

## MCDR INSPECTION REPORT

### General

S.N.	Particulars	Details
1(a)	Name of the Mine	Majhgawan Diamond Mine(113.332 Ha)
1(b)	Name of Inspecting Officer & Designation	Shri Sanjay M Girhe, RMG, IBM Jabalpur
1(c)	Accompanying Mines Representatives	Shri P. S. Dhruw, AGM(Mining) Shri S.C.Mondal, AGM(Survey) Shri Sunil Goyal, SM(Mining) Shri S.K.Pathak, Manager(Geology)
1(d)	Type of Inspection	Review and Updation of Mining Plan for Period April 2020-March 2025 & Star rating Inspection
1(e)	Date of Inspection	11/12/2019
2	Total Lease Area (Ha) with breakup of Non-forest and forest land	Forest Land :NIL Non Forest land:113.332 Total=113.332
3	Mine code	270/17MPR26001
4	IBM Registration Number under rule 45 of MCDR,1988	IBM/270/2011
5	Name of the Lease, Address, Phone, email and fax number	M/s NMDC LTD,10-3-311/A Khanij Bhavan,Castle Hills,Masab Tank Hyderabad,Ph:07732 - 271223,dmaiti@nmdc.co.in,Fax:07732-271474
6	Village	Hinota
7	Taluka/Mandal	Panna
8	District	Panna
9	Pin code	488001
10	State	M.P.
11	Post Office	Majhgawan
12	Nearest Police Station	Panna
13	Nearest Railway Station	Khajuraho
14	Date of Grant of Mining Lease	16.12.1964
15	Date of Execution	15.07.1965
16	Date of opening of Mine	01.06.1968
17	Date of First Renewal, if applicable and its period & expiry	15.07.1985 to 14.07.1995 For 10 Years
18	Date of Second Renewal, if applicable and its period & expiry	15.07.1995 to 14.07.2005 For 10 Years
19	Date of submission of renewal application if Mining Operations are continuing under deemed extension	15.07.2005 to 14.07.2025 For 20 Years Lease Executed for above period
20	Name of the Nominated Owner with Address, phone, email, fax number	Sri.P.K.Satpathy, Director (Production) NMDC LTD,10-3-311/A Khanij Bhavan,Castle

	and date of appointment	Hills,Masab Tank Hyderabad, PH:040- 23538706,FAX:04023538711,Email:pksatpathy@nmd c.co.in, Date of Appointment :13.12.2014
21	Name of the Mine Agent with Address, phone, email, fax number and date of appointment	Shri Rajeev Sharma Diamond Mining Project Majhgawan Panna PH: 07732 -271223, Email <a href="mailto:rsharma@nmdc.co.in">rsharma@nmdc.co.in</a> , Ph No. 07732-271234, Fax:07732-271474, Date of Appointment: 01.12.2017
22	Name of the Mine Manager with Address, phone, email, fax number and date of appointment in mines	Sri.D.Maiti, DGM(Mine) Diamond Mining Project Majhgawan Panna PH: 07732 -271223, Email <a href="mailto:dmaiti@nmdc.co.in">dmaiti@nmdc.co.in</a> ,Fax:07732- 271474 ,: Date of Appointment :10.06.2016
23	Name of the Mining Engineer, Qualification and total experience with address, phone, email, fax number and date of appointment in the mine	Sri.Sanjay Kumar AGM(Mining) Diamond Mining Project Majhgawan Panna PH: 07732 -271223, Email <a href="mailto:sanjaykumar@nmdc.co.in">sanjaykumar@nmdc.co.in</a> ,Fax:07732-271474 ,: Date of Appointment :07.07.2009
24	Whether Geologist and Mining Engineer appointment in mines satisfy the rule 42 & carrying out their duties as per rule 43 & 44.	Sri.Santosh Kumar Pathak Manager(Geology) Diamond Mining Project Majhgawan Panna PH: 07732 -271223, Email <a href="mailto:skpathak@nmdc.co.in">skpathak@nmdc.co.in</a> ,Fax:07732-271474 ,: Date of Appointment :03.12.2016
25	Date of Approval of Mine Plan/Modified Mine Plan with five- year period and specific condition in approval letter, if any.	Date of Approval :14.03.2006 15.07.2005 to 14.07.2025
26	Date of Approval of Scheme of Mining/Modified Scheme of Mining with five- year period and specific condition in approval letter, if any.	Date of Approval :27.11.2018 2018 -19 to 31.03.2020
27	Mineral(s) granted in lease and approved for Mining	Diamond
28	Method of Mining (Opencast, Underground)	Opencast
29	Category (Fully Mechanized, Others or Manual)	Fully Mechanized
30	Captive/Non-Captive	Non Captive

### **Exploration**

S.N.	Item	Proposals	Actual Work	Remarks
1a	Backlog of previous year	Exploration was not proposed in approved SOM dtd 26.08.2015 for 2015-16 to 2019-20	No exploration carried out during the year	
1b	Exploration over lease area for Geological axis 1 or 2.	Exploration not proposed during the year	Phase wise exploration were carried in past	14 Core drilled boreholes drilled. 157 BHs were drilled during 1961-72

1c	Exploration Agency & Expenditure in Lakh Rupees during the year	Exploration not proposed during the year	Previously Panna Diamond Syndicate, NMDC carried out phase wise exploration	From year 1956 - 59, 1961-72, 1991-1994 phase wise exploration carried out
1d	Balance area to be explored to bring Geological axis in 1 or 2.	Exploration not proposed during the year	Most of the mineralized area explored in detailed manner	
1e	Balance reserves as on 01.04.2019	Reserves in Million Tonnes Proved(111) -10.10 Resources Million Tonnes Indicated(332)-3.58 Inferred(333): 2.38 As per approved SOM dtd 26/08/2015	Reserves in Million Tonnes Proved(111) – 9.07 Resources Million Tonnes Indicated(332)-3.58 Inferred(333): 2.38 As per annual return 2018-19	No additional reserves estimated
1f	General remarks of Inspecting officer on geology, exploration etc.	Entire mineralised lase area been explored fully as per UNFC Guidelines by the lessee in past. Diamond occur in Kimberlitic pipe an intrusion into Kaimur sand stone.		

## **2.0 Development**

<b>S.N.</b>	<b>Item</b>	<b>Proposals</b>	<b>Actual Work</b>	<b>Remarks</b>
2a	Location of Development w.r.t. lease area	It was proposed to work from 320mRL to 260mRL by total length of 973m development at the end of year	Working carried out as per the proposals	
2b	Separate benches in topsoil overburden and mineral (Rule 15)	Separate bench from 320mRL to 300mRL proposed in OB & 9 to 10m height bench in ore	Benches heights are being maintained as per the proposals	Excavation projection marked on relevant plates
2c	Stripping ratio or ore to OB ratio	Proposed as 1:2.19	NIL	
2d	Quantity of topsoil generation in m <sup>3</sup>	Not Proposed	Not Applicable	No top soil encountered during the year
2e	Quantity of overburden generation in m <sup>3</sup>	Proposed as 90000 CuM	Only 210 tonne OB removed	Less OB generation due to less development
2f	General remarks of Inspecting officer on development of pit w.r.t type of deposit etc.	Majhgaon pipe is oval shaped ore body having longer axis of 320m and shorter axis of 280m. The ore body suitable for open cast mechanised mine operations.		

### **3.0 Exploitation**

<b>S.N</b>	<b>Item</b>	<b>Proposals</b>	<b>Actual Work</b>	<b>Remarks</b>
3a	Number of pits proposed for production	Working proposed in single pit	Working carried out in single pit	Only one pit is existing in ML area
3b	Quantity of ROM mineral production proposed (2018-19) in Tones	Proposed ROM 700000tonnes during 2018-19	282383 carats	Less production during the year
3c	Recovery of Salable/usable mineral from ROM production	Not proposed	Only salable diamond recovered after beneficiation	Gem, Industrial & other varieties of diamond being recovered
3d	Quantity of mineral reject generation	560000 tonnes	280153 tonnes	
3e	Grade of mineral reject generation and threshold value declared	Not Proposed	NA	Details not furnished in approved document
3f	Quantity of sub-grade mineral generation	Not Proposed	NA	No subgrade generation proposed
3g	Grade of sub-grade mineral generation	Not Proposed	NA	Entire ROM fed to beneficiation plant
3h	Manual/Mechanized method adopted for segregation from ROM	Mechanized crushing & beneficiation proposed	Mechanized crushing & beneficiation being carried out	Beneficiation plant located in lease area
3i	Any analysis or beneficiation study proposed & carried out for sub-grade mineral and reject	Not Proposed	Nil	Already beneficiation plant located in lease area
3j	Provision of drilling & blasting in mineral benches	Big dia 110mm deep drilling & blasting is proposed by wagon drill	Big dia 110mm deep drilling & blasting is carried out wagon drill	Deployment of suitable HEMM discussed in approved SOM
3k	Provision of mining machineries in mineral benches	Excavator, 2.5Cum capacity Blast hole drill-110mm dia Dumpers-40 tonnes-04 Nos Tractor mounted Air	Excavator, 2.5Cum capacity Blast hole drill-110mm dia Dumpers-40 tonnes-04 Nos Tractor mounted Air	HEMM deployed as per production target set for the year

		Compressor FE loader-3.1CuM-02 Nos Crawler dozer-03 Nos Rock breaker-01 no	Compressor FE loader-3.1CuM-02 Nos Crawler dozer-03 Nos Rock breaker-01 no		
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Proposed as 10m in ore	Proposed height being maintained		
3m	Total area covered under excavation /pits	Proposed 13.61 Ha as per approved SOM	13.3 Ha as per annual return 2018-19	13.30 already excavated & abandoned & 6.83 Ha under current working	
3n	Ore to OB ratio for the pit/mine during the year	Proposed as 1:2.19	Nil	Due to very less OB of 290 tonnes generated	
3o	Total area put in use under different heads at the end of year	As per the previous approved SOM Pits-13.61Ha OB dumps-25.48Ha Infrastructure-2.32Ha Tailing pond-6.63Ha Township-4.94Ha	Pits-6.83Ha Already exploited & abandoned -13.30Ha Reclaimed/Rehabilitated-9.40Ha OB dumps-26.63Ha Infrastructure-8.30Ha Tailing pond-6.63Ha	Area suitable marked on relevant plans	
3p	Production of ROM mineral during last five-years period, as Applicable(In Million T)	2016-17	700000	262052	Details as per annual returns
		2017-18	700000	245015	
		2018-19	700000	282383	
		2019-20	700000	43890(Up to 31 Oct 2019)	
3q	General remarks of inspecting officer on method of mining etc	Mechanised open cast working proposed by using Excavator /loader & dumpers combination with deep drilling & blasting using wagon drill.			

#### **4.0 Solid Waste Management-Dumping**

S.N.	Item	Proposals	Actual Work	Remarks
4a	Separate dumping of topsoil, OB & mineral reject (Rule 32,33)	Top soil has been utilized earlier for plantation	Top soil has been utilized earlier for plantation	No proposals was given during 2018-19
4b	Location of topsoil, OB & mineral reject dumps	03 Nos of coarse grain mineral rejects/OB dumps existing in ML area	03 Nos of coarse grain mineral rejects/OB dumps existing in ML area	02 dumps located along south-west & 1 is at eastern part of ML area

4c	Number of Dumps within lease area and outside lease area	03 Nos of coarse grain mineral rejects/OB dumps existing in ML area	03 Nos of coarse grain mineral rejects/OB dumps existing in ML area	Dumps position marked on plan
4d	Location of Dumps w.r.t. ultimate pit limit (Rule 16)	OB –dump; MML coarse tailing :MML	OB –dump; MML coarse tailing :MML	Dumps position marked on plan
4e	Number of Active & Alive dumps	Two (2) active dumps in ML	Two (2) active dumps in ML	
4f	Number of dead dumps	No dead dumps	No dead dumps	
4g	Number of dumps stablished	1 dump stabilized by plantation	1 dump stabilized by plantation	
4h	Whether Retaining wall or garland drain all along dumps are there	Yes, retaining wall or garland drain all along dumps are provided	Yes, retaining wall or garland drain all along dumps are provided	Also marked on plans
4i	Length of Retaining wall or garland drain all along dump	350m	350m	Also marked on plans
4j	Number of settling ponds	1(It lies in Both the leases SML & MML)	1(It lies in Both the leases SML & MML)	
4k	Specific commends of inspecting officer on waste dump management	Mining lease area is mostly devoid of top soil. Mostly dumps are of coarse & fine tailing and suitably marked over relevant plans. One dump is stabilized by suitable plantation.		

### **5.0 Solid Waste Management-Backfilling**

<b>S.N.</b>	<b>Item</b>	<b>Proposals</b>	<b>Actual Work</b>	<b>Remarks</b>
5a	Status on part or full extraction of mineral from mined out area before starting backfilling (ha)	Not Proposed	About 13.30 Ha area already exploited & abandoned.	About 9.40 Ha area reclaimed & rehabilitated
5b	Area under backfilling of mined out area	Not proposed during the year	Not done	No proposals
5c	Concurrent use of topsoil for restoration or rehabilitation of mined out area (Rule 32)	Not Proposed	NA	Previous generated top soil utilized in plantation
5d	Total area fully reclaimed & rehabilitated	Not Proposed	Not done	About 9.40 Ha area reclaimed & rehabilitated previously
5e	General remarks of inspecting officer on backfilling, reclamation etc	Presently scope of reclamation & backfilling doesnot exist and main pit ore yet to be exhausted. Hence, scope of reclamation by backfilling shall be generated in future.		

## **6.0 Progressive Mine Closer Plan**

<b>S.N</b>	<b>Item</b>	<b>Proposals</b>	<b>Actual Work</b>	<b>Remarks</b>
6a	Whether Annual report on PMCP submitted on time and correctly-Rule 23E(2). Details should be given in the format as given in Annexure-20	To be submitted before 1st July of every year	Yes, submitted within time limit as per the provisions of Rule 26 of MCDR,2018	Copy was produced during inspection
6b	Management of worked/mined out benches	Not Proposed	Nil	Benches not matured in working pit
	i) Area available for rehabilitation (Ha)	Not Proposed	Nil	
	ii) Afforestation done (ha)	Not Proposed	Nil	
	iii) No.of saplings planted during the year	1000	10000 replaced in total lease area for MML and SML	
	iv) Cumulative no. of plants	Not Proposed	Nil	
	v) Any other specific method of rehabilitation	Not Proposed	Nil	
	vi) Cost incurred on watch & care during the year	Not Proposed	Nil	
6c	Compliance on reclamation and rehabilitation by backfilling i) Voids available for backfilling (L*B*D) ii) Void filled by waste/tailings iii) Afforestation on the backfilling iv) Rehabilitation by making water reservoir v) Any other specific means	Not Proposed	Nil	None of the pit area has been matured for reclamation by backfilling
6d	Compliance of Rehabilitation of waste land within lease i) Afforestation ii) Area rehabilitation iii) Method of rehabilitation	1000	10000 replaced in total lease area for MML and SML .	Significant amount of survived plantation seen in ML area
6e	Compliance of Environment monitoring (core zone & buffer zone)	Periodical Air, Water, Noise monitoring Proposed	Ambient Air, Water ,Noise are done in quarter	Analysis reports were provided

6f	General remarks of inspecting officer on PMCP compliance & progressive closer operations	Main working pit or its any part is not matured for reclamation by backfilling, hence scope doesn't exist.
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## **7.0 Mineral Conservation**

<b>S.N.</b>	<b>Item</b>	<b>Proposals</b>	<b>Actual Work</b>	<b>Remarks</b>
7a	ROM mineral dispatch or grade wise sorting within lease area	700000 MT proposed as total ROM production for despatch. Grade wise sorting proposed not proposed	15086MT dispatched as Refractory grade bauxite & rest 42607.67MT as closing stock at mine head	Different varieties of diamond furnished in AR
7b	Method of grade-wise mineral sorting i.e. manual or mechanical	Mechanical	Mechanical	Through wet beneficiation method
7c	Different grade of mineral sort out at mine	Through crushing & sizing Gem, Industrial & other verity of diamond proposed	Through crushing & sizing Gem, Industrial & other verity of diamond produced	
7d	Any beneficiation process at mines	Wet beneficiation is being practiced	Wet beneficiation is being practiced	Generated tailed is being dumped separately
7e	General remarks of inspecting officer on Mineral conservation & beneficiation issues	Mineral conservation is being practiced very systematic & scientific way by adopting wet beneficiation method. Core grain & fine grain tailing is also being preserved for recovery of micro diamond in future		

## **8.0 Environment**

<b>S.N.</b>	<b>Item</b>	<b>Proposals</b>	<b>Actual Work</b>	<b>Remarks</b>
8a	Separate removal and utilization of topsoil (Rule32)	Not Proposed	NA	No top soil generated during the year
8b	Concurrent use or storage of topsoil	Not Proposed	NA	Previously top soil utilized for plantation
8c	Separate dumps for overburden waste rock, rejects and fines (Rule 33)	Proposed	Dumping carried out at earmarked locations	Dumps locations marked on surface plan
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Not Proposed	NA	No scope of reclamation by backfilling



8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Not Proposed	NA	Area not matured so far for the said purpose
8f	Baseline information on existence of plantation & additional plantation done (Rule 41)	Proposed 1000 nos of saplings	10000 plants replaced in total lease area for MML and SML	Plantation work observed during the inspection
8g	Survival rate	Proposed as 85%	Achieved 80 %	
8h	Water sprinkling on roads to control airborne dust	Water sprinkling is proposed by water tanker	Regular water sprinkling is done by water tanker	Water tanker of 5KL capacity is provided for the purpose
8i	General remarks of inspecting officer on aesthetic beauty in and around mine area	Aesthetic beauty in and around mine area is very good as significant amount of plantation done in ML area. Different species of saplings have been planted		

### **9. Compliance of Rule 45**

<b>S. N.</b>	<b>Item</b>	<b>Comments</b>	<b>Remarks</b>
9a	Status of submission of monthly and Annual returns	M.R. not submitted upto- November- 2019 A.R. submitted upto- 2018-19	Annual Return for the year 2018-19 submitted within time limit & Annual return for the year 2019-20 was under preparation
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Given	Shri Sanjay Kumar appointed as Mining Eng. & Shri Jitendra Kumar as Geologist
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Given & area is reconciled by survey team	Already exploited & abandoned - 13.30Ha Reclaimed/Rehabilitated-9.40Ha OB dumps-26.63Ha Infrastructure-8.30Ha Tailing pond-6.63Ha
9d	Scrutiny of Annual return on afforestation	Not Given	Afforestation done inside lease area
9e	Scrutiny of Annual return on mineral reject generation (Grade & Quantity)	Given	280153 tonnes mineral rejections have been generated
9f	Scrutiny of Annual return on ROM stock and/or grade ore	Given	<u>Gem quantity (Carats:</u> O/S-4271 Despatched-8861 C/S-8976 <u>Industrial quantity (Carats:</u> O/S-10138

			Desptached-5176 C/S-16411 <u>Other quantity (Carats:</u> O/S-11016 Desptached-10515 C/S-13610
9g	Scrutiny of Annual return on sale value, Ex.Mine price & production costs	NA	<u>Gem quantity (Carats:</u> Rs-32232 <u>Industrial quantity (Carats:</u> Rs-2900 <u>Other quantity (Carats:</u> Rs-2902
9i	Scrutiny of Annual return on Fixed assets	Given	Nil
9k	Scrutiny of Annual return on mining Machineris	Mining machinery are maintained by Mechanical Engineer and scrutiny done by Mining Engineer .	Excavator, 2.5Cum capacity Blast hole drill-110mm dia Dumpers-40 tonnes-04 Nos Tractor mounted Air Compressor FE loader-3.1CuM-02 Nos Crawler dozer-03 Nos Rock breaker-01 no

- 10- Details of violations observed during current inspection and compliance position of earlier violation pointed out: - This inspection was carried out in connection with evaluation of star ratings templates & MCDR,2017. During inspection no significant violations have been pointed out for rectification.

Sanjay M. Girhe  
Sr. Mining Geologist  
RO, Jabalpur  
Dt: 16.12.2021