

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

Mining Plan Modification REPORT

Bangalore regional office

Mine file No : KNT/CTD/Fe-56/BNG

Mine code : 30KAR07035

- (i) Name of the Inspecting : **S21**) **H M Shivakumar**
Officer and ID No.
- (ii) Designation : Assistant Mining Engineer
- (iii) Accompanying mine : Mr. Nandan Bhandary - GM (Mines), Mr. Nataraja BD - Ma
Official with
Designation
- (iv) Date of Inspection : 14/12/2022
- (v) Prev.inspection date : 17/12/2021

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **BHOMMAN 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 : CHITRADURGA
- Village : BEDARABOMMANAHALLI,
- Taluka : CHITRADURGA
- Post office : BEHEEMASAMUDRA
- Pin Code : 577520
- FAX No. :
- E-mail : sunil.singh@jsw.in
- Phone : 9449598135
- (f) Police Station : Bheemasamudra
- (g) First opening date : 10/08/2020
- (h) Weekly day of rest : SUN
2. Address for : Bheemasamudra Village & Post
correspondance Chitradurga Taluk & District
577520
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: 9448286155
 FAX :

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

Mining Engineer

Name : Srinivas N R, Full Time
 Qualification : B.E., Mining Engineering
 Appointment/ : 12/10/2020
 Termination date

Geologist

Name : Mr. Deepak Patil B.S., Full Time
 Qualification : M.Sc., Applied Geology
 Appointment/ : 16/07/2012
 Termination date

Manager

Name : Santosh Kumar
 Qualification : FCC
 Appointment/ : 02/02/2022
 Termination date

6. Date of approval of Mining Plan/Scheme of Mining : Fresh under rule 22 MCR1960 31/10/2019
 MP modif under 17(3) MCR 2016 19/01/2022

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	NA	Proposed in FY 2022-23 of Plan Period.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	NIL	NA	-
1d	Balance area to be explored to bring Geological axis in 1 or 2	-		Total G1 Area=59.00 Ha. G2 Area=03.53 Ha. G3 Area=05.37 Ha. G4 Area=Nil Non-Mineralized Area=25.70 Ha.
1e	Balance reserve as on 01/04/20	Minable Reserves- 66,056,508 Tonnes Geological Resources- 75,185,195 Tonnes (as per Approval of "Modification to the Approved Mining Plan" updated as on 01-10-2021)	Minable Reserves- 65,493,924 Tonnes Geological Resources- 74,622,611 Tonnes	As per the submitted AR-2021-22.

1f	General remarks of inspecting officers on geology, exploration etc	There are two-Iron ore bands in the lease area, one major band & another small extension of major band on eastern part. Block wise bands are : The Iron ore mineralization is extended up to 1277m along the strike length, average width is about 450m and average depth is 55m in the major band, the eastern part minor band is about 405m length, average width is about 155m and average depth is about 40m.	Exploration by the earlier lessee has been carried out by 79 core boreholes over 5770m and 29 RC drill holes over 2423m. Further area under old mineral stacks to is be explored for establishing the Geology. However, present lessee has proposed further exploration in the year 2023-2024 for bringing balance area to G1 level.
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Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	E 631511 to E 631678 N 1571200 to N 1571734 Section No.- G-G' to P-P'	E 631511 to E 631678 N 1571200 to N 1571734 Section No.- G-G' to P-P'	The development is carried out within the proposed grid intervals.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	-	-	Separate benches are maintained in Overburden and Mineral. OB-5 benches and Mineral -24 benches.
2c	Stripping ratio or ore to OB ratio	1 : 0.036 in Tonnes	1 : 0.034 in Tonnes	-
2d	Quantity of topsoil generation in m3	Whenever topsoil is found it is utilized for plantation.		Very meager quantity of Top soil availability is reported and wherever & whenever topsoil is found it is utilized for plantation.
2e	Quantity of overburden generation in m3	20904 m3	17372 m3	29533 tonnes of OB generated as per the AR-2021-2022.

2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	There are 2 pits in the mine and development of pit is found suitable w.r.t type of deposit.
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Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	1	1	Pit Dimension (1277 m x 450 m)
3b	Quantity of ROM mineral production proposed	1000000 Tons	858407 Tons	It was reported due to space constrain at mine head, only 858407 MT of Iron ore production only could be achieved during the year 2021-22.
3c	Recovery of sailable/usable mineral from ROM production	100 %	100 %	As per the proposal.
3d	Quantity of mineral reject generation	NIL	NA	-
3e	Grade of mineral rejects generation and threshold value declared.	NIL	NA	-
3f	Quantity of sub grade mineral generation.	NIL	NA	-
3g	Grade of sub grade mineral generation	NA	NA	-
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanized Method for ROM Segregation	Mechanized Method for ROM Segregation	Mechanized method adopted for ROM segregation by Dry Screening Plant of 400 TPH capacity.
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No Proposal	No such beneficiation study had been carried out.	The entire Iron Ore produced is suitably blended and consumed and beneficiation of ore does not arise.

3j	Provision of drilling and blasting in mineral benches	No Proposal	Nil	106 (2) (B) Permission obtained from DGMS as per MMR 1961.
3k	Provision of mining machineries in mineral benches	Proposed Mining Machineries: Excavators-4 Tippers-10 Drill-0 Wheel loader-3	Deployed Mining Machineries: Excavators-4 Tippers-14 Drill-0 Wheel loader-3	The reported machineries are found deployed in the mine.
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Bench Height - 6m Bench Width - 8m	Bench Height - 6m Bench Width - 8m	The height of the benches in OB and Mineral found suitable for proposed method of mining.
3m	Total area covered under excavation/pits	46.43 Ha	46.43 Ha	-
3n	Ore to OB ratio for the pit/mine during the year.	1 : 0.036	1 : 0.034	As per proposals with minor variation.
3o	Total area put in use under different heads at the end of year	Mining-46.43 Ha Waste Dumps-9.93 Ha. Infrastructure - 0.72 Ha Roads-2.37 Ha Greenbelt-2.95 Bio-Diversity-4.84 Others-26.36 Ha (Mineral storage, Existing Engineering measures & Unused area) Total - 93.60 Ha	Mining-46.43 Ha Waste Dumps-9.93 Ha Infrastructure-0.72 Ha Roads-2.37 Ha Greenbelt- 2.95 Bio-Diversity-4.84 Others-26.36 Ha. (Mineral storage, Existing Engineering measures & Unused area) Total - 93.60 Ha	As per AR-2021-22.
3p	Production of ROM mineral during the last five year period as applicable	2020-21:1000000 2021-22: 1000000 (in tonnes)	2020-21:836994. 2021-22: 858407 (in tonnes)	Mine has started in the year 2020 and it is reported due to space constraint at mine head, only 858407 MT Iron ore production achieved.

3q General remarks of inspecting officers on method of mining etc.

Mining method adopted is suitable for the type of deposit. However, thorough planning is required for achieving the proposed quantity of production.

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 Overburden is Proposed	Separate dump of Overburden is being carried out.	Separate dumping of overburden carried out as proposed.
4b	Location of topsoil, OB and mineral reject dumps	OB Dump Proposal: E 632298 to E 632345 N 1571486 to N 1571546 Section O-O'	OB Dump Location: E 632298 to E 632345 N 1571486 to N 1571546 Section O-O'	OB dump is within the proposed locations.
4c	Number of dumps within lease area and outside of lease area	Within Lease area: 01 Nos. (Proposed Active Dump) Outside - Nil	Within Lease area: 01 Nos. (Proposed Active Dump) Outside - Nil	There of 4 dumps within the Mining lease out of which one is active and 3 are dead/inactive dumps.
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Proposed Dump- Outside Ultimate Pit Limit.	Proposed Dump- Outside Ultimate Pit Limit.	All the dumps are outside the Ultimate Pit Limit as per the present exploration data.
4e	Number of active and alive dumps.	Active Dump-1	Active Dump-1	Active Dump-1
4f	Number of dead dumps.	NIL	3	3 inactive dumps within the ML.
4g	Number of dumps established.	NIL	NIL	-
4h	Whether Retaining wall or garland drain all along dumps are there.	YES	YES	YES

4i	Length of Retaining wall or garland drain all along dumps	NIL	NIL	No proposals as per Approved Modification to the Approved Mining Plan
4j	Number of settling ponds	0	0	-
4k	Specific comments of inspecting officer on waste dump management			Adequate measures needs to be taken for proper stabilization of old and active dumps in view of the unpredictable heavy rains occurring in and around the Mining Area in the recent past.

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.	NIL	NA	No part of the mining pits is matured for backfilling and mineral persists at depth.
5b	Area under backfilling of mined out area	NIL	NA	No part of the mining pits is matured for backfilling and mineral persists at depth.
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	NIL	NA	It is reported that any meager quantity of Top soil is encountered it is Utilized in Plantation activity.
5d	Total area fully reclaimed and rehabilitated	NIL	NA	NIL
5e	General remarks of inspecting officers on backfilling and reclamation etc.			No part of the mining pits is matured for backfilling and mineral persists at depth.

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 2021-22 is submitted to IBM Office on 30.06.2022.	Submitted within the stipulated time.
6b	Area available for rehabilitation (ha) .	Not Proposed	NA	-
6c	afforestation done (ha).	NIL	NA	-
6d	No. of saplings planted during the year	1000 (Gap filling, Green belt & Old Dump) (proposed as per previous Approved Mining Plan)	2000	As proposed in the mine plan, previous and present year plantation work is completed in FY 2021-22. Lessee has planted 1200 nos. in the dump slope & near SST gap plantation. Since enough area was not available 800 nos. avenue plantation is also carried outside the ML Boundary
6e	Cumulative no .of plants	2000 no's	2000 no's	The cumulative numbers of plants are carried out by the present lessee. However, the previous lessee has carried out extensive plantation work in and around the mines. The cumulative numbers of plants are carried out by the present lessee. However, the previous lessee has carried out extensive plantation work in and around the mines.

6f	Any other method of rehabilitation	NIL	NA	-
6g	Cost incurred on watch and care during the year	1.5 Lakhs	2.0 Lakhs	Appears to be correct.
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	NIL	NA	No part of the mining pits are matured for backfilling and mineral persists at depth.
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	NIL	NA	No part of the mining pits are matured for backfilling and mineral persists at depth.
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on on backfilled area	NIL	NA	No part of the mining pits are matured for backfilling and mineral persists at depth.
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	NIL	NA	No part of the mining pits are matured for backfilling and mineral persists at depth.
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	NIL	NA	No part of the mining pits are matured for backfilling and mineral persists at depth.
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	NIL	NA	-
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (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 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.	Regular Environmental Monitoring is carried out by Agency- Ecomen Laboratories and all the Parameters observed to be within the permissible limits.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.			PMCP compliance & progressive closure operations found satisfactory.

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 lease area.	Grade wise sorting is done within lease area.	-
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanical	Mechanical	Grade wise mineral sorting done within the mine. Size wise sorting done by dry Screening Method: Plant Capacity-400 TPH.
7c	Different grade of mineral sorted out at mines.	YES	Fe <55%	Lumps and Fines of > 55% Fe only is reported in production and dispatch.
7d	Any beneficiation process at mines	No Proposal	No beneficiation process in mines	-

7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	The entire Iron ore produced suitably blended to bring to saleable grade thereby taking care of mineral conservation aspect. Requirement of beneficiation process has not arisen till date.
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Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	NIL	NA	During the RY no topsoil is generated,
8b	Concurrent use or storage of topsoil	NIL	NA	During the RY no topsoil is generated. However, it is committed to utilize in plantation as and when encountered.
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate Dump for overburden / Waste is proposed.	Separate dumping of overburden is being carried out.	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	No part of the mining pits are matured for backfilling and mineral persists at depth.
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	NIL	NA	No part of the mining pits are matured for backfilling and mineral persists at depth.

8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Safety zone is 2000 completely covered in Vegetation. No. Of plantation proposed: 1000 green belt/gap plantation		As proposed in the mine plan, previous and present year plantation work is completed in FY 2021-22.
8g	Survival rate	80%	80%	Appears to be correct.
8h	Water sprinkling on roads to control airborne dust	Water sprinkling on road proposed to control airborne dust.	Water tankers are deployed for sprinkling on roads to control airborne dust.	On the day of inspection it is observed for 5 No's. of Water Tankers: Capacity: 8000 & 10000 Liters deployed for the purpose.
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area			Aesthetic beauty in and around the mine is maintained satisfactorily with plantation by the present lessee and erstwhile lessee. Also thick natural vegetation in the surrounding forest area adds up to the aesthetics.

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 Nov2022: Submitted on 09.12.2022 A.R. submitted for the FY 2021-22 Submitted on 30/06/2022		Submitted with in the stipulated time.

9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mining Engineer- Srinivas N.R. Geologist- Deepak Patil B.S. Manager- Santosh Kumar.	All the officers reported were present on the day of inspection.
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Already exploited: 46.43 Ha Working: 0.0 Ha Waste Dump: 9.93 Ha Roads & Infrastructure : 3.09 Ha. Others: 34.15 Ha. (Mineral storage, Safety zone, Bio-Diversity, Existing Engineering measures & Unused area) Total Area: 93.60 Ha	In order.
9d	Scrutiny of Annual return on afforestation	Plantation within Lease: 1200 nos. Plantation outside Lease: 800 nos. Survival Rate: 80%	Figures reported appear to be correct.
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	No Mineral Reject Generated	
9f	Scrutiny of Annual return on ROM stock and/or graded ore	Opening Stock: 391599.10 T Production: 858407.00 T Closing Stock: 509493.82 T	Figures are as of 31/03/2022

9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Lumps Fe 0-55% : 474 Rs./T Fines Fe 0-55% : 652 Rs./T	As per AR-2021-22, Ex-mine price of below 55% Fe lumps is Rs.1489/- per ton and fines is Rs. 2384/- per ton.
9h	Scrutiny of Annual return on fixed assets	Value of Fixed Assets: Rs. 31,89,90,468 after Depreciation on Fixed Assets: Rs. 51,76,418/-	As per the AR-2021-2022.
9k	Scrutiny of Annual return on mining machineries	Back Hoe Loader- 1 Screening Plant-1 Tipper-14 Water Tanker (8 kl & 10 kl)-5 Wheel Loader- 3 Generator -5 Shovel- 4 Jeep/Tractor- 4	All the proposed and reported mining machineries found deployed at the mine.

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

Date :

(H M Shivakumar)

Indian Bureau of Mines