

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

**MCDR INSPECTION REPORT**

**Bhubaneshwar regional office**

**Mine file No :** ORI/MN/KJR/MCDR-8/BBS

**Mine code :** 40ORI08019

- (i) Name of the Inspecting : **RAM** ) **RAMKISHAN R**  
Officer and ID No.
- (ii) Designation : Sr. Asst. Contrl. Mines
- (iii) Accompanying mine : Shri Amit Dubey, Agent, Shri S S Mishra, Mine Manage  
Official with  
Designation
- (iv) Date of Inspection : 13/09/2018
- (v) Prev.inspection date : 12/10/2017

**PART-I : GENERAL INFORMATION**

1. (a) **Mine Name** : **JODA WEST**
- (b) **Registration NO.** :
- (c) Category : A Manual
- (d) Type of Working : Opencast
- (e) Postal address  
State : ORISSA  
District : KEONJHAR  
Village : BICHAKUNDI  
Taluka : CHAMPUA  
Post office : BICHAKUNDI  
Pin Code :  
FAX No. : 916767-72010  
E-mail :  
Phone : 916767-72239
- (f) Police Station :
- (g) First opening date : 04/06/1935
- (h) Weekly day of rest : SUN
2. Address for : JODA WEST MN MINE, M/S TISCO LTD  
correspondance P.O.BICHHAKUNDI  
DIST-KEONJHAR, ORISSA-758034
3. (a) Lease Number : ORI0056  
(b) Lease area : 1437.72  
(c) Period of lease :  
(d) Date of Expiry : 31/03/2030
4. Mineral worked : MANGANESE ORE Main

## 5. Name and Address of the

Lessee : TISCO  
 Bombay House 24, Homy Mody  
 Street Mumbai MUMBAI  
 (SUBURBAN) MAHARASHTRA  
 Phone:  
 FAX :

Owner : M/sTISCO  
 Mr. N.P.Sinha M/s TISCO  
 singhbhum SINGHBHUM (WEST)  
 JHARKHAND  
 Phone: 06767-72010  
 FAX :

Agent : AMIT KUMAR DUBEY  
 KEONJHAR ORISSA  
 Phone: 9238101140  
 FAX :

## Mining Engineer

Name : SHRI SOUMYA RANJAN MOHANTA, Full Time  
 Qualification : DEGREE, FCC  
 Appointment/ : 01/08/2018  
 Termination date

## Geologist

Name : SHRI ANSUMAN DASGUPTA, Full Time  
 Qualification : MSC GEOLOGY  
 Appointment/ : 01/02/2016  
 Termination date

## Manager

Name : SHRI S S MISHRA  
 Qualification : DIPLOMA, FCC  
 Appointment/ : 05/05/2017  
 Termination date

6. Date of approval of Mining	:	Renewal under rule 22 MCR1960	12/03/2002
Plan/Scheme of Mining	:	Modif.of approved Mining Plan	24/03/2005
	:	Mining Scheme rule 12 MCDR1988	17/02/2009
	:	Mining Scheme rule 12 MCDR1988	21/05/2013
	:	MP review under 17(1) MCR 2016	09/11/2017

## PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

## Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	No such specific proposal.	however 66 nos of bore holes drilled during the year 2017-18.	Nil
1b	Exploration over lease area for geological axis 1 or 2	60 nos of bore holes were proposed during the year 2017-18.	drilling of 66 nos of boreholes carried.	Nil
1c	Exploration Agencies and Expenditure in lakh rupees during the year	No such sepecific proposal	Rs. 137.08 Lakhs was the expenditure done by in house agency.	
1d	Balance area to be explored to bring Geological axis in 1 or 2	140 nos of boreholes were proposed during the scheme period from the year 2018-19 to 2022-23 to brought area under G1/G2.	66 nos of boreholes were drilled during the year 2017-18. area under G1: 207.545 ha, G2: 103.917 Ha, G3: 294.178 ha and the rest is non mineralised area.	Nil
1e	Balance reserve as on 01/04/20	As per the approved document on 09.11.2017 the Manganese ore reserves are 1.062 mt and resources are 5.25 mt. and iron reserves are 27.17 mt. and resources are 79.81 mt.	Due to depletion of reserves from year 2017 the Manganese reserves as on 01.04.2018 are 1.01 mt. and resources are 5.25 mt. and iron reserves are 27.17 mt. and resources are 79.81 mt.	Nil
1f	General remarks of inspecting officers on geology, exploration etc	No comments to offer.	66 nos of boreholes drilled against the proposal of 60 nos of boreholes to increase the confidence level during excvation.	Nil

## Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	D-Quarry: 3100 N-3320 N & 4900E-5240E, H-Quarry: 2000 N- 2325 N& 3400E-3650E & 1150N-1500N & 3650 E-3900E, I-Quarry: 3980N-4150N & 5590E-5740E, Gangaigora Quarry: 2810N-3000N & 5850 E-5970E, Sankheiburu Quarry: 2260N-2400N & 5570E-5700E.	Only D-Quarry and H-Quarry were operational. No work done in I-Quarry, Gangaigora and Sankheiburu Quarry. D-Quarry: 3100 N-3320 N & 4900E-5240E, H-Quarry: 2000 N- 2325 N& 3400E-3650E & 1150N-1500N & 3650 E-3900E,	due to want of FC now ork carried out in other quarries.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	generated top soil proposed to be used for plantation purpose and seperate benches in OB and mineral are proposed.	seperate becnhes in OB and mineral are mainatined. top soil generated was used for plantation purpose.	Nil
2c	Stripping ratio or ore to OB ratio	1:8.2 t/cu.m.	1:10.24 t/cu.m.	variation is due to change in the litho formation during excavation.
2d	Quantity of topsoil generation in m3	No such specific proposal.	2027 cu.m. in the year 2017-18.	used for plantation purpose.
2e	Quantity of overburden generation in m3	1736412 cu.m. for the year 2017-18.	713025 cu.m.	less production of OB due to less development work as only two quarries were developed during the year.
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	No comments to offer.	Development was carried out in two no of quarries only.	Nil

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Exploitation:

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Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	5 nos (D-Quarry, H-Quarry, I-Quarru, Sankheiburu, Gangaigora ) were proposed during the year 2017-18.	2 nos (D-Quarry, H-Quarry) were operational.	other quarries could not be worked out due to want of FC.
3b	Quantity of ROM mineral production proposed	211765 tonnes during the year 2017-18.	81854 tonnes during the year 2017-18.	less production due to less development work as only two quarries were developed.
3c	Recovery of sailable/usable mineral from ROM production	180000 tonnes	69595 tonnes	less production due to less development and less production of ROM.
3d	Quantity of mineral reject generation	10588 tonnes.	9017 tonnes.	Nil
3e	Grade of mineral rejects generation and threshold value declared.	+10%-25% Mn	+10%-25% Mn	Nil
3f	Quantity of sub grade mineral generation.	21176 tonnes	8172 tonnes	due to less production of ROM.
3g	Grade of sub grade mineral generation	+10%-25% Mn	+10%-25% Mn	Nil
3h	Manual / Mechanised method adopted for segregating from ROM	Manual	Manual	Nil
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	1.Study on Mechanized processing of Manganese Ore 2. study for beneficiation of Low/ Sub Grade	Study done on Mechanized processing of Manganese Ore. study for beneficiation of Low/ Sub Grade Manganese Ore and Fines carried out by reduction roasting and magnetic separation.	Nil

3j Provision of drilling and blasting in mineral benches	Deep hole Drilling blasting Depth of hole = 8 m +10% subgrade =8.8m Spacing= 3m Burden= 2.5 m Volume= 60 CuM Specific Gravity=2.5 Tonnage/Hole= 150 Tonnes Powder factor= 6.0 kg/Tonne	Deep hole Drilling blasting Depth of hole = 8 m +10% subgrade =8.8m Spacing= 3m Burden= 2.5 m Volume= 60 CuM Specific Gravity=2.5 Tonnage/Hole= 150 Tonnes Powder factor= 6.0 kg/Tonne	Nil
3k Provision of mining machineries in mineral benches	Shovel : 6, 2.4 Cum Dumper : 28, 25 tonnes Drill : 5	Shovel : 6, 2.4 Cum Dumper : 24, 25 tonnes Drill : 1	Nil
3l Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Bench height- 8m	Bench height- 8m	Found to be as per proposal.
3m Total area covered under excavation/pits	103.046 ha by the end of plan period i.e. 2017-18.	85.433 ha	Nil
3n Ore to OB ratio for the pit/mine during the year.	1:8.20 t/cu.m.	1:10.24 t/cu.m.	Nil

3o	Total area put in use under different heads at the end of year	Area to be excavated: 103.046 ha Storage of top soil: 1 ha Waste dump: 101.463 Mineral storage: 36.750 ha Infrastructure : 37.185 ha Roads: 20.14 ha Railways: 0 ha Greenbelt: 69.730 ha Tailing pond: 0 ha Effluent treatment plan: 0.131 ha Mineral separation plan: 0 ha Township area: 123.320 ha Area remaining untouched: 944.954 ha	Area to be excavated: 85.4330 ha Storage of topsoil: 0.09 ha Waste dump: 86.375 ha Mineral Storage: 32.95 ha Infrastructure: 13.385 ha Roads: 20.14 ha Railways: 0 ha Greenbelt: 69.73 ha Tailing pond: 0 ha Effluent treatment plan: 0 ha Mineral separation plan: 0 ha Township area: 123.320 ha Area remaining untouched: 1006.297 ha	Nil
3p	Production of ROM mineral during the last five year period as applicable	2013-14: 164706 MT 2014-15: 176471 MT 2015-16: 188235 MT 2016-17: 200000 MT 2017-18: 211765 MT	2013-14: 164642.325 MT 2014-15: 123299.077 MT 2015-16: 114585.335 MT 2016-17: 93777.678MT 2017-18: 81854.524 MT	Nil
3q	General remarks of inspecting officers on method of mining etc.	No comments to offer.	the mine production is carried out from two quarries only.	Nil

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Solid Waste Management - Dumping:

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Sl.No.	Item	Propasals	Actual work	Remarks
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4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Separate Dumps , OB and mineral reject has been proposed. top soil will be used for plantation.	Separate Dumps, OB and mineral reject has been used for plantation.	Nil
4b	Location of topsoil, OB and mineral reject dumps	D#1: 4636 E- 5282 E & 2768 N-1724 N D#8:3236E- 3898E & 1974N- 1360N D#11:3338E- 3605E & 1305N- 1007N D#5:5638E- 5852E& 3121 N-2961 N	D#1: 4636 E- 5282 E & 2768 N-1724 N D#8:3236E-3898E & 1974N- 1360N D#11:3338E-3605E & 1305N-1007N D#5:5638E-5852E& 3121 N-2961 N	Nil
4c	Number of dumps within lease area and outside of lease area	4 nos.	4 nos with in lease area.	Nil
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Outside of UPL	Outside of UPL	Nil
4e	Number of active and alive dumps.	4 nos	2 nos	less development as only two nos of quarries were developed.
4f	Number of dead dumps.	Nil	Nil	Nil
4g	Number of dumps established.	No proposal.	Nil	Nil
4h	Whether Retaining wall or garland drain all along dumps are there.	No such specific proposal.	Nil	Nil
4i	Length of Retaining wall or garland drain all along dumps	Nil	Nil	Nil
4j	Number of settling ponds	1 no	1 no	Nil



4k	Specific comments of inspecting officer on waste dump management	No comments to offer.	waste dumping is being carried out as per proposal.	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.	No proposal.	Nil	Area not matured for reclamation
5b	Area under backfilling of mined out area	No proposal.	Nil	Nil
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	generated top soil will be used for plantation.	top soil is being used for plantation.	Nil
5d	Total area fully reclaimed and rehabilitated	No proposal.	Nil	Nil
5e	General remarks of inspecting officers on backfilling and reclamation etc.	No comments to offer.	Area not matured for reclamation and rehabilitation	Nil

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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).	Submitted.	Submitted.	Nil

6b	Area available for rehabilitation (ha) .	No proposal.	Nil	Nil
6c	afforestation done (ha).	Afforestation on H-quarry waste dump: 3.5 ha during the year 2017-18.	Afforestation on H-quarry waste dump: 3.6 ha carried out.	Nil
6d	No. of saplings planted during the year	8750 nos. on waste dump	24839 nos. saplings planted on dumps with gap plantation.	Nil
6e	Cumulative no .of plants	No such proposal.	139794 nos during the scheme period.	Nil
6f	Any other method of rehabilitation	No proposal.	Nil	Nil
6g	Cost incurred on watch and care during the year	Rs. 218750 during the year 2017-18	Rs. 1662573	Nil
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling ( Lx B x D	Nil	Nil	Nil
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	Nil	Nil	Nil
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on on backfilled area	Nil	Nil	Nil

6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	Nil	Nil	Nil
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	Nil	Nil	Nil
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	Nil	Nil	Nil
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	Nil	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)	regular monitoring of environmental parametrs are proposed.	monitoring is being carried out.	Nil
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	No comments to offer.	plantation was carried out on dump slopes as proposed.	Nil

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**Mineral Conservation:**


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Sl.No.	Item	Propasals	Actual work	Remarks
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7a	ROM Mineral dispatch or grade-wise sorting within lease area	Grade wise sorting are proposed.	carried out.	Nil
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Manual	Manual	Nil
7c	Different grade of mineral sorted out at mines.	Chemical Grade (Mn> 48% & Fe< 4%) ( +10 - 75mm, +6 - 25mm, -10mm ) High Grade (Mn>46%) ( +10 -75mm, +6 - 25mm, -10mm ) Low Grade (Mn >25% & < 35%) ( +10 - 75mm, +6 - 25mm, -10mm )	Chemical Grade (Mn> 48% & Fe< 4%) ( +10 -75mm, +6 -25mm, -10mm ) High Grade (Mn>46%) ( +10 -75mm, +6 -25mm, -10mm ) Medium Grade (Mn>35% & Mn< 26%) ( +10 -75mm, +6 -25mm, -10mm ) Low Grade (Mn >25% & < 35%) ( +10 - 75mm, +6 -25mm, -10mm )	Nil
7d	Any beneficiation process at mines .	Nil	Nil	Nil
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	No comments to offer.	manual sorting of different grades of managanese ore is being carried out.	Nil

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**Environment:**


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Sl.No.	Item	Propasals	Actual work	Remarks
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8a	Separate removal and utilization of topsoil (Rule 32)	No such specific proposal, however generated top soil is used for plantation purpose.	generated top soil is being used for plantation purpose.	Nil
8b	Concurrent use or storage of topsoil	top soil generated will be used for plantation purpose.	2027 cu.m. top soil generated used for plantation purpose.	Nil
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate Dumps for Overburden, subgrade and Mineral rejects Proposed	Separate Dumps for Overburden, subgrade and Mineral rejects are maintained.	Nil
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Nil	Nil	Nil
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Nil	Nil	Nil
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Plantation proposed in dumps: 3.5 ha (8750 nos)	Plantation carried out waste dump: 3.6 ha (28839 nos)	Nil
8g	Survival rate	No proposal.	84%	Nil

8h	Water sprinkling on roads to control airborne dust	Haul roads are regularly sprinkled with the help of mobile water sprinklers.	Haul roads are regularly sprinkled with the help of mobile water sprinklers.	Nil
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	No comments to offer.	plantation is carried out as proposed on the dump slopes.	Nil

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Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	submit before 1st July of previous year annual return.	Monthyl and annual return are submitted with in stipulated time period.	Nil
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	(i) Graduate Mining Engineer 1 (ii) Diploma Mining Engineer 2 (iii) Geologist 1	(i) Graduate Mining Engineer 1 (ii) Diploma Mining Engineer 2 (iii) Geologist 1	Nil
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	1) Open cast wroking- 85.433 ha 2)Reclaimed/Rehabilitated- 37.880 ha 3)waste disposal- 86.375 ha 4)Occupied by plant, buildings, residential area and roads- 38.856 5)Mineral storage, Top soil storage& green belt- 102.770 ha	1) Open cast wroking- 85.433 ha 2)Reclaimed/Rehabilitated- 37.880 ha 3)waste disposal- 86.375 ha 4)Occupied by plant, buildings, residential area and roads- 38.856 5)Mineral storage, Top soil storage& green belt- 102.770 ha	Nil

9d	Scrutiny of Annual return on afforestation	24839 nos	24839 nos	Nil
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	12259 t	12259 t	Nil
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM stock: 0 tonnes 25% to below 35% Mn: 72243.039 tonnes 35% to below 46% Mn: 7636.398 tonnes	ROM stock: 0 tonnes 25% to below 35% Mn: 72243.039 tonnes 35% to below 46% Mn: 7636.398 tonnes	Nil
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Production cost: Rs 6109.10	Production cost: Rs 6109.10	captive mine
9h	Scrutiny of Annual return on fixed assets	Rs 738526086	Rs 738526086	Nil
9k	Scrutiny of Annual return on mining machineries	Back hoe (2.4 Cum/0.9 cum/ 1.8 Cum)- 6 Dumper-24 Front End Loader: 1 Drill:1 Dozer: 2 Water tanker :3 Explosive Van:1	Back hoe (2.4 Cum/0.9 cum/ 1.8 Cum)- 6 Dumper-24 Front End Loader: 1 Drill:1 Dozer: 2 Water tanker :3 Explosive Van:1	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 :**

(RAMKISHAN R)

Indian Bureau of Mines