

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

MCDR INSPECTION REPORT

Bhubaneshwar regional office

Mine file No : ORI/IRON/SNG/MCDR-7/BBS

Mine code : 30ORI13028

- (i) Name of the Inspecting : **K013**) **KEWAL KRISHAN**
Officer and ID No.
- (ii) Designation : Regional Mining Geologist
- (iii) Accompanying mine : A. Samal Mines Manager, R.K Chaturvedi , Geologist
Official with
Designation
- (iv) Date of Inspection : 14/03/2022
- (v) Prev.inspection date : 28/08/2021

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **TANTRA, RAIKELA & BANDHAL**
- (b) **Registration NO.** : **IBM/4355/2011**
- (c) Category : A Mechanised
- (d) Type of Working : Opencast
- (e) Postal address
- State : ORISSA
- District : SUNDARGARH
- Village : TANTRA
- Taluka : BONAI
- Post office : TENSA
- Pin Code : 770042
- FAX No. : 95-6625-236023
- E-mail : trbmine@jindalsteel.net
- Phone : 95-6625-236023,236024
- (f) Police Station : Lahunipara
- (g) First opening date : 17/02/1990
- (h) Weekly day of rest : SUN
2. Address for : T.R.B IRON MINES
correspondance PO-TENSA
DIST-SUNDERGARH
3. (a) Lease Number : ORI0652
- (b) Lease area : 207.78
- (c) Period of lease : 50
- (d) Date of Expiry : 24/05/2035
4. Mineral worked : IRON ORE Main

5. Name and Address of the

Lessee : m/s Jindal Steel and Power Ltd
 TRB Iron Ore Mines At
 P.O.Tensa SUNDARGARH
 ORISSA
 Phone:06625 - 82023, 82024
 FAX :

Owner : Jindal steel & power ltd
 Barbil KEONJHAR ORISSA
 Phone: 06767 30158
 FAX :

Agent : SHRI P K PATRA
 SUNDARGARH ORISSA
 Phone:
 FAX :

Mining Engineer

Name : B D SAHOO, Full Time
 Qualification : BE-MINING AND FCC
 Appointment/ : 17/09/2014
 Termination date

Geologist

Name : R K CHATURVEDI, Full Time
 Qualification : M TECH IN APPLIED GEOLOGY
 Appointment/ : 17/09/2014
 Termination date

Manager

Name : PANCHANAN SINGH
 Qualification : BE-MINING AND FCC
 Appointment/ : 26/12/2016
 Termination date

6. Date of approval of Mining	:	Mining Scheme rule 12 MCDR1988	25/08/2000
Plan/Scheme of Mining	:	Renewal under rule 22 MCR1960	09/10/2003
	:	Modif.of approved Mining Plan	19/12/2007
	:	Mining Scheme rule 12 MCDR1988	22/03/2010
	:	FMCP under 23C(1)	29/07/2010
	:	Modif.approved Mining Scheme	11/08/2010
	:	Modif.approved Mining Scheme	23/04/2012
	:	Mining Scheme rule 12 MCDR1988	27/03/2015
	:	MP modif under MCR 1960	27/03/2015
	:	MP review under 17(1) MCR 2016	18/10/2017
	:	MP modif under 17(3) MCR 2016	05/12/2018
	:	MP review under 17(1) MCR 2016	18/11/2019

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	05 boreholes 2020-21 06 Bhs in the year 2021-22	06 in year 2020-21 & 14 borholes in the year 2021-22	
1b	Exploration over lease area for geological axis 1 or 2	Eleven bore holes have been proposed during the ensuing review period so as to complete the detail exploration of the entire lease area under G1 level	20 nos of boreholes have been drilled against the target to complete the entire area under G1 level of exploration	
1c	Exploration Agencies and Expenditure in lakh rupees during the year		In house drill machine in the year 2020-21 & Geotech Exploration 2021-22 Rs. 21.11 Lakh	In house drill machine in the year 2020-21 & Geotech Exploration 2021-22 Rs. 21.11 Lakh
1d	Balance area to be explored to bring Geological axis in 1 or 2	no such proposal	no such proposal	Entire area has been explored under G1 Level of exploration
1e	Balance reserve as on 01/04/20		6.92 Million tonne.	6.92 Million tonne as on 1/4/2021

1f	General remarks of inspecting officers on geology, exploration etc	Lease area around Tensa-Raikela represents a part of the western limb of the main "Horse Shoe" shaped synclinorium of Pre-Cambrian age. The litho assemblages belonging to the Precambrian Iron Ore formations, comprise of schists, tuffs, phyllites, basic rocks, BHJ, BHQ, shale etc. with potential deposits of Iron. The entire lease area has been explored under G1 level of exploration.
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Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Patch 1 137N-1033N/ 1269W-1950E Patch 2 53N-500N/ 1950E-2504E Patch 3A 279N-561N/ 245E-633E	Patch 1 137N-1033N/ 1269W-1950E Patch 2 53N-500N/ 1950E-2504E Patch 3A 279N-561N/ 245E-633E	Joint mining with PTAL could be started because of statutory clearance.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	seperate benches in top soil,overbuden and minerals	seperate benches in top soil,overbuden and minerals	
2c	Stripping ratio or ore to OB ratio	1:3.525	1:1.12	stripping ratio varies because of irregular nature of deposit.

2d	Quantity of topsoil generation in m3	no such proposal	18 CuM	Incidental top soil encountered during development
2e	Quantity of overburden generation in m3	3262591	2749363(up to Feb-22)	Irregular nature of over burden and less development due to delay in joint mining due to want statutory clearances.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc			The development activites are carried out in three nos of pits. Seperate benches in overbuden and in ore are maintained as per proposal.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	03 nos & joint mining with PTAL	03 Patch - 1 Patch - 2 Patch-3A	Joint mining with PTAL could not be carried out for want of statutory clearances.
3b	Quantity of ROM mineral production proposed	3100798 MT	2458030 MT(till Feb 2022)	The proposed production could not be achieved due to delay in Joint mining because of statutory clearances.
3c	Recovery of sailable/usable mineral from ROM production	90%in case ofore 70% in case of MR	broadly as per the proposal	
3d	Quantity of mineral reject generation	468682 MT	381527MT	mineral reject is generated less becasuse of less production.

3e	Grade of mineral rejects generation and threshold value declared.	45 to 58 % Fe , Threshold value 45% Fe	45 to 58 % Fe , Threshold value 45% Fe	
3f	Quantity of sub grade mineral generation.	468682 MT	381527 MT	sub-grade mineral is generated less because of less production.
3g	Grade of sub grade mineral generation	45 to 58 % Fe ,	45 to 58 % Fe ,	
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanized	Mechanized	
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	no such proposal	no such proposal	
3j	Provision of drilling and blasting in mineral benches	Drilling and blasting	Drilling and blasting	9.9m drill holes with 100mm dia and blasting by using class - 2 and class - 6 explosives. NONEL system of initiation is used.
3k	Provision of mining machineries in mineral benches	The excavation is proposed by using shovel dumper combination	Shovel and dumper combination is deployed as proposed	
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	height of the benches proposed 9 m and , width more than the height up to 12 m	as per proposal . however at some place in patch 1 , benches are found in collapsed position.	Issued violation under rule 11(1) of MCDR 2017
3m	Total area covered under excavation/pits	108.038 Ha	broadly as per the proposal	

3n	Ore to OB ratio for the pit/mine during the year.	1:3.525	1:1.12 (up to Feb-22)	variation of stripping ratio because irregular nature of ore body and less production
3o	Total area put in use under different heads at the end of year	Total area proposed under different head during the plan peroid 180.997 ha	broadly as per proposal	
3p	Production of ROM mineral during the last five year period as applicable	2017-18 - 3100917 MT 2018-19 - 3100337 MT 2019-20 - 3100644 MT 2020-21 - 3100863 MT 2021-22 - 3100798 MT	2017-18 - 2578777 MT 2018-19 - 2765369 MT 2019-20 - 2575673 MT 2020-21 - 2506870 MT 2021-22 -- 2458030MT (till Feb 22)	
3q	General remarks of inspecting officers on method of mining etc.		The menthod of mining is A category and is fully mechanised .The ROM production is carried out by opencast mining methods.	The menthod of mining is A category and is fully mechanised .The ROM production is carried out by opencast mining methods.

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	seperate dumping for oberbuden and mineral reject /subgrade envisaged	seperate dumping for oberbuden and mineral reject /subgrade envisaged	
4b	Location of topsoil, OB and mineral reject dumps	OB dump 50N-508N/ 2131E-2681E	as per proposal	
4c	Number of dumps within lease area and outside of lease area	within in lease area 01 outside lease area nil	within in lease area 01 outside lease area nil	

4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	outside the UPL	outside the UPL	
4e	Number of active and alive dumps.	01	01	
4f	Number of dead dumps.	no such proposal	no such proposal	
4g	Number of dumps established.			
4h	Whether Retaining wall or garland drain all along dumps are there.	yes , proposed during the year	as per proposal	
4i	Length of Retaining wall or garland drain all along dumps	245x1.5x1	as per proposal	
4j	Number of settling ponds	no such proposal	no such proposal	
4k	Specific comments of inspecting officer on waste dump management			Retaining walls, garland drains and settling tanks etc. are already built around existing dumps and are maintained. however during the plan peroid party has proposed to construct the retaining wall and garland drain of about 1098 m length and Afforestation of 15000 no

Solid Waste Management - Backfilling:

Sl.No.	Item	Propasals	Actual work	Remarks
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5a	Status of part or full extraction of mineral from mined out area before starting backfilling.	Full extraction of mineral from mined out area before starting backfilling	Full extraction of mineral from mined out area before starting backfilling	
5b	Area under backfilling of mined out area	1.924 ha	broadly as per proposal	
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	no such proposal	18 cum top soil generated during mining and same is utilized for plantation	
5d	Total area fully reclaimed and rehabilitated	1.924ha during the year	brodly as per proposal	up 2019-20 Reclamation and Rehabilitation of 15.07 ha & in 2020-21 1.52 ha
5e	General remarks of inspecting officers on backfilling and reclamation etc.			The backfilling and reclamation are broadly as per the proposal

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).	sumbitted before Ist july	submitted	Annual Report on PMCP for 2020-21 has been submitted on 29.04.2021
6b	Area available for rehabilitation (ha) .	2.0 ha	broadly as per proposal	rehabilitated by plantation during the year 2021-21 .
6c	afforestation done (ha).	2 ha	as per proposal	over the dumps.

6d	No. of saplings planted during the year	1600 nos on dumps 1600 on backfilled area	broadly as per proposal
6e	Cumulative no .of plants	not specified	1) 33273 nos in Dump Management 2) 72903 nos in Backfilled Area 3) 210245 nos in Greenbelt, Lease Boundary (Safety Zone), Colony
6f	Any other method of rehabilitation	no such proposal	no such proposal
6g	Cost incurred on watch and care during the year	1.2 lakh	3.14 lakh
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	back filling of exhausted quarry ,	back filling of exhausted quarry
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	1.924 ha	broadly as per proposal
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on on backfilled area	1600 nos	as per proposal
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	no such proposal	no such proposal

6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	no such proposal	no such proposal	
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	no such proposal	no such proposal	
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	no such proposal	no such proposal	
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	no such proposal	no such proposal	
6p	Compliance of environmental monitoring (core zone and buffer zone)	periodical monitoring of environmental parameters are proposed	as per proposal	
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.			The PMCP work is broadly as per proposal. The aesthetic beauty has increased due to plantation carried out by party.

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	grade-wise sorting	grade wise sorting is being practiced	

7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	mechanical	as per the proposal	
7c	Different grade of mineral sorted out at mines.	45 to 58% Fe & > 58% Fe	as per proposal	
7d	Any beneficiation process at mines .	no such proposal	no such proposal	
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues			grade-wise sorting of mineral is carried out . No beneficiation is practced.

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	no such proposal	no such proposal	
8b	Concurrent use or storage of topsoil	no such proposal	no such proposal	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	provision for seperate dumping of overbuden, waste rock, subgrade/ reject is envisaged	provision for seperate dumping of overbuden, waste rock, subgrade/ reject is envisaged	
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use		4728826.34 MT of waste used in back filling.	4728826.34 MT of waste used in back filling.

8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	by backfilling of mined out land	by backfilling of mined out land	
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	1) 1600 nos on waste dump management 2) 1600 in Backfilled Area 3) 3000 on Lease boundar(saftey zone)y, Office Premises		
8g	Survival rate		83%	83%
8h	Water sprinkling on roads to control airborne dust	water sprinkling to control dust	water sprinkling to control dust	
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area			aesthetic beauty in and around the mine is good because of planation carriedout and by regular sprinkling of water on mine road to control the dust.

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
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- 9a Status of submission of Monthly and Annual returns as per MCDR 2017, the monthly return are to be submitted before 10th day of every month in respect of the preceding month and AR shall be submitted before the 1st day of July each year for the preceding financial year monthly return submitted but the AR are not for the year 2021-22 are not due for submission as on date of inspection,
- 9b Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager The annual return for the year 2021-22 was not due for submission as on date of inspection, The scrutiny of annual return for the year 2021-22 during the inspection doesnot arise.
- 9c Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc. The annual return for the year 2021-22 was not due for submission as on date of inspection, The scrutiny of annual return for the year 2021-22 during the inspection doesnot arise.
- 9d Scrutiny of Annual return on afforestation The annual return for the year 2021-22 was not due for submission as on date of inspection, The scrutiny of annual return for the year 2021-22 during the inspection doesnot arise.

- 9e Scrutiny of Annual return on mineral reject generation (Grade and quantity) The annual return for the year 2021-22 was not due for submission as on date of inspection, The scrutiny of annual return for the year 2021-22 during the inspection doesnot arise.
- 9f Scrutiny of Annual return on ROM stock and/or graded ore The annual return for the year 2021-22 was not due for submission as on date of inspection, The scrutiny of annual return for the year 2021-22 during the inspection doesnot arise.
- 9g Scrutiny of Annual return on sale value, Ex. Mine price and production cost The annual return for the year 2021-22 was not due for submission as on date of inspection, The scrutiny of annual return for the year 2021-22 during the inspection doesnot arise.
- 9h Scrutiny of Annual return on fixed assets The annual return for the year 2021-22 was not due for submission as on date of inspection, The scrutiny of annual return for the year 2021-22 during the inspection doesnot arise.
- 9k Scrutiny of Annual return on mining machineries The annual return for the year 2021-22 was not due for submission as on date of inspection, The scrutiny of annual return for the year 2021-22 during the inspection doesnot arise.
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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

Date :

(KEWAL KRISHAN)

Indian Bureau of Mines