

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

MCDR INSPECTION REPORT

Bhubaneshwar regional office

Mine file No : ORI/IRON/KJR/MCDR-35/BBS

Mine code : 30ORI08059

- (i) Name of the Inspecting : U11) DAYANAND UPADHYAY
Officer and ID No.
- (ii) Designation : Sr. Asst. Contrl. Mines
- (iii) Accompanying mine : Sri Manish Kumar, Mines Manager
Official with
Designation
- (iv) Date of Inspection : 13/10/2019
- (v) Prev.inspection date : 21/12/2018

PART-I : GENERAL INFORMATION

1. (a) Mine Name : KHONDBOND
- (b) Registration NO. : 4376/30ORI08059
- (c) Category : A Mechanised
- (d) Type of Working : Opencast
- (e) Postal address
- State : ORISSA
- District : KEONJHAR
- Village : KHONDBOND
- Taluka : CHAMPUA
- Post office : BICHAKUNDI
- Pin Code :
- FAX No. : 0676772239
- E-mail : md.office@tatasteel.com
- Phone : 06767 72239
- (f) Police Station : Bamebari
- (g) First opening date : 17/01/1983
- (h) Weekly day of rest : SUN
2. Address for correspondence : VILL:KHANDBOND& GURDA
PO:BICHAKUNDI
P. S. JODA, DIST:KEONJHAR,ORISSA, PIN:758034
3. (a) Lease Number : ORI0108
- (b) Lease area : 978
- (c) Period of lease : 50 yrs
- (d) Date of Expiry : 31/03/2030
4. Mineral worked : MANGANESE ORE Associated
IRON ORE Main

5. Name and Address of the

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

Owner : T V NARENDRAN
TATA STEEL LIMITED
JAMSHEDPUR, POST-BISTUPUR
SINGBHUM EAST, JHARKHAND
SINGHBHUM (EAST) JHARKHAND
Phone: 06572431818
FAX : 0657-2431818

Agent : SHIRISH SHEKHAR
KHONDBOND IRON AND MN MINES
KEONJHAR ODISHA KEONJHAR
ORISSA
Phone: 7209003547
FAX : 0676772239

Mining Engineer

Name : Manish Kumar, Full Time
Qualification : B.E. Mining
Appointment/ : 24/06/2018
Termination date

Geologist

Name : KANISHKA DATTA, Full Time
Qualification : MSC TECH (APPLIED GEOLOGY)
Appointment/ : 01/07/2013
Termination date

Manager

Name : Manish Kumar
Qualification : B.E. Mining
Appointment/ : 24/09/2018
Termination date

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| 6. Date of approval of Mining Plan/Scheme of Mining | : | Renewal under rule 22 MCR1960 | 11/12/2001 |
| | | Modif.of approved Mining Plan | 11/06/2004 |
| | | Modif.of approved Mining Plan | 09/03/2009 |
| | | FMCP under 23C(1) | 09/03/2009 |
| | | Mining Scheme rule 12 MCDR1988 | 31/03/2009 |
| | | Mining Scheme rule 12 MCDR1988 | 19/06/2013 |
| | | Modif.approved Mining Scheme | 19/01/2016 |
| | | Modif.approved Mining Scheme | 24/08/2016 |
| | | 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 | During the Year 2018-19 , 20 Nos. of Bore Holes proposed. | 26 nos. BH have been drilled during year 2018-19. | 26 nos. BH have been drilled during year 2018-19 against the proposal of 20nos. of bore holes. |
| 1b | Exploration over lease area for geological axis 1 or 2 | 204.6 ha area under G1/G2 Level of exploration during plan period. | During plan period about 45.1 ha area has been explored under G1/G2 Level of exploration. Total 397.8 ha area has been explored under G1/G2 Level of exploration. | Out of total lease area about 397.8 ha area has been explored under G1/G2 level by putting 784 nos. of bore holes of total meterage 29726.2m. |
| 1c | Exploration Agencies and Expenditure in lakh rupees during the year | Not specified. | In house drilling by TATA is carried out. Expenditure incurred in drilling is 41.92 Lakh. | In house drilling by TATA is carried out. Expenditure incurred in drilling is 41.92 Lakh. |
| 1d | Balance area to be explored to bring Geological axis in 1 or 2 | 204.6 ha potentially mineralised area under G1/G2 Level of exploration during plan period. | Out of total lease area about 397.8 ha area has been explored under G1/G2 level by putting 784 nos. of bore holes of total meterage 29726.2m. | Out of total lease area about 397.8 ha area has been explored under G1/G2 level by putting 784 nos. of bore holes of total meterage 29726.2m. |
| 1e | Balance reserve as on 01/04/20 | As per Review of mining plan approved on 09/11/2017, Iron ore: Mineable reserve-107.31MT & Resources-177.10MT Mn ore: Mineable reserve-0.825MT & Resources-1.261MT | Balance reserve as on 01/04/2019, Iron ore: Mineable reserve-103.83MT & Resources-177.10MT Mn ore: Mineable reserve-0.759MT & Resources-1.261MT | Balance reserve as on 01/04/2019, Iron ore: Mineable reserve-103.83MT & Resources-177.10MT Mn ore: Mineable reserve-0.759MT & Resources-1.261MT |

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| 1f | General remarks of inspecting officers on geology, exploration etc | During the Year 2018-19 , 20 Nos. of Bore Holes proposed. | 26 nos. BH have been drilled during year 2018-19. | Out of total lease area about 397.8 ha area has been explored under G1/G2 level by putting 784 nos. of bore holes of total meterage 29726.2m. |
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Development :

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|--|---|---|--|
| 2a | Location of development w.r.t.lease area | Pit-1: N14090-14380 & E10210-10880, Pit-2: N12440-13020 & E9800-10460, Pit-3, N10000-10750 & E9230-9770, Pit-3, N10000-10750 & E9230-9770, Pit-7: N12685-13130 & E8250-8660, OZXII: N13960-14315 & E9041-9365 | Pit-1: N14090-14380 & E10210-10880, Pit-2: N12440-13020 & E9800-10460, Pit-3, N10000-10750 & E9230-9770, Pit-7: N12685-13130 & E8250-8660, OZXII: N13960-14315 & E9041-9365 | The development is concentrated in 05 pits as per proposal. |
| 2b | Separate benches in topsoil, overburden and minerals (Rule 15) | Separate benches in OB and ore with 10m height for iron ore and 6m height for Mn ore, top soil bench- nil. | Separate benches in OB and ore with 10m height for iron ore and 6m height for Mn ore have been maintained. | Separate benches in OB and ore with 10m height for iron ore and 6m height for Mn ore have been maintained. |
| 2c | Stripping ratio or ore to OB ratio | Iron- 1:7.69 T/cu.m Mn- 1:5 T/cu.m | Iron- 1:7.32 T/cu.m Mn- 1:3.6 T/cu.m | Average stripping ratio varies due to irregular & pocket nature of ore deposit. |
| 2d | Quantity of topsoil generation in m3 | Not proposed. | No top soil generation, as working is concentrated in broken up area. | No top soil generation, as working is concentrated in broken up area. |

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| 2e | Quantity of overburden generation in m3 | Iron: 0.63 million CuM Mn: 0.274 million CuM | Iron: 0.38 million CuM Mn: 0.165 million CuM | The less generation of waste is in account of less ROM production. |
| 2f | General remarks of inspecting officers on development of pit w.r.t. type of deposit etc | The development is proposed in 05 pits i.e Pit-1, Pit-2, Pit-3, Pit-7 & OZXII . | The development is concentrated in 05 pits i.e Pit-1, Pit-2, Pit-3, Pit-7 & OZXII as per proposal. Separate benches in OB and ore with 10m height for iron ore and 6m height for Mn ore have been maintained. | The development is concentrated in 05 pits i.e Pit-1, Pit-2, Pit-3, Pit-7 & OZXII as per proposal. |

Exploitation:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|---|--|--|--|
| 3a | Number of pit proposed for production | 05 pits i.e Pit-1, Pit-2, Pit-3, Pit-7 & OZXII | The ROM productiont is concentrated in 05 pits i.e Pit-1, Pit-2, Pit-3, Pit-7 & OZXII as per proposal. | The ROM productiont is concentrated in 05 pits i.e Pit-1, Pit-2, Pit-3, Pit-7 & OZXII as per proposal. |
| 3b | Quantity of ROM mineral production proposed | Iron: 4.85 MT Mn: 55000 Tonnes | Iron: 2.85 MT Mn: 45489Tonnes | The actual production is less than planned due to delay of expansion of its captive plant. |
| 3c | Recovery of sailable/usable mineral from ROM production | Iron: 3.6 MT Mn: 48626Tonnes | Iron: 2.22 MT Mn: 38761Tonnes | The actual production is less than planned due to delay of expansion of its captive plant. |
| 3d | Quantity of mineral reject generation | Iron: 1.15 MT Mn: 2550 cu.m | Iron Ore: 638063 tonne (Grade 45 to 58% Fe) and Manganese Ore: 6728 tonne (Grade 10 to 25% Mn) | The actual production is less than planned due to delay of expansion of its captive plant. |
| 3e | Grade of mineral rejects generation and threshold value declared. | Iron Ore: 45 to 58% Fe Mn Ore: 10 to 25% Mn | Iron Ore: 45 to 58% Fe Mn Ore: 10 to 25% Mn | Threshold value for Iron Ore is 45% Fe and for Manganese Ore is 10% Mn. |

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| 3f | Quantity of sub grade mineral generation. | Iron: 1.15 MT Mn: 2550 cu.m | Iron Ore: 638063 tonne (Grade 45 to 58% Fe) and Manganese Ore: 6728 tonne (Grade 10 to 25% Mn) | The actual production is less than planned due to delay of expansion of its captive plant. |
| 3g | Grade of sub grade mineral generation | Iron Ore: 45 to 58% Fe Mn Ore: 10 to 25% Mn | Iron Ore: 45 to 58% Fe Mn Ore: 10 to 25% Mn | Threshold value for Iron Ore is 45% Fe and for Manganese Ore is 10% Mn. |
| 3h | Manual / Mechanised method adopted for segregating from ROM | Mechanised for iron ore and manual for Mn ore. | Mechanised for iron ore and manual for Mn ore. | Mechanised for iron ore and manual for Mn ore. |
| 3i | Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects. | 8 MTPA wet beneficiation plant from 2020-21 and further 2 MTPA wet beneficiation plant from 2022-23. | At present only crushing and screening is being carried out at mines site. Compmany has proposed 8 MTPA wet beneficiation plant from 2020-21 and further 2 MTPA wet beneficiation plant from 2022-23. | At present only crushing and screening is being carried out at mines site. |
| 3j | Provision of drilling and blasting in mineral benches | Drilling of blast holes 100mm & 150 mm diameter drills and blasting with slurry and SME explosives. | Drilling and blasting is carried out with 100mm & 150 mm diameter drills with slurry and SME explosives. | Blasting is carried out with slurry and SME explosives maintaining 4m spacing and 3.2m burden. |
| 3k | Provision of mining machineries in mineral benches | EXCAVATOR 5.9 cu.m-4, DUMPER 100T-12, WATER TANKER 50L-2, DOZER-4, DTH DRILL 150mm dia.-3 etc. | Shovel 5.9 cu.m-2, dumper 100T-4, wheel loader-1, water tanker 5Kl-2, Compressor, Dozer-4, Explosive Van-1, drill machine 150mm dia.-3 etc. | Excavator, Loader and Dumper are equipped to winning out the mineral. |
| 3l | Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM | Bench height 10m for iron ore and 6m for Mn ore. | Bench height is suitably matched with the excavator. | Bench height is suitably matched with the excavator. |

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| 3m | Total area covered under excavation/pits | 268.946 ha proposed during approved plan period. | About 199.379 ha area has been covered under excavation pits. | About 199.379 ha area has been covered under excavation pits. |
| 3n | Ore to OB ratio for the pit/mine during the year. | Iron- 1:7.69 T/cu.m Mn- 1:5 T/cu.m | Iron- 1:7.32 T/cu.m Mn- 1:3.6 T/cu.m | Average stripping ratio varies due to irregular & pocket nature of ore deposit. |
| 3o | Total area put in use under different heads at the end of year | Total 577.687 ha area proposed under different heads during approved plan period. | Area covered under Pits: 199.379 Ha., Dumps - 49.357 Ha., Infrastructure & roads- 44.727 Ha., Other Purpose (Storing Minerals, top soil, tailing pond & safety zone) 33.487 Ha. | Area covered under Pits: 199.379 Ha., Dumps -49.357 Ha., Infrastructure & roads- 44.727 Ha., Other Purpose (Storing Minerals, top soil, tailing pond & safety zone) 33.487 Ha. |
| 3p | Production of ROM mineral during the last five year period as applicable | Iron Ore Production: 2014-15:9.28 mt 2015-16:6.28 mt 2016-17:8.29 mt 2017-18:11.39 mt 2018-19: 4.85mt Manganese Ore Production: 2014-15:0.082 mt 2015-16:0.052 mt 2016-17:0.064 mt 2017-18:0.050 mt 2018-19: 0.055mt | Iron Ore Production: 2014-15:0.20 mt 2015-16:1.68 mt 2016-17:2.45 mt 2017-18:2.57 mt 2018-19:2.85 mt Manganese Ore Production: 2014-15:0.00080 mt 2015-16:0.0048 mt 2016-17:0.057 mt 2017-18:0.049 mt 2018-19:0.045 mt | The actual production is less than planned due to delay of expansion of its captive plant. |

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| 3q | General remarks of inspecting officers on method of mining etc. | Fully mechanized opencast method of mining has been proposed to win the ore. | Fully mechanized opencast method of mining is being practiced at mine. | The ROM production is concentrated in 05 pits i.e Pit-1, Pit-2, Pit-3, Pit-7 & OZXII as per proposal. |
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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 dumping for overburden and mineral reject. | Waste material and Mineral reject has been dumped at the desiganted area. | There is no top soil generation. |
| 4b | Location of topsoil, OB and mineral reject dumps | SUBGRADE DUMP NO. 1A, 2A (From 11217N-10800N ,9500E-9690E), SUBGRADE DUMP NO. 3 (FROM 12780N-12390N,10285E-9825E), WASTE DUMP NO. 5A (From 12013N-11590N,9965E-9606E) | The sub grade/mineral reject and OB have been dumped on SUBGRADE DUMP NO. 3 (FROM 12780N-12390N,10285E-9825E) and WASTE DUMP NO. 5A (From 12013N-11590N,9965E-9606E) respectively. | The sub grade/mineral reject and OB have been dumped on SUBGRADE DUMP NO. 3 and WASTE DUMP NO. 5A respectively due to less generation mineral reject and OB as proposed. |
| 4c | Number of dumps within lease area and outside of lease area | SUBGRADE DUMP NO. 1A, 2A (From 11217N-10800N ,9500E-9690E), SUBGRADE DUMP NO. 3 (FROM 12780N-12390N,10285E-9825E), WASTE DUMP NO. 5A (From 12013N-11590N,9965E-9606E) | The sub grade/mineral reject and OB have been dumped on SUBGRADE DUMP NO. 3 (FROM 12780N-12390N,10285E-9825E) and WASTE DUMP NO. 5A (From 12013N-11590N,9965E-9606E) respectively. | There are 04 existing sub grade/mineral reject dumps 1, 1A, 2A & 3 and 02 permanent OB dumps 5A & 5B. The other dumps are temporary in nature. All the proposed dumps are lies within the lease area. |

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| 4d | Location of dumps w.r.t. ultimate pit limit (Rule 16) | SUBGRADE DUMP NO. 1A, 2A (From 11217N-10800N ,9500E-9690E), SUBGRADE DUMP NO. 3 (FROM 12780N-12390N,10285E-9825E), WASTE DUMP NO. 5A (From 12013N-11590N,9965E-9606E) | The sub grade/mineral reject and OB have been dumped on SUBGRADE DUMP NO. 3 (FROM 12780N-12390N,10285E-9825E) and WASTE DUMP NO. 5A (From 12013N-11590N,9965E-9606E) respectively. | There are 04 existing sub grade/mineral reject dumps 1, 1A, 2A & 3 and 02 permanent OB dumps 5A & 5B. The other dumps are temporary in nature. All the proposed dumps are lies outside the UPL. |
| 4e | Number of active and alive dumps. | SUBGRADE DUMP NO. 1A, 2A (From 11217N-10800N ,9500E-9690E), SUBGRADE DUMP NO. 3 (FROM 12780N-12390N,10285E-9825E), WASTE DUMP NO. 5A (From 12013N-11590N,9965E-9606E) | The sub grade/mineral reject and OB have been dumped on SUBGRADE DUMP NO. 3 (FROM 12780N-12390N,10285E-9825E) and WASTE DUMP NO. 5A (From 12013N-11590N,9965E-9606E) respectively. | The sub grade/mineral reject and OB have been dumped on SUBGRADE DUMP NO. 3 and WASTE DUMP NO. 5A respectively due to less generation mineral reject and OB as proposed. |
| 4f | Number of dead dumps. | Not proposed. | Nil. | Dumps no. 1 & 2 of manganese pits have been fully rehabilitated by plantation. |
| 4g | Number of dumps established. | Not proposed. | Old Dumps no. 1 & 2 of manganese pits have been fully rehabilitated by plantation. | Dumps no. 1 & 2 of manganese pits have been fully rehabilitated by plantation. |
| 4h | Whether Retaining wall or garland drain all along dumps are there. | Retaining wall of 400m long along proposed conveyor belt and 1230m along dump WB-A. | Retaining wall of 400m long along proposed conveyor belt not made. The retaining wall made along dump WB-A is not completed and about 100m length of retaining wall remains to be made along the dump towards the top edge of Pit-7. | The shortcomings of retaining wall has been pointed out through letter dated 22/10/2019. |

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| 4i | Length of Retaining wall or garland drain all along dumps | Retaining wall of 400m long along proposed conveyor belt and 1230m along dump WB-A. | Retaining wall of 400m long along proposed conveyor belt not made. The retaining wall made along dump WB-A is not completed and about 100m length of retaining wall remains to be made along the dump towards the top edge of Pit-7. | The shortcomings of retaining wall has been pointed out through letter dated 22/10/2019. |
| 4j | Number of settling ponds | 02 nos. of settling ponds. | One no. of settling pond proposed near to top soil dump is not constructed. | The shortcomings of settling pond has been pointed out through letter dated 22/10/2019. |
| 4k | Specific comments of inspecting officer on waste dump management | SUBGRADE DUMP NO. 1A, 2A (From 11217N-10800N ,9500E-9690E), SUBGRADE DUMP NO. 3 (FROM 12780N-12390N,10285E-9825E), WASTE DUMP NO. 5A (From 12013N-11590N,9965E-9606E) | The sub grade/mineral reject and OB have been dumped on SUBGRADE DUMP NO. 3 (FROM 12780N-12390N,10285E-9825E) and WASTE DUMP NO. 5A (From 12013N-11590N,9965E-9606E) respectively. The slope of the dumps have been stabilised by plantation. | Old Dumps no. 1 & 2 of manganese pits have been fully rehabilitated by plantation. The shortcomings of retaining wall & settling pond has been pointed out through letter dated 22/10/2019. |

Solid Waste Management - Backfilling:

| Sl.No. | Item | Proposals | Actual work | Remarks |
|--------|---|--|-----------------------------------|-----------------------------------|
| 5a | Status of part or full extraction of mineral from mined out area before starting backfilling. | No Proposal of backfilling during 2018-19. | Pits are matured for backfilling. | Pits are matured for backfilling. |
| 5b | Area under backfilling of mined out area | No Proposal of backfilling during 2018-19. | Pits are matured for backfilling. | Pits are matured for backfilling. |

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| 5c | Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32) | Not proposed. | No proposal of top soil generation, as no fresh area has been proposed for development in year 2018-19. | No proposal of top soil generation, as no fresh area has been proposed for development in year 2018-19. |
| 5d | Total area fully reclaimed and rehabilitated | Not proposed. | Mined out area is not matured for reclamation and rehabilitation. | Mined out area is not matured for reclamation and rehabilitation. |
| 5e | General remarks of inspecting officers on backfilling and reclamation etc. | No proposal of backfilling as none of the pit area is matured for backfilling. | Mined out area is not matured for reclamation and rehabilitation. | Mined out area is not matured for reclamation and rehabilitation. |

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 specified. | Annual PMCP report for reporting year i.e. 2018-19 has been submitted. | Annual PMCP report for reporting year i.e. 2018-19 has been submitted. |
| 6b | Area available for rehabilitation (ha) . | Not proposed as pits are not matured for reclamation and rehabilitation | Pits are not matured for reclamation and rehabilitation. However about 1 ha area waste dump has been proposed to rehabilitate by plantation against which about 1.32 ha area of waste dump has been rehabilitated by plantation. | Pits are not matured for reclamation and rehabilitation. |
| 6c | afforestation done (ha). | 1.0 ha area of waste dump. | About 1.32 ha area of waste dump has been rehabilitated by plantation. | About 1.32 ha area of waste dump has been rehabilitated by plantation. |
| 6d | No. of saplings planted during the year | 3000 nos. of saplings. | In 2018-19, total 4142 nos. of saplings have been planted by lessee. | In 2018-19, total 4142 nos. of saplings have been planted by lessee. |

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| 6e | Cumulative no .of plants | Not specified. | Cumulative nos. of saplings planted in the lease area is about 344502. | Cumulative nos. of saplings planted in the lease area is about 344502. |
| 6f | Any other method of rehabilitation | Not proposed as pits are not matured for reclamation and rehabilitation | Pits are not matured for reclamation and rehabilitation. However about 1 ha area waste dump has been proposed to rehabilitate by plantation against which about 1.32 ha area of waste dump has been rehabilitated by plantation. | Pits are not matured for reclamation and rehabilitation. |
| 6g | Cost incurred on watch and care during the year | Not specified. | Around Rs 8.4 lakh cost incurred on watch and care. | Around Rs 8.4 lakh cost incurred on watch and care. |
| 6h | Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (L x B x D | Not proposed as pits are not matured for reclamation and rehabilitation | Pits are not matured for reclamation and rehabilitation. | Pits are not matured for reclamation and rehabilitation. |
| 6i | Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings | Not proposed as pits are not matured for reclamation and rehabilitation | Pits are not matured for reclamation and rehabilitation. | Pits are not matured for reclamation and rehabilitation. |
| 6j | Compliance on reclamation and rehabilitation by backfilling (iii) Afforestation on on backfilled area | Not proposed as pits are not matured for reclamation and rehabilitation | Pits are not matured for reclamation and rehabilitation. | Pits are not matured for reclamation and rehabilitation. |
| 6k | Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir | Not proposed as pits are not matured for reclamation and rehabilitation | Pits are not matured for reclamation and rehabilitation. | Pits are not matured for reclamation and rehabilitation. |

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| 6l | Compliance on reclamation and rehabilitation by backfilling (v)any other specific means. | Not proposed as pits are not matured for reclamation and rehabilitation | Pits are not matured for reclamation and rehabilitation. | Pits are not matured for reclamation and rehabilitation. |
| 6m | Compliance of rehabilitation of waste land within lease (i)afforestation | Not proposed. | Nil. | Nil. |
| 6n | Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha) | Not proposed. | Nil. | Nil. |
| 6o | Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation | Not proposed. | Nil. | Nil. |
| 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. | Not proposed as pits are not matured for reclamation and rehabilitation | Pits are not matured for reclamation and rehabilitation. However about 1 ha area waste dump has been proposed to rehabilitate by plantation against which about 1.32 ha area of waste dump has been rehabilitated by plantation. | Pits are not matured for reclamation and rehabilitation. However about 1 ha area waste dump has been proposed to rehabilitate by plantation against which about 1.32 ha area of waste dump has been rehabilitated by plantation. |

Mineral Conservation:

| Sl.No. | Item | Proposals | Actual work | Remarks |
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| 7a | ROM Mineral dispatch or grade-wise sorting within lease area | Gradewise sorting. | Gradewise sorting is being practiced. | Gradewise sorting is being practiced. |
| 7b | Method of grade-wise mineral sorting i.e. manual or mechanical. | Mechanical for Iron ore and Manual for Manganese ore. | Mechanical for Iron ore and Manual for Manganese ore. | Mechanical for Iron ore and Manual for Manganese ore. |
| 7c | Different grade of mineral sorted out at mines. | Iron Ore having Fe grade from 45 to 58% and > 58% Fe. Manganese Ore having Mn Grade from 10 to 25% and >25% Mn. | Iron Ore: 45 to 58% Fe, 62 to 65% Fe and >65% Fe. Mn Ore: 10 to 25% Mn, 25 to 35% Mn, 35 to 46% Mn, >46% Mn | Iron Ore: 45 to 58% Fe, 62 to 65% Fe and >65% Fe. Mn Ore: 10 to 25% Mn, 25 to 35% Mn, 35 to 46% Mn, >46% Mn |
| 7d | Any beneficiation process at mines | 8 MTPA wet beneficiation plant from 2020-21 and further 2 MTPA wet beneficiation plant from 2022-23. | At present only crushing and screening is being carried out at mines site. Company has proposed 8 MTPA wet beneficiation plant from 2020-21 and further 2 MTPA wet beneficiation plant from 2022-23. | No beneficiation process at present, only crushing and screening is carried out. |
| 7e | General remarks of inspecting officer on Mineral conservation and beneficiation issues | Gradewise sorting of ore is proposed Manual for Mn ore mechanised for Iron ore. | Gradewise sorting of ore is proposed Manual for Mn ore mechanised for Iron ore is practiced at mine site. | At present only crushing and screening is being carried out at mines site. Company has proposed 8 MTPA wet beneficiation plant from 2020-21 and further 2 MTPA wet beneficiation plant from 2022-23. |

Environment:

| Sl.No. | Item | Proposals | Actual work | Remarks |
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| 8a | Separate removal and utilization of topsoil (Rule 32) | No proposal of top soil generation. | No proposal of top soil generation, as no fresh area has been proposed for development in year 2018-19. | No proposal of top soil generation, as no fresh area has been proposed for development in year 2018-19. |
| 8b | Concurrent use or storage of topsoil | No proposal of top soil generation. | No proposal of top soil generation, as no fresh area has been proposed for development in year 2018-19. | No proposal of top soil generation, as no fresh area has been proposed for development in year 2018-19. |
| 8c | Separate dumps for overburden, waste rock, rejects and fines (Rule 33) | Separate dumping of Waste, Mineral reject has been proposed. | Separate dumping of Waste, Mineral reject has been carried out. | Separate dumping of Waste, Mineral reject has been carried out. |
| 8d | Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use | No proposal of backfilling as none of the pit area is matured for backfilling. | Mined out area is not matured for reclamation and rehabilitation. | Mined out area is not matured for reclamation and rehabilitation. |
| 8e | Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc) | No proposal of backfilling as none of the pit area is matured for backfilling. | Mined out area is not matured for reclamation and rehabilitation. | Mined out area is not matured for reclamation and rehabilitation. |
| 8f | Baseline information on existence of plantation and additional plantation done (Rule 41) | 3000 nos. of saplings in 2018-19. | Total 4142 nos. saplings have been planted in 2018-19. Cumulative 4142 nos. of saplings have been planted by lessee. | Total 4142 nos. saplings have been planted in 2018-19. Cumulative 4142 nos. of saplings have been planted by lessee. |
| 8g | Survival rate | Not specified. | As reported survival rate is 89.4%. | As reported survival rate is 89.4%. |

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| 8h | Water sprinkling on roads to control airborne dust | Mobile and fixed water sprinkler. | Mobile and fixed water sprinkler. are used to control air borne dust. | Mobile and fixed water sprinkler. are used to control air borne dust. |
| 8i | General remarks of inspecting officer on aesthetic beauty in and around mines area | The aesthetic beauty of the mine is proposed to improve through planation over the matured slope of the waste dumps. | Plantation has been carried out over the matured slope of the waste dumps as well as gap filling plantation has also been carried out. | Total 4142 nos. saplings have been planted in 2018-19. Cumulative 4142 nos. of saplings have been planted by lessee. |

Compliance of Rule 45:

| Sl.No. | Item | Proposals | Actual work | Remarks |
|--------|---|--|---|--|
| 9a | Status of submission of Monthly and Annual returns | Monthly and annual returns have been submitted for the year 2018-19. | Monthly and annual returns have been submitted for the year 2018-19. | Monthly and annual returns have been submitted for the year 2018-19. |
| 9b | Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager | Information has been furnished about Mining Engineer, Geologist, and Manager. | Mining engineer and Geologist are appointed. | Mining engineer and Geologist are appointed. |
| 9c | Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc. | Area covered under Pits: 199.379 Ha., Dumps -49.357 Ha., Infrastructure & roads- 44.727 Ha., Other Purpose (Storing Minerals, top soil, tailing pond & safety zone) 33.487 Ha. | Area covered under Pits: 199.379 Ha., Dumps - 49.357 Ha., Infrastructure & roads- 44.727 Ha., Other Purpose (Storing Minerals, top soil, tailing pond & safety zone) 33.487 Ha. | Area covered under Pits: 199.379 Ha., Dumps -49.357 Ha., Infrastructure & roads- 44.727 Ha., Other Purpose (Storing Minerals, top soil, tailing pond & safety zone) 33.487 Ha. |

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| 9d | Scrutiny of Annual return on afforestation | 4142 nos. of saplings. | 4142 nos. of saplings. | 4142 nos. of saplings within lease area. |
| 9e | Scrutiny of Annual return on mineral reject generation (Grade and quantity) | Iron Ore: 638063 tonne (Grade 45 to 58% Fe) and Manganese Ore: 6728 tonne (Grade 10 to 25% Mn) | Iron Ore: 638063 tonne (Grade 45 to 58% Fe) and Manganese Ore: 6728 tonne (Grade 10 to 25% Mn) | Iron Ore: 638063 tonne (Grade 45 to 58% Fe) and Manganese Ore: 6728 tonne (Grade 10 to 25% Mn) |
| 9f | Scrutiny of Annual return on ROM stock and/or graded ore | ROM Iron Ore closing stock 697523.0 tonnes and For Manganese Ore, it is furnished 88053.188tonnes. | ROM Iron Ore closing stock 697523.0 tonnes and For Manganese Ore, it is furnished 88053.188tonnes. | ROM Iron Ore closing stock 697523.0 tonnes and For Manganese Ore, it is furnished 88053.188tonnes. |
| 9g | Scrutiny of Annual return on sale value, Ex. Mine price and production cost | Ex Mine Price: Rs.4437.33 for Mn Ore and Rs. 2058.06 for iron ore per tonne. | Ex Mine Price: Rs.4437.33 for Mn Ore and Rs. 2058.06 for iron ore per tonne. | The Sale value is NIL because of captive consumption of the mineral. |
| 9h | Scrutiny of Annual return on fixed assets | Value of Fixed Assets - Rs 1057061533 | Value of Fixed Assets - Rs 1057061533 | Value of Fixed Assets - Rs 1057061533 |
| 9k | Scrutiny of Annual return on mining machineries | Shovel 5.9 cu.m-2, dumper 100T-4, wheel loader-1, water tanker 5Kl-2, Compressor, Dozer-4, Explosive Van-1, drill machine 150mm dia.-3 etc. | Shovel 5.9 cu.m-2, dumper 100T-4, wheel loader-1, water tanker 5Kl-2, Compressor, Dozer-4, Explosive Van-1, drill machine 150mm dia.-3 etc. | Shovel 5.9 cu.m-2, dumper 100T-4, wheel loader-1, water tanker 5Kl-2, Compressor, Dozer-4, Explosive Van-1, drill machine 150mm dia.-3 etc. |

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 |
| Violation of rule 11(1) & 45(5)(c) has been issued on 22.10.2019. | | | |
| Date : 02.12.2019 | | | <i>Dayanand Upadhyay</i> (DAYANAND UPADHYAY) |

Indian Bureau of Mines