

MCDR-MiFLOFE/25/2022-BBS-IBM_RO_BBS
INDIAN BUREAU OF MINES
MINERALS DEVELOPMENT AND REGULATION DIVISION

I/10858/2023

MCDR INSPECTION REPORT

Bhubaneshwar regional office

Mine file No : ORI/IRON/SNG/MCDR-21/BBS

Mine code : 30ORI13053

- (i) Name of the Inspecting : **VPD**) **VIKRAM DESHPANDE**
Officer and ID No.
- (ii) Designation : Assistant Controller Mine
- (iii) Accompanying mine : S/Shri P.C. Barua, Mines Manager, R.P. Mondal, AGM(Ge
Official with
Designation
- (iv) Date of Inspection : 19/05/2023
- (v) Prev.inspection date : 12/04/2022

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **TALDIH(1173.484 HA)**
- (b) **Registration NO.** : **IBM/5662/2011**
- (c) **Category** : **A Fully Mechanised**
- (d) **Type of Working** : **Opencast**
- (e) **Postal address**
- State : **ORISSA**
- District : **SUNDARGARH**
- Village : **Tensa**
- Taluka : **Koira**
- Post office : **Lahunipara**
- Pin Code : **770042**
- FAX No. : **06625-236031**
- E-mail : **rsp.director@sail.in**
- Phone : **06625-236026**
- (f) **Police Station** : **Lahunipara**
- (g) **First opening date** :
- (h) **Weekly day of rest** : **SUN**
2. **Address for** : **TALDIH IRON ORE MINE, M/S SAIL**
correspondance : **SUNDERGARH DISTRICT**
: **ORISSA**
3. (a) **Lease Number** :
- (b) **Lease area** : **1173.484 Ha.**
- (c) **Period of lease** : **06.01.2010 to 05.01.2030**
- (d) **Date of Expiry** :
4. **Mineral worked** : **IRON ORE** Main

I/10858/2023

5. Name and Address of the

Lessee : M/s Steel Authority of India Ltd (SAIL)
Ispat Bhwan, Lodhi Road New
Delhi DELHI DELHI
Phone:011-24367481-86
FAX :011-24367015/22467458

Owner : Atanu Bhowmick
Rourkela Steel Plant
Rourkela SUNDARGARH ORISSA
Phone:
FAX :

Agent : Tilak Patnaik
At & Po Taldih PO: Koira
District: Sundargarh
SUNDARGARH ORISSA
Phone:
FAX :

Mining Engineer

Name : SHRI S K PARIDA, Full Time
Qualification : DIPLOMA IN MINING ENGG
Appointment/ : 04/07/2016
Termination date

Geologist

Name : SHRI MANOJ KUMAR MAJHI, Full Time
Qualification : MSC TEC (APPLIED GEOLOGY)
Appointment/ : 29/03/2021
Termination date

Manager

Name : SHRI P C BARUA
Qualification : B TECH MINING
Appointment/ : 28/03/2016
Termination date

6. Date of approval of Mining
Plan/Scheme of Mining

: (i) Review of Mining Plan 2020-21 to 2024-25:
RMP/A/16-ORI/BHU/2019-20 08.11.2019.
(ii) Modification of Review of Mining Plan 2020-21 to 2024-25:
MRMP/A/48-ORI/BHU/2020-21 03.02.2021

I/10858/2023

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	2021-22: 25 nos	2022-23:25 nos.	Backlog continued in 2022-23.
1b	Exploration over lease area for geological axis 1 or 2	G2 level.	G2 level.	All the boreholes are drilled in G2 level in 2022-23
1c	Exploration Agencies and Expenditure in lakh rupees during the year	M/s. Gemcokati Expl. Pvt.Ltd. Total budget is Rs. 1586.41 Lakh (for entire Lease)	M/s. Gemcokati Expl. Pvt.Ltd. The drilling is completed and post drill work under progress.	
1d	Balance area to be explored to bring Geological axis in 1 or 2	745.008 ha.	745.008 ha.	Mineralized zone explored in G1 level and the rest area explored in G2 level.
1e	Balance reserve as on 01/04/20	As on 31.10.2020 111: 250.178 121: 78.084 211: 39.542 221: 19.520 Total: 387.324	As on 01.04.2023 111: 247.209 121: 78.036 211: 39.542 221: 19.520 Total: 384.307	Reserve re-calculated after deduction of excavation for the year 2022-23.

I/10858/2023

1f	General remarks of inspecting officers on geology, exploration etc	M.L area exhibits 18 km long north-south trending ridge like hilly terrain. Banded Iron Formation is the host rock of the Iron ore deposits. Iron ore deposit strikes from N60°E - S60°W to N-S & N20°W - S20°E to E-W and dips 300 to 800 in western part and 100 to 500 in eastern part of the M.L area. The Mineralized zone has been explored in G1 level and the rest area explored in G2 level.
----	--	---

Development :

Sl.No.	Item	Proposals	Actual work	Remarks
2a	Location of development w.r.t.lease area	A Block: 2422900N to 2423350N 309400E to 309750E C Block: 2424000N to 2424500N 310000E to 310300E	A Block: 2423010N to 2423275N 309480E to 309670E C Block: 2424100N to 2424450N 310100E to 310250E	In block A the excavation proposed during year 2022-23 was confined to only one bench as lateral extension was not possible due to delay in tree felling.

I/10858/2023

2b	Separate benches in topsoil, overburden and minerals (Rule 15)	A Block: Topsoil- 1 bench Overburden- 5 benches Mineral- 5 benches C Block: Topsoil- no benches Overburden- 2 benches Mineral- 2 benches	A Block: Topsoil- 1 bench Overburden-5 benches Mineral- 5 benches C Block: Topsoil- no benches Overburden-2 benches Mineral- 2 benches	Separate benches in OB and mineral maintained.
2c	Stripping ratio or ore to OB ratio	1:0.063	1:0.335	More intercalated waste encountered.
2d	Quantity of topsoil generation in m3	8000	68.65	Less quantity found in the area.
2e	Quantity of overburden generation in m3	187450	403952	More intercalated waste encountered.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc			In all there are 06 pits within the Amalgamated lease out of which Mining in Taldih Mine is confined to two pit viz. A and C Blocks. Benches have height of 6m and width of 10m. In block A the excavation proposed during year 2022-23 was confined to only one bench as lateral extension was not possible due to delay in tree felling.

Exploitation:

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

I/10858/2023

3a	Number of pit proposed for production	2 (Block-A & C)	2 (Block-A & C)	As per proposal.
3b	Quantity of ROM mineral production proposed	2992684 T.	1206100 T.	Less production due to Less EC.
3c	Recovery of sailable/usable mineral from ROM production	80.27 %	100 %	
3d	Quantity of mineral reject generation	210880 M3	73580 M3	All generated mineral reject blended.
3e	Grade of mineral rejects generation and threshold value declared.	Grade: Fe >45 to <57% Threshold: Fe 45%	Grade: Fe >45 to <57% Threshold: Fe 45%	Grade of mineral reject generation and threshold value as per proposal.
3f	Quantity of sub grade mineral generation.	210880 M3	73580 M3	All generated sub-grade mineral blended.
3g	Grade of sub grade mineral generation	Grade: Fe >45 to <57% Threshold: Fe 45%	Grade: Fe >45 to <57% Threshold: Fe 45%	Grade of mineral reject generation and threshold value as per proposal.
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanized	Mechanized	As per proposal
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	Yes	Fe varying from 45 to 57 %	Screening of subgrade materials carried out in departmental laboratory. The +10mm lump recovery varying between 30 to 40% with a quality of 52 to 55% Fe.
3j	Provision of drilling and blasting in mineral benches	Yes, Provision of drilling & blasting in mineral benches.	Blast hole diameter: 100mm Blasting using ANFO and slurry explosives with NONEL. Burden: 2.5m Spacing: 3.5m	As per proposal

I/10858/2023

3k	Provision of mining machineries in mineral benches	Yes, Provision made for mining machineries in mineral benches	Excavator Bucket Capacity: 2.5m3 Dumper Capacity: 35T	As per proposal
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Yes, 6 m Bench Height is proposed	6 m Bench Height is maintained	As per proposal.
3m	Total area covered under excavation/pits	26.920 Ha.	24.162 Ha.	
3n	Ore to OB ratio for the pit/mine during the year.	1:0.063	1:0.335	
3o	Total area put in use under different heads at the end of year	Area under Excavation: 26.920 ha. Overburden Dump: 9.000 ha. Mineral storage: 4.0 ha. Others: 18.25 ha. Total area: 58.170 ha.	Area under Excavation: 24.162 ha. Overburden Dump: 8.387 ha. Mineral storage: 4.0 ha. Others: 18.25 ha. Total area: 54.799 ha.	
3p	Production of ROM mineral during the last five year period as applicable	Year- 2018-19- 1.89 MT Year- 2019-20- 2.05 MT Year- 2020-21- 1.35 MT Year- 2021-22- 2.05 MT Year-2022-23- 2.99 MT	Year- 2018-19-0.33 MT Year- 2019-20-1.16 MT Year- 2020-21- 1.24MT Year- 2021-22- 1.25MT Year-2022-23- 1.21MT	Less production due to delay in hand over of the area from forest department, delay in infrastructure development and quality of the top benches and EC restriction.
3q	General remarks of inspecting officers on method of mining etc.			The mining method adopted is opencast method by shovel-dumper combination and is same as proposed.

I/10858/2023

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Yes, in Mineral Rejects and Waste.	Dumping of mineral reject in TSD- 1 and dumping of waste in TWD- 2	Dumping in TWD-2 started in 2020-21
4b	Location of topsoil, OB and mineral reject dumps	TWD-2 In 'C' Block 2424131N to 2424730N 310542E to 311070E TSD-1 In 'A' Block 2423150N to 2423350N 309730E to 309930E	TWD-2 In 'C' Block 2424131N to 2424730N 310542E to 311070E TSD-1 In 'A' Block 2423150N to 2423350N 309730E to 309930E	Dumping in TWD-2 started in 2020-21.
4c	Number of dumps within lease area and outside of lease area	Waste Dump: 1 no. Mineral Reject Dump:1 no.	Waste Dump: 1 Mineral Reject Dump:1	As per proposal. All waste dump and mineral reject dumps are within Lease area.
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	TSD-1 within ultimate pit limit TWD-2 outside ultimate pit limit	TSD-1 within ultimate pit limit TWD-2 outside ultimate pit limit	TSD-1 is temporary dump.
4e	Number of active and alive dumps.	Waste Dump: 1 no. Mineral reject dump: 1 no.	Waste Dump: 1 no. Mineral reject dump: 1	As per proposal
4f	Number of dead dumps.	No proposal	None	
4g	Number of dumps established.	No Proposal	None	
4h	Whether Retaining wall or garland drain all along dumps are there.	Yes, proposed	Yes, Partially. On the North side of TWD-2 no protective measures observed.	
4i	Length of Retaining wall or garland drain all along dumps	Retaining Wall: 360m Garland Darin: 380m	Retaining Wall: 485.00m Garland Darin: 485.00m	

I/10858/2023

4j	Number of settling ponds	02	02	
4k	Specific comments of inspecting officer on waste dump management			The dump TWD-2 is not secured properly nor terracing has been done for which violation of 37(2) and 37(5) of MCDR 2017 has been pointed out to the lessee vide letter dated 30/05/2023.

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.	No Proposal	Nil	Taldih mine has started in 2016-17, no pit exhausted completely.
5b	Area under backfilling of mined out area	No Proposal	Nil	Taldih mine has started in 2016-17, no pit exhausted completely for back filling.
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Nil	Nil	Taldih mine has started in 2016-17, no pit exhausted completely for back filling.
5d	Total area fully reclaimed and rehabilitated	No Proposal	Nil	Taldih mine has started in 2016-17, no area matured for reclaimed & rehabilitation.

I/10858/2023

5e	General remarks of inspecting officers on backfilling and reclamation etc.	Taldih mine was opened in the year 2016-17. No area is matured for reclaimed & rehabilitation hence no such 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).	As per rule 23E(2) of MCDR, 2017, the holder of mining lease shall submit to the competent authority a yearly report as per the format specified by the IBM, before 1st day of July every year setting forth the extent of the protective and rehabilitative works carried out as envisaged in the approved mine closure plan, and if there is any deviation, reasons thereof.	Under process of Submission.	
6b	Area available for rehabilitation (ha) .	Nil	Nil	
6c	afforestation done (ha).	Nil	Nil	

I/10858/2023

6d	No. of saplings planted during the year	Nil	Nil	
6e	Cumulative no .of plants	Nil	Nil	
6f	Any other method of rehabilitation	NA	NA	
6g	Cost incurred on watch and care during the year	NA	NA	
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	NA	NA	No proposal of backfilling during the plan period.
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	NA	NA	
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on backfilled area	NA	NA	
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	NA	NA	
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	NA	NA	

I/10858/2023

6m	Compliance of rehabilitation of waste land within lease (i)afforestation	NA	NA	
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	NA	NA	
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	NA	NA	
6p	Compliance of environmental monitoring (core zone and buffer zone)	Quarterly monitoring of AAQ, Water Quality and Noise Level to be carried out through a recognized environmental consultant.	Monthly and Quarterly monitoring of AAQ, Water Quality and Noise Level are being carried out.	
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.			The Taldih mine has opened in the year 2016. The area is not matured for backfilling hence no such proposal has been made. The lessee carried out no plantation in the area.

Mineral Conservation:

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

I/10858/2023

7a	ROM Mineral dispatch or grade-wise sorting within lease area	Yes, grade-wise sorting within lease area proposed	As per proposal	Taldih Iron Mine is a captive mine of M/s SAIL and the ore is used for extraction of Iron & Steel from different steel plants.
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanical	Mechanical	Mechanical, >57% Fe feed to crusher and partly subgrade materials/mineral reject blended with high grade ore.
7c	Different grade of mineral sorted out at mines.	Yes, proposed	45 - 57% Fe at Dump / Stack	
7d	Any beneficiation process at mines	Not proposed	None	No beneficiation done for the year 2022-23.
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues			No beneficiation of ore is done except grade-wise sorting which is carried out at the mine site itself. The grade-wise sorted material is transported via trucks to the Basrsuan Railway siding of the lessee which is located at a distance of 15 km from the mine site.

Environment:

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

I/10858/2023

8a	Separate removal and utilization of topsoil (Rule 32)	Yes, grade-wise sorting within lease area proposed	As per proposal	Taldih Iron Mine is a captive mine of M/s SAIL and the ore is used for extraction of Iron & Steel from different steel plants.
8b	Concurrent use or storage of topsoil	Storage: Nil	Storage: 1410.64 M3	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Dumping of overburden in TWD-2.	Dumping of overburden in TWD-2.	All generated reject blended with production.
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Nil	Nil	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Nil	Nil	
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	NA	NA	
8g	Survival rate	NA	NA	
8h	Water sprinkling on roads to control airborne dust	Water sprinkling in haulage road for dust control.	Regular water sprinkling is being done with 1 X 12 KL & 1 X 20 KL mobile water tankers.	

I/10858/2023

8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	The Taldih mine commenced its operation in the year 2016. The lessee is regularly monitoring the air, water and other parameters. No plantation has been done and for dust suppression regular water sprinkling is being done. Due to these efforts there is no adverse impact on the aesthetic beauty in and around the mines.
----	--	---

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	Monthly return to be submitted by 10th of each month and Annual Return to be submitted by 1st July every year	M.R. Submitted upto March, 2023. AR for 2022-23 under process of submission.	A.R. Submitted upto financial year 2021-22.
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager		Mines manager, Mining engineer & Geologist have appointed in the mine. AR for 2022-23 under process of submission.	

I/10858/2023

9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Area covered under excavation: 26.920 Ha; Used for waste disposal: 9.000 ha. Retaining wall: 1.50 Ha; Other: 4.50 ha.	Area covered under excavation: 24.162 Ha; Used for waste disposal: 8.387 ha. Infrastructure: 16.75 ha. Retaining wall: 1.00 Ha; Other: 4.50 ha.	AR for 2022-23 under process of submission.
9d	Scrutiny of Annual return on afforestation	NA	NA	
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)		AR for 2022-23 under process of submission.	Mineral Reject generation during the year 2022-23 was nil.
9f	Scrutiny of Annual return on ROM stock and/or graded ore		The mineral reject 121600 tonnes (Part of ROM) has been shown in section 4 of annual return of 2020-21 but has not been shown in closing stock of ROM which has been stacked in mines.	AR for 2022-23 under process of submission.
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost		Production cost for lump & fines Rs.1472.45/- per Tonne.	AR for 2022-23 under process of submission.
9h	Scrutiny of Annual return on fixed assets		The asset is common for Barsua & Taldih Iron Mine.	
9k	Scrutiny of Annual return on mining machineries		AR for 2022-23 under process of submission.	

I/10858/2023

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 37(2)	29/05/2023			
MCDR17	Rule 37(5)	29/05/2023			

Date :07/06/2023**(VIKRAM DESHPANDE)**

Indian Bureau of Mines