

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

MCDR INSPECTION REPORT

Bhubaneshwar regional office

Mine file No : ORI/CR/JJP/MCDR-6/BBS

Mine code : 11ORI19007

- (i) Name of the Inspecting : **SRM**) **SHRI SUDIP RANJAN MAZUMDAR**
Officer and ID No.
- (ii) Designation : Senior Mining Geologist
- (iii) Accompanying mine : Sri Manoj Kumar Pati, Regional Manager
Official with
Designation
- (iv) Date of Inspection : 24/02/2020
- (v) Prev.inspection date : 22/10/2019

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **SOUTH KALIAPANI**
- (b) **Registration NO.** : **IBM/4269/2011**
- (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 :
- FAX No. : 06767-230367
- E-mail : info@orissamining.com
- Phone : 06726-268722
- (f) Police Station : Kaliapanio
- (g) First opening date : 06/10/1980
- (h) Weekly day of rest : SUN
2. Address for : SOUTH KALIAPANI CHROMITE MINE
correspondance AT/PO: KALIAPANI, DIST: JAJPUR
ORISSA
3. (a) Lease Number : ORI0236
- (b) Lease area : 552.46
- (c) Period of lease :
- (d) Date of Expiry : 31/03/2020
4. Mineral worked : CHROMITE Main

5. Name and Address of the

Lessee : M/S Orissa Mining Corporation Ltd
P.O.NO.34 OMC House
Bhubaneswar KHURDA ORISSA
Phone:
FAX :

Owner : Sri R. Vineel Krishna
The Odisha Mining
Corporation Ltd. OMC House
Post Box 34 Bhubaneshwar
BHUBNESHWAR ORISSA
Phone: 0674-2393431
FAX : 0674-2391629

Agent : SHRI MANOJ PATI
JAJPUR ORISSA
Phone:
FAX :

Mining Engineer

Name : SHRI N SETHI, Full Time
Qualification : B E MINING
Appointment/ : 12/06/2019
Termination date

Geologist

Name : Sri Kali Charan Rath, Full Time
Qualification : M. Sc> Geology
Appointment/ :
Termination date

Manager

Name : KATHI PRADHAN
Qualification : BE(Mining)
Appointment/ : 14/06/2019
Termination date

6. Date of approval of Mining	:	Fresh under rule 22 MCR1960	21/02/2003
Plan/Scheme of Mining	:	Mining Scheme rule 12 MCDR1988	22/03/2007
	:	Mining Scheme rule 12 MCDR1988	22/03/2010
	:	Modif.approved Mining Scheme	22/08/2014
	:	Mining Scheme rule 12 MCDR1988	16/04/2015
	:	MP modif under 17(3) MCR 2016	13/02/2018
	:	MP review under 17(1) MCR 2016	20/11/2019

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	27 nos of boreholes were propose during the year 2018-19.	23 nos of boreholes were drilled during the year 2018-19. Remaining 4 nos of boreholes were drilled during the year 2019-20.	23 nos of boreholes were drilled during the year 2018-19. Remaining 4 nos of boreholes were drilled during the year 2019-20.
1b	Exploration over lease area for geological axis 1 or 2	27 nos of boreholes were propose during the year 2018-19.	23 nos of boreholes were drilled during the year 2018-19. Remaining 4 nos of boreholes were drilled during the year 2019-20.	23 nos of boreholes were drilled during the year 2018-19. Remaining 4 nos of boreholes were drilled during the year 2019-20.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Not Specified	Exploration Agency: M/s Thriveni Earth Movers limited and expenditure incurred was Rs 340.79 lakh.	Exploration Agency: M/s Thriveni Earth Movers limited and expenditure incurred was Rs 340.79 lakh.
1d	Balance area to be explored to bring Geological axis in 1 or 2	27 nos of boreholes were propose during the year 2018-19.	23 nos of boreholes were drilled during the year 2018-19. Remaining 4 nos of boreholes were drilled during the year 2019-20. As on 30.06.2019, lease area explored under G1 is 195.74 Ha, G2 is 96.99 Ha and unexplored area 259.727 Ha.	23 nos of boreholes were drilled during the year 2018-19. Remaining 4 nos of boreholes were drilled during the year 2019-20. As on 30.06.2019, lease area explored under G1 is 195.74 Ha, G2 is 96.99 Ha and unexplored area 259.727 Ha.

1e	Balance reserve as on 01/04/20	As per the approved document on 13.02.2018 the chrome ore reserves are 5.69 million tones and resources are 9.32 million tones	Updated reserves as on 01.04.2019 are 7.47 million tones and resources are 2.74 million tones	Updated reserves as on 01.04.2019 are 7.47 million tones and resources are 2.74 million tones
1f	General remarks of inspecting officers on geology, exploration etc	27 nos of boreholes were proposed during the year 2018-19.	23 nos of boreholes were drilled during the year 2018-19. 4 nos of boreholes were drilled during the year 2019-20. As on 30.06.2019, lease area explored under G1 is 195.74 Ha, G2 is 96.99 Ha and unexplored area 259.727 Ha.	23 nos of boreholes were drilled during the year 2018-19. 4 nos of boreholes were drilled during the year 2019-20. As on 30.06.2019, lease area explored under G1 is 195.74 Ha, G2 is 96.99 Ha and unexplored area 259.727 Ha.

Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Two pits were proposed for mine development during the year 2018-19 for Band- I & II and band-IV	Two pits were developed during the year 2018-19.	Two pits were developed during the year 2018-19.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Separate benches in overburden and mineral proposed. Top soil is scrapped and its utilization is proposed.	Separate benches in overburden and mineral maintained. Top soil is scrapped and utilized.	Separate benches in overburden and mineral maintained. Top soil is scrapped and utilized.

2c	Stripping ratio or ore to OB ratio	In 2018-19, stripping ratio proposed was 1:8.6 t/cu.m.	In 2018-19, stripping ratio achieved was 1:6.3 t/cu.m.	In 2018-19, stripping ratio achieved was 1:6.3 t/cu.m.
2d	Quantity of topsoil generation in m3	In 2018-19, the proposal for top soil generation was 283000 cu.m.	Generation of top soil was 36165 cu.m.	Generation of top soil was 36165 cu.m.
2e	Quantity of overburden generation in m3	In 2018-19, proposal for overburden generation was 11.96 mil.cu.m	In 2018-19, overburden generated was 6.61 mil.cu.m	In 2018-19, overburden generated was 6.61 mil.cu.m
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	Opencast mining method proposed	Mine development is carried out by opencast mining method with two pits.	Mine development is carried out by opencast mining method with two pits.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Two pits during the year 2018-19	production carried from two pits.	production carried from two pits.
3b	Quantity of ROM mineral production proposed	In 2018-19, ROM production proposal was 1.39 mil.t.	In 2018-19, ROM production was 1.05 mil.t.	In 2018-19, ROM production was 1.05 mil.t.
3c	Recovery of sailable/usable mineral from ROM production	saleable ore 1.15 mil.t and mineral rejects 0.24 mil.t.	saleable ore 0.96 mil.t and mineral rejects 0.09 mil.t.	saleable ore 0.96 mil.t and mineral rejects 0.09 mil.t.
3d	Quantity of mineral reject generation	In 2018-19, Quantity of mineral reject generation proposal was 0.24 mil.t	In 2018-19, Quantity of mineral reject generated was 0.09 mil.t.	In 2018-19, Quantity of mineral reject generated was 0.09 mil.t.
3e	Grade of mineral rejects generation and threshold value declared.	+10%-40% Cr2O3	+10%-40% Cr2O3	+10%-40% Cr2O3

3f	Quantity of sub grade mineral generation.	In 2018-19, Quantity of subgrade mineral generation proposal was 0.24 mil.t.	In 2018-19, Quantity of subgrade mineral generated was 0.09 mil.t.	In 2018-19, Quantity of subgrade mineral generated was 0.09 mil.t.
3g	Grade of sub grade mineral generation	+10%-40% Cr2O3	+10%-40% Cr2O3	+10%-40% Cr2O3
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanized and manual	Mechanized and manual	Mechanized and manual
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No	Nil	Nil
3j	Provision of drilling and blasting in mineral benches	Drilling and Blasting is proposed	Drilling and Blasting is carried out	Drilling and Blasting is carried out
3k	Provision of mining machineries in mineral benches	Excavator and dumper combination have been proposed for mining in mineral benches.	Excavator and dumper combination have been deployed for mining in mineral benches.	Excavator and dumper combination have been deployed for mining in mineral benches.
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Height of the benches proposed is 6m	Height of benches in overburden and mineral is suitable for method of mining proposed in mining plan. Bench height is maintained.	Height of benches in overburden and mineral is suitable for method of mining proposed in mining plan. Bench height is maintained.
3m	Total area covered under excavation/pits	Area under mining at the end of plan period will be 205.18 Ha	Area under mining at the end of 2018-19 is 135.785 Ha.	Area under mining at the end of 2018-19 is 135.785 Ha.

3n	Ore to OB ratio for the pit/mine during the year.	In 2018-19, stripping ratio proposed was 1:8.6 t/cu.m.	In 2018-19, stripping ratio achieved was 1:6.3 t/cu.m.	In 2018-19, stripping ratio achieved was 1:6.3 t/cu.m.
3o	Total area put in use under different heads at the end of year	Total area put in use under different heads at the end of plan period will be 473.17 Ha	Total area put in use under different heads at the end of 2018-19 is 289.746 Ha	Total area put in use under different heads at the end of 2018-19 is 289.746 Ha
3p	Production of ROM mineral during the last five year period as applicable	Year wise Production proposal 2014-15: 1.53 mil.t. 2015-16: 1.11 mil. t 2016-17: 1.09 mil.t. 2017-18: 0.83 mil.t. 2018-19: 1.39 mil.t.	Year wise ROM production 2014-15: 0.65 mil.t. 2015-16: 0.83 mil. t 2016-17: 1mil.t. 2017-18: 0.75 mil.t. 2018-19: 1.05 mil.t.	Year wise ROM production 2014-15: 0.65 mil.t. 2015-16: 0.83 mil. t 2016-17: 1mil.t. 2017-18: 0.75 mil.t. 2018-19: 1.05 mil.t.
3q	General remarks of inspecting officers on method of mining etc.	In 2018-19, two number of pits proposed for production.	In 2018-19, two numbers of pits put for production. Production is carried out by opencast mining method as proposed.	In 2018-19, two numbers of pits put for production. 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)	Separate dumping of OB and mineral rejects are proposed. Top soil generated is being proposed to be utilized.	Top soil generated is being utilized and separate dumps for mineral rejects are maintained.	Top soil generated is being utilized and separate dumps for mineral rejects are maintained.

4b	Location of topsoil, OB and mineral reject dumps	OB is dumped in WD1, WD2 and mineral rejects are proposed to be stacked in SGD2	OB is dumped in WD1, WD2 and mineral rejects are stacked in SGD2	OB is dumped in WD1, WD2 and mineral rejects are stacked in SGD2
4c	Number of dumps within lease area and outside of lease area	2 nos with in lease area	2 nos with in lease area	2 nos with in lease area
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Dumps are located outside the UPL	Dumps are located outside the UPL	Dumps are located outside the UPL
4e	Number of active and alive dumps.	2 nos	2 nos	2 nos
4f	Number of dead dumps.	Not Applicable	Nil	Nil
4g	Number of dumps established.	Not applicable	Nil	Nil
4h	Whether Retaining wall or garland drain all along dumps are there.	proposed	provided	Nil
4i	Length of Retaining wall or garland drain all along dumps	1600 mtrs	1600 mtrs	Nil
4j	Number of settling ponds	2 nos.	2 nos.	Nil
4k	Specific comments of inspecting officer on waste dump management	OB is dumped in WD1, WD2 and mineral rejects are proposed to be stacked in SGD2	OB is dumped in WD1, WD2 and mineral rejects are stacked in SGD2. Waste dump management is carried out as proposed.	OB is dumped in WD1, WD2 and mineral rejects are stacked in SGD2. Waste dump management is carried out as proposed.

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.	Not Proposed	Nil	Not matured for reclamation as mineral not exhausted.
5b	Area under backfilling of mined out area	Not Proposed	Nil	Not matured for reclamation as mineral not exhausted.
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Top soil is being proposed for utilization for planation	Top soil is being utilized for planation	Top soil is being utilized for planation
5d	Total area fully reclaimed and rehabilitated	Not Proposed	Nil	Not matured for reclamation as mineral not exhausted.
5e	General remarks of inspecting officers on backfilling and reclamation etc.	Not matured for reclamation as mineral not exhausted.	Not matured for reclamation as mineral not exhausted.	Not matured for reclamation as mineral not exhausted.

Progressive Mine Closure Plan:

Sl.No.	Item	Propasals	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 as per Rule 26 (2) of MCDR, 2017	Annual report on PMCP for the year 2018-19 have been submitted	Annual report on PMCP for the year 2018-19 have been submitted
6b	Area available for rehabilitation (ha) .	Not Proposed	Nil	Nil

6c	afforestation done (ha).	20000 nos saplings plantation is proposed during the year 2018-19 on waste dump terraces.	20200 nos saplings plantation carried out	20200 nos saplings plantation carried out
6d	No. of saplings planted during the year	20000 nos	20200 nos	Nil
6e	Cumulative no .of plants	Not Specified	90459 nos	Nil
6f	Any other method of rehabilitation	Not proposed	Nil	Nil
6g	Cost incurred on watch and care during the year	Rs 3000000	Rs 1310145	Nil
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	Not proposed	Nil	Nil
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	Not proposed	Nil	Nil
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on on backfilled area	Not proposed	Nil	Nil
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	Not proposed	Nil	Nil

6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	Not proposed	Nil	Nil
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	Not proposed	Nil	Nil
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	Not proposed	Nil	Nil
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	Not proposed	Nil	Nil
6p	Compliance of environmental monitoring (core zone and buffer zone)	Periodical monitoring of environmental parameters are proposed.	Carried out.	Nil
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	Annual report on PMCP to be submitted as per Rule 26 (2) of MCDR, 2017	Annual report on PMCP for the year 2018-19 have been submitted. PMCP measures are carried out as proposed	Annual report on PMCP for the year 2018-19 have been submitted. PMCP measures are 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 within lease area.	Grade wise sorting within lease area.	Grade wise sorting within lease area.

7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanized	Mechanized	Mechanized
7c	Different grade of mineral sorted out at mines.	+10%-40% Cr2O3 and +40% Cr2O3	+10%-40% Cr2O3 and +40% Cr2O3	+10%-40% Cr2O3 and +40% Cr2O3
7d	Any beneficiation process at mines .	No beneficiation of mineral reject proposed during the year 2018-19	Nil	Nil
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	Grade wise sorting within lease area.	Grade wise sorting within lease area	Grade wise sorting within lease area

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Separate removal and utilization of top soil is proposed	separate removal and utilization of top soil is carried out.	separate removal and utilization of top soil is carried out.
8b	Concurrent use or storage of topsoil	Separate removal and utilization of top soil is proposed	separate removal and utilization of top soil is carried out.	separate removal and utilization of top soil is carried out.
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate dumps for OB and mineral rejects are proposed	Separate dumps for OB and mineral rejects are maintained.	Separate dumps for OB and mineral rejects are maintained.

8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Not proposed	Nil	The mine is not matured for reclamation and rehabilitation
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	20000 nos saplings plantation proposed on waste dump	20200 nos saplings plantation carried out	20200 nos saplings plantation carried out
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Not specified	90%	Data as furnished in annual return of 2018-19
8h	Water sprinkling on roads to control airborne dust	Water sprinkling is proposed for dust suppression	water sprinkling is carried out for dust suppression	water sprinkling is carried out for dust suppression
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	Separate removal and utilization of top soil is proposed	separate removal and utilization of top soil is carried out. Aesthetic beauty in and around mined area is maintained	separate removal and utilization of top soil is carried out. Aesthetic beauty in and around mined area 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 to be submitted as per rule 45 of MCDR 2017	Monthly returns and annual return for 2018-19 have been submitted.	Monthly returns and annual return for 2018-19 have been submitted.

9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Information on Manager, Mining Engineer and Geologist furnished in annual return for 2018-19	Manager, Mining Engineer and Geologist have been appointed in mines.	Manager, Mining Engineer and Geologist have been appointed in mines.
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Lease area (surface area) utilization at the end of the year as furnished in annual return for 2018-19. Covered under current working: 135.785 ha, Used for waste disposal: 114.523 Ha, Occupied by plant buildings, residential, welfare buildings & roads: 18.816 Ha, other purposes: 20.622 Ha	Lease area (surface area) utilization at the end of the year as furnished in annual return for 2018-19. Covered under current working: 135.785 ha, Used for waste disposal: 114.523 Ha, Occupied by plant buildings, residential, welfare buildings & roads: 18.816 Ha, other purposes: 20.622 Ha	Lease area (surface area) utilization at the end of the year as furnished in annual return for 2018-19. Covered under current working: 135.785 ha, Used for waste disposal: 114.523 Ha, Occupied by plant buildings, residential, welfare buildings & roads: 18.816 Ha, other purposes: 20.622 Ha
9d	Scrutiny of Annual return on afforestation	20200 nos.	20200 nos.	Nil
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	In 2018-19, Quantity of mineral reject generated was 89993 tones	In 2018-19, Quantity of mineral reject generated was 89993 tones	In 2018-19, Quantity of mineral reject generated was 89993 tones
9f	Scrutiny of Annual return on ROM stock and/or graded ore	Closing stock of ROM as furnished in annual return of 2018-19 is Nil	Closing stock of ROM as furnished in annual return of 2018-19 is Nil	Closing stock of ROM as furnished in annual return of 2018-19 is Nil

9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Production cost Rs. 4350.81 per tonne	Production cost Rs. 4350.81 per tonne	Production cost Rs. 4350.81 per tonne
9h	Scrutiny of Annual return on fixed assets	Rs 270975095 as furnished in annual return of 2018-19	Rs 270975095 as furnished in annual return of 2018-19	Rs 270975095 as furnished in annual return of 2018-19
9k	Scrutiny of Annual return on mining machineries	SHOVEL (HYDRAULIC) 3.300 CUM 10, SHOVEL (HYDRAULIC) 1.300 CUM 1, DOZER 200.000 HP 7, Opencast ROCK DRILL (NONELEC.) 165.000 MM 1 etc.	SHOVEL (HYDRAULIC) 3.300 CUM 10, SHOVEL (HYDRAULIC) 1.300 CUM 1, DOZER 200.000 HP 7, Opencast ROCK DRILL (NONELEC.) 165.000 MM 1 etc.	SHOVEL (HYDRAULIC) 3.300 CUM 10, SHOVEL (HYDRAULIC) 1.300 CUM 1, DOZER 200.000 HP 7, Opencast ROCK DRILL (NONELEC.) 165.000 MM 1 etc.

Details of violations observed during current inspection and compliance position of violation pointed out

Violation observed		Show cause position	
Rule NO.	Issued on Compliance on	Rule NO.	Issued on Compliance on

Date :

(SHRI SUDIP RANJAN MAZUMDAR)

Indian Bureau of Mines