

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

MCDR INSPECTION REPORT

Bhubaneshwar regional office

Mine file No : ORI/MN/KJR/MCDR-2/BBS

Mine code : 40ORI08003

- (i) Name of the Inspecting : **S010**) **SHRI G.C. SETHI**
Officer and ID No.
- (ii) Designation : Deputy Controller Mines
- (iii) Accompanying mine : Shri S. Mishra, QP
Official with
Designation
- (iv) Date of Inspection : 08/07/2020
- (v) Prev.inspection date : 15/02/2020

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **BAMEBARI**
- (b) **Registration NO.** : **IBM / 4376 / 2011**
- (c) Category : A Manual
- (d) Type of Working : Opencast
- (e) Postal address
- State : ORISSA
- District : KEONJHAR
- Village : BAMEBARI
- Taluka : CHAMPUA
- Post office : BAMEBARI
- Pin Code :
- FAX No. : 06767-272027,272246
- E-mail : bmm.mnmines@tatasteel.com
- Phone : 06767-279208
- (f) Police Station : Joda
- (g) First opening date : 01/03/1939
- (h) Weekly day of rest : SUN
2. Address for : BAMEBARI MN MINES
correspondance VIL/PO-BAMEBARI
DIST-KEONJHAR,ORISSA-758034
3. (a) Lease Number : ORI0187
- (b) Lease area : 464
- (c) Period of lease : 20
- (d) Date of Expiry : 31/03/2000
4. Mineral worked : MANGANESE ORE Main

5. Name and Address of the

Lessee : TATA IRON & STEEL CO. LTD.
TATA IRON & STEEL CO. OMQ,
NUAMUNDI JHARKHAND
SINGHBHUM (WEST) JHARKHAND
Phone:
FAX :

Owner : Sri T.V. Narendran
Managing Director, M/s TATA
Steel Jamshedpur, Dist-East
Singhbhum Jharkhand-831001
KEONJHAR ORISSA
Phone: 0657-2423298
FAX : 0657-2431818

Agent : AMIT KUMAR DUBEY
KEONJHAR ORISSA
Phone: 9238101140
FAX :

Mining Engineer

Name : Sri Maruti Nandan Suman, Full Time
Qualification : B. Tech (Mining) & FCC
Appointment/ : 19/01/2015
Termination date

Geologist

Name : Sri Joydeep Bhattacharjee, Full Time
Qualification : M.Sc. (Applied Geology)
Appointment/ : 16/10/2017
Termination date

Manager

Name : Sri Rimlal Joshi
Qualification : AMIE (Mining) & FCC
Appointment/ : 18/06/2014
Termination date

6. Date of approval of Mining	:	Modif. approved Mining Scheme	24/03/2005
Plan/Scheme of Mining		Mining Scheme rule 12 MCDR1988	05/12/2007
		Mining Scheme rule 12 MCDR1988	09/06/2010
		FMCP under 23C(1)	20/01/2015
		Mining Scheme rule 12 MCDR1988	26/03/2015
		Modif. approved Mining Scheme	04/05/2018

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	No backlog	In 2019-20, total 52 Nos .of bore holes have been drilled by lessee.	Nil
1b	Exploration over lease area for geological axis 1 or 2	About 293 ha area under G1/G2 Level of exploration during plan period.	In 2019-20, about 8.34 ha explored under G1 Level of exploration and 2.92 ha under G2 Level of exploration.	Nil
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Not specified.	In 2019-20, total 52 Nos .of bore holes have been drilled through in-house. Cost incurred in drilling was Rs. 72.39 Lakhs.	Nil
1d	Balance area to be explored to bring Geological axis in 1 or 2	About 293 ha area under G1/G2 Level of exploration.	Out of total 464 ha lease area about 282.85 ha area has been explored under G1/G2 level of exploration.	Nil
1e	Balance reserve as on 01/04/20	Reserve as per Modification of review of mining plan approved on 04/05/2018 was: Mn ore- 1.383 Million Tonnes under 111,121 & 122 category and resources 6.814 Million Tonnes. Resources of iron ore 3.251 Million Tonnes.	Balance reserve as on 01/04/2020 is 1.312 million Tonnes of Mn ore.	Nil

1f	General remarks of inspecting officers on geology, exploration etc	In 2019-20, 248 Nos. of bore holes	In 2019-20, total 52 Nos .of bore holes of 2283.85 meterage have been drilled by 1	About 282.85 ha area has been explored under G1/G2 level by putting 956 nos. of bore holes of total meterage 37337.81 m. Deviation of exploration is pointed out through letter during teh earlier inspection to this mine.
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Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Bamebari, Joribar & Bonaikela blocks	Bamebari & Joribar blocks.	No development in Bonaikela block due to want of clearance of Forest area.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Separate benches in OB and ore are envisaged, No bench formation in top soil proposed due to lack of topsoil availability.	Separate benches in OB and ore have been maintained.	No tposoil exists in the location proposed for development during 2019-20.
2c	Stripping ratio or ore to OB ratio	1.403 T/cu.m	1.83 T/cu.m	Average stripping ratio varies due to irregular & pocket nature of ore deposit.
2d	Quantity of topsoil generation in m3	Not proposed.	There is no top soil generation as no exploitation proposed in virgin area.	No top soil generated during 2019-20.

2e	Quantity of overburden generation in m3	137437cu.m	137240cu.m	Less quantity of OB generated due to less production of ROM during 2019-20.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	The development is proposed in three pits i.e Bamebari, Joribar, Boneikela pits.	The development is concentrated in two pits i.e Bamebari, Joribar. No development carried out in Bonaikela pit due to want of clearance of Forest area.	No development carried out in Bonaikela pit due to want of clearance of Forest area.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Three pits in three lease blocks.	Working is concentrated in two pit one each in Bamebari & Joribar blocks	No working is carried out in Bonaikela block due to want of Forest clearance.
3b	Quantity of ROM mineral production proposed	Mn ore- 97882 tonnes	ROM production reported in 2019-20 is 79619.4156 tonnes	ROM Production is less as no working is carried out in Bonaikela pit due to want of clearance of Forest area.
3c	Recovery of sailable/usable mineral from ROM production	85% recovery of saleable ore.	About 85% recovery of saleable ore generated from ROM.	Nil
3d	Quantity of mineral reject generation	14682.5 tonnes	Mineral reject/sub grade generated during 2019-20 is 11371 tonnes.	Mineral reject generation is low due to less ROM production during 2019-20.
3e	Grade of mineral rejects generation and threshold value declared.	10-25% Mn.	Mineral reject/sub grade generated during 2019-20 is 11371 tonnes with grade 10-25% Mn.	Nil
3f	Quantity of sub grade mineral generation.	14682.5 tonnes	Mineral reject/sub grade generated during 2018-19 is 11371 tonnes with grade 10-25% Mn.	Nil

3g	Grade of sub grade mineral generation	10-25% Mn.	Mineral reject/sub grade generated during 2019-20 is 11371 tonnes with grade 10-25% Mn.	Nil
3h	Manual / Mechanised method adopted for segregating from ROM	Manual	Manual	Nil
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	Not applicable.	Manual method is practiced for segregating of Mn from ROM	Nil
3j	Provision of drilling and blasting in mineral benches	Deep hole Drilling with large diameter (83mm)and blasting with slurry explosive cartridges alongwith delay detonator.	Deep hole Drilling with large diameter (83mm) slurry explosive cartridges. Cap-sensitive slurry explosive cartridges are being used as base charge and non-cap sensitive are used as column charge.	Blasting parameters with Spacing- 3m & Burden -2.5m.
3k	Provision of mining machineries in mineral benches	Backhoe-2, Dumper-16, Drill-3, Water Sprinkler 9KL-2 etc.	BACK HOE 1.2/2.0 cu.m-3, FRONT END LOADER 2.0 cu.m-1, DUMPER 30/25T -24, WATER TANKER 9KL-2, DOZER-1 etc.	Excavator, Loader and Dumper are equipped to winning out the mineral.
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Bench height 6-8m	Bench height 6-8m	Nil
3m	Total area covered under excavation/pits	97.308 ha	97.194ha.	Nil
3n	Ore to OB ratio for the pit/mine during the year.	1.403 T/cu.m	1.83 T/cu.m	Average stripping ratio varies due to irregular & pocket nature of ore deposit.

3o	Total area put in use under different heads at the end of year	Total area proposed under different heads are Pit-97.308 ha, waste dump-46.465 ha, Infrastructure - 4.186 ha, roads-10.42 ha & Mineral storage-11.215 ha, Township area -24.350 ha. etc	Area covered under different heads are Pit-97.194 ha, waste dump-46.465 ha, Plant, residential & building, roads-38.95ha, Reclaimed/Rehabilitated-42.632 ha & others - 29.87 ha.	Nil
3p	Production of ROM mineral during the last five year period as applicable	2015-16 :97885 tonnes 2016-17 :97885 tonnes 2017-18: 97883 tonnes 2018-19: 97882 tonnes 2019-20: tonnes	2015-16 :78420.506 tonnes 2016-17 :83146.467 tonnes 2017-18 :78405.558 tonnes 2018-19: 79619.415 tonnes 2019-20: tonnes	ROM Production is less as no working is carried out in Bonaikela pit due to want of clearance of Forest area.
3q	General remarks of inspecting officers on method of mining etc.	Excavation of ROM has been proposed in three blocks i.e. from Bamebari, Joribar, Boneikela.	The ROM production has been carried out in two blocks i.e. from Bamebari & Joribar. Mining is carried out by Deep hole Drilling with large diameter (83mm) slurry explosive cartridges. Cap-sensitive slurry explosive cartridges are being used as base charge and non-cap sensitive are used as column charge.	Nil

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
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4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	OB of Bamebari and Joribar has been proposed for backfill in Bamebari Pit. Provisions for separate dumping of mineral reject also envisaged. Top soil generation not envisaged.	Overbureden generated from Bamebari and Joribar block has been back filled in Bamebari Pit. Stacking of mineral reject is being done as per the proposal.	There is no top soil generation.
4b	Location of topsoil, OB and mineral reject dumps	OB of Bamebari and Joribar proposed for backfill in Bamebari Pit. Provisions for stacking of mineral rejects also envisaged.	Overbureden generated of Bamebari and Joribar has been back filled in Bamebari Pit. Mineral reject stacking done as per proposal.	There is no top soil generation.
4c	Number of dumps within lease area and outside of lease area	Five	Five	Nil
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	The OB dumps are lying outside ultimate pit limit.	The OB dumps are lying outside ultimate pit limit.	Nil
4e	Number of active and alive dumps.	One active waste dump i.e. in Bonaikela block . OB of Bamebari and Joribar: Proposed for backfill in Bamebari Pit	Overbureden generated from Bamebari and Joribar block has been back filled in Bamebari Pit. Bonaikela dump not developed due to want of forest clearance.	Nil
4f	Number of dead dumps.	Bamebari block:3 nos., Joribar block: 2 nos.	Bamebari: Three fully rehabilitated and stabilized by plantation. Joribar:-Two partially rehabilitated and stabilized by plantation	Nil

4g	Number of dumps established.	Bamebari block:3 nos., Joribar block: 2 nos.	Bamebari: Three fully rehabilitated and stabilized by plantation. Joribar:-Two partially rehabilitated and stabilized by plantation	Nil
4h	Whether Retaining wall or garland drain all along dumps are there.	Retaining wall of 140m and a garland drain of 140m.	Retaining wall of 140m and a garland drain of 140m has been completed.	Nil
4i	Length of Retaining wall or garland drain all along dumps	Retaining wall of 140m and a garland drain of 140m	Retaining wall of 140m and a garland drain of 140m has been completed.	Nil
4j	Number of settling ponds	One settling pond in 2019-20.	The settling pond constructed completed during 2019-20.	Nil
4k	Specific comments of inspecting officer on waste dump management	OB of Bamebari and Joribar blocks proposed for backfill in Bamebari Pit. Separate dumping provisions for mineral reject dump.	Overbureden generated from Bamebari and Joribar block has been back filled in Bamebari Pit. Mineral reject dump as per proposal. Retaining wall and garland drain have been completed around the dump.	Nil

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.	Backfilling in Bamebari block envisaged.	The mined out area of Bamebari Pit has been backfilled partly as per the proposal.	The process of backfilling is going on.
5b	Area under backfilling of mined out area	0.402 ha in Bamebari block.	An extent of 0.402 ha mined out area of Bamebari block has been backfilled during 2019-20.	Nil

5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	No topsoil exists.	No topsoil generated during 2019-20.	Nil
5d	Total area fully reclaimed and rehabilitated	An extent of 0.402 ha of Bamebari block for backfilling and 1.81 ha of dump rehabilitation envisaged in 2019-20 .	An extent of 0.402 ha mined out area of Bamebari Pit has been backfilled and 1.81 ha of dum area has been rehabilitated by plantation during 2019-20.	Nil
5e	General remarks of inspecting officers on backfilling and reclamation etc.		An extent of 0.402 ha mined out area of Bamebari Pit has been backfilled and 1.81 ha of dum area has been rehabilitated by plantation during 2019-20.	Nil

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).	The annual report on PMCP has to be submitted under rule 26(2) of MCDR, 2017.	Annual return on PMCP has been submitted.	Nil
6b	Area available for rehabilitation (ha) .	An extent of 0.402 ha of Bamebari block for backfilling and 1.81 ha of dump rehabilitation envisaged in 2019-20.	An extent of 0.402 ha mined out area of Bamebari block has been backfilled and 1.81 ha of dump area rehabilitated by way plantation during 2019-20.	Nil
6c	afforestation done (ha).	1.81 ha.	1.81 ha.	Nil

6d	No. of saplings planted during the year	4525 nos. of saplings	5556 nos. of saplings planted during 2019-20.	More number of plantations done during 2019-20.
6e	Cumulative no .of plants	Not specified.	Cumulatively 285786 nos. of saplings were planted.	Nil
6f	Any other method of rehabilitation	Not applicable.	An extent of 0.402 ha mined out area of Bamebari block has been backfilled during 2019-20.	Nil
6g	Cost incurred on watch and care during the year	Not specified.	Rs 258189/-has been spent for watch and care of the planation.	Nil
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	An extent of 0.402 ha. has been proposed for backfilling and 1.81 ha of dump rehabilitation in 2019-20.	An extent of 0.402 ha mined out area of Bamebari block has been backfilled.	Nil
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	An extent of 0.402 ha. has been proposed for backfilling and 1.81 ha of dump rehabilitation in 2019-20.	An extent of 0.402 ha mined out area of Bamebari block has been backfilled.	Nil
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestati on on backfilled area	An extent of 0.402 ha. has been proposed for backfilling and 1.81 ha of dump rehabilitation in 2019-20.	An extent of 0.402 ha mined out area of Bamebari block has been backfilled.	Nil
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	Not applicable.	Nil	Nil

6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	Not specified.	An extent of 0.402 ha mined out area of Bamebari block has been backfilled.	Nil
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	Not applicable.	Not applicable.	Nil
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	Not applicable.	Nil	Nil
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	Not applicable.	Nil	Nil
6p	Compliance of environmental monitoring (core zone and buffer zone)	Quarterly monitoring of air, water and noise level are envisaged.	Quarterly monitoring of air, water and noise level are being carried out.	Nil
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.		An extent of 0.402 ha mined out area of Bamebari block has been backfilled and 1.81 ha of dumps rehabilitated by plantation. Quarterly monitoring of air, water and noise level are also being carried out.	Nil

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Gradewise sorting envisaged.	Gradewise sorting is being practiced.	Nil

7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Manual	Manual	Nil
7c	Different grade of mineral sorted out at mines.	Chemical Grade (Mn> 48% & Fe<4%), High Grade (Mn>46%), Medium Grade (Mn>35% & Mn<26%), Low Grade (Mn >25% & <35%), Sub Grade (Mn> 10% & Mn <25%)	Chemical Grade (Mn> 48% & Fe<4%), High Grade (Mn>46%), Medium Grade (Mn>35% & Mn<26%), Low Grade (Mn >25% & <35%), Sub Grade (Mn> 10% & Mn <25%)	Nil
7d	Any beneficiation process at mines .	None	Not applicable.	Manual Sorting and sizing is being practiced.
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues		Gradewise sorting of Chemical Grade (Mn> 48% & Fe<4%), High Grade (Mn>46%), Medium Grade (Mn>35% & Mn<26%), Low Grade (Mn >25% & <35%), Sub Grade (Mn> 10% & Mn <25%)are being practiced.	Manual Sorting and sizing is being practiced.

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	No topsoil generation envisaged.	No top top soil generated during 2019-20.	Nil
8b	Concurrent use or storage of topsoil	Not applicable.	No top top soil generated during 2019-20.	Nil

8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	OB of Bamebari and Joribar:proposed for backfill in Bamebari block. Separate dumping of mineral reject envisaged. Top soil not proposed.	OB of Bamebari and Joribar:proposed for backfill in Bamebari block. Separate dumping of mineral reject are being done. No top soil generated during 2019-20.	Nil
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	An extent of 0.402 ha, (Bamebari block) proposed for backfilling and 1.81 ha of dump rehabilitation by plantation.	An extent of 0.402 ha mined out area of Bamebari block has been backfilled and 1.81 ha of dump rehabilitated by plantation.	Nil
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	An extent of 0.402 ha, (Bamebari block) proposed for backfilling and 1.81 ha of dump rehabilitation by plantation.	An extent of 0.402 ha mined out area of Bamebari block has been backfilled and 1.81 ha of dump rehabilitated by plantation.	Nil
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	4525 nos. of saplings plantation proposed in 1.81 ha area in 2019-20.	5556 nos. of saplings planted over 1.81 ha of dumping area area in 2019-20.	Nil
8g	Survival rate	Not specified.	Reported survival rate is 82%.	Nil
8h	Water sprinkling on roads to control airborne dust	Deployment of mobile Water sprinklers are envisaged.	Water sprinkler are deployed to control air borne dust.	Nil

8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	Lessee has planted 5556 nos. of saplings over an extent of 1.81 ha area during 2019-20. Cumulatively 285786 nos. of saplings were planted.	Nil
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Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	Monthly & Annual returns are being submitted regularly.	Monthly & Annual returns are being submitted regularly to this office.	Nil
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Graduate Mining Engineer-1, Surveyor-1, Geologist-1, Other-23	Graduate Mining Engineer-1, Surveyor-1, Geologist-1, Other-23	The employment status furnished in the annual return is found to be in order.
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Area covered under different heads are Pit-97.194 ha, waste dump-46.465 ha, Plant, residential & building, roads-38.95ha, Reclaimed/Rehabilitated-42.632 ha & others -29.87 ha.	Area covered under different heads are Pit-97.194 ha, waste dump-46.465 ha, Plant, residential & building, roads-38.95ha, Reclaimed/Rehabilitated-42.632 ha & others -29.87 ha.	Nil
9d	Scrutiny of Annual return on afforestation	5556 nos. of saplings planted during 2019-20.	Found to be in order.	Nil

9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	11371 tonnes, 10-25% Mn	Found to be in order.	Nil
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM closing stock is Nil	ROM closing stock is Nil	Nil
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Production cost is: Rs 4515.33 & Ex mine price- Rs4515.33/-	Production cost is: Rs 4515.33 & Ex mine price- Rs4515.33/-	Nil
9h	Scrutiny of Annual return on fixed assets	Value of Fixed Assets (inRs) 221116208/-	Value of Fixed Assets (inRs) 221116208/-	Nil
9k	Scrutiny of Annual return on mining machineries	BACK HOE 1.2/2.0 cu.m-3, FRONT END LOADER 2.0 cu.m-1, DUMPER 30/25T -24, WATER TANKER 9KL-2, DOZER-1 etc.	The deployment status of mining machineries are found to be in order.	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

Date :

(SHRI G.C. SETHI)

Indian Bureau of Mines