

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

General:

SL. No.	Particulars	Details
1	Name of the Mine	Joda East Iron Mine
2	Date of inspection	27/10/2024
3	Name of inspecting officer	Prashant S Hegde, RMG
4	Name accompanying mine officials	S/Shri Rajesh Kumar, Agent, Haridrumat Behera, Mines Manager Cum Mining Engineer, Pinku Kumar, QP, Biplab Kumar Mahato, Geologist and other mine officials.
5	Last date of Inspection & Officer	13/07/2023 Shri R. K. Das, DCOM
6	Total Lease Area (Ha) with breakup of Non-forest and forest land	671.093 Ha. (625.48 Ha Forest + 45.613 Ha Non- forest)
7	Minecode	30ORI08027
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, 24 Homi Mody Street, Fort. Mumbai-400001, Ph No.: 9262699402 Fax: 06767-272010 Email id: ceo_md_office@tatasteel.com
10	Village	Joda, Kamarjoda, Banspani, Khuntpani & Baitarni R.F
11	Taluka/Mandal	Barbil
12	District	Keonjhar
13	Pincode	758034
14	State	Odisha
15	Post office	Joda
16	Nearest police station	Joda
17	Nearest Railway station	Banspani
18	Date of Grant of Mining Lease	01.07.1925
19	Date of Execution	01.07.1925
20	Date of opening of Mine	1956
21	Date of expiry	31.03.2030
22	Name of the Nominated Owner with Address, phone, email, fax number and date of appointment	Mr. T. V. Narendran Northern Town, Jamshedpur, P.O: Bistupur, Dist: East Singhbhum, Jharkhand- 831001, Phone No: 0657-2424602 Email id: narendran@tatasteel.com Date of appointment: 01.11.2013
23	Name of the Mine Agent with Address, phone, email, fax number and date of appointment	Mr. Rajesh Kumar Joda East Iron Mine, At/PO; Joda Dist: Keonjhar Phone No: - 9234612797 rajesh.kumar1@tatasteel.com Date of appointment: 08.06.2023

24	Name of the Mines Manager with Address, mobile no, email, fax number and date of appointment in mine	Mr. Haridrumat Behera Qualification: B. Tech in Mining Engineering Total Experience: 32 Years Joda East Iron Mine, At/PO; Joda Dist: Keonjhar Phone No: - 9238087091 haridrumat@tatasteel.com Date of appointment: 15.04.2024
25	Name of the Mining Engineer , Qualification and total experience with Address, mobile no, email, fax/phone number and date of appointment in mine	Mr. Haridrumat Behera Qualification: B. Tech in Mining Engineering Total Experience: 32 Years Joda East Iron Mine, At/PO; Joda Dist: Keonjhar Phone No: - 9238087091 haridrumat@tatasteel.com Date of appointment: 15.04.2024
26	Name of the Geologist , Qualification and total experience with Address, mobile no, email, fax number and date of appointment in mine	Mr. Biplab Kumar Mahato Qualification: MSc. In Applied Geology Joda East Iron Mine, At/PO; Joda Dist: Keonjhar biplab.mahato@tatasteel.com Date of appointment: 15.05.2024
27	Date of Approval of Mining Plan/Review of Mining Plan/ their modifications with five-year period and specific condition in approval letter, if any.	1) Approved Review Mining Plan No. RMP/A/45-ORI/BHU/2019-20 dated 21/02/2020 for period 2021-22 to 2024-25 2) Next draft RMP submitted on 27/09/2024 and same was under process.
28	Mineral (s) granted in lease and proved for mining	Iron ore
29	Method of Mining(Open cast, Underground)	Open cast
30	Category (Fully Mechanised, Others or Manual)	Fully Mechanized
31	Captive/Non Captive	Captive
32	Present EC Capacity	19.5 MTPA of ROM (with Beneficiation plant throughput capacity of 17.6 MTPA) (Grant dated 13/04/2023)

OBSERVATIONS/COMMENTS OF INSPECTING OFFICER:**1)Exploration:---**

SL.No	Item	Proposals (FY 2023-24)	Actual work	Remarks
1a	Backlog of previous year	FY: 23-24: NIL FY:2024-25: NIL	NIL	NIL
1b	Exploration over lease area for Geological axis 1 or 2.	NIL	G-1: 291.50 Ha; (Entire Potentially mineralized area explored	As on date of inspection) (Total Potentially mineralized area : 291.50 Ha+ non-

			under G-1)	mineralized area: 379.593 Ha)
1c	Exploration Agency & Expenditure in lakh Rupees during the year	NIL	NIL	_____
1d	Balance area to be explored to bring Geological axis in 1 or 2	NIL	NIL (Entire Potential mineralized area explored under G-1)	NIL
1e	Balance reserves as on 01.04.2024	NA	Iron Ore (+ 45 % Fe) Reserves (111+121+122) : 133.24 million tonnes	Based on approved RMP dated 21/02/2020 and AR
1f:	General remarks of inspecting Officer on Geology, exploration etc.	Joda East iron deposit lies in the western portion of Singhbhum-Orissa Craton. The principal rocks met within the area are Banded Hematite Jasper (BHJ), shales and cherty quartzites, laterite, hematitic iron ores. Based on exploration data the configuration of ore body as follows. Iron ore body: 4000 m X 830m X 35m Entire Potentially mineralized area was already explored under G-1.		

2)Development:--

SL. No.	Item	Proposals (FY 2023-24)	Actual work	Remarks
2a	Location of development w.r.t. lease area	<p>North Pit N: 3220 to 4410 E: 1500 to 2350</p> <p>South Pit N: 1400 to 2650 E: 1550 to 2450</p>	<p>North Pit N: 3307 to 4253 E: 1547 to 2241</p> <p>South Pit N: 1588 to 2637 E: 1605 to 1935</p> <p>Within the proposed area.</p>	_____
2b	Separate benches in topsoil, overburden and mineral	Separate benches in overburden and minerals ; No top-soil generation	As per proposal	_____
2c	Stripping ratio or ore to OB ratio	1:0.066	1: 0.064	Ratio in M3/tonnes
2d	Quantity of topsoil generation in m3	No proposals	Nil	_____
2e	Quantity of overburden	1,220,000	758,854	Within the limit.

	generation in m3			
2f	General remarks of inspecting Officer on development of pit w.r.t. type of deposit etc	Developments of pits are being carried out as per approved RMP. Next draft RMP submitted on 27/09/2024 and same was under process.		

3)Exploitation:--

SL.No.	Item	Proposals (FY 2023-24)	Actual work	Remarks
3a	Number of pits proposed for production	Two pits	Two pits	North Pit and South Pit
3b	Quantity of ROM mineral production proposed	18,600,000 Tonnes	11,850,399 Tonnes (Due to enhancement of EC granted recently and other statutory clearances yet to be obtained.)	Within the limit
3c	Recovery of salable/usable mineral from ROM production	94.6 % ; 17,600,000 tonnes (+58 % Fe)	93.3 %; 11,054,099 tonnes (+58 % Fe)	_____
3d	Quantity of mineral reject generation	1,000,000 tonnes	796,300 tonnes	639,625 tonnes utilized by blending during FY 2023-24.
3e	Grade of mineral reject generation and threshold value declared	Iron ore: 45 to 58 % Fe	Iron ore: 45 to 58 % Fe	Threshold value of Iron Ore : +45 % Fe
3f	Quantity of sub-grade mineral generation	Same as para 3d		Sub-grade mineral/ mineral reject are being stacked separately and part being
3g	Grade of sub-grade mineral generation	Same as para 3e		

				utilized by blending.
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanized	Mechanized	-----
3i	Any analysis or beneficiation study proposed & carried out for sub-grade mineral and reject	Nil	NIL	-----
3j	Provision of drilling & blasting in mineral benches	Deep Hole Drilling Dia:- 165 mm Depth: - 10 m Spacing: - 4.0 to 4.3 m Burden: - 3.5 to 4.0 m Explosive used: - SME	As per proposals.	-----
3k	Provision of mining machineries in mineral benches	Yes, mining by Shovel (5.9 m ³) and Dumper (100 T) combination.	As per proposals.	-----
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	9m bench height with 9 to 25 m width	As per proposals.	-----
3m	Total area covered under excavation/pits	251.187 Ha (End of plan period with reduction area for other mining activities)	292.938 Ha (other mining activities utilization reduced due to limited excavation as compare to proposals)	-----
3n	Ore to OB ratio for the pit/mine during the year	1:0.066	1: 0.064	Ratio in M3/tonnes

3o	Total area put in use under different heads at the end of year	Particulars	Total Area(Ha) at the end of Plan period	Particulars	Total Area(Ha) at the end of FY 2023-24	_____
		Area under Mining	251.187	Area under Mining	292.938	
		Overburden/Waste dumping	59.725	Overburden/Waste dumping	42.379	
		Mineral Storage	110.548	Mineral Storage	62.44	
		Infrastructure (Occupied by plants buildings & roads)	125.365	Infrastructure (Occupied by plants buildings & roads)	88.409	
				Within the limit.		
3p	Production of ROM mineral during last five-years period, as applicable	2019-20: 12,000,000 2020-21: 12,300,000 2021-22: 15,900,000 2022-23: 19,500,000 2023-24: 18,600,000		2019-20: 10,957,291 2020-21: 11,930,921 2021-22: 11,465,323 2022-23: 11,993,518 2023-24: 11,850,399		Unit: In tonnes
3q	General remarks of inspecting Officer on method of mining etc		Open-cast fully mechanized mining method is being carried as per approved RMP. The enhancement of EC granted recently and other statutory clearances yet to be obtained. Next draft RMP submitted on 27/09/2024 and same was under process.			

4)Solid Waste Management-Dumping:--

SL.No.	Item	Proposals (FY 2023-24)	Actual work	Remarks
4a	Separate dumping of topsoil, OB & mineral reject	No top soil generation; Separate dumping/backfilling of OB & mineral reject proposed.	As per proposals.	_____
4b	Location of topsoil, OB & mineral reject dumps	(1)OB materials proposed to Backfilling at Back-Filling Area i.e. Waste Dump 2(N: 3487 to 3630 ; E: 1333 to 1703) and waste dump No-4(N: 4835 to 5225;E: 1069 to 1093) (2)Mineral Reject Dumps/stacking at Mineral Reject-1A(N: 3945 to 4128 ;	(1)OB materials proposed to Backfilling at Back Filling Area i.e. Waste Dump 2 N: 3494 to 3621 E: 1438 to 1674 (2)Mineral Reject Dumps/Stacking in Mineral Reject-1A(N: 3951 to 4126;E: 1345 to 1375) As per the proposals and within limit considering quantity of	_____

		E: 1343 to 1382) and Mineral Reject-3 (N: 4821 to 5066 ; E: 1276 to 1336)	generation									
4c	Number of dumps within lease area and outside lease area	<table border="1"> <tr> <td rowspan="2">Inside Lease</td> <td>OB</td> <td>4 nos</td> </tr> <tr> <td>Mineral reject</td> <td>3 nos</td> </tr> <tr> <td>Outside Lease</td> <td colspan="2">NIL</td> </tr> </table>	Inside Lease	OB	4 nos	Mineral reject	3 nos	Outside Lease	NIL		As per proposals.	_____
Inside Lease	OB	4 nos										
	Mineral reject	3 nos										
Outside Lease	NIL											
4d	Location of dumps w.r.t. ultimate pit limit	Proposed outside the pit limit except back-filling WD no-2 and Mineral reject -1A as these located at ore exhausted part of pit.	As per proposals.	_____								
4e	Number of active & alive dumps	OB dumps: 3 nos Mineral reject dumps: 3nos	As per proposals.	_____								
4f	Number of dead dumps	One (Waste Dump No-1)	As per proposals.	_____								
4g	Number of dumps stabilised	One (Waste Dump No-1)	As per proposals.	_____								
4h	Whether Retaining wall or garland drain all along dumps are there	Yes, proposed	Proposals carried out as per approved RMP and well maintained.	_____								
4i	Length of Retaining wall or garland drain all along dump	Retaining wall- 1345 m Garland drain- 1345 m	Retaining wall- 919 m Garland drain- 919 m (Less generation of OB wastes /mineral reject quantity as compare to proposals.)	_____								
4j	Number of settling ponds	One	One	_____								
4k	Specific comments of inspecting Officer	Overburden wastes and mineral reject management are being carried out as per the approved proposals.										

	on waste dump management	
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5)Solid Waste Management-Backfilling:--

SL.No	Item	Proposals (FY 2023-24)	Actual work	Remarks
5a	Status on part or full extraction of mineral from mined out area before starting backfilling	Back-filling proposed at exhausted part pits. (Back-Filling Area i.e. Waste Dump No- 2(N: 3487 to 3630 ; E: 1333 to 1703)	As per proposals.	_____
5b	Area under backfilling of mined out area	6.9 Ha	3.49 Ha Lesser backfilling one due to less OB excavation.	_____
5c	Concurrent use of topsoil for restoration or rehabilitation of mined out area	Nil	Nil	Topsoil encountered is being utilized for plantation.
5d	Total area fully reclaimed & rehabilitated	NIL	NIL	NIL
5e	General remarks of inspecting Officer on backfilling and reclamation etc	Backfilling is being carried out as per the approved proposals. As reported, total cumulative back-filled area in ML was 11.04 Ha.		

6)Progressive Mine Closure Plan:---

SL.N.	Item	Proposals (FY 2023-24)	Actual work	Remarks
6a	Whether Annual report on PMCP submitted on time and correctly - Rule 26(2). (Hard copy same provided)	Before 1 st July of 2024	Submitted on time	NIL
6b	Management of worked/ mined out benches/dumps i) Area available for rehabilitation (ha) ii) Afforestation done (ha) iii) No. of saplings planted during the year	i)2.02 ii)2.02 Ha iii)5067 nos iv) NAs	i)2.21 ii)2.21 Ha iii) 9240 nos iv)4,87,282 nos (within ML)	9240 nos saplings planted over dumps /backfilled area during FY 23-24.

	iv) Cumulative no. of plants v) Any other specific method of rehabilitation vi) Cost incurred on watch & care during the year	v) Plantation vi) NA	v) Plantation vi) Rs 25.5 lakhs	
6c	Compliance on reclamation and rehabilitation by backfilling i) Voids available for backfilling (L X B X D) ii) Void filled by waste/tailings iii) Afforestation on the backfilled area iv) Rehabilitation by making water reservoir v) Any other specific means	i) 1.79 million cum.m. (including tailing of 0.57million cum. m.) ii) 1.79 million cum.m iii) NIL iv) Nil v) NA	i) 1.1 million cum.m ((including tailings of 0.32 million cum. m) ii) 1.1 million cum. m (including tailings of 0.32 million cum. m.) iii) NIL iv) Nil v) NA	Within the proposals; 634,168 tonnes ie.317,084 cum. m of tailings disposed at In-pit slime Dam No-2 during FY-23-24 as proposed.
6d	Compliance of Rehabilitation of waste land within lease i) Afforestation ii) Area rehabilitated (ha) iii) Method of rehabilitation	i) NIL ii) Nil iii) Nil	i) NIL ii) Nil iii) Nil	9240 nos of sapling planted during FY 2023-24.
6e	Compliance of Environmental monitoring (core zone & buffer zone)	Environmental monitoring in Core zone and buffer zone will be as per MOEFCC and SPCB guidelines.	Environmental monitoring in Core zone and buffer zone was carried out as per the proposals and parameters are within the limit.	NIL
6f	General remarks of inspecting Officer on PMCP compliance & progressive closure operation etc	Lessee has implementing PMCP proposals as per approved RMP.		

7) Mineral Conservation:---

SL.No	Item	Proposals (FY 2023-24)	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Ore/mineral sorting by Dry crushing & screening and wet beneficiation Plants within lease area.	As per proposals	NIL

7b	Method of grade-wise mineral sorting i.e. manual or mechanical	Mechanical	Mechanical	NIL
7c	Different grade of mineral sorted out at mines	Iron Ore of different size (CLO & Fines) and grade for their captive steel plant (Iron Grade range- 62- below 65% Fe and above 65 % Fe;	As per proposals (Fines: 62 to below 65 % Fe and 65 % & above Fe ; CLO (10-40 size; 62 to below 65 % Fe, and 65% & above Fe)	NIL
7d	Any beneficiation process at mines	Wet beneficiation plant of 7 MTPA with Jigging and Hydro cyclone circuit and Dry Plant of 5 MTPA Capacity.	Wet beneficiation plant of 7 MTPA with Jigging and Hydro cyclone circuit and Dry Plant of 5 MTPA Capacity.	---
7e	General remarks of inspecting Officer on mineral conservation & beneficiation issues	After dry and wet mineral processing, ore/mineral/product dispatches to their captive steel plants as per the proposals and there is no mineral conservation issue. Proposals of enhancement upto 9 MTPA of dry Mineral Processing Plant and enhancement upto 10.5 MTPA of Wet Mineral Processing Plant, were under progress.		

8)Environment:--

SL.No.	Item	Proposals (FY 2023-24)	Actual work	Remarks
8a	Separate removal and utilization of topsoil	No such proposals.	Nil	<i>Topsoil encountered was stacked separately and utilized for plantation</i>
8b	Concurrent use or storage of topsoil	No such proposals.	Nil	---do---
8c	Separate dumps for overburden, waste rock, rejects and fines	Separate dumping/backfilling of OB wastes and dumping/stacking of mineral rejects proposed	Carried out as per proposals.	Nil
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	OB Wastes will be used for backfilling at exhausted portion of pit (ie. DUMP no-2); Mineral reject will be stacked separately at	Carried out as per the proposals	Nil

		Mineral reject stock No A1		
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Back-filling proposed to be carried out over 6.9 Ha area of exhausted pit (i.e Dump No-2)	3.49 Ha Lesser backfilling due to less OB excavation.	Within the limit.
8f	Baseline information on existence of plantation & additional plantation done	Area proposed for plantation: 2.02 ha No. of saplings to be planted: 5067 nos	Area under plantation (FY'23-24): 2.21 ha No. of saplings planted: 9240 nos Cumulative area under plantation: 31.58 ha Cumulative nns. Of plants within the lease: 4,87,282	_____
8g	Survival rate	NA	85 %	_____
8h	Water sprinkling on roads to control airborne dust	Regular sprinkling of water on Haul roads, dumping/backfilling area and dry/wet beneficiation Plants area using Water tankers and fixed water sprinklers to suppress the dust.	Carried out as per the proposals.	_____
8i	General remarks of inspecting Officer on aesthetic beauty in & around mines area.	Aesthetic beauty in & around mines area is good as lessee implementing the PMCP proposal and carried out plantation as per the proposals.		

9) Compliance of Rule 45

SL.No.	Item	COMMENTS		Remarks.
9a	Status of submission of Monthly and Annual returns	Regularly submitting the MRs/ARs on-time.		Nil
S.N.	Item	Details GIVEN in A.R.	Actual in field	_____
9b	Scrutiny of Annual return for information	Mining Engineer Cum Manager:	Mining Engineer Cum Manager:	_____

	on Mining Engineer, Geologist and Manager	Haridrumat Behera Geologist: Mr Sanjay Kumar Bhuyan	Haridrumat Behera Geologist: Mr. Biplab Kumar Mahato (DOA on 15.05.2024)													
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	(1) Covered under current (O/C) Workings- 292.938 Ha (2) Used for Waste Disposal-42.379 Ha (3) Occupied by plant, buildings, residential, welfare, buildings and roads- 88.409 Ha (4) Other Purpose (Mineral Storage+ Tailoring pond)- 195.528 Ha	Actual also as per AR	_____												
9d	Scrutiny of Annual return on afforestation	9240 nos within ML and 270 nos outside ML	Actual also as per AR.	_____												
9e	Scrutiny of Annual return on mineral reject generation (Grade & quantity)	During year-23-24 <table border="1"> <tr> <td>Iron Unprocessed Ore (45-58 % Fe with avg. 55.42 % Fe)</td> <td>7,96,300 tonnes</td> </tr> <tr> <td>Iron Processed Ore (45-58 % Fe with avg. 53.86 % Fe)</td> <td>6,34,168 tonnes</td> </tr> </table>	Iron Unprocessed Ore (45-58 % Fe with avg. 55.42 % Fe)	7,96,300 tonnes	Iron Processed Ore (45-58 % Fe with avg. 53.86 % Fe)	6,34,168 tonnes	Actual also as per AR.	_____								
Iron Unprocessed Ore (45-58 % Fe with avg. 55.42 % Fe)	7,96,300 tonnes															
Iron Processed Ore (45-58 % Fe with avg. 53.86 % Fe)	6,34,168 tonnes															
9f	Scrutiny of Annual return on ROM stock and/or graded ore	As on 31.03.2024 tonnes Stock Iron ROM:663,976 <table border="1"> <tr> <th colspan="2">Fines closing stock in tonnes</th> </tr> <tr> <td>62%-below 65%</td> <td>172,001</td> </tr> <tr> <td>65% and above</td> <td>3642</td> </tr> <tr> <th colspan="2">CLO stock in tonnes</th> </tr> <tr> <td>62%-below 65% Fe (10-40 mm)</td> <td>538,175</td> </tr> <tr> <td>65% and above (10-40mm)</td> <td>46355</td> </tr> </table>	Fines closing stock in tonnes		62%-below 65%	172,001	65% and above	3642	CLO stock in tonnes		62%-below 65% Fe (10-40 mm)	538,175	65% and above (10-40mm)	46355	Appear to be correct.	-----
Fines closing stock in tonnes																
62%-below 65%	172,001															
65% and above	3642															
CLO stock in tonnes																
62%-below 65% Fe (10-40 mm)	538,175															
65% and above (10-40mm)	46355															

9g	Scrutiny of Annual return on sale value, Ex. Mine price & production cost	Iron Ore Ex-Mine Price and cost of production: Rs-1965.28 per tonne;	Cost of production calculation was not matching	V/L issued.
9i	Scrutiny of Annual return on fixed assets	Fixed Value of Assets: Rs 448,17,55,952	Appear to be correct	_____
9k	Scrutiny of Annual return on mining machineries	Shovel (Hydraulic) 5.9 cum.m : 5 nos; Rock Hole Drill: 5 nos; Front end Loader:2 nos; Dumpers (100 T):15 nos ; Water tanker: 2 nos; Dozer: 3 nos Motor Grader: 2 nos. Crane: 2 nos	Observed to be correct	_____

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

(a) Compliance position of earlier violation pointed out: No violation of rules pointed out during last inspection dated 13/07/2023.

(b) During current inspection: The violation of Rule 45 (7) of MCDR 2017 has been observed and the violation letter issued on 08/11/2024.

Date:08/11/2024

(Prashant S. Hegde)
Regional Mining Geologist