INDIAN BUREAU OF MINES MINERALS DEVELOPMENT AND REGULATION DIVISION

Mining Plan Modification REPORT

Bangalore regional office

Mine file No: KNT/BLR/FE-201/BNG Mine code: 30KAR03180

(i) Name of the Inspecting : S21) H M Shivakumar

Officer and ID No.

(ii) Designation : Assistant Mining Engineer

(iii) Accompaning mine :

Official with Designation

(iv) Date of Inspection : 04/03/2022
(v) Prev.inspection date : 13/07/2021

PART-I : GENERAL INFORMATION

1. (a) Mine Name : SMIORE ML-2678(OLD2580)

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

(c) Category : A Fully Mechanised

(d) Type of Working : Opencast

(e) Postal address

State : KARNATAKA
District : BELLARY

Village : DEOGIRI,SB HALLI,RAM

Taluka : SANDUR

Post office Pin Code

FAX No. : (080) 23613169,08395260473

E-mail : eps@sandurgroup.com

Phone : (080) 23613166,08395260301

(f) Police Station : Sandur

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

(h) Weekly day of rest : SUN

2. Address for : M/s THE SANDUR MANGANESE & IRON ORES LTD

correspondance NO.9, BELLARY ROAD, SADASHIVANAGAR,

BANGALORE - 560080

3. (a) Lease Number : KAR1516 (b) Lease area : 1860.1

(c) Period of lease : 20

(d) Date of Expiry : 31/12/2033

4. Mineral worked : MANGANESE ORE Associated

IRON 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 : SRI Md ABDULSALEEM (DIRECTOR MINES)

DEOGIRI SANDUR TQ BALLARI

BELLARY KARNATAKA
Phone: 08395-271025/28
FAX : 08395-271066

Agent : SHRIDHAR P HEGDE

DEOGIRI SANDUR BELLARY BELLARY KARNATAKA

Phone: 08395-271025/28/29/40, 9448497925

FAX : 08395-271066

Mining Engineer

Name : SUNIL KUMAR GS, Full Time

Qualification : B.E.MINING Appointment/ : 06/09/2015

Termination date

Geologist

Name : Rajesh M Katral, Full Time

Qualification : M.Sc (Geology), Appointment/ : 19/06/2005

Termination date

Manager

Name : Prakash Babu

Qualification : FCC

Appointment/ : 01/07/2021

Termination date

6. Date of approval of Mining : Mining Scheme rule 12 MCDR1988 22/10/2002 Plan/Scheme of Mining : Mining Scheme rule 12 MCDR1988 15/01/2013 Renewal under rule 22 MCR1960 05/12/2013

MP modif under MCR 1960 01/09/2015
MP modif under MCR 1960 01/09/2015
MP modif under MCR 1960 19/08/2016
MP review under 17(1) MCR 2016 07/12/2017
MP review under 17(1) MCR 2016 05/10/2018
Modif.approved Mining Scheme 02/09/2021

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	No Proposal	No Backlog	46 DTH Confirmatory holes amounting to total of 1277 Mtrs in FY 2019-20
1b	Exploration over lease area for geological axis 1 or 2	20 DTH Holes amounting to total of 900 mts proposed at G1 level.	78 DTH Holes drilled at 50 Mtrs grid interval with a total meterage of 2081m	G1 level: 876 Ha G2 level: 70 Ha G3 level: 415 Ha (old dumps and Mineral Reject are stacked on the G3 area) G4 level: nil
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Departmental & External 10.00 lakhs	Departmental & External 11.47 lakhs.	Drill machine was hired & exploration carried out by SMIORE.
1d	Balance area to be explored to bring Geological axis in 1 or 2	No Proposal	Not applicable	G1 level: 876 Ha G2 level: 70 Ha G3 level: 415 Ha (old dumps and Mineral Reject are stacked on the G3 area) G4 level: nil
1e	Balance reserve as on 01/04/20		Mn. Ore: 1,23,57,916 Tons, Iron Ore: 9,62,36,373 Tons	As per A,R, submitted for FY 2020-21.
1f	General remarks of inspecting officers on geology, exploration etc			During the year lessee has carried out 54 DTH Holes drilled at 50 Mtrs grid interval with a total meterage of 2064m. Total Mineralized area is 1361 Ha. The area covered under G1 level: 876 Ha; G2 level: 70 Ha G3 level: 415 Ha (old dumps and Mineral Reject are stacked on the G3 area) and G4 level: nil.

Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Manganese ore: JLK: N 1658652 TO 1658424, E 673420 TO 676364 JLK N 1658400 TO 1658667, E 673600 TO 673640 YRD: N 1658652 TO 1658424, E 673420 TO 676364 YRD: N 1658400 TO 1658667, E 673600 TO 673640 RMK: N 1658652 TO 1658424, E 673420 TO 676364 RMK: N 1658652 TO 1658667, E 673600 TO 676364 RMK: N 1658400 TO 1658667, E 673600 TO 673640	YRD: N 1658652 TO 1658424, E 673420 TO 676364 YRD: N 1658400 TO 1658667, E 673600 TO 673640 RMK: N 1658652 TO 1658424, E 673420 TO 676364 RMK: N 1658400 TO 1658667, E 673600 TO 673640 CBG: N 1657800 TO 1658030, E 671550 TO 671930 SK: N 1657800 TO	Development activities are carried out within the approved locations.
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: 8 to 11 benches, Mineral: 16 to 17 benches as per AR submitted.

2c	Stripping ratio or ore to OB ratio	Mn Ore: 1:24.27 Fe Ore: 1:1.47	Mn Ore: 1:22.13 Fe Ore: 1:0.44	The stripping ratio in Mn ore is high due to nature of occurrence and irregular habit of the ore.
2d	Quantity of topsoil generation in m3	Fe: 103500	Mn: 0 Tons, Fe: 0 Tons	Working is in already opened pit, no Top Soil has been generated.
2e	Quantity of overburden generation in m3		Fe pit: 491740 Tons.	
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc			Development is carried out in Manganese & Iron ore pits within the approved limits barring a portion of KMK pit where benches were not systematically developed for which the violation is issued.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Manganese ore:12 pits, Iron ore: 12 pits	Working in Manganese ore 12 pits and Iron ore 03 pits	Work carried out within the approved proposed limits.
3b	Quantity of ROM mineral production proposed	Mn Ore: 254000 T Fe Ore: 1600000 T	Mn Ore: 253053.06 T Fe Ore: 1595000.02 T	Saleable Mn Ore: 253053.06 T + Mineral reject Mn Ore 114718 T
				Saleable iron ore 1595000.02 tons + Mineral Reject iron ore 652032 tons

3c	Recovery of sailable/usable mineral from ROM production	Mn Ore: 41% Fe Ore: 74%	Mn Ore: 69% Fe Ore: 71%	Manual sorting of salable Mn ore from ROM after dry screening and Mechanized Crushing and Screening for Iron ore
3d	Quantity of mineral reject generation	Mn Ore: 362855 T Fe Ore: 564340	Mn Ore: 114718 T Fe Ore: 652032 T As per A.R. 2020-21 submitted	Mineral Reject of Manganese and Iron ores occurring incidentally are stacked separately for beneficiation.
3e	Grade of mineral rejects generation and threshold value declared.		10 to 22% Mn 45 to 55% Fe & 35 to 45% Fe	Mineral Reject above threshold value and below cut of grade of Mn ore and Iron ores are stacked separately.
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	Manual method proposed for segregating from Manganese ROM and Mechanized method proposed for Iron ROM	Manual method adopted for segregating from Manganese ROM and Mechanized method adopted for Iron ROM	Method of mining carried out as proposed.
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 and Iron ores carried out for size grading.
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 Depth :8.25 Mtrs.

3k	Provision of mining machineries in mineral benches		Mining machineries used Excavator-45 No's, Wheel loaders-31 No's, Trucks-206 No's, Water Tanker-44 No's Explosive Van-4 No's Air Compressor-17 No's Pumps (Elec.)-28 No's Others (Non-Elec.) -2 No's Crusher-9 No's Drills - 32 nos, Jack Hammer - 18 nos	
31	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	height & Bench width -	Actual Bench height - maximum 7.5 m Bench width - minimum 7.5-8 m	Bench height and width maintained as proposed expcept for benches in KMK East pit b/w sections CC' - DD' Violation issued.
3m	Total area covered under excavation/pits	470.45 ha in the plan period	460.45 ha	
3n	Ore to OB ratio for the pit/mine during the year.		Actual Mn Ore: 1:22.13 & Fe Ore: 1:0.44	total OB removed 5362285 tonnes.

30 Total area put in use under different heads at the end of year

Area put to

Mn Ore-

(in tonnes)

use in plan 460.45 ha, period Reclaimed/Rehabilitated-Area under 110 ha, mining: 470.45 Waste disposal-415.60 Storage for Occupied by plant, top soil-3.00 buildings, residential, welfare buildings and Waste dump roads-78.28 ha, site-442.52 Afforestation-82.84, Other Purpose-801.94 ha, ha, Mineral Work Done Under storage-Progressive mine closure 128.44, plan during the year-Infrastructure 0.10 ha. (Workshop, administrative buildings etc-25.10 ha, Roads-32.16 ha, Tailing pond-2.00 ha, Mineral separation plant-2.00 ha, Township Area-27.52 ha

Mn Ore-

(in tonnes)

Area under mining:

3p Production of ROM mineral during the last five year period as applicable

2016-17 254000 215254 five year period 2017-18 254000 252445 2018-19 254000 253023.5 2019-20 254000 253362.24 2020-21 254000 253053.06 Iron Ore-Iron Ore-(in tonnes) 2016-17 (in tonnes) 1600000 1149899 1579949 2017-18 1600000 1581000 2018-19 1590002 1600000 1595000.02 2019-20 1600000 2020-21 1600000

Production data for the year 2020-21 from AR submitted. 3q General remarks
 of inspecting
 officers on
 method of mining
 etc.

There is no change in method of Mining & all the mining operations are carried out as per the approved proposals except for benches in KMK East pit b/w section CC'-DD' for which Violation is pointed out.

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a		are proposed	S Separate dumps are maintained for top soil, OB and mineral reject.	Top soil, OB and mineral reject are stacked separately.

4b Location of topsoil, OB and mineral reject dumps

Locations for Manganese Pits: TO 1659660 E 675480 TO 675870 TO 1659094 E 674474 TO 674976 N 1659360 TO 1659660 E 675549 TO 675981, TO 1658240 E 673029 TO 673406, TO 1657680 E 671200 TO 671800, N 1657550 TO 1657800 E 670570 TO 670800, N 1657900 TO 1655260 E 670600 TO 671000, SK: 1657550 TO 1657800 E 670570 TO 670800 KMK(E): N 1657550 TO 1657800 E 670570 TO 670800, KMK: N 1657900 TO 1655260 E 670600 TO

Proposed OB

Actual OB Locations for Manganese Pits: JLK: N 1659360 TO 1659660 JLK: N 1659360 E 675480 TO 675870 YRD: N 1658779 TO 1659094 E 674474 TO 674976 YRD: N 1658779 N 1659360 TO 1659660 E 675549 TO 675981, RMK: N 1657895 TO 1658240 E 673029 TO 673406, CBG: N 1657290 TO 1657680 E 671200 TO 671800, RMK: N 1657895 N 1657550 TO 1657800 E 670570 TO 670800, N 1657900 TO 1655260 E 670600 TO 671000 CBG: N 1657290 SK: SK: 1657550 TO 1657800 E 670570 TO 670800, KMK (E) N 1657550 TO 1657800 E 670570 TO 670800, KMK: KMK: N 1657900 TO 1655260 E 670600 TO 671000, NK: 16583

Topsoil, OB & mineral reject dumps are located at proposed locations.

4c Number of dumps within lease area and outside dumps of lease area

Within lease area-16 OB Outside mining area-Nil lease area-Nil

NK: 1658376 TO

671000,

Within lease area-16 OB dumps Outside mining lease

All the 16 number of Dumps are located within the lease area, no dump(s) outside the lease area.

4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Waste Dumping in Manganese pits: JLK, YRD, RMK, CBG, SK, KMK(E), KMK, NK, KPTS Iron pits: KTIO (A & B), KVHIO, KH, AMK, RNP, KVH(BG), JLK. Back filling in JLK pit	Waste Dumping in Manganese pits: JLK, YRD, RMK, CBG, SK, KMK(E), KMK, NK, KPTS Iron pits: KTIO (A & B), KVHIO & Back filling in JLK pit.	Backfilled at the proposed locations. Managnese ore in the proposed pits are exhausted. On the date of inspection back filling was in progress in Jaldikolla Pit
4e	Number of active and alive dumps.	16	16	
4f	Number of dead dumps.	No Proposal	NIL	Total Numbers of Dead dumps-70
4g	Number of dumps established.	Proposed as per the approved R&R Plan.	NIL	Inactive part of the dumps are Stabilized by plantation, coir mat and plantation.
4h	Whether Retaining wall or garland drain all along dumps are there.	and garland	Retaining wall and garland drain constructed and maintained all along the dumps.	As per the information of the lessee, in Total Retainining wall 51086 Cum & garland drain 44311 Cum constructed along the toes of the dumps in the lease
4i	Length of Retaining wall or garland drain all along dumps	- 1470 mtrs	Retaining Wall - 895 cbm Garland Drain - 4044 cbm The proposed Retaining wall and garland work is commenced and is in progress.	The proposed Retaining wall and garland work is costructed and maintained.
4j	Number of settling ponds	No Proposal	NIL	As per the data provided by lessee, 50 No's of settling ponds constructed in the previous years.
4k	Specific comments of inspecting officer on waste dump management			All the dumps are located at the proposal location within the lease. Inactive dumps are stablized by coir mats and plantation.

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.		Mineral extracted fully before starting back filling	Mineral is exhausted at the proposed backfilling area.
5b	Area under backfilling of mined out area	2.15 ha	2.05 ha in JLK & YRD pit after complete extraction of ore	
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	NIL	Reclamation to be done by afforestation after completion of the backfilling.
5e	General remarks of inspecting officers on backfilling and reclamation etc.			Backfilling work is in progress, hence no plantation carried out at the back filled area.

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 30.06.2020	PMCP submitted within the stipulated time.
6b	Area available for rehabilitation (ha).	20.00 ha available	22.22 ha	
6c	afforestation done (ha).	No Proposal	NIL	
6d	No. of saplings planted during the year	No Proposal	NIL	
6e	Cumulative no .of plants	100000 No's saplings proposed	47339 No's saplings are done	Planted inside lease as per A.R. 2020-21
6f	Any other method of rehabilitation	-	Coir matting and gap plantation on dead dumps.	

6g	Cost incurred on watch and care during the year	Rs. 3Lakh	Rs. 237.40 Lakh	As reported by the lessee, the cost includes back filling afforestation and environmental monitoring.
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	complete excavation of ore		Backfilling is in progress at proposed location. 49537 tons of waste back filled during the year.
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	1.04 Ha.	1.05 На.	
6j	Compliance on reclamation and rehabilitation by backfilling (iii) Afforestati on on backfilled area		Backfilling is in progress, hence, not possible to do afforestation at this stage.	Still Backfiling work is in progress.
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No proposal	NIL	
61	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	No proposal	NIL	
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	No proposal	NIL	

6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	No proposal	NIL	
60	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	Plantation	Plantation	
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 analysed are within the permissible limit.
6q 	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.			Back filling work is under progress. Lessee has carried out plantation on stablized waste dumps and waste land area. PMCP activities implemented in mines as per 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		
7b	_	Ore and	Manual for Mn Ore and Mechanical for Iron ore is done.	

7c	Different grade of mineral sorted out at mines.	28-30, 30-32 & 32-34%		Grade wise sorting done manually for Mn ore and sizewise Iron ore is sorted out by Screening.
7d	Any beneficiation process at mines	1 1 1	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			Mn ore is sorted manually from ROM. The Mn ore and iron ore above Threshold value and below cut-off rate (unsaleable ore) stacked seperate as a mineral reject.

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	removal of	Top Soil is not generated during the year.	Top Soil is not generated during the year.
d8	Concurrent use or storage of topsoil	No proposal	Top soil stacked separately.	Will be 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 maintained.	
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 JLK and KT10 pit.	

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 alongwith backfilling of mineral exhausted pits.	
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Baseline information on existence of plantation available.	Within ML area 49905. No's of saplings planted @ 70% survival.	3334567 No's of saplings are done till 31st March 2021.
8g	Survival rate	65%	70% to 80%	
8h	Water sprinkling on roads to control airborne dust	sprinkling	Water sprinkling is done regularly on haul roads and mine faces to suppress the dust	27 No's water tankers of different capacity is deployed
8i 	General remarks of inspecting officer on aesthetic beauty in and around mines area			The aesthetic beauty in and around the mine maintained well and looks very good . Greenary developed on waste dumps and waste land area.

Compliance of Rule 45:

Sl.No.	Item	Propasals A	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	M.R. Submitted upto July-2021 A.R. submitted upto FY 2020- 21		Annual return submitted within stipulated time line i.e. on 29.06.2021

9b Scrutiny of Appointed as per Rule Annual return Manager Annual return Mining-Rule (55) of MCDR 2017. submitted online & Shri.Prakash for information Appears to be correct for the Year 2020on Mining Babu Engineer, Shri.Bachalapp Geologist and a. K, Manager Shri.Karthika. Mining Engineer-Shri.Sunil Kumar G S, Geologist-Shri. Shridhar P Hegde 9c Scrutiny of Area under Appears to be correct Annual return on mining: 460.45 land use pattern ha, for area under Reclaimed/Reha pits, reclaimed bilitated-110 area, dumps etc. ha, Waste disposal-305.60 ha, Occupied by plant, buildings, residential, welfare buildings and roads-78.28 ha, Afforestation-82.84, Other Purpose-801.94 ha, Work Done Under Progressive mine closure plan during the year-0.100 9d Scrutiny of 50025 No's Appears to be correct Annual return on saplings are afforestation done 9e Scrutiny of Mn Ore: 114718 Appears to be correct Annual return on (10-20% Mn) mineral reject Tonnes generation Fe Ore: 652032

(Grade and

quantity)

(35-55% Fe)

Tonnes

9£ Scrutiny of Annual return on ROM; ROM stock and/or Opening stockgraded ore

Manganese ore: Appears to be correct.

29726.83 Tonnes, Production-253053.06 Tonnes,

Closing stock-29563.61

Tonnes. Iron

ore: ROM;

Opening stock-12119 Tonnes, Production-1595000.02 Tonnes, Closing stock-

11018.12 Tonnes

9q Scrutiny of Annual return on Cost of sale value, Ex. Mine price and production cost

Manganese:

In the cost of Production- Rs Production, expenditure 5030 per Tons, incurred towards Sale valueexploration and other 8037.49 Rs/T taxes not taken into and Ex. Mine account for cost of price- 7700.29 production.

Rs/T.

Iron ore: Cost of

Production- Rs 396 per Tons, Sale value-2576.84 Rs/T and Ex. Mine price-2150.95Rs/T.

9h Scrutiny of Annual return on fixed assets

Rs. 116668240 Appears to be correct

9k Scrutiny of

Annual return on No's,

mining machineries Excavator-45 Appears to be correct

Wheel loaders-

31 No's, Trucks-206

No's,

Water Tanker-27 No's

Explosive Van-

4 No's Air

Compressor-17

No's

Pumps (Elec.)-

28 No's Others (Non-Elec.) -2 No's Crusher-9 No's

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

Violation	n observed	Show couse position	
Rule NO.	Issued on Compliance on	Rule NO.	Issued on Compliance on
MCDR17 Rule 11(1)	21/04/2022		

Date :

(H M Shivakumar)

Indian Bureau of Mines