

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

Review and updation of Mining Plan REPORT

Goa regional office

Mine file No : Goa/Fe/59

Mine code : 30GOA01069

- (i) Name of the Inspecting Officer and ID No. : **K02) KALMATA M.K.**
- (ii) Designation : Senior Mining Geologist
- (iii) Accompanying mine Official with Designation : Shri Abhijiit Pednekar and Shri K.S.Sreenivasan, QP's
- (iv) Date of Inspection : 17-OCT-17
- (v) Prev.inspection date :

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **GULLIEM & GAVAL**
- (b) **Registration NO.** : **IBM/635/2011**
- (c) Category : A Mechanised
- (d) Type of Working : Opencast
- (e) Postal address
- State : GOA
- District : NORTH GOA
- Village : PISSURLEM
- Taluka : SATTARI
- Post office : PISSURLEM
- Pin Code : 403530
- FAX No. :
- E-mail :
- Phone : 0832-2370583
- (f) Police Station :
- (g) First opening date :
- (h) Weekly day of rest : SUN
2. Address for correspondance : Gulliem-e-Gaval Iron Ore mine
At- Pissurlem, Po- Sanquelim
Tq-Sattari, North Goa-403 505
3. (a) Lease Number : GOA0077
- (b) Lease area : 87.55
- (c) Period of lease :
- (d) Date of Expiry : 22-NOV-27
4. Mineral worked : IRON ORE Main

5. Name and Address of the

Lessee : GEETABALA M. N. PERULEKAR
 Altinho, Mapusa Bardez
 NORTH GOA GOA
 Phone:
 FAX :

Owner : Smt. Geetabala M.N. Parulekar
 Mine Owner, Altinho,
 Mapusa, Bardez, Goa NORTH
 GOA GOA
 Phone:
 FAX :

Agent : G.H.KARKARE
 PISSURLEM MINE OF SMT
 G.M.N.PARULEK
 VILLAGE:PISSURLEM,tQ:
 SATARI NORTH,GOA NORTH GOA
 GOA
 Phone:
 FAX :

Mining Engineer

Name : B.SARATHI, Full Time
 Qualification : BE (Mining)
 Appointment/ : 21-JAN-02
 Termination date

Mining Engineer

Name : RAJIV KUMAR, Full Time
 Qualification : AMIE (PASSED SECTION 'A' & ' B')
 Appointment/ : 21-SEP-05
 Termination date

Mining Engineer

Name : Shri Sreenivasan K.S, Full Time
 Qualification : B.E.Mining
 Appointment/ : 07-JUL-12
 Termination date

Geologist

Name : E. KUPPUSAMY, Full Time
 Qualification : M.Sc.(Geology), Univ. of Madras, Madras
 Appointment/ : 10-OCT-05
 Termination date

6. Date of approval of Mining Plan/Scheme of Mining : Mining Scheme rule 12 MCDR1988 29-APR-03
 Renewal under rule 24 MCR1960 10-MAY-07
 MP modif under MCR 1960 06-OCT-15
 MP modif under 17(3) MCR 2016 03-OCT-16
 MP modif under 17(3) MCR 2016 03-FEB-17

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

| Sl.No. | Item | Proposals | Actual work | Remarks |
|--------|---|---|---|--|
| 1a | Backlog of previous year | There was a proposal to drill 04 boreholes to a total depth of 280 mtrs in the year 2016-17 | No exploration was carried out by the lessee. | Violation is pointed out for the same. |
| 1b | Exploration over lease area for geological axis 1 or 2 | 2.00ha in the year 2016-17 | No exploration was carried out in the year 2016-17. | Violation is pointed out for the same. |
| 1c | Exploration Agencies and Expenditure in lakh rupees during the year | NA | NA | |
| 1d | Balance area to be explored to bring Geological axis in 1 or 2 | | 43 ha | |
| 1e | Balance reserve as on 01/04/20 | | Mineable reserves - 15.562 million tons Remaining resources - 12.297 million tons | |
| 1f | General remarks of inspecting officers on geology, exploration etc | | There was a proposal to explore entire mineralized area under G-1 level in the plan period. But exploration was not carried out as per the proposal. Violation is pointed out for the same. | |

Development :

| Sl.No. | Item | Proposals | Actual work | Remarks |
|--------|--|--|---|---------|
| 2a | Location of development w.r.t.lease area | There was a proposal to work between the cross sections 26P-26P' to 12P-12P' and -12P-12P' to -30P-30P'. | Working has been carried out as per the proposal. | |

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| 2b | Separate benches in topsoil, overburden and minerals (Rule 15) | Separate benches were proposed in Ore & OB. | Benches were made as per the proposal. |
| 2c | Stripping ratio or ore to OB ratio | 1:1.06 | 1:1.025 |
| 2d | Quantity of topsoil generation in m3 | Nil | Nil |
| 2e | Quantity of overburden generation in m3 | 922500 | 615112 |
| 2f | General remarks of inspecting officers on development of pit w.r.t. type of deposit etc | | The development was carried out as per the proposal. |

Exploitation:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|---|--------------|--------------|---------|
| 3a | Number of pit proposed for production | Two | Two | |
| 3b | Quantity of ROM mineral production proposed | 1500000 tons | 1500000 tons | |
| 3c | Recovery of sailable/usable mineral from ROM production | 90% | 95% | |
| 3d | Quantity of mineral reject generation | Nil | Nil | |
| 3e | Grade of mineral rejects generation and threshold value declared. | NA | NA | |
| 3f | Quantity of sub grade mineral generation. | Nil | Nil | |
| 3g | Grade of sub grade mineral generation | NA | NA | |

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| 3h | Manual / Mechanised method adopted for segregating from ROM | Mechanised | Mechanised |
| 3i | Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects. | Nil | Nil |
| 3j | Provision of drilling and blasting in mineral benches | NO | No drilling and blasting is carried out |
| 3k | Provision of mining machineries in mineral benches | Five excavators were proposed. | On the day of inspection mine was not working and no machineries were observed in the mineral benches. |
| 3l | Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM | 7mtr | Yes benches were maintained as per the proposal. |
| 3m | Total area covered under excavation/pits | | 60.68Ha |
| 3n | Ore to OB ratio for the pit/mine during the year. | 1:1.06 | 1:1.025 |
| 3o | Total area put in use under different heads at the end of year | | Area under mining- 60.6863Ha, Area under waste dump-5.3041ha, Infrastructure-1.7655Ha. |
| 3p | Production of ROM mineral during the last five year period as applicable | 2017-18 901000 tons 2016-17 1500000 tons 2015-16 901000 tons 2014-15 Nil 2013-14 Nil | 2017-18 170271 tons (Upto sep 17) 2016-17 1500000 tons 2015-16 9225 tons 2014-15 Nil 2013-14 Nil |

3q General remarks of inspecting officers on method of mining etc.

The benches were developed as per the proposal and working is carried out as per the proposal. No drilling blasting is proposed and Ripper and dozers are used for ripping of hard strata.

Solid Waste Management - Dumping:

| Sl.No. | Item | Proposals | Actual work | Remarks |
|--------|--|--|---|--|
| 4a | Separate dumping of topsoil, OB and mineral rejects (Rule 32,33) | No topsoil and Mineral reject dumps were proposed and OB was proposed for temporary backfilling. | Temporary back filling was made as per the proposal | |
| 4b | Location of topsoil, OB and mineral reject dumps | No external dumping was proposed | Nil | |
| 4c | Number of dumps within lease area and outside of lease area | only back filling was proposed in the year 2016-17. | No dumps were made in the year 2016-17. | Three old dumps were exist within the lease area and one old dump outside the lease area which is inactive dump. |
| 4d | Location of dumps w.r.t. ultimate pit limit (Rule 16) | | Dumps are existing within the UPL. | |
| 4e | Number of active and alive dumps. | Nil | Nil | Lessee is doing temporary backfilling. |
| 4f | Number of dead dumps. | Nil | Nil | One inactive old dump outside the lease area. |
| 4g | Number of dumps established. | Nil | Nil | Three old dumps within the lease area. |
| 4h | Whether Retaining wall or garland drain all along dumps are there. | One trench was proposed | Only backfilling was done during 2016-17 and garland drains were exist in the lease area. | |

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| 4i | Length of Retaining wall or garland drain all along dumps | 346 in the year 2016-17 | 315 mtr in the year 2016-17 |
| 4j | Number of settling ponds | Nil | Nil |
| 4k | Specific comments of inspecting officer on waste dump management | | Only temporary backfilling was proposed in the year 2016-17 and backfilling was made as per the proposal. |

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. | temporary Backfilling was proposed on the mineralized area. | Mineral is not fully extracted from the backfilled and only temprory backfilling is done. | |
| 5b | Area under backfilling of mined out area | 8.25 ha | 7.00 Ha | Temporary backfilling is done. |
| 5c | Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32) | Nil | No topsoil is generated. | |
| 5d | Total area fully reclaimed and rehabilitated | Nil | Nil | Only temporary backfilling was proposed in the year 2016-17. |
| 5e | General remarks of inspecting officers on backfilling and reclamation etc. | | Since area is not available for dumping temporary backfilling is made on the mineralized area and same will be rehandled in future. | |

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). | Before first july of every year. | Report on PMCP was submitted for the year 2016-17. | |

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| 6b | Area available for rehabilitation (ha) . | Nil | Nil | |
| 6c | afforestation done (ha). | 0.2ha | 0.4ha | Plantation done outside the lease area on inactive dump. |
| 6d | No. of saplings planted during the year | 2000 | 5500 | |
| 6e | Cumulative no .of plants | | 23000 | |
| 6f | Any other method of rehabilitation | Nil | Nil | |
| 6g | Cost incurred on watch and care during the year | Rs 65000 | Rs 65000 | |
| 6h | Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D | 330 mx 250 mx 29m (Temporary backfilling) | 300m x 220m x 29m (Temporary backfilling) | |
| 6i | Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings | About 1240230 tons of waste | 1230224 tons of waste | About 11.75ha was reclaimed by backfilled previously. |
| 6j | Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on backfilled area | Nil | Nil | |
| 6k | Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir | Nil | Nil | |
| 6l | Compliance on reclamation and rehabilitation by backfilling (v)any other specific means. | Nil | Nil | About 11.75ha is reclaimed by backfilling previously. |

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| 6m | Compliance of rehabilitation of waste land within lease (i)afforestation | Nil | Nil |
| 6n | Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha) | Nil | Nil |
| 6o | Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation | Nil | Nil |
| 6p | Compliance of environmental monitoring (core zone and buffer zone) | | Lessee is regularly monitoring air, water and noise and all the parameters are within permissible limit. |
| 6q | General remarks of inspecting officers on PMCP compliance and progressive closure operations etc. | | Lessee is regularly monitoring air, water and noise and all the parameters are within permissible limit. |

Mineral Conservation:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|---|------------|--|---------|
| 7a | ROM Mineral dispatch or grade-wise sorting within lease area | | About 28516 tons of below 55% fe grade lumps and about 962331 tons of 55 to 58% fe fines is despatched from the mines in the year 2016-17. | |
| 7b | Method of grade-wise mineral sorting i.e. manual or mechanical. | Mechanical | Mechanical | |
| 7c | Different grade of mineral sorted out at mines. | | 45 to 55% fe grade and 55 to 58% fe grade. | |
| 7d | Any beneficiation process at mines . | | Only dry crushing and screening. | |

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| 7e | General remarks of inspecting officer on Mineral conservation and beneficiation issues | Lessee is using only dry screening and crushing for sorting of ore and lessee is blending lowgrade ore with high grade ore as per the requirement of the buyer. |
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Environment:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|---|-----------|-------------|--|
| 8a | Separate removal and utilization of topsoil (Rule 32) | Nil | Nil | |
| 8b | Concurrent use or storage of topsoil | Nil | Nil | |
| 8c | Separate dumps for overburden, waste rock, rejects and fines (Rule 33) | | | No mineral reject was generated and OB was utilized for temporary backfilling as per the proposal. |
| 8d | Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use | | | OB is utilized for temporary backfilling. |
| 8e | Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc) | Nil | Nil | |
| 8f | Baseline information on existence of plantation and additional plantation done (Rule 41) | | | Total about 23000 plantation is made inside and outside the lease area. |
| 8g | Survival rate | | 70% | |

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| 8h | Water sprinkling on roads to control airborne dust | Lessee is using water tanker for wetting roads to control airborne dust. |
| 8i | General remarks of inspecting officer on aesthetic beauty in and around mines area | Benches were made systematically and plantation is made in and around the lease area. Lessee is using water tanker for wetting roads to avoid airborne dust. |

Compliance of Rule 45:

| Sl.No. | Item | Propasals | Actual work | Remarks |
|--------|---|---|---|---------|
| 9a | Status of submission of Monthly and Annual returns | | Lessee is regularly submitting monthly and anuual returns. | |
| 9b | Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager | Mining engineer- Shri Srinivasan and Geologist-Shri Ashish Gadgil. | As per the office records the information is correct. | |
| 9c | Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc. | Area under mining-60.711 ha, area reclaimed- 11.75ha, waste disposal- 5.304ha, infrastructure -2.5Ha. | information on landuse pattern is almost matching. | |
| 9d | Scrutiny of Annual return on afforestation | 5500 ouside the lease. | Plantation was made on inactive dump which is outside the lease area. | |
| 9e | Scrutiny of Annual return on mineral reject generation (Grade and quantity) | Nil | Nil | |
| 9f | Scrutiny of Annual return on ROM stock and/or graded ore | About 101897 tons of ROM was shown as closing stock in the annual returns submitted for the year 2016-17. | Matching | |

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| 9g | Scrutiny of Annual return on sale value, Ex. Mine price and production cost | Sale value-rs- 849/tos for lumps of below 55% fe ore and rs 960.91/ ton for fines having 55 to 58% fe grade. exmine price same as sale value and cost of production- Rs 460.30/ton. | sale value and exmine price is shown same. |
| 9h | Scrutiny of Annual return on fixed assets | Value of Fixed Assets (in Rs) 115769135. | |
| 9k | Scrutiny of Annual return on mining machineries | Six excavators of different capacity, one dozer, six wheel loaders and 29 dumpers were shown. | During inspection the mine was not working and no machineries were observed in the mine. |

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) | 30-OCT-17 | | | |

Date :

(KALMATA M.K.)

Indian Bureau of Mines