

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

MCDR inspection REPORT

Goa regional office

Mine file No : Goa/FeMn/153

Mine code : 30GOA01157

- (i) Name of the Inspecting : **K02**) **KALMATA M.K.**
Officer and ID No.
- (ii) Designation : Senior Mining Geologist
- (iii) Accompanying mine : Mr.Pereira Sebastian Manager
Official with
Designation
- (iv) Date of Inspection : 10/08/2017
- (v) Prev.inspection date : 20/12/2016

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **MARETA SODO**
- (b) **Registration NO.** :
- (c) Category : A Fully Mechanised
- (d) Type of Working : Opencast
- (e) Postal address
State : GOA
District : NORTH GOA
Village : HONDA
Taluka : SATTARI
Post office : HONDA
Pin Code : 403530
FAX No. : 0832-732587
E-mail :
Phone : 0832-721151(3 lines)
- (f) Police Station :
- (g) First opening date : 01/01/1955
- (h) Weekly day of rest : SUN
2. Address for : At-Sonshi
correspondance Po-Honda
Tq-Bicholim, North Goa
3. (a) Lease Number : GOA0170
(b) Lease area : 26.68
(c) Period of lease :
(d) Date of Expiry : 22/11/2027
4. Mineral worked : IRON ORE Main

5. Name and Address of the

Lessee : VEDANTA LIMITED
 P.O.Box 125 Sesa Ghor, 20
 EDC Complex Patto Plaza,
 Panajim NORTH GOA GOA
 Phone:0832-6713600
 FAX :0832-6713721

Owner : D. D. JALAN
 SESA GHOR, 20 EDC COMPLEX
 PATTO PLAZA, PANJIM NORTH
 GOA GOA
 Phone: 9892800505, 083
 FAX : 0832-2460690

Mining Engineer
 Name : DHIRAJKUMAR NAMDEV JAGDISH,Full Time
 Qualification : B.E (MINING)
 Appointment/ : 03/07/2008
 Termination date

Mining Engineer
 Name : MOMIN NAUSHAD,Full Time
 Qualification : B.E.(Mining), B'lore University
 Appointment/ : 17/02/2006
 Termination date

Geologist
 Name : INAYATULLAA DAVANGIRI,Full Time
 Qualification : M.SC (GEOLOGY)
 Appointment/ : 16/07/2007 02/07/2008
 Termination date

Geologist
 Name : MS JASMINE AMONKAR,Full Time
 Qualification : M.SC (GEOLOGY)
 Appointment/ : 03/07/2008 12/01/2009
 Termination date

Geologist
 Name : YATIN GULWANI,Full Time
 Qualification : M.Sc. Geology
 Appointment/ : 12/01/2009
 Termination date

Manager
 Name : S.PERIERA
 Qualification : DIP MINING
 Appointment/ : 12/05/2008
 Termination date

Manager
 Name : MOMIN NAUSHAD
 Qualification : B.E.)MINING)
 Appointment/ : 08/02/2005 12/05/2008
 Termination date

6. Date of approval of Mining Plan/Scheme of Mining	:	Renewal under rule 22 MCR1960	27/02/1989
		Mining Scheme rule 12 MCDR1988	17/02/1997
		Mining Scheme rule 12 MCDR1988	06/06/2005
		Renewal under rule 24 MCR1960	11/04/2007
		Modif.of approved Mining Plan	24/09/2008
		Modif.of approved Mining Plan	22/04/2010
		MP modif under MCR 1960	11/08/2015
		MP modif under 17(3) MCR 2016	02/02/2017

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 03 borholes to a depth of 325 mtrs in the year 2016-17.	Exploration was not carried out as per the proposal.	Violation was pointed out for the same.
1b	Exploration over lease area for geological axis 1 or 2	Total seven boreholes were proposed in the plan period to explore entire lease area under G-1 level. 03 in the year 2016-17 and 04 in the year 2017-18.	The area which is proposed for exploration is a private land and lease agreement is made with land owners. However due to presence of cashew plantation in the said land, land owners are demanding for compensation. So drilling has not carried out so far.	violation is pointed out for the same and lessee has replied that discussion is going on with land owner for compensation, as soon as it is settled drilling activity shall be commenced.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	NA	NA	No exploration has been carried out in the plan period. In the past exploration was carried out by M/s, Kartikay Exploration and Mining Services Pvt Ltd, New Delhi and expenditure incurred during 2008-09 to 2012-13 is about 11.25 lakhs.
1d	Balance area to be explored to bring Geological axis in 1 or 2	About 7.25 ha.	Proposal is made in the year 2016-17 and 2017-18, drilling is not started so far.	
1e	Balance reserve as on 01/04/20		Reserves:- 10.075 million tons Remaining Resources:- 10.756 million tons Total:- 20.831 million tons.	

1f	General remarks of inspecting officers on geology, exploration etc	Most of the area is explored under G-1 level of exploration and few borehole proposals are also made in the present plan period to cover entire mineralized area under G-1 level of exploration. However since the land owners are not allowing for drilling, exploration is not started so far. Once the matter is settled entire area will be explored.
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Development :

Sl.No.	Item	Proposals	Actual work	Remarks
2a	Location of development w.r.t. lease area	.In the year 2016-17 it was proposed to work b/w co-ordinates, N-1717150 to N-1717530 and E-397700 to E-397960	Working has been carried out as per the proposal	
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Separate benches were proposed in OB and Ore.	Benches were made as per the proposal.	
2c	Stripping ratio or ore to OB ratio	1:0.43 in the year 2016-17.	1:0.28	
2d	Quantity of topsoil generation in m3	Nil	Nil	
2e	Quantity of overburden generation in m3	195454	115314	

2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	The working has been carried out as per the proposal and benches were systematically developed.
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Exploitation:

Sl.No.	Item	Proposals	Actual work	Remarks
3a	Number of pit proposed for production	One	One	
3b	Quantity of ROM mineral production proposed	1000000 tons	910000 tons	
3c	Recovery of sailable/usable mineral from ROM production	70%	64%	
3d	Quantity of mineral reject generation	302100 tons	329086 tons	
3e	Grade of mineral rejects generation and threshold value declared.	50.7% fe.	51.03% fe.	
3f	Quantity of sub grade mineral generation.	Nil	Nil	
3g	Grade of sub grade mineral generation	NA	NA	
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 drilling and blasting is proposed.	Nil	Hard portion will be removed by ripper dozer.

3k	Provision of mining machineries in mineral benches	3 hydraulic excavators were proposed.	Lessee is using three hydraulic excavators as per the proposal.	
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	7 mtrs	7 mtr	The bench height was suitable for method of mining proposed.
3m	Total area covered under excavation/pits		Total area covered under pit is about 15.00 Ha.	No additional area was proposed in the plan period. Proposals were given in the brokenup area only.
3n	Ore to OB ratio for the pit/mine during the year.	1:0.43	1:0.28	
3o	Total area put in use under different heads at the end of year		Area under mining- 15.286ha, waste disposal-5.24ha, Infrastructure 0.011ha.	
3p	Production of ROM mineral during the last five year period as applicable	2016-17 1000000 tons 2015-16 450879 tons 2014-15 nil 2013-14 nil 2012-13 89000 tons	2016-17 910000 tons 2015-16 202985 tons 2014-15 nil 2013-14 nil 2012-13 88328 tons	
3q	General remarks of inspecting officers on method of mining etc.		The mine is worked by opencast mechanized method using heavy earth moving machineries without drilling and blasting. Lessee is using ripper dozar for looseing hard strata. Benches heigt and width are maintained as per the proposal in the approved document.	

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
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4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	No top soil and mineral reject dump was proposed and OB proposed for temporary backfilling.	No top soil generation was proposed in the year 2016-17 and OB was utilized for temporary backfilling and most of the mineral reject was utilized for blending and small quantity was stacked separately	
4b	Location of topsoil, OB and mineral reject dumps		No topsoil was proposed and generated in the year 2016-17 and OB which was generated was utilized for temporary backfilling B/w co-ordinates N-1717400 to N-1717610 & E-397450 to E-397680.	
4c	Number of dumps within lease area and outside of lease area	No external dumping was proposed in the year 2016-17.	No external dumping was made in the year 2016-17 only temporary backfilling is done.	Two old dumps are existing within the lease area.
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	No external dumping was proposed.	only temporary backfilling is done in the year 2016-17.	Two existing old dumps are within the UPL only.
4e	Number of active and alive dumps.	Nil	Nil	Only temporary backfilling is proposed.
4f	Number of dead dumps.		Two	
4g	Number of dumps established.		Two	
4h	Whether Retaining wall or garland drain all along dumps are there.	Nil	Nil	
4i	Length of Retaining wall or garland drain all along dumps	Nil	Nil	
4j	Number of settling ponds	Nil	Nil	
4k	Specific comments of inspecting officer on waste dump management		No external dumping was proposed in the year 2016-17 and only temporary backfilling was done.	

Solid Waste Management - Backfilling:

Sl.No.	Item	Propasals	Actual work	Remarks
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5a	Status of part or full extraction of mineral from mined out area before starting backfilling.	Only temporary backfilling was proposed.	Mineral is not fully extracted and only temporary backfilling is done and same will be rehandled in next plan period to mine left out ore.
5b	Area under backfilling of mined out area	About 1.00ha temporary backfilling.	about 0.8ha is temporarily back filled in the year 2016-17.
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Nil	Nil
5d	Total area fully reclaimed and rehabilitated	Nil	Nil
5e	General remarks of inspecting officers on backfilling and reclamation etc.		Only temporary backfilling was done and same will be rehandled in the next plan period to mine out all the ore. Since the mineral is not exhausted and only temporary backfilling is done no area is fully reclaimed and rehabilitated.

Progressive Mine Closure Plan:

Sl.No.	Item	Proposals	Actual work	Remarks
6a	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).		Annual report on PMCP was not submitted within time.	Violation was pointed out for the same.
6b	Area available for rehabilitation (ha) .	Nil	Nil	
6c	afforestation done (ha).	No plantation was proposed in the year 2016-17.	Nil	
6d	No. of saplings planted during the year	Nil	Nil	

6e	Cumulative no .of plants		6000 outside the lease.	
6g	Cost incurred on watch and care during the year	Nil	Nil	
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	Nil	Nil	Only temprory backfilling is done.
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	Nil	Nil	Only temprory backfilling is done.
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestati on 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	
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 all are within permissible limit for the last quarter.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.		Mineral is not fully exhausted and no reclamation and rehabilitation was carried out so far. Lessee is regularly monitoring air, water and noise levels and results of the last quarter are within permissible limit.

Mineral Conservation:

Sl.No.	Item	Proposals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area		ROM is dispatching from the lease.	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanical	Mechanical	
7c	Different grade of mineral sorted out at mines.		Lessee is separately stacking +54% fe ore and +45 to -54% fe ore.	
7d	Any beneficiation process at mines	Nil	Nil	
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues		Lessee is using mineral reject for blending. No beneficiation is done within the lease area.	

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)		OB is using for temprory backfilling and Ore is stacking separately, mineral reject is using for blending.	
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Nil	OB is using for temprory 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)		About 6000 saplings were planted on Common dump of Maretasodo, Sonshi & BD Mine outside lease.	
8g	Survival rate		80 to 85%	
8h	Water sprinkling on roads to control airborne dust		Water Tanker used for sprinkling on 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 done on Common dump of Maretasodo, Sonshi & BD Mine outside lease.	

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
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- 9a Status of submission of Monthly and Annual returns Party is submitting monthly and annual returns within time period.
- 9b Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager Mining Enginner Mr.Rohit Tiwari and Geologist Mr. Santosh Ghadi. Details of mining engineer and geologist given in the A/R are matching with office records.
- 9c Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc. Area under Current Mining- 15.286ha, Waste Disposal- 5.245ha and infra structure- 0.011ha.
- 9d Scrutiny of Annual return on afforestation Six thousand shown in the annual returns submitted manually. Six thousand plantation was done outside the lease area.
- 9e Scrutiny of Annual return on mineral reject generation (Grade and quantity) Mineral reject shown in a/r is about 329086 tonnes.
- 9f Scrutiny of Annual return on ROM stock and/or graded ore About 86530 tonnes ROM stock was shown in the return submitted for the year 2016-17. The ROM stock was tallying.

9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Cost of production is shown as Rs 1603/ton and sale value for lumps below 55% fe is shown as Rs 1833/ton, 55 to 58% Fe is shown as Rs-1998/ton .Sale value for fines below 55%fe is Rs-1872/ton and Rs 2483/ton for ore between 55 to 58 grade.
9h	Scrutiny of Annual return on fixed assets	Value of fixed assets is shown as zero in the annual returns submitted for the year 2016-17.
9k	Scrutiny of Annual return on mining machineries	Excavator-03, wheel loader-01, dozer-01, grader-01.

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)	22/08/2017	02/11/2017				
MCDR17	Rule 26(2)	22/08/2017	02/11/2017				

Date :

(KALMATA M.K.)

Indian Bureau of Mines