil
3g	Grade of sub grade mineral generation	No proposal	Nil	Nil
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanized Crushing & Screening proposed.	Mechanized crushing and screening carried out.	Size- 0-10mm(fines) & 10-40 mm(C-ore), Crusher- 250 TPH-2 Nos. & 200 TPH-1 No.
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No proposal	Nil	Nil
3j	Provision of drilling and blasting in mineral benches	Deep hole Drilling and blasting proposed.	Drilling & blasting carried out . DTH drilling of 100 mm dia & slurry explosives in conjunction with Detonators used for blasting.	Nil

3k	Provision of mining machineries in mineral benches	i)Excavator- 1.6 Cum- 10 Nos. & 0.9-1.1 Cum- 1 no. ii)Tippers-16- 18 Cum-42 Nos. iii)Drill-102- 115 mm dia- 3 No. iv)Wheel loader- 5 Nos. v)Water sprinklers- 10000 litres- 6 nos.	i)Excavator- 1.6 Cum - 3 Nos , 2.6 Cum-7 nos & 0.6 Cum- 1 no ii)Wheel Loader- 4 Nos. iii)Tipper-18 Cum-55 nos. iv)Water tanker-10,000 litres-3 nos. v)Drill- 102 mm-2 nos	Nil
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Proposed Height 8 m for both Overburden and Mineral bench	8 m height maintained for both Overburden and Mineral bench.	Nil
3m	Total area covered under excavation/pits	44.68 ha at the end of plan period (2023-24)	35.16 ha covered under excavation/pits	As per AR 2019-20.
3n	Ore to OB ratio for the pit/mine during the year.	1:3.95(in tons)	1:0.65(in tons)	Ore- 1249750 tons Waste- 822900 tons.
3o	Total area put in use under different heads at the end of year	i)Area under Mining- 44.68 ha ii) Waste dump- 46.78 ha iii) Infrastructure & roads- 2.85 ha. iv)Mineral storage- 1.5 ha v)Green belt& R &R measures- 7.68 ha at the end of plan period (2023-24)	i)Covered under current(O/c) workings- 35.16 ha ii)Waste disposal- 39.93 ha iii) Occupied by Plants, buildings, residential, welfare& roads-2.43 ha. iv)Other purpose(Green belt safety zone, R&R and Future Mining area)- 53.01 ha	Land use as reported in AR 2019-20.

3p	Production of ROM mineral during the last five year period as applicable	2019-20: 15,00,000 tons (in tonnes)	2019-20: 12,49,750 tons (in tonnes)	Mine operations commenced on 05.06.2019.(Auctioned block). The CEC production limit is 1.25 MMTPA & EC production limit is 1.25 MMTPA during the year 2019-20.
3q	General remarks of inspecting officers on method of mining etc.	-	-	The Mining activities were carried out as per the proposal.

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Separate dumping proposed for OB.	Separate dumping maintained for OB.	Nil
4b	Location of topsoil, OB and mineral reject dumps	Proposed OB dump Block-I AD-1- (Sec 1-1' to 4-4') N- 1671580-1671980 E- 674675-675230 Block-II Temporary dump Location-Along Sec-(SS2-SS2')	Actual OB dump location Block-I AD-1 (Sec 1-1' to 4-4') Block-II Temporary dump Location-Along Sec-(SS2-SS2')	Waste dumping carried out within the proposed extent as per the proposal.
4c	Number of dumps within lease area and outside of lease area	Two active dumps within the lease area & 7 dead dumps outside the lease area (1 Active Dump AD-1 proposed for Block-I & one Temporary Dump proposed for Block-II)	Two active dumps within the lease area & 7 dead dumps outside the lease area (1 Active Dump AD-1 for Block-I & one Temporary Dump for Block-II utilized for waste dumping)	Nil

4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Waste Dump AD-1 proposed for Block-I is outside UPL Temporary waste dump for Block-II proposed within UPL.	Waste Dump AD-1 proposed for Block-I is outside UPL Temporary waste dump for Block-II proposed within UPL.	Nil
4e	Number of active and alive dumps.	2 active waste dumps. Waste Dump AD-1 proposed for Block-I Temporary waste dump for Block-II	2 active waste dumps used for waste dumping. Waste Dump AD-1 is utilized for Block-I waste dumping. Temporary waste dump is utilized for Block-II waste dumping.	As per the proposal.
4f	Number of dead dumps.	7 dead dumps	7 dead dumps	Outside ML area.
4g	Number of dumps established.	Not mentioned	Nil	Nil
4h	Whether Retaining wall or garland drain all along dumps are there.	Retaining wall & Garland drain proposed along the proposed waste dumps(AD-1 & Temporary dump) for Block-I & II.	Retaining wall and garland drain construction carried out as per the proposal.	Nil
4i	Length of Retaining wall or garland drain all along dumps	For AD-1(Block-I), TW1-804 m, GD-1-804 m, For Temporary dump (Block-II)- TW-8-286 m and GD-8-291 m .	Toe wall and garland drain construction for AD-1 completed as per the proposal. (TW-1-707 m, GD-1-707 m).The toe wall & garland drain construction at Temporary Dump have not been constructed since it is a temporary dump and is inside the existing pit and will be re-handled in future.	Nil
4j	Number of settling ponds	GCD, SMCD, RWHP & SST proposed as per the R& R plan. Location (N-1, N-3,N-4,N-5, EID's & ID's)	Construction of GCD, SMCD, RWHP & SST construction is being carried out as per the R&R proposal.	As reported by the Lessee.

4k	Specific comments of inspecting officer on waste dump management	-	-	The waste dumping has been carried out at the earmarked location as per the proposal.
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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 proposal	Nil	Nil
5b	Area under backfilling of mined out area	No proposal	Nil	Nil
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	No proposal	Nil	Nil
5d	Total area fully reclaimed and rehabilitated	No proposal	Nil	Nil
5e	General remarks of inspecting officers on backfilling and reclamation etc.	-	-	No backfilling proposals.

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 before 1st of July every year	Annual PMCP report for the year 2019-20 submitted on 10.09.2020	Submitted
6b	Area available for rehabilitation (ha) .	17.73 ha(16.63 ha area under encroachment & 1.1 ha Green belt development)	4.1 ha within the Lease (1.1 ha safety zone + 1.8 ha Gap plantation+ 1.2 ha dump)	As reported by the Lessee during inspection.

6c	afforestation done (ha).	17.73 ha.	4.1 ha within the Lease (1.1 ha safety zone + 1.8 ha Gap plantation+ 1.2 ha dump)	As reported by the Lessee during inspection. Violation issued for carrying out less plantation w.r.t the approved proposal.
6d	No. of saplings planted during the year	18,000 nos. of plants proposed (Area under Encroachment & Green belt development)	2028 nos. of plants within ML area with 96 % survival rate and 152 nos. of plants outside ML area with 94 % survival rate	As reported in AR 2019-20. Violation issued.
6e	Cumulative no .of plants	Not mentioned.	2028 nos. of plants within ML area with 96 % survival rate and 152 nos. of plants outside ML area with 94 % survival rate. Total plants -2180 nos.	As per AR 2019-20.
6f	Any other method of rehabilitation	No proposal	Nil	Nil
6g	Cost incurred on watch and care during the year	Not mentioned	Nil	Nil
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	No proposal	Nil	Nil
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	No proposal	Nil	Nil
6j	Compliance on reclamation and rehabilitation by backfilling (iii) Afforestation on backfilled area	No proposal	Nil	Nil

6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No proposal	Nil	Nil
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	No proposal	Nil	Nil
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	No proposal	Nil	Nil
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	No proposal	Nil	Nil
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	No proposal	Nil	Nil
6p	Compliance of environmental monitoring (core zone and buffer zone)	Environmental monitoring proposed for Air, water, noise& Soil for Core and buffer zone.	Environmental monitoring carried out for Air, Water Noise& Soil for both core and buffer zone.	Environmental monitoring report for Jan-2020 available. All environmental parameters within the permissible limit
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	—	—	Total 18,000 nos. saplings to be planted in Greenbelt development & area under encroachment against which only 2180 nos. of total saplings are planted for the year 2019-20. Violation issued.

Mineral Conservation:

Sl.No.	Item	Proposals	Actual work	Remarks
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7a	ROM Mineral dispatch or grade-wise sorting within lease area	Mechanized Crushing & screening proposed for iron ore	Mechanized Crushing carried out for iron ore.	Crusher-250 tph- 2 nos. & 200tph-1no. Size- 0-10 mm(fines) & 10-40 mm(C-ore)
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	No grade wise sorting proposed	No grade wise sorting carried out.	Nil
7c	Different grade of mineral sorted out at mines.	No proposal	Nil	Nil
7d	Any beneficiation process at mines .	No proposal	Nil	Nil
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	-	-	The mineral conservation activities are carried out inside mine as per the proposal

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	No top soil generation proposal	Nil	Nil
8b	Concurrent use or storage of topsoil	No proposal	Nil	Nil
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate dumping proposed for OB.	Separate dumping maintained for OB.	Dumping of waste carried out in proposed waste dump (AD-1) for Block-I and temporary waste dump for Block-II. No mineral reject generation.

8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	No proposal	Nil	Nil
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	No proposal	Nil	Nil
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Not mentioned.	2028 nos. of plants within ML area with 96 % survival rate and 152 nos. of plants outside ML area with 94 % survival rate. Total plants -2180 nos.	Nil
8g	Survival rate	Not mentioned	96% achieved within ML area and 94 % achieved outside ML area.	As reported in AR 2019-20.
8h	Water sprinkling on roads to control airborne dust	Water sprinkling on roads proposed	Water sprinkling carried out as per the proposal	Three Water sprinkler of capacity 10 KL used in the mines for water sprinkling.
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	-	-	The aesthetic beauty in and around the mine looks good.

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	M.R. Submitted up to Jan-2021. ***** A.R. of the year 2019-20 submitted on 30.06.2020	M.R. Submitted up to Jan-2021. ***** A.R. of the year 2019-20 submitted on 30.06.2020	Submitted.

9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mining Engineer- Shri Rohit Agrawal ii) Geologist- Shri Raghavendra S. Desai iii) Manager- Shri Awadhesh Kumar Rai	It was observed during inspection that A whole time 'Geologist' has not been appointed as per the provision of Rule (55) of MCDR 2017.	Violation issued under Rule 55
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	i) Covered under current (O/c) workings- 35.16 ha ii) Waste disposal- 39.93 ha iii) Occupied by Plants, buildings, residential, welfare & roads- 2.43 ha. iv) Other purpose (Green belt safety zone, R&R and Future Mining area)- 53.01 ha	Appears to be correct.	Nil
9d	Scrutiny of Annual return on afforestation	2028 nos. of plants within ML area with 96 % survival rate and 152 nos. of plants outside ML area with 94 % survival rate.	Appears to be correct	Nil
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Nil	Appears to be correct	Nil
9f	Scrutiny of Annual return on ROM stock and/or graded ore	O/s- 0 tons Production- 12,49,750.01 tons C/s- 0 tons	Appears to be correct	Nil

9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Cost of Production- Rs 520.61/ton Ex mine price- Rs. 520.61/ton	Appears to be correct	Captive Mines
9h	Scrutiny of Annual return on fixed assets	Rs 1173189811 including industrial, plant & machinery & capitalized expenditure	Appears to be correct	Nil
9k	Scrutiny of Annual return on mining machineries	i)Excavator- 1.6 Cum - 3 Nos , 2.6 Cum- 7 nos & 0.6 Cum- 1 no ii)Wheel Loader- 4 Nos. iii)Tipper-18 Cum-55 nos. iv)Water tanker-10,000 litres-3 nos. v)Drill- 102 mm-2 nos. vi)Motor Grader-1 no. vii)Dozer- 1no. viii)Crusher- 250 TPH- 2nos & 200 TPH-1 no.	Appears to be correct	Nil

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(1)	01/03/2021				
MCDR17 Rule 48	01/03/2021				
MCDR17 Rule 55(1)(3)	01/03/2021				

Date :

(SANDEEP KUMAR SINGH)

Indian Bureau of Mines