

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

Inspection under SDF for star rating of mines REPORT

Bangalore regional office

Mine file No : KNT/BLR/FE/490/BNG

Mine code : 30KAR03181

- (i) Name of the Inspecting : **A101**) **ARUN KUMAR**
Officer and ID No.
- (ii) Designation : Deputy Controller Mines
- (iii) Accompanying mine : Shri. Sunil Kumar Singh - G M (Mines), Shri S Prakash
Official with
Designation
- (iv) Date of Inspection : 26/08/2019
- (v) Prev.inspection date : 05/09/2018

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **TUNGA 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 : HITTANAHALLI
- Taluka : SANDUR
- Post office : TARANAGAR
- Pin Code : 583275
- FAX No. :
- E-mail : PANDEY.BINAY@JSW.IN
- Phone : 9448286155
- (f) Police Station : BANNIHATTI
- (g) First opening date : 25/01/2018
- (h) Weekly day of rest : SUN
2. Address for : ITTANAHALLI VILLAGE, TARANAGAR
correspondance : SANDUR TALUK, BALLARI DISTRICT- 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 :

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	Proposed- 10 Nos of pits (1.5X1.5X1.5 m) & 11 Nos of Trenches (70x2x1.5 m)	No Pits & Trenches as proposed were carried out	Since the mine started on 12.02.2018 . pits and trenches as proposed were not done in 2017-18.
1b	Exploration over lease area for geological axis 1 or 2	08 RC bore holes amounting to 420 Mts and 12 Pits (1.5X1.5X1.5 mts) were proposed.	08 RC Boreholes at a grid interval of 50X50 mts amounting to 399 mts and 20 Pits (1.5X1.5X1.5 mts) amounting to 300 mts were carried out	Exploration report has not been submitted.Violation pointed out
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Not specified.	In house drilling machine deployed for carrying out the RC drilling.	
1d	Balance area to be explored to bring Geological axis in 1 or 2		21.55 Ha area needs to be explored on Geological axes 1 or 2	Area under G-1: 8.51 Ha and area under G-2: 2.62 Ha
1e	Balance reserve as on 01/04/20		6.12 Million Tonnes	As per annual return submitted for the FY 2018-19.
1f	General remarks of inspecting officers on geology, exploration etc			08 RC Boreholes at a grid interval of 50X50 mts amounting to 399 mts and 20 Pits (1.5X1.5X1.5 mts) amounting to 300 mts were carried out,the report of the same is to be submitted.

Development :

Sl.No.	Item	Proposals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Proposed Location of Development: E 675454 to 675240, N 1670872 to 1670640	Actual Location of Development : E 675454 to 675233, N 1670872 to 1670636	In b/w section line S5-S5' to S7-S7' b/w 882 m to 906 m.

2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Separate benches in overburden and mineral proposed.	Separate benches are maintained in overburden and mineral.	OB-1 bench and Mineral -1 bench.
2c	Stripping ratio or ore to OB ratio	1 : 0.51	1 : 0.36	Bulk density; ore -3 and waste/OB - 2. Violation pointed out
2d	Quantity of topsoil generation in m3	No proposal.	1876 tonnes	The top soil generated was used for plantation
2e	Quantity of overburden generation in m3	154387 tonnes	109403 tonnes	Violation pointed out for lower handling of OB
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc			Development was carried out in b/w section line S5-S5' to S7-S7' with stripping ration of 1:0.36. Violation pointed out for lower handling of OB.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	1 pit proposed for Production.	Production is carried out from 1 pit only.	Approximate working Pit dimension (289 X 88 X 15) mts.
3b	Quantity of ROM mineral production proposed	300000 Tons	299993 Tons	No Change
3c	Recovery of sailable/usable mineral from ROM production	80 %	80 %	No change
3d	Quantity of mineral reject generation	No proposal	Nil	No mineral reject generated.
3e	Grade of mineral rejects generation and threshold value declared.	No proposal	Not applicable	Nil
3f	Quantity of sub grade mineral generation.	No proposal	Nil	No sub grade mineral generated.

3g	Grade of sub grade mineral generation	No proposal	Not applicable	nil
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanized Method proposed for segregating from ROM	Mechanized Method adopted for segregating from ROM	Dry Crushing and screening 250 TPH.
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No proposal	No such beneficiation study carried out.	-
3j	Provision of drilling and blasting in mineral benches	Provision of drilling & blasting is made in mineral benches.	Drilling & blasting carried out by combination of slurry and Nonel detonator	40 % of the total material handled is blasted.
3k	Provision of mining machineries in mineral benches	Provision of mining machineries made: Excavator- 4 nos, Tippers - 11, Hydraulic drill - 1 nos, wheel loader - 2 nos.	Machineries deployed: Excavator- 4 nos, wheel loader - 1 nos. Tippers - 7 nos, Hydraulic drill - 1 nos	4 tippers and 1 excavator was in operation on the date of inspection.
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Bench width and Height of 8 mts proposed.	Bench width of 6 mts and Height of 8 mts maintained	No change
3m	Total area covered under excavation/pits	8.16 Ha in the plan period	6.16 Ha	Actual Excavation pit within in the proposal limit
3n	Ore to OB ratio for the pit/mine during the year.	1 : 0.51	1 : 0.36	Violation pointed out for lower stripping ratio

3o	Total area put in use under different heads at the end of year	Total area in the plan period : Mining- 8.16 Ha, Roads -0.5 Ha, Infrastructure - 0.44 Ha, Waste Dumps- 13.57, Others - 8.61 Ha Green Belt - 1.73 R & R structures - 0.20	Already exploited & Abandoned by opencast mining - 2.35 Ha, covered under current working - 3.810 Ha, used for waste disposal - 0.660 Ha, Infrastructures - 0.44 Ha, other area (R & R and Future mining area) - 25.42 Ha.	Violation pointed out as no area has been exploited & Abandoned.
3p	Production of ROM mineral during the last five year period as applicable	2014-15:NA 2015-16:NA 2016-17:NA 2017-18: 300000 2018-19: 300000 (in tonnes)	2014-15:NA 2015-16:NA 2016-17:NA 2017-18: 273983.00 2018-19: 299993.42 (in tonnes)	Mine started on 12.02.2018. Actual production within the proposed limits.
3q	General remarks of inspecting officers on method of mining etc.			Drilling & blasting carried out by combination of slurry and Nonel detonator, using heavy HEMM. Dry Crushing and screening adopted for segregation from ROM.

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 for OB proposed.	Separate dump for OB maintained.	-
4b	Location of topsoil, OB and mineral reject dumps	Proposed Location of Dump : E 675712 to 675880, N 1670470 to 1670672	Location of Dump :E 675742 to 675562, N 1670532 to 1670658	OB: South East corner of lease area between Section S1 - S1' & S2 - S2'

4c	Number of dumps within lease area and outside of lease area	Within Lease area: 02 OB dumps Outside - NIL	Within Lease area: 02 OB dumps Outside - NIL	-
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Dumps are proposed outside the UPL	Dumps are located outside the UPL	OB dump is Approximately 35 mts away from the UPL.
4e	Number of active and alive dumps.	01 No.	01 No.	-
4f	Number of dead dumps.	01 No.	01 No.	-
4g	Number of dumps established.	01 No.	01 No.	Partially stabilized by terracing & plantation
4h	Whether Retaining wall or garland drain all along dumps are there.	Retaining wall and garland drain proposed all along the dump.	Constructing Retaining wall and garland drain as proposed	-
4i	Length of Retaining wall or garland drain all along dumps	Retaining wall -1248 mts, garland drain - 1248 mts	Retaining wall - 650 mts completed. As on 01.04.2019	Construction of Retaining Wall & garland drain is in progress
4j	Number of settling ponds	1 SST proposed.	1 SST Constructed	20 m (L) X 10 m (W) X 3 m (H)
4k	Specific comments of inspecting officer on waste dump management			OB is dumped in the South East corner of lease area between Section S1 - S1' & S2 - S2'. Constructing Retaining wall and garland drain as proposed in R & R plan.

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	Mine started on 12.02.2018 & no area is matured for backfilling

5b	Area under backfilling of mined out area	No proposal	Nil	-
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	No proposal	Not applicable	Top soil generated was used for plantation.
5d	Total area fully reclaimed and rehabilitated	No proposal	Nil	-
5e	General remarks of inspecting officers on backfilling and reclamation etc.			Mine was started on 12.02.2018 & there is no area devoid of mineral for backfilling & reclaiming the land

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 by 1st july every year.	Annual report on PMCP not submitted	Violation pointed out
6b	Area available for rehabilitation (ha) .	No proposal	Nil	-
6c	afforestation done (ha).	0.58 Ha	0.95 Ha	Outside ML : 0.37 Ha
6d	No. of saplings planted during the year	Not Specified.	WML: 530 Nos. OML : 130 Nos.	-
6e	Cumulative no .of plants	Not Specified.	WML: 740 Nos. OML: 617 Nos. Total Sapling - 1357 No	-
6f	Any other method of rehabilitation	No proposal	Nil	Construction of R & R structures proposed by ICFRE and Approved by CEC
6g	Cost incurred on watch and care during the year	Not specified	NA	-

6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	No proposal	Nil	-
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	No proposal	Nil	-
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on on backfilled area	No proposal	Nil	No matured area available for backfilling
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No proposal	Nil	Mine was started in the recent past
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	No proposal	Nil	-
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	No proposal	Nil	No waste land available within lease
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	No proposal	Nil	-
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	No proposal	Nil	-

6p	Compliance of environmental monitoring (core zone and buffer zone)	Proposed Environmental monitoring in Core zone and Buffer Zone.	Environmental monitoring in Core zone and Buffer Zone is carried out on monthly basis.	Monitoring carried out BS-Envi-tech, Hyderabad. All the parameters were observed to be within the permissible limit.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.			Mine has been restarted after the E-auction & the PMCP work is in progress. Violation pointed out for not submitting the Annual report on PMCP

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Grade wise sorting proposed within the lease area	Grade wise sorting done within the lease area	-
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanical sorting proposed	Mechanical method adopted for grade wise sorting.	Dry crushing and screening of 250 TPH (1 unit).
7c	Different grade of mineral sorted out at mines.	Lumps: 10-40mm(+45% Fe) & Fines:0-10mm(+45% Fe)	Lumps and Fines- 55 to below 58 and 58 to below 60 Fe%.	Captive consumption only
7d	Any beneficiation process at mines .	No proposal	Nil	Dry crushing & screening
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues			Mineral conservation is taken care off. Dry crushing & screening is adopted. All the material is used for captive consumption.

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
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8a	Separate removal and utilization of topsoil (Rule 32)	No proposal	1876 tonnes of top soil generated	Top soil generated is used for plantation
8b	Concurrent use or storage of topsoil	No proposal	Top soil is used for plantation as on when generated	-
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate Dump for OB proposed	Separate Dump for OB maintained	-
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	No proposal	Not Applicable	Mine has been started recently
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	No proposal	Not Applicable	nil
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Baseline information on existence of plantation available	WML: 530 Nos. sapling planted OML : 130 Nos sapling planted	Green belt developement in process in the safety zone
8g	Survival rate	Not specified	99 %	-
8h	Water sprinkling on roads to control airborne dust	Water sprinkling on haul roads proposed to control airborne dust	Water tankers and fogger were deployed to control the airborne dust on haul roads and screening plant	2 nos of water tanker each of 9000 lits capacity. and 1 mobile fogger used.
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area			Aesthetic beauty is beeing developement in and around the mine as the mine has been restarted recently

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
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9a	Status of submission of Monthly and Annual returns		Monthly return submitted up to July-2019. Annual return submitted for the FY 2018-19.	Annual return submitted on 28.06.2019.
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Manager Mining - Shri. Awadhesh Kumar Rai, Mining Eng.- Shri. Aman kumar, Geologist- Shri. R.S. Desai	Same officers were present during the course of inspection	
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Already exploited & Abandoned by opencast mining - 2.35 Ha, covered under current working - 3.810 Ha, used for waste disposal - 0.660 Ha, Infrastructures - 0.44 Ha, other area (R & R and Future mining area) - 25.42 Ha.	Violation pointed out as there is no area which is fully exploited & abandoned	
9d	Scrutiny of Annual return on afforestation	WML: 530 Nos. sapling planted OML: 130 Nos sapling planted @ 99 % survival rate.	Appears to be correct	
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Nil	No mineral reject proposed and generated	
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM: Opening stock - 227212 tonnes, production- 299993 tonnes, Closing stock - Nil.	Appears to be correct.	

9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Sale value - Nil, ex-mine price -258.07 Rs/tonne. Production Cost - 624.31 Rs/tonne	No sale value as it's a captive mine
9h	Scrutiny of Annual return on fixed assets	Rs. 34.49 Crores, Including plant, machinery , transport equipment and capitalized expenditure	Appears to be correct
9k	Scrutiny of Annual return on mining machineries	Wheel Loader - 1 Nos, Drill Machine - 1 Nos, water tanker - 2, Crushing & Screening -1 Nos, tipper - 7	Appears to be correct

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)	09/09/2019			
MCDR17	Rule 26(2)	09/09/2019			
MCDR17	Rule 35(2)	09/09/2019			
	Rule 45(7)	09/09/2019			

Date :

(ARUN KUMAR)

Indian Bureau of Mines