

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

Review and updation of Mining Plan 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 :
Official with
Designation
- (iv) Date of Inspection : 25/09/2021
- (v) Prev.inspection date :

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) 083952746**
- (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** : **50**
- (d) **Date of Expiry** : **17/10/2022**
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	No proposal.	NIL.	No back log.
1b	Exploration over lease area for geological axis 1 or 2	31 Nos. Bore holes with 2135meterage.	33 nos. of Core bore holes drilled. Total meterage drilled 2224.00 mts.	Total area under G-1=195.27 Ha.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	In House exploration proposed.	Exploration carried out in -house by NMDC (Global Exploration Center, (GEC) Raipur, M/s. NMDC Limited. Incurred cost of Rs. 2.45 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	77.75 Ha from G2 to G1, out of which 35.625 Ha planned for detailed exploration during the plan period.	Total area under G-1=195.27	Nil.
1e	Balance reserve as on 01/04/20	Nil.	208.23Million Tons with grade of 62.07% Fe.	As per the IBM Annual Returns submitted for the F.Y.2020-21.
1f	General remarks of inspecting officers on geology, exploration etc			33 nos. of Core bore holes were drilled against the proposal of 31 core bore holes. Total meterage drilled were 2224.00 mts.

Development :

Sl.No.	Item	Proposals	Actual work	Remarks
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2a	Location of development w.r.t.lease area	Location of development proposed in B-Block& C-Block: C-Block: Pit-1: E-75823 to E-77048, N-76179 toN-76535 Pit-2: E-75332to E-75728, N-76406 to N-76843 Pit-3: E-74540 to E-74792, N-76745 to N-76900 B-Block: Pit-1:E78235 to E78663,N76551 to N76760 Pit-2: E78500 to E78824,N76273 to N76489 Pit-3: E77819 to E78257,N76080 to N76219	Actual development carried out in B-block & C-Block: C-Block: Pit-1:E-75823 to E-77040, N-76188 to N-76524 Pit-2: E-75335 to E-75720, N-76424 to N-76743 Pit-3: E-74553 to E-74790, N-76743 to N-76824 B-Block: Pit-1:E-78268 to E-78652, N-76559 toN-76760 Pit-2: E-78503 toE-78826, N-76276 to N-76480 Pit-3: E-77837 toE-78242, N-76082 to N-76215	B-Block Pit-1: Between cross sections B-7 to B-10M Pit-2: Between cross sections B-9 to B-11 Pit-3: Between cross sections B-3Mto B7M C-Block Pit-1: Between cross sections C-13 ¾ to C-26 7/8 Pit-2: Between cross sections C-8 3/4 to C-131/8 Pit-3: Between cross sections C-3 to C-
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	No separate benches in Ore Body, Overburden and top soilare 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=14 benches & C-Block= 13 benches containing both mineral and OB.
2c	Stripping ratio or ore to OB ratio	1: 0.15	1: 0.158	Bulk density: B-Block:3.18t/m3 & C-Block: 3.31 t/m3
2d	Quantity of topsoil generation in m3	No proposal.	100 m3 Trace amounts of Top soil encountered during opening up of virgin areas has been carefully separated and instantaneously used for development of gardens and greenbelt development measures in R&R Plan.	Incidental occurrence of Top Soil has been utilized for different plantation works inside mines.

2e	Quantity of overburden generation in m3	1500000 Tons.	1111791 Tons.	Lower handling of OB due to planned capacity of 10 million tons but actual production restricted to 7 Million Tons (Non availability of EC).
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc			Development of the mine was carried out as per the proposal.

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= 803X210X76 Pit2 = 829X147X60 Pit3 = 447X236X66 C-Block (LXWXH) (in metres) Pit-1 = 1441X314X79 Pit-2 = 388X353X56 Pit-3= 122X108X12
3b	Quantity of ROM mineral production proposed	10000000 Tonnes.	6999908.87 Tonnes.	Actual production restricted to 7 Million Tons due to non availability of EC.
3c	Recovery of sailable/usable mineral from ROM production	100 %	100 %	Nil.
3d	Quantity of mineral reject generation	335600 Tons.	115000 tons of mineral rejects generated.	Mineral rejects generated have been blended with higher grade ROM to produce saleable products.
3e	Grade of mineral rejects generation and threshold value declared.	Not specified.	51.00 % 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 segregation from ROM.	Mechanized method adopted for segregating from ROM.	05 units of Integrated dry crushing & screening plants of each 450 TPH capacity, 4 in C-Block and 1 in B-Block.
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"diaBurden = 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.	Mechanised opencast mining using shovel dumper combination & deep hole drilling & blasting.	Machaneries used on the day of inspection : Drills-9 nos.Truck 30 T- 10nos. Truck 25 T- 54nos Dumper 85 T-04 Dumper 100 T-02 Wheel loader-12 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 meters, 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	100.16 Haproposed at the end of the Plan Period.	99.87 Ha at the end of the year 2020-21.	Nil.
3n	Ore to OB ratio for the pit/mine during the year.	1: 0.15	1: 0.158	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-100.16 Ha. Overburden Dump- 18.75 Ha. Mineral storage -10.34 Ha, Infrastructure -4.65 Ha, Roads- 16.36 Ha, Green Belt- 14.03 Ha Mineral separation plant- 1.7 Ha Others (virgin area planted)- 29 Ha At the end of plan period .	Actual total area at the end of the F.Y.2020-21. Area under Mining-99.87 Ha. Overburden Dump- 15.12 Ha. Mineral storage - 9.45 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 16-17 6000000 17-18 6000000 18-19 7000000 19-20 7000000 20-21 10000000	Year Quantity in Tonnes 16-17 5990607 17-18 5999900 18-19 6999940 19-20 6999843 20-21 6999909	Actual production is within the proposed limits. Actual production restricted to 7 Million Tons due to non availability of EC in FY 20-21.
3q	General remarks of inspecting officers on method of mining etc.			

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 (3.50Ha) in B-Block &AD-1 (5.19Ha) in C-Block New Dump (2.82 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 (B-Block):N-76810 to N-76960 E-78357 to E-78636 AD-1 (C-Block):N-76473 to N-76797 E-77013 to E-77272	OB dumps: AD-2 (B-Block):N-76813 to N-77021 E-78381 to E-78634 AD-1 (C-Block): N-76465 to N-76757 E-76931 to E-77269	NEW DUMP (C-Block): E-76265to E-76714 N-76572 to N-76766. Violation issued
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: 03 nos. Outside lease area Nil.	Violation issued.
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 is 30 mts and NEW Dump is 70 mts away from the UPL.
4e	Number of active and alive dumps.	Active: 02 nos.	Active: 03 nos.	Nil.
4f	Number of dead dumps.	No proposal .	NIL.	Nil.
4g	Number of dumps established.	No Proposal.	Nil.	02 no. of terraces Partially stabilized on active dumps.
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 -160 X 1 X3 mts GD - 149X 1X1 mts	RW -160X 1X3 mts GD - 149X 1 X 1 mts	Nil.
4j	Number of settling ponds	No proposal.	NIL.	NIL.

4k	Specific comments of inspecting officer on waste dump management	Waste dumping (AD1 & AD2) was carried out at the earmarked area. Violation issued for making a new OB dump in C Block.
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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.	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).	Annual report on PMCP to be submitted by 1st July of every year.	Annual Report for FY 2020-21 submitted.	Report submitted on date 10/10/2021.
6b	Area available for rehabilitation (ha) .	No proposal.	Nil.	Nil.

6c	afforestation done (ha).	7.52 Ha (2020-21)	13.03 Ha (2020-21)	Nil.
6d	No. of saplings planted during the year	18800 saplings.	43,000 nos. of saplings planted with in the ML area.	Nil.
6e	Cumulative no .of plants	187070 saplings	1,88,417 nos. of saplings	Nil
6f	Any other method of rehabilitation	No proposal.	Nil.	Nil
6g	Cost incurred on watch and care during the year	Rs.39.36 Lakhs Rupees	Rs. 53.88Lakhs Rupees.	Including cost of sampling.
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	No proposal.	Nil.	
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	No proposal.	Nil.	
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on on backfilled area	No proposal.	Nil.	
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No proposal.	Nil.	
6l	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.	
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 Carried on quarterly basis in core & buffer zone for Air, water, Soil and Noise.	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, 04 in C-Block and 1 in B-Block.
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Mechanical method proposed for sorting.	Mechanical method adopted for sorting.	

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.	
7d	Any beneficiation process at mines	No proposal.	Not applicable.	No beneficiation process.
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues			Mineral conservation is taken care. All the low grade minerals 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.	100 m3 Trace amounts of Top soil encountered during opening up of virgin areas.	Top Soil generated is being utilized for plantation in mines.
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 and another New Dump at C-Block are maintained for OB.	1,15,000 Tons of Subgrade with 51%Fe Grade have been generated in the F.Y.2020-21.
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.	

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 is made.
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Baseline information on existence of plantation is available.	43,000 nos. of saplings planted with in the ML area	25,342 nos. of sapling outside the lease area.
8g	Survival rate	85%	85%	
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.	06nos. 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 & around the mine was good as lessee has carried out afforestation ,water sprinkling and other environmental protective measures as per the proposal.

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 Aug, 2021. Annual Return submitted for the year 2020-21.	Annual return submitted on 07.07.2021.

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 mine officials 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 working- 99.87 Ha. Overburden Dump- 15.12 Ha. Mineral storage - 9.45 Ha Occupied Plant, building residential area, Roads - 19.38 Ha.	Appears to be correct.
9d	Scrutiny of Annual return on afforestation	Within ML- 48,000saplings @ 85 % survival, Outside ML- Nil.	Appears to be correct.
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	51% Fe, QTY: 1,15,000 Tons.	Appears to be correct.
9f	Scrutiny of Annual return on ROM stock and/or graded ore	ROM- Opening stock NIL Production- 6999908.87 Tons Closing stock Nil Dump workings: Opening & Closing Stock 4191.04 Tons	Appears to be correct.

- 9g Scrutiny of Ex Mine Price: Appears to be correct.
Annual return on Fines 2885.61
sale value, Ex. Rs/Ton
Mine price and Lump 4191.40
production cost Rs/Ton
Sale value:
Fines 2885.61
Rs/Ton
Lump 4191.40
Rs/Ton
Cost of
production:
Rs. 1492.43
per Ton
- 9h Scrutiny of Rs. Appears to be correct.
Annual return on 326,04,15,886/
fixed assets - including
land,
machinery,
plant and
transportation
machinery.
- 9k Scrutiny of Drills-9 nos. Appears to be correct.
Annual return on Truck 30 T-
mining 10nos.
machineries Truck 25 T-
54nos
Dumper 85 T-04
Dumper 100 T-
02
Wheel loader-
12 nos.
Excavator- 23
nos.
-

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)	11/10/2021			
MCDR17	Rule 24(1)	11/10/2021			

Date :**(ARUN KUMAR)**

Indian Bureau of Mines