

**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, Dr. D.N.Subramany
Official with
Designation
- (iv) Date of Inspection : 28/08/2019
- (v) Prev.inspection date : 12/11/2018

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 correspondence** : NMDC Limited, Donimalai
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

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	No proposal	51 nos. of Core bore holes were drilled against the proposal of 42 nos. of Core bore holes. Total meterage drilled 3553.00 mts against the proposal of 2777.00 mts.	Nil
1b	Exploration over lease area for geological axis 1 or 2	G1 = 241.605 Ha proposed to be covered in the plan period	G1=194.105 Ha covered till the end of F.Y.2018-19	31.875 Ha covered under G-1 in the F.Y.2018-19
1c	Exploration Agencies and Expenditure in lakh rupees during the year	Global Exploration Center, (GEC) Raipur, M/s. NMDC Limited. Phone: 07782 265347	Global Exploration Center, (GEC) Raipur, M/s. NMDC Limited. Incurred cost of Rs. 3.77 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	No proposal	47.5 Ha to be covered in the remaining mine plan period.	Balance period from 2019-22.
1e	Balance reserve as on 01/04/20	-	155.64 Million Ton as on 01-04-2019	As per the IBM Annual Returns submitted for the F.Y.2018-19
1f	General remarks of inspecting officers on geology, exploration etc			51 nos. of Core bore holes were drilled against the proposal of 42 nos. of Core bore holes covering 31.875 Ha under G-1

Development :

Sl.No.	Item	Proposals	Actual work	Remarks
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2a	Location of development w.r.t.lease area	<p>Location of development proposed in B-Block & C-Block:</p> <p>C-Block: Pit-1: E76100 to E77000, N-76150 to 76500 Pit-2: E75400 to E75600, N-76400 to 76750 Pit-3: E74650 to E74800, N-76750 to 76800</p> <p>B-Block: Pit-1: E78300 to E78600, N76600 to 76750 Pit-2: E77850 to E78400, N76100 to 76250 Pit-3: E78450 to E78800, N76300 to 76500</p>	<p>Actual development carried out in B-block & C-block:</p> <p>C-Block: Pit-1: E76102 to E77000, N-76200 to 76550 Pit-2: E75350 to E75650, N-76400 to 76750 Pit-3: E74700 to E74800, N-76750 to 76800</p> <p>B-Block: Pit-1: E78300 to E78200, N76600 to 76700 Pit-2: E77850 to E78200, N76100 to 76250 Pit-3: E78450 to E78800, N76300 to 76450</p> <p>on the date of inspection</p>	<p>B-Block Pit-1: Between cross sections B-7 to B-9M Pit-2: Between cross sections B-3M to B-6M Pit-3: Between cross sections B-8M to B11M</p> <p>C-Block Pit-1: Between cross sections C-16 7/8 to C-26 1/4 Pit-2: Between cross sections C-10 to C-12 1/2 Pit-3: Between cross sections C-3 to C-4</p>
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	No separate benches in Ore body and Overburden are proposed.	All the benches consisting of ore and waste are simultaneously worked.	No Top soil generated. B-block=13 benches & C-Block=8 benches containing both mineral and OB.
2c	Stripping ratio or ore to OB ratio	1: 0.14	1: 0.12	Handled 8.72 Lakh Ton of OB against the proposal of 10 LT of OB. Violation pointed out.
2d	Quantity of topsoil generation in m3	No proposal	Nil	No top soil generated.
2e	Quantity of overburden generation in m3	10 Lakh Ton	8.726 Lakh Ton	Violation pointed out
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc			Low quantity of OB handled ,thus lowering the stripping ratio .Violation pointed out

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= 803X188X76 Pit2 = 829X141X60 Pit3 = 433X227X60 C-Block(LXWXH)(in metres) Pit-1 = 1442X258X67 Pit-2 = 383X303X42 Pit-3= 50X25X5
3b	Quantity of ROM mineral production proposed	70 LT	69.99 LT	No change
3c	Recovery of sailable/usable mineral from ROM production	100 %	100 %	Nil
3d	Quantity of mineral reject generation	No proposal	Nil	No generation of mineral reject.
3e	Grade of mineral rejects generation and threshold value declared.	No proposal	Not applicable	Nil
3f	Quantity of sub grade mineral generation.	No proposal	Nil	Incidental sub grade ore being encountered is being blended with high grade ore and fed to the plant
3g	Grade of sub grade mineral generation	No proposal	Not applicable	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 made.	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	Mining Machinery Proposed Drills-8 nos., Truck 30 T-57nos., Dumper 85/100T-04, Wheel loader-11 nos., Excavator - 18 nos.	Mechanised Opencast Mining using Shovel Dumper Combination and deep hole drilling and blasting. Drills-10 nos., Truck 30 T- 51nos. Dumper 85T-05, Dumper 100T-03, Wheel loader-15 nos. Excavator-30 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.	No change
3m	Total area covered under excavation/pits	94.96 Ha proposed at the end of the Plan Period.	85.34 Ha	Mining within the proposed area
3n	Ore to OB ratio for the pit/mine during the year.	1: 0.14	1: 0.12	Violation pointed out

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- 14.03Ha,Mineral separation plant- 1.7 Ha, Others (virgin area planted)- 29 Ha	Area at the end of the F.Y.2018-19. Area under Mining-85.34 Ha.Overburden Dump- 8.35 Ha.Mineral storage -7.88 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 14-15 6000000 15-16 6500000 16-17 6000000 17-18 6000000 18-19 7000000	Year Quantity in Tonnes 14-15 5035025 15-16 5659667 16-17 5990607 17-18 5999900 18-19 6999940	Actual production is within the proposed limits
3q	General remarks of inspecting officers on method of mining etc.			Mining operation was carried out in 3 pits of B & C Block using HEMM & 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 dumping proposed for the OB dumps	Separate dumping is being carried out in B & C blocks. AD-2 (2.69 Ha) in B-block & AD-1 (4.39 Ha) in C- block	OB dumping is being done in the earmarked area.
4b	Location of topsoil, OB and mineral reject dumps	OB dumps: AD-2: N-768102 to N-76960 E-78357 to E-78636 AD-1: N-76473 to N-76797, E-77013 to E-77272	OB dumps: AD-2: N-768102 to N-76960 E-78357 to E-78636 AD-1: N-76473 to N-76797, E-77013 to E-77272	AD-2: Between Cross Sections B-8 & B-9 AD-1: Between Cross Section C-26 1/4 & C-28 3/4

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	No change
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 and AD-1 30 mts away from the UPL.
4e	Number of active and alive dumps.	Active: 02 nos.	Active: 02 nos.	Nil
4f	Number of dead dumps.	No proposal	No dead dumps	-
4g	Number of dumps established.	No Proposal	Nil	Coir matting has been done on the top terrace of AD-1 partially.
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 - 370X 3X3 mts GD- 370X 1.5X1 mts	RW - 400X3X3 mts GD- 400X3X3 mts	Nil
4j	Number of settling ponds	No proposal	Nil	03 nos. Silt Settling ponds have been constructed as per the approved R & R Plan
4k	Specific comments of inspecting officer on waste dump management			Waste dump management was carried out as per the approved modified MP.

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.	No proposal	Nil	No Proposal of back filling and mineral is not exhausted.

5b	Area under backfilling of mined out area	No proposal	Nil	-
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	No proposal	Nil	mineral is not exhausted
5d	Total area fully reclaimed and rehabilitated	No proposal	Nil	No area is fully reclaimed & rehabilitated
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 21.06.2019.	-
6b	Area available for rehabilitation (ha) .	2.6 HA	2.6 HA	-
6c	afforestation done (ha).	2.6 HA	23.7 Ha covered under plantation	-
6d	No. of saplings planted during the year	7000 nos. of saplings	78000 nos. of saplings	-
6e	Cumulative no .of plants	9000 nos. of saplings	78000 nos. of saplings	-
6f	Any other method of rehabilitation	No proposal	Nil	-
6g	Cost incurred on watch and care during the year	19.1 Lakhs Rupees	213 Lakhs Rupees	nil

6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	No proposal	Nil	Pits not matured for backfilling
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	-

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	AMS:06 Nos.,WMS:05 No,NMS:06 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 proposal were implemented as per the R & R plan.

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 wet beneficiation adopted within the lease area	Nil
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues			Mineral conservation aspects were followed as per the proposal

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
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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	Not applicable	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 are maintained for OB.	No generation of mineral rejects
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
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 78,000 nos. of saplings have been planted and 22,000 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 is satisfactory as the lessee had carried out plantation & small flower gardens.

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	Monthly Returns Submitted up to July, 2019. Annual Return submitted for the year 2018-19.	Annual return submitted on 29.06.2019.	
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	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: 85.34 Ha -Used for waste disposal: 8.35 Ha -Occupied by plant, buildings, residential, welfare buildings & roads: 19.38 Ha Other purposes (mineral storage): 7.88Ha	Appears to be correct.	
9d	Scrutiny of Annual return on afforestation	Within ML - 78,000 saplings @ 85 % survival, Outside ML- 22,000 @85 % survival	Appears to be correct.	
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	NIL	No mineral reject generated	

9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM- Opening stock NIL, Production -6999900.65 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 3016 Rs/Ton Lump 3670 Rs/Ton Sale value : Fines 3016 Rs/Ton Lump 3670 Rs/Ton Cost of production: Rs.780.68 per Ton	Appears to be correct
9h	Scrutiny of Annual return on fixed assets	Rs. 347,41,96,326/ - 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- 5lnos. Dumper 85T-05 Dumper 100T-03 Wheel loader- 15 nos. Excavator- 30 nos.	Appears to be correct

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)	09/09/2019	12/10/2019				
MCDR17	Rule 35(2)	09/09/2019	12/10/2019				

Date :

(ARUN KUMAR)

Indian Bureau of Mines