

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

Inspection under SDF for star rating of mines REPORT

Ranchi regional office

Mine file No : JHK/GML/BX/252/RRO

Mine code : 07JHK09004

- (i) Name of the Inspecting : **E025**) **NAMAN EKKA**
Officer and ID No.
- (ii) Designation : Junior Mining Geologist
- (iii) Accompanying mine :
Official with
Designation
- (iv) Date of Inspection : 21/01/2020
- (v) Prev.inspection date :

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **KUJAM - I BAUXITE MINE (80**
- (b) **Registration NO.** : **IBM/935/2011**
- (c) Category : A Other than Fully Mech.
- (d) Type of Working : Opencast
- (e) Postal address
State : JHARKHAND
District : GUMLA
Village : KUJAM
Taluka : BISHNUPUR
Post office : JOBHIPAT
Pin Code : 835207
FAX No. : 06526-224118
E-mail :
Phone : 06526-224015, 224112, 2231:
- (f) Police Station : BISHUNPUR
- (g) First opening date :
- (h) Weekly day of rest : SUN
2. Address for : AT- COURT ROAD, LOHARDAGA,
correspondance PO - LOHARDAGA,
DIST - LOHARDAGA (JHARKHAND).
3. (a) Lease Number : JHK0159
(b) Lease area : 80.87
(c) Period of lease : 50
(d) Date of Expiry : 12/03/2056
4. Mineral worked : BAUXITE Main

5. Name and Address of the

Lessee : M/S HINDALCO INDUSRIES LTD.
 COURT ROAD, LOHARDAGA,
 LOHARDAGA JHARKHAND
 Phone:06526 - 224012 & 224118
 FAX :06526-224112, 224016 & 0651- 2330782

Owner : A.K. AGARWALA
 HINDALCO INDUSTRIES LIMITED
 AT-RENUKOOT, P.O.-RENUKOOT
 DIST. SNOEBHADRA, U.P
 SONBHADRA UTTAR PRADESH
 Phone: 05446-252084, 2
 FAX : 05446-252107

Agent : B.K.JHA
 M/s HINDALCO INDUSTRIES
 Ltd. COURT ROAD PO& DIST -
 LOHARDAGA (JHK) LOHARDAGA
 JHARKHAND
 Phone: Mob- 941708929, 06526-224112/224015
 FAX : 06526-224118

Mining Engineer

Name : Gaurang Agrawal, Full Time
 Qualification : B.Tech. (Mining)
 Appointment/ : 01/07/2020
 Termination date

Manager

Name : JITENDRA KUMAR
 Qualification : DIP-IN-MIN & MINE SURVEYING
 Appointment/ : 01/12/2013
 Termination date

6. Date of approval of Mining : Fresh under rule 22 MCR1960 12/04/2005
 Plan/Scheme of Mining Mining Scheme rule 12 MCDR1988 02/09/2015

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	There is no exploration proposal during 2018-19 as per scheme of mining approved dated 02/09/2015 and valid for the plan period 2015-16 to 2019-20.	The entire lease area had already been explored at a grid interval of 100mx100m and 50mx50m. Total metrage drilled are 917.75m and 730.60m respectively. A total of 85 nos. of boreholes in a grid interval 100m x 100m were drilled in which 59 nos. are positive and 26 nos. are negative. In similar manner, 60 nos. of boreholes were drilled in a grid interval of 50m x 50m in which 39 nos are positive and 21 nos. are negative.	
1b	Exploration over lease area for geological axis 1 or 2	The entire lease hold area had already been explored and reserve established under Gland G2.	There is no area left for exploration within the lease area.	No proposal for further exploration.
1c	Exploration Agencies and Expenditure in lakh rupees during the year	No such proposal.	Agencies deployed for exploration has not not been reported and expenditure figures for exploration is not available.	Nil
1d	Balance area to be explored to bring Geological axis in 1 or 2	No proposal as there is no area left for exploration within lease area.	Nil	Nil

1e	Balance reserve as on 01/04/20	Reserve as on 01.04.2015 as per approved scheme of mining is given below ; (111) : 2.52million tonnes. The average grade of Bauxite is Al ₂ O ₃ : 40.19% and SiO ₂ : 4.35%. The cut off grade is Al ₂ O ₃ : +30% and SiO ₂ : -5%	Reserve as on 01.04.2018 after depleting 141655.00 MT production of 2017-18=2.068 million tonnes. The average grade of Bauxite is Al ₂ O ₃ : 40.19% and SiO ₂ : 4.35%. The cut off grade is Al ₂ O ₃ : +30% and SiO ₂ : -5%	
1f	General remarks of inspecting officers on geology, exploration etc	-	Bauxite deposits of Neterhat plateau are mostly associated with laterite. Bauxite occurs as Boulder, lenses, pocket type deposit overlain by Laterite cappings.	Bauxite deposits of Neterhat plateau are mostly associated with laterite. Bauxite occurs as Boulder, lenses, pocket type deposit overlain by Laterite cappings.

Development :

Sl.No.	Item	Proposals	Actual work	Remarks
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- 2a Location of development w.r.t.lease area As per approved scheme of mining dated 02.09.2015, three quarry faces namely quarry no 4A9, 4A10 and 4A11were proposed for development during 2017-18. The quarry no. 4A9 is located in between co-ordinates 337N - 665N & 155W-200E. The quarry no. 4A10 and 4A11are located in between co-ordinates 568S-956S & 362W-509W. Proposed for development of quarry faces of quarry no A13 during the year 2018-19. The quarry is located in between co-ordinates 00-300N to 64E-300W. Mining/ development work was under operation as proposed in the approved document. The quarry dimension was 160m x 60m x 9.5m. The development work was being advanced towards northern and western portion of the lease.
- 2b Separate benches in topsoil, overburden and minerals (Rule 15) Proposed one bench in top soil & murrum and one bench in bauxite . The bench height in soil & murrum was 6m, 1.56m & 3.4m respectively. The height of bauxite bench was 2.02m, 2.5m & 2.32m respectively. The bench width is kept 6m. One bench in soil & murrum and one bench in Bauxite was observed during the inspection of the mine.

2c	Stripping ratio or ore to OB ratio	Proposed stripping ratio during 2018-19 was 1:1.11	During 2018-19 production was 141655 MT and OB removed 406421 MT, Striping ratio comes near about 1:1.34	
2d	Quantity of topsoil generation in m3	Proposed Quantity of top soil & murrum generation during 2017-18 was 147129 cum	Top soil generated during 2017-18 was not reported.	
2e	Quantity of overburden generation in m3	Proposed generation of OB during 2018-19 was :147129 cum	OB/waste generated during 2018-19 was 406421MT.	
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	-	During 2017-18, three quarries 4A9, 4A10 and 4A11 were developed for production as per approved scheme of mining. During 2018-19, quarry no. 4A13 is being developed for production. The month wise production is also reported. The overall development of mine is by and large satisfactory.	-

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	One pit namely 4A13 was proposed for production during the year 20118-19.	The pit was under operation and monthwise production is being reported by the lessee.	
3b	Quantity of ROM mineral production proposed	299293 tonnes	80395 Tonnes	Captive plant was not in operation for numbers of months
3c	Recovery of sailable/usable mineral from ROM production	70%	70%	
3d	Quantity of mineral reject generation	58304 cum	16078 tones	

3e	Grade of mineral rejects generation and threshold value declared.	No proposal of grade of mineral reject generation with respect of threshold value declared .	Less than 30% Al ₂ O ₃ & More than 10% silica	NIL
3f	Quantity of sub grade mineral generation.	No proposal of sub grade generation.	Not reported sub grade generation from the mine. However, whatever lower.sub grade grade ore is generated from the mine, is blended with high grade ore and dispatched to alumina plant, as such there is no generation of sub grade mineral.	
3g	Grade of sub grade mineral generation	No such proposal	Not Applicable	NIL
3h	Manual / Mechanised method adopted for segregating from ROM	Manual method proposed to be adopted for segregation from ROM.	Manual method such as manual hand sorting and sizing are adopted for segregation from ROM.	
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No beneficiation study proposed for subgrade and reject minerals.	Not Applicable	-

3j	Provision of drilling and blasting in mineral benches	Proposal was there for deep hole blasting in hard formation by wagon drill having diameter 100mm dia.The holes are kept 6m deep and burden and spacing are maintained 2.5x3 depending upon compactness of the formation. Holes are charged with ANFO mixture. Short firing is done usually with help of safety fuse and detonator.	Deep hole blasting practiced. Holes are done in hard formation by crawler mounted wagon drill having 100mm dia up to a depth of 4m.Burden spacing were 2mx2m.holes are charged with ANFO mixture. Short firing is done usually with the help of safety fuse and detonator.	
3k	Provision of mining machineries in mineral benches	DTH - 01, Excavator -07, Compressor - 02, jackhammer - 04, Tippers - 04 nos. were proposed to be used during mining.	Air compressor, Wagon drill, Shovel, JCB were used for mining.	
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	The average height of the benches in overburden and mineral was 3m x 6m is suitable for method of mining proposed in approved SoM for (OTFM) mine.	As per proposal..	-
3m	Total area covered under excavation/pits	10.00 Ha.	9.910 ha	-
3n	Ore to OB ratio for the pit/mine during the year.	1:1.65 (Tonns :Cum)	1:1.65 (Tonns :Cum)	

3o	Total area put in use under different heads at the end of year	76.28 ha	76.75 ha
3p	Production of ROM mineral during the last five year period as applicable	2015-16 293099 2016-17 295634 2017-18 298804 2018-19 299446 2019-20 299901	2015-16 223025 2016-17 294830 2017-18 291458 2018-19 260995 2019-20 80395
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)	soil will be used for reclamation of the backfilled quarry	soil is used for reclamation of the backfilled quarry	There is no dump of top soil
4b	Location of topsoil, OB and mineral reject dumps	-	-	-
4c	Number of dumps within lease area and outside of lease area	all overburden will be backfilled in mined-out areas	all overburden will be backfilled in mined-out areas	
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	NA	NA	
4e	Number of active and alive dumps.	NA	NA	
4f	Number of dead dumps.	NA	NA	
4g	Number of dumps established.	NIL	NIL	
4h	Whether Retaining wall or garland drain all along dumps are there.	NA	NA	
4i	Length of Retaining wall or garland drain all along dumps	NA	NA	

4j	Number of settling ponds	NA	NA	
4k	Specific comments of inspecting officer on waste dump management	-	-	-

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.	Yes	Yes	only after fully exhaustion of bauxite , backfilling is being done
5b	Area under backfilling of mined out area	4.99 ha	1.75 ha	
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	soil will be used for reclamation of the backfilled quarry	soil will be used for reclamation of the backfilled quarry	
5d	Total area fully reclaimed and rehabilitated	68.97 ha	63.44ha	
5e	General remarks of inspecting officers on backfilling and reclamation etc.	-	-	-

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).	-	Yes Submitted on time and correctly	-
6b	Area available for rehabilitation (ha) .	NIL	NIL	

6c	afforestation done (ha).	NIL	NIL
6d	No. of saplings planted during the year	NIL	NIL
6e	Cumulative no .of plants	NIL	NIL
6f	Any other method of rehabilitation	NIL	NIL
6g	Cost incurred on watch and care during the year	NIL	NIL
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	4.99 ha	1.75 ha
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	NIL	NIL
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on backfilled area	NIL	2448 Nos.
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	NIL	NIL
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	NIL	NIL
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	NIL	NIL

6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	NIL	NIL
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	NIL	NIL
6p	Compliance of environmental monitoring (core zone and buffer zone)	Proposal for Air, water, Noise	Enviromental monitoring done in core nad buffer zone.
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	-	-

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Grade wise stack	Grade wise stack	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Manual	Manual	
7c	Different grade of mineral sorted out at mines.	NIL	40% to below 45% Al2O3 45% to below 50% Al2O3	
7d	Any beneficiation process at mines	NIL	NIL	
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	-	-	-

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Yes	Yes done at mines	
8b	Concurrent use or storage of topsoil	Concurrent use	Concurrent use	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	NA	NA	
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	NA	NA	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	All overburden will be backfilled in mined-out areas, soil will be spread for reclamation.	All overburden will be backfilled in mined-out areas, soil will be spread for reclamation.	
8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Yes	Yes	
8g	Survival rate	70 %	60 %	
8h	Water sprinkling on roads to control airborne dust	Yes	Yes	
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	-	-	-

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns		Submitted on time.	
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	-	Mining Engineer and Geologist Present during inspection.	-
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	-	Details given in Annual Return are more or les same as on feild.	-
9d	Scrutiny of Annual return on afforestation	1720 Trees planted inside lease area and nearly 500 trees planted outside lease area.	Details given in Annual Return are more or les same as on feild.	
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	-	No mineral reject generated only topsoil and OB generated.	-
9f	Scrutiny of Annual return on ROM stock and/or graded ore	Production of ROM Was 131115.000 tonnes with grade 44.30 % Al2O3	Production of ROM Was 131115.000 tonnes with grade 44.30 % Al2O3	
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	Ex mine reported is 1074 Rs. / Tonnes of ore	Ex mine reported is 1074 Rs. / Tonnes of ore	
9h	Scrutiny of Annual return on fixed assets	Value of Fixed Assets (in Rs.) 598030798.00	Value of Fixed Assets (in Rs..) 598030798.00	
9k	Scrutiny of Annual return on mining machineries	AIR COMPRESSOR ROCK DRILL (NONELEC.) SHOVEL (HYDRAULIC) DUMPER 35.000 TONNE DUMPER 25.000 TONNE WHEEL LOADER WATER TANKER	AIR COMPRESSOR ROCK DRILL (NONELEC.) SHOVEL (HYDRAULIC) DUMPER 35.000 TONNE DUMPER 25.000 TONNE WHEEL LOADER WATER TANKER	-

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

Date :

(**NAMAN EKKA**)

Indian Bureau of Mines