

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

MCDR INSPECTION REPORT

Bhubaneshwar regional office

Mine file No : ORI/CR/JJP/MCDR-12/BBS

Mine code : 11ORI19014

- (i) Name of the Inspecting : **RAM**) **RAMKISHAN R**
Officer and ID No.
- (ii) Designation : Sr. Asst. Contrl. Mines
- (iii) Accompanying mine : Shri M.K.Samal, Mine Mnager
Official with
Designation
- (iv) Date of Inspection : 11/12/2020
- (v) Prev.inspection date : 12/03/2020

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **SUKINDA**
- (b) **Registration NO.** : **IBM/4200//2011**
- (c) Category : A Mechanised
- (d) Type of Working : Opencast
- (e) Postal address
- State : ORISSA
- District : JAJPUR
- Village : KALIAPANI
- Taluka : SUKINDA
- Post office : KALIAPANI
- Pin Code : 755047
- FAX No. : 06726-268143
- E-mail : smcgen@imfagroup.com
- Phone : 06726-268139,268143
- (f) Police Station : Sukinda
- (g) First opening date : 15/09/1999
- (h) Weekly day of rest : SUN
2. Address for : SUKINDA CHROMITE MINE IMFA
correspondance AT/PO-KALIAPANI
DIST-JAJPUR
3. (a) Lease Number : ORI0693
- (b) Lease area : 116.76
- (c) Period of lease : 30
- (d) Date of Expiry : 03/09/2029
4. Mineral worked : CHROMITE Main

5. Name and Address of the

Lessee : INDIAN METALS & FERRO ALLOYS LIMITED
 IMFA, BOMIKHAL, BHUBANESWAR
 ORISSA. BHUBNESHWAR ORISSA
 Phone:0674-580100,580125
 FAX :0674-580045,580020

Owner : SUBHRAKANTA PANDA
 M/S INDIAN CHARGE CHROME
 LTD. IMFA BUILDING,
 BOMIKHAL, RASULGARH,
 BHUBANESWAR- 751 010 JAJPUR
 ORISSA
 Phone: 0674-2580100,25
 FAX : 0674- 2580020/

Agent : SHRI SANJEEV DAS
 JAJPUR ORISSA
 Phone:
 FAX :

Mining Engineer

Name : SHRI M K SAMAL,Full Time
 Qualification : AMIE
 Appointment/ : 20/05/2011
 Termination date

Geologist

Name : SHRI H S SAHOO,Full Time
 Qualification : MSC GEOLOGY
 Appointment/ : 16/11/2010
 Termination date

Manager

Name : SHRI M K SAMAL
 Qualification : AMIE
 Appointment/ : 25/02/2017
 Termination date

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|---|---|--------------------------------|------------|
| 6. Date of approval of Mining Plan/Scheme of Mining | : | Fresh under rule 22 MCR1960 | 18/11/1999 |
| | | Mining Scheme rule 12 MCDR1988 | 22/10/2003 |
| | | Mining Scheme rule 12 MCDR1988 | 25/06/2004 |
| | | Modif.approved Mining Scheme | 06/05/2005 |
| | | Modif.approved Mining Scheme | 14/06/2007 |
| | | Mining Scheme rule 12 MCDR1988 | 01/01/2010 |
| | | Mining Scheme rule 12 MCDR1988 | 31/07/2013 |
| | | Modif.approved Mining Scheme | 23/09/2016 |
| | | MP modif under 17(3) MCR 2016 | 14/02/2018 |
| | | MP review under 17(1) MCR 2016 | 31/10/2018 |

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 | The entire mineralised area are explored under G1 area. However, 2 nos of boreholes were proposed in the year 2019-20. | 2 nos boreholes have been drilled | |
| 1c | Exploration Agencies and Expenditure in lakh rupees during the year | | Drill king India is the exploration agency. | |
| 1d | Balance area to be explored to bring Geological axis in 1 or 2 | The entire mineralsied area explored under G1 level. | 2 nos boreholes have been drilled. | |
| 1e | Balance reserve as on 01/04/20 | As per the approved document on 31/10/18 the chromite reserves are 119.61lakh tonnes and resources are 225.72 lakh tonnes | The reserves and reosurces over the period of time the reserves as on 01.04.2020 are 113 lakh tonnes and resources are 225.72 tonnes. | |
| 1f | General remarks of inspecting officers on geology, exploration etc | | Exploration has been carried out more than the proposal during the year 2019-20. | |

Development :

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

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|----|---|---|---|---|
| 2a | Location of development w.r.t. lease area | Single quarry is proposed in Band-1 ore body during the year 2019-20. | single quarry has been developed in band-1 | |
| 2b | Separate benches in topsoil, overburden and minerals (Rule 15) | No generation of top soil due to its non-existence and separate benches in OB and mineral are envisaged | Separate benches in OB and mineral are maintained. | |
| 2c | Stripping ratio or ore to OB ratio | 1:3.13 t/cu.m. | 1:2.54 t/cu.m. | due to irregular nature of ore deposit. |
| 2d | Quantity of topsoil generation in m3 | Not applicable | Nil | |
| 2e | Quantity of overburden generation in m3 | 1100000 cu.m. | 784934 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. | |

Exploitation:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|---|--|---|---------|
| 3a | Number of pit proposed for production | one pit is proposed during the year 2019-20. | one pit. | |
| 3b | Quantity of ROM mineral production proposed | 351000 t | 320141 t | |
| 3c | Recovery of sailable/usable mineral from ROM production | 326000 t ore and 25000 t of mineral reject | 314224 t ore and 5917 t of mineral reject | |

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|----|--|---|---|
| 3d | Quantity of mineral reject generation | 25000 t | 5917 t |
| 3e | Grade of mineral rejects generation and threshold value declared. | +10% Cr2O3-30% Cr2O3 | +10% Cr2O3-30% Cr2O3 |
| 3f | Quantity of sub grade mineral generation. | Not applicable | Nil |
| 3g | Grade of sub grade mineral generation | Nil | Nil |
| 3h | Manual / Mechanised method adopted for segregating from ROM | Mechanised. | Mechanised. |
| 3i | Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects. | Not proposed. | Nil |
| 3j | Provision of drilling and blasting in mineral benches | drilling and blasting is proposed. | 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 | 8 m. | maintained. |
| 3m | Total area covered under excavation/pits | 36.158 ha during the end of plan period i.e. year 2023-24. | 29.331 ha |

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|----|--|--|--|
| 3n | Ore to OB ratio for the pit/mine during the year. | 1:3.13 t/cu.m. | 1:2.54 t/cu.m. |
| 3o | Total area put in use under different heads at the end of year | total area put to use till the end of plan period is 116.76 ha i.e. year 2023-24 | 116.76 ha |
| 3p | Production of ROM mineral during the last five year period as applicable | 2015-16: 273786 tonnes 2016-17: 351000 tonnes 2017-18: 351000 tonnes 2018-19: 351000 tonnes 2019-20: 351000 tonnes | 2015-16: 273598 tonnes 2016-17: 350512 tonnes 2017-18: 350112 tonnes 2018-19: 341003 tonnes 2019-20: 320141 tonnes |
| 3q | General remarks of inspecting officers on method of mining etc. | | production is carried out by opencast mining method 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) | No top soil & mineral reject generation is envisaged. However, separate dumping of OB is proposed. | separate dumping of OB is carried out. | |
| 4b | Location of topsoil, OB and mineral reject dumps | North west part of the lease area. | North west part of the lease area. | |
| 4c | Number of dumps within lease area and outside of lease area | one within lease area. | one within lease area. | |

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| 4d | Location of dumps w.r.t. ultimate pit limit (Rule 16) | Outside UPL | Outside UPL |
| 4e | Number of active and alive dumps. | one | one |
| 4f | Number of dead dumps. | Not proposed | Nil |
| 4g | Number of dumps established. | Not proposed | 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 | 116 m of retaining wall & 346 m of Garland drain during the year 2019-20. | 150 m of retaining wall & 383 m of Garland drain |
| 4j | Number of settling ponds | Not proposed | Nil |
| 4k | Specific comments of inspecting officer on waste dump management | | The waste management is carried out as per the proposal. |

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. | Area not matured for backfilling. | Not applicable | |
| 5b | Area under backfilling of mined out area | Not applicable | Nil | |

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|----|---|--------------------|-----------------------------------|
| 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 applicable Nil | |
| 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 |
|--------|--|---|---------------|---------|
| 6a | Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2). | PMCP report to submitted before 1 st July | | |
| 6b | Area available for rehabilitation (ha) . | dump slope area 0.6 ha during the year 2019-20. | 0.6 ha | |
| 6c | afforestation done (ha). | 0.6 ha | 0.6 ha | |
| 6d | No. of saplings planted during the year | 1500 nos | 1680 nos | |
| 6e | Cumulative no .of plants | | 76156 nos | |
| 6f | Any other method of rehabilitation | coirmatting over dumps | carried out | |
| 6g | Cost incurred on watch and care during the year | | Not available | |

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| 6h | Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D | Not applicable Nil |
| 6i | Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings | Not applicable Nil |
| 6j | Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on on backfilled area | Not applicable Nil |
| 6k | Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir | 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 |

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|----|---|---|--|
| 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 |

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. | caried out | |
| 7b | Method of grade-wise mineral sorting i.e. manual or mechanical. | mechanical | mechanical | |
| 7c | Different grade of mineral sorted out at mines. | below 30% Cr2O3 and +30% Cr2O3 | below 30% Cr2O3 and +30% Cr2O3 | |
| 7d | Any beneficiation process at mines | Not proposed. | Nil | |

7e General remarks of inspecting officer on Mineral conservation and beneficiation issues

grade wise sorting of mineral is carried out.

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 dumping for waste rock is proposed. | carried out. | |
| 8d | Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use | area not matured for backfilling. | Not applicable | |
| 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) | 1500 nos | 1680 nos | |

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| 8g | Survival rate | 92% |
| 8h | Water sprinkling water on roads to control airborne dust | sprinkling on haul roads for dust suppression is proposed |
| 8i | General remarks of inspecting officer on aesthetic beauty in and around mines area | Aesthetic beauty in and around the mine is maintained. |

Compliance of Rule 45:

| 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: 4 Diploma Mining Engineer: 6 Geologist: 3 | found to be in order. | |
| 9c | Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc. | under mining: 29.331 ha, waste disposal: 51.487 ha, infra: 22.714 ha others: 13.228 ha | under mining: 29.331 ha, waste disposal: 51.487 ha, infra: 22.714 ha others: 13.228 ha | |
| 9d | Scrutiny of Annual return on afforestation | 2730 nos | 2730 nos | |
| 9e | Scrutiny of Annual return on mineral reject generation (Grade and quantity) | 5917 t | 5917 t | |

| | | | | |
|----|---|---|--|-----|
| 9f | Scrutiny of Annual return on ROM stock and/or graded ore | ROM closing stock is 618836.143 t | ROM closing stock is 618836.143 t | |
| 9g | Scrutiny of Annual return on sale value, Ex. Mine price and production cost | Prodcution cost Rs. 4034. | Prodcution cost Rs. 4034. | |
| 9h | Scrutiny of Annual return on fixed assets | Rs. 288408083 | Rs. 288408083 | |
| 9k | Scrutiny of Annual return on mining machineries | DUMPER 32.000 TONNE 24, BACK HOE 3.100 CUM 3, BACK HOE 2.100 CUM 2 3, BACK HOE BACK HOE 0.990 CUM 1, DOZER 330.000 HP 1, DOZER 200.000 HP 1 etc., | DUMPER 32.000 TONNE 24, BACK HOE 3.100 CUM 3, BACK HOE 2.100 CUM 2 BACK HOE 0.990 CUM 1, DOZER 330.000 HP 1, DOZER 200.000 HP 1 etc., | Nil |

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 :

(RAMKISHAN R)

Indian Bureau of Mines