

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

**MCDR inspection REPORT**

**Goa regional office**

**Mine file No :** Goa/Fe/163

**Mine code :** 30GOA02023

- (i) Name of the Inspecting : **K03** ) **G. S. KANNAN**  
Officer and ID No.
- (ii) Designation : Junior Mining Geologist
- (iii) Accompanying mine : S/Shri.P.Sreenivasa Rao, MM, Ms.Roshel, Geologist  
Official with  
Designation
- (iv) Date of Inspection : 29/08/2017
- (v) Prev.inspection date : 19/11/2010

**PART-I : GENERAL INFORMATION**

1. (a) **Mine Name** : **SHIGAO (KAPIL)**
- (b) **Registration NO.** : **IBM/510/2011**
- (c) Category : A Mechanised
- (d) Type of Working : Opencast
- (e) Postal address
- State : GOA
- District : SOUTH GOA
- Village : SHIGAO
- Taluka : SANGUEM
- Post office : COLLEM
- Pin Code : 403410
- FAX No. : 91(834)730651
- E-mail : fomento@fomento.com
- Phone : 2732346
- (f) Police Station :
- (g) First opening date : 07/11/1952
- (h) Weekly day of rest : SUN
2. Address for : Shigao Mine of M/s Fomento  
correspondance Po-Collem  
Goa
3. (a) Lease Number : GOA0172
- (b) Lease area : 50.4
- (c) Period of lease :
- (d) Date of Expiry : 21/11/2027
4. Mineral worked : IRON ORE Main

## 5. Name and Address of the

Lessee : SOCIEDADE TIMBLO IRMAOS LTD.  
 SUBHASH TIMBLO BHAVAN  
 ISIDORA, BAPTISTA ROAD,  
 MARGAO, GOA SOUTH GOA GOA  
 Phone:(0832) 2736307  
 FAX :(0832) 2714462

Owner : M/S. SOCIEDADE TIMBLO IRMAOS LIMITADA.  
 POST BOX NO. 31 MARGAO -  
 GOA (403 602) SOUTH GOA  
 GOA  
 Phone: 91 (834) 273234  
 FAX : 91 (834) 273065

Agent : ANURAG MISHRA  
 VILLA FLORES DA  
 SILVA, ERASMO CARVAL  
 STREET, POST BOX NO-31  
 MARGAO, GOA SOUTH GOA GOA  
 Phone:  
 FAX :

Mining Engineer  
 Name : D R Vaze, Full Time  
 Qualification : Dip. in Mining & Mine Surveying, FCC  
 Appointment/ : 07/05/1996  
 Termination date

Mining Engineer  
 Name : J. KANNAN, Full Time  
 Qualification : B.E.(Mining) & Second Class Mgr. Cert. c  
 Appointment/ : 10/05/2001  
 Termination date

Geologist  
 Name : SHRIDHAR P. HEGDE, Full Time  
 Qualification : M. Sc. (Applied Geology), Karnataka Univ  
 Appointment/ : 20/07/2001 23/10/2001  
 Termination date

Geologist  
 Name : BENEDITO JOAQUIM FERNANDES, Full Time  
 Qualification : M. Sc. (Geology), Goa University  
 Appointment/ : 24/10/2001  
 Termination date

Geologist  
 Name : P G Bhobe, Full Time  
 Qualification : MSc (Geology)  
 Appointment/ :  
 Termination date

Manager  
 Name : Dharmendra P. Pawar  
 Qualification : B.E.Mining, 1st Class Mines Manager Cr.  
 11/12/2006

Appointment/ :  
Termination date

Manager

Name : D R Vaze  
Qualification : Dip. in Mining & Mine Surveying  
Appointment/ : 02/01/1995 19/04/2005  
Termination date

6. Date of approval of Mining	:	Mining Scheme rule 12 MCDR1988	08/01/2003
Plan/Scheme of Mining		Renewal under rule 24 MCR1960	19/12/2006
		MP modif under MCR 1960	12/08/2015
		MP modif under 17(3) MCR 2016	20/09/2016

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

## Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	20 Boreholes has proposed with 1200 meterage in Previous approved Plan	No Boreholes has drilled because of delay in mobilization of drilling machine	Because of nil boreholes, mining plan has modified
1b	Exploration over lease area for geological axis 1 or 2	Additional exploration was not proposed in modified mining plan.	4 additional boreholes has drilled during 2016-2017	
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Own drilling and/or contract drilling machines were used for exploration in the past.	Total 4 boreholes were drilled using diamond drill rigs during last year and spend Rs.5 lacs on exploration.	Total 292 were drilled using diamond drill rigs with 11960 meterage in past. Total Rs. 112.35 lacs were spent on exploration.
1d	Balance area to be explored to bring Geological axis in 1 or 2	Not proposed.	Exploration was carried out at 100m X 50m grid interval. 56.44ha area has to be explored for availability of ore.	
1e	Balance reserve as on 01/04/20	Reserves as on 01.04.2017 were 3.193 million tons under 111, 2.374 million tons under 331 & 333 category.	Reserves as on 01.04.2017 were 3.356 million tons under 111, 2.374 million tons under 331 & 333 category.	
1f	General remarks of inspecting officers on geology, exploration etc	The deposit is Tatodi-Sangod-Shigao band	The vein type deposit is explored and operating intermittently. Structurally the ore body was doubly folded into anticline & syncline	

## Development :

Sl.No.	Item	Proposals	Actual work	Remarks
2a	Location of development w.r.t.lease area	N-1696650-1697000/ E-414300-414800	N-1696650-1697080/ E-414300-414750	

2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Topsoil is not present in area. Separate benches in waste and ore are planned in area-II-W.	Topsoil is not present in area. Separate benches in waste and ore are developed in area-II-W.	
2c	Stripping ratio or ore to OB ratio	1 : 4.52	1 : 5.85	
2d	Quantity of topsoil generation in m3	Nil	Nil	No Top Soil is Existing
2e	Quantity of overburden generation in m3	947171 m3/ 2083776 Tons	838923 m3/ 1845631 Tons	
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	Proposed 2083776 Tons from 11 benches during 2016-2017	Achieved 1845631 Tons from 10 benches during 2016-2017	

### Exploitation:

Sl.No.	Item	Proposals	Actual work	Remarks
3a	Number of pit proposed for production	Development and production in Single pit was proposed in Area-II W.	Development and production was carried out in Area-II W.	
3b	Quantity of ROM mineral production proposed	The total target of ROM Production was 450000 tons during 2016-2017 as per distribution from lessee on capping on EC limit.	Total 287000 tons of ROM production was reported during the year.	
3c	Recovery of saleable/usable mineral from ROM production	The recovery of ore from ROM was planned 100% after screening.	ROM quantity of 287000 tonnes was despatched for processing and 287000 tonnes of grade-wise production is reported after dry process screening. The recovery of ore from ROM is 100%.	
3d	Quantity of mineral reject generation	No Proposal	Nil	

3e	Grade of mineral rejects generation and threshold value declared.	No Proposal	Nil
3f	Quantity of sub grade mineral generation.	No Proposal	Nil
3g	Grade of sub grade mineral generation	No Proposal	Nil
3h	Manual / Mechanised method adopted for segregating from ROM	Dry screening was proposed for grade-wise production.	Electric operated mechanical screen plants are in use for grade wise production of iron ore in lumps and fines
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No Proposal	Except Crushing, no other beneficiation activity has been carried out only
3j	Provision of drilling and blasting in mineral benches	Drilling and blasting was proposed.	Ripper dozer is used for loosening the hard benches. Drilling & blasting will be carried out in very hard rock which is not rippable by ripper dozer
3k	Provision of mining machineries in mineral benches	Backhoe excavators were proposed for excavation of ROM material. Dozer with ripper attachment is used in hard strata.	Excavator- 6 Nos Ripper Dozer - 2 Nos Dozer- 2 Nos Backhoe -1 No Truck - 80 No W/ Loader - 2 No Drill Machine - 1 No Water tanker - 4 No Mobile Screen - 1 No Water Pump - 2 No
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Bench height of 6m was proposed in waste and Ore.	As per the Proposal all bench height is maintained
3m	Total area covered under excavation/pits	45.54 hect area is under Pit and additional 0.920 hect is required	46.5493hect areas are under Pit only.
3n	Ore to OB ratio for the pit/mine during the year.	1 : 4.52	1 : 5.85

3o	Total area put in use under different heads at the end of year	Land use Pattern as on 01.04.2017. Mines = 46.5493 hect Dump = 0.7268 hect Mine road = 1.4802 hect Infrastructure = 0.8837 hect	Land use Pattern as on 01.04.2017. Mines = 46.5493 hect Dump = 0.7268 hect Mine road = 1.4802 hect Infrastructure = 0.8837 hect
3p	Production of ROM mineral during the last five year period as applicable	2016-2017 = 450000 tons 2015-2016 = 248000 tons 2014-2015 = Nil 2013-2014 = Nil 2012-2013 = 500000 tons	2016-2017 = 287000 tons 2015-2016 = Nil 2014-2015 = Nil 2013-2014 = Nil 2012-2013 = 152000 tons
3q	General remarks of inspecting officers on method of mining etc.	Nil	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)	There is no Topsoil and Mineral rejects, only OB is proposed as backfilling in the existing pit area.	Separate temporary backfilling of waste inside the bottom pit is carried out during the year 2016-2017.	
4b	Location of topsoil, OB and mineral reject dumps	N-1696730-1696350/ E-414030-414420	N-1696730-1696350/ E-413950-414330	
4c	Number of dumps within lease area and outside of lease area	Lease area = 2 Dumps Non Lease area = 1 Dump	Lease area = 2 Dumps Non Lease area = 1 Dump	Both are old existing dumps

4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	No external dumping was proposed; however temporary backfilling was proposed, which is within UPL	Dump-1: N-1696750 to 1696900/ E-414600 to 414850 Dump-2: N-1697030 to 1697650/ E-414200 to 414850 All are outside UPL
4e	Number of active and alive dumps.	There is no active and alive dump.	There is no active dump within lease area for waste dumping.
4f	Number of dead dumps.	within Lease area = 2 Dumps Outside Lease area = 1 Dump	within Lease area = 2 Dumps Outside Lease area = 1 Dump
4g	Number of dumps established.	2	2
4h	Whether Retaining wall or garland drain all along dumps are there.	Garland drain, Settling Pond was proposed to maintain & cleaned on different terraces of Backfilled area to avoid wash-off.	Garland drain is made on terraces of backfilled area to avoid wash-off.
4i	Length of Retaining wall or garland drain all along dumps	Garland drain, Settling Pond was proposed to maintain & cleaned on different terraces of Backfilled area to avoid wash-off.	Garland Drainage = 840m & Retaining wall = 77m has constructed
4j	Number of settling ponds	No Proposal	4 Settling ponds have made
4k	Specific comments of inspecting officer on waste dump management	Nil	Nil

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Solid Waste Management - Backfilling:

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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.	Due to non-availability of area, it is proposed for temporary backfilling within Pit.	Temporary backfilling has done
5b	Area under backfilling of mined out area	7.50 hect	6.64 hect
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.	Nil	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).	To be submitted before 30th July of Every Year	Submitted	
6b	Area available for rehabilitation (ha) .	Mineral is persisting in bottom pit and temporary backfilling is proposed in it.	Temporary backfilling is carried out in pit in two terraces upto surface level.	
6c	afforestation done (ha).	Gap Filling	Gap Filling	
6d	No. of saplings planted during the year	2000 Proposed	2350 Acheived	
6e	Cumulative no .of plants	2000 saplings were proposed during 2016-2017.	Total 2350 saplings were planted during 2016-2017	Cumulative 235170 plants has planted

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6f	Any other method of rehabilitation	Nil	Nil
6g	Cost incurred on watch and care during the year	Nil	Rs.77,000/-
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling ( Lx B x D	Nil	Nil
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	Nil	Nil
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation 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)	Quarterly environment monitoring is required and report has to be sent to IBM Regional office.	Quarterly environment monitoring is carried out through own as well as private agency in Core & Buffer Zone as per guidelines.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	Nil	Nil

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#### Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	As per approved mining plan proposed ROM was classified as +55% Fe, +50-55% Fe, +45-50% Fe and below 35% Fe is considered as mineral reject due to low market price.	As per proposal ROM mineral has dispatch	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanical	Mechanical processing i.e. dry screening was proposed for grade-wise production.	
7c	Different grade of mineral sorted out at mines.	The grade-wise production of +45% Fe and +35% Fe was proposed in modified mining plan.	As per approved mining plan proposed ROM was classified as Powdery ore +45% Fe, below 35% is considered as mineral reject due to low market price.	

7d	Any beneficiation process at mines .	Mechanical processing i.e. dry screening was proposed for grade-wise production.	Dry Screening has been used in mines
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	Nil	Nil

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Environment :

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	No Proposal	Nil	
8b	Concurrent use or storage of topsoil	Nil	Nil	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Proposal was to temporary backfill the waste inside the pit due to nonavailability of other area for dumping and mineral is persisting in the pits.	Temporary backfilling is started during the year.	
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Nil	Nil	

8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Nil	Dump is restored with plantation and temporary backfilling is started in pit. The mining lease will remain in operation upto 2027.
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Existence of plantation is there on slopes of the dump, along the road and other part of lease area. Additional plantation is not proposed during the year.	2350 plantation is carried out during the year 2016-2017. Cumulatively 235170 saplings were planted
8g	Survival rate	No Proposal	Survival rate is around 70%. Gap filling plantation was done during 2016-2017
8h	Water sprinkling on roads to control airborne dust	Yes, it is proposed for water sprinkling on haul roads.	Water sprinkling on road is observed during the inspection.
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	Nil	Surrounding area beyond lease area is lush green and lessee has carried out plantation on dump, along road etc.

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Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	MR Submitted up to = September 2017 AR Submitted up to = 2016-2017	Both Annual & Monthly returns are submitting in online system.	

9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Geologist & Surveyor are appointed partly.	It is advised to appoint full time Geologist & Surveyor	This Technical persons are working as part time in other Non-working mines also
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Area under pit 46.549ha, area under dump 25.133ha and Infra Structure 2.364ha, other purposed 20.79ha.	Land use pattern as per approved modified mining plan and AR are coinciding	
9d	Scrutiny of Annual return on afforestation	Within Lease = 350 Outside Lease = 2000	Forest & Fruit Bearing Plant - 2350 in Gap filling	
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	ROM Stack = 287000 tons	As per proposal the ROM has been carried out	
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Ex.Mine Price = Rs.911/- & Production cost is Rs.807/-	Nil	
9h	Scrutiny of Annual return on fixed assets	Fixed assets have filled	Fixed asset have filled properly.	
9k	Scrutiny of Annual return on mining machineries	Backhoe, wheel loader, dozer, truck & Pump	All machineries are available in site	

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**Details of violations observed during current inspection and compliance position of violation pointed out**

Violation observed		Show couse position	
Rule NO.	Issued on Compliance on	Rule NO.	Issued on Compliance on

**Date :**

**(G. S. KANNAN)**

Indian Bureau of Mines