

**INDIAN BUREAU OF MINES  
MINES CONTROL AND CONSERVATION OF MINERAL DIVISION**

**MCDR INSPECTION REPORT**

**Bhubaneshwar regional office**

**Mine file No :** ORI/MN/SNG/MCDR-18/BBS

**Mine code :** 40ORI13036

- (i) Name of the Inspecting : **25** ) **SHRI IBRAHIM SARIF**  
Officer and ID No.
- (ii) Designation : Assistant Controller Mine
- (iii) Accompanying mine : Shri Debabrata Patil Mines Manager  
Official with  
Designation
- (iv) Date of Inspection : 24/04/2015
- (v) Prev.inspection date : 08/03/2015

**PART-I : GENERAL INFORMATION**

1. (a) **Mine Name** : **GANUA**
- (b) Category : A Manual
- (c) Type of Working : Opencast
- (d) Postal address  
State : ORISSA  
District : SUNDARGARH  
Village : GANUA  
Taluka : BONAI  
Post office : PATMUNDA  
Pin Code :  
FAX No. :  
E-mail :  
Phone :
- (e) Police Station :
- (f) First opening date :
2. Address for : VILL-GANUA  
correspondance PO-PATMUNDA  
DIST-SUNDERGARH
3. (a) Lease Number : ORI0731  
(b) Lease area : 129.18  
(c) Period of lease : 10  
(d) Date of Expiry : 22/10/2001
4. Mineral worked : MANGANESE ORE Associated  
IRON ORE Main

## 5. Name and Address of the

Lessee : Zenith Mining (P) Ltd  
 Shaadab,tulsipur  
 cuttack,india CUTTACK  
 ORISSA  
 Phone:91 671 600553  
 FAX :

Owner : M/S ZENITH MINING (P)  
 AT/PO-KOIRA , NEAR S.B.I  
 1ST FLOOR HOUSE OF ROSHI  
 DIST-SUNDERGARH SUNDARGARH  
 ORISSA  
 Phone: 06625-33065  
 FAX :

Agent : BHIMSEN APAT  
 AT/PO-GUALI KEONJHAR  
 ORISSA  
 Phone: 06767-276989  
 FAX : 06767-275759

## Mining Engineer

Name : S.S. MOHANTY,Full Time  
 Qualification : B.Tech(mining),with 1st class managers c  
 Appointment/ :  
 Termination date

## Mining Engineer

Name : SUBRAT MOHAPATRA,Full Time  
 Qualification : A.M.IE MINING  
 Appointment/ : 01/09/2002  
 Termination date

## Geologist

Name : T.K.BASU,Part Time  
 Qualification : Msc Geology  
 Appointment/ :  
 Termination date

## Geologist

Name : S.K.MAHAPATRA,Full Time  
 Qualification : M.Sc. Geology  
 Appointment/ :  
 Termination date

## Geologist

Name : S.K.SAHOO,Full Time  
 Qualification : MSC GEOLOGY  
 Appointment/ : 01/07/0004  
 Termination date

|   |
|---|
| <p>Manager<br/> Name : R.L.CHOUDHURY<br/> Qualification : PERMIT MANAGER<br/> Appointment/ : 29/07/2002<br/> Termination date</p> |
| <p>Manager<br/> Name : S.MOHAKUR<br/> Qualification :<br/> Appointment/ : 16/10/0002<br/> Termination date</p>                    |

6. Date of approval of Mining : 08/04/2010  
Plan/Scheme of Mining

**PART - II : TECHNICAL DETAILS/COMMENTS**

1. Details about Average employment :

Maximum number of persons employed on any day during the year

| Employment category | No.of employment | Av. yearly working days |
|---------------------|------------------|-------------------------|
|---------------------|------------------|-------------------------|

**2. Community Development Plan (in and around the mines) : Proposed action and expenditure towards socio-economic development.**

| Action during the year | Expenditure in Rs. Lakhs for |              |               |               | Remarks |
|------------------------|------------------------------|--------------|---------------|---------------|---------|
|                        | previous year                |              | current year  |               |         |
|                        | Proposed                     | Incurred     | Proposed      | Incurred      |         |
| <b>General</b>         |                              |              |               |               |         |
| Health                 | 15.00                        | 4.90         | 5.00          | 4.90          |         |
| Sanitation             | 0.00                         | 2.02         | 2.50          | 3.02          |         |
| Water supply           | 10.00                        | 3.68         | 5.00          | 3.68          |         |
| <b>Sub total</b>       | <b>25.00</b>                 | <b>10.60</b> | <b>12.50</b>  | <b>11.60</b>  |         |
| <b>Infrastructure</b>  |                              |              |               |               |         |
| Roads                  | 50.00                        | 10.00        | 6.04          | 6.04          |         |
| <b>Sub total</b>       | <b>50.00</b>                 | <b>10.00</b> | <b>10.60</b>  | <b>6.04</b>   |         |
| <b>Employment</b>      |                              |              | <b>55.90</b>  | <b>55.90</b>  |         |
| Recreation             | 10.00                        | 5.00         | 4.57          | 4.57          |         |
| Environment management | 13.10                        | 50.00        | 141.00        | 141.00        |         |
| Training               | 10.00                        | 6.00         | 3.08          | 3.08          |         |
| <b>Total</b>           | <b>108.10</b>                | <b>83.50</b> | <b>221.19</b> | <b>222.19</b> |         |

**3. Status of compliance of MCDR, 1988, including therewith the rectification of the outstanding violation of rules.**

There was no outstanding violations.

During current inspection violation of rule 16(1), 33(2) and 33(6) of MCDR 1988 and pointed out to the party followed by show cause notice for non compliance of violation of rules 16(1) & 33(6) of MCDR 1988. vide this office letter dated 07.09.2015.

**4. A note on the justification in case of suspension of mining operation under rule 13(2) or prohibition of deployment of any person under rule 56 of MCDR, 1988, if recommended.**

Not Recommended

## 5. Scientific Mining

| Items | Proposal | Actual work done | Remarks |
|-------|----------|------------------|---------|
|-------|----------|------------------|---------|

## B. Working (Rule 13)

|                                       |                           |                                |
|---------------------------------------|---------------------------|--------------------------------|
| a.Number and size of each pit (LxWxH) | Q-3:500m x400m x 44m      | Q-3: Avg (420m x398m x 46m)    |
|                                       | Q-4:270m x200m x 54m      | Q-4: Avg(301m x 220m x 35m)    |
|                                       | Q-5:500m x150m x36m       | Q-5:280m x50m x13m             |
|                                       | Q-5(Mn): 220mx226mx21m    | Q-5(Mn):Avg (210m x208m x 15m) |
|                                       | Q-5(Mn)Old:120mx104m x18m |                                |

b.Bench size(LxWxH)length can be defined as regular/irregular :

| Name of Bench | no  | Type | Length | Width | Height | Top RL | Bottom RL | Quarry | OB/Ore in Mtr |
|---------------|-----|------|--------|-------|--------|--------|-----------|--------|---------------|
| 3             | 1   | ore  | 480    | 23.75 | 9      | 599    | 590       |        |               |
| 2             | ore | 600  | 16.5   | 8     | 590    | 582    |           |        |               |
| 3             | ore | 600  | 20.75  | 7     | 582    | 575    |           |        |               |
| 4             | ore | 850  | 18.2   | 9     | 575    | 566    |           |        |               |
| 5             | ore | 360  | 54.2   | 8     | 566    | 558    |           |        |               |
| 6             | ore | 400  | 113    | 5     | 558    | 553    |           |        |               |
| 4             | 1   | ore  | 185    | 12.8  | 7      | 595    | 587       |        |               |
| 2             | ore | 240  | 18.8   | 9     | 587    | 578    |           |        |               |
| 3             | ore | 220  | 39     | 9     | 578    | 569    |           |        |               |
| 4             | ore | 240  | 30     | 9     | 569    | 560    |           |        |               |
| 5             | 1   | ore  | 275    | 19.5  | 7      | 553    | 546       |        |               |
| 2             | ore | 117  | 7.5    | 6     | 546    | 540    |           |        |               |
| 5Mn           | 1   | OB   | 207    | 12    | 6      | 559    | 553       |        |               |
| 2             | ore | 170  | 9.3    | 6     | 553    | 547    |           |        |               |
| 3             | ore | 103  | 11     | 2     | 547    | 5      |           |        |               |

c.Ore to waste ratio : Iron-1:0.163  
pit wise if possible Mn-1:11  
otherwise for mine

Iron-1:0.03  
Mn- Nil

d.Total area covered : 46.417 Ha  
under excavation/pits

35.24 Ha

## C. Waste disposal (Rule 13)

b.Method of dumping : Advancing  
whether

Advancing

advancing/retreat

e. Yearly generation of waste quantity : Iron-646170 MT  
Mn-451879 MT Iron-25444.08MT  
Mn-Nil

c. Total area covered under waste dump : 9.989 Ha  
3.88 ha

d. No. and size of each waste dump with No of steps/lift/bench : 02nos.  
Two active dumps D-1 & D-2 with two terraces.  
Total height 32m in Iron & 20m in Mn.  
Dump-1: 205m x 96m  
Dump-2: 200m x 98m  
Dump-3: 330m x 100m  
Dump-4: 105m x 120m

#### D. Production

b. Year wise production of last five year : Iron-3969330 MT  
Mn-39621MT Iron : 833472.667MT  
Mn : Nil

#### D. Reserve

a. Reserve position as per latest MP/MS and at the time of inspection.

| Type            | UNFC Code | Grade | Mn |
|-----------------|-----------|-------|----|
| Iron ore        | 111       |       |    |
| Proved          | 27203524  | +45%  | -  |
| Probable        | 122       |       |    |
|                 | 160797984 | +45%  |    |
|                 | 534818    | +10%  |    |
| Feasibility     | 211       |       |    |
|                 | 2158944   |       |    |
| +45%            | -         |       |    |
| -               |           |       |    |
| Pre-feasibility | 222       |       |    |
|                 | 10681200  | +45%  |    |
|                 | 7880      | +10%  |    |
| Total           |           |       |    |
|                 | 200841652 |       |    |
| +45%            | 542698    |       |    |
| +10%            |           |       |    |

#### RESERVE POSITION AS ON 01/04/2015

#### MANGANESE ORE

| Category | Quantity in Tonnes | Grade   |
|----------|--------------------|---------|
| Proved   | 0                  |         |
| Probable | 534818             | +10% Mn |
| Possible | 7880               | +10% Mn |
| Total    | 542698             |         |

| <b>IRON ORE</b> |                    |         |
|-----------------|--------------------|---------|
| Category        | Quantity in Tonnes | Grade   |
| Proved          | 27203524           | +45% Fe |
| Probable        | 160797984          | +45% Fe |
| Possible        | 12840144           | +45% Fe |
| Total           | 200841652          |         |

| <b><u>PRODUCTION FOR THE PREVIOUS YEAR 2014 - 2015</u></b> |            |      |
|--|------------|------|
| Mineral  | Production | Unit |
| IRON ORE   | 833472     | TON  |
| MANGANESE ORE  | 0          | TON  |

**6. Conservation of Mineral - both quantitative and qualitative****Beneficiation (Rule 20 and 26)**

Efforts for improving low grade and sub grade mineral. : Sub grade fines have been analysed at Modern Mineral Processing plant, IBM, Nagpur for laboratory beneficiation test for process development.

Efforts for improving percentage of recovery of ore. : Dry Beneficiation for Iron Ore and manual sorting and sizing for manganese ore.

**Mineral Rule 15**

Number of benches in ore and waste. : Iron : 6 in Ore  
Mn : 3 in Ore & 1 in OB

Percentage of recovery of ore pitwise w.r.t. ROM and total material : ROM recovery is -  
86% of total excavation for Iron ore &  
22 % of the total excavation for Mn ore

**Sub/grd mineral/fines (Rule16)**

Qty of yearly generation and total qty available during inspection with grade : Iron Ore:  
Generation : Nil  
Utilisation ; Nil  
Stacked : 1744971.693 MT  
Manganese Ore :  
Generation : Nil  
Utilisation ; Nil  
Stacked : 244.825 MT

Number and size of each stack : Iron Ore Sub-Grade Scr. Fines(0-10mm) -55% 1729402.093  
Iron Ore Sub-Grade Scr. Fines(0-10mm) 55-57.99%  
374605.220  
Iron Ore Sub-Grade Scr. Fines(3-10mm) 55-57.99%  
4478.110  
Iron Ore Sub-Grade Scr. Fines(-3mm) -55% 15569.600  
Iron Ore Sub-Grade Lump(40-200mm) 58-59.99% 1833.710  
Iron Ore Sub-Grade Lump(10-40mm) 58-59.99% 156.660

Separate stacking from waste : Waste dumping has been carried out along with sub grade mineral, they are not stocked separately.

Total area covered for stacking : 21.753 Ha

**Exploration data as on 31/03/ 2015**

| No. of Boreholes | No. of Pits | No. of Trenches |
|------------------|-------------|-----------------|
| 147              |             |                 |

**OVERBURDEN HANDLED DURING PREVIOUS YEAR 2014 - 2015**

|                                    |       |
|------------------------------------|-------|
| Overburden/waste removed (in m3) : | 25444 |
|------------------------------------|-------|

**Utilisation of Sub Grade Mineral and Mineral Rejects**

| Generated | Utilised | Stacked | (In Ton.) |
|-----------|----------|---------|-----------|
|           |          |         |           |



## 7. Environment Management - both quantitative and qualitativ

### A. Land environment

- h. Public building, places and monuments (protected, historical), place of worship and places of tourist
- : No such public building, places and monuments (protected, historical), place of worship and places of tourist exist in the lease area.

### B Water environment.

- b. Ground water
- : Likely depth of water table is anticipated to be a depth of 5m (at RL 545m) general surface level (at RL 550m) in rainy season and 8m (at RL 542m) in dry season. Existing depth of working in Iron ore Quarry-3 has been reached up to RL 546 m. Working in manganese ore zone (Q-5) may puncture the water table. Therefore, there is possible of accumulation of seepage, rainfall and surface run-off water which will be pumped out by a diesel operated 10HP capacity pump.
- a. Surface water
- : Monitoring is being conducted fortnightly through an authorized vendor & quality is within the prescribed limit.  
Average annual rainfall is 1325mm. The major part of the surface water is allowed to run through garland drains and stored and settled at Q-5. In the central part of the mine, the surface run off mine is channelised to in pit sumps at Quarry-3, and quarry 6 through drains.
- c. Quality of water
- : Potable

### C. Air environment

- a. Noise
- : Monitoring is being conducted fortnightly through an authorized vendor & quality is within the prescribed limit.
- b. Air
- : Monitoring is being conducted fortnightly through an authorized vendor & quality is within the prescribed limit.
- c. Climatic condition
- : Humid Tropical. Average annual rainfall is 1325mm. The south-west monsoon lasts from mid June to mid September and the area receives more than 80% of the annual rainfall during the period.

#### 7.1 Comments on the steps taken by the lessee towards maintaining environment and monitoring of environmental parameters to ensure the qualitative improvement in the environment and ecology.

| <u>Water Management</u> |              |              |           |        |        |
|-------------------------|--------------|--------------|-----------|--------|--------|
| Season                  | Station type | Station name | Parameter | Value  |        |
|                         |              |              |           | Actual | Excess |

| <u>Air data for excess parameters</u> |              |              |           |        |        |
|---------------------------------------|--------------|--------------|-----------|--------|--------|
| Season                                | Station name | Type of area | Parameter | Value  |        |
|                                       |              |              |           | Actual | Excess |

| <u>PLANTATION DURING THE PREVIOUS YEAR</u> |                      |                      | <u>2014 - 2015</u> |                      |                      | Area in Hect. |
|--|----------------------|----------------------|--------------------|----------------------|----------------------|---------------|
| Within lease area                          |                      |                      | Outside lease area |                      |                      |               |
| <u>Area</u>                                | <u>Trees planted</u> | <u>Survival rate</u> | <u>Area</u>        | <u>Trees planted</u> | <u>Survival rate</u> |               |
| 3.7  | 8744                 | 53                   |                    | 500                  |                      |               |

**TOP SOIL MANAGEMENT**

Quantity as on 31/03/2015

**8. Scrutiny of annual returns on cost of production, reserve, production, pit mouth value, stock, land use pattern and fixed assets.**

(1) Reserve : Iron-27203524.37 MT(111), 160797984 MT(122), 2158944 MT(211),  
 10681200 MT(222) = 200841652 MT  
 : Mn-534818MT(122), 7880MT(222)  
 = 542698MT  
 (2) Production : Iron-833472.667MT & Mn-Nil  
 (3) Pit's Mouth Value :

(5) Land use pattern -

| Type of land  | Area ha |
|---|---------|
| Degraded land by dump                               | 3.88    |
| Degraded land by pit                                | 35.24   |
| Degraded land by pit in forest                      | 32.827  |
| Degraded land by dump in forest                     | 3.88    |
| Degraded land by pit in non forest                  | 2.413   |
| Degraded land by road in forest                     | 10.00   |
| Degraded land by road in non forest                 | 3.66    |
| Degraded land by plant building Town in forest      | : 2.412 |
| Degraded land by plant building, Town in non forest | : 7.388 |

Degraded land others in forest 15.125  
 Degraded land other in non forest 21.800

Area in non forest 90.063  
 Area in forest 259.191

**PART - III : PERFORMANCE OF MINE OWNER**

(In case of lease expiring within 2 years - as per guidelines)

**PART - IV : PROPOSALS FOR FURTHER ACTION FOR :**

Indian Bureau of Mines (any issue related to CGPB, SGPB, Assistance, Consultancy, Annual Programme and studies, etc.)

None

State Government (Illegal mining, mining dispute, infrastructure, Mineral based industry, Mineral policy, etc.)

None

The Central Government (Infrastructure, Development, Mineral policy and Legislation, Mineral based industry, etc.)

None

Date :

(SHRI IBRAHIM SARIF)

Indian Bureau of Mines