

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

MCDR INSPECTION REPORT

Ranchi regional office

Mine file No : BIH/LOH/BX/245/RRO

Mine code : 07JHK12007

- (i) Name of the Inspecting : **E025**) **NAMAN EKKA**
Officer and ID No.
- (ii) Designation : Junior Mining Geologist
- (iii) Accompanying mine : SH. S.P.JHA, MINE MANAGER & N. PRAMANIK, GEOLOGIST.
Official with
Designation
- (iv) Date of Inspection : 22/09/2017
- (v) Prev.inspection date : 05/01/2017

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **PAKHAR(115.13HCT[134.33])**
- (b) **Registration NO.** : **IBM/935/2011**
- (c) **Category** : **A Fully Mechanised**
- (d) **Type of Working** : **Opencast**
- (e) **Postal address**
- State : **JHARKHAND**
- District : **LOHARDAGA**
- Village : **PAKHAR**
- Taluka : **KISKO**
- Post office : **NARI NAWADIH**
- Pin Code :
- FAX No. : **06526-224118**
- E-mail : **N.A.**
- Phone : **06526-224112, 224015,22311**
- (f) **Police Station** : **KISKO**
- (g) **First opening date** : **23/04/1996**
- (h) **Weekly day of rest** : **FRI**
2. **Address for correspondance** : **VILL.- PAKHAR,**
P.O.- KISKO - 835302, DISTT.- LOHARDAGA,
JHARKHAND
3. (a) **Lease Number** : **BHR0267**
- (b) **Lease area** : **115.13**
- (c) **Period of lease** : **15**
- (d) **Date of Expiry** : **18/07/1996**
4. **Mineral worked** : **BAUXITE** **Main**

5. Name and Address of the

Lessee : M/S HINDALCO INDUSTRIES LTD.
 AT - COURT ROAD,
 LOHARDAGA, LOHARDAGA
 JHARKHAND
 Phone:06526-22401112, 224446 & 224016.
 FAX :06526-224112 & 224445

Owner : A.K. AGRAWAL
 M/s HINDAL INDUSTRIES Ltd.,
 PO - RENUKOOT, UTTAR
 PRADESH- 231217 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

Manager
 Name : S.P. JHA
 Qualification : B.E.(MINING), 2nd CLASS MINES MANAGER CE
 Appointment/ : 12/02/2011
 Termination date

6. Date of approval of Mining	:	Existing rule 11 MCDR1988	13/01/1994
Plan/Scheme of Mining		Renewal under rule 24 MCR1960	18/12/1995
		Mining Scheme rule 12 MCDR1988	31/01/2001
		Mining Scheme rule 12 MCDR1988	08/09/2006
		Modif.approved Mining Scheme	26/04/2007
		Modif.of approved Mining Plan	31/08/2010
		Mining Scheme rule 12 MCDR1988	31/08/2010
		Modif.approved Mining Scheme	30/06/2011
		MP modif under MCR 1960	26/02/2016

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	There was no proposal for BHs to be given during the approved plan period	No exploration was carried out during the period as no exploration was proposed. Hence no backlog of exploration existed as on date of inspection.	Entire lease area leaving 7.5m safety barrier, was explored.
1b	Exploration over lease area for geological axis 1 or 2	There was no proposal for BHs to be given for G1 and G2 level during the approved plan period.	No exploration was carried out as no proposal was available.	
1c	Exploration Agencies and Expenditure in lakh rupees during the year	No such proposal was there in the present approved Document.	No proposal for exploration in 2016-17	
1d	Balance area to be explored to bring Geological axis in 1 or 2	No area was remained unexplored.	Entire lease area was explored.	Entire lease area leaving 7.5m safety barrier, has been explored
1e	Balance reserve as on 01/04/20	Balance Reserve as on 01/04/2015 Reserve (111) - 3010666 Tons Resources (211) - 607322 Tons	Reserve as on 01/04/2017 Reserve (111) - 2431211 Tons Resources (211) - 607322 Tons	

1f	General remarks of inspecting officers on geology, exploration etc	The Aluminium ore of the lease area was predominantly Gibbsite (Tri hydrate). The Ore is overlain by Laterite and underlain by Lithomargic clay. Both the Laterite and Ore body have variable thickness. The laterite of the area has become soft & fragile due to weathering and was mixed with Morrum. The Laterite of the area contained less Iron. There was no proposal of exploration during the valid approved plan period of 2015-16 to 2019-20.	Bauxite deposit of the area is mostly associated with laterite, occurs as irregular and discontinuous lenses or tabular bodies within the laterite capping. The thickness of different litho horizons observed in the quarry face was as given below:- i. Laterite: 1-5m; ii. Ore: 5-15m; iii. Lithomargic clay: 1-1.5m.
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Development :

Sl.No.	Item	Proposals	Actual work	Remarks
2a	Location of development w.r.t. lease area	There was proposal to develop Quarry no. 4, & Quarry No. 6	At the time of inspection Quarry no. 4, & Quarry No. 6 were not fully developed and were in the development stage.	
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Separate benches in Overburden (Laterite) and Ore were proposed to be developed	Separate benches in Overburden (Laterite) and Bauxite were developed in Quarry no. 4 & 6	

2c	Stripping ratio or ore to OB ratio	As proposed in 2016-17 ROM / Waste Ratio to be maintained at 1:0.079	In 2016-17 ROM / Waste Ratio was 1:2.40
2d	Quantity of topsoil generation in m3	As proposed in 2016-17 Soil & Morrum generation would be - 118671 m3 from Quarry No 4 & 6	In 2016-17 Soil & Morrum generation was - 110125 m3 from Quarry No 4 & 6
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	Not applicable.	The bench dimension was maintained as per proposal.

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	2 pits were proposed for production - Quarry No 4 & 6	During Inspection production was from Quarry No. 4 & 6	
3b	Quantity of ROM mineral production proposed	In 2016-17 ROM mineral Production proposed in m3 - 212333	In 2016-17 ROM mineral Production in Tons - 282190.00	
3c	Recovery of sailable/usable mineral from ROM production	The proposed recovery of saleable/useable mineral from ROM production was 80%.	in 2016-17 nearly 80% recovery of saleable/useable mineral from ROM production	
3d	Quantity of mineral reject generation	No proposal available for mineral rejects generation during the period 2016-17	No mineral reject generation was reported from the mine.	

3e	Grade of mineral rejects generation and threshold value declared.	Since no mineral reject generation was proposed hence its grade is irrelevant. The Threshold value of Bauxite has been kept at 30% Al ₂ O ₃ (Min) and <5% SiO ₂ .	The threshold value of Bauxite was maintained with stringent specification.
3f	Quantity of sub grade mineral generation.	No proposal for sub-grade mineral generation was available in 2016-17	No sub-grade generation was reported from the mine.
3g	Grade of sub grade mineral generation	No proposal available	Not applicable
3h	Manual / Mechanised method adopted for segregating from ROM	No proposal available	Not applicable.
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No analysis or beneficiation study was proposed for sub-grade mineral and reject material since no sub-grade and reject material was proposed to be generated from the mine as per approved Document.	No analysis or beneficiation study was carried out for sub-grade mineral and reject material as no sub-grade mineral and reject material was reported to be generated from the mine.

- 3j Provision of drilling and blasting in mineral benches
- There was provision of drilling and blasting in harder formation (Laterite and Bauxite). Drilling was proposed by crawler mounted Rock Drill of 100mm dia upto the depth of 5.5m with Burden and Spacing at 2.5m X 3m. The holes were proposed to be charged with Slurry explosive and short firing was proposed with the help of OD and Safety fuse. About 10-20 holes were proposed to be blasted in a row of blasting.
- Drilling with Rock drill (100 mm dia) and blasting were done as per proposal.
- 3k Provision of mining machineries in mineral benches
- The following machineries were proposed to be used in the mine
Excavater 03 Nos.
Dumper 16 nos.
Compressor - 02nos.
Tractor - 02 nos.
Dozer - 01 nos.
water pump - 01 nos
Generator - 01 nos.
Wagon Drill - 02 Nos.
- The following machineries were proposed to be used in the mine
Excavater 02 Nos.
Compressor - 01nos.
Tractor - 01 nos.
Dozer - 01 nos.
water pump - 01 nos
Wagon Drill - 01 Nos.

3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	In the approved Document it was proposed to maintain the height of benches in OB and Mineral within 6m. Whereas the bench width was proposed to be maintained within 06m height. The height and width proposed was suitable for 'A'-OTFM method of mining.	The height of the benches in Top soil was maintained between 1-2m, in OB(Laterite), it was maintained between 2-2.5m while in Bauxite, the bench height was maintained between 3-4m. The height of benches were in conformable with the 'A'-OTFM method of mining
3m	Total area covered under excavation/pits	Total cumulative area proposed to be covered under excavation up to the plan period was 41.28 Ha.	As on date of inspection, about 35.00 Ha area was covered under excavation.
3n	Ore to OB ratio for the pit/mine during the year.	As proposed in 2016-17 Ore : OB is 1:1.41	During the inspection it was found Ore: OB is 1:2.40
3o	Total area put in use under different heads at the end of year	As proposed in 2016-17 for - Quarry Including Backfilling - 23.84 Ha. Waste Dump - 0.75 Ha. Road -1.55 Ha. Infrastructure - 0.05 Ha.	At the time of inspection for - Quarry Including Backfilling - 21.44 Ha. Waste Dump - 0.75 Ha. Road -1.55 Ha. Infrastructure - 0.05 Ha.
3p	Production of ROM mineral during the last five year period as applicable	As proposed - 2012-13 - 269926 Tons 2013-14 - 297137 Tons 2014-15 - 297654 Tons 2015-16 - 298185 Tons 2016-17 - 298752 Tons	2012-13 - 208503 Tons 2013-14 - 296950 Tons 2014-15 - 283210 Tons 2015-16 - 297265 Tons 2016-17 - 282190 Tons

3q	General remarks of inspecting officers on method of mining etc.	As per approved Document valid for the plan period 2015-16 to 2019-20 it was proposed to work under 'A'-OTFM category of opencast mining with bench dimension of 6m X 6m (h X w).	'A'- OTFM category of opencast mining method was adopted in the mine. The bench height in Top soil was maintained between 1-2m, in OB(Laterite) it was maintained at 2-2.5m and in Bauxite it was maintained at 3-4m, which were within proposed limit.
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Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	There was no proposal for separate dumping for Top soil and OB (Morrum/Laterite) material. There was proposal for simultaneous backfilling in sequential manner. The hard laterite was proposed to be dumped at first in the void followed by Morrum and finally top soil spreading over backfilled area.	There was no dump of Top soil, OB (Morrum/Laterite) within the lease area. Also, there was no Mineral Reject dump within the lease area.	
4b	Location of topsoil, OB and mineral reject dumps	No Proposal	Not Applicable	
4c	Number of dumps within lease area and outside of lease area	No Proposal	No Dumps of Top Soils, OB were found within and outside lease area.	

4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	No Proposal	No dumps within the lease area.
4e	Number of active and alive dumps.	No Proposal	No active & Alive dumps within the lease area found.
4f	Number of dead dumps.	No Proposal	NO Dead dumps available within the lease area.
4g	Number of dumps established.	No proposal for establishment of new dumps in 2016-17	No Dumps available within the lease area.
4h	Whether Retaining wall or garland drain all along dumps are there.	No Proposal for dumps.	Not applicable.
4i	Length of Retaining wall or garland drain all along dumps	No Proposal for dumps	Not applicable.
4j	Number of settling ponds	No proposal for dumps & Settling ponds.	Not applicable.
4k	Specific comments of inspecting officer on waste dump management		Since no dump was there within the lease area hence no comment on the aspect can be given.

Solid Waste Management - Backfilling:

Sl.No.	Item	Propasals	Actual work	Remarks
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5a	Status of part or full extraction of mineral from mined out area before starting backfilling.	As per approved Document, dated 26/02/2016, there was proposal for full extraction of mineral from mined out area before starting backfilling of the mined out area i.e simultaneous backfilling along with top soil spreading were proposed.	Simultaneous backfilling and top soil spreading were in practice in the mine after complete extraction of mineral from the active mining part of the lease.	
5b	Area under backfilling of mined out area	As per approved Document, there was proposal for backfilling of about 2.39 Ha of void area out of 17.86 Ha of excavated area within the lease, upto the plan period 2016-17	As on date of inspection cummulative 13.220 ha of area has been back filled.	
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	No Proposal for Concurrent use of Top Soil in 2016-17	Not Applicable.	
5d	Total area fully reclaimed and rehabilitated	Proposal for 2.39 Ha of pit will be reclaimed in 2016-17	A cummulative of 9.82 Ha of pit is reclaimed.	
5e	General remarks of inspecting officers on backfilling and reclamation etc.			Backfilling and reclamation work has been done as proposed.

Progressive Mine Clousre Plan:

Sl.No.	Item	Propasals	Actual work	Remarks
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6a	Whether Annual report on PMCP submitted on time and correctly. Rule 23 E(2).	Not applicable.	The Annual Report on PMCP under Rule- 23E(2) was submitted.
6b	Area available for rehabilitation (ha) .	There was proposal for rehabilitation of about 0.53 Ha area through plantation of 1325 trees over backfilled area	5800 trees has been planted.
6c	afforestation done (ha).	Area proposed for afforestation 0.53 Ha.	Afforested area - 3.6 Ha.
6d	No. of saplings planted during the year	Saplings - 1325	Saplings planted 5800 survival Rate 80%
6e	Cumulative no .of plants	No Proposal	11000 Nos. of plants in Cumulative
6f	Any other method of rehabilitation	No proposal	Only plantation has been reported over the backfilled area and no other method was adopted.
6g	Cost incurred on watch and care during the year	No proposal available in the approved Scheme of Mining.	No information available
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	Total Area - 2.9 Ha. Q1 - 184mX91mX10m Q2 - 132mX74mX12m Q3 - 65mX30mX10m	Total Area - 11.85 Ha.
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	No Proposal	Not Applicable

6j	Compliance on reclamation and rehabilitation by backfilling (iii) Afforestation on on backfilled area	Area to be afforested - 0.67 Ha.	Afforestation done by planting trees.
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No proposal for 2016-17	Not Applicable
6l	Compliance on reclamation and rehabilitation by backfilling (v) any other specific means.	No Proposal for 2016-17	Not Applicable
6m	Compliance of rehabilitation of waste land within lease (i) afforestation	No Proposal in 2016-17	Not Applicable
6n	Compliance of rehabilitation of waste land within lease (ii) Area rehabilitation (ha)	No Proposal in 2016-17	Not applicable
6o	Compliance of rehabilitation of waste land within lease (iii) Method of rehabilitation	No Proposal in 2016-17	Not Applicable
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.		As on date of inspection, upto 2016-17, about 9.82 Ha area was backfilled and reclaimed of excavated area.

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
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7a	ROM Mineral dispatch or grade-wise sorting within lease area	No proposal for grade wise sorting	Not applicable	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	No Proposal	Not Applicable	
7c	Different grade of mineral sorted out at mines.	No Proposal	Not Applicable	
7d	Any beneficiation process at mines	No Proposal	No Beneficiation process at the mine available during inspection.	
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues			No beneficiation was carried out at the mine site. For Mineral Conservation aspect, lessee had deployed suitable nos. of workers for manual sorting of ore from blasted material to avoid mixing of ore with deleterious material. The low grade ore (on visual perception) was blended with high grade material, before dispatch to the railway siding.

Environment:

Sl.No.	Item	Propasals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	Separate removal and spreading of top soil and Morrum over backfilled area was proposed	The top so generated was used for spreading over backfilled area of 2.75 Ha.	

8b	Concurrent use or storage of topsoil	No Proposal	Not applicable	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	No Proposal	Not Applicable	
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	No Proposal	Not Applicable	
8h	Water sprinkling on roads to control airborne dust	Proposal of water sprinkling of roads to control airborne dust.	At the time of inspection water sprinkling of roads to control airborne dust was available.	
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area			As on date of inspection, upto 2016-17, about 9.82 Ha area was backfilled and reclaimed of excavated area.

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns		Monthly and Annual returns Submitted Online.	
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Mining Engineer in charge - Ashutosh Jha Geologist in charge - Narayan parmanic	During Inspection Mining Engineer in charge - Ashutosh Jha Geologist in charge - Narayan parmanic	

9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	(i) Already exploited & abandoned by opencast mining -- 35.00 Ha (ii) Covered under current (O/C) Workings -- 21.780 Ha. (iii) Reclaimed/Rehabilitated -- 13.220	(i) Already exploited & abandoned by opencast (O/C) mining -- 35.00 Ha (ii) Covered under current (O/C) Workings - 21.780 Ha. (iii) Reclaimed/Rehabilitated -- 13.220
9k	Scrutiny of Annual return on mining machineries	(i) SHOVEL (HYDRAULIC) 0.900 CUM 3 (ii) WHEEL LOADER 2.300 CUM 1 (iii) DUMPER 25.000 TONNE 6 25.000 TONNE 6 (iv) DUMPER 10.000 TONNE 4 (v) AIR COMPRESSOR 450.000 CUM/MN 1 (vi) AIR COMPRESSOR 330.000 CUM/MN 1	(i) SHOVEL (HYDRAULIC) 0.900 CUM 3 (ii) WHEEL LOADER 2.300 CUM 1 (iii) DUMPER 25.000 TONNE 6 10.000 TONNE 4 (v) AIR COMPRESSOR 450.000 CUM/MN 1 (vi) AIR COMPRESSOR 330.000 CUM/MN 1

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