

**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 : **DJ03**) **DILIP JAIN**
Officer and ID No.
- (ii) Designation : Junior Mining Geologist
- (iii) Accompanying mine : Mr. Amit Kumar Dubey (Agent), Mr. Rimplal Joshi (Mine
Official with
Designation
- (iv) Date of Inspection : 08/01/2018
- (v) Prev.inspection date : 16/02/2016

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

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	45	45	No back log. Proposed BH for the year 2016-17 completd.
1b	Exploration over lease area for geological axis 1 or 2	A total of 180 Core Bore hole along with 50 RC BH have been proposed to explore lease area for the period from 2015-16 to 2019-20.	4.45 Ha	Exploratory drilling is ongoing in the lease to upgrade the level of exploration.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	No specific proposal.	Rs. 114.64 Lakhs	Only the drilling activity is outsourced and all other exploration jobs are done in house only.
1d	Balance area to be explored to bring Geological axis in 1 or 2	As per approved document and area around of 291.63 Ha yet to explore out of total RML area i.e. 464.00 Ha.	As per approved document an area of 172.37 ha is explored under G1/G2 level of exploration out of total RML area i.e. 464.00 Ha.	NIL.
1e	Balance reserve as on 01/04/20	In the approved SOM dated 26/03/2015, the Reserve and Resource of the Mn ore furnished was 0.999 and 0.9726 million tonnes respectively.	Reserve and resource as on 01/04/2017 was 0.814 and 0.9726 million tonnes respectively.	Reserve and resource +25% Mn.

1f	General remarks of inspecting officers on geology, exploration etc	--	The occurrence of the Mn ore is pockety in nature. Exploratory drilling is ongoing in the lease to upgrade the level of exploration.	NIL.
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Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Bamemari Block: 2505N-2735N & 3260E-3550E Joribar Block: 11358N - 11482N & 12388E - 12559E	The excavation in the lease area in between the proposed coordinates.	NIL.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Proposed for Separate benches in OB and Ore.	Separate benches being maintained in OB and Ore.	NIL.
2c	Stripping ratio or ore to OB ratio	1:2.95 T/CuM	1:2.74 T/CuM	NIL.
2d	Quantity of topsoil generation in m3	130 CuM.	588 CuM.	NIL.
2e	Quantity of overburden generation in m3	245716.00 CuM	227295.46 CuM	NIL.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	--	During reporting year 2016-17, it is proposed to develop two pits namely Bamemari Block and Joribar Block. The development work has been carried out as per proposal.	NIL.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
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3a	Number of pit proposed for production	2 pits namely Bamemari Block and Joribar Block.	As per proposal for reporting year 2016-17.	NIL.
3b	Quantity of ROM mineral production proposed	97885.00 MT	83146.467 MT	NIL.
3c	Recovery of sailable/usable mineral from ROM production	83200 MT	70674.49	NIL.
3d	Quantity of mineral reject generation	14685.00 MT	12249 MT	NIL.
3e	Grade of mineral rejects generation and threshold value declared.	Mn>10% &Mn<25%	Mn>10% &Mn<25%	NIL.
3f	Quantity of sub grade mineral generation.	14685.00 MT	12249 MT	NIL.
3g	Grade of sub grade mineral generation	Mn>10% &Mn<25%	Mn>10% &Mn<25%	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.	1.Study on Mechanized processing of Manganese Ore 2. study for beneficiation of Low/ Sub Grade Manganese Ore and Fines carried	Study Completed.	Study done on Mechanized processing of Manganese Ore. study for beneficiation of Low/ Sub Grade Manganese Ore and Fines carried out by reduction roasting and magnetic separation.

3j	Provision of drilling and blasting in mineral benches	Deep hole Drilling blasting Depth of hole = 8 m +10% subgrade =8.8m Spacing= 3m Burden= 2.5 m Volume= 60 CuM Specific Gravity=2.5 Tonnage/Hole= 150 Tonnes Powder factor= 6.0 kg/Tonne	Drilling and blasting being practices as per approved proposal.	NIL.
3k	Provision of mining machineries in mineral benches	Shovel and dumper combination.	Shovel and dumper combination.	NIL.
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Bench Height : 8 m Bench Width: 8 m	Found to be as per proposal.	NIL.
3m	Total area covered under excavation/pits	94.946 ha. (at the end of 31.03.2020)	90.33 Ha area at the end of reporting year 2016-17.	Figure as per annual return 2016-17.
3n	Ore to OB ratio for the pit/mine during the year.	1:2.95 T/CuM	1:2.74 T/CuM	NIL.
3o	Total area put in use under different heads at the end of year	As per approved document dated 26/03/2015 total area put under different heads i.e. excavation, waste dumping, infrastructure , road etc was 197.069 Ha.	An area around 190.04 Ha is put under different land use like pits, dumps, road, reclaimed, infrastructure etc. at the end of the reporting year 2016-17.	NIL.

3p	Production of ROM mineral during the last five year period as applicable	2012-13: 97883 MT 2013-14: 97883 MT 2014-15: 97883 MT 2015-16: 97885 MT 2016-17: 97885 MT	2012-13:76498 MT 2013-14:63517 MT 2014-15:61763 MT 2015-16:78420 MT 2016-17:83146 MT	NIL.
3q	General remarks of inspecting officers on method of mining etc.	Mining is proposed with opencast method of mining.	The mining operations were carried out by other than fully mechanized opencast methods as per the proposal envisaged in the review of mining plan approved on 26/03/2015.	NIL.

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Separate Dumps for topsoil, OB and mineral reject has been proposed.	Separate dumps for top soil, OB, mineral reject and subgrade has been observed.	NIL.
4b	Location of topsoil, OB and mineral reject dumps	Tpo soil dump: 2102N- 2109N/2876E- 2883E Bamebari OB Dump: 2965N- 2528N/2459E- 2534E Joribar OB Dump 02: 12417N- 12285N/13311E- 13154E	Dumping of waste is being done as per proposal.	NIL.

4c	Number of dumps within lease area and outside of lease area	Within Lease area: 06 Out Side Lease area: NIL.	All the waste dumps are within lease area.	NIL.
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	No new dump has been proposed for reporting year. The waste is proposed to dump over back filled area.	As per proposal.	NIL.
4e	Number of active and alive dumps.	Bamebari: No proposal for active dumping Joribar: dump proposed over backfilled area	Joribar: one dump over backfilled area.	NIL.
4f	Number of dead dumps.	Bamebari:3 Joribar: 1	Bamebari:3 Joribar: 1	NIL.
4g	Number of dumps established.	No specific proposal.	Bamebari: Two dumps established and one partially established. Joribar: One dump established.	NIL.
4h	Whether Retaining wall or garland drain all along dumps are there.	No proposal for reporting year.	Retaining wall and garland drain has been provided at the bottom of the dump.	NIL.
4i	Length of Retaining wall or garland drain all along dumps	Ganrland Drain : 0 Retaining wall: 0	Garland drain: 358m Retaining wall : 358 m	NIL.
4j	Number of settling ponds	NIL.	NIL.	NIL.

4k	Specific comments of inspecting officer on waste dump management	--	Waste dumping is being carried out as per proposal. Retaining wall and garland drain has been provided at the bottom of the dump. Plantation and coir matting observed at the matured slope of the dumps.	NIL.
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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.	Proposal of Backfilling Bamebari and Joribar Pit	Backfilling done over demineralized pit.	NIL.
5b	Area under backfilling of mined out area	0.5 ha for reporting year.	1.60 Ha area.	NIL.
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Top soil has been proposed to be used for dump restoration.	Top soil is being used for plantation purposes in dumps. When not in use it is stacked at earmarked location.	NIL.
5d	Total area fully reclaimed and rehabilitated	No specific proposal.	NIL.	NIL.
5e	General remarks of inspecting officers on backfilling and reclamation etc.	--	The backfilling of void created through mining has been started to back fill. Matured slope of the waste dumps are being planted for early rehabilitation.	NIL.

Progressive Mine Clousre Plan:

Sl.No.	Item	Propasals	Actual work	Remarks
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6a	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).	Yearly report of PMCP for the year 2016-17 has been submitted by party under rule 26(2) of MCDR, 2017.	PMCP report for the reporting year 2016-17 has been submitted.	NIL.
6b	Area available for rehabilitation (ha) .	No proposal of rehabilitation for reporting year.	NIL.	NIL.
6c	afforestation done (ha).	Gap filing plantation was proposed.	Around 1.2 Ha area covered under gap filling plantation.	NIL.
6d	No. of saplings planted during the year	5000 number of saplings.	A total of 8000 number of saplings were planted during reporting year.	NIL.
6e	Cumulative no .of plants	No specific proposal.	Cumulative no. of plants till 31. 12.2017. Afforestation on dump- 280230 nos. Avenue- 156212 nos.	NIL.
6f	Any other method of rehabilitation	Backfilling of voids of Bamebari block and Joribar Block.	Backfilling is being carried out as per proposal.	NIL.
6g	Cost incurred on watch and care during the year	Rs. 125000/-	Rs. 795581/-	Including the plantation cost.
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	Backfilling area 2016-17: 0.5ha	Backfilling area 2016-17: 1.6ha	NIL.
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	Voids were proposed to be filled by waste.	As per proposal.	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)	Monitoring of environmental parameter like water quality, noise quality, air quality etc. are proposed.	Environmental parameters are being monitored as per proposal.	NIL.

6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	Back filling and plantation has been proposed.	Plantation has been carried out over the matured slope of the dumps. Backfilling over worked out pit under progress. Plantation will be undertaken after complete backfilling.	NIL.
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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 observed within lease area.	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 % > 46. High Grade: Mn % between 35 to 46. Medium Grade: Mn % between 25 to 35. Sub Grade : Mn % between 10 to 25.	Chemical Grade: Mn % > 46. High Grade: Mn % between 35 to 46. Medium Grade: Mn % between 25 to 35. Sub Grade : Mn % between 10 to 25.	NIL.
7d	Any beneficiation process at mines .	The ROM proposed to sort and size by Manual means.	No mechanical beneficiation. The ROM is being sorted and Sized by Manual means.	NIL.
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	--	Study done on Mechanized processing of Manganese Ore. Study completed for beneficiation of Low/ Sub Grade Manganese Ore and Fines carried out by reduction roasting and magnetic separation.	NIL.

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	130 CuM top soil is proposed to remove.	588 CuM top soil generated was stored separately and was utilized completely.	NIL.
8b	Concurrent use or storage of topsoil	Proposed to use top soil.	Top soil generated was stored separately and was utilized completely.	NIL.
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate dumping of overburden, waste rock, mineral reject and fines has been proposed.	As per proposal.	NIL.
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Backfilling - 0.50 ha area.	Backfilled- 1.60 ha area.	NIL.
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Backfilling over 0.5 ha area and Plantation: 5000 nos.	Backfilled- 1.60 ha area and plantation by 13650 numbers of saplings over 1.20 Ha. area.	NIL.
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	No specific information/pr oposal.	Cumulative no. of plants till 31. 12.2017, Afforestation on dump- 280230 nos. and Avenue plantation - 156212 nos.	As reported by Mine Manager.
8g	Survival rate	No specific proposal.	82%	As reported by Mine Manager.
8h	Water sprinkling on roads to control airborne dust	To control the airborne dust water sprinkling is proposed.	Water sprinkling being carried out as per proposal.	NIL.

8i	General remarks -- of inspecting officer on aesthetic beauty in and around mines area	The aesthetic beauty of the mine is good. The plantation is carried out over the matured slope of the dump. Back filling over mine out area has been started.	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	As per rule 45 of MCDR, 2017, Monthly and annual returns to be submitted.	Monthly and annual returns being submitted regularly.	NIL.
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Graduate Mining Engineer: 01, Geologist: 01, Surveyor: 01	As mines falls under A category mine as per MCDR,2017, a full time Mining engineer and Geologist has been appointed.	Geologist: Joydeep Bhattacharjee Appointed on: 16.10.2017
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	1.Open cast wroking-90.235 2.Reclaimed/Re habilated- 28.880 3.waste disposal- 48.799 4.Infrastructu re- 38.856 5.Mineral storage,Top soil storage& green belt- 10.390	The land information furnished in the annual return of the year 2016- 17, seems to be in order.	NIL.
9d	Scrutiny of Annual return on afforestation	A total of 13650 saplings have been planted.	The status of plantation furnished in the annual return is in order.	NIL.

9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	The quantity of Mineral reject furnished is 4112.00 tonnes.	Found to be in order.	NIL.
9f	Scrutiny of Annual return on ROM stock and/or graded ore	As per AR 2016-17, Mn ROM production for the year 2016-17 was 83146.467 tonnes.	A total of 83146.467 tonnes of Mn ROM was produced as indicated in annual return of the year 2016-17.	NIL.
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	The cost of production furnished in AR 2016-17 was Rs. 3945.17 per tonnes.	The cost of production furnished in annual return appears to be correct.	NIL.
9h	Scrutiny of Annual return on fixed assets	Value of fixed asset furnished in annual return is Rs. 192569354.00	The Value of fixed asset furnished in annual return for the year 2016-17, seems to be in order.	NIL.
9k	Scrutiny of Annual return on mining machineries	Excavator- 3, dumper-15, drill-1, Loader-1, Dozer-1, water tanker-2, L.V-1	The deployment status of mining and other machineries furnished in annual return appears to be correct.	NIL.

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

Date :

(DILIP JAIN)

Indian Bureau of Mines