

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

MCDR INSPECTION REPORT

Bhubaneshwar regional office

Mine file No : ORI/IRON/SNG/MCDR-1/BBS

Mine code : 30ORI13001

- (i) Name of the Inspecting : **RAM**) **RAMKISHAN R**
Officer and ID No.
- (ii) Designation : Sr. Asst. Contrl. Mines
- (iii) Accompanying mine : Shri B K Soren, Mine Manager, Shri P P Dev, AGM (Geo
Official with
Designation
- (iv) Date of Inspection : 09/01/2018
- (v) Prev.inspection date : 15/10/2015

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **BARSUA**
- (b) **Registration NO.** :
- (c) Category : A Mechanised
- (d) Type of Working : Opencast
- (e) Postal address
State : ORISSA
District : SUNDARGARH
Village : BARSUA
Taluka : BONAI
Post office : TENSA
Pin Code : 770042
FAX No. : 06625-236031
E-mail : rmdcal@giascl.vsnl.net.in
Phone : 06625-236026
- (f) Police Station : Lahunipara
- (g) First opening date : 06/01/1960
- (h) Weekly day of rest : SUN
2. Address for : BARSUA IRON MINE OF SAIL
correspondance AT/PO-BARSUA
DIST-SUNDERGARH
3. (a) Lease Number : ORI0155
(b) Lease area : 77.94
(c) Period of lease :
(d) Date of Expiry : 31/03/2020
4. Mineral worked : IRON ORE Main

5. Name and Address of the

Lessee : STEEL AUTHORITY OF INDIA LIMITED
 PURNAPANI LIMESTONE MINE
 SUNDERGARH DISTRICT -770
 ORISSA SUNDARGARH ORISSA
 Phone:0661-728121
 FAX :

Owner : SHRI KALYAN MAITY
 ISPAT BHAWAN, LODHI ROAD
 M/S SAIL LTD, NEW DELHI
 SUNDARGARH ORISSA
 Phone:
 FAX :

Agent : SHRI A K PAL
 TENSA SUNDARGARH ODISHA
 SUNDARGARH ORISSA
 Phone:
 FAX :

Mining Engineer

Name : SHRI S K KHANDE, Full Time
 Qualification : B E (MINING)
 Appointment/ : 08/07/2016
 Termination date

Geologist

Name : SHRI R P MONDAL, Full Time
 Qualification : MSC (GEOLOGY)
 Appointment/ : 08/07/2016
 Termination date

Manager

Name : SHRI B K SOREN
 Qualification : BSC (MINING)
 Appointment/ : 01/06/2016
 Termination date

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|-------------------------------|---|--------------------------------|------------|
| 6. Date of approval of Mining | : | Mining Scheme rule 12 MCDR1988 | 22/02/2002 |
| Plan/Scheme of Mining | : | Mining Scheme rule 12 MCDR1988 | 04/10/2007 |
| | : | Renewal under rule 24 MCR1960 | 28/07/2008 |
| | : | Mining Scheme rule 12 MCDR1988 | 04/09/2015 |

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

| Sl.No. | Item | Proposals | Actual work | Remarks |
|--------|---|---|--|-------------------------|
| 1a | Backlog of previous year | No such specific proposal in the pproved document however 17 nos of boreholes proposed for the year 2016-17 | drilling of 16 nos of boreholes carried out during the year 2016-17. | Almost as per proposal. |
| 1b | Exploration over lease area for geological axis 1 or 2 | No such specific proposal in the pproved document however 17 nos of boreholes proposed for the year 2016-17 | drilling of 16 nos of boreholes carried out during the year 2016-17. | Almost as per proposal. |
| 1c | Exploration Agencies and Expenditure in lakh rupees during the year | No such proposal. | carried out by MECL and cost inccured was 117 lakh. | Nil |
| 1d | Balance area to be explored to bring Geological axis in 1 or 2 | No such proposal in the approved document. | 370.427 ha needs to be explored to brought under G1/G2 level. | Nil |
| 1e | Balance reserve as on 01/04/20 | As per the approved document on 04.09.2015 the iron ore reserves are 64.57 million tonnes and resources are 87.44 million tonnes. | due to addition and depletion over the period, the iron ore reserves are 64.57 million tonnes and resources are 87.44 million tonnes as on 01.04.2017. | Nil |
| 1f | General remarks of inspecting officers on geology, exploration etc | No comments to offer. | exploration proposal given approved document for exploration to brought remaining area under G1/G2 level. | Nil |

Development :

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|--|---|---|---|
| 2a | Location of development w.r.t.lease area | development is proposed in area-3 and area-5 for the year 2016-17. | development is carried out in area-3 only by removing OB/waste only. | due to non availability of Forest clearance of adjoining lease (ML-162) in which processing is carried out, mine could not be developed as proposed in the mining plan. |
| 2b | Separate benches in topsoil, overburden and minerals (Rule 15) | no top soil generation is proposed and seperate benches in OB/waste and mineral are proposed with bench height of 10 m. | no top soil is generated and seperate benches in OB/waste and mineral are maintained with bench height of 10 m. | Nil. |
| 2c | Stripping ratio or ore to OB ratio | 1:0.00 t:cu.m. for the year 2016-17. | No production of iron ore carried out during the year 2016-17. | due to non availability of Forest clearance of adjoining lease (ML-162) in which processing is carried out, mine not produced any mineral during the year 2016-17. |
| 2d | Quantity of topsoil generation in m3 | No proposal for the year 2016-17. | Not generated. | Nil. |

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| 2e | Quantity of overburden generation in m3 | Nil for the year 2016-17. | 0.5 million cu.m. | due to non availability of Forest clearance of adjoining lease (ML-162) in which processing is carried out, mine could not be developed as proposed in the mining plan. violation issued letter no: ORI/IRON/SNG/MCDR-1/BBS/VOL-II/2518 dated 12/01/2018. |
| 2f | General remarks of inspecting officers on development of pit w.r.t. type of deposit etc | The development of the mine is not carried out as per approved document for the year 2016-17. | due to non availability of Forest clearance of adjoining lease (ML-162) in which processing is carried out, mine could not be developed as proposed in the mining plan. | Nil |

Exploitation:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|---|---|--|---|
| 3a | Number of pit proposed for production | 2 pits, Area-3 and Area-5 for the year 2016-17. | only Development work carried out in Area-3. | due to non availability of Forest clearance of adjoining lease (ML-162) in which processing is carried out, mine could not produced iro ore. |
| 3b | Quantity of mineral production proposed | 4.98 Million tonnes for the year 2016-17. | Nil | due to non availability of Forest clearance of adjoining lease (ML-162) in which processing is carried out, mine could not produced iron ore. |

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| 3c | Recovery of sailable/usable mineral from ROM production | 67% | Nil | Nil |
| 3d | Quantity of mineral reject generation | No proposal. | Nil | Nil |
| 3e | Grade of mineral rejects generation and threshold value declared. | No proposal. | Nil | Nil |
| 3f | Quantity of sub grade mineral generation. | 1.68 million tonnes for the eyar 2016-17. | 0.81 million tonnes. | Nil |
| 3g | Grade of sub grade mineral generation | +45-57%Fe | +45-57%Fe | Nil |
| 3h | Manual / Mechanised method adopted for segregating from ROM | Mechanised | Mechanised. | Nil |
| 3i | Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects. | Slime benfeciatiion proposed. | Not carried out. | due to non availability of Forest clearance of adjoining lease (ML-162) in which processing is carried out. |
| 3j | Provision of drilling and blasting in mineral benches | drill machine: 150 mm, class-II,III with NONEL initiation for blasting are proposed. | drill machine: 150 mm, class-II,III with NONEL initiation for blasting are proposed. | Nil |
| 3k | Provision of mining machineris in mineral benches | excvation is proposed by excvators and dumpers, excvator: 7.5 cu.m. truck: 100 tonnes | excvation is carried out by excvators and dumpers, excvator: 7.5 cu.m. truck: 100 tonnes | Nil |

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|----|--|--|--|---|
| 3l | Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM | height of bench proposed is 10 m and suitable. | height of bench proposed is 10 m and suitable. | Nil |
| 3m | Total area covered under excavation/pits | 177.8 ha at the end of plan period 2019-20. | 169.28 ha. | Nil |
| 3n | Ore to OB ratio for the pit/mine during the year. | 1:0 t.cu.m. for the year 2016-17. | Nil | due to non availability of Forest clearance of adjoining lease (ML-162) in which processing is carried out, mine could not be produced iron ore. |
| 3o | Total area put in use under different heads at the end of year | Total area: 319.62 ha at the end of plan period 2019-20, excavation: 177.8 ha, sub grade stack: 68.71 ha, roads&infra: 23.67 ha, green belt: 49.44 ha. | Total area: 311.1 ha at the end of 2016-17, excavation: 169.28 ha, sub grade stack: 68.71 ha, roads&infra: 23.67 ha, green belt: 49.44 ha. | |
| 3p | Production of ROM mineral during the last five year period as applicable | 2012-13: 2.5 million tonnes of iron ore 2013-14: 2.5 mi.t. 2014-15: 2.5 mi.t. 2015-16: 5.99 mi.t. 2016-17: 4.97 mi.t. | 2012-13: 2.28 million tonnes of iron ore 2013-14: 1.91 mi.t. 2014-15: 0.27 mi.t. 2015-16: Nil 2016-17: Nil | due to non availability of Forest clearance of adjoining lease (ML-162) in which processing is carried out, mine could not produced iron ore from 2015-16 to 2016-17. |

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| 3q | General remarks of inspecting officers on method of mining etc. | Mine should be developed and produce iron ore as per mining plan. the development work should not be carried out till getting of the FC. | only development work carried out by not producing the iron ore. | Nil |
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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) | No proposal for generation of top soil, OB/waste only generation of subgrade mineral is proposed with seperate dumping. In case generation of any waste it should be backfilled in the mineral exhusted area. | OB/waste, sub grade mineral generated are mixed and dumed over subgrade dump. | violation issued letter no: ORI/IRON/SNG/MCDR-1/BBS/Vol-II/2518 dated 12/01/2018. |
| 4b | Location of topsoil, OB and mineral reject dumps | No proposal for dumping of waste and top soil. sub grade dump No.9 & 2 & 4 are proposed for dumping of sub grade material. | sub grade dump No.9 & 2 & 4 are proposed for dumping of sub grade material but mixed with waste. | violation issued letter no: ORI/IRON/SNG/MCDR-1/BBS/Vol-II/2518 dated 12/01/2018. |
| 4c | Number of dumps within lease area and outside of lease area | 9 nos of sub grade dumps with in lease area. | 9 nos of sub grade dumps with in lease area. | Nil |

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|----|--|--|--|---|
| 4d | Location of dumps w.r.t. ultimate pit limit (Rule 16) | location of dumps are with in the ultimate pit limit. | location of dumps are with in ultimate pit limit. | due to steep slopes and non availability of non mineralised area. |
| 4e | Number of active and alive dumps. | 2 nos. | 1 nos of dump is active. | Nil |
| 4f | Number of dead dumps. | 7 nos of dead dump | 7 nos of dead dumps. | Nil |
| 4g | Number of dumps established. | 3 dumps are stabilised. | 3 dumps are stabilised. | Nil |
| 4h | Whether Retaining wall or garland drain all along dumps are there. | yes provided. | provided. | Nil. |
| 4i | Length of Retaining wall or garland drain all along dumps | garland drain of 2300 m for the year 2016-17. | 1600 m of garland drain | Nil |
| 4j | Number of settling ponds | 15 to 20 nos. for the year 2016-17. | 10 nos | Nil |
| 4k | Specific comments of inspecting officer on waste dump management | waste and sub grade material should be stacked seperately. | waste genertaed was supposed to be back filled in the 3E pit, but could not be carried out due to mineral not exhausted. | Nil |

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. | full extraction of mineral is not carried out. | Nil |
| 5b | Area under backfilling of mined out area | No proposal. | Nil | Nil |

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| 5c | Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32) | No proposal. | No generation of top soil. | Nil |
| 5d | Total area fully reclaimed and rehabilitated | 3.83 ha for the year 2016-17. | Nil | afforestation on the backfilled area. backfilling not carried out as mineral not exhausted fully. |
| 5e | General remarks of inspecting officers on backfilling and reclamation etc. | No comments to offer. | afforestation not carried out as proposed in the backfilling area, due to non extraction of mineral. | 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). | Submitted. | Submitted with in stipulated time period. | Nil |
| 6b | Area available for rehabilitation (ha) . | 3.83 ha. for the year 2016-17. | Nil | afforestation on backfilled area not carried out due to mineral not exhausted in the proposed area. |
| 6c | afforestation done (ha). | 15 ha for the year2016-17. | 5 ha. | Violation issued letter no: ORI/IRON/SNG/MCDR-1/BBS/VOL-II/2518 dated 12/01/2018. |
| 6d | No. of saplings planted during the year | 50000 nos. for the year 2016-17 | 8000 nos. | Nil |
| 6e | Cumulative no .of plants | No such proposal. | 296002 nos. | Nil |
| 6f | Any other method of rehabilitation | No proposal. | Nil | Nil |

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|----|--|---------------------------------|-------------|-------------------------------|
| 6g | Cost incurred on watch and care during the year | Rs 3 lakh for the year 2016-17. | Rs 3.2 lakh | Nil |
| 6h | Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D | No proposal. | Nil | Nil |
| 6i | Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings | No proposal. | Nil | Nil |
| 6j | Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on backfilled area | 3.83 ha. for the year 2016-17 | Nil | back filling not carried out. |
| 6k | Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir | No proposal. | Nil | Nil |
| 6l | Compliance on reclamation and rehabilitation by backfilling (v)any other specific means. | No proposal. | Nil | Nil |
| 6m | Compliance of rehabilitation of waste land within lease (i)afforestation | No proposal. | Nil | Nil |

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|----|---|--|---|-----|
| 6n | Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha) | No proposal. | Nil | Nil |
| 6o | Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation | No proposal. | Nil | Nil |
| 6p | Compliance of environmental monitoring (core zone and buffer zone) | quarterly monitoring of environmental parameters are proposed. | quarterly monitoring of environmental paramaetres are carried out. | Nil |
| 6q | General remarks of inspecting officers on PMCP compliance and progressive closure operations etc. | No comments to offer. | afforestation on backfilling area not carried out as proposed area not fully extracted for mineral. | Nil |

Mineral Conservation:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|---|---------------|-----------------------|---|
| 7a | ROM Mineral dispatch or grade-wise sorting within lease area | Yes proposed. | mineral not produced. | due to non availability of Forest clearance of adjoining lease (ML-162) in which processing is carried out, mine could not be developed as proposed in the mining plan. |
| 7b | Method of grade-wise mineral sorting i.e. manual or mechanical. | mechanised. | mechanised. | Nil |
| 7c | Different grade of mineral sorted out at mines. | +62 - 65%Fe | mineral not produced. | Nil |

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|----|--|--|---|---|
| 7d | Any beneficiation process at mines . | crushing and screening with dry circuit for direct ore and wet circuit for beneficiable ore. | mineral not produced for the year 2016-17. | due to non availability of Forest clearance of adjoining lease (ML-162) in which processing is carried out, beneficiation not carried out as proposed in the mining plan. |
| 7e | General remarks of inspecting officer on Mineral conservation and beneficiation issues | No comments to offer. | due to non availability of Forest clearance of adjoining lease (ML-162) in which processing is carried out, beneficiation not carried out as proposed in the mining plan. | Nil |

Environment:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|---|--|---|---------|
| 8a | Separate removal and utilization of topsoil (Rule 32) | No proposal. | No generation of top soil for the year 2016-17. | Nil |
| 8b | Concurrent use or storage of topsoil | No proposal. | No generation of top soil. | Nil |
| 8c | Separate dumps for overburden, waste rock, rejects and fines (Rule 33) | seperate sub grade dumps are proposed and waste generated is proposed backfilled in the exhasut portion of 3E pit. | sub grade dumps are maintained and waste generated is dumped on the sub grade dump temporarily due to non availability of backfilling area. | Nil |
| 8d | Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use | No proposal. | Nil | Nil |

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|----|---|--|--|-----|
| 8e | Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc) | 50000 saplings proposed as a part of dump management for the year 2016-17. | 8000 saplings planted. | Nil |
| 8f | Baseline information on existence of plantation and additional plantation done (Rule 41) | No such specific proposal. | cumulative of 296002 nos of plantation carried out till 2016-17. | Nil |
| 8g | Survival rate | No such proposal. | 85% as reported by lessee. | Nil |
| 8h | Water sprinkling on roads to control airborne dust | water sprinkling by water sprinklers on haul roads proposed. | carried out water sprinkling on haul roads. | Nil |
| 8i | General remarks of inspecting officer on aesthetic beauty in and around mines area | No comments to offer. | aesthetic beauty and environment are maintained. | Nil |

Compliance of Rule 45:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|---|--|--|---------|
| 9a | Status of submission of Monthly and Annual returns | submitted. | submitted with in stipulated time period. | Nil |
| 9b | Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager | graduate minng enigneer:2, diploma engineer: 8, Geologist:1, surveyor: 2 | graduate minng enigneer:2, diploma engineer: 8, Geologist:1, surveyor: 2 | Nil |

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|----|---|---|--|------|
| 9c | Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc. | O/c workings: 106.083 ha, waste disposal: 29.333 ha, infra&road: 37.737, mineral storage: 2.225 ha, reclaimed/rehabilitated: 33.384 ha. | O/c workings: 169.28 ha, sub garde / waste disposal: 68.71 ha, infra&road: 23.67 ha, green belt: 49.44 ha. | Nil |
| 9d | Scrutiny of Annual return on afforestation | 8000 nos. | found to be in order. | Nil |
| 9e | Scrutiny of Annual return on mineral reject generation (Grade and quantity) | Nil | 0.81 million tonnes of sub grade ore generated. | Nil. |
| 9f | Scrutiny of Annual return on ROM stock and/or graded ore | ROM production: Nil | Nil | Nil |
| 9g | Scrutiny of Annual return on sale value, Ex. Mine price and production cost | Production cost: Nil | No mineral produced. | Nil |
| 9h | Scrutiny of Annual return on fixed assets | fixed assests: Rs 4593611715 | fixed assests: Rs 4593611715 | Nil |
| 9k | Scrutiny of Annual return on mining machineries | shovel: 3 nos, back hoe: 1no, dumper: 6 nos. dozer: 4nos | found to be in order. | Nil |

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 |
| MCDR17 | Rule 11(1) | 12/01/2018 | 16/03/2018 | | |
| MCDR17 | Rule 14(1) | 12/01/2018 | 16/03/2018 | | |
| MCDR17 | Rule 45(7)(a) | 12/01/2018 | 16/03/2018 | | |

Date :

(RAMKISHAN R)

Indian Bureau of Mines