

INDIAN BUREAU OF MINES
MINERALS DEVELOPMENT AND REGULATION DIVISION
MCDR INSPECTION REPORT
BHUBANESHWAR REGIONAL OFFICE

File No-MCDR-MiFLOMn/3/2022-BBS-IBM_RO_BBS

Mine Code- 400RI08019

General

S N	Particulars	Details
1	Name of the Mine	Joda West Iron & Manganese Mine
2	Date of Inspection	06.05.2023
3	Name of Inspecting Officer	Shri Ashok Kumar Pany, Assistant Mining Engineer
4	Name of official accompanying inspection	Shri Niranjan Kumar, Mine Manager Shri Rajib Deb, Geologist
5	Last date of Inspection & Officer	19.10.2022, Shri Rajesh Kumar Das, Deputy Controller of Mines
6	Total Lease Area (Ha) with breakup of Non-forest and forest land	Forest Land- 1246.552 ha Non Forest Land- 191.167 ha Total Lease area- 1437.719 ha
7	Mine code	40 ORI 08019
8	IBM Registration Number under rule 45 of MCDR, 2017	IBM/4376/2011
9	Name of the lessee, Address, phone, email and fax number	M/S Tata Steel Limited, Dist- East Singbhum, Jamshedpur, Jharkhand-831001 Phone-0657-2424602 Fax-022-66657724, Email: mdoffice@tatasteel.com
10	Village	Joda, Kamarjoda, Bichhakundi, Banspani, Bhuyaroida and Baitarani RF
11	Taluka/Mandal	Barbil
12	District	Keonjhar
13	Pin code	758034
14	State	Odisha
15	Post office	Bichhakundi,
16	Nearest police station	Joda
17	Nearest Railway station	Bansapani
18	Date of Grant of Mining Lease	17.01.1933
19	Date of Execution	17.01.1933
20	Date of Expiry	31.03.2030
21	Date of opening of Mine	17.01.1933
22	Name of the Nominated Owner with Address, phone, email, fax number and date of appointment	Shri Thachat Viswanath Narendran, Managing Director M/s Tata Steel Limited, Jamshedpur, Dist- East Singbhum, Jharkhand-831001 Phone-0657-2424602 Fax-022-66657724, Email: mdoffice@tatasteel.com Dt. of Appointment: 01.11.2013

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23	Name of the Mine Agent with Address, phone, email, fax number and date of appointment	Shri Awnish Kumar, Agent & Chief Manganese Group of Mines, AT/PO- Bichhakundi, Via – Joda, Dist. Keonjhar, PIN – 758034 Phone – 9238306100 Email: awnish.kumar@tatasteel.com Dt. of Appointment – 20.10.2021
24	Name of the Mines Manager with Address, phone, email, fax number and date of appointment in mines	Mr. Niranjana Kumar, AMIE & FCC Joda West Iron and Manganese Mines, At/PO- Bichhakundi Via-Joda Dist- Keonjhar Odisha-758034 Phone – 9204058109 Email: Niranjana.kumar@tatasteel.com Date of appointment: 30.05.2022
25	Name of the Mining Engineer, Qualification and total experience with Address, phone, email, fax number and date of appointment in mine	Shri Sapharshi Datta, B. Tech (Mining) & FCC, Experience – 13 yrs. Joda West Iron and Manganese Mine, At/PO- Bichhakundi, Via-Joda, Dist- Keonjhar, Odisha-758034 Tel: 8114384791, Email: sapharshi.datta@tatasteel.com Dt. of Appointment-30.05.2022
26	Name of the Geologist, Qualification and total experience with Address, phone, email, fax number and date of appointment in mine	Shri Rajib Deb, M. Tech. (Mineral Exploration) Experience – 15 yrs. Joda West Iron and Manganese Mine, At/PO- Bichhakundi, Via-Joda, Dist- Keonjhar, Odisha-758034 Tel: 9238005230, Email: rajib.deb@tatasteel.com Dt. of Appointment- 01.09.2021
27	Date of Approval of Review of Mining Plan/Modified Mining Plan with five-year period and specific condition in approval letter, if any.	Review of Mining Plan approved vide letter No. MCDR-MiFLOMn/3/2022-BBS-IBM-RO-BBS Dated 28.03.2023 for the period 2023-24 to 2027-28
28	Mineral(s) granted in lease and proved for mining	Iron & Manganese
29	Method of Mining (Opencast, Underground)	Opencast
30	Category (Fully Mechanised, Others or Manual)	Category-A, Fully Mechanized
31	Captive/Non Captive	Captive
32	Present EC Capacity	Mn-180000 Tonnes Iron- Nil

Scientific Mining: Compliance of proposals of approved Mining Plan/Review of mining for the Year 2022-23.

Exploration

S.N.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	2105 Nos. of backlog proposal for the year 2021-22	320 Nos. has been drilled during the year 2022-23	
1b	Exploration over lease area during the year for Geological axis 1 or 2.	No proposal for the year 2022-23	Not applicable. During the year the area explored is as follows:- G1-37.330 Ha G2- 47.012 Ha Total: 84.342 Ha	The exploration status as on 01-04-2023 is as follows:- G1: 339.987 Ha G2: 225.472 Ha Total- 565.459 Ha
1c	Exploration Agency & Expenditure in lakh Rupees during the year	Not specified	Expenditure incurred Rs 969.30 Lakhs	
1d	Balance area to be explored to bring Geological axis in 1 or 2	872.260 ha		
1e	Balance reserves/resource as on 01.04.2023	As per the approved RMP dated 28.03.2023, the reserve/resource status as on 01.07.2022 is as follows:- <u>Manganese-</u> Reserve- : 3.359 Million Tonne Resource : 6.283 Million Tonne <u>Iron</u> Reserve- : 57.789 Million Tonne Resource : 18.414 Million Tonne		
1f	General remarks of inspecting officer on geology, exploration etc.	The exploration work is under progress and delayed due to non-availability of forest clearance.		

Development

S.N.	Item	Proposals	Actual work	Remarks
2a	Location of development w.r.t. lease area	Production of Manganese Ore has been proposed in D-Quarry (Extn), Gangaigora, H' Quarry and Old H' Quarry and production of Iron Ore in South Pit	Mining has been carried out D-Quarry (Extn), Gangaigora and H' Quarry	Production of Mn ore has been carried out as no EC available for Iron ore.
2b	Separate benches in topsoil, overburden and mineral (Rule 15)	Separate Benches Proposed	Carried out	
2c	Stripping ratio or ore to OB ratio	1:6.89	1:10.85	Ore & OB Ratio increased due to less excavation of Manganese Ore
2d	Quantity of topsoil generation in m ³	2388	1098	
2e	Quantity of overburden/waste generation in m ³	3818663	2123160	
2f	General remarks of inspecting officer on development of pit w.r.t. type of deposit etc.	Mechanized opencast mining operation carried out with manual sorting and screening.		

Exploitation

S.N.	Item	Proposals	Actual work	Remarks
3a	Number of pits proposed for production	Manganese- 4 Nos. Iron- 1 Nos.	Manganese- 3 Nos. Iron- Nil	
3b	Quantity of ROM production proposed	Manganese- 800000 tonne Iron- 2000001 tonne	Manganese- 164046 tonne Iron- Nil	Less production due non-availability of EC for Iron and enhance quantity EC for Manganese.
3c	Recovery of salable/usable mineral from ROM production	Manganese- 350000 tonne Iron- 1000002 tonne	Manganese- 143956 tonne	
3d	Quantity of mineral reject generation	Manganese- 450000 tonne Iron- 999999 tonne	Manganese- 20090 tonne	
3e	Grade of mineral reject generation and threshold value declared	Mineral reject- Iron-45 % to 55 % Fe Mn-10% to 25% Mn Threshold Value- Iron-45 % Fe Mn-10% Mn	Mineral reject- Iron-45 % to 55 % Fe Mn-10% to 25% Mn Threshold Value- Iron-45 % Fe Mn-10% Mn	
3f	Quantity of sub-grade mineral generation	Same as mineral reject	Same as mineral reject	
3g	Grade of sub-grade mineral generation	Same as mineral reject	Same as mineral reject	
3h	Manual / Mechanized method adopted for segregating from ROM	Mechanized	Mechanized	
3i	Any analysis or beneficiation study proposed & carried out for sub-grade mineral and reject	No beneficiation study proposed	Nil	
3j	Provision of drilling & blasting in mineral benches	Provision of drilling & blasting proposed in mineral benches	Deep hole Drilling blasting Depth of hole = 8 m (max) +10% subgrade =8.8m Spacing= 3-3.5m Burden= 2.5-3.0m	
3k	Provision of mining machineries in mineral benches	Excavator – 1.6 M3 Tipper – 35 tonne Drill- 100 mm dia	Excavator – 1.6 M3 Tipper – 35 tonne Drill- 100 mm dia	
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Bench Height: 6-8m Bench Width: 8-10 m	Bench Height: 6-8 m Bench Width: 8-10 m	
3m	Total area covered under excavation/pits	106.144 ha	89.77 ha	

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3n	Ore to OB ratio for the pit/mine during the year	1:6.89	1:10.85	
3o	Total area put in use under different heads at the end of year	Area under Mining – 106.144 Storage of Top Soil – 0.750 Waste Dump – 118.220 Mineral Storage – 56.940 Infrastructure – 42.865 Roads – 25.109 ETP – 0.131 Mineral Separation Plant – 20.149 Township – 123.320 Others (Green Belt)- 67.496 Total – 561.124 ha.	Area under Mining – 89.770 Storage of Top Soil – 0.25 Waste Dump – 90.90 Mineral Storage – 36.11 Infrastructure – 13.24 Roads – 20.140 Township – 123.320 Others (Green Belt)- 69.730 Total – 443.46 ha	
3p	Production of ROM mineral during last five-year period, as applicable	2018-19 - 100013 tonne 2019-20 – 95998 tonne 2020-21 – 211755 tonne 2021-22 - 300000 tonne 2022-23 - 800000 tonne	2018-19 - 64866 tonne 2019-20 – 93605 tonne 2020-21 – 109415 tonne 2021-22 - 115632 tonne 2022-23 - 164046 tonne	
3q	General remarks of inspecting officer on method of mining etc.	Mechanized opencast mining operation carried out with shovel-dumper combination.		

Solid Waste Management-Dumping

S.N	Item	Proposals	Actual work	Remarks
4a	Separate dumping of topsoil, OB & mineral reject (Rule 32, 33)	Separate dumping of OB and mineral reject proposed	Carried out	
4b	Location of topsoil, OB & mineral reject dumps	Waste Dump – D-Quarry – Dump D#1 - 1378N-1787N & 4722E-5297E, from 590 to 660 mRL. Mineral Reject Stack (Mn. Ore) – Within - D Quarry - 2480N-2740N & 4740E-4935E from 550 to 580 mRL Mineral Reject Stack (Iron Ore) – Dump D7J - 1682N-2190N & 3073E-3400E from 515 to 560 mRL.	Waste Dump – D-Quarry – Dump D#1 - 1697N-2220N & 4781E-5287E from 558 mRL to 630 mRL Mineral Reject Stack (Mn. Ore) – Within - D Quarry - 2500N-2660N & 4751E-4926E from 550 to 575 mRL. Mineral Reject Stack (Iron Ore) – Dump D7J - 1828N-2127N & 3123E-3400E from 519 to 560 mRL.	

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4c	Number of dumps within lease area and outside lease area	within lease area – 10 outside lease area - Nil	within lease area – 10 outside lease area - Nil	
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Outside UPL	Outside UPL	
4e	Number of active & alive dumps	03	03	
4f	Number of dead dumps	07	07	
4g	Number of dumps stabilized	03	03	
4h	Whether Retaining wall or garland drain all along dumps are there	Yes	Yes	
4i	Length of Retaining wall or garland drain all along dump	Retaining Wall & Garland Drain - Waste Dump No. D#1 = 1047m, MR Dump No. D7J=328 m Total – 1375m	Retaining Wall & Garland Drain – Waste Dump No. D#1 = 947m, MR Dump No. D7J=225 m Total – 1172m	
4j	Number of settling ponds	No proposal	Nil	
4k	Specific comments of inspecting officer on waste dump management	Waste dumping has been carried out within the proposed area.		

Solid Waste Management-Backfilling

S.N.	Item	Proposals	Actual work	Remarks
5a	Status on part or full extraction of mineral from mined out area before starting backfilling	Nil	Nil	
5b	Area under backfilling of mined out area	Nil	Nil	
5c	Concurrent use of topsoil for restoration or rehabilitation of mined out area (Rule 32)	3842	1098	100% used for plantation activities
5d	Total area fully reclaimed & rehabilitated	No proposal	Nil	
5e	General remarks of inspecting officer on backfilling, reclamation etc.	Mineral not exhausted from quarry and no backfilling proposal during the year.		

Progressive Mine Closure Plan

S.N.	Item	Proposals (Yr.2022-23)	Actual work	Remarks
6a	Whether Annual report on PMCP submitted on time and correctly - Rule 26.	To be submitted before 1 st July	Not due, yet to be Submitted	
6b	Area available for rehabilitation (ha)	Nil	NIL	
6c	Afforestation done (ha)	3.0 ha	3.0 ha	

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6d	No. of saplings planted during the year	7500	8426	
6e	Cumulative no. of plants	Total 304710 Nos. of trees planted.		-
6f	Any other specific method of rehabilitation	-	-	-
6g	Cost incurred on watch & care during the year	Rs. 952500/-	Rs. 1134000/-	-
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (L X B X D).	Nil	Nil	-
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Void filled by waste/tailings.	Nil	Nil	-
6j	Compliance on reclamation and rehabilitation by backfilling (iii) Afforestation on the backfilled area.	Nil	Nil	-
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir.	Nil	Nil	-
6l	Compliance on reclamation and rehabilitation by backfilling (v) Any other specific means	Nil	Nil	-
6m	Compliance of Rehabilitation of waste land within lease (i) Afforestation	Nil	Nil	-
6n	Compliance of Rehabilitation of waste land within lease (ii) Area rehabilitated (ha) Method of rehabilitation	Nil	Nil	-
6o	Compliance of Rehabilitation of waste land within lease (iii) Method of rehabilitation	Nil	Nil	-
6p	Compliance of Environmental monitoring (core zone & buffer zone)	Quarterly monitoring of Air, Noise Level and Ground water quality proposed	Monitoring carried out quarterly.	-
6q	General remark of inspecting officer on PMCP compliance and progressive closure operation etc.	Progressive closure operation carried out as per proposal.		

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Mineral Conservation

S.N.	Item	Proposals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Grade wise sorting within lease area	Grade wise sorting within lease area	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical	Manual	Manual	
7c	Different grade of mineral sorted out at mines	Below 25% Mn, 25% to below 35% Mn, Above 35% Mn	Below 25% Mn, 25% to below 35% Mn, Above 35% Mn	
7d	Any beneficiation process at mines	Nil	Nil	
7e	General remarks of inspecting officer on Mineral conservation & beneficiation issues	Manual shorting and sizing of manganese ore has been carried out with screening of fines.		

Environment

S.N.	Item	Proposals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	3842	1098	Separately removed and used for plantation.
8b	Concurrent use or storage of topsoil	No proposal	Nil	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate dump proposed	Carried out	
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	No proposal	Nil	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	No proposal	Nil	
8f	Baseline information on existence of plantation & additional plantation done (Rule 41)	7500 Nos. of Plantation	8426 Nos.	304710 Nos of cumulative plantation up to 31.03.2023
8g	Survival rate	85%	90%	
8h	Water sprinkling on roads to control airborne dust	Water sprinkling on haul roads proposed to suppress the dust	Carried out	
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	The aesthetic beauty in & around the mine area maintained.		

Compliance of Rule 45

S.N.	Item	COMMENTS		Remarks
9a	Status of submission of Monthly and Annual returns	Monthly Return submitted within due date and Annual return is not due for submission.		
S.N.	Item	Details Given in AR.	Observation of I/Officer	Remarks
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Not applicable as return not received.	Not applicable as return not received.	
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Not applicable as return not received.	Not applicable as return not received.	
9d	Scrutiny of Annual return on afforestation	Not applicable as return not received.	Not applicable as return not received.	
9e	Scrutiny of Annual return on mineral reject generation (Grade & quantity)	Not applicable as return not received.	Not applicable as return not received.	
9f	Scrutiny of Annual return on ROM stock and/or graded ore	Not applicable as return not received.	Not applicable as return not received.	
9g	Scrutiny of Annual return on sale value, Ex. Mine price & production cost	Not applicable as return not received.	Not applicable as return not received.	
9i	Scrutiny of Annual return on fixed assets	Not applicable as return not received.	Not applicable as return not received.	
9k	Scrutiny of Annual return on mining machineries	Not applicable as return not received.	Not applicable as return not received.	

Violation observed during current inspection and compliance position of earlier violation pointed out:

(a) Compliance position of earlier violation pointed out: - Violation of Rule 11(1), 12(4) & 37(2) has been pointed out on 11.11.2022 during earlier inspection. Violation of Rule 37(1) was complied and penalty of 5 lakhs has been deposited for non-compliance of Rule 11(1) & 12(4). The exploration work is under progress.

(b) No violation observed during current inspection.

Date-22.05.2023

Ashok Kumar Pany
Assistant Mining Engineer