INDIAN BUREAU OF MINES
MINERALS DEVELOPMEMT AND REGULATION DIVISION

MCDR INSPECTION REPORT

Ranchi regional office

Mine file No : JHK/GML/BX/253/RRO **Mine code : 07JHK09005**

(i) Name of the Inspecting Officer and ID No. : **B001) SAGAR BODRA**

(ii) Designation : Assistant Mining Geologis

(iii) Accompaning mine Official with Designation : S/SHRI VICTOR BASU, GM (GEOLOGY) & A. ANBARASU, MINES

(iv) Date of Inspection : 17/08/2018

(v) Prev.inspection date : 11/10/2017

PART-I : GENERAL INFORMATION

1. (a) **Mine Name** : **KUJAM - II BAUXITE MINE**

(b) Registration NO. : **IBM/935/2011**

(c) Category : A Fully Mechanised

(d) Type of Working : Opencast

(e) Postal address

State : JHARKHAND

District : GUMLA

Village : KUJAM

Taluka : BISHNUPUR

Post office : JOBHIPAT

Pin Code : 835207

FAX No. : 06526-224112, 224015, 2231

E-mail : bijesh.jha@adityabirla.com

Phone : 06526-224118

(f) Police Station : BISHUNPUR

(g) First opening date : 01/07/2008

(h) Weekly day of rest : SUN

2. Address for correspondance : VILL -KUJAM & CHIRODIH,
PO & PS -BISHUNPUR,
DIST - GUMLA (JHARKHAND).

3. (a) Lease Number : JHK0160

(b) Lease area : 157.38

(c) Period of lease : 20

(d) Date of Expiry : 23/03/2026

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 HINDALCO INDUSTRIES LTD. CENTURY BHAWAN, 3rd FLOOR, Dr. ANNIE BASANT ROAD, WORLY, MUMBAI(MH KOLKATA WEST BENGAL Phone: FAX :
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	:	VIDYA SAGAR SINGH,Full Time
Qualification	:	B.Sc.(MINING)
Appointment/ Termination date	:	01/10/2013

Geologist

Name	:	RATIKANT BEHRA,Full Time
Qualification	:	M.Sc. (GEOLOGY)
Appointment/ Termination date	:	01/06/2013

6. Date of approval of Mining Plan/Scheme of Mining :

Fresh under rule 22 MCR1960	12/04/2005
Modif.of approved Mining Plan	22/07/2011
Mining Scheme rule 12 MCDR1988	21/11/2014

PART - II : OBSERVATION/COMMENTS OF INSPECTING OFFICERS

Exploration :

Sl.No.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	No exploration proposal during2017-18 as per scheme of mining approved dated 21/11/2014	No exploration carried out during the year.	No backlog of previous year.
1b	Exploration over lease area for geological axis 1 or 2	No proposal for further exploration as entire lease area has already been explored.	During 2017-18, no exploration has been carried out. However, during 2016-17, 04 boreholes have been drilled in a grid interval of 50m x 50m up to a depth of 64.5m. The max. and mini. depth was 20m and 9.5 m respectively for geological axis 1 or 2.	Nil
1c	Exploration Agencies and Expenditure in lakh rupees during the year	No such proposal.	Exploration agencies and expenditure incurred towards exploration work was not available as the exploration has not been carried out during the year.	Nil
1d	Balance area to be explored to bring Geological axis in 1 or 2	No proposal for further exploration as entire lease area has already been explored.	Nil	Nil

1e	Balance reserve as on 01/04/20	Reserve as on 01.04.2014 as per approved scheme of mining valid for the plan period 2014-15 to 2018-19 was ; (111) : 3883778 MT	Reserve as on 01.04.2014 under (111): 3883778 MT Production during 2014-15: 149685 MT 2015-16: 223025 MT 2016-17: 294830 MT 2017-18: 291458 MT Total : 958998 MT Reserve as on 01.04.2018 : 3883778-958998 =2924788 MT	Nil
1f	General remarks of inspecting officers on geology, exploration etc	No such proposal	Bauxite deposits of Neterhat plateau are mostly associated with laterite. Bauxite occurs as Boulder, lenses, pocket type deposit overlain by Laterite capping.	Nil

Development :

Sl.No.	Item	Propasals	Actual work	Remarks
2a	Location of development w.r.t.lease area	Proposed devlopment during 2017-18 was was in quarry no 4F, quarry no. 5 and quarry no. 7 in the lease area.	Mining was carried in 4F, Q. no.5 and Q. No. 7.	Lessee has got enhanced EC for production of 0.3million ton vide letter dated 21.07.2015.
2b	Separate benches in topsoil, overburden and minerals (Rule 15)	Two benches in soil,morrum and laterite and one bench in Bauxite.	Two benches in OB and one bench in Bauxite.	Nil
2c	Stripping ratio or ore to OB ratio	Proposed stripping ratio during 2017-18 was 1:1.92	During 2017-18 production was 291458 MTand OB removed 954235 MT,ratio -1:0.3	Nil

2d	Quantity of topsoil generation in m3	Proposed Quantity of top soil to be generated during 2017-18 was 317007 cum.	The figures of top soil generation was not available for the plan period 2017-18.	Nil
2e	Quantity of overburden generation in m3	Proposed generation of OB during 2017-18 was : 356395 cum	OB/waste generated during 2017-18 was 954235 MT	Nil
2f	General remarks of inspecting officers on development of pit w.r.t. type of deposit etc	NA	By and large the development of quarries are as per approved document.	Nil

Exploitation:

Sl.No.	Item	Propasals	Actual work	Remarks
3a	Number of pit proposed for production	Three pits were proposed during for the plan period 2017-18 for production.	Actually work carried in quarry 4F only.	Nil
3b	Quantity of ROM mineral production proposed	Proposed ROM production was 298804 MT for the plan period 2017-18.	Actual production during the year 2017-18 was 291458 MT	Nil
3c	Recovery of sailable/usable mineral from ROM production	Proposed recovery of saleable/useable mineral from ROM production was 90%:	Actual recovery was 90%.	Nil
3d	Quantity of mineral reject generation	No such proposal	No reject is generated,	In the mine, lower grade ore is blended with high grade ore and dispatched to alumina plant, as such there is no generation of reject

3e	Grade of mineral rejects generation and threshold value declared.	No proposal of sub grade generation.	Nil	Nil
3f	Quantity of sub grade mineral generation.	No proposal of sub grade generation.	Nil	Nil
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 sorting and sizing by deploying laboueres is practiced for segregation from ROM.	Nil
3i	Any analysis or beneficiation study proposed and carried out for sub grade mineral and rejects.	No beneficiation study proposed for subgrade and reject.	Not Applicable	Nil
3j	Provision of drilling and blasting in mineral benches	Proposal was there for deep hole blasting in hard formation by rock drill having diameter from 88mm to 100mm dia.The holes are kept 6m deep and burden and spacing are maintained 2m x 2m 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 is 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.	Nil

3k	Provision of mining machineries in mineral benches	Excavator, Terex, Dumper, tractor, wagon drill were proposed to to be used during mining.	Air compressor,Wagon drill, Shovel, JCB were used for mining.	Nil
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	Proposed height of the benches was 3m x 6m.	Dimension of the benches was 3m x 6m.	Nil
3m	Total area covered under excavation/pits	Proposed area to be covered for mining for the plan period 2017-18 was7.49ha	Actual area covered under mining was 10.92ha during the year 2017-18.	Nil
3n	Ore to OB ratio for the pit/mine during the year.	Proposed ore :OB ratio during 2017-18 was 1:1.92	Actual ore : OB ratio was 1:0.3 during the year 2017-18.	Nil
3o	Total area put in use under different heads at the end of year	Proposed area under quarry-7.49 ha,Plantation-0.5 ha,and backfilling 5.97 ha.	Total area put in use is given below: i) Already exploited & abandoned by opencast (O/C) mining: 47.730 ha, ii) Covered under current (O/C)Workings: 10.920 ha iii) Reclimed/Rehabilitated: 36.810 ha iv) Work done under progressive mine closure plan during the year2017-18: 6.93 ha.	Nil
3p	Production of ROM mineral during the last five year period as applicable	Proposed Bauxite production as per approved scheme of mining 2014-15: 293927MT 2015-16: 293099 MT 2016-17: 295634 MT 2017-18 : 298804 MT 2018-19: 299446 MT	Production during last five years : 2013-14 : 149790 MT 2014-15 : 149685 MT 2015-16 :223025 MT. 2016-17: 294830 MT 2017-18: 291458 MT	Nil

3q	General remarks of inspecting officers on method of mining etc.	NA	Mining is being carried as per approved Mining plan.	Nil

Solid Waste Management - Dumping:

Sl.No.	Item	Propasals	Actual work	Remarks
4a	Separate dumping of topsoil, OB and mineral rejects (Rule 32,33)	No such proposal	Concurrent backfilling of mined out quarries and spread of top soil over them is in practice.	Nil
4b	Location of topsoil, OB and mineral reject dumps	No such proposal	Concurrent backfilling of mined out quarries and spread of top soil over them is in practice.	Nil
4c	Number of dumps within lease area and outside of lease area	No such proposal	Two waste dumps are existing near quarry no.1 i.e on non mineralised area.	Nil
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	No proposal for dumping, concurrent backfilling proposed.	Two existing dumps are in the eastern side near Quarry no -1.	Nil
4e	Number of active and alive dumps.	No such proposal	Two existing dumps are in the eastern side near Quarry no -1.	Nil
4f	Number of dead dumps.	No such proposal	No dead dumps in the lease area.	Nil
4g	Number of dumps established.	No such proposal	Not Applicable	Nil
4h	Whether Retaining wall or garland drain all along dumps are there.	No such proposal	No retaining wall or Garland drain existed in the lease area.	Nil
4i	Length of Retaining wall or garland drain all along dumps	No such proposal	Not Applicable	Nil
4j	Number of settling ponds	No such proposal	No settling pond in the lease area.	Nil

4k	Specific comments of inspecting officer on waste dump management	No such proposal	Two existing active waste dump exist in the lease area.Near Quarry no 1 and 4B two ponds are there , have been converted into water reservoir ,used for agricultural purpose.	Nil

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.	Simultaneous backfilling was proposed in quarry no-4F and 5.	Simultaneous backfilling is practiced in quarry no 4F and 5.	Nil
5b	Area under backfilling of mined out area	Proposed area to be backfilled during 2017-18 was in quarry no 4F and 5. covering an area of 5.97 ha.	Area backfilled during 2017-18 was 6.93 ha	Nil
5c	Concurrent use of topsoil for restoration or rehabilitation of mineral out area (Rule 32)	Simultaneous backfilling and spreading of top soil over them proposed in the approved scheme of mining.	Top soil used concurrently for restoration or rehabilitation of mined out areas.	NIl
5d	Total area fully reclaimed and rehabilitated	Total area proposed to be reclaimed during 2017-18 was 5.97 ha	Total area fully reclaimed against proposal was 6.93 ha during 2017-18.	Nil
5e	General remarks of inspecting officers on backfilling and reclamation etc.	Simultaneous backfilling and spreading of top soil over them proposed in the approved scheme of mining.	Mining and backfilling are being carried as proposed in approved document.	Nil

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).	Lessee has submitted Annual on PMCP report in time.	Lessee has submitted Annual on PMCP report in time.	Nil
6b	Area available for rehabilitation (ha) .	Proposed area for rehabilitation was 0.5 ha through plantation.	A cumulative of 9.09 ha area was rehabilitated by backfiling and plantation and 1.38 ha was by creating water reservoir till the end of the year.	Nil
6c	afforestation done (ha).	About 1000 saplings was proposed to be planted during 2017-18 covering an area of 0.5 ha..	As on 01.04.2017, a total of 24500 nos. of trees were planted over an area of 9.09 ha. The survival rate reported was around 60%. During the year 2015-16 to 2017-18, about 13600 nos of trees were planted over an area of 6.50 ha. The average survival rate reported was around 80%.	Nil
6d	No. of saplings planted during the year	About 1000 saplings was proposed to be planted during 2017-18 covering an area of 0.5 ha..	About 5000 saplings were planted during 2017-18, covering an area of 2.5ha. The survival rate reported was around 80%.	Nil
6e	Cumulative no .of plants	A cumulative of 26600 nos, of trees were proposed to be planted during the plan period 2014-15 to 2018-19.	A cumulative of 30000 nos. of trees were planted till the end of 2017-18.	Nil
6f	Any other method of rehabilitation	No such proposal	Quarry no 1 and 4B have been converted into water reservoir ,used for agricultural purpose.	Nil
6g	Cost incurred on watch and care during the year	Not Available.	Not Available.	Nil

6h	Compliance on reclamation and rehabilitation by backfilling (i) Voids available for backfilling (Lx B x D	Total area proposed to be backfilled during 2017-18 was 5.97 ha.	A total of 6.93 ha area was backfilled against proposed area of 5.97 ha during the year 2017-18.	Nil
6i	Compliance on reclamation and rehabilitation by backfilling (ii) Voids filled by waste / tailings	Total area proposed to be backfilled during 2017-18 was 5.97 ha.	A total of 6.93 ha area was backfilled against proposed area of 5.97 ha during the year 2017-18.	Nil
6j	Compliance on reclamation and rehabilitation by backfilling (iii)Afforestation on backfilled area	About 1000 saplings was proposed to be planted during 2017-18 covering an area of 0.5 ha..	About 5500 saplings were planted during 2017-18 covering an area of 2.5 ha. The survival rate reported was around 80%.	Nil
6k	Compliance on reclamation and rehabilitation by backfilling (iv) Rehabilitation by making water reservoir	No such proposal	Quarry no 1 and 4B have been converted into water reservoir ,used for agricultural purpose.	Nil
6l	Compliance on reclamation and rehabilitation by backfilling (v)any other specific means.	No such proposal	Quarry no 1 and 4B have been converted into water reservoir ,used for agricultural purpose.	Nil
6m	Compliance of rehabilitation of waste land within lease (i)afforestation	No such proposal	5500 spplings were palnted during 2017-18 covering an area of 2.5 ha.The survival rate reported was around 80%.	Nil
6n	Compliance of rehabilitation of waste land within lease (ii)Area rehabilitation (ha)	No such proposal	Not Applicable	Nil
6o	Compliance of rehabilitation of waste land within lease (iii)Method of rehabilitation	Not Applicable	Not Applicable	Nil

6p	Compliance of environmental monitoring (core zone and buffer zone)	Proposal was there to quarterly monitoring of air,water and noise data.	Quarterly monitoring of air,water and noise data carried.	Nil
6q	General remarks of inspecting officers on PMCP compliance and progressive closure operations etc.	No such proposal	Lessee has made every effort to comply the provisions of PMCP as per approved document. Outmost care taken for preserving environment and conservation of mineral resources.	Nil

Mineral Conservation:

Sl.No.	Item	Propasals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	No such proposal for grade wise sorting within the lease area.	Only manual sorting and sizing are done before dispatch.	Nil
7b	Method of grade-wise mineral sorting i.e. manual or mechanical.	Manual method of sorting was proposed in approved document.	ROM manually sorted, sized and low grade ore blended with high grade ore before dispatch.	Nil
7c	Different grade of mineral sorted out at mines.	No such proposal	ROM manually sorted, sized and low grade ore blended with high grade ore before dispatch.	Nil
7d	Any beneficiation process at mines .	No proposal of beneficiation at mines.	No beneficiation carried at mines.	Nil
7e	General remarks of inspecting officer on Mineral conservation and beneficiation issues	No such proposal	This is a captive mine and as such there is no issue of conservation of mineral resources as High grade ore blended with low grade ore and dispatched to Alumina plants. No Subgrade or reject generation is reported from the mine.	Nil

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.	Nil
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 to spreading over backfilled areas.	Nil
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	Proposal was there to remove top soil separately and spread over minedout backfilled area concurrently.	OB and waste rock so removed is used for backfilling of mined out areas.	Nil
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	Proposal was there to remove top soil separately and spread over mined out backfilled area concurrently for restoring the land to its original use:	All waste rock, fines etc used concurrently for backfilling of mined out areas and spreading of top soil for restoring the land for its original use.	Nil
8e	Phased restoration, reclamation and rehabilitation of lands affected by mining operations (Pits, dumps etc)	Proposal was there for phased restoration ,reclamation and rehabilitation of land affected by mining operation.	Backfilled mined out areas are reclaimed and rehabilitated by afforestation and making them reservoir to be used for agricultural purpose.	Nil

8f	Baseline information on existence of plantation and additional plantation done (Rule 41)	Proposal was there to backfil 5.97 ha during 2017-18 and plant 1000 saplings .covering an area of 0.50 ha..	As on 31.03.2018 total broken area 64.33 ha,Total reclaimed area 44.66 ha, total area covered under plantation9.09 ha.	Nil
8g	Survival rate	No such proposal	Reported survival rate during 2017-18 was about 80%.	Nil
8h	Water sprinkling on roads to control airborne dust	Proposal was there to deploy water sprinkler on roads to control airborne dust.	Water sprinkler is used regularly on roads to control airborne dust	Nil
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	No such proposal	Concurrent backfilling and spread of top soil and afforestation over them to keep aesthetic beauty around mine area. excellent	Nil

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.	Nil
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	As per Annual return 2017-18 Sri A. Anbarasu is Mining Engineer cum Mines manager and Sri Ratikant Behra is Geologist.	Sri A.Anarbasu is Mining Engineer cum Mines manager and Sri Ratikant Behra is Geologist.	Nil

9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	As per Annual Return2017-18,area already exploited & abondened by opencast-47.73 ha , Area covered under current (O/C)-10.92ha, Area reclaimed/rehabiliated-36.81 ha, Area used for progressive mine closure plan -6.93 ha,and Road and building-1.62ha.	As per Annual Return2017-18,area already exploited & abondened by opencast-47.73 ha , Area covered under current (O/C)-10.92ha, Area reclaimed/rehabiliated-36.81 ha, Area used for progressive mine closure plan -6.93 ha,and Road and building-1.62ha.	Nil
9d	Scrutiny of Annual return on afforestation	As per Annual return 5500 trees planted during 2017-18 with survival rate 60%.	As per Annual return 5500 trees planted during 2017-18 with survival rate 60%. seems to be correct.	Nil
9e	Scrutiny of Annual return on mineral reject generation (Grade and quantity)	Reject Generation was nil.	No reject is generated.	Nil
9f	Scrutiny of Annual return on ROM stock and/or graded ore	As per annual return 2017-18 OS -32.81 MTl, CS-148.88 MT, ROM production-291458.00 MT and despatch-291341.93 MT	As per annual return 2017-18 OS -32.81 MTl, CS-148.88 MT, ROM production-291458.00 MT and despatch-291341.93 MT	Nil
9g	Scrutiny of Annual return on sale value, Ex. Mine price and production cost	It is a captive mine of M/s Hindalco Industries Ltd, Ex-mine price -913.25/MT, Cost of production-913.25/-MT	It is a captive mine of Hindalco,Cost of production-913.25/-MT. It seems to be correct.	Nil

9h	Scrutiny of Annual return on fixed assets	Value of fixed assets as furnished in AR 2017-18 was on fixed assets Rs 278554834 /-.	Value of fixed assets as furnished in AR 2017-18 was on fixed assets Rs 278554834 /-.	Nil
9k	Scrutiny of Annual return on mining machineries	As per Annual return, Mining machinery used during 2017-18 was; SHOVEL (HYDRAULIC): 0.9cum-01 SHOVEL (HYDRAULIC):2.1cum-01 SHOVEL (HYDRAULIC): 1.7 cum -01 WHEEL LOADER: 1.8 cum-02 DUMPER: 25 T-06 DUMPER: 8.00 T -02 AIR COMPRESSOR-450 cum/min-03 ROCK DRILL (NON-ELEC.)-100mm-01 ROCK DRILL (NON-ELEC.)-63.5mm-01 WATER TANKER-5000 Litre-01	As per Annual return, Mining machinery used during 2017-18 was; SHOVEL (HYDRAULIC): 0.9cum-01 SHOVEL (HYDRAULIC):2.1cum-01 SHOVEL (HYDRAULIC): 1.7 cum -01 WHEEL LOADER: 1.8 cum-02 DUMPER: 25 T-06 DUMPER: 8.00 T -02 AIR COMPRESSOR-450 cum/min-03 ROCK DRILL (NON-ELEC.)-100mm-01 ROCK DRILL (NON-ELEC.)-63.5mm-01 WATER TANKER-5000 Litre-01	Nil

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 :

(**SAGAR BODRA**)

Indian Bureau of Mines