

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

MCDR INSPECTION REPORT

Bhubaneshwar regional office

Mine file No : ORI/CR/JJP/MCDR-8/BBS-16/3/2K

Mine code : 11ORI19008

- (i) Name of the Inspecting : **U11**) **DAYANAND UPADHYAY**
Officer and ID No.
- (ii) Designation : Sr. Asst. Contrl. Mines
- (iii) Accompanying mine : Shri M. D. Patra, Mines manager, Shri G. Bhuyam, M.E
Official with
Designation
- (iv) Date of Inspection : 19/01/2018
- (v) Prev.inspection date : 15/03/2016

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **SUKRANGI**
- (b) **Registration NO.** : **IBM/4269/2011**
- (c) Category : A Other than Fully Mech.
- (d) Type of Working : Opencast
- (e) Postal address
- State : ORISSA
- District : JAJPUR
- Village : SUKRANGI
- Taluka : SUKINDA
- Post office : KALIAPANI
- Pin Code : 755047
- FAX No. : 0674-461629
- E-mail :
- Phone : 0674-402220,404323,410169
- (f) Police Station :
- (g) First opening date : 01/08/1989
- (h) Weekly day of rest : SUN
2. Address for : VILL: SUKRANGI, PO: KALIAPANI
correspondance POLICE STATION: TOMKA
DIST: JAJPUR, ORISSA, PIN755047
3. (a) Lease Number : ORI0240
- (b) Lease area : 382.71
- (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 : m/s ORISSA MINING CORPORATION LTD
OMC HOUSE P.B.No.34
BHUBNESHWAR ORISSA
Phone: 2393431
FAX : 2391629

Agent : HALDHAR SAHOO Dy G.M.(MINES)
SUKRANGI/KALIAPANI CR MINES
M/S OMC LTD P.O.KALAAPANI
JAJPUR ORISSA
Phone: 06726-20251
FAX : 06726-20281

Geologist

Name : T.P.MOHANTY, Full Time
Qualification : M.Sc (GEOLOGY)
Appointment/ : 01/09/1995
Termination date

Manager

Name : S.MOHANTY
Qualification : AMIE(MINING)
Appointment/ : 27/03/2002
Termination date

Manager

Name : D.P.MOHANTY
Qualification : DIPLOMA WITH 2nd CLASS COMPETANCY CERTIF
Appointment/ : 11/05/0199
Termination date

6. Date of approval of Mining	:	Renewal under rule 24 MCR1960	27/07/2006
Plan/Scheme of Mining		Mining Scheme rule 12 MCDR1988	28/07/2006
		Mining Scheme rule 12 MCDR1988	18/12/2009
		Mining Scheme rule 12 MCDR1988	22/08/2014

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	10 bore holes in 2015-16 and 10 bore holes in 2016-17.	In 2015-16, 7 bore holes and in 2016-17, 07 bore holes have been carried out by lessee.	Proposed bore holes with their location have not been achieved due to want of clearance of surface right and sabik forest.
1b	Exploration over lease area for geological axis 1 or 2	To prove the continuity of ore bands within G1 area.	In 2016-17, 07 bore holes have been carried out by lessee within G1 area.	
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Not specified.	Expenditure incurred in drilling for the year 2016-17 is Rs 18.50 lakh.	Expenditure incurred in drilling for the year 2016-17 is Rs 18.50 lakh.
1d	Balance area to be explored to bring Geological axis in 1 or 2	To prove continuity of band III, IV and V under G1 axis	In 2016-17, 07 bore holes have been carried out by lessee within G1 area.	In 2015-16 & 2016-17 total nos. of proposed bore holes have not been achieved due to want of clearance of surface right and sabik forest.
1e	Balance reserve as on 01/04/20	Proved Mineral Reserves (111)-5.41 Million T, Feasibility Mineral Resource (211)- 9.50 Million T as per scheme of mining approved on 22.08.2014.	Balance reserve as on 01.04.2017 is 5.41 Million T under 111 category.	Balance reserve as on 01.04.2017 is 5.41 Million T under 111 category.

1f	General remarks of inspecting officers on geology, exploration etc	Almost total potential mineralised area has been explored under G1 level of exploration.	To prove the further continuity of ore bands 66 nos of bore holes have been proposed during scheme period which is valid upto 2018-19.
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Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Southern part of lease area, E: -450/550 & N: -3/200	Development is located in southern part of lease area between co-ordinate E: -450/550 & N: -3/200.	Development is being carried out as per proposal.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Separate benches in OB and ore with 6m height.	Separate benches in OB and ore with 6m height. No. of OB benches in ore-01 and in OB-9.	Bench height is as per proposal.
2c	Stripping ratio or ore to OB ratio	1:3.28	1:3.16	Stripping ration is less due to restriction of forest area which under process for clearance.
2d	Quantity of topsoil generation in m3	Not proposed.	Not applicable.	There is no top soil proposal in approved scheme of mining.
2e	Quantity of overburden generation in m3	670526 cu. m	569821.20 cu.m	Overburden removal is less due to restriction of forest area which is under process for clearance.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc		The ore bands are fully explored and development and excavation of ore is presentally through single open pit as per proposal.	The ore bands are fully explored and development and excavation of ore is presentally through single open pit as per proposal.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Single pit.	Working is concentrated in single pit.	Working is concentrated in single pit.
3b	Quantity of ROM mineral production proposed	129799 T	129796T	ROM production for the year 2016-17 is more or less equal to the proposed production.
3c	Recovery of sailable/usable mineral from ROM production	85%	Recovery of slaeable ore is 85%.	
3d	Quantity of mineral reject generation	21985T	21820T, +10 to 30% Cr2O3	The sub grade mineral generated has been utilised after blending with high grade.
3e	Grade of mineral rejects generation and threshold value declared.	+10 to 30% Cr2O3	The sub grade mineral generated has been utilised after blending with high grade.	The sub grade mineral generated has been utilised after blending with high grade.
3f	Quantity of sub grade mineral generation.	21985T	21820T, +10 to 30% Cr2O3	The sub grade mineral/mineral reject generated has been utilised after blending with high grade.
3g	Grade of sub grade mineral generation	+10 to 30% Cr2O3.	The sub grade mineral/mineral reject generated has been utilised after blending with high grade.	The sub grade mineral/mineral reject generated has been utilised after blending with high grade.
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.	Not applicable.	

3j	Provision of drilling and blasting in mineral benches	115mm DTH dia. drilling of blast hole.	DTH drilling of 115mm dia. Blast hole with emulsion/slurry explosive of 83mm dia alongwith delay detonator is being practiced for drilling and blasting.	Depth of blasting- 6.5m Burden-2m spacing- 3 m.
3k	Provision of mining machineries in mineral benches	Drilling machine 115mm dia., Excavator, Dumper 20T capacity etc.	DTH of 115mm dia. is used for drilling blast hole. Ore & OB are handled by excavator of 0.9 cu.m to 3.1 cu.m capacity with dumper of 20 T capacity.	Dozer is also used for road grading and three water sprinkler of 12 KL capacity are used for water spraying.
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Bench height 6m.	Bench height is suitably matched with the loading excavator.	Bench height is suitably matched with the loading excavator.
3m	Total area covered under excavation/pits	26.82 ha. during plan period.	About 25.07 ha.	Working is concentrated in single pit.
3n	Ore to OB ratio for the pit/mine during the year.	1:3.28	1:3.16	Stripping ration is less due to restriction of forest area which under process for clearance.
3o	Total area put in use under different heads at the end of year	228.835 ha during scheme period.	Total area covered includes Pit-25.07 ha, waste dump- 19.9ha, Mineral storage-120.26 ha, Plant, buildings, roads & others-20.09ha.	Total area covered includes Pit-25.07 ha, waste dump- 19.9ha, Mineral storage-120.26 ha, Plant, buildings, roads & others- 20.09ha.
3p	Production of ROM mineral during the last five year period as applicable	2012-13: 123660T 2013-14: 132300T 2014-15: 200066T 2015-16: 213179T 2016-17: 152409T	2012-13: 67499T 2013-14: 96083T 2014-15: 50225.83T 2015-16: 129500T 2011-12: 129797T	

3q	General remarks of inspecting officers on method of mining etc.	The ROM production has been proposed from single pit . DTH drilling of 115mm dia. Blast hole with emulsion/ slurry explosive of 83mm dia alongwith delay detonator is being practiced for drilling and blasting.	The ROM production has been proposed from single pit . DTH drilling of 115mm dia. Blast hole with emulsion/ slurry explosive of 83mm dia alongwith delay detonator is being practiced for drilling and blasting.
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Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Separate dump for OB and mineral rteject.	Separate dump for OB and mineral rteject.	There is no top soil generation as proposed in scheme of mining.
4b	Location of topsoil, OB and mineral reject dumps	WD-1, E :- 400/-900 & N: -100/-400 and WD-2, E: - 200/-900 & N: 1000/2000	Waste has been dumped on WD-1 Between co-ordinate E :-400/-900 & N: -100/-400.	Waste dump, WD-2 has not been created due to wants of surface right. Top soil is not proposed.
4c	Number of dumps within lease area and outside of lease area	03 dumps.	There 03 dumps within the lease area.	OB dump-3 is in active dump.
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	WD-1, E :- 400/-900 & N: -100/-400 and WD-2, E: - 200/-900 & N: 1000/2000	Waste has been dumped on WD-1 Between co-ordinate E :-400/-900 & N: -100/-400.	Waste dump, WD-2 has not been created due to wants of surface right.
4e	Number of active and alive dumps.	Active dump WD-1 & WD-2.	Waste has been dumped on WD-1 Between co-ordinate E :-400/-900 & N: -100/-400.	Waste dump, WD-2 has not been created due to wants of surface right.
4f	Number of dead dumps.	Not proposed.	OB dump-3 is dead dump which is rehibilated by plantation.	Dead dump-3 is rehibilated by plantation.

4g	Number of dumps established.	Not proposed.	OB dump-3 is dead dump which is rehibilated by plantation.	Dead dump-3 is rehibilated by plantation.
4h	Whether Retaining wall or garland drain all along dumps are there.	Garland drain along dump WD-1.	Garland drain along dump WD-1 has been made.	Garland drain along dump WD-1 has been made.
4i	Length of Retaining wall or garland drain all along dumps	609m length garland drain along dump WD-1.	Garland drain of 609m length along dump WD-1 has been made.	Garland drain of 609m length along dump WD-1 has been made.
4j	Number of settling ponds	Not propopsed.	Not applicable.	
4k	Specific comments of inspecting officer on waste dump management		Partially the slope of the dump has been stabilised. The retaining wall and garland drain around the waste dump has been constructed by lessee.	Partially the slope of the dump has been stabilised. The retaining wall and garland drain around the waste dump has been constructed by lessee.

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.	Not proposed.	Pit is not matured for reclamation.	Mineralisation is continue and pit is not matured for reclamation.
5b	Area under backfilling of mined out area	Not proposed.	Not applicable.	Mineralisation is continue and pit is not matured for reclamation.
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Not proposed.	Not applicable.	Mineralisation is continue and pit is not matured for reclamation.

5d	Total area fully reclaimed and rehabilitated	Not proposed.	Not applicable.	Mineralisation is continue and pit is not matured for reclamation.
5e	General remarks of inspecting officers on backfilling and reclamation etc.		Pit is not matured for reclamation.	Mineralisation is continue and pit is not matured for reclamation.

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).	Not spcefied.	Annual return on PMCP has been submitted.	Annual return on PMCP has been submitted.
6b	Area available for rehabilitation (ha) .	Not proposed.	Not applicable.	Mineralisation is continue and pit is not matured for reclamation.
6c	afforestation done (ha).	0.5 ha area.	Afforestation has been carried out along slope of waste dump & safety zone covering area of 0.5 ha.	Afforestation has been carried out along slope of waste dump & safety zone covering area of 0.5 ha.
6d	No. of saplings planted during the year	500 nos. of saplings.	In 2016-17, 545 trees are planted by lessee in the lease area about 0.5 ha on waste dump and safety zone.	In 2016-17, 545 trees are planted by lessee in the lease area about 0.5 ha on waste dump and safety zone.
6f	Any other method of rehabilitation	Not proposed.	Not applicable.	Mineralisation is continue and pit is not matured for reclamation.
6g	Cost incurred on watch and care during the year	Not specified.	As reptred by lessee cost incurred on watch and care is about Rs 3.5 lakh.	As reptred by lessee cost incurred on watch and care is about Rs 3.5 lakh.

6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	Not proposed.	Not applicable.	Mineralisation is continue and pit is not matured for reclamation.
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	Not proposed.	Not applicable.	Mineralisation is continue and pit is not matured for reclamation.
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on on backfilled area	Not proposed.	Not applicable.	Mineralisation is continue and pit is not matured for reclamation.
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	Not proposed.	Not applicable.	Mineralisation is continue and pit is not matured for reclamation.
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	Not proposed.	Not applicable.	Mineralisation is continue and pit is not matured for reclamation.
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	Not proposed.	Not applicable.	
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	Not proposed.	Not applicable.	

6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	Not proposed.	Not applicable.	
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.		Area has not been matured for reclamation & rehabilitation and afforestation proposed along slope of waste dump & safety zone.	Cumulative no. of trees planted by lessee is about 63050 nos. along the slope of waste dump, in active dump and safety zone.

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Grade wise sorting.	Grade wise sorting of - 40% and +40% Cr ₂ O ₃ is being practiced.	Grade wise sorting of -40% and +40% Cr ₂ O ₃ is being practiced.
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanised.	Mechanised.	
7c	Different grade of mineral sorted out at mines.	Grade wise sorting of - 40% and +40% Cr ₂ O ₃ .	Grade wise sorting of - 40% and +40% Cr ₂ O ₃ is being practiced.	Grade wise sorting of -40% and +40% Cr ₂ O ₃ is being practiced.
7d	Any beneficiation process at mines	Not proposed.	Not applicable.	

7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	ROM from the mine is stacked different grade specification between -40% and +40% Cr ₂ O ₃ and it is dispatched to byers. Sub grade mineral generated during mining is stacked aeparately.	ROM from the mine is stacked different grade specification between -40% and +40% Cr ₂ O ₃ and it is dispatched to byers. Sub grade mineral generated during mining is stacked aeparately.
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Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Not proposed.	Not applicable.	
8b	Concurrent use or storage of topsoil	Not proposed.	Not applicable.	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate dump for OB and mineral rteject.	There is separate dump for OB and mineral rteject.	
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Not proposed.	Not applicable.	Mineralisation is continue and pit is not matured for reclamation.
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Not proposed.	Not applicable.	Mineralisation is continue and pit is not matured for reclamation.

8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Plantation proposed along the slope of waste dump & safety zone.	Trees have been planted along the slope of waste dump and safety zone.	As reported cumulative no. of trees planted by lessee is about 63050 nos. along the slope of waste dump, in active dump and safety zone.
8g	Survival rate	Not specified.	As reported survival rate is 80%.	
8h	Water sprinkling on roads to control airborne dust	Two water sprinkler.	Two water sprinkler.	Two water sprinkler of 12 KL capacity are used for water spraying.
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area		Cumulative no. of trees planted by lessee is about 63050 nos. along the slope of waste dump, in active dump and safety zone.	Aesthetic beauty in and around mines area is maintained by plantation.

Compliance of Rule 45:

Sl.No.	Item	Proposals	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.	
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Graduate Mining Engineer-2, Diploma mining Engineer-3, Geologist-1, Surveyor-2	Graduate Mining Engineer-2, Diploma mining Engineer-3, Geologist-1, Surveyor-2.	
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.		Pit-25.07 ha, waste dump- 19.9ha, Plant, buildings, roads & others-20.09ha.	Pit-25.07 ha, waste dump- 19.9ha, Plant, buildings, roads & others-20.09ha.
9d	Scrutiny of Annual return on afforestation	200 nos. of tree	200 nos. of tree	

9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	21820T, +10 to 30% Cr2O3	
9f	Scrutiny of Annual return on ROM stock and/or graded ore	Fines: 11505.75T, below 40% cr2o3 149611.92T, 40% to 52% cr2o3 1100.0T, 52% cr2o3 & above	Fines: 11505.75T, below 40% cr2o3 149611.92T, 40% to 52% cr2o3 1100.0T, 52% cr2o3 & above
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Fines: Rs 1938/-, below 40% cr2o3 Rs 9769.17/-, 40% to 52% cr2o3 Rs 23253.60, 52% cr2o3 & above	Fines: Rs 1938/-, below 40% cr2o3 Rs 9769.17/-, 40% to 52% cr2o3 Rs 23253.60, 52% cr2o3 & above
9h	Scrutiny of Annual return on fixed assets	Fixed asset-Rs 3145480000.00	Fixed asset-Rs 3145480000.00
9k	Scrutiny of Annual return on mining machineries	Drilling machine-1, Excavator-3 (1.8 -3.5 cu.m), front end loader-1 (2.5 cu.m) Dumper -10 (16 cu.m), Water Tanker-2.	Drilling machine-1, Excavator-3 (1.8 -3.5 cu.m), front end loader-1 (2.5 cu.m) Dumper -10 (16 cu.m), Water Tanker-2.

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)	05/02/2018			

Date :

(DAYANAND UPADHYAY)

Indian Bureau of Mines