

**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 : **U11**) **DAYANAND UPADHYAY**
Officer and ID No.
- (ii) Designation : Sr. Asst. Contrl. Mines
- (iii) Accompanying mine : Shri B.D.Sahoo, Mines Manager
Official with
Designation
- (iv) Date of Inspection : 28/08/2021
- (v) Prev.inspection date : 07/10/2020

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 nos. of bore holes in 2020-21.	06 nos. of bore holes drilled in 2020-21.	Exploration is as per proposal.
1b	Exploration over lease area for geological axis 1 or 2	G1 level.	06 nos. of bore holes drilled in 2020-21.	06 nos. of bore holes drilled in 2020-21.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Not specified.	Proposed bore holes are drilled by in house drilling machine.	Proposed bore holes are drilled by in house drilling machine.
1d	Balance area to be explored to bring Geological axis in 1 or 2	19.781 ha G2 area to G1 level during plan period.	06 nos. of bore holes drilled in 2020-21 in 19.781 ha proposed area under G1 level.	06 nos. of bore holes drilled in 2020-21 in 19.781 ha proposed area under G1 level.
1e	Balance reserve as on 01/04/20	As per Review of mining plan approved on 18/11/2019, Reserve: 10.891million tones and resources: 6.956 million tones	Balace reserve as on 01/04/2021: Reserve: 6.927 million tones and resources: 6.956 million tones.	Balace reserve as on 01/04/2021: Reserve: 6.927 million tones and resources: 6.956 million tones.
1f	General remarks of inspecting officers on geology, exploration etc	05 nos. of bore holes proposed in 2020-21.	06 nos. of bore holes drilled in 2020-21.	06 nos. of bore holes drilled in 2020-21.

Development :

Sl.No.	Item	Proposals	Actual work	Remarks
--------	------	-----------	-------------	---------

2a	Location of development w.r.t.lease area	Patch - 1 Insitu: 137N-1033N/ 1269W-1950E, Patch - 2 Insitu & Float: 53N-500N/ 1950E-2504E, Patch - 3A: 279N-561N/ 245E-633E.	Patch - 1 Insitu: 137N-1033N/ 1269W-1950E, Patch - 2 Insitu & Float: 53N-500N/ 1950E-2504E, Patch - 3A: 279N-561N/ 245E-633E.	Development is as per proposal.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Separate benches in OB and ore with 9m height, top soil bench- nil.	Separate benches in OB and ore of 9m height have been maintained.	Separate benches in OB and ore of 9m height have been maintained.
2c	Stripping ratio or ore to OB ratio	1 : 3.541	1:1.08	Average stripping ratio varies due to irregular nature of ore deposit.
2d	Quantity of topsoil generation in m3	Not proposed.	About 17 cu. m of top soil generated during mining which is being utilised in plantation.	About 17 cu. m of top soil generated during mining which is being utilised in plantation.
2e	Quantity of overburden generation in m3	3353992 cu.m	890975.24 cu.m	OB generated in 2020-21, 890975.24 cu.m.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	Development proposed in 03 nos. of quarry.	Development is carried out in 03 nos. of quarry as per proposal.	Development is carried out in 03 nos. of quarry as per proposal.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Proposed 03 nos. of quarry.	03 nos. of quarry.	Production carried out as per proposal.

3b	Quantity of ROM mineral production proposed	3100863T	2506870T	ROM production is within approved proposal.
3c	Recovery of sailable/usable mineral from ROM production	2378618T	1528184T	ROM production is within approved proposal.
3d	Quantity of mineral reject generation	722245T	978686T	Mineral reject blended with high grade to make it saleable/usable.
3e	Grade of mineral rejects generation and threshold value declared.	45% Fe-58%Fe.	45% Fe-58%Fe.	Mineral reject blended with high grade to make it saleable/usable.
3f	Quantity of sub grade mineral generation.	722245T	978686T	Mineral reject blended with high grade to make it saleable/usable.
3g	Grade of sub grade mineral generation	45% Fe-58%Fe.	45% Fe-58%Fe.	Mineral reject blended with high grade to make it saleable/usable.
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanised	Mechanised	Mechanised
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	Not proposed.	Dry crushing and screening is being carried out at mines site.	Dry crushing and screening is being carried out at mines site.
3j	Provision of drilling and blasting in mineral benches	Controlled blasting with 'V' pattern firing.	Controlled blasting with 'V' pattern firing is in practice .	Controlled blasting with 'V' pattern firing is in practice .
3k	Provision of mining machineries in mineral benches	Excavator and dumper combination.	Excavator and dumper combination.	Excavator, Loader and Dumper are equipped to winning out the mineral.

3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Bench height- 9m	Bench height is suitably matched with the excavator	Bench height is suitably matched with the excavator
3m	Total area covered under excavation/pits	108.038 ha proposed during approved plan period.	About 107.968 ha area has been covered under excavation/ pits.	About 107.968 ha area has been covered under excavation/ pits.
3n	Ore to OB ratio for the pit/mine during the year.	1 : 3.541	1:1.08	Average stripping ratio varies due to irregular nature of ore deposit.
3o	Total area put in use under different heads at the end of year	Total area proposed under different heads during approved plan period is 180.997ha.	Total area covered under different heads is 180.997ha.	Total area covered under different heads is 180.997ha.
3p	Production of ROM mineral during the last five year period as applicable	2016-17: 3.1 mil.t. 2017-18: 3.1 mil.t 2018-19: 3.1 mil.t 2019-20: 3.1 mil.t 2020-21: 3.1 mil.t	2016-17: 2.72 mil.t. 2017-18: 2.57 mil.t 2018-19: 2.76 mil.t 2019-20: 2.57 mil.t 2020-21: 2.50 mil.t	ROM production is within approved proposal.
3q	General remarks of inspecting officers on method of mining etc.	3 nos. of quarry/pits	Production is carried out from 3 nos. of quarry/pits as proposed.	Production is carried out from 3 nos. of quarry/pits as proposed.

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Backfilling of OB and mineral reject dump are proposed.	Backfilling of OB is carried out. Mineral reject is maintained.	Backfilling of OB is carried out. Mineral reject is maintained.

4b	Location of topsoil, OB and mineral reject dumps	Backfilling of OB in exhausted Patch-2. Mineral reject dump:1019 N/1128 N to 1452 E to 1627 E.	Backfilling of OB in exhausted Patch-2 is carried out. Mineral reject dump:1019 N/1128 N to 1452 E to 1627 E (towards north of Patch - 1)	Backfilling of OB in exhausted Patch-2 is carried out. . Mineral reject dump:1019 N/1128 N to 1452 E to 1627 E (towards north of Patch - 1)
4c	Number of dumps within lease area and outside of lease area	Backfilling of OB proposed.	Backfilling of OB in exhausted Patch-2 is carried out.	Backfilling of OB in exhausted Patch-2 is carried out.
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Backfilling of OB proposed.	Backfilling of OB in exhausted Patch-2 is carried out.	Backfilling of OB proposed.
4e	Number of active and alive dumps.	Backfilling of OB proposed.	Backfilling of OB in exhausted Patch-2 is carried out.	Backfilling of OB in exhausted Patch-2 is carried out.
4f	Number of dead dumps.	Not proposed.	Nil	Nil
4g	Number of dumps established.	Not proposed.	Nil	Nil
4h	Whether Retaining wall or garland drain all along dumps are there.	Yes	Retaining wall and Garland Drain are made.	Retaining wall and Garland Drain are made.
4i	Length of Retaining wall or garland drain all along dumps	150m Retaining wall and Garland Drain.	Retaining wall and Garland Drain are made as per proposal.	Retaining wall and Garland Drain are made as per proposal.
4j	Number of settling ponds	01 on of Settling Tank.	01 on of Settling Tank.	01 on of Settling Tank.
4k	Specific comments of inspecting officer on waste dump management	Backfilling of OB proposed.	Backfilling of OB in exhausted Patch-2 is carried out.	Backfilling of OB in exhausted Patch-2 is carried out.

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.	Backfilling of exhausted quarry patch-2.	Backfilling of exhausted quarry patch-2 is carried out.	Backfilling of exhausted quarry patch-2 is carried out.
5b	Area under backfilling of mined out area	Backfilling of 3.454 ha of exhausted quarry patch-2	Backfilling of 3.454 ha exhausted quarry patch-2 is carried out.	Backfilling of 3.454 ha exhausted quarry patch-2 is carried out.
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Not proposed.	About 17 cu. m of top soil generated during mining which is being utilised in plantation.	About 17 cu. m of top soil generated during mining which is being utilised in plantation.
5d	Total area fully reclaimed and rehabilitated	Backfilling of 3.454 ha exhausted quarry patch-2	Backfilling of 3.454 ha exhausted quarry patch-2 is carried out.	Backfilling of 3.454 ha exhausted quarry patch-2 is carried out.
5e	General remarks of inspecting officers on backfilling and reclamation etc.	Backfilling of 3.454 ha exhausted quarry patch-2	Backfilling of 3.454 ha exhausted quarry patch-2 is carried out.	Backfilling of 3.454 ha exhausted quarry patch-2 is carried out.

Progressive Mine Closure Plan:

Sl.No.	Item	Proposals	Actual work	Remarks
6a	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).	Annual report on PMCP to be submitted before 1 st July.	Annual return on PMCP has been submitted.	Annual return on PMCP has been submitted.
6b	Area available for rehabilitation (ha) .	1.52 ha backfill area by 1600 nos. of plantation.	1.52 ha backfill area by 1600 nos. of plantation.	1.52 ha backfill area by 1600 nos. of plantation.
6c	afforestation done (ha).	3200 nos. of plantation on dump and backfilled area.	Total 20582 nos. of saplings planted during the year.	Total 20582 nos. of saplings planted during the year.

6e	Cumulative no .of plants	Not specified.	Cumulative nos. of saplings planted in the lease area is about 96180 nos..	Cumulative nos. of saplings planted in the lease area is about 96180 nos..
6f	Any other method of rehabilitation	1.52 ha backfill area by 1600 nos. of plantation.	1.52 ha backfill area rehabilitated by 1600 nos. of plantation.	1.52 ha backfill area rehabilitated by 1600 nos. of plantation.
6g	Cost incurred on watch and care during the year	Not specified.	Around Rs 2.47 lakh cost incurred on watch and care.	Around Rs 2.47 lakh cost incurred on watch and care.
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	Backfilling of 3.454 ha exhausted quarry patch-2	Backfilling of 3.454 ha exhausted quarry patch-2 is carried out.	Backfilling of 3.454 ha exhausted quarry patch-2 is carried out.
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on backfilled area	Backfilling of 3.454 ha exhausted quarry patch-2	Backfilling of 3.454 ha exhausted quarry patch-2 is carried out.	Backfilling of 3.454 ha exhausted quarry patch-2 is carried out.
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	Backfilling of 3.454 ha exhausted quarry patch-2	Backfilling of 3.454 ha exhausted quarry patch-2 is carried out.	Backfilling of 3.454 ha exhausted quarry patch-2 is carried out.
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	Backfilling of 3.454 ha exhausted quarry patch-2	Backfilling of 3.454 ha exhausted quarry patch-2 is carried out.	Backfilling of 3.454 ha exhausted quarry patch-2 is carried out.
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	Not proposed.	Safety zone area has been rehabilitated by plantation.	Safety zone area has been rehabilitated by plantation.

6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	Not proposed.	Safety zone area has been rehabilitated by plantation.	Safety zone area has been rehabilitated by plantation.
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	Not proposed.	Safety zone area has been rehabilitated by plantation.	Safety zone area has been rehabilitated by plantation.
6p	Compliance of environmental monitoring (core zone and buffer zone)	Quarterly monitoring	Quarterly monitoring of air, water and noise level are being carried out.	Quarterly monitoring of air, water and noise level are being carried out.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	Rehabilitation of 1.52 ha backfill area by 1600 nos. of plantation.	Rehabilitation of 1.52 ha backfill area by 1600 nos. of plantation has been carried out.	Rehabilitation of 1.52 ha backfill area by 1600 nos. of plantation has been carried out.

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Gradewise sorting.	Gradewise sorting is being practiced.	Gradewise sorting is being practiced.
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanised	Mechanised	Mechanised
7c	Different grade of mineral sorted out at mines.	45% to 58% Fe and +58% Fe.	45% to 58% Fe and +58% Fe.	45% to 58% Fe and +58% Fe.
7d	Any beneficiation process at mines .	Not proposed.	Dry crushing and screening Of ROM is being practiced.	Dry crushing and screening Of ROM is being practiced.

7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	Gradewise sorting	Gradewise sorting is being practiced. Dry crushing and screening Of ROM is being practiced.	Gradewise sorting is being practiced. Dry crushing and screening Of ROM is being practiced.
----	--	-------------------	---	---

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Notproposed.	About 17 cu. m of top soil generated during mining which is being utilised in plantation.	About 17 cu. m of top soil generated during mining which is being utilised in plantation.
8b	Concurrent use or storage of topsoil	Notproposed.	About 17 cu. m of top soil generated during mining which is being utilised in plantation.	About 17 cu. m of top soil generated during mining which is being utilised in plantation.
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Backfilling of OB proposed.	Backfilling of OB in exhausted Patch-2 is carried out. Mineral reject is stacked at proposed location.	Backfilling of OB in exhausted Patch-2 is carried out.
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Backfilling of OB proposed.	Backfilling of OB in exhausted Patch-2 is carried out. Mineral reject is stacked at proposed location.	Backfilling of OB in exhausted Patch-2 is carried out. Mineral reject is stacked at proposed location.
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Rehabilitation of 1.52 ha backfill area by 1600 nos. of plantation.	Rehabilitation of 1.52 ha backfill area by 1600 nos. of plantation is carried out.	Rehabilitation of 1.52 ha backfill area by 1600 nos. of plantation is carried out.

8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	3200 nos. of plantation on dump and backfilled area.	Total 20582 nos. of saplings planted during the year.	Total 20582 nos. of saplings planted during the year.
8g	Survival rate	Not specified.	As reported survival rate is 81%.	As reported survival rate is 81%.
8h	Water sprinkling on roads to control airborne dust	water sprinkler	water sprinkler are used to control air borne dust.	water sprinkler are used to control air borne dust.
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	3200 nos. of plantation on dump and backfilled area.	Total 20582 nos. of saplings planted during the year. Aesthetic beauty in and around mined area is maintained by plantation	Aesthetic beauty in and around mined area is maintained by plantation

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	Monthly & Annual returns are being regularly submitted by lessee.	Monthly & Annual returns are being regularly submitted by lessee.	Monthly & Annual returns are being regularly submitted by lessee.
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	The employment status of mining engineer, geologist & mine manager have been furnished in the annual return	Mining engineer, geologist & mine managers were employed in the mine.	Mining engineer, geologist & mine managers were employed in the mine.

9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Area covered under different heads are Pit-91.379 ha, waste dump-29.233 ha, Plant, residential & building, roads-26.204ha & others - 43.707 ha. etc	Area covered under different heads are Pit-91.379 ha, waste dump-29.233 ha, Plant, residential & building, roads-26.204ha & others -43.707 ha. etc	Area covered under different heads are Pit-91.379 ha, waste dump-29.233 ha, Plant, residential & building, roads-26.204ha & others -43.707 ha. etc
9d	Scrutiny of Annual return on afforestation	20582 nos. of saplings.	20582 nos. of saplings.	20582 nos. of saplings.
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	978686T, Grade 45% Fe to 58% Fe	978686T, Grade 45% Fe to 58% Fe	978686T, Grade 45% Fe to 58% Fe
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM Closing stock: 40920.0T	ROM Closing stock: 40920.0T	ROM Closing stock: 40920.0T
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Cost of production in Rs 1972.16	Cost of production in Rs 1972.16	Cost of production in Rs 1972.16
9h	Scrutiny of Annual return on fixed assets	Value of Fixed Assets in Rs 489847251	Value of Fixed Assets in Rs 489847251	Value of Fixed Assets in Rs 489847251
9k	Scrutiny of Annual return on mining machineries	SHOVEL-1, BACK HOE-12, FRONT END LOADER-6, DUMPER-39, ROCK DRILL-2, DOZER-2, CRUSHER-1 etc.	SHOVEL-1, BACK HOE-12, FRONT END LOADER-6, DUMPER-39, ROCK DRILL-2, DOZER-2, CRUSHER-1 etc.	SHOVEL-1, BACK HOE-12, FRONT END LOADER-6, DUMPER-39, ROCK DRILL-2, DOZER-2, CRUSHER-1 etc.

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)	10/09/2021			

Date :

(DAYANAND UPADHYAY)

Indian Bureau of Mines