INDIAN BUREAU OF MINES
MINERALS DEVELOPMEMT AND REGULATION DIVISION

Inspection under SDF for star rating of mines REPORT

Bangalore regional office

Mine file No : KNT/BLR/MN/39/BNG **Mine code : 40KAR03014**

(i) Name of the Inspecting Officer and ID No. : **A101) ARUN KUMAR**

(ii) Designation : Deputy Controller Mines

(iii) Accompaning mine Official with Designation : Shri.Shridhar Hedge-Mines Manager,Shri.Subramanyam Ja

(iv) Date of Inspection : 30/08/2019

(v) Prev.inspection date : 06/09/2018

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **SMIORE ML NO. 2679**

(b) Registration NO. : **IBM/35/2011**

(c) Category : A Fully Mechanised

(d) Type of Working : Opencast

(e) Postal address

State : KARNATAKA
District : BELLARY
Village : RAMGAD
Taluka : SANDUR
Post office : SANDUR
Pin Code :
FAX No. : 08395- 271066, 080-2361316
E-mail : eps@sandurgroup.com
Phone : (08395)- 271025/29/40/28, (

(f) Police Station : SANDUR

(g) First opening date : 01/01/1954

(h) Weekly day of rest : SUN

2. Address for correspondance : M/s THE SANDUR MANGANESE & IRON ORES LTD,
NO.9, BELLARY ROAD, SADASHIVANAGAR,
BANGALORE - 560080

3. (a) Lease Number : KAR0224
(b) Lease area : 4335.68
(c) Period of lease : 20
(d) Date of Expiry : 31/12/1993

4. Mineral worked : IRON ORE Associated
MANGANESE ORE Main

5. Name and Address of the

Lessee	:	SANDUR MANGANESE & IRON ORES LTD DEOGIRI (PO)-583 112 SANDUR BELLARY KARNATAKA Phone:08395-271025/28/29/40 FAX :08395-271066
Owner	:	S.R.SRIDHAR, ED(Mines) of M/s SMIORE LTD The Sandur Manganese & Iron Ore LTD Deogiri-583 112 Tq- Sandur BELLARY KARNATAKA Phone: 08395-271025/28 FAX : 08395-271066
Agent	:	S.R.SRIDHAR BELLARY KARNATAKA Phone: FAX :

Mining Engineer

Name	:	Jayashankar D,Full Time
Qualification	:	BE Mining
Appointment/ Termination date	:	24/05/2013

Geologist

Name	:	J.Subramanyam,Full Time
Qualification	:	M.Sc. Geology
Appointment/ Termination date	:	01/12/2010

Manager

Name	:	L.GYANAPRAGESAM
Qualification	:	B.SC, FCC
Appointment/ Termination date	:	27/09/2001

6. Date of approval of Mining Plan/Scheme of Mining :

Existing rule 11 MCDR1988	28/04/1992
Mining Scheme rule 12 MCDR1988	15/01/2013
Renewal under rule 22 MCR1960	05/12/2013
Modif.of approved Mining Plan	25/05/2016
MP review under 17(1) MCR 2016	08/12/2017
Modif.of approved Mining Plan	08/12/2017
MP review under 17(1) MCR 2016	05/10/2018

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	No Proposal	No Backlog	8 DTH Confirmatory holes amounting to total of 199 Mtrs in FY 2017-18
1b	Exploration over lease area for geological axis 1 or 2	DTH Holes amounting to total of 350 mts proposed at G1 level.	11 DTH Holes drilled at 50 Mtrs grid interval amounting to total of 330 mts.	Entire Mineralized area has been explored under G1 stage
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Departmental & External 1000030 Rs	Departmental & External Rs. 96,662 /-	Drill machine was hired & exploration carried out by Department
1d	Balance area to be explored to bring Geological axis in 1 or 2	No Proposal	Nil	Nil
1e	Balance reserve as on 01/04/20		Mn. Ore: 745149 Tonnes, Iron Ore: 2373185 Tonnes	As per AR submitted for FY 2018-19
1f	General remarks of inspecting officers on geology, exploration etc			No deviation wrt exploration was observed during the course of inspection on 30.08.2019

Development :

Sl.No.	Item	Propasals	Actual work	Remarks

2a	Location of development w.r.t.lease area	Proposed Location of Development for Manganese Ore Neerlabbi (NRLB)-N 1667432 to 1667663,E 659912 to 660167,Dabaxikolla (DBX)- N 1673010 to 1673118 , E656212 to 656330,Governer Point (GP)- N 1673531 to 1673800,E 655707 to 655957, Myadar banda- N 1658317 to 1658500 E 669373 to 669696	Actual Location of Development for Manganese Ore Neerlabbi (NRLB)- N 1667452 to 1667643,E 659932 to 660149, Dabaxi kolla (DBX)- N 1673028 to 1673097 ,E 656230 to 656308, Governor Point (GP)- N 1673569 to 1673782,E 655727 to 655937 as per the latest survey plan	Neerlabbi (NRLB)-D to H,Dabaxikolla(DBX) -I to M,Governer Point (GP)- G to U,Myadar banda -O & Q to T
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Separate benches proposed in topsoil, overburden and mineral	Separate benches maintained in topsoil, overburden and mineral	Top soil:1 Bench, Over burden:3 benches, Mineral: 6 benches
2c	Stripping ratio or ore to OB ratio	5.64	6.94(67234 tones of OB handled more than the proposed)	The nature of occurrence of Mn ore is irregular
2d	Quantity of topsoil generation in m3	620 Tonnes	290 Tonnes	Top Soil stacked separately
2e	Quantity of overburden generation in m3	432830 Tonnes	500064 Tonnes	Mn ore occurrence are pockety in nature
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 given in the approved document

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks

3a	Number of pit proposed for production	Manganese ore;04 pits and 02 exploratory Mining pits	Working in 03 pits and no workings in exploratory mining pits	Approx. Dimension of the pit; Neerlabbi (NRLB)- 620 m X 360 m X 165 m, Governor Point (GP)- 600 m X 380 m X 71 m, Dabaxi kolla (DBX)- 460 m X 140 m X 49 m,
3b	Quantity of ROM mineral production proposed	Mn Ore: 32000 T	Mn Ore: 31761.34 T	Nil
3c	Recovery of sailable/usable mineral from ROM production	42%	44%	Manual sorting of salable Mn ore from ROM after dry screening
3d	Quantity of mineral reject generation	Mn Ore: 44800T Iron Ore: 87229 T	Mn Ore:40308 T Iron Ore: 23985 T	Iron ore is stacked separately as mineral reject due to lack of EC for the same
3e	Grade of mineral rejects generation and threshold value declared.	10 to 22% Mn 35 to 55% Fe	10 to 22% Mn 35 to 55% Fe	Nil
3f	Quantity of sub grade mineral generation.	No proposal	Nil	Nil
3g	Grade of sub grade mineral generation	No proposal	Not applicable	Nil
3h	Manual / Mechanised method adopted for segregating from ROM	Manual method proposed for segregating from ROM	Manual method adopted for segregating from ROM	No Change
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No proposal	No such beneficiation study carried out for sub-grade and mineral reject	Dry crushing and screening for Mn ore
3j	Provision of drilling and blasting in mineral benches	Provision of drilling & blasting made	Drilling & Blasting is carried out in combination with Ammonium Nitrate, Slurry explosive and Nonel detonators	100 mm dia, Spacing :4 Mtrs & Burden: 3 Mtrs and height:8.25 Mtr

3k	Provision of mining machineries in mineral benches	Proposed mining machineries Exavator-2 No's, Wheel loaders 2 No's, Trucks-12 No's, Deep hole Drill-1 No's, Jack hammer-4 No's	Mining machineries used Exavator-2 No's, Wheel loaders 2 No's, Trucks-14 No's, Deep hole Drill-1 No's, Jack hammer-2 No's	Nil
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Proposed Bench height & Bench width -7.5 m	Bench height - maximum 7.5 m Bench width - minimum 7.5-8 m	In order
3m	Total area covered under excavation/pits	48.44 ha in the plan period	46.20 ha	Nil
3n	Ore to OB ratio for the pit/mine during the year.	5.64	6.94	nil
3o	Total area put in use under different heads at the end of year	Area put to use in plan period - Area under mining: 48.44 ha, Storage for top soil-0.5 ha. Waste dump site-38.78 ha. Mineral storage-2.14, Infracture-0.845 ha. Roads-5.18 ha.	Area under mining: 46.20 ha, Reclaimed/Rehabilated-5.08, Waste disposal-42.36, Occupied by plant, buildings, residential, welfare buildings and roads-5.525 ha.	nil
3p	Production of ROM mineral during the last five year period as applicable	2014-15 7400 2015-16 7400 2016-17 7400 2017-18 7400 2018-19 32000	2014-15 7303 2015-16 7080 2016-17 7017 2017-18 7224 2018-19 31761	All units in Tons.Actual production of Manganese ore is within the proposed limits.
3q	General remarks of inspecting officers on method of mining etc.			Mining was carried out in 3 pits with 44% recovery.HEMM were used in combination with drilling & blasting

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Separate dumps are proposed for top soil, OB and mineral reject	Separate dumps are maintained for top soil, OB and mineral reject	Top soil, OB and mineral reject stacked separately
4b	Location of topsoil, OB and mineral reject dumps	Proposed OB Locations: NRLB: N 1666957 TO 1667417 E 659875 TO 660335,DBX: N 1672760 TO 1673062 E 656324 TO 656600,Myadara Banda: N1658318 TO 1658540 E 669710 TO 669811 Proposed Mineral reject stacking Locations:NRLB : 1. N 1667093 TO 1667296 E 660267 TO 660385,2. N 1667434 TO 67680 E 659654 TO 659828, N 1667756 TO 1668000 E 669903 TO 660089,DBX: N 1672949 TO 1673110 E 656289 TO 656416 GP: N 1673528 TO 1673625 E 656000 TO 656200 Myadara Banda: N1658460 TO 1658520 E 669811 TO 669881	Top Soil Locations: NRLB- N 1667774 to 1667778 E 659970 to 659950 OB Locations: NRLB: N 1666984 TO 1667376 E 659937 TO 660281 DBX: N 1672752 TO 1673049 E 656332 TO 656581 Mineral reject stacking Locations: NRLB: 1. N 1667093 TO 1667296 E 660267 TO 660385 2. N 1667434 TO 1667680 E 659654 TO 659828 3. N 1667756 TO 1668000 E 669903 TO 660089 DBX: N 1672949 TO 1673110 E 656289 TO 656416 GP: N 1673528 TO 1673625 E 656000 TO 656200 Myadara Banda: N1658460 TO 1658520 E 669811	Nil
4c	Number of dumps within lease area and outside of lease area	Within lease area- 28 OB dumps Outside mining lease area-Nil	Within lease area- 28 OB dumps Outside mining lease area-Nil	Very old dumps since the inception of the mine

4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	No Proposal	Partial Backfilling in progress in Neerlabbi(CD), Dabaxi Kolla and Governor Point.	Minerals from the pits are exhausted and backfilled
4e	Number of active and alive dumps.	No Proposal	Waste disposal by Backfilling in Neerlabbi, Dabaxi Kolla and Governor Point.	On the date of inspection backfilling was in progress in Neerlabbi and Dabaxi Kolla pit.
4f	Number of dead dumps.	No Proposal	Nil	Total Numbers of Dead dumps-25
4g	Number of dumps established.	Proposed as per the approved R&R Plan	22 No's of dumps are stabilized and 6 No's of dumps are partially stabilized.	Stabilized by plantation and coir matting.
4h	Whether Retaining wall or garland drain all along dumps are there.	Retaining wall and garland drain proposed all along the dumps.	Retaining wall and garland drain constructed and maintained all along the dumps.	Nil
4i	Length of Retaining wall or garland drain all along dumps	Retaining Wall -100 X 1.50 X 2 Mtrs Garland Drain - 150 X 2 X 1 Mtrs	Retaining Wall - 301 X 1.75 X 2 M Garland Drain - 150 X 2 X 1 Mtrs	Total TW 4118 Cum & garland drain 3895 Cum
4j	Number of settling ponds	No proposal	Nil	7 no's of settling ponds constructed in the previous years.
4k	Specific comments of inspecting officer on waste dump management			Waste disposal by concurrent backfilling was adopted.

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.	proposed backfilling after extracting the mineral fully	Mineral extracted fully before starting partial backfilling	Nil
5b	Area under backfilling of mined out area	0.2 ha during FY 2018-19	0.2 Ha in Dabaxikolla,Nirlabi & Governor point	1.18 Ha covered in all

5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	No proposal	Top soil generated is stacked separately	Top soil will be utilized for plantation in the plan period
5d	Total area fully reclaimed and rehabilitated	No proposal	5.08 Ha (CD-1.8 ha, DBX-2.68 ha, GP-0.6 ha)	Reclamation done by afforestation
5e	General remarks of inspecting officers on backfilling and reclamation etc.			Partial Backfilling was in progress as per the approved document

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 by 1st July of every year	Annual report on PMCP submitted on 28.06.2019	Nil
6b	Area available for rehabilitation (ha) .	2 to 3 ha available	2.88 ha	Nil
6c	afforestation done (ha).	0.5 ha proposed for Gap filling	0.6 ha covered under Gap filling	Nil
6d	No. of saplings planted during the year	500 No's sapling proposed	500 No's sapling planted on backfilled area	Nil
6e	Cumulative no .of plants	5000 No's sapling	5100 No's sapling	Nil
6f	Any other method of rehabilitation	Proposed as per approved R & R plan	Coir matting and gap plantation on dead dumps	Nil
6g	Cost incurred on watch and care during the year	Rs. 214.11 Lakh	Rs.280.71 Lakh	Nil
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	Backfilling proposed in DBX, NRLB & GP pits after complete excavation of ore	Backfilling carried out in DBX, NRLB & GP pits as per plan	Nil

6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	Proposed backfilling NRLB-250 m X100.75 m X40 m, DBX- 357 m X197 m X17m.	NRLB-250 m X74.887 m X7 m, DBX- 120 m X77.74 m X11m.	Nil
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on backfilled area	0.3 Ha	0.4 Ha	Nil
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	500 No's of saplings	500 No's of saplings planted	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
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	No proposal	Nil	Over the years, a total of 44.35 ha have been rehabilitated by way of plantation
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)	Environmental monitoring proposed in Core and Buffer Zone	Environmental monitoring has been carried out for all the 4 seasons for Ambient air quality (core zone- 4 locations & buffer zone- 6 locations), water quality (surface water - 5 locations & Ground water- 5 locations), Noise quality (core zone - 6 location & buffer zone - 6 locations)	All the environmental parameters were observed to be within the permissible limit
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.			PMCP activities were carried out as per the proposal.

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Grade wise sorting proposed with in Lease area for Mn ore	Grade wise sorting done manually with in Lease area for Mn ore	Nil
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Manual sorting for Mn Ore proposed	Manual sorting done	Nil
7c	Different grade of mineral sorted out at mines.	24-26, 26-28, 28-30,30-32, 32-34% Mn	24-26, 26-28, 28-30, 30-32,32-34% Mn	Grade wise sorting done manually
7d	Any beneficiation process at mines .	No proposal	No such beneficiation process carried out in the mines	Crushing, dry screening and manual separation of Mn ore from ROM
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues			All the Mn ore is sorted manually. The unsalable ore above the threshold value is stacked as mineral reject at the earmarked locations.

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Separate removal of Topsoil proposed	Topsoil removed from NRLB pit	Stacked separately
8b	Concurrent use or storage of topsoil	No proposal	Top soil stacked separately	Will be u Used for Plantation and rolling of coir mat over dump slope
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate dumps for overburden and Mineral rejects proposed	Separate dumps for overburden and Mineral rejects maintained	Waste is used for backfilling & Mineral rejects are stacked separately
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	OB and waste proposed for backfilling	Concurrent Backfilling is in progress in NRLB, DBX and GP	Nil
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Proposed during Final Mine Closure plan	Phased reclamation and rehabilitation of in active dumps in progress	Nil
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Baseline information on existence of plantation available	Within ML area 5100 No's of saplings planted @ 70% survival	301500 No's of cumulative sapling are done up 31st March 2019
8g	Survival rate	65%	70%	Nil
8h	Water sprinkling on roads to control airborne dust	Water sprinkling proposed on haul roads to control airborne dust	Water sprinkling is done regularly on haul roads and mine faces to suppress the dust	2 No's of water tankers each of 7000 Ltrs capacity is deployed
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area			Aesthetic beauty in and around the mine was maintained & greenary developed

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	M.R. Submitted upto July-2019 A.R. submitted upto FY 2018-19	Annual return submitted on 27.06.2019	
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Manager Mining-Shri.L.Gnanapregasam, Mining Engineer-Shri.Sunil Kumar G S, Geologist-Shri Shridhar P Hegde	Manager Mining-Shri Shridhar P Hegde, Mining Engineer- Shri Karthik A K, Geologist-Shri Subramanyam Jalli	
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Covered under current working 46.20 ha, Reclaim and rehabilitated-5.08 ha, used for waste disposal-42.36 ha, occupied by plant, Buildings, residential, welfare buildings and roads-5.525 ha	Appears to be correct	
9d	Scrutiny of Annual return on afforestation	Within mining lease area-5100 @ 70% survival	Appears to be correct	
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Mn-40308(10-20% Mn) Tonnes, Fe-23985 (35-55% Fe) Tonnes	Appears to be correct	
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM; Opening stock-6178.74 Tonnes, Production-31761.34 Tonnes, Closing stock-6015.67 Tonnes	Appears to be correct	

9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Cost of Production Rs 4561 per Tonn, sale value- 7960 Rs/T and Ex. Mine price- 7843 Rs/T	Violation pointed out
9h	Scrutiny of Annual return on fixed assets	Nil	Violation pointed out
9k	Scrutiny of Annual return on mining machineries	Excavator-2 No's, Wheel Loader-2 No's, Trucks- 14 No's, Water tanker-2 No's Explosive van- 1 No's Wagon drill- 1 No's, Jack hammer-2 No's	Appears to be correct

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	
MCDR17	Rule 35(2)	11/09/2019	18/10/2019				
	Rule 45(7)	11/09/2019	18/10/2019				

Date :

(**ARUN KUMAR**)

Indian Bureau of Mines