

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

**MCDR INSPECTION REPORT**

**Bhubaneshwar regional office**

**Mine file No :** ORI/CR/JJP/MCDR-7/BBS

**Mine code :** 11ORI19001

- (i) Name of the Inspecting : **RAM** ) **RAMKISHAN R**  
Officer and ID No.
- (ii) Designation : Sr. Asst. Contrl. Mines
- (iii) Accompanying mine : Shri Awnish Kumar, Mine Manager  
Official with  
Designation
- (iv) Date of Inspection : 10/01/2020
- (v) Prev.inspection date : 07/04/2019

**PART-I : GENERAL INFORMATION**

1. (a) **Mine Name** : **BHIMTANGAR (SUKINDA)**
- (b) **Registration NO.** : **IBM/4376/2011**
- (c) Category : A Mechanised
- (d) Type of Working : Opencast
- (e) Postal address
- State : ORISSA
- District : JAJPUR
- Village : BHIMTANGAR
- Taluka : SUKINDAGARH
- Post office : KALARANGATTA
- Pin Code : 755028
- FAX No. : 06726-268734
- E-mail : chiefoffice@tatasteel.com
- Phone : 06726-268763,268734
- (f) Police Station : Kaliapani
- (g) First opening date : 01/12/1960
- (h) Weekly day of rest : SUN
2. Address for : SUKINDA CHROMITE MINE(BHIMTANAGAR)  
correspondance M/S TISCO LTD, P.O.KALARANGIATTA  
DIST:JAJPUR, ORISSA-755028
3. (a) Lease Number : ORI0241
- (b) Lease area : 406
- (c) Period of lease :
- (d) Date of Expiry : 31/03/2020
4. Mineral worked : PYROXENITE Associated  
CHROMITE Main

## 5. Name and Address of the

Lessee : TATA STEEL LTD.  
 KEONJHAR ORISSA  
 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 : Rajesh Patel  
 M/s Tata Steel Limited  
 Post-Kalarangiatta Dist-  
 Jajpur, Odisha JAJPUR ORISSA  
 Phone: 9238101084  
 FAX :

## Mining Engineer

Name : Sabyasachy Mishra, Full Time  
 Qualification : BE Mining & FCC  
 Appointment/ : 01/03/2016  
 Termination date

## Geologist

Name : Tarun Kumar Chakraborty, Full Time  
 Qualification : MSC App. Geology  
 Appointment/ : 01/02/2016  
 Termination date

## Manager

Name : Awnish Kumar  
 Qualification : B Tech Mining & FCC  
 Appointment/ : 01/01/2018  
 Termination date

6. Date of approval of Mining	:	Modif. approved Mining Scheme	05/07/2007
Plan/Scheme of Mining	:	Mining Scheme rule 12 MCDR1988	02/02/2009
	:	Renewal under rule 24 MCR1960	22/05/2012
	:	Modif. of approved Mining Plan	19/07/2016
	:	MP review under 17(1) MCR 2016	09/11/2017
	:	FMCP under 23C(1)	28/09/2018
	:	MS modif under MCR 1960	14/02/2019
	:	FMCP under 23C(1)	29/04/2019

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

## Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	No such specific proposal.	Nil	
1b	Exploration over lease area for geological axis 1 or 2	No boreholes have been proposed during the year 2018-19.	Nil	G1 level- 213.323 ha, out of which 29.257ha mineralised & 184.066ha non-mineralised. G2 level-98.880ha nonmineralised and G3 level- 93.797ha non mineralised.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Not applicable	Nil	
1d	Balance area to be explored to bring Geological axis in 1 or 2	G1 level- 213.323 ha, out of which 29.257ha mineralised & 184.066ha nonmineralise d. G2 level- 98.880ha nonmineralise d and G3 level- 93.797ha non mineralised as per the modification of review of minig plan approved on 14.02.2019.	G1 level- 213.323 ha, out of which 29.257ha mineralised & 184.066ha non-mineralised. G2 level-98.880ha non mineralised and G3 level- 93.797ha non mineralised.	

1e	Balance reserve as on 01/04/20	Reserves of chromite are 4.075 million tonnes and Remaining Resource of 91.745 million tonnes. The same for Pyroxinite is for 0.221 million tonnes & 9.911 million tonnes as per the modification of review of mining plan approved on 14.02.2019.	due to depletion/addition over the period of time the updated chrome ore reserves as on 01.04.2019 are 3.202 mil.t. and resources are 91.74 mil.t. Pyroxinite reserves are for 0.221 million tonnes & 9.911 million tonnes.
1f	General remarks of inspecting officers on geology, exploration etc		The Sukinda chromite mine is located in southern part of funnel shaped Sukinda valley, which extends from east to west with the open end facing west.

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Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	OB-X quarry during the year 2018-19.	development is carried out in OB-X quarry.	Nil
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	no topsoil generation is envisaged during the year 2018-19. seperate benches in OB and mineral are proposed.	seperate benches in OB and mineral are maintained.	
2c	Stripping ratio or ore to OB ratio	1:3.67 t/cu.m.	1:3.35 t/cu.m.	from opencast mine workings.

2d	Quantity of topsoil generation in m3	Not applicable	Nil	
2e	Quantity of overburden generation in m3	6604402 cu.m.	5318305 cu.m.	
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc		development is carried out by opencast mining method as proposed.	Nil

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#### Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	1 quarry	1 quarry	
3b	Quantity of ROM mineral production proposed	Chromite: 2100000 tonnes, Pyroxenite-110000 tonnes in 2018-19.	Chromite: 1604787 tonnes, Pyroxenite: Nil	
3c	Recovery of sailable/usable mineral from ROM production	1559219 t	1274435 t	
3d	Quantity of mineral reject generation	540781 tonnes in 2018-19.	312397 t	
3e	Grade of mineral rejects generation and threshold value declared.	+10-40% Cr	+10-40% Cr	Nil
3f	Quantity of sub grade mineral generation.	addressed in mineral rejects	Nil	
3g	Grade of sub grade mineral generation	Not applicable	Nil	

3h	Manual / Mechanised method adopted for segregating from ROM	Mechanised and mechanised and manual manual		
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	proposed.	carried out	
3j	Provision of drilling and blasting in mineral benches	drilling and blasting is proposed.	drilling and blassting is carried out.	
3k	Provision of mining machineries in mineral benches	shovel and dumper combination is proposed for excavation and hauling.	shovel and dumper combination is deployed for excavation and hauling.	
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Bench height of 8-10m proposed.	mainatined	However bench width not mainatined. so violation observed and communicated to lessee letter dated 20.01.2020
3m	Total area covered under excavation/pits	172.18 ha	170.11 ha	
3n	Ore to OB ratio for the pit/mine during the year.	1:3.67 t/cu.m.	1:3.35 t/cu.m.	
3o	Total area put in use under different heads at the end of year	406 ha	406 ha	Nil

3p	Production of ROM mineral during the last five year period as applicable	Chromite:- 2014-15: 1743152 tonnes, 2015-16: 1740492 tonnes, 2016-17: 1848095 tonnes, 2017-18: 1800000 tonnes & 2018-19: 2100000 tonnes, Pyroxinite: ,2014-15: Nil, 2015-16: Nil, 2016-17: 949620 tonnes, 2017-18: 93500 tonnes and 2018-19: 110000 tonnes	Chromite:- 2014-15: 275590 tonnes, 2015-16: 1019519 tonnes & 2016-17: 1640004 tonnes, 2017-18: 1550375 tonnes & 2018-19: 1604787 tonnes Pyroxene: 2014-15: Nil, 2015-16: Nil, 2016-17: 11053 tonnes, 2017-18: 7300 tonnes & 2018-19: Nil
3q	General remarks of inspecting officers on method of mining etc.	production is carried out by opencast mining method.	

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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 dumping of OB with backfilling and stacks for Mineral Rejects proposed.	Separate dumping of OB with backfilling and stacks for Mineral Rejects are maintained.	
4b	Location of topsoil, OB and mineral reject dumps	Only Back filling of OB II was proposed for OB disposal.	Back filling of OB II was carried out for OB disposal	
4c	Number of dumps within lease area and outside of lease area	No dumps are being proposed during the year 2018-19	Nil	waste is disposed as backfilling of mined out quarry.

4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Not applicable	Nil
4e	Number of active and alive dumps.	Not applicable	Nil
4f	Number of dead dumps.	Not applicable	Nil
4g	Number of dumps established.	Not applicable	Nil
4h	Whether Retaining wall or garland drain all along dumps are there.	Yes	provided.
4i	Length of Retaining wall or garland drain all along dumps	already exists.	Nil
4j	Number of settling ponds	Already exists.	Nil
4k	Specific comments of inspecting officer on waste dump management		waste generated during the year 2018-19 was backfilled in the mined out pit as proposed.

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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.	part of the mined out area is propsoed for backfilling.	carried out.	
5b	Area under backfilling of mined out area	14.64 ha	14.64 ha	
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Not applicable	Nil	

5d	Total area fully reclaimed and rehabilitated	Not proposed.	Nil
5e	General remarks of inspecting officers on backfilling and reclamation etc.		backfilling in the mined out area is carried out as proposed.

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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).	PMCP report to submitted submitted before 1 st July		
6b	Area available for rehabilitation (ha) .	Not applicable	Nil	
6c	afforestation done (ha).	4.4 ha during the year 2018-19	4.4 ha	with in lease area.
6d	No. of saplings planted during the year	11000 nos	14223 nos	
6e	Cumulative no .of plants		720775 nos	
6f	Any other method of rehabilitation	Not applicable	Nil	
6g	Cost incurred on watch and care during the year		Rs. 53.24 lakhs	
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling ( Lx B x D	14.64 ha	14.64 ha	

6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	14.64 ha	14.64 ha	
6j	Compliance on reclamation and rehabilitation by backfilling (iii) Afforestation on backfilled area	Not applicable	Nil	
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	Not applicable	Not applicable	Nil
6l	Compliance on reclamation and rehabilitation by backfilling (v) any other specific means.	Not applicable	Nil	
6m	Compliance of rehabilitation of waste land within lease (i) afforestation	Not applicable	Nil	
6n	Compliance of rehabilitation of waste land within lease (ii) Area rehabilitation (ha)	Not applicable	Nil	
6o	Compliance of rehabilitation of waste land within lease (iii) Method of rehabilitation	Not applicable	Nil	

6p	Compliance of environmental monitoring (core zone and buffer zone)	Periodical Monitoring as stipulated in Environment Clearance granted by MoEF & CC and Consent to Operate granted by SPCB	Periodical Monitoring as stipulated in Environment Clearance granted by MoEF & CC and Consent to Operate granted by SPCB is carried out.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.		PMCP measures were carried out as proposed.

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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 of mineral is proposed.	carried out.	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	manual and mechanical	manual and mechanical	
7c	Different grade of mineral sorted out at mines.	+10-40% Cr and +40% Cr	+10-40% Cr and +40% Cr	
7d	Any beneficiation process at mines	Yes proposed for mineral rejects.	carried out.	
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues		beneficiation is carried out as proposed.	

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## Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Not applicable	Nil	
8b	Concurrent use or storage of topsoil	Not applicable	Nil	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	separate dumps for waste and mineral rejects is proposed.	carried out.	
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	backfilling of mined out pit is proposed.	carried out.	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Not applicable	Nil	
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	11000 nos	14233 nos	within lease area.
8g	Survival rate		80%	
8h	Water sprinkling on roads to control airborne dust	water sprinkling on haul raods for dust supression is proposed	carried out.	

8i General remarks of inspecting officer on aesthetic beauty in and around mines area

Aesthetic beauty in and around the mine is well maintained.

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Compliance of Rule 45:

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Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	Monthly and annual returns are to be submitted as per rule 45 of MCDR, 2017	submitted.	
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Graduate Mining Engineer 17, Diploma Mining Engineer 7, Geologist 5	Graduate Mining Engineer 17, Diploma Mining Engineer 7, Geologist 5	
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Covered under current (O/C) Workings: 170.110 ha, Used for waste disposal: 41.682 ha, Occupied by plant, buildings, residential, welfare buildings & roads: 87.280 ha, Other Purpose (Mineral Storage): 27.880 ha	Covered under current (O/C) Workings: 170.110 ha, Used for waste disposal: 41.682 ha, Occupied by plant, buildings, residential, welfare buildings & roads: 87.280 ha, Other Purpose (Mineral Storage): 27.880 ha	
9d	Scrutiny of Annual return on afforestation	14233 nos	14233 nos	within lease area

9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	168561 t	168561 t	tailings of COB plant
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM clsoing stock of chromite ore is 125694.319 t.	ROM clsoing stock of chromite ore is 125694.319 t.	
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	production cost Rs. 3417.	production cost Rs. 3417.	
9h	Scrutiny of Annual return on fixed assets	Rs. 823191112	Rs.823191112	
9k	Scrutiny of Annual return on mining machineries	BLAST HOST DRILL 100.000 MM 2, CRANE 30.000 TONNE 1, DOZER 480.000 HP 1, DOZER 360.000 HP 2, DOZER 320.000 HP 7, DOZER 480.000 HP 1, DOZER 360.000 HP 2, DOZER 320.000 HP 7, DOZER 300.000 HP 3, FRONT END LOADER 1.800 CUM 5, etc.,	BLAST HOST DRILL 100.000 MM 2, CRANE 30.000 TONNE 1, DOZER 480.000 HP 1, DOZER 360.000 HP 2, DOZER 320.000 HP 7, DOZER 300.000 HP 3, FRONT END LOADER 1.800 CUM 5, etc.,	

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**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 :**

(RAMKISHAN R)

Indian Bureau of Mines