

MCDR-MIFLOFE/15/2023-BBS-IBM\_RO\_BBS  
INDIAN BUREAU OF MINES  
MINERALS DEVELOPMENT AND REGULATION DIVISION

I/4284/2023

MCDR INSPECTION REPORT

Bhubaneshwar regional office

Mine file No : ORI/MN/KJR/MCDR-21/BBS

Mine code : 40ORI08033

- (i) Name of the Inspecting : **VPD** ) **VIKRAM DESHPANDE**  
Officer and ID No.
- (ii) Designation : Assistant Controller Mine
- (iii) Accompanying mine : S/Shri Sabyasachi Mishra Head(Planning and Production  
Official with  
Designation
- (iv) Date of Inspection : 10/01/2023
- (v) Prev.inspection date : 27/08/2021

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **TIRINGPAHAR**
- (b) **Registration NO.** : **4376**
- (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. : 06572431818
- E-mail : mdoffice@tatasteel.com
- Phone : 06767 279208
- (f) **Police Station** : Joda
- (g) **First opening date** : 08/02/1972
- (h) **Weekly day of rest** : SUN
2. **Address for** : VILL&PO: BAMEBARI  
**correspondance** DIST: KEONJHAR,ORISSA  
PIN:758030
3. (a) **Lease Number** : ORI0186
- (b) **Lease area** : 169
- (c) **Period of lease** :
- (d) **Date of Expiry** : 31/03/2030
4. **Mineral worked** : MANGANESE ORE Main

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## 5. Name and Address of the

Lessee : TISCO  
Bombay House 24, Homy Mody  
Street Mumbai MUMBAI  
(SUBURBAN) MAHARASHTRA  
Phone:  
FAX :

Owner : TISCO  
24,HOMI MODY STREET FORT  
MUMBAI-1 GREATER BOMBAY  
MAHARASHTRA  
Phone:  
FAX :

Agent : AWNISH KUMAR  
KEONJHAR ORISSA  
Phone:  
FAX :

## Mining Engineer

Name : SHRI NIRANJAN KUMAR,Full Time  
Qualification : AMIE (MINING)  
Appointment/ : 21/11/2017  
Termination date

## Mining Engineer

Name : Md Shadab Khushtar,Full Time  
Qualification : M.Tech(Mining)  
Appointment/ : 05/08/2002  
Termination date

## Geologist

Name : SHRI NAGA RAJU VENGALARAJU,Full Time  
Qualification : MSC (APPLIED GEOLOGY)  
Appointment/ : 15/09/2017  
Termination date

## Geologist

Name : Rishikant Maurya,Full Time  
Qualification : M.Sc (Tech), Geology  
Appointment/ : 21/11/2017  
Termination date

## Manager

Name : Rakesh Kumar  
Qualification : Diploma, FCC  
Appointment/ :  
Termination date

6. Date of approval of Mining	:	Modif.approved Mining Scheme	24/03/2005
Plan/Scheme of Mining	:	Mining Scheme rule 12 MCDR1988	28/04/2006
	:	Mining Scheme rule 12 MCDR1988	09/07/2010
	:	Mining Scheme rule 12 MCDR1988	13/04/2012
	:	Mining Scheme rule 12 MCDR1988	29/04/2015
	:	FMCP under 23C(1)	01/09/2016

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MP modif under 17(3) MCR 2016  
MP review under 17(1) MCR 2016

03/07/2018  
31/07/2020

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## PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

## Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	Nil	Nil	
1b	Exploration over lease area for geological axis 1 or 2	Core - 54 Nos. RC - 204 Nos. Total Meterage - 13220 m	Core - 56 Nos, 3093.30m RC - 1 No, 60m Total - 57 Nos, 3153.30m	Violation for Rule 11(1) of MCDR 2017 for failing undertake drilling of 204 RC holes has been issued to the lessee on 02/02/2023.
1c	Exploration Agencies and Expenditure in lakh rupees during the year		Core-M/s Gemcokati, Expenditure-Rs 177.31 Lakhs RC-APC Drilling, Expenditure-Rs 1.80 Lakhs	
1d	Balance area to be explored to bring Geological axis in 1 or 2		18.40 ha	Lessee has been issued violation of Rule 12(4) of MCDR 2017 on 02/02/2023 for failure to cover entire potential mineralized zone into G-1 category.
1e	Balance reserve as on 01/04/20	As per the las document approved on 31/07/2020 the Resources/Reserves(In Million Tonnes) are as follows Manganese: 111-1.606 122-0.097 221-2.938 222-0.366 Iron: 111-1.84 221-3.82 222-0.13	Resources/Resources as on 01/04/2022(In Million Tonnes) is as below: Manganese: 111-1.455 122-0.0978 221-2.938 222-0.3659 Iron: 111-1.535 122-0.04 221-3.82 222-0.144	+10% Mn +45 Fe

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1f General remarks  
of inspecting  
officers on  
geology,  
exploration etc

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Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Guruda - A - Quarry - 1 - 11370N-11510N & 12090E-12312E from 564 mRL to 636 mRL. & Quarry - 2 - 11560N-11749N & 11696E-11868E from 666 mRL to 698 mRL.	Guruda - A - Quarry - 1 - Quarry - 1 - 11363N-11505N & 12095E-12300E from 569 mRL to 636 mRL. Quarry - 2 - 11560N-11730N & 11728E- 11861E from 670 mRL to 698 mRL.	
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Separate Benches in Overburden and Manganese	As proposed.	Pocket Type Deposit.
2c	Stripping ratio or ore to OB ratio	(In-situ CuM : CuM) Guruda - A - 1: 0.98 Avg. 1: 0.98	(In-situ CuM : CuM) Guruda - A - 1: 0.62 Guruda - B - Nil Avg. 1: 0.62	Ore includes Mn.Ore & Iron Ore Mineral Rejects.
2d	Quantity of topsoil generation in m3	375	410	
2e	Quantity of overburden generation in m3	161443	159493	
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc			

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## Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	2	2	Both Pits are located in Guruda-A block.
3b	Quantity of ROM mineral production proposed	122000	67012	Production could not be enhanced due to delay in grant of Environment Clearance.
3c	Recovery of sailable/usable mineral from ROM production	100%	100%	
3d	Quantity of mineral reject generation	Manganese: 22000 Iron: 314001	Manganese: 7695.121 Iron: 198979	Mn-below 25%. Iron concurrent to development of Mn Pits.
3e	Grade of mineral rejects generation and threshold value declared.	Threshold Value - Mn. Ore - Mn>10% Iron Ore - Fe>45% Generation - Mn. Ore - Mn-17.92% Iron Ore - Fe-53.18%	Threshold Value - Mn. Ore - Mn>10% Iron Ore - Fe>45% Generation - Mn. Ore - Mn-19.32% Iron Ore - Fe- 49.67%	
3f	Quantity of sub grade mineral generation.	None	None	Included in Mineral Reject.
3g	Grade of sub grade mineral generation	Mn. Ore - Mn-17.92% Iron Ore - Fe-53.18%	Mn. Ore - Mn-19.32% Iron Ore - Fe- 49.67%	
3h	Manual / Mechanised method adopted for segregating from ROM	Manual	Manual	

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3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	Yes,	1. Study on Mechanized processing of Manganese Ore 2. Study for beneficiation of Low/ Sub Grade Manganese Ore and Fines	
3j	Provision of drilling and blasting in mineral benches	Deep hole Drilling and blasting	Deep hole Drilling and blasting	Depth of hole = 8 m +10% subgrade =8.8m Spacing= 3m to 3.5m Burden= 2.5 m to 3m Volume= 60 CuM Specific Gravity=2.5 Tonnage/Hole= 150 to 210 Tonnes Powder factor= 6.0 to 8.00 kg/Tonne
3k	Provision of mining machineries in mineral benches	Shovel - 2 Nos. Dumper- 8 Nos. Drill- 1 Nos. Dozer - 1 Nos. FE Loader - 1 Nos.	Shovel - 2 Nos. Dumper- 12 Nos. Drill- 1 Nos. Dozer - 1 Nos. FE Loader - 1 Nos.	Includes 2 Nos. low capacity (10 T) dumpers deployed for finished ore transportation for stack preparation & 2 Nos. in reserve for mine development
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Bench Height: 6-8 m Bench Width: 8-10 m	Bench Height: 6-8 m Bench Width: 8-10 m	
3m	Total area covered under excavation/pits	26.057 ha	25.926 ha	
3n	Ore to OB ratio for the pit/mine during the year.	1: 0.98	1: 0.62	Ore includes Mn. Ore & Iron Ore Mineral Rejects

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3o	Total area put in use under different heads at the end of year	Area Excavated: 26.057 ha Storage of top soil: 0.300 ha Waste Dump: 25.43 ha	Area Excavated: 25.926 ha Storage of Top Soil : Nil Waste Dump: 26.992 ha
3p	Production of ROM mineral during the last five year period as applicable	Mn. Ore (Tonnes) 2017-18: 100000 2018-19: 100000 2019-20: 100000 2020-21: 98200 2021-22: 122000	Mn. Ore (Tonnes) 2017-18: 66877.225 2018-19: 84923.229 2019-20: 84998 2020-21: 84141 2021-22: 67012

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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.	Separate dumps for top soil, OB, mineral reject	Topsoil generated was used for gardening and plantation purpose

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4b	Location of topsoil, OB and mineral reject dumps	Waste Dump - Proposed New Dump D#4 - 11166N-11341N & 11677E-11927E from 640 mRL to 683 mRL Mineral Reject Dump - Mn. Ore (M#1) - 11828N-11992N & 12219E-12314E and up to 671 mRL Mn. Ore (M#3) - 11348N-11472N & 11748E-11873E and up to 698 mRL Iron Ore (I#3) - 11277N-11629N & 11550E-11706E and up to 700 mRL.	Proposed New Dump D#4 - 11151N-11339N & 11678E-11917E from 640 mRL to 677 mRL Mineral Reject Dump - Mn. Ore (M#1) - 11828N-11991N & 12219E-12314E and up to 669 mRL Mn. Ore (M#3) - 11367N-11470N & 11761E-11859E and up to 698 mRL Iron Ore (I#3) - 11305N-11628N & 11552E-11705E and up to 698 mRL.	
4c	Number of dumps within lease area and outside of lease area	5	5	4 Nos + 1 (partial back filling of Guruda-A Quarry-1)
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Outside UPL	Outside UPL	
4e	Number of active and alive dumps.	3	3	
4f	Number of dead dumps.	1	1	
4g	Number of dumps established.	None	None1	

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4h	Whether Retaining wall or garland drain all along dumps are there.	Yes.	As proposed.	
4i	Length of Retaining wall or garland drain all along dumps	1000 mtr	1005 mtr	
4j	Number of settling ponds	1	1	
4k	Specific comments of inspecting officer on waste dump management			Dumps are properly terraced and protective measures are well in place.

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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.	Not proposed	Nil	
5b	Area under backfilling of mined out area	None	None	
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	375 Cu.m	410 Cu.m	
5d	Total area fully reclaimed and rehabilitated	None	None	
5e	General remarks of inspecting officers on backfilling and reclamation etc.			Top soil generated is used for gardening and plantation.

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Progressive Mine Clousre Plan:

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Sl.No.	Item	Propasals	Actual work	Remarks
6a	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).	Should be submitted by 1st July'2022.	Submitted on 27.06.2022	
6b	Area available for rehabilitation (ha) .	None	None	
6c	afforestation done (ha).	1.890	1.890	Rehabilitation of Dump
6d	No. of saplings planted during the year	4725	7600	
6e	Cumulative no .of plants	4725	7600	
6f	Any other method of rehabilitation	None	None	
6g	Cost incurred on watch and care during the year		Rs 20,00,000	
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling ( Lx B x D	None	None	
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	None	None	
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on backfilled area	None	None	

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6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	None	None
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	None	None
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	4725	7600
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	1.890 ha	1.890 ha
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	None	None

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6p	Compliance of environmental monitoring (core zone and buffer zone)	Core Zone - a) Ambient Air Quality Monitoring (Twice a week) b) Water Quality (Once in a month) c) Noise Survey (Once in a quarter) d) Ground Vibration  Buffer Zone - Quarterly monitoring of Ambient Air and Water Quality.	As proposed
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.		Lessee has carried out plantation over an area of 1.1890 ha with 7600 saplings.

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Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Total - 122000 Tonnes	Total - 67012 Tonnes	ROM (Mn.Ore )
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Manual	Manual	

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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% & < 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%)
7d	Any beneficiation process at mines .	Manual Sorting, sizing and mechanical screening	Manual Sorting, sizing and mechanical screening
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues		

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**Environment:**

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	375 Cu.m	410 Cu.m	
8b	Concurrent use or storage of topsoil	Use of topsoil for plantation	Use of topsoil for plantation	Utilized for plantation over the dump slope.
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate Dumps for Overburden, subgrade and Mineral Rejects	Separate Dumps for Overburden, subgrade and Mineral Rejects maintained.	

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8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	None	None	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Dump Plantation - 1.890 ha (4725 Nos. of Sapling)	Dump Plantation - 1.890 ha (7600 Nos. of Sapling)	
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	1.890 ha (4725 Nos. of Sapling)	1.890 ha (7600 Nos. of Sapling)	
8g	Survival rate	85%	85%	
8h	Water sprinkling on roads to control airborne dust	Mobile water sprinklers.	Haul roads are regularly sprinkled with the help of mobile water sprinklers.	
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area			Lessee has undertaken plantation, water sprinkling of haul roads for better environment management and for aesthetic beauty in and around mines.

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**Compliance of Rule 45:**

Sl.No.	Item	Propasals	Actual work	Remarks
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9a	Status of submission of Monthly and Annual returns	Annual Return to be submitted by 1 July Monthly Return to be submitted by 10 th of the month.	Annual Return for year 2021-22 and monthly returns have been submitted within stipulated time.
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mining Engineer, Mines Manager and Geologist should be appointed.	Mines Manager: Rakesh Kumar Mining Engineer: Md. Sadab Khustar Geologist: Rishikant Maurya
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Area Excavated: 26.057 ha Storage of top soil: 0.300 ha Waste Dump: 25.43 ha	Area Excavated: 25.926 ha Storage of Top Soil : Nil Waste Dump: 26.992
9d	Scrutiny of Annual return on afforestation		No. of Saplings Planted - 7600, Survival Rate - 85%
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)		Mn. Ore - Mn-19.32% 7695.121 Tonnes  Iron Ore - Fe- 49.67% 198979 Tonnes
9f	Scrutiny of Annual return on ROM stock and/or graded ore		Mn. Dioxide - 5.602 Tonnes 46% & Above - 3.920 Tonnes 35% & above but below 46% - 1213.173 Tonnes 25% & above but below 35%- 20130.465 Tonnes Below 25% - 225750.919 Tonnes



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9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Mn. Dioxide - Nil 46% & Above - 18994.007 Tonnes (EMP-Rs. 8237.11/T) 35% & above but below 46% - 19605.180 Tonnes (EMP-Rs. 4937.93/T) 25% & above but below 35%- 20717.692 Tonnes (EMP-Rs. 2562.68/T) Below 25% - 7695.121 Tonnes (EMP-Rs. 871.91/T) Total - 67012. Tonnes (Cost of Production - Rs. 4671.80/T)
9h	Scrutiny of Annual return on fixed assets	Rs. 6,39,98,345/-
9k	Scrutiny of Annual return on mining machineries	Rock Shovel - 2 Nos. Drill(100mm)-1 Dumper- 12 Nos. Back Hoe 1.90 Drill- 1 Nos. Cu.m-2 Dozer - 1 Nos. Dozer-1 FE Loader - 1 Nos. Front End Dumper 25 tonne-10 Loader (1.2 Dumper 10 tonne-3 Cu.m)-1 Explosive Van- 1 Water Tanker (1000 L)-1 Dumper 25 tonne-10 Dumper 10 tonne-3

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**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
MCDR17	Rule 11(1)	02/02/2023			
MCDR17	Rule 12(4)	02/02/2023			

**Date :****(VIKRAM DESHPANDE)**

Indian Bureau of Mines