

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

Mining Plan Modification REPORT

Bangalore regional office

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

Mine code : 30KAR03182

- (i) Name of the Inspecting : **A101**) **ARUN KUMAR**
Officer and ID No.
- (ii) Designation : Deputy Controller Mines
- (iii) Accompanying mine : Shri. Vinod Mines Manager & Shri B D Nataraj-Geologis
Official with
Designation
- (iv) Date of Inspection : 25/02/2020
- (v) Prev.inspection date :

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

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

Mining Engineer

Name : VINOD KUMAR N.R,Full Time
 Qualification : B.E(MINING),1st Class Mine's Manager Cer
 Appointment/ : 21/03/2018
 Termination date

Geologist

Name : Nataraj. B.D,Full Time
 Qualification : M.Sc (Geology)
 Appointment/ : 21/03/2018
 Termination date

6. Date of approval of Mining Plan/Scheme of Mining : MP under 16(1) of MCR 2016 16/02/2017

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	No proposal	Nil	No backlog
1b	Exploration over lease area for geological axis 1 or 2	08 RC bore holes amounting to 410 Mts were proposed.	2018-19: 05 RC Boreholes (240 Mts) & in Oct., 209: 12 RC Boreholes amounting to 580 mts were carried out.	Nil
1c	Exploration Agencies and Expenditure in lakh rupees during the year	In house	In house drilling machine deployed for carrying out the exploratory drilling.	Rs.74.20 Lakhs spent on drilling
1d	Balance area to be explored to bring Geological axis in 1 or 2	Nil	6.93 Ha	G1-13.22 Ha,G2-0.88 Ha,G3- 3.97 Ha & 2.96 Ha is unexplored
1e	Balance reserve as on 01/04/20	Nil	11.53 Million Tonnes on 31.10.2019	as As per approved modified MP.
1f	General remarks of inspecting officers on geology, exploration etc			12 RC boreholes were drilled in 2019-20.Further exploration is proposed in the year 2020-21 & 2021-22

Development :

Sl.No.	Item	Proposals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Proposed Location of Development E668909 to 669268 ,N 1660300 to 1660720	Actual Location of Development : E 669056 to 669293, N 1660420 to 1660720	Actual working area restricted beyond 1KM of historic monument
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.	Nil
2c	Stripping ratio or ore to OB ratio	1 : 0.23	1 : 0.15	Bulk density; ore -3 t/m ³

2d	Quantity of topsoil generation in m3	No proposal.	542m3	Used for plantation purpose
2e	Quantity of overburden generation in m3	93608 tonnes	59715 tonnes	Violation pointed out dated 19.02.2020. Modified MP submitted & approved 02.06.2020
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc			Working restriction due to temple issue. Scientific study was carried out by NIRM as per the direction of the State Govt. to access the impact of drilling & blasting on temple. Recommendation awaited by the expert committee

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 (295 X 298 X 101) mts.
3b	Quantity of ROM mineral production proposed	408000Tons	407999 Tons	No Change.
3c	Recovery of sailable/usable mineral from ROM production	100 %	100 %	Nil
3d	Quantity of mineral reject generation	No proposal	NIL	No generation of Mineral reject.
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
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No proposal	No such beneficiation study carried out.	Nil
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.	20 % of the total material handled is blasted.
3k	Provision of mining machineries in mineral benches	Provision of mining machineries made Excavator- 3 nos, Tippers - 8, Hydraulic drill - 1 nos, wheel loader - 2 nos.	Machineries deployed: Excavator- 4 nos, wheel loader - 2 nos. Hydraulic drill - 1 nos	No working on the date of inspection, as the target were complete
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 8 mts and Height of 8 mts maintained.	Nil
3m	Total area covered under excavation/pits	10.76 Ha at the end of plan period	8.8 Ha	Actual Excavation pit within in the proposal limit
3n	Ore to OB ratio for the pit/mine during the year.	1 : 0.23	1 : 0.15	Nil

3o	Total area put in use under different heads at the end of year	Total area in the plan period : Mining- 10.76 Ha, Roads -1.2 Ha, Infrastructure - 0.3 Ha, Waste Dumps-1.20 Ha, Others - 8.61 Ha Green Belt - 1.39 Ha R & R structures - 0.38 Ha, Mineral storage-0.30 Ha	Already exploited & Abandoned by opencast mining - 6.85 Ha, covered under current working - 1.95 Ha, used for waste disposal - 1.41 Ha, Infrastructures - 1.204 Ha, other area (R & R and Future mining area) - 9.616 Ha.	Violation issued under rule 45(7)
3p	Production of ROM mineral during the last five year period as applicable	2014-15:NA 2015-16:NA 2016-17:NA 2017-18: NA 2018-19: 408000 (in tonnes)	2014-15:NA 2015-16:NA 2016-17:NA 2017-18: NA 2018-19: 407999 (in tonnes)	Mine started on 17.03.2018. Actual production within the proposed limits.
3q	General remarks of inspecting officers on method of mining etc.			Mine started on 17.03.2018. Method of mining was carried out by opencast, fully mechanized mine.

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.	Nil
4b	Location of topsoil, OB and mineral reject dumps	Proposed temporary dump between section line S1-S1' & S2-S2' within the mine pit	OB dumping was carried out as per plan	Maintained as per the approved MP
4c	Number of dumps within lease area and outside of lease area	Within Lease area: 01 temporary OB dump, Outside - NIL	Within Lease area: 02 OB dumps, Outside - NIL	No change

4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Dumps are proposed within the UPL	Dumps are located within the UPL	Temporary dump
4e	Number of active and alive dumps.	01 No.	01 No.	No change
4f	Number of dead dumps.	02 No.	02 No.	Nil
4g	Number of dumps established.	02 No	02 No	Nil
4h	Whether Retaining wall or garland drain all along dumps are there.	Retaining wall and garland drain proposed all along the dump.	Constructed Retaining wall and garland drain as proposed	Nil
4i	Length of Retaining wall or garland drain all along dumps	Retaining wall -345 mts, garland drain - 358 mts	Retaining wall - 367 mts., Garland drain-403 mts	Nil
4j	Number of settling ponds	1 SST proposed.	Not constructed	ICFRE cancelled the construction of SST due to thick vegetation
4k	Specific comments of inspecting officer on waste dump management			Waste dump management was satisfactory & was carried as per approval.

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	Mineral is not exhausted for backfilling
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	542 m3 of top soil used for afforestation
5d	Total area fully reclaimed and rehabilitated	No proposal	Nil	Nil

5e	General remarks of inspecting officers on backfilling and reclamation etc.	The mineral is not exhausted and the mine has been restarted after auctioning.
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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).	To be submitted by 1st july every year.	PMCP report submitted in time	Nil
6b	Area available for rehabilitation (ha) .	No proposal	Nil	Nil
6c	afforestation done (ha).	0.46 Ha	0.502 Ha within ML	Outside ML : 0.225 Ha
6d	No. of saplings planted during the year	Not Specified	WML: 551 Nos. OML: 255 Nos.	@95% survival rate
6e	Cumulative no .of plants	Not Specified	WML: 551 Nos. OML: 255 Nos. Total Sapling - 806 No	Nil
6f	Any other method of rehabilitation	No proposal	Nil	Nil
6g	Cost incurred on watch and care during the year	No proposal	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 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)	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.			The mine has been restarted after auctioning. R & R activities as approved by CEC has been implemented

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.	No change
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
7c	Different grade of mineral sorted out at mines.	Fines & Lumps :55% Fe-62%Fe	Lumps and Fines- 55 to below 58 ,58 to below 60 Fe% & 60 to below 62Fe%	Captive consumption only.
7d	Any beneficiation process at mines .	No proposal	Nil	Beneficiation process carried out in the Plant and outside the ML.
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues			Mineral conservation is taken care off. Dry crushing and screening adopted in the mine.

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	No proposal	Nil	top soil generated were used for plantation
8b	Concurrent use or storage of topsoil	No proposal	Top soil is used for plantation as on when generated.	Nil
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate temporary dump for OB proposed.	Separate temporary dump for OB maintained.	Nil
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	No proposal	Not Applicable.	Nil

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)	Green belt development across the safety zone	WML: 551 Nos. OML: 255 Nos. Total Sapling - 806 No	Nil
8g	Survival rate	99 %	95 %	Nil
8h	Water sprinkling on roads to control airborne dust	Water sprinkling on haul roads proposed to control airborne dust	Water tankers were deployed to control the airborne dust on haul roads and screening plant.	2 nos of water tanker each of 10000 liters
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area			The aesthetic beauty in and around the mine is well maintained.

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	Monthly return submitted up to Jan-2020. Annual return submitted for the FY 2018-19.	Annual return submitted on 29.06.2019.	
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Manager Mining - Shri. Vinod Kumar, Mining Eng.- Shri. Pradeep kumar Sahu, Geologist- Shri. Nataraj Belgere	Mines Manager & Geologist were present during the course of inspection.	Violation issued for insufficient experience of Mining Engineer

9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Already exploited & Abandoned by opencast mining - 6.85 Ha, covered under current working - 1.95 Ha, used for waste disposal - 1.41 Ha, Infrastructures - 1.204 Ha, other area (R & R and Future mining area) - 9.616 Ha	Violation issued as there is no already exploited & abandoned area in the mine so far
9d	Scrutiny of Annual return on afforestation	WML: 551 Nos. OML: 255 Nos. Total Sapling - 806 No @ 95 % survival rate.	Appears to be correct
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	ROM: Opening stock - Nil, production- 407999.33 tonnes, Closing stock - 0.37.Grade of lumps & fines varies from 55to 62% Fe	Appears to be correct
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Sale value - Nil, ex-mine price -238.17 Rs/tonne. Production Cost - 599.49 Rs/tonne.	No sale value as it's a captive mine.
9h	Scrutiny of Annual return on fixed assets	30.10 Crores, including plant, machinery , transport equipment and capitalized expenditure	Appears to be correct

9k	Scrutiny of Annual return on mining machineries	Excavators-4 Nos., Wheel Loader - 2 Nos, Drill Machine - 1 Nos, ,dozer-01 no., water tanker - 2, Crushing & Screening -1 Nos	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
Rule 45(7)	16/06/2020				
Rule 55	16/06/2020				

Date :**(ARUN KUMAR)**

Indian Bureau of Mines