

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

MCDR INSPECTION REPORT

Bhubaneshwar regional office

Mine file No : ORI/IRON/SNG/MCDR-11/BBS

Mine code : 30ORI13035

- (i) Name of the Inspecting : **S010**) **SHRI G.C. SETHI**
Officer and ID No.
- (ii) Designation : Deputy Controller Mines
- (iii) Accompanying mine : Shri Sanjib Kr. Swain, Qualified Person
Official with
Designation
- (iv) Date of Inspection : 06/10/2020
- (v) Prev.inspection date : 06/02/2020

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **RAIKELA & TANTRA**
- (b) **Registration NO.** : **IBM/4124/2011**
- (c) Category : A Other than Fully Mech.
- (d) Type of Working : Opencast
- (e) Postal address
- State : ORISSA
- District : SUNDARGARH
- Village : RAIKELA
- Taluka : BONAI
- Post office : DENGULA
- Pin Code : 770048
- FAX No. : 06767-275621
- E-mail : penguinbbl@gmail.com
- Phone : 06767-275621
- (f) Police Station : Koira
- (g) First opening date : 01/08/1991
- (h) Weekly day of rest : SAT
2. Address for : PO.DENGULA
correspondance VILL: RAIKELA
VIA.KOIRA,TQ.BONAI,DIS.SUNDERGARH,PIN.770048
3. (a) Lease Number : ORI0725
- (b) Lease area : 49.37
- (c) Period of lease : 30
- (d) Date of Expiry : 02/12/2036
4. Mineral worked : IRON ORE Main

5. Name and Address of the

Lessee : PENGUIN TRADING & AGENCIES LTD.
 PENGUIN TRADING AGENCIES
 CHATTERJEE INTER NATIONAL
 18 FLOOR33AJ.N.ROAD KOLKATA
 WEST BENGAL
 Phone:033-2267866
 FAX :

Owner : PENGUIN TRADING AGENCIES
 CHATTERJEE INTERNATIONAL
 18TH FLOOR,33A JAWAHARLAL
 NEHRU ROAD KOLKATA WEST
 BENGAL
 Phone: 033-2267866
 FAX : 033-2267866

Agent : S.K.GUPTA
 C/O RAIKELA TANTA IRON MINE
 , M/S PT&A LTD KEONJHAR
 ORISSA
 Phone: 06767 75621
 FAX : 06767 75621

Mining Engineer

Name : K. K. Sahoo,Full Time
 Qualification : AMIE
 Appointment/ : 01/10/2003
 Termination date

Geologist

Name : A K SETHI,Full Time
 Qualification : MSC (GEOLOGY)
 Appointment/ : 14/08/2014
 Termination date

Manager

Name : T. D. Behra
 Qualification : BE (MINING)
 Appointment/ : 14/08/2013
 Termination date

6. Date of approval of Mining	:	Mining Scheme rule 12 MCDR1988	08/02/2002
Plan/Scheme of Mining	:	Renewal under rule 24 MCR1960	28/04/2006
	:	Modif.of approved Mining Plan	22/12/2009
	:	Modif.of approved Mining Plan	28/09/2010
	:	Mining Scheme rule 12 MCDR1988	17/03/2011
	:	Modif.approved Mining Scheme	13/06/2012
	:	Modif.approved Mining Scheme	17/10/2014
	:	Mining Scheme rule 12 MCDR1988	30/12/2015
	:	MP modif under 17(3) MCR 2016	18/10/2017
	:	MP modif under 17(3) MCR 2016	17/01/2019

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	No such proposal	Nil	There is no backlog
1b	Exploration over lease area for geological axis 1 or 2	No such proposal	Nil	Nil
1c	Exploration Agencies and Expenditure in lakh rupees during the year	No specific proposal.	Nil	Nil
1d	Balance area to be explored to bring Geological axis in 1 or 2	The entire area already explored under G1 . How ever some of the boreholes which have been terminated in ore zone earlier , 09 nos of boreholes are proposed to drilled during the period 2019-20 at the same locations of earlier terminated boreholes.	The entire area already explored under G1 . How ever some of the boreholes which have been terminated in ore zone earlier , 09 nos of boreholes are proposed to drilled during the period 2019-20 at the same locations of earlier terminated boreholes.	Nil
1e	Balance reserve as on 01/04/20	17076940 tonnes under 111 2472820 tonnes under 211	17076940 tonnes under 111 2472820 tonnes under 211	Nil

1f	General remarks of inspecting officers on geology, exploration etc	Area has been already explored, However lessee has proposed to drilled additional 09 nos of boreholes during the year 2019-20 to know the depth extension in area where the boreholes were terminated in the ore zone earlier.	Nil
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Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Raikela quarry 230S to 120 N and 74 W to 420E Tantra quarry 120N to 480N and 200 E to 300 E	Raikela quarry 230S to 120 N and 74 W to 420E Tantra quarry 120N to 480N and 200 E to 300 E	Nil
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Separate benches in OB and ore , top soil bench	Separate benches in Ore and OB	Nil
2c	Stripping ratio or ore to OB ratio	1:0.470	1: 485	Average stripping ratio varies due to encountered of waste rock in the mineralized zone.
2d	Quantity of topsoil generation in m3	No proposal for topsoil gebneration in 2019-20	Nil	Nil
2e	Quantity of overburden generation in m3			Nil

2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	Development has been done in the Raikel and Tantra quarry as per approved Modification of Review Mining Plan. The average stripping ratio varies due to encountered of waste rock in the mineralized zone.
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Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Two	Two	Nil
3b	Quantity of ROM mineral production proposed			
3c	Recovery of sailable/usable mineral from ROM production			
3d	Quantity of mineral reject generation			
3e	Grade of mineral rejects generation and threshold value declared.	+45 Fe to -55% Fe	+45 Fe to -55% Fe	Nil
3f	Quantity of sub grade mineral generation.	67502 tonnes	199390 tonnes	Due to change in recovery percentage of mineral reject and saleable ore in time series data, for which lessee has modified the mining plan and was approved on 17.1.2019
3g	Grade of sub grade mineral generation	+45 Fe to -55% Fe	+45 Fe to -55% Fe	Nil

3h	Manual / Mechanised method adopted for segregating from ROM	Mechanization Mechanized	Mechanized	Nil
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	Not applicable.	Only crushing and screening practised.	Nil
3j	Provision of drilling and blasting in mineral benches	100 mm dia DTH Drill, blast hole with emulsion/slurr y explosive as column charge and booster along with delay detonator.	100 mm dia DTH Drill, blast hole with emulsion/slurry explosive as column charge and booster along with delay detonator.	Nil
3k	Provision of mining machineries in mineral benches	Excavator, Tipp er, Dumper and Loader	Mining machinery and deployed as per proposal	Nil
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Bench height of 6m	Height of benches in OB and mineral is suitable	Nil
3m	Total area covered under excavation/pits	36.770 ha area is proposed for the plan period	33.039 ha	Nil
3n	Ore to OB ratio for the pit/mine during the year.	1: 0.470	1: 0.485	Average stripping ratio varies due to the encountered of waste rock in the mineralized zone.

3o	Total area put in use under different heads at the end of year	Total area proposed under different head as per approved mining plan Excavation- 36.770 Ha. Waste dump and back filling 9.149 ha Mineral storage .500 ha Road-.6 Ha. Green belt in Safety Zone- 2.353 Ha.	Area covered under different heads pit 33.039 ha Waste dump 5.095 ha Roads 2.043 ha Mineral storage 2.604 ha	Nil
3p	Production of ROM mineral during the last five year period as applicable	2015-16: 1080144.000 tonnes 2016-17: 829020.000 tonnes 2017-18: 891518.000 tonnes 2018-19: 909933.000 tonnes 2019-20: tonnes	2015-16: 830722.040 tonnes 2016-17: 764020.000 tonnes 2017-18: 858560.000 tonnes 2018-19: 908090.000 tonnes 2019-20: tonnes	Nil
3q	General remarks of inspecting officers on method of mining etc.	Mining operations are proposed by opencast method in the two pits ie Raikela and Tantra pits.	Mining is carried out by opencast method in the two pits ie Raikela and Tantra pits.	Nil

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
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4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Separate dumping proposal	OB generated is utilized for back filling and mineral reject is stored at the specified place as per approved document	Nil
4b	Location of topsoil, OB and mineral reject dumps	Mineral reject S450 to S 500 and E 390 to E510 OB proposed for back filing Top Soil --	OB generated during mining operation has been utilized for back filling and mineral reject at the designated.	Nil
4c	Number of dumps within lease area and outside of lease area	Within: One S500 to S700 and E410 to E510 outside --nil	Nil	Nil
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	outside the UPL	outside the UPL	Yes religiously followed
4e	Number of active and alive dumps.	No waste dump proposal , OB is proposed for backfilling.	One dead dump And two mineral rejects	Nil
4f	Number of dead dumps.	Not specified	One S 500 to S 700 and E 410 to E 510	Nil
4g	Number of dumps established.	one dead dump	one dead dump	Nil
4h	Whether Retaining wall or garland drain all along dumps are there.	Maintenance of retaining wall and garland drain	Being carried out	Nil
4i	Length of Retaining wall or garland drain all along dumps	Maintenance of retaining wall and garland drain	Being carried out	Nil
4j	Number of settling ponds	Nil	Nil	Nil

4k	Specific comments of inspecting officer on waste dump management	One dead /old dump is stabilized by coir matting and plantation. No waste dump proposal as OB is proposed for back filling	Nil
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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.	Back filling proposed in-between section E E' to GG' .	Completed	Nil
5b	Area under backfilling of mined out area	0.50ha	0.50ha	Nil
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Nil	Nil	Nil
5d	Total area fully reclaimed and rehabilitated	0.50ha	0.50ha	Nil
5e	General remarks of inspecting officers on backfilling and reclamation etc.		Lessee has done the reclamation and rehabilitation in south eastern part of lease area as proposed in the approved document.	Nil

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).	Annual report on PMCP are submitted	Annual report on PMCP are submitted	Nil

6b	Area available for rehabilitation (ha) .	0.50 ha	0.50 ha	Nil
6c	afforestation done (ha).	0.50 ha	4000 sampling have been done by the lessee	Nil
6d	No. of saplings planted during the year	1250	4000	More plantation undertaken during 2019-20.
6e	Cumulative no .of plants	Not specified.	88710	Nil
6f	Any other method of rehabilitation	By backfilling In-between section E E' to GG'	Backfilling complted in the designated site.	Nil
6g	Cost incurred on watch and care during the year		Rs. 5,70,000,.00	Nil
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	0.50 ha. In-between section E E' to GG'	Done	Nil
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	0.50 ha. In-between section E E' to GG'	Completed.	Nil
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on on backfilled area	0.50 ha. In-between section E E' to GG'	Completed.	Nil
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	Not applicable.	Nil	Nil

6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	Not applicable.	Nil	Nil
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	Not applicable.	Nil	Nil
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	Not applicable.	Nil	Nil
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	Nil	Nil	Nil
6p	Compliance of environmental monitoring (core zone and buffer zone)	Quarterly monitoring of air , water and noise level	Being carried out as per proposal	Nil
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.		PMCP compliance are being made by the lessee. Plantation has been carried out over the waste dumps for stabilization, garland drains and retaining wall are there to arrest the slippage/wash off	Nil

Mineral Conservation:

Sl.No.	Item	Proposals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	grade -wise	grade -wise	Nil

7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanized	Mechanized	Nil
7c	Different grade of mineral sorted out at mines.	45 to 55 % Fe And +55 Fe	45 to 55 % Fe And +55 Fe	Nil
7d	Any beneficiation process at mines	Only crushing and screening proposed.	Only crushing and screening being done.	Nil
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues		The mineral conservation aspect is being dealt by different grades by sorting and proper blending.	Nil

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Not envisaged.	Not applicable.	Nil
8b	Concurrent use or storage of topsoil	Not applicable.	Nil	Nil
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate dumping of rejects & waste rock is envisaged and also provisions for backfilling is allounced for.	Mineral reject so generated is stacked and the OB/waste generated due to the mining operation is utilized for back filling.	Nil

8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Backfilling envisaged.	Backfilling is being done as per the requirements.	Nil
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Backfilling envisaged.	Backfilling is being done as per the requirements.	Nil
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	1250 nos. of saplings proposed in 2019-20.	Only 4000 nos. of saplings plantation undertaken during 2019-20	Cummulatively 88710 of saplings planted till the date of inspection.
8g	Survival rate	Not specified.	80%	Nil
8h	Water sprinkling on roads to control airborne dust	Water sprinkling arrangements exists in the mine.	Water sprinkling arrangements exists in the mine.	Nil
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area		To keep the aesthetic beauty intact in the lease area, suppression of dust in the mine is being done through sprinkling of water .	Nil

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	As per rule Monthly and Annual Returns are to be submitted to IBM	Monthly Return and annual returns are being submitted by the party regularly	Nil

9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	The employment status of mining Engineer , geologist and Mine manager is furnished in the annual return submitted for the year 2019-20	The employment status of mining Engineer , geologist and Mine manager is in order.	Nil
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	The data on account of land use pattern is furnished in the Annual return submitted for the year 2019-20.	Found in order.	Nil
9d	Scrutiny of Annual return on afforestation	There are 4000 nos. of sampling within lease area	The plantation status is in order.	Nil
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	199390 tonnes	199390 tonnes	Nil
9f	Scrutiny of Annual return on ROM stock and/or graded ore	Closing stock furnished in the following grades i.e. below 55%, 55 to 58% ,58 to 60%, 60 to 62%, 62 to 65%	Appears to be correct.	Nil
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Production cost Rs. 1433.56	Production cost Rs. 1433.56	Nil
9h	Scrutiny of Annual return on fixed assets	Fixed assets furnished in AR is Rs 110711324	In order.	Nil

9k	Scrutiny of Annual return on mining machineries	Crusher 150THP 2, Excavator 1.7/0.9 cum 12, Loader 2.5 cum 6, Dumper 20T 16, Dozer 1, Rock breaker 2 etc,	Crusher 150THP 2, Excavator 1.7/0.9 cum 12, Loader 2.5 cum 6, Dumper 20T 16, Dozer 1, Rock breaker 2 etc,	Nil
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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 G.C. SETHI)

Indian Bureau of Mines