

MCDR-MiFLOCR/10/2023-BBS-IBM_RO_BBS
INDIAN BUREAU OF MINES
MINERALS DEVELOPMENT AND REGULATION DIVISION

I/9520/2023

MCDR INSPECTION REPORT

Bhubaneshwar regional office

Mine file No : MCDR-MiFLOCR/10/2023-BBS-IBM_

Mine code : 11ORI19030

- (i) Name of the Inspecting : **VPD**) **VIKRAM DESHPANDE**
Officer and ID No.
- (ii) Designation : Assistant Controller Mine
- (iii) Accompanying mine : S/Shri Naveen Srivastava, Mining Engineer, Dr Dilip T
Official with
Designation
- (iv) Date of Inspection : 28/04/2023
- (v) Prev.inspection date : 01/06/2022

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **SARUABIL CHROMITE BLOCK**
- (b) **Registration NO.** : **IBM/5765/2011**
- (c) **Category** : **A Fully Mechanised**
- (d) **Type of Working** : **Opencast**
- (e) **Postal address**
- State : **ORISSA**
- District : **JAJPUR**
- Village : **Saruabil**
- Taluka : **Kaliapani**
- Post office : **Kalarangiatta**
- Pin Code : **755028**
- FAX No. :
- E-mail : **mdtsalloysltd@tatasteel.co**
- Phone : **06742551045**
- (f) **Police Station** : **KALIAPANI**
- (g) **First opening date** : **06/11/2020**
- (h) **Weekly day of rest** : **SUN**
2. **Address for** : **SARUABIL**
correspondance **PO-KALIAPANI**
DIST-JAJPUR
3. (a) **Lease Number** :
- (b) **Lease area** : **246.858 ha**
- (c) **Period of lease** : **50 years, 26.06.2020 to 25.06.2070**
- (d) **Date of Expiry** : **25.06.2070**
4. **Mineral worked** : **Chromite**

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5. Name and Address of the

Lessee : TATA STEEL MINING LTD
SUKINDA JAJPUR ORISSA
Phone:
FAX :

Owner : Tata Steel Mining Limited
KALIAPANI JAJPUR ODISHA
JAJPUR ORISSA
Phone:
FAX :

Agent : Shri Sushanta Kumar Mishra
KALIAPANI JAJPUR ODISHA
JAJPUR ORISSA
Phone:
FAX :

Mining Engineer

Name : SHRI NAVEEN SHRIVASTAVA, Full Time
Qualification : BE MINING
Appointment/ : 21/10/2021
Termination date

Geologist

Name : Dr. Dilip Kumar Tiwari, Full Time
Qualification : Ph.D. in Geology
Appointment/ : 15/03/2021
Termination date

Manager

Name : SHRI NAVEEN SHRIVASTAVA
Qualification : BE MINING
Appointment/ : 21/10/2021
Termination date

6. Date of approval of Mining Plan/Scheme of Mining : MP under 16(1) of MCR 2016 10/11/2020

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PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

| Sl.No. | Item | Proposals | Actual work | Remarks |
|--------|---|---|--|--|
| 1a | Backlog of previous year | 05 | 02 | |
| 1b | Exploration over lease area for geological axis 1 or 2 | 12 | 17 | Quality assurance purpose. |
| 1c | Exploration Agencies and Expenditure in lakh rupees during the year | 155.58 INR | 160.25 INR, M/s Prime drilling Pvt. Ltd. | |
| 1d | Balance area to be explored to bring Geological axis in 1 or 2 | No Proposal | None | Out of the total lease of 246.858 ha, 56.801 ha area has been covered under G-1 whereas remaining lease area has been covered under G-2 level. Further, the potentially mineralised area of 18.971 has been covered under G-1 level. |
| 1e | Balance reserve as on 01/04/20 | As per approved mining plan dated 10.11.2020 the reserves/resources are: 111-4.389(MT) 211-5.738 (MT) | As on 01/04/2023 the reserves/resources are: 111-3.54(MT) 211-5.738 (MT) | |

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

Out of the total lease of 246.858 ha, 56.801 ha area has been covered under G-1 whereas remaining lease area has been covered under G-2 level. Further, the potentially mineralised area of 18.971 has been covered under G-1 level.

Development :

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|--|-----------------------------------|--------------------------------------|---|
| 2a | Location of development w.r.t.lease area | 376941E-377653E/2328133N-2329117N | 376986E-377576E 2328210N-2328970N | During year 22-23 development was proposed in quarry B&C but was found confined to quarry C but is broadly as per proposal. |
| 2b | Separate benches in topsoil, overburden and minerals (Rule 15) | NA | NA | Since the orebody is near vertical, there are limitations for separate benches for waste and overburden. |
| 2c | Stripping ratio or ore to OB ratio | 1:4.46 | 1:5.65 | Actual OB generation is slightly less. |
| 2d | Quantity of topsoil generation in m3 | No Proposal | None. | |
| 2e | Quantity of overburden generation in m3 | 2007200 | 1971502 | Actual OB generation is less. |

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|----|---|--|
| 2f | General remarks of inspecting officers on development of pit w.r.t. type of deposit etc | During year 22-23 development was proposed in quarry B&C but was found confined to quarry C but is broadly as per proposal. Actual generation of OB is less. |
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Exploitation:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|---|-------------------|-------------|--|
| 3a | Number of pit proposed for production | 02 | 01 | During year 22-23 development was proposed in quarry B&C but was found confined to quarry C. |
| 3b | Quantity of ROM mineral production proposed | 450500 tons | 349535 tons | Production as per EC. EC enhancement application in process. |
| 3c | Recovery of sailable/usable mineral from ROM production | 100% | 100% | |
| 3d | Quantity of mineral reject generation | 33125 | 0 | Threshold 10% Cr2o3. |
| 3e | Grade of mineral rejects generation and threshold value declared. | (10 to 40% Cr2O3) | Nil | Thresh hold 10% Cr2o3. |
| 3f | Quantity of sub grade mineral generation. | NA | NA | |
| 3g | Grade of sub grade mineral generation | NA | NA | |
| 3h | Manual / Mechanised method adopted for segregating from ROM | Mechanized | Mechanized | |

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|----|--|--|---|---|
| 3i | Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects. | NA | NA | |
| 3j | Provision of drilling and blasting in mineral benches | Yes, proposed. As per proposal | | DTH drill machine of 150mm dia and drilling of 3-3.5m spacing and 2.5-3.0m burden. Site Mixed Emulsion (SME) used for blasting. |
| 3k | Provision of mining machineries in mineral benches | Yes | As per proposal | Excavator of 3.5 cu.m capacity and 35 ton dumpers. |
| 3l | Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM | Yes, suitable. As per proposal | | Height-6m to 8m Width-13m to 15m |
| 3m | Total area covered under excavation/pits | 90.783 Ha | 55.345 Ha | |
| 3n | Ore to OB ratio for the pit/mine during the year. | 1:4.46 | 1:5.65 | FY 2022-23 |
| 3o | Total area put in use under different heads at the end of year | Mining-90.783 Ha Dumps-100.875 Ha Mineral Storage-9.191Ha Township-7.872 Ha Infrastructure-12.624 Ha Others-25.513 Ha | Mining-55.345 Ha Dumps-67.371 Ha Mineral Storage-9.103Ha Township-6.443 Ha Infrastructure-12.262 Ha Others-96.334 Ha | Proposal as per end of plan period FY 2024-25. |

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| 3p | Production of ROM mineral during the last five year period as applicable | 2020-21: 150280 tons 2021-22: 400520 tons 2022-23: 450500 tons | 2020-21: 149974 tons 2021-22: 349994 tons 2022-23: 349535 tons | Actual production in FY 22 & 23 as per EC. Application for EC enhancement is in process. |
| 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. |

Solid Waste Management - Dumping:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|--|---|---------------------------------------|-------------|
| 4a | Separate dumping of topsoil, OB and mineral rejects (Rule 32,33) | Yes, proposed for OB and mineral rejects. | Only for OB. | |
| 4b | Location of topsoil, OB and mineral reject dumps | 377162E-377889E/ 2327762N-2328581N | 377162E-377889E/ 2327762N-2328581N | |
| 4c | Number of dumps within lease area and outside of lease area | Within lease-6 Outside lease-0 | Within lease-6 Outside lease-0 | |
| 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 | Dump No. 06 |
| 4f | Number of dead dumps. | 02 | 02 | Dump 1 & 3 |
| 4g | Number of dumps established. | 0 | 2 | |
| 4h | Whether Retaining wall or garland drain all along dumps are there. | Yes | Yes, as per proposal | |

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|----|--|---|--|---|
| 4i | Length of Retaining wall or garland drain all along dumps | Retaining Wall- 436m Garland Drain- 406m | Retaining Wall- 440m Garland Drain- 410 | |
| 4j | Number of settling ponds | 1 | 1 | |
| 4k | Specific comments of inspecting officer on waste dump management | | | Dumps 4, 5 & 6 will be merged to form Dump 7 at Conceptual Stage. |

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 for backfilling | None | |
| 5b | Area under backfilling of mined out area | NA | NA | |
| 5c | Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32) | NA | NA | No proposal of Topsoil generation during the plan period. |
| 5d | Total area fully reclaimed and rehabilitated | NA | NA | |
| 5e | General remarks of inspecting officers on backfilling and reclamation etc. | | | Area not matured for Backfilling. |

Progressive Mine Clousre Plan:

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

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|----|--|----------|-------------|--|
| 6a | Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2). | | | In process of submission for year 2022-23 |
| 6b | Area available for rehabilitation (ha) . | Nil | Nil | |
| 6c | afforestation done (ha). | 2.0 ha | 2.0 ha | |
| 6d | No. of saplings planted during the year | 3200 | 5025 | |
| 6e | Cumulative no .of plants | 6400 | 10435 | |
| 6f | Any other method of rehabilitation | Nil | None. | |
| 6g | Cost incurred on watch and care during the year | Rs 8 lac | Rs 8.04 lac | |
| 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 | |

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|----|--|---|--|---|
| 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 | |
| 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) | Periodical Monitoring of Air, Water and Cr6+. | Periodical Monitoring as stipulated in Environment Clearance granted by MoEF & CC and Consent to Operate granted by SPCB | |
| 6q | General remarks of inspecting officers on PMCP compliance and progressive closure operations etc. | | | The area is not matures for backfilling hence no such proposal has been made. The lessee has planted adequate number of plants. |

Mineral Conservation:

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| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|--|-------------------------------------|---|---|
| 7a | ROM Mineral dispatch or grade-wise sorting within lease area | Cr203 above threshold value of 10% | Cr203 above threshold value of 10% is used. | |
| 7b | Method of grade-wise mineral sorting i.e. manual or mechanical. | Mechanized | Mechanized | |
| 7c | Different grade of mineral sorted out at mines. | Cr203 above threshold value of 10%. | Cr203 above threshold value of 10%. | |
| 7d | Any beneficiation process at mines . | None | None | |
| 7e | General remarks of inspecting officer on Mineral conservation and beneficiation issues | | | No specific bleneficiation of the ROM is carried except blending of ore . |

Environment:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|--|-----------|-------------|--|
| 8a | Separate removal and utilization of topsoil (Rule 32) | NA | NA | |
| 8b | Concurrent use or storage of topsoil | NA | NA | No topsoil generation being envisaged. |
| 8c | Separate dumps for overburden, waste rock, rejects and fines (Rule 33) | Yes | Only OB. | |

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| 8d | Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use | NA | NA | |
| 8e | Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc) | None | None | |
| 8f | Baseline information on existence of plantation and additional plantation done (Rule 41) | | 5025 saplings planted during the year. | |
| 8g | Survival rate | 80% | 90% | |
| 8h | Water sprinkling on roads to control airborne dust | Water sprinkling with the help of water tanker. | Water sprinkling with the help of water tanker & fixed sprinkler. | |
| 8i | General remarks of inspecting officer on aesthetic beauty in and around mines area | | | The lessee is regularly monitoring the air, water and other parameters. Adequate 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. |

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Compliance of Rule 45:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|---|--|--|---------|
| 9a | Status of submission of Monthly and Annual returns | Monthly return to submitted by 10th of every month and Annual Return to be submitted by 1st July every year. | Mothly returns during year 2022-23 have been submitted within time and Annual Return for year 2022-23 is in process of submission. | |
| 9b | Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager | | Annual Return for year 2022-23 is in process of submission. | |
| 9c | Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc. | | Annual Return for year 2022-23 is in process of submission. | |
| 9d | Scrutiny of Annual return on afforestation | | Annual Return for year 2022-23 is in process of submission. | |
| 9e | Scrutiny of Annual return on mineral reject generation (Grade and quantity) | | Annual Return for year 2022-23 is in process of submission. | |
| 9f | Scrutiny of Annual return on ROM stock and/or graded ore | | Annual Return for year 2022-23 is in process of submission. | |
| 9g | Scrutiny of Annual return on sale value, Ex. Mine price and production cost | | Annual Return for year 2022-23 is in process of submission. | |
| 9h | Scrutiny of Annual return on fixed assets | | Annual Return for year 2022-23 is in process of submission. | |
| 9k | Scrutiny of Annual return on mining machineries | | Annual Return for year 2022-23 is in process of submission. | |

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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 :**(VIKRAM DESHPANDE)**

Indian Bureau of Mines