

**REPORT ON CHECK INSPECTION OF HISRI NEW BAUXITE MINE (14.55) OF  
LESSEE M/s HINDALCO IND. LTD. IN VILLAG- HISRI, DISTRICT-  
LOHARDAGA**

**Name and designation of inspecting officer** : Shri Anupam Nandi (RCOM Ranchi)

**Date of Inspection** : 04.03.2020

**1. General information of the mine:**

- i) Name of mine : Hisri New Bauxite Mine (14.55 ha)
- ii) Owner : A.K.Agarwala
- iii) Nominated Owner : A.K.Agarwala
- iv) Mining Engineer : Shri Manoj Nayak
- v) Agent : Shri Bijesh Jha
- vi) Mine Manager : Shri Ajay Kr. Pandey
- vii) Lease Area : 14.55 Hact
- viii) Location : Village-Hisri, P.S.- Kisko, District- Lohardaga
- ix) Lease Period : upto 2030
- x) Date of Expiry : 31.03.2030
- xi) Date of approval of Mining Plan: 19-03-2020
- xii) Date of approval of scheme :
- xiii) Period of Mining Plan : 31.03.2025  
Scheme of Mining
- xiv) Production (Year 2018-19) : 90674 (tonne)

## 2. Brief description of the mine:

a. The bauxite bearing areas of Jharkhand belongs to the Indian Peninsula. It consists mainly of Chotanagpur Granite Gneiss associated with intrusions of quartzite, older rocks and Deccan traps. Ranchi plateau is the main topographic unit in the area with altitudes between 960 m And 1075 m above MSL, capped with laterite and bauxite. Bauxite deposits are the result of Silica leaching process of alumina rich rocks and it occurs in forms of an extensive blanket below the laterite cover on the flat topped. It also occurs as segregation, discontinuous boulders and in blanket form over laterite residuum. The thickness of the deposits in the ranges from 1 m -18 m with an average thickness of 6 meters. Under suitable condition of weathering. Chemical alteration and leaching through geological time, the parent rocks have giving rise laterite and bauxite residuum. The parent rocks which may give rise to bauxite are silicate rocks with high alumina and less of silica . Granite – Gneiss in association with intrusions of quartzite and older basic rocks is the main source rock in the area . The Gondwana formation is present in the northern part of the Ranchi upland. The Pre Cambrian rocks in Singhbhum lie in the south. At the western side of Jharkhand, Deccan trap is exposed where Laterite / Bauxite have been reported as cappings. At the eastern side, Laterite appears on the peneplained surface of older rocks. The oldest rock belongs to Dharwar. It is in turn intruded by the batholithic mass of Chotanagpur granite and further metamorphosed into various schistose and gneissic rocks. The generalized stratigraphy of the study area is illustrated below (Roy Chodhury ,1958)

<b>Recent</b>		Alluvium ,Conglomerate & Carbonaceous shale
<b>Tertiary to Recent</b>		Laterite, Bauxite and Lithomerge
<b>Upper Cretaceous</b>	Deccan Trap	Basaltic lavas
	Intratrappean	Calcified – Silicified rocks and grit
<b>Cuddapah and Earlier</b>	Chotanagpur Granite Gneiss	Newer Dolerite Vein rocks , Pegmatite or Graphic granite Aplite , Quartzveins and quartz-tourmaline rock Pseudo-Diorite
<b>Archean</b>		Granites and Gneisses Diorite Ultrabasic igneous rocks
	Dharwar	Phyllites, Mica-schist, Quartzites, Lime-Silicate rocks and Basic rocks.

### General Geology :

The proposed area forms almost a rectangular map of land that exposes bauxites, laterites in the escarpment section, slopes and surface. In the area as seen in the

Eastern and western as well as northern and southern part of the area both in the escarpment sections & plateau region. The central part is soil cover. A generalized section as per borehole is characterized as follows:

Soil & Morrum	:0.30 – 4.57 m
Ferruginous Laterite	: 0.76 – 17.53 m
Bauxite	: 1.52 – 12.95 m
Ferruginous / Aluminous Laterite	: 0.76 – 8.38 m
Clay	: 0.11 – 3.00 m

Litho merge could not be seen in the area. Laterites are red, hard compact, massive masses with vesicles, scoriaceous, ferruginous laterite (morrum). Segregation of Bauxite has been found mostly just beneath the pisolitic laterite (morrum). The top surface, a perfect plateau is in general covered with soil and morrum.

It is evident from the Plate no. 5 that the entire laterite overlain by soil has been mapped. The laterite mass are sometimes Aluminous ( $< 38\% \text{Al}_2\text{O}_3$ ) whereas top surface is somewhere covered up by laterite & bauxite. Lithological section as measured in different in the area have been represented in Plate no. 5.

Three types of bauxite occurrences are observed in the area:

- (i) Segregation in laterites mainly metal grade massive bauxite in the entire area.
- (ii) Bouldary low-grade aluminous laterite occurring as parting.
- (iii) Powdery & boulders of Gibbsite

The Bauxite deposits in the area are not so extensive and continuous and limited in the area mainly. Mineralogically, the bauxite is both boehmitic and gibbsitic and is found suitable for low temperature and low pressure leaching by American Bayer's Process. The material at Hisri (New) area is quite suitable for supply to its captive plant at Muri.

b. Description on deployment of mining machinery may be given in the following format.

b) Deployment of mining machinery:  
**Departmental**

Sl No	Machineries deployed	Capacity	Number of Units	In use	Idle	Percentage Of utilization	Brief description	Remarks
1	Excavator	0.9 Cum	1	Excavate the OB & ore		85%	Make-TELCON INDIA Model-210 LCH	
2	Excavator	1.7 Cum	1	Excavate the OB & ore		88%	Make-TELCON INDIA Model-350 LCH	
4	Dumper	25 tonne	2	Dumb the material		85%	Make- CIPL, INDIA Model- TEREX 1025	
5	Dumper	25 tonne	1	Dumb the material		88%	Make- HINDUSTAN, INDIA Model- TEREX 1025	
6	Dumper	32 tonne	1	Dumb the material		85%	Make- TATA PRIMA 2528K,INDIA Model- TATA HYVA	
7	Crusher Large Double Jaw	120 tph	1	Crush the material		85%	Make- Greundler USA	
8	Impact crusher	200 TPH	1	Crush the material		80%	Sandvik	
9	Crawler Drill	115mm dia	1	For drilling		70%	Make- Atlas Copco Model- ROC 203 PC	
10	Air Compressor	450 cfm	1	For drilling		70%	Make- Atlas Copco Model- XAH-210	
11	Auger Drill	8" dia	1				Make- CLO ZIRONI, Brazil Model- CR-10	
12	Aerial Ropeway, Monocable	45 tph		Transport bauxite to unloading station		80%	Make- BRECO , USA	

**Contractual**

Sl No	Machineries deployed	Capacity	Number of Units	In use	Idle	Percentage Of utilization	Brief description	Remarks
1	JH01 BC7117 (DUMPER)	6 cum	1	Dumb the material		80%	Make TATA	
2	PB12 K 7267(DUMPER)	6 cum	1	Dumb the material		80%	Make TATA	
3	JH 05 U 0441(DUMPER)	6 cum	1	Dumb the material		80%	Make TATA	
4	AP 01 Y6263(DUMPER)	6 cum	1	Dumb the material		80%	Make TATA	
5	JH 05 U 0439(DUMPER)	6 cum	1	Dumb the material		80%	Make TATA	
6	JH05 U-0438(DUMPER)	6 cum	1	Dumb the material		80%	Make TATA	
7	PB 12 K 7266(DUMPER)	6 cum	1	Dumb the material		80%	Make TATA	
8	AP 01 Y 6262(DUMPER)	6 cum	1	Dumb the material		80%	Make TATA	
9	AP 01 Y 5036(DUMPER)	6 cum	1	Dumb the material		80%	Make TATA	
10	VALVO 300	1.5 cum	1	Excavate the OB & ore		85%	VOLVO	
11	PC-210	0.9 cum	1	Excavate		82%	KOMATSU	

				the OB & ore				
12	LOADER JH 05AH 1501		1	For leveling		70%	L&T	
13	ATLAS COPCO DRILL MACHINE	115 mm dia.	1	For drilling		70%	ATLAS COPCO	

### 3. Implementation of Mining Plan or scheme of Mining:

Sr. No.	Proposal in the approved Mining Plan or Scheme of mining (Period from 2015-16 to 2019-20)	Observations regarding implementation of proposals given in approved Mining Plan or Scheme of mining.	Remarks
1.	<b>CONSERVATION OF MINERALS</b>		
a)	Exploration:	38 boreholes-597.80 meters (2018-19)	No specific proposal for 2018-19
b)	Utilization of subgrade mineral:	Simultaneously Blending.	
c)	Any other proposal for monitoring:		
2.	<b>SCIENTIFIC MINING</b>		
a)	Mine Development and method of mining	Fully Mechanized mining with the combination of Dumper & Excavator.	
b)	Handling of Waste/subgrade material:	Waste is Used for back filling.	


c)	Area reclamation & restoration:	Reclaimed(0.457 ha) and restored by plantation (0.183 Ha) (2018-19)	
d)	Any other proposal for monitoring:		
<b>3.</b>	<b>PROTECTION OF ENVIRONMENT</b>		
a)	Afforestation:	366 saplings (2018-19)	
b)	Quality of Air:	Within permissible limit	
c)	Quality of Water:	Within permissible limit	
d)	Noise Level:	Within permissible limit	
e)	Vibration:	Within permissible limit	
f)	Any other proposal for monitoring:	NA	

**4. History of Violations after approval of Mining Plan or Scheme of Mining:**

Sl. No.	Date of Inspection	Name of Inspecting Officer	Violations of MCDR,88 observed and Pointed out	Rectification of Violations	Remarks
1. 2.	22.08.2018	Shri N. K Chatterjee (AMG)	Rule 33, Rule 35(2) & Rule 55(1)(3)(i)	Complied on 12.11.2018	

**5. Socio-Economic Development Plan: Total 7.03\_ lakh spent for C S R activities during 2018-19.**

Sl. No.	Proposed Action Plan towards Socio-Economic Development	Expenditure Proposed (In Rs. Lakh)	Expenditure Incurred (In Rs. Lakh)	Remarks
1.	General Development in the area			
	i) Housing			
	ii) Water Supply	0.8	1.19	231 beneficiaries
	iii) Sanitation	0.53	0.79	145 beneficiaries
	iv) Health, Safety and Medical Facilities	0.86	1	245 beneficiaries
2.	Education and Training	1.35	1.65	55 beneficiaries
3.	Employment to local inhabitants		95 local manpower	
4.	Public Transportation and communication	0.8	0.95	145 beneficiaries
5.	Recreation and other sports activities	0.55	0.8	85 beneficiaries
6.	Expenditure for environment management		10.12	
7.	Other(Livelihood & socio economical standard improvement support.)	0.57	0.65	27 beneficiaries
	<b>Total:</b>	<b>5.46</b>	<b>17.15</b>	<b>CSR activities.</b>

  
 23/04/2020  
 (Anupam Nandi)

Regional Controller of Mines & Inspecting Officer