

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

**MCDR inspection REPORT
Ranchi regional office**

Mine file No : BIH/GLA/BX/221/RRO

Mine code : 07BHR32008

- (i) Name of the Inspecting : **K005**) **B.P. KERKETTA**
Officer and ID No.
- (ii) Designation : Deputy Controller Mines
- (iii) Accompanying mine : Sh. D.K.Parida,GM (Mines)& Shri Sanjay Kumar, Mines
Official with
Designation
- (iv) Date of Inspection : 05/09/2019
- (v) Prev.inspection date : 14/09/2018

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **GURDARI (1039.5)**
- (b) **Registration NO.** : **IBM/935/2011**
- (c) **Category** : **A Fully Mechanised**
- (d) **Type of Working** : **Opencast**
- (e) **Postal address**
- State : **JHARKHAND**
- District : **GUMLA**
- Village : **GURDARI AMBAKONA**
- Taluka : **BISHUNPUR**
- Post office : **DUMBERPAT**
- Pin Code :
- FAX No. : **06526-24118**
- E-mail : **bijesh.jha@adityabirla.com**
- Phone : **06526-24016**
- (f) **Police Station** : **BISHUNPUR**
- (g) **First opening date** : **01/02/1985**
- (h) **Weekly day of rest** : **SUN**
2. **Address for** : **VILL-GURDARI**
correspondance **BISHNPUR**
DIST-GUMLA
3. (a) **Lease Number** : **BHR0249**
- (b) **Lease area** : **584.19**
- (c) **Period of lease** : **50**
- (d) **Date of Expiry** : **22/03/2035**
4. **Mineral worked** : **BAUXITE** **Main**

5. Name and Address of the

Lessee : HINDALCO INDUSTRIES LTD.,
 AT & PO - COURT ROAD,
 LOHARDAGA LOHARDAGA
 JHARKHAND
 Phone:06526- 224015/224112/223113
 FAX :06526- 224118

Owner : S.S.KOTHARI
 M/s HINDALCO INDUSTRIES
 Ltd., CENTURY BHAWAN,Dr.
 ANNIE BESANT Rd. MUMBAI
 (SUBURBAN) MAHARASHTRA
 Phone: 022- 24227586
 FAX : 022- 24308491

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 : Sanjay Kumar,Full Time
 Qualification : B.E(MINING)
 Appointment/ : 18/01/2019
 Termination date

Geologist
 Name : Dharendra Pratap Singh,Full Time
 Qualification : MSc(Geo)
 Appointment/ : 21/04/2019
 Termination date

Manager
 Name : KIRAN SHANKAR SINGH
 Qualification : B.E (MINING ENGINEER)
 Appointment/ : 01/01/2014 17/01/2019
 Termination date

6. Date of approval of Mining : Existing rule 11 MCDR1988 12/02/1992
 Plan/Scheme of Mining Mining Scheme rule 12 MCDR1988 25/09/1998
 Renewal under rule 24 MCR1960 12/05/2005
 Mining Scheme rule 12 MCDR1988 19/01/2012
 FMCP under 23C(1) 02/05/2013
 Mining Scheme rule 12 MCDR1988 17/04/2015
 MP review under 17(1) MCR 2016 20/02/2019

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	NIL	NIL	
1b	Exploration over lease area for geological axis 1 or 2	NIL	156 no. of boreholes. G1 area- 292.09 ha. G2 area- 116.84 ha.	
1c	Exploration Agencies and Expenditure in lakh rupees during the year	NA	S N Singh & SWPL Rs. 928339.2	
1d	Balance area to be explored to bring Geological axis in 1 or 2	NA	NA	
1e	Balance reserve as on 01/04/20	NA	Proved Mineral Reserve 2154685 MT (111) Probable Mineral Reserve 1809000 MT (122)	
1f	General remarks of inspecting officers on geology, exploration etc	The Aluminium ore of the lease area was predominantly Gibbsite (Trihydrate). The Ore is overlain by Laterite and underlain by Lithomargic clay.	Drilling for exploration was not proposed during the plan period 2018-09. However, 156no of boreholes were drilled during 2018-19 by the lessee. After drilling of 224 Boreholes during 2019-20 and 2020-21 lessee has proposed to cover exploration of entire lease area.	

Development :

Sl.No.	Item	Proposals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Kathupani, Ambakona, Kekrang	Kathupani, Ambakona, Kekrang	
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Top soil - I Morrum - I Laterite - I	Top soil - I Morrum - I Laterite - I	
2c	Stripping ratio or ore to OB ratio	1 : 3.8	1 : 3.4	

2d	Quantity of topsoil generation in m3	288202	271152.83
2e	Quantity of overburden generation in m3	652697	577707
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc		Work was in progress as per approved document. Bauxite deposits of Neterhat plateau are mostly associated with laterite. Bauxite occurs as Boulder, lenses, pocket type deposit overlain by Laterite

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	3	3	
3b	Quantity of ROM mineral production proposed	324528 MT	322340 MT	
3c	Recovery of sailable/usable mineral from ROM production	90%	99.3%	
3d	Quantity of mineral reject generation	15678 m3	21102 m3	
3e	Grade of mineral rejects generation and threshold value declared.	NA	28.66%	
3f	Quantity of sub grade mineral generation.	7002 m3	43710 m3	
3g	Grade of sub grade mineral generation	Al2O3- 36.47% SiO2- 3.12%	Al2O3- 33.2% SiO2- 3.5%	
3h	Manual / Mechanised method adopted for segregating from ROM	Manual	Manual	

3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	NA	NA
3j	Provision of drilling and blasting in mineral benches	Deep hole blasting (100mm dia) Burden x Spacing (2.5m x 3m)	Deep hole blasting (100mm dia) Burden x Spacing (2.5m x 3m)
3k	Provision of mining machineries in mineral benches	The list of machineries deployed in the mine during inspection (2018-19) were as given below:- i. Rock drill: 01 nos. (100 mm dia), 01no.(45mm), 03nos(32mm) ii. Air Compressor: 02 nos. (400 cum/min; iii. Air Compressor: 03nos.(90cum/min) iv. Hydraulic Shovel(0.9 cu.m): 1 no.; v. Hydraulic Shovel(1.7 cu.m): 1 no.; vi. Hydraulic Shovel(2.1 cu.m): 1 no.; vii. Wheel mounted Loader: 2 nos. (1.8 cu.m); viii. Dumper (8 MT): 2 nos.; ix. Dumper(25 MT): 6 nos.; x. Water tanker (5000 lts): 01 no.;	The list of machineries deployed in the mine during inspection (2018-19) were as given below:- i. Rock drill: 01 nos. (100 mm dia), 01no.(45mm), 03nos(32mm) ii. Air Compressor: 02 nos. (400 cum/min; iii. Air Compressor: 03nos.(90cum/min) iv. Hydraulic Shovel(0.9 cu.m): 1 no.; v. Hydraulic Shovel(1.7 cu.m): 1 no.; vi. Hydraulic Shovel(2.1 cu.m): 1 no.; vii. Wheel mounted Loader: 2 nos. (1.8 cu.m); viii. Dumper (8 MT): 2 nos.; ix. Dumper(25 MT): 6 nos.; x. Water tanker (5000 lts): 01 no.;

3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	In the approved Scheme of Mining 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 15m. The height and width proposed was suitable for 'A'-FM 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'-FM method of mining.
3m	Total area covered under excavation/pits	15.33 ha.	14.74 ha.
3n	Ore to OB ratio for the pit/mine during the year.	1 : 4.16	1 : 3.87
3o	Total area put in use under different heads at the end of year	Area to be excavated 159.59ha,Infra structure(Workshop,administrative building) 1ha, Roads 7.34ha,Greenbelt 0.64ha.	Area already exploited 163.9ha,current O/C workings 14.74ha,Reclaimed/rehabilitated area 149.16ha, Used for waste disposal 9.311ha,Area occupied by plant , Buildings,residential,welfare buildings&roads 8.34ha, area for work done under progressive mine closure plan during the year 6.3ha
3p	Production of ROM mineral during the last five year period as applicable	2013-14 320210MT 2014-15 323655MT 2015-16 324991MT 2016-17 324294MT 2017-18 324211MT 2018-19 324528MT	2013-14 313975MT 2014-15 323655MT 2015-16 324590MT 2016-17 324200MT 2017-18 324060MT 2018-19 322340MT

3q	General remarks of inspecting officers on method of mining etc.	As per Scheme of Mining approved dated 17.04.2015 for the plan period 2015-16 to 2018-19 Where 2014-15 was lapse period, it was proposed to work under 'A'-FM category of opencast mining with bench dimension of 3-6m X 6-15m (h X w).	A'- FM 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.
----	---	---	--

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	Not proposed.	Backfilled concurrently. There was no dump of Top soil, OB (Morrurum/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	NA	Nil	
4c	Number of dumps within lease area and outside of lease area	NIL	NIL	
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	NA	Nil	
4e	Number of active and alive dumps.	There was no proposal of active dump in the approved Scheme of Mining.	No active dump was present within the lease area.	
4f	Number of dead dumps.	NIL	NIL	

4g	Number of dumps established.	There was no proposal of dump within the lease area as per approved Scheme of Mining.	There was no dump within the lease area hence its establishment was not relevant.
4h	Whether Retaining wall or garland drain all along dumps are there.	There was no proposal of construction of Retaining wall or Garland drain.	Nil
4i	Length of Retaining wall or garland drain all along dumps	Not proposed	Not applicable.
4j	Number of settling ponds	Not proposed	Nil
4k	Specific comments of inspecting officer on waste dump management	There was no proposal for external dump within the lease area.	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
5a	Status of part or full extraction of mineral from mined out area before starting backfilling.	Fully extracted	Fully extracted & reclamation is being carried out	
5b	Area under backfilling of mined out area	11.3 ha.	6.3 ha.	
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Yes,proposed.	Backfilling of mined out areas concurrently	
5d	Total area fully reclaimed and rehabilitated	144.26 ha.	149.16 ha.	

5e	General remarks of inspecting officers on backfilling and reclamation etc.	Simultaneous backfilling and spreading of top soil over backfilled area proposed in the approved scheme of mining.	Total broken area as on date of inspection was 163.9ha and total area reclaimed and rehabilitated was 149.16ha.
----	--	--	---

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 to be submitted in time.	Annual report submitted.	
6b	Area available for rehabilitation (ha) .	11.3 ha.	6.3 ha. void but backfilling was being carried out.	
6c	afforestation done (ha).	0.55 ha.	4.3 ha.	
6d	No. of saplings planted during the year	1375nos	4300nos	
6e	Cumulative no .of plants	5650nos	27445nos	
6f	Any other method of rehabilitation	NIL	NIL	
6g	Cost incurred on watch and care during the year	Rs 3323335/- (including backfilling cost)	Rs. 403151/-	
6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	11.3 ha.	6.3 ha. already backfilled & presently 5 ha. void backfilling is being carried on.	

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	0.55 ha.	4.3 ha.	
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	NIL	NIL (during the year)	About 0.7ha water reservoir made earlier.
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	NA	NA	
6p	Compliance of environmental monitoring (core zone and buffer zone)	Environmental monitoring to be done	Environmental monitoring of Air, Noise & Water in core & buffer zones are being carried out on quarterly basis	

6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	Lessee has made every effort to comply the provisions of PMCP as per approved document. Out of proposed 1375nos., 4300nos. of plantation have been done.
----	---	--

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	324528MT	322340MT	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Manual	Manual	
7c	Different grade of mineral sorted out at mines.	NA	NA	
7d	Any beneficiation process at mines	NIL	NIL	
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	As per approved Scheme of Mining, there was no proposal for mineral beneficiation. The Mineral conservation aspect was maintained skillfully by deploying suitable nos. of employee for manual sorting of ore from OB/Waste material after blasting.	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)	Proposal was there to remove top soil separately and spread over minedout backfilled area concurrently.	Concurrent backfilling and spread of top soil over backfilled area for rehabilitation/afforestation practiced.	Concurrent spreading over backfilled area
8b	Concurrent use or storage of topsoil	Proposal was there to remove top soil separately and spread over minedout backfilled area concurrently.	Top soil concurrently used for spreading over backfilled areas.	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	No such proposal instead Concurrent backfilling and spread of top soil over backfilled area proposed.	OB and waste rock so removed is used to backfill mined out areas.	Concurrent backfilling
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Proposed.	Overburden & waste rock, rejects used for restoring the land to its original use.	
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Proposed area for reclamation and rehabilitation was 11.30 ha during 2018-19.	6.3ha area have been reclaimed during the year.	

8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	About 5650 saplings was proposed to be planted during the plan period 2015-16 to 2018-19 over 2.26ha and 1375 plantatiion over 0.55 ha during 2018-19.	Total area reclaimed and rehabilitated was 149.16ha and total plantation done on 13.5ha by planting 25710 trees as on . on 14/09/2018.During the year 2018-19,plantation of 4300nos of saplings have been done in about 4.3ha area.
8g	Survival rate	90%	65%
8h	Water sprinkling on roads to control airborne dust	YES,proposed.	Water sprinkling on roads to control airborne dust is done regularly.
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area		The aesthetic beauty in and around mines area is good.

Compliance of Rule 45:

Sl.No.	Item	Propasals	Actual work	Remarks
9a	Status of submission of Monthly and Annual returns	Lessee use to submit monthly and Annual Return regularly.	Lessee use to submit monthly and Annual Return regularly and furnished data in relevant items.	
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	As per Annual return 2018-19 Sri Sanjay Kumar was Mining Engineer cum Mines manager and Sri Dhirendra Pratap Singh was Geologist.	During inspection it was observed that Sri Sanjay Kumar was Mining Engineer cum Mines manager and Sri Dhirendra Pratap Singh was Geologist.	

- 9c Scrutiny of land use land use pattern was
Annual return on pattern was observed as given
land use pattern furnished as below:-
for area under given below:-
pits, reclaimed i. Excavated
area, dumps etc. quarries:163.9 14.74 ha- current
0. working);
14.74 ha- ii. Reclaimed/
current Rehabilitated: 149.16Ha;
working); iii. Plant & building-
ii. Reclaimed/ 8.34ha
Rehabilitated: iv. Area under PMCP-
149.16Ha; 6.3ha
iii. Plant &
building-
8.34ha
iv. Area under
PMCP-6.3ha
- 9d Scrutiny of As per Annual Plantation done within
Annual return on Return for the ML area was 4300nos.
afforestation year 2018-19, within the lease area
the plantation with survival rate -65%.
done within ML
area was shown
as 4300nos.
within the
lease area
with survival
rate -65%.
- 9e Scrutiny of As per Annual No Mineral Reject
Annual return on Return 2018-19 generation from the mine
mineral reject the was reported during the
generation information on period 2018-19.
(Grade and Mineral Reject
quantity) generation was
shown as Nil.
- 9f Scrutiny of As per Annual The figures given for
Annual return on Return for the opening and closing
ROM stock and/or year 2018-19, stocks were in
graded ore the ROM stock conformable with the
(opening figures furnished
balance) and through Monthly returns.
Closing stock
were shown as
given below:-
i. Opening
stock: NIL
ii. Closing
stock:
NIL.and ROM
production-
322340MT

9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	It is a captive mine of Hindalco, Cost of production- Rs 993.14/MT	It is a captive mine of Hindalco, Cost of production- Rs 993.14/MT
9h	Scrutiny of Annual return on fixed assets	The value of Fixed Assets of the lessee was shown in Part-IIA of the Annual Return for the year 2018-19 was Rs 598030798/-	The value of Fixed Assets of the lessee was shown in Part-IIA of the Annual Return for the year 2018-19 was Rs 598030798/-
9k	Scrutiny of Annual return on mining machineries	The list of machineries deployed in the mine during inspection (2018-19) were as given below:- i. Rock drill: 01 nos. (100 mm dia), 01no. (45mm), 03nos (32mm) ii. Air Compressor: 02 nos. (400 cum/min); iii. Air Compressor: 03nos. (90cum/m in) iv. Hydraulic Shovel(0.9 cu.m): 1 no.; v. Hydraulic Shovel(1.7 cu.m): 1 no.; vi. Hydraulic Shovel(2.1 cu.m): 1 no.; vii. Wheel mounted Loader: 2 nos. (1.8 cu.m); viii. Dumper (8 MT): 2 nos.; ix. Dumper(25 MT): 6 nos.; x. Water tanker (5000 lts): 01 no.;	The list of machineries deployed in the mine during inspection (2018-19) were found as given below:- i. Rock drill: 01 nos. (100 mm dia), 01no. (45mm), 03nos (32mm) ii. Air Compressor: 02 nos. (400 cum/min); iii. Air Compressor: 03nos. (90cum/min) iv. Hydraulic Shovel(0.9 cu.m): 1 no.; v. Hydraulic Shovel(1.7 cu.m): 1 no.; vi. Hydraulic Shovel(2.1 cu.m): 1 no.; vii. Wheel mounted Loader: 2 nos. (1.8 cu.m); viii. Dumper (8 MT): 2 nos.; ix. Dumper(25 MT): 6 nos.; x. Water tanker (5000 lts): 01 no.;

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)	20/09/2019			
MCDR17	Rule 35(2)	20/09/2019			

Date :

(B.P. KERKETTA)

Indian Bureau of Mines