

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

Inspection under SDF for star rating of mines REPORT

Bangalore regional office

Mine file No : KNT/BLR/FE/397/BNG

Mine code : 30KAR03092

- (i) Name of the Inspecting : **A101**) **ARUN KUMAR**
Officer and ID No.
- (ii) Designation : Deputy Controller Mines
- (iii) Accompanying mine : Shri. Dhiren Bhushan, Mines Manager,
Official with
Designation
- (iv) Date of Inspection : 08/12/2020
- (v) Prev.inspection date : 28/08/2019

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **KUMARASWAMY**
- (b) **Registration NO.** : **IBM/270/2011**
- (c) **Category** : A Fully Mechanised
- (d) **Type of Working** : Opencast
- (e) **Postal address**
- State : KARNATAKA
- District : BELLARY
- Village : KAMMADARUVU
- Taluka : SANDUR
- Post office : DEOGIRI
- Pin Code : 583112
- FAX No. : 040-23538711 (F)
- E-mail : kiom.nmdc@gmail.com,bsahoo@
- Phone : 040-23538713 (O) 0839527464
- (f) **Police Station** : SANDUR
- (g) **First opening date** : 18/11/1991
- (h) **Weekly day of rest** : SUN
2. **Address for** : NMDC Limited, Donimalai
correspondance Bellary, Karnataka. Pin-583 118
3. (a) **Lease Number** : KAR0212
- (b) **Lease area** : 647.5
- (c) **Period of lease** : 30
- (d) **Date of Expiry** : 17/10/2002
4. **Mineral worked** : IRON ORE Main

5. Name and Address of the

Lessee : NATIONAL MINERAL DEV. CORPN. LTD
 10-3-311/A, CASTLE HILLS,
 MASAB TANK, HYDERABAD
 TELANGANA
 Phone:3538706
 FAX :3538705

Owner : P K Sathpathy
 NMDC Limited, 10-3-311/A,
 Castle Hills, Masab Tank
 Hyderabad, HYDERABAD
 TELANGANA
 Phone: 040-23538706/07
 FAX : 04023538711

Agent : B SAHOO
 NMDC LIMITED PO DONIMALAI
 BELLARY KARNATAKA
 Phone:
 FAX : 08395274624

Mining Engineer

Name : S. N. Singh, Full Time
 Qualification : B.TECH (MINING)
 Appointment/ : 11/08/2015
 Termination date

Geologist

Name : Dr. D. N. Subramanyam, Full Time
 Qualification : M.SC. Geology
 Appointment/ : 02/07/2016
 Termination date

Manager

Name : Dhiren Bhushan
 Qualification : B.TECH (MINING)
 Appointment/ : 20/06/2016
 Termination date

6. Date of approval of Mining Plan/Scheme of Mining	:	Existing rule 11 MCDR1988	29/07/1992
		Mining Scheme rule 12 MCDR1988	21/04/1998
		Renewal under rule 22 MCR1960	29/10/2002
		Modif.of approved Mining Plan	06/02/2007
		Mining Scheme rule 12 MCDR1988	17/09/2007
		Mining Scheme rule 12 MCDR1988	16/08/2012
		Modif.approved Mining Scheme	23/06/2014
		MP modif under 17(3) MCR 2016	26/08/2016
		MP review under 17(1) MCR 2016	03/11/2016
		MP modif under 17(3) MCR 2016	06/07/2017
		MP modif under 17(3) MCR 2016	13/07/2018
		MP modif under 17(3) MCR 2016	13/12/2019

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	26 Nos. Bore holes with 2000 meterage	36 nos. of Core bore holes were drilled against the proposal of 26nos. of Core bore holes. Total meterage drilled 3228.00 mts against the proposal of 2000.00 mts.	Nil
1b	Exploration over lease area for geological axis 1 or 2	G-3 & G-1	G1-195.27 Ha, G3-14.5 Ha	Nil
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Not specified	NMDC in-house (Global Exploration Center, (GEC) Raipur, M/s. NMDC Limited. Incurred cost of Rs. 5.90 Crores.	Expenditure incurred includes cost of drill machine, depreciation, running and maintenance cost etc.
1d	Balance area to be explored to bring Geological axis in 1 or 2	Nil	77.75 Ha needs to be explored in the plan period	Exploration proposed in coming years
1e	Balance reserve as on 01/04/20	Nil	215.23 Million Ton as on 01-04-2020 with average grade of 62.38% Fe	In AR, only 29 Tons, 21 Tons & 20 Tons have been furnished under probable mineral reserves (121), Feasibility mineral resources (211) & Inferred mineral resources (333) respectively which is not aligned with the reserves & resources furnished in the approved document. Violation issued

1f	General remarks of inspecting officers on geology, exploration etc	36 nos. of Core bore holes were drilled against the proposal of 26nos. of Core bore holes.Total meterage drilled 3228.00 mts against the proposal of 2000.00 mts in FY 2019-20.
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Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Location of development proposed in B-Block& C-Block: C-Block: Pit-1: E-75865 to E-77105, N-76155 to N-76610, Pit-2: E-75405 to E-75640,N-76410 to N-76765 ,Pit-3: E-74615 to E-74790, N-76735 to N-76825, B-Block: Pit-1:E78250 to E78695,N76500 to N76750 ,Pit-2: E77835 to E78265,N76075 to N76250, Pit-3: E78480 to E78830,N763260 to N76425	Actual development carried out in B-block & C-block: C-Block: Pit-1: E-75868 toE-77105, N-76165 to N-76550 Pit-2: E-75409 to E-75637, N-76410 to N-76745 Pit-3: E-74670 to E-74790, N-76745 to N-76804, B-Block: Pit-1:E-78255 to E-78645, N-76555 toN-76749, Pit-2: E-77835 toE-78260, N-76075 to N-76230, Pit-3: E-78490 toE-78795, N-76290 to N-76420	Development of faces proposed in between cross sections C/ 21 ¼ & C/ 21 7/8 (1018 & 1024 mRL), C/ 18 ¾ to C/ 19 3/8(1042 mRL) & C/ 11 3/8 to C/ 12 ½ (1030 & 1036 mRL) in pit 1 of C Block were short by 30-40 mtrs.Violation issued
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	No separate benches inOre Body and Overburden are proposed.	All the benches consisting of ore and waste are simultaneously worked.	The minor quantity of generated TopSoilstacked and utilized for gardening purpose. B-block=13 benches & C-Block= 12 benches containing both mineral and OB.

2c	Stripping ratio or ore to OB ratio	1: 0.14	1: 0.14	No change
2d	Quantity of topsoil generation in m3	No proposal	NIL	No top soil generated.
2e	Quantity of overburden generation in m3	10 Lakh Ton	9.99 Lakh Ton	Nil
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 within the grids specified

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Three Pits in B-block and three pits in C-block proposed.	Actual working in 6 pits, three each in B & C Block.	Approx dimension of the pits: B-Block (LXWXH) (in metres) Pit 1= 803X200X76 Pit2 = 829X147X60 Pit3 = 433X234X60 C-Block (LXWXH) (in metres) Pit-1 = 1445X289X73 Pit-2 = 388X303X42 Pit-3= 113X61X41
3b	Quantity of ROM mineral production proposed	70 LT	69.99 LT	Nil
3c	Recovery of sailable/usable mineral from ROM production	100 %	100 %	Nil
3d	Quantity of mineral reject generation	No proposal	110000 Tons	The mineral reject generated during mining was blended with high grade ore
3e	Grade of mineral rejects generation and threshold value declared.	No proposal	51.2 % Fe below the cut off grade	Nil

3f	Quantity of sub grade mineral generation.	No proposals	Nil	Nil
3g	Grade of sub grade mineral generation	No proposals	Nil	Nil
3h	Manual / Mechanised method adopted for segregating from ROM	Mechanized method proposed for segregated from ROM.	Mechanized method adopted for segregated from ROM.	05 units of Integrated dry crushing & screening plants of each 450 TPH capacity.
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No Proposal	No such beneficiation study carried out.	Nil
3j	Provision of drilling and blasting in mineral benches	Provision of drilling & blasting is proposed.	Drilling & blasting is done in combination with slurry & NONEL	4 to 4.5" dia. and 6" dia. holes are being utilized for drilling & blasting. For 4 to 4.5" dia Burden = 2.5 to 2.8 m, Spacing = 2.5 to 3 m, Max.Charge/delay=180 to 210 Kg For 6" dia: Burden = 4 to 5 m, Spacing = 5 to 6 m, Max.Charge/delay= 275 Kg
3k	Provision of mining machineries in mineral benches	Provision of Mining Machinery is made. Drills-10 nos. Truck 30 T-51nos. Dumper 85T-05 Dumper 100T-03 Wheel loader-15 nos. Excavator- 30 nos.	Mechanised Opencast Mining using Shovel Dumper Combination and deep hole drilling and blasting.	Machaneries used on the day of inspection: Drills-10 nos., Truck 30 T-41nos. Dumper 85T-05 Dumper 100T-03 Wheel loader-13 nos. Excavator- 23 nos.

3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Proposed bench height =6 metres, Proposed avg. bench width 15-20 mts	Bench height of 6 mts and avg width of 15-20 mts maintained as per the proposal.	Nil
3m	Total area covered under excavation/pits	94.96 Haproposed at the end of the Plan Period.	92.60 Ha at the end of reporting year	Nil
3n	Ore to OB ratio for the pit/mine during the year.	1: 0.14	1: 0.14	Nil
3o	Total area put in use under different heads at the end of year	Proposed total area at the end of the Plan Period. Area under Mining-94.96 Ha. Overburden Dump- 14.75 Ha. Mineral storage -10.34 Ha Roads- 16.36 Ha, Green Belt- 14.03 Ha Mineral separation plant- 1.7 Ha Others (virgin area planted)- 29 Ha	Actual total area at the end of the F.Y.2019-20. Area under Mining-92.60 Ha. Overburden Dump- 13.40 Ha. Mineral storage - 10.02 Ha Occupied Plant, building residential area, Roads -19.38 Ha.	Nil
3p	Production of ROM mineral during the last five year period as applicable	Year Quantity in Tonnes 15-16 6500000 16-17 6000000 17-18 6000000 18-19 7000000 19-20 7000000	Year Quantity in Tonnes 15-16 5659667 16-17 5990607 17-18 5999900 18-19 6999940 19-20 6999843	Actual production is within the proposed limits.
3q	General remarks of inspecting officers on method of mining etc.			Open cast mining was carried out with shovel dumper combination as per the proposal

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)	Separate dumping proposed for the OB dumps	Separate dumping is being carried out in B & C blocks.	Nil
4b	Location of topsoil, OB and mineral reject dumps	Proposed OB dumps: AD-2 (B-Block): N-76865 to N-77000, E-78385 to E-78540 AD-1 (C-Block): N-76510 to N-76735, E-77060 to E-77230	Actual location of OB dumps: AD-2 (B-Block): N-76865 to N-76990, E-78385 to E-78515 AD-1 (C-Block): N-76515 to N-76735, E-77065 to E-77215	AD-2: Between Cross Sections B-8 & B-9 AD-1: Between Cross Section C-25 & C-28 1/8
4c	Number of dumps within lease area and outside of lease area	Within lease area: Active dumps: 02 nos. Outside lease area: Nil	Within lease area: Active dumps: 02 nos. Outside lease area: Nil	Nil
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	Location of dumps proposed outside the UPL	Dumps are located outside the UPL.	AD-2 is 50 mts & AD-1 30 mts away from UPL
4e	Number of active and alive dumps.	Active: 02 nos.	Active: 02 nos.	Nil
4f	Number of dead dumps.	No proposal	Nil	Nil
4g	Number of dumps established.	No proposal	Nil	Nil
4h	Whether Retaining wall or garland drain all along dumps are there.	Retaining wall and garland drain all along dumps have been proposed.	Constructed Retaining wall and garland drain all along dumps as per the approved R & R Plan of KIOM	Nil
4i	Length of Retaining wall or garland drain all along dumps	RW -250 X 1 X3 mts GD - 250 X 1X1 mts	RW -255 X 1 X3 mts GD - 255 X 1X1 mts	Nil
4j	Number of settling ponds	No proposal	Nil	Nil
4k	Specific comments of inspecting officer on waste dump management			Waste dumping was being dumped in the earmarked area as per proposal.

Sl.No.	Item	Propasals	Actual work	Remarks
5a	Status of part or full extraction of mineral from mined out area before starting backfilling.	No proposal	Nil	No Proposal of back filling and mineral is not exhausted.
5b	Area under backfilling of mined out area	No proposal	Nil	Nil
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	No proposal	Nil	Nil
5d	Total area fully reclaimed and rehabilitated	No proposal	Nil	Nil
5e	General remarks of inspecting officers on backfilling and reclamation etc.			Pits are not matured for backfilling as mineral from these pits are not exhausted.

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 every year.	Annual Report on PMCP submitted on 30.06.2020.	Nil
6b	Area available for rehabilitation (ha) .	No proposal	Nil	Nil
6c	afforestation done (ha).	2.6 HA	23.7 Ha	Nil
6d	No. of saplings planted during the year	7000 nos. of saplings	Within ML -36,658 saplings	Nil
6e	Cumulative no .of plants	Not specified	78000 nos. of saplings	Nil
6f	Any other method of rehabilitation	No proposal	Nil	Nil
6g	Cost incurred on watch and care during the year	19.1 Lakhs Rupees.	213 Lakhs Rupees.	Including cost of saplings

6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	No proposal	Nil	Nil
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	No proposal	Nil	Nil
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on on backfilled area	No proposal	Nil	Nil
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No proposal	Nil	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	Nil
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 zone & buffer zone	Environmental monitoring is being carried on quarterly basis in core zone & buffer zone for Air, Water, Noise and Soil regularly	Monitoring is being done by M/s. Pragathi Labs Consultant, Hyderabad. Parameters were observed to be within the permissible limits.
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	Dry crushing and screening of ROM proposed.	Dry crushing and screening of ROM is carried out at different locations of the mines.	05 Nos. of integrated crushing & screening plants.
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanical method proposed for sorting	Mechanical method adopted for sorting.	Nil
7c	Different grade of mineral sorted out at mines.	Lump +-10-40 mm, Sized lump -20 to +10 mm Fines -10mm	Mineral sorted as per the proposal	Nil
7d	Any beneficiation process at mines	No proposal	No beneficiation process.	Dry crushing & screening
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues			Mineral conservation is taken care. All the low grade minerals below the cut off grade are blended with high grade to meet the market requirement.

Environment :

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	No proposal	Nil	No top soil generated
8b	Concurrent use or storage of topsoil	No proposal	Nil	Nil
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Separate dumps for OB proposed	02 nos. of Separate dumps i.e. AD-1 at C-block & AD-2 at B Block	1,10,000 Tons of mineral rejects with 51.20% Grade have been generated in the F.Y.2019-20.
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	No proposal	OB dumped will be used at the conceptual stage for restoration.	Nil
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	No proposal	Nil	No pits & benches are completely exhausted, hence, no proposal in this regard are made.
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Baseline information on existence of plantation is available.	Within the mining lease area 36,658nos. of saplings have been planted and 25,342 nos. of sapling outside the lease area.	Nil
8g	Survival rate	85%	85%	Nil
8h	Water sprinkling on roads to control airborne dust	Water sprinkling on haul roads proposed to control airborne dust.	Water sprinkling is carried out regularly on haul roads. In addition to water sprinklers mist canon is deployed at crushing units for mitigation of the airborne dust.	05 nos. of water tankers of varying in capacity from 4KL to 28KL have been deployed.

8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	Aesthetic beauty in and around the mine was good as lessee has carried out afforestation, water sprinkling and other environmental protective measures as per the proposal
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Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	Monthly Returns Submitted up to Nov, 2020. Annual Return submitted for the year 2019-20.	Annual return submitted on 30.06.2020.	
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mining Engineer: Shri. R. K. Tekam Geologist: Dr. D.N. Subramanyam, Manager: Shri. Dhiren Bhushan	Same Mines Manager & Mine Geologist have accompanied during the course of inspection	
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	-Covered under current Open cast workings: 92.60 Ha -Used for waste disposal: 13.40 Ha -Occupied by plant, buildings, residential, welfare buildings & roads: 19.38 Ha Other purposes (mineral storage): 10.02 Ha	Appears to be correct	

9d	Scrutiny of Annual return on afforestation	Within ML - 36,658 saplings ,Outside ML- 25,342 @85 % survival	Appears to be correct
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	1,10,000 Tons with average grade of 51.2% Fe	The mineral reject generated during mining was blended with high grade ore
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM- Opening stock NIL Production - 6999841.59 Tons Closing stock Nil Dump workings: Opening & Closing Stock 4191.04 Tons	Appears to be correct
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Ex Mine Price: Fines 2842Rs/Ton Lump 3475 Rs/Ton Sale value : Fines 2842 Rs/Ton Lump 3475 Rs/Ton Cost of production: Rs. 1780.18 per Ton	Appears to be correct
9h	Scrutiny of Annual return on fixed assets	Rs. 347,21,60,525/ - including land, machinery, plant and transportation machinery.	Appears to be correct
9k	Scrutiny of Annual return on mining machineries	Drills-10 nos. Truck 30 T-4lnos. Dumper 85T-05 Dumper 100T-03 Wheel loader- 13 nos. Excavator- 23 nos.	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 11(1)	03/02/2021			
MCDR17	Rule 45(7)(a)	03/02/2021			

Date :

(ARUN KUMAR)

Indian Bureau of Mines