INDIAN BUREAU OF MINES
MINERALS DEVELOPMEMT AND REGULATION DIVISION

MCDR INSPECTION REPORT

Bhubaneshwar regional office

Mine file No : ORI/IRON/SNG/MCDR-16/BBS **Mine code : 30ORI13041**

(i) Name of the Inspecting Officer and ID No. : **CHHA) SHRI L H CHHANGTE**

(ii) Designation : Deputy Controller Mines

(iii) Accompaning mine Official with Designation : Sri A.S.Mahapatro , Chief GM (Mining)

(iv) Date of Inspection : 28/07/2016

(v) Prev.inspection date : 26/11/2015

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **TEHERAI**

(b) Registration NO. :

(c) Category : A Fully Mechanised

(d) Type of Working : Opencast

(e) Postal address

State	: ORISSA
District	: SUNDARGARH
Village	: TEHERAI
Taluka	: BONAI
Post office	: KOIRA
Pin Code	: 770048
FAX No.	:
E-mail	:
Phone	:

(f) Police Station :

(g) First opening date : 31/12/1982

(h) Weekly day of rest : SAT

2. Address for correspondance : VILLAGE:TEHERAI, P.O.KOIRA
DIST: SUNDERGARH
ORISSA-770048

3. (a) Lease Number : ORI0131
(b) Lease area : 137.46
(c) Period of lease : 20
(d) Date of Expiry : 31/12/2001

4. Mineral worked : IRON ORE Main
MANGANESE ORE Associated

5. Name and Address of the

Lessee : BONAI INDUSTRIAL COMPANY LTD
P.O.BARBIL KEONJHAR
ORISSA
Phone:06767-30221
FAX :

Owner : M D RUSTAGI, NOMINATED OWNER
RUNGTA OFFICE,MAIN ROAD,
BARBIL AT/PO- BARBIL,DIST-
KEONJHAR SUNDARGARH ORISSA
Phone:
FAX :

Agent : D.R.OJHA
C/O BICO LTD AT O.P.BARBIL
KEONJHAR ORISSA
Phone: 06596-62321,62221
FAX :

Mining Engineer
Name : DIPAK KUMAR,Full Time
Qualification : BE MINING
Appointment/ Termination date : 22/06/2011

Geologist
Name : S K DE,Full Time
Qualification : MSC GEOLOGY
Appointment/ Termination date : 30/01/2013

Manager
Name : B K SRIVASTAB
Qualification : BE MINING
Appointment/ Termination date : 08/10/2012

6. Date of approval of Mining Plan/Scheme of Mining :

Fresh under rule 22 MCR1960	24/01/2002
Mining Scheme rule 12 MCDR1988	16/11/2007
Mining Scheme rule 12 MCDR1988	22/03/2010
Mining Scheme rule 12 MCDR1988	28/03/2012
FMCP under 23C(1)	16/01/2015
Modif.approved Mining Scheme	21/07/2015

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	20 bore holes for 2015-16	Drilled 20 bore holes as well	No back log
1b	Exploration over lease area for geological axis 1 or 2	To be fully explored during 2017-18	Exploration under G1 & 2 out of the total ML area of 137.460 ha has been 95 ha , which is 70% approx	Unexplored area remaining for G1 & 2 category of UNFC is 42. 460 ha which is about 30%
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Proposed to be explored Departmentally	Details of expenditure not made available during inspection	
1d	Balance area to be explored to bring Geological axis in 1 or 2	45 ha proposed	Actual turned out to be 42.460 ha	Over achieved under this aspect
1e	Balance reserve as on 01/04/20	As on 1/4/2016 : UNFC 111, 121, 122 = 8.884 MMT (+45% Fe) of Iron ores and 0.0404 MMT (+10% Mn) of Manganese Ores	Actual as on 1/4/2016 is also found to be same	No deviation
1f	General remarks of inspecting officers on geology, exploration etc	Details of exploration programme givenin their MP	Carried out as per their approved programme	No deviation in this aspect

Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	2 Pits , Chattan Pit for iron ore and Main Pit for Manganese ores both at the central part of the ML	Development as proposed	No deviation

2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Yes , proposed	Seperate benches for Ores and OB maintained	
2c	Stripping ratio or ore to OB ratio	1: 0.35 (T/m3) for iron ores and 1: 8.9 (T/m3) for Mnaganese ores	Actual turned out to be 1:0.63 (T/m3) for iron ores and 1:18 (T/m3) for Manganese ores	There seems to be significant deviation here , but the same has been taken care of
2d	Quantity of topsoil generation in m3	NIL	None	No top soil in this mine
2e	Quantity of overburden generation in m3	From Chattan Iron ore pit 6,55,236 m3 and from Main Mn ore pit 1,60,258 m3 for the year 2015-16	Actual exploitation turned out to be : From Chattan Iron ore pit 4,20,255.74 m3 and from Main Mn ore pit 41405.505 m3 for the year 2015-16	Much excess voluems have been genrated of OB during the year
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	Specific proposal were made in their MP	Proposals have been carried out satisfactorily	There has been over excess generation of OB as there has been local geological disturbances which was not foreseen in their MP

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	2 pits, One for Iorn ore and another for Manganese Ore	Developed as proposed	No deviation
3b	Quantity of ROM mineral production proposed	Proposed production for the year was 18,57,000 MT of Iron ore and 18,000 MT of Manganese	Actual production for the year 2015-16 was 6,61,677 MT of Iron ore and 2,299.404 MT of Manganese	There has been significant under production in this mine for the year 2015-16
3c	Recovery of sailable/usable mineral from ROM production	100% recovery from ROM	Carried out as proposed	

3d	Quantity of mineral reject generation	NIL	No mineral reject generated here	
3e	Grade of mineral rejects generation and threshold value declared.	Propsed Cut off grade is 55% Fe whereas threshold is 45% Fe	Followed as proposed	
3f	Quantity of sub grade mineral generation.	For Iron ore , proposed production of subgrade for the year 2015-16 was 185700MT and for Manganese 1800 MT	Actual for Iron ore was NIL whereas for Mn it was 125.070 MT only	Sub grade materials were either not produced or insignificantly produced
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanised	Mechanised method of crushing and screening followed	No deviation so far
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	NIL	Carried out as and when required	
3j	Provision of drilling and blasting in mineral benches	Yes	Scientific blasting method has been followed in this mine	
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Yes , proposed in their MP	Scientific mining method being followed by making regular shape and dimensions of benches	No deviation
3m	Total area covered under excavation/pits	60 ha as per MP	Actual area covered by Pits as on date of inspection was 57.266 hactares	
3n	Ore to OB ratio for the pit/mine during the year.	1:0.35 for Iron and 1: 8.9 for Manganese	Actual turned out to be 1:0.63 for Iron and for Manganese 1: 18	

3o	Total area put in use under different heads at the end of year	Out of total ML area of 137.460 hactares , the proposed break up as per their MP was 1. Pit area = 57.266 ha, 2.Dumps = 14.880 ha, 3. Road = 2.977 ha	Different land use followed as proposed	No deviation in this regard
3p	Production of ROM mineral during the last five year period as applicable	For 2015-16 : Iron =2.496 MMT, Mn= 0.018 MMT	Actual during the year was Iron= 0.662 MMT and Mn = 2299.404 MT	There was significant under production during the reporting year mainly because of poor demand
3q	General remarks of inspecting officers on method of mining etc.	Details of scientfic proposal were made in their approved MP	Followed satisfactorily	Howver, development and production has been much on the lower side due to low demand in the market

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Yes	Seperate dumping for OB, Mineral rejects maintained	
4b	Location of topsoil, OB and mineral reject dumps	2 Dumps , Dump B at Northern Eastern side (N750-900/ E 1480-1600) and another Dump C at Southern side (N220-490/ E1330-1580) were proposed	2 dumps developed as proposed	No deviation

4c	Number of dumps within lease area and outside of lease area	2 nos within ML and No dump outside ML	Developed as proposed	
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Dumps were proposed beyond UPL	Developed as proposed	
4e	Number of active and alive dumps.	2 Dumps active, No dead dump proposed	Developed as proposed	There is no matured dump as on date of inspection
4h	Whether Retaining wall or garland drain all along dumps are there.	Retaining wall erection proposed	Retaining walls erected around the 2 dumps as proposed	No deviation in this regard
4i	Length of Retaining wall or garland drain all along dumps	Dump B 500m periphery, Dump C 400m periphery	Retaining walls erected as proposed , around 500m in Dump B and 385m around Dunp C	No deviation
4k	Specific comments of inspecting officer on waste dump management	Specific proposals made	Proposals followed as far as possible	There is no problem in dump managment and no spillage from the dumps here

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.	NIL	There has been NO mined out area in this mine	
5b	Area under backfilling of mined out area	Nil	None	No mined out area
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	NIL	None	No top soil generated here

5d	Total area fully reclaimed and rehabilitated	NIL	None	However, there has been a stabilised / partially reclaimed area of 245 havctares in this mine
5e	General remarks of inspecting officers on backfilling and reclamation etc.	Specific proposals given in the MP	Proposals have been followed satisfactorily	There is no Waste dump management proble here in this mine

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).	Yes	Annual report on PMCP submitted to IBM regularly	
6b	Area available for rehabilitation (ha) .	NIL	None	Partial rehabilitation started
6c	afforestation done (ha).	Proposed for 8.0 ha cummulative till 2015-16	Actual area covered so far 7.56 ha	
6d	No. of saplings planted during the year	During 2015-16 , 25000 saplings plantation proposed	Planted as proposed	
6e	Cumulative no .of plants	Cummulative till 2015-16 was 155000 saplings	Actual till 1/4/2016 was 132634 saplings	
6g	Cost incurred on watch and care during the year	No specific proposal given in MP	Details not available as on date	

6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	NIL	None
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	No specific proposal made under this head	No details available during the inspection
6p	Compliance of environmental monitoring (core zone and buffer zone)	Regular monitoring of environmental parameters given in MP	Regualar monitoring of various environmental parameters carried out as proposed
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	Specific proposals given in their MP	Actually the proposals under PMCP have also been followed satisfactorily

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Specific proposals given in their MP	Actual dispatch as follows during 2015-16 : 1. Lumps - NIL, 2. Fines = 23098.310 MT (60-62% Fe) 3. Concentrates = 889198. 060 MT (62-65% Fe)	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanical	Dry Method of Beneficiation process employed here	
7c	Different grade of mineral sorted out at mines.	Lumps, Fines and Concentrates	Lumps are of 60-62% Fe, 62-65% Fe , Fines are 60-62% Fe and Concentrates as 62-65% Fe	

7d	Any beneficiation process at mines .	Dry Method proposed	Dry Method of Beneficiation in vogue
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	Specific proposals given in the MP	All important aspects of Mineral Conservation followed judicously in this mine

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	NIL	NONE	No top soil here
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Yes	There are seperate dumping for OB and Mineral rejects	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	No specific proposal	Partially started	
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Details given in their MP	Carried out as per MP	
8g	Survival rate	80% within ML	Actual 75% within ML	
8h	Water sprinkling on roads to control airborne dust	Proposed	Regular water sprinkling carried on haul roads inside the mine	

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	Yes	Details of AR/ MR scrutinised and found in order	
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Porposed	All statutory employment have been made as per proposals	
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Details given in AR	SCrutinised and found in proper order	
9d	Scrutiny of Annual return on afforestation	During 2015-16 , 5000 plants proposed	Planted as proposed	
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	NIL	None	No mineral reject here
9f	Scrutiny of Annual return on ROM stock and/or graded ore	Details given	Closing stock of ROm was 673.570 MT (+45% Fe)	
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Details given	Sale value of Lumps (+62 Fe) was Rs 1105 Fines (+62% Fe) was Rs 1404.83 Cost of production was Rs 917.71 per MT	
9k	Scrutiny of Annual return on mining machineries	Details given in AR	Actual also found to be in order	

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 :

(**SHRI L H CHHANGTE**)

Indian Bureau of Mines