

HIL/LHD/ENV/MoEF&CC/414

Date: 24<sup>th</sup> November 2025

To,  
**The Dy. Director General of Forest (C)**  
**Ministry of Environment, Forests and Climate Changes**  
**2nd Floor, Headquarter-Jharkhand State Housing Board**  
**Harmu Chowk, Ranchi, Jharkhand-834002**

**Sub:** Six Monthly EC Compliance Report for Kujam-I (80.87 Ha) Bauxite Mining project of M/s Hindalco Industries Limited, Gumla, Jharkhand for the period from April 2025 to September 2025.

**Ref:** Environmental Clearance Identification No. EC23B001JH143302, dated 21<sup>st</sup> August 2023.

Dear Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for **Kujam-I (80.87 Ha)** Bauxite Mining project of **M/s Hindalco Industries Limited** located in Gumla, Jharkhand for the period from **April 2025 to September 2025** for your kind perusal please.

The lease details are below:

Lease area (ha)	Production Capacity (MT)	Lease Period
80.87	150000	13.03.2006 to 12.03.2056

Hope you will find the same in order.

Thanking You

Yours faithfully,  
For **Hindalco Industries Limited**

**Basudev Gangopadhyay**  
**AVP (Planning, Environment & Compliance)**

Enclosure: - As Above

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**Name of the Project** : **Kujam - I Bauxite Mine (80.87 ha)**  
**M/s Hindalco Industries Limited,**

**EC Identification No & date** : **EC23B001JH143302, dated 21.08.2023.**

**Period of compliance Report** : **From 1<sup>st</sup> April 2025 to 30<sup>th</sup> September 2025**

**A. Specific Conditions**

**Condition 1-This Environmental Clearance is valid subject to the following condition below-  
That this project has**

- a. Obtained all legal rights to operate at concerned place.**
- b. Complied with all existing concerned laws of the land and**
- c. Complied with the decisions of SEIAA on the issue of Environmental Clearance till date.**

**Reply to Condition 1** – Agreed. All the legal rights and laws concerned are already complied with. The decision of SEIAA on the issue of Environmental Clearance are being/ will be complied with.

**Condition 2- Gabion Planation work in the safety zone (7.5 m width around the proposed lease boundary and on either side of approach road in two rows with the spacing of 3x3m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, morality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change. Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.**

**Reply to Condition 2-** Being adhered to. Progressive plantation is being carried out in consultation with local forest Dept. During FY 2025-26 till September, a total of 3250 nos. of saplings have been planted within this lease. Cumulative 9.94 ha areas have been planted till date. In addition to these, agricultural activities (bio plantation) is going on reclaimed land as per the consent from landowners. Safety Zone plantation work is already being carried out. Plant survival rates are being taken care of by regular watering and manuring. Protection of saplings by fencing pillar and chain link fencing is being done. Photographs of plantation and chain link fencing are attached below:



Plantation and Agriculture activities in Safety zone and Reclaimed Area

**Condition 3-** Since this is an existing mine located adjacent to the notified forest land. Therefore 7.5-meter safety zone should be maintained as a special precautionary measure protect the adjoining forest.

**Reply to Condition 3-** Noted and complied. A 7.5-meter safety zone was maintained, and no mining activity was carried out within this zone.

**Condition 4-** No mining/activity shall be undertaken in the forest land or deemed forest without obtaining requisite prior forestry clearance.

**Reply to Condition 4-** Noted. However, there is no forest area in our mining lease area. Therefore, Therefore, there is no need for forest clearance.

**Condition 5-** The project proponent may apply simultaneously for forest and NBWL clearance in order to complete the formalities without undue delay which till process on their respective merits, no rights will vest in or accrue to them unless all clearance are obtained, if applicable.

**Reply to Condition 5-** Noted. However, there is no forest land within the lease hold area. Therefore, there is no need for forest clearance. This mine is also located beyond the ESZ boundary. Hence, NBWL is not applicable for this mine.

## **B. Statutory Compliance**

**Condition 1-** This Environmental Clearance (EC) is subject to orders/ judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law. Common Cause Conditions as may be applicable.

**Reply to Condition 1 –** Noted. However, common cause conditions are not applicable for this mine.

**Condition 2-** In the writ petition (Civil) no. 202/1995, T.N. Godaverman Thirumulpad vs union of India and Ors. the Hon'ble Supreme Court passed an order dated 03.06.2022 " National Park or Wildlife Sanctuary must have an ESZ of minimum 01 km in which the activities prescribed and prescribed in the guidelines of 09th February 2011 shall be strictly adhered to".

**Reply to Condition 2-** Noted. However, this mine is approximately 9 km away from the Mahuadanr ESZ boundary.

**Condition 3-** The Project proponent complies with all the statutory requirements and judgement of Hon'ble Supreme Court dated 2 August 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of common cause versus Union of India & Ors before commencing the mining operations.

**Reply to Condition 3-** Noted. However, common conditions are not applicable for this mine.

**Condition 4-** The Hon'ble Supreme Court vide order dated 08.01.2020 in W.P. (Civil) No. 114/2014 in the mater of Common Cause vs. Union of India has directed that the area which has been mined should be restored so that grass and other vegetation including trees can grow in the mining area for the benefit of animals.

*"The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fil for growth of fodder, flora, fauna etc."*

**Reply to Condition 4-** Agreed. The mine is currently non-operational due to the exhaustion of mineral reserves. The Final Mine Closure Plan (FMCP) has been approved by the Indian Bureau of Mines (IBM). In accordance with the approved FMCP, mine closure activities are being carried out, including land reclamation, plantation, re-grassing, construction of a rainwater harvesting pond, and facilitation of agricultural activities. These efforts aim to restore the mined-out area, enabling the growth of grass, vegetation, and trees for the benefit of local wildlife and the surrounding ecosystem.

**Condition 5-** The State Government concerned shall ensure that mining operation shall not be commenced till the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of Judgement of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors.

**Reply to Condition 5-** There had been no illegal mining involved. Hence, there is no demand from the State Government regarding common cause matter for Kujam I bauxite mine.

**Condition 6-** This Environmental Clearance shall become operational only after receiving formal NBWL Clearance from MoEF&CC subsequent to the recommendations of the Standing Committee of National Board for Wildlife, if applicable to the Project.

**Reply to Condition 6-** Noted. However, this mine is located beyond the ESZ boundary. Hence, NBWL Clearance is not applicable for this mine.

**Condition 7-** This Environmental Clearance shall become operational only after receiving formal Forest Clearance (FC) under the provision of the Forest Conservation Act, 1980. If applicable to the Project.

**Reply to Condition 7-** Noted. However, no forest area is involved in the lease area. Hence, this condition is not applicable for this mine.

**Condition 8-** Project Proponent (PP) shall obtain Consent to Operate after grant of EC and effectively implement all the conditions stipulated therein. The mining activity shall not commence prior to obtaining Consent to Establish / Consent to Operate from the concerned State Pollution Control Board.

**Reply to Condition 8-** Noted. Valid CTE and CTO have already been received from JSPCB, Ranchi.

**Condition 9-** The PP shall adhere to the provision of the Mines Act, 1952, Mines and Mineral (Development & Regulation) Act, 2015 and rules & regulations made there under. PP shall adhere to various circulars issued by Directorate General Mines Safety (DGMS) and Indian Bureau of Mines from time to time.

**Reply to Condition 9-** The mine is currently non-operational due to the exhaustion of mineral reserves. The Final Mine Closure Plan (FMCP) has been approved by the Indian Bureau of Mines (IBM). In accordance with the approved FMCP, mine closure activities are being carried out and all the provisions and regulations made under Mines Act, 1952 and MMDR Act, 2015 and various circulars issued by Directorate General Mines Safety (DGMS) and Indian Bureau of Mines are being adhered to.

**Condition 10- The Project Proponent shall obtain consent from all the concerned landowners. Before mining operations, as per the provisions of the MMDR Act, 1957 and rules made there under in respect of lands which are not owned by it.**


**Reply to Condition 10-** The mine is currently non-operational due to the exhaustion of mineral reserves. The Final Mine Closure Plan (FMCP) has been approved by the Indian Bureau of Mines (IBM). The entire land was acquired in accordance with applicable laws while the mine was operational.

**Condition 11- The Project Proponent shall follow the mitigation measures provided in MoEF & CC's Office Memorandum No. Z-1013/57/2014-IAJI (M), dated 29th October, 2014 titled "Impact of mining activities on Habitations-Issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area".**

**Reply to Condition 11-** Noted and being adhered to.

**Condition 12- The Project Proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water and from CGWA for withdrawal of ground water for the project.**

**Reply to Condition 12-** Noted. We have obtained NOC for withdrawal of groundwater from CGWA/CGWB for drinking purposes only. The Scan copy of the same NOC is attached below.

  
नदी बोर्ड  
जल संसाधन, नदी प्रबंधन  
और जल संचयन विभाग  
भारत सरकार  
Ministry of Jal Shakti  
Department of Water Resources,  
River Development & Ganga Rejuvenation  
Central Ground Water Authority

(मुख्य निष्कर्षी हेतु अनापत्ति प्रमाण पत्र)  
**NO OBJECTION CERTIFICATE (NOC) FOR GROUND WATER ABSTRACTION**

Project Name:	Kujam-1 Bauxite Mining Project (80.87 Ha)				
Project Address:	Kujam-1 Bauxite Mining Project, Vill - Kujam, Chalam, Dewnaghi, Tehsil - Raxvaipur				
Village:	Kujam	Block:	Bishunpur		
District:	Garhwa	State:	Jharkhand		
Pin Code:					
Communication Address:	Hindalco Industries Ltd, Hindalco Complex, Coast Road Lohardaga, P.O. Lohardaga, Lohardaga, Lohardaga, Jharkhand - 835302				
Address of CGWA Regional Office:	Central Ground Water Board Mid Eastern Region, 6th & 7th Floor, Lok Nayak Jai Prakash Bhawan, Fraser Road Oak Banglow, Patna, Bihar - 800011				

1. NOC No.:	CGWA/NOC/MIN/REN/2/2023/0366	2. Date of Issuance:	11/10/2023
3. Application No.:	21.4/1864/4/MIN/2019	4. Category:	Scale
5. Project Status:	Existing Ground Water	6. Category:	(CGWA-2022)
7. Valid from:	12/12/2023	8. NOC Type:	Renewal
9. Valid up to:	11/12/2026		

9. Ground Water Abstraction Permitted:							
Fresh Water		Saline Water		Dewatering		Total	
m <sup>3</sup> /day	m <sup>3</sup> /year	m <sup>3</sup> /day	m <sup>3</sup> /year	m <sup>3</sup> /day	m <sup>3</sup> /year	m <sup>3</sup> /day	m <sup>3</sup> /year
9.50	3467.50						

10. Details of ground water abstraction /dewatering structures											
Total Existing No.:1						Total Proposed No.:0					
DW	DCR	BW	TW	MP	MPu	DW	DCR	BW	TW	MP	MPu
0	0	1	0	0	0	0	0	0	0	0	0

DW: Dug Well, DCR: Dug-cum-Riser Well, BW: Bore Well, TW: Tube Well, MP: Minor PUMP, MPu: Minor Pumps

11. Ground Water Abstraction/Restoration Charges paid (Rs.):	6626.00
12. Environment Compensation (if applicable) paid (Rs.):	0.00

(Compliance Conditions, given overleaf)  
This is an auto generated document & need not to be signed.

18/11, 4th Floor, 4th Floor, 4th Floor, 4th Floor - 110011 / 110011, Janapada House, Mandir Road, New Delhi 110011  
Phone: (011) 23022851 Fax: 23022851, 2306712  
Website: cgwa.gov.in  
पानी बचाओ - जीवन बचाओ  
SAVE WATER - SAVE LIFE

NOC for Ground water Extraction



**Condition 13- A copy of EC letter will be marked to concerned Panchayat / local NGO etc. if any from whom suggestion / representation has been received while processing the proposal.**

**Reply to Condition 13-** Noted. The EC letter has been submitted to DC Office, DIC office, RO, MoEF&CC, concerned Panchayat office, MS, JSPCB. Acknowledgment copy of the same is attached herewith as **Annexure-8**.

**Condition 14- State Pollution Control Board/Committee shall be responsible for display of this EC letter at its Regional office, District Industries Centre, and Collector's office/ Tehsildar's Office for 30 days.**

**Reply to Condition 14-** Noted. The EC Letter has been submitted to JSPCB for display of same at its Regional office and other government offices. Acknowledgment copy of the same is attached herewith as **Annexure-8**.

**Condition 15- The Project Authorities should widely advertise the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of the clearance letter mentioning that the instant project has been accorded EC and copy of the EC letter is available with the State Pollution Control Board/Committee and website of the Ministry of Environment, Forest and Climate Change ([www.Environmentclearance.nic.in](http://www.Environmentclearance.nic.in)). A copy of the advertisement may be forwarded to the concerned MoEF & CC Regional Office for compliance and record.**

**Reply to Condition 15-** Noted and complied. The information regarding grant of EC has been published in two local newspapers, namely “Hindustan” and “Hindustan Times.” Copies of the advertisement in local newspapers have already been submitted to the Regional Office of MoEF&CC, Ranchi and JSPCB, Ranchi along with the Six-monthly EC compliance report, vide letter no. HIL/LHD/ENV/MoEF/433 dated 25.11.2023. The copy of the same advertisement in the newspapers is attached below.

**पर्यावरण स्वीकृति के संबंध में**

हिण्डालको इण्डस्ट्रीज लिमिटेड की कुजाम 1 बॉक्ससाईट खदान (क्षेत्रफल : 80.87 हे०), बॉक्ससाईट 150000 टी.पी.ए की उत्पादन क्षमता के साथ गांव : कुजाम, देवरागिनी और चाटम, तालुका बिशुनपुर, जिला, गुमला, झारखंड का एस.ई.आई.ए.ए. झारखंड से पुनः मान्य ईसी प्रदान किया गया है।

**पर्यावरण स्वीकार करेक बारे में**

हिण्डालको इण्डस्ट्रीज लिमिटेड कर कुजाम 1 बॉक्ससाईट खदान (क्षेत्रफल : 80.87 हे०), बॉक्ससाईट 150000 टी.पी.ए कर उत्पादन क्षमता कर साथे गांव : कुजाम, देवरागिनी और चाटम, तालुका बिशुनपुर, जिला, गुमला, झारखंड कर एस.ई.आई.ए.ए. झारखंड बट से फिर से मानके ले फिन से ईसी देवल गेले है।

Advertisement in the “Hindustan” Newspaper

**पर्यावरण स्वीकृति के संबंध में**

हिण्डालको इण्डस्ट्रीज लिमिटेड की कुजाम 1 बॉक्ससाईट खदान (क्षेत्रफल : 80.87 हे०), बॉक्ससाईट 150000 टी.पी.ए की उत्पादन क्षमता के साथ गांव : कुजाम, देवरागिनी और चाटम, तालुका बिशुनपुर, जिला, गुमला, झारखंड का एस.ई.आई.ए.ए. झारखंड से पुनः मान्य ईसी प्रदान किया गया है।

**पर्यावरण स्वीकार करेक बारे में**

हिण्डालको इण्डस्ट्रीज लिमिटेड कर कुजाम 1 बॉक्ससाईट खदान (क्षेत्रफल : 80.87 हे०), बॉक्ससाईट 150000 टी.पी.ए कर उत्पादन क्षमता कर साथे गांव : कुजाम, देवरागिनी और चाटम, तालुका बिशुनपुर, जिला, गुमला, झारखंड कर एस.ई.आई.ए.ए. झारखंड बट से फिर से मानके ले फिन से ईसी देवल गेले है।

Advertisement in the “Hindustan Times” Newspaper

**Condition 16-** The Project Proponent shall inform the MoEF&CC for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred then mining operation shall only be carried out after transfer of EC as per provisions of the para 11 of EIA Notification. 2006 as amended from time to time.

**Reply to Condition 16-** Noted and it will be informed if applicable.

**Condition 17-** In all Stone Mining projects, depending upon the air pollution estimates based upon fuel Use in operations and activities of the respective projects; required monitoring station-based air quality monitoring shall be done in the influence area of the project with needed mitigation conditions to ensure sustainable Stone mining as per guidelines, circulars and norms of MOEFCC / Hon'ble NGT or any other directives of regulatory / statutory bodies and competent Courts.

**PP to take preventive steps to avoid flash flood conditions arising from mining operations and probably run off in rainy season conditions.**

**Reply to Condition 17-** This is not a stone mine. It is a bauxite mine and all the mitigation measures are being taken to prevent air pollution in Kujam I Bauxite Mine. The mine is currently non-operational due to the exhaustion of mineral reserves. The Final Mine Closure Plan (FMCP) has been approved by the Indian Bureau of Mines (IBM). In accordance with the approved FMCP, mine closure activities are being carried out.

As shallow depth mining had been carried out, there was no chance of flash flood conditions arising from mining operations.

**Condition 18-** PP shall maintain minimum distance from Reserved / Protected Forests as stipulated in applicable guidelines.

**Reply to Condition 18-** Noted and adhered. The mine is currently non-operational due to the exhaustion of mineral reserves. The Final Mine Closure Plan (FMCP) has been approved by the Indian Bureau of Mines (IBM).

**Condition 19-** All statutory clearances shall be obtained before the start of mining operations.

**Reply to Condition 19-** All statutory clearances were obtained.

### **C. Air Quality monitoring and preservation**

**Condition 1-** The Project Proponent shall install a minimum of 3 (three) online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2 (two) in downwind direction based on long term climatological data about wind direction such that an angle of 120° is made between the monitoring locations to monitor critical parameters. relevant for mining operations, of air pollution viz. PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>2</sub>, CO and SO<sub>2</sub> etc. as per the methodology mentioned in NAAQS Notification No. B-2901 6/20/90/PCUI, dated 18.11.2009, covering the aspects of transportation and use of heavy machinery in the impact zone. The ambient air



quality shall also be monitored at prominent places like office buildings, canteen etc. as per the site condition to ascertain the exposure characteristics at specific places. The above data shall be digitally displayed within 03 months in front of the main Gate of the mine site.

**Reply to Condition 1-** We have established four ambient air quality monitoring stations in the core zone as well as buffer zone. Monitoring is being carried out and reported to the concerned authorities. Monitoring Report is attached as **Annexure 2**. A display board is already installed in front of mine gate office. We have already installed an online PM10 analyzer at mine site.

**Condition 2-** Effective safeguard measures for prevention of dust generation and subsequent Suppression (like regular water sprinkling, metal road construction etc.) shall be carried out in areas prone to air pollution wherein high levels of PM10 and PM2.5 are evident such as haul road, loading and unloading point and transfer points. Fugitive dust emissions from all sources shall be regularly controlled by installation of required equipment/ machineries and preventive maintenance. Use of suitable water-soluble chemical dust suppressing agents may be explored for better effectiveness of dust control system. It shall be ensured that the air pollution level conforms to the standards prescribed by the MoEF&CC/ Central Pollution Control Board.

**Reply to Condition 2-** Continuous water sprinkling is being done for dust suppression on haul road. Online PM10 analyser has been installed for regular monitoring purposes. Suitable water-soluble chemical dust suppressing agents will be used in future if required. The photograph of Water Sprinkler is already attached below.



Water Sprinkling on Haul Road

**Condition 3-**Approved devices for dust suppression shall be installed.

**Reply to Condition 3-** USEPA approved online PM10 analyzer has been installed in mine as per the directives of JSPCB. However, dust suppression is also being done by sprinkling water through mobile water tankers.

The photograph of Water Sprinkler is already attached in reply to condition no. 2 of Section-C Air Quality monitoring and preservation.

**Condition 4- Personnel working in dusty areas should be provided with protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed, A detailed report shall be sent to the Pollution Control Board periodically.**

**Reply to Condition 4-** The mine is currently non-operational due to the exhaustion of mineral reserves. The Final Mine Closure Plan (FMCP) has been approved by the Indian Bureau of Mines (IBM). In accordance with the approved FMCP, mine closure activities are being carried out. All the workers have been provided with PPEs including dust mask and dust respirators. Apart from PPEs distribution to all workers, we are also providing adequate safety training and conducting awareness session on Safety and health aspects on regular basis. Periodical Occupational health surveillance program of the workers is being carried out and records maintained for Kujam group of mines. PME report is attached as **Annexure 6**.

**Condition 5- The proponent shall upload the status of compliance of the environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to Jharkhand State Pollution Control Board and its concerned Regional Office. The criteria pollutant levels are namely SPM, RSPM, SO<sub>2</sub>, NO<sub>x</sub> (ambient levels) or critical sectoral parameters, indicated for the project shall be monitored and displayed at a convenient location near the project shall be monitored and displayed at a convenient location near the main gate of the company in the company in the public domain.**

**Reply to Condition 5-** Six-monthly EC compliance along with Environmental monitoring reports is being uploaded on company website regularly. The same is also being submitted to the Regional Office of MoEF&CC, Ranchi and JSPCB, Ranchi. An Environmental Display board is already installed at the Mine Main Gate.

#### **D. Water quality monitoring and preservation:**

**Condition 1- In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from CGWA and MoEF&CC is in place before such mining operations. The permission for intersection of ground water table shall essentially be based on detailed hydro-geological study of the area.**

**Reply to Condition 1-** Noted. As shallow depth mining had been carried out in Kujam I Bauxite Mine. Therefore, Mining operation does not involve intersection of ground water table. However, we are regularly monitoring the ground water table through installation of piezometer. The copy of the same report is attached herewith as **Annexure-1**.

As the water table is not intersecting during mining operation, the detailed hydro-geological study is not applicable for this mine.

**Condition 2-** Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintained. The natural water bodies and or streams which are flowing in and around the village, should not be disturbed. The Water Table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the Project Proponent has to provide water to the villagers for their use. A provision for regular monitoring of water tables in open dug wall located in village should be incorporated to ascertain the impact of mining over ground Water table. The Report on changes in Ground water level and quality shall be submitted on a six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.

**Reply to Condition 2-** Noted. Regular monitoring of drinking water along with stream and spring water is being carried out. As shallow depth mining had been carried out, hence there is no intersection of ground water table during the mining operation at present and in future. A piezometer has been installed in mine for monitoring ground water level. Drinking water is being provided to nearby villages regularly. The Water level and water quality reports are being sent regularly to regional office of Ministry, CGWA and JSPCB. The same is attached herewith as **Annexure 1 & 2**.

**Condition 3-**Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation in consultation with Central Ground Water Authority/ State Ground Water Department. The Report on changes in Ground water level and quality shall be submitted on a six-monthly basis to the Regional Office of the Ministry. CGWA and State Groundwater Department / State Pollution Control Board.

**Reply to Condition 3-** We are not using ground water for any mining purposes. As shallow depth mining had been carried out, hence there is no intersection of ground water table during the mining operation at present and in future. A piezometer has been installed for monitoring of ground water level. The Water level and water quality reports are being sent regular to regional office of Ministry, CGWA and JSPCB. The same is attached herewith as **Annexure 1 & 2**.



Piezometer at Kujam I Mine

**Condition 4-** The Project Proponent shall undertake regular monitoring of natural water course/ water resources/ springs and perennial nallahs existing/ flowing in and around the mine lease and maintain its records. The project proponent shall undertake regular monitoring of water quality upstream and downstream of water bodies passing within and nearby/ adjacent to the mine lease and maintain its records. Sufficient number of gullies shall be provided at appropriate places within the lease for management of water. PP shall carry out regular monitoring w.r.t. pH and included the same in the monitoring plan. The parameters to be monitored shall include their water quality vis-à-vis suitability for usage as per CPCB criteria and flow rate. It shall be ensured that no obstruction and/ or alteration be made to water bodies during mining operations without justification and prior approval of MoEF&CC. The monitoring of water courses/ bodies existing in lease area shall be carried out four times in a year viz. pre- monsoon (April-May), Monsoon (August), post-monsoon (November) and winter (January) and the record of monitored data may be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board. Clearly showing the trend analysis on a six-monthly basis.

**Reply to Condition 4-** Regular monitoring of water quality parameters of natural water course/ water resources/ springs and perennial nallahs existing/ flowing in and around the mine lease is being carried. There are no watercourses/bodies existing in the mining lease area. No natural water bodies are being / will be obstructed due to any mining operations. Monitoring Reports are being sent regular to regional office of Ministry, CGWA and JSPCB on six-monthly basis. The same are attached herewith as **Annexure 2**.

**Condition 5-** Quality of polluted water generated from mining operations which include Chemical Oxygen Demand (COD) in mines run-off acid mine drainage and metal contamination in runoff shall be monitored along with Total Suspended Solids (TDS). Dissolved Oxygen (DO). pH and Total Suspended Solids (TSS). The monitored data shall be uploaded on the website of the company as well as displayed at the project site in public domain, on a display board, at a suitable location near the main gate of the Company. The circular No. J-20012/1/2006-AJI (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change may also be referred to in this regard.

**Reply to Condition 5-** There is no polluted water generated during mining operations. However, a negligible amount of wastewater is generated in the workshop from washing vehicles, and an Oil & grease trap system is already installed for Kujam group of mines to treat this effluent. The treated water is in close circuit and being reused for washing of vehicle in the workshop.

Furthermore, the quality of this treated water is being monitored regularly and all water parameters are within permissible limits. The monitoring report is attached herewith as **Annexure- 2**

The monitoring report is being uploaded on company website along with Six-monthly EC Compliance report regularly. An Environmental Display board is already installed at the Mine Main Gate.

**Condition 6-** Project Proponent shall plan, develop and implement rainwater harvesting measures on long term basis to augment ground water resources in the area consultation with Central Ground Water Board/ State Groundwater Department. A report on amount of water recharged needs to be submitted to Regional Office MoEF&CC annually.

**Reply to Condition 6-** Rainwater harvesting pond with proper fencing has been already constructed on long term basis to augment ground water in the area, in consultation with Central Ground Water Board. Photographs of the same have been attached below. Water Positivity study of Kujam Groups of Mines (Kujam I and II) has been carried out recently. Total amount of water recharge has been found 24,186.09 m<sup>3</sup>/annum.



Rainwater Harvesting Pond in mine

**Condition 7- Industrial wastewater (workshop and wastewater from the mine) should be properly collected and treated so as to conform to the notified standards prescribed from time to time. The standards shall be prescribed through Consent to Operate (CTO) issued by concerned State Pollution Control Board (SPCB). The workshop effluent shall be treated after its initial passage through Oil and grease trap.**

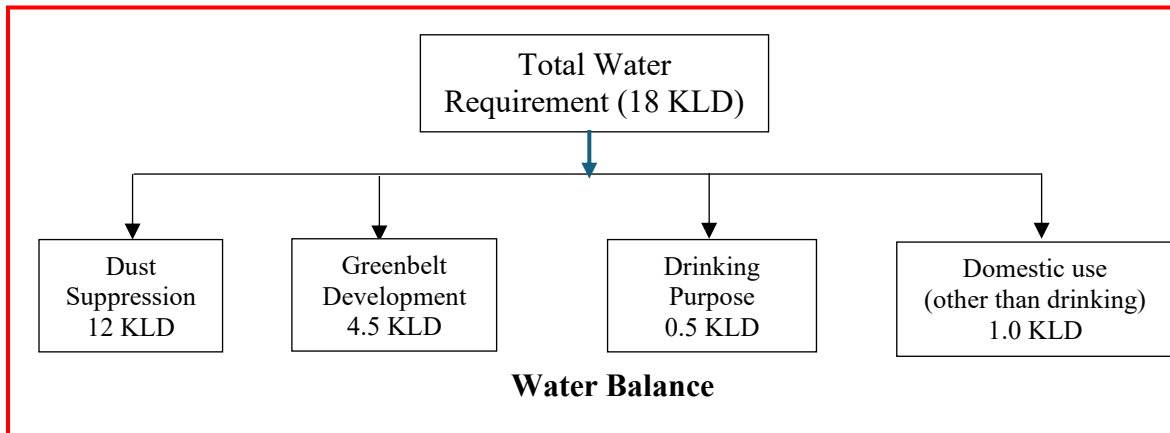
**Reply to Condition 7-** There is no industrial wastewater generation from the mining operations, and no wastewater is being discharged outside the mine lease area. However, a negligible amount of wastewater is generated in the workshop from vehicle washing activities within the Kujam Group of Mines. An oil and grease trap system has been installed for the treatment of this effluent. The treated water is maintained in a closed-loop system and is being reused for vehicle washing in the workshop. Furthermore, the quality of the treated water is monitored regularly, and all parameters remain within permissible limits. The monitoring report is attached herewith as **Annexure-2**



Washing ramp with Oil and Grease Trap

**Condition 8-** The water balance/water auditing shall be carried out and measures for reducing the consumption of water shall be taken up and reported to the Regional Office of the MoEF&CC and State Pollution Control Board/Committee.

**Reply to Condition 8-** Noted. The water balance for the mine is given below. We are taking water from rainwater harvesting pond for sprinkling and other activities. However, we have obtained NOC from CGWA/CGWB for drinking purposes only. However, we have conducted water study for Netarhat group of mines and prepared a report. Based on the water study this mine has been turned out to be a water positive mine.



**Condition 9-** The mining operations shall be restricted to ground above the water table, and it should not intersect the groundwater table. In case of working below the ground water table. Prior approval of the Ground Water Directorate, Government of Jharkhand / Central Ground Water Board shall be obtained. Benches height and slope shall be maintained as per approved Mining Plan. The Mining Plan has to be got approved by concerned authorities as per IBM or equivalent agencies. Safety measures shall be adopted in line with DGMS Guidelines.

**Reply to Condition 9-** Noted. We are not using ground water for any mining purposes. There is no chance of intersection of ground water table during mining operations at present and in future as we are practicing shallow depth mining operations. A piezometer has been installed for monitoring of ground water level. The Mining Plan has already been approved by IBM, Ranchi and safety measures like benches height and slope are being maintained as per the guideline by DGMS.

**Condition 10-** The project proponent shall ensure that no natural watercourse and / or water resources shall be obstructed / diverted due to any mining operations. Adequate measures shall be taken for conservation and protection of the first order and the second order streams. If any emanating / passing through the mine lease area during the course of mining operation.

**Reply to Condition 10-** There is no natural watercourse and / or water resources within the mining lease area. As Shallow depth mining methodology was adopted for mining process, there was no impact of mining operation on natural water course.



**Condition 11- The project proponent shall implement approved conservation measures to augment ground water resources in the area in consultation with the Ground Water Directorate, Government of Jharkhand/ Central Ground Water Board.**

**Reply to Condition 11-** A detailed plan to augment groundwater has been prepared, and suitable measures like creation of water harvesting ponds etc., are being taken for the augmentation of groundwater in the area, in consultation with Central Ground Water Board.

**Condition 12- The project proponent shall, if required, obtain necessary prior permission/NOC from the competent authorities for drawl of requisite quantity of water required from the source for the project.**

**Reply to Condition 12-** No Objection Certificate (NOC) for ground water abstraction for Kujam I mine has been obtained for drinking purposes only. The Scan copy of the same NOC is already attached in reply to condition no. 12 of Section - B Statutory compliance.

However, rainwater harvesting pond has been created and used for sprinkling on haul roads and raising plantation. No natural water resource/ground water is being used for mining purposes.

**Condition 13- Suitable rainwater harvesting measures shall be planned and implemented in consultation with the Ground Water Directorate, Government of Jharkhand / Central Ground Water Board.**

**Reply to Condition 13-** Suitable measures such as creation of rainwater harvesting ponds, etc., are implemented in the area, in consultation with the Central Ground Water Board.

#### **E. Noise and vibration monitoring and prevention**

**Condition 1- The peak particle velocity at 500 m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS Guidelines.**

**Reply to Condition 1-** Complied. The mine is currently non-operational due to the exhaustion of mineral reserves. The Final Mine Closure Plan (FMCP) has been approved by the Indian Bureau of Mines (IBM).

**Condition 2- The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed: by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day /night hours.**

**Reply to Condition 2-** Complied. The mine is currently non-operational due to the exhaustion of mineral reserves. The Final Mine Closure Plan (FMCP) has been approved by the Indian Bureau of Mines (IBM). Mining operation was restricted to daytime only. So, there was no disturbance created in the nearby villages regarding illumination and sound.

**Condition 3-**The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The workers engaged in operations of HEMM. etc. should be provided with ear plugs /muffs. All personnel including labours working in dusty area shall be provided with protective respiratory devices along with adequate training, awareness and information on safety and health aspects. The PP shall be held responsible in case it has been found that workers/ personals/ labours are working without personal protective equipment.

**Reply to Condition 3-** Noted. The noise level monitoring is being conducted at a regular interval. The noise level is below the prescribed norms. Report has been attached as **Annexure 2**. All workers engaged in operation have been provided with PPEs. Training in Health and safety is being imparted by the respective officials.

#### **F. Mining Plan:**

**Condition 1-** The Project Proponent shall adhere to the working parameters of the mining plan which was submitted at the time of EC appraisal wherein year-wise plan was mentioned for total excavation i.e. quantum of mineral, waste. over burden, inter burden and topsoil etc. No change in basic mining proposal like mining technology, total excavation, mineral & waste production, lease area and scope of working (viz. method of mining, overburden & dump management, O.B & dump mining, mineral transportation mode. ultimate depth of mining etc.) shall not be carried out without prior approval of the Ministry of Environment Forest and Climate Change which entail adverse environmental impacts even if it is a part of approved mining plan modified after grant of EC or granted by State Govt. in the form to Short Term Permit (STP), Query license or any other name.

**Reply to Condition 1-** Complied. The mine is currently non-operational due to the exhaustion of mineral reserves. The Final Mine Closure Plan (FMCP) has been approved by the Indian Bureau of Mines (IBM).

**Condition 2-** . The Project Proponent shall get the Final Mine Closure Plan along with Financial Assurance approved from Indian Bureau of Mines/Department of Mining & Geology as required under the Provision of the MMDR Act. 1957 and Rules/ Guidelines made there under. A copy of approved final mine closure plan shall be submitted within 2 months of the approval of the same from the competent authority to the concerned Regional Office of the Ministry of Environment, Forest and Climate Change for record and verification.

**Reply to Condition 2-** The Final Mine Closure Plan (FMCP) has been approved by the Indian Bureau of Mines and subsequently submitted to the regional office of the Ministry of Environment, Forest and Climate Change (MoEFCC).

**Condition 3-**The land-use of the mine lease area at various stages of the mining scheme as well as at the end-of-life shall be governed as per the approved Mining Plan. The excavation vis-à-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per the approved mining plan. PP shall ensure the

**monitoring and management of rehabilitated areas until the vegetation becomes self-sustaining. The compliance status shall be submitted half-yearly to the MoEF&CC and its concerning the Regional Office.**

**Reply to Condition 3-** Noted. The mine is currently non-operational due to the exhaustion of mineral reserves. The Final Mine Closure Plan (FMCP) has been approved by the Indian Bureau of Mines (IBM). Monitoring and management of rehabilitated areas is being continued through supervision. Photograph is attached below.



**Reclaimed area**

**Condition 4- No change in mining technology and scope of working should be made without prior approval of the Statutory authorities / Department of Mines, Government of Jharkhand / Jharkhand State Pollution Control Board, Ranchi during the EC period.**

**Reply to Condition 4-** Complied. The mine is currently non-operational due to the exhaustion of mineral reserves. The Final Mine Closure Plan (FMCP) has been approved by the Indian Bureau of Mines (IBM).

**Condition 5- No change in the calendar plan including excavation, quantum of mineral and waste should be made.**

**Reply to Condition 5-** Complied. The mine is currently non-operational due to the exhaustion of mineral reserves. The Final Mine Closure Plan (FMCP) has been approved by the Indian Bureau of Mines (IBM). Data pertaining to excavation, quantum of mineral bauxite etc. are mentioned in the report attached as **Annexure 4**.

**Condition 6- The Project proponent shall make all internal roads pucca as per approved specification of Govt. of Jharkhand and shall maintain a good housekeeping by regular cleaning and wetting of the haul roads and the premises.**

**Reply to Condition 6-** Internal haul road has been provided as per approved specifications. Regular housekeeping and water sprinkling is being carried out for fugitive dust suppression.

**Condition 7- The Project proponent shall maintain register for production and dispatch and submit return to the Board.**

**Reply to Condition 7-** Complied. The mine is currently non-operational due to the exhaustion of mineral reserves. The Final Mine Closure Plan (FMCP) has been approved by the Indian Bureau of Mines (IBM).

**Condition 8- Dispensary facilities for First Aid shall be provided at site.**

**Reply to Condition 8-** Dispensary facilities is available for Kujam Group of Mines. Photographs are attached below.



Dispensary Facility inside mine premises

## G. Land Reclamation

**Condition 1- The Overburden (O.B.) generated during the mining operations shall be stacked at earmarked OB dump site(s) only and it should not be kept active for a long period of time. The physical parameters of the OB dumps are like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by D.G.M.S w.r.t safety in mining operations shall be strictly adhered to maintain the stability of topsoil/OB dumps. The topsoil shall be used for land reclamation and plantation.**

**Reply to Condition 1-** The mine is currently non-operational due to the exhaustion of mineral reserves. The Final Mine Closure Plan (FMCP) has been approved by the Indian Bureau of Mines (IBM). In accordance with the approved FMCP, mine closure activities are being carried out.

At present, there is no overburden (OB) dump within the mine lease area. Mining operations were conducted as per the approved mining plan by IBM and in compliance with the safety guidelines and circulars issued by the DGMS.

Monitoring and management of the rehabilitated areas are being undertaken through effective supervision. Data pertaining to backfilling is enclosed as **Annexure 4**.

**Condition 2- The reject/ waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. The physical parameters of the waste dumps are like height. Width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of waste dumps.**

**Reply to Condition 2-** The mine is currently non-operational due to the exhaustion of mineral reserves. The Final Mine Closure Plan (FMCP) has been approved by the Indian Bureau of Mines (IBM). In accordance with the approved FMCP, mine closure activities are being carried out.

Overburden and waste rock were used for backfilling as per the approved mining plan by IBM. Mining operations were conducted in compliance with the safety guidelines and circulars issued by the DGMS. Monitoring and management of rehabilitated areas is being done through effective supervision. Data pertaining to backfilling is enclosed as **Annexure 4**.

**Condition 3- The reclamation of waste dump sites shall be done in scientific manner as per the Approved Mining Plan cum Progressive Mine Closure Plan.**

**Reply to Condition 3-** The Land reclamation of OB dumps was carried out scientifically as per the approved mining plan.

**Condition 4- The slope of dumps shall be vegetated in a scientific manner with suitable native species to maintain the slope stability, prevent erosion and surface run off. The selection of local species regulates local climatic parameters and helps in adaptation of plant species to the microclimate. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps. The dump mass should be consolidated with the help of dozer/ compactors thereby ensuring proper filling/ leveling of dump mass. In critical areas. use of geo textiles/ geo-membranes / clay liners / Bentonite etc. shall be undertaken for stabilization of the dump.**

**Reply to Condition 4-** Complied. The mine is currently non-operational due to the exhaustion of mineral reserves. The Final Mine Closure Plan (FMCP) has been approved by the Indian Bureau of Mines (IBM). In accordance with the approved FMCP, mine closure activities are being carried out.

At present, there is no overburden (OB) dump within the mine lease area. Mining operations were conducted as per the approved mining plan by IBM

**Condition 5- The Project Proponent shall carry out slope stability study in case the dump height is more than 30 meters. The slope stability report shall be submitted to concerned regional office of MoEF& CC.**

**Reply to Condition 5-** Complied. At present, there is no overburden (OB) dump within the mine lease area. Overburden were used for backfilling as per the approved mining plan by IBM Therefore, this condition is not applicable for this mine.

**Condition 6- Catch drains, settling tanks and ponds of appropriate size shall be constructed around the mine working, mineral yards and Topsoil/OB/Waste dumps to prevent run off of water and flow of sediments directly into the water bodies (Nallah/ River/ Pond etc.). The collected water should be utilized for watering the mine area, roads, green belt development, plantation etc. The drains/ sedimentation sumps, etc. shall be de-silted regularly, particularly after monsoon season, and maintained properly.**

**Reply to Condition 6-** The mine is currently non-operational due to the exhaustion of mineral reserves, and the Final Mine Closure Plan (FMCP) has been approved by the Indian Bureau of Mines (IBM). To collect and manage rainwater during the monsoon season, part of the mined-out area is being used as a settling tank for surface runoff. The stored rainwater is utilized for watering the mine area, roads, greenbelt development, agricultural activities, and sprinkling as required. Catch drains and garland drains of appropriate size have been constructed around the mine pit to prevent the runoff of water and the flow of sediments into nearby agricultural fields and water bodies, wherever applicable.

**Condition 7- Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining which shall also help in providing adequate retention time period thereby allowing proper settling of sediments/ silt material. The sedimentation pits/ sumps shall be constructed at the corners of the garland drains.**

**Reply to Condition 7-** To collect & manage rainwater during monsoon, part of mined out area is used as a settling tank for the runoff. Stored Rainwater is being used for green belt development and sprinkling in the mining lease area.

**Condition 8- The topsoil, if any, shall temporarily be stored at earmarked site(s) within the mine lease only and should not be kept unutilized for long. The physical parameters of the topsoil dumps are like height. width and angle of slope shall be governed as per the approved mining Plan and as per the guidelines framed by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of dumps. The topsoil shall be used for land reclamation and plantation purposes.**



**Reply to Condition 8-** Complied. The mine is currently non-operational due to the exhaustion of mineral reserves. The Final Mine Closure Plan (FMCP) has been approved by the Indian Bureau of Mines (IBM). In accordance with the approved FMCP, mine closure activities are being carried out.

At present, there is no overburden (OB) dump within the mine lease area. Monitoring and management of rehabilitated areas is being continued through supervision.

## **H. Transportation**

**Condition 1- No Transportation of the minerals shall be allowed in case of roads passing through villages habitations. In such cases, PP shall construct a 'bypass' road for the purpose of transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing village/ rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers.**

**Reply to Condition 1-** The mine is currently non-operational due to the exhaustion of mineral reserves. The Final Mine Closure Plan (fugitive) has been approved by the Indian Bureau of Mines (IBM). In accordance with the approved FMCP, mine closure activities are being carried out. Therefore, no transportation of minerals is currently taking place. Earlier Haul Road was constructed for transportation of minerals.

Mobile water tankers with sprinkling facilities have been provided along-haul roads to arrest dust emission. Regular maintenance of vehicles is undertaken to minimize vehicular emission. All measures are being taken to control vehicular emission. PUC Certificate of running HEMM has been attached as **Annexure 7**.

**Condition 2- The Main haulage road within the mine lease should be provided with a permanent water sprinkling arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipment like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed in Crushers, belt-conveyors, and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.**

**Reply to Condition 2-** The mine is currently non-operational due to the exhaustion of mineral reserves. The Final Mine Closure Plan (FMCP) has been approved by the Indian Bureau of Mines (IBM). In accordance with the approved FMCP, mine closure activities are being carried out.

Therefore, no transportation of minerals is currently taking place. Earlier Haul Road was constructed for transportation of minerals.

Mobile water tankers with sprinkling facilities have been provided along-haul roads to arrest dust emission.

**Condition 3- Vehicular emissions shall be kept under control by regular repairing of transport roads and regular air quality monitoring. Measures shall be taken for maintenance of vehicles used in mining operations and in transportation of minerals. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded. No transportation of stone / sand outside the mine lease area shall be carried out after sunset.**

**Reply to Condition 3-** The mine is currently non-operational due to the exhaustion of mineral reserves. The Final Mine Closure Plan (FMCP) has been approved by the Indian Bureau of Mines (IBM). In accordance with the approved FMCP, mine closure activities are being carried out. Therefore, no transportation of minerals is currently taking place.

## **I. Greenbelt**

**Condition 1-The Project Proponent shall develop greenbelt in 7.5m wide safety zone all along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within the first 5 years starting from the windward side of the active mining area. The development of greenbelt shall be governed as per the EC granted by the Ministry irrespective of the stipulation made in approved mine plan.**

**Reply to Condition 1-** Green belt development work is being carried out in safety zone of mine lease. Plantation work is being governed as per approved mining plan and as per EC condition. The photographs of the same are already attached in reply to condition no. 1 of section – A Specific condition.

**Condition 2- The Project Proponent shall carry out plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in community areas etc. by planting the native species in consultation with the State Forest Department/ Agriculture Department/ Rural development department/ Tribal Welfare Department/ Gram Panchayat is such that only those species be selected which are of use to the local people. The CPCB guidelines in this respect shall also be adhered to. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for the protection and care of trees.**

**Reply to Condition 2-** . Progressive plantation is being carried out in consultation with local forest Dept. During FY 2025-26 till September, a total of 3250 nos. of saplings have been planted within this lease. Cumulative 9.94 ha areas have been planted till date. In addition to these agricultural activities (bio plantation) is going on reclaimed land as per the consent from landowners. The Green belt development program is in progress with the progress of mining activities.



Greenbelt Plantation and Agricultural activities

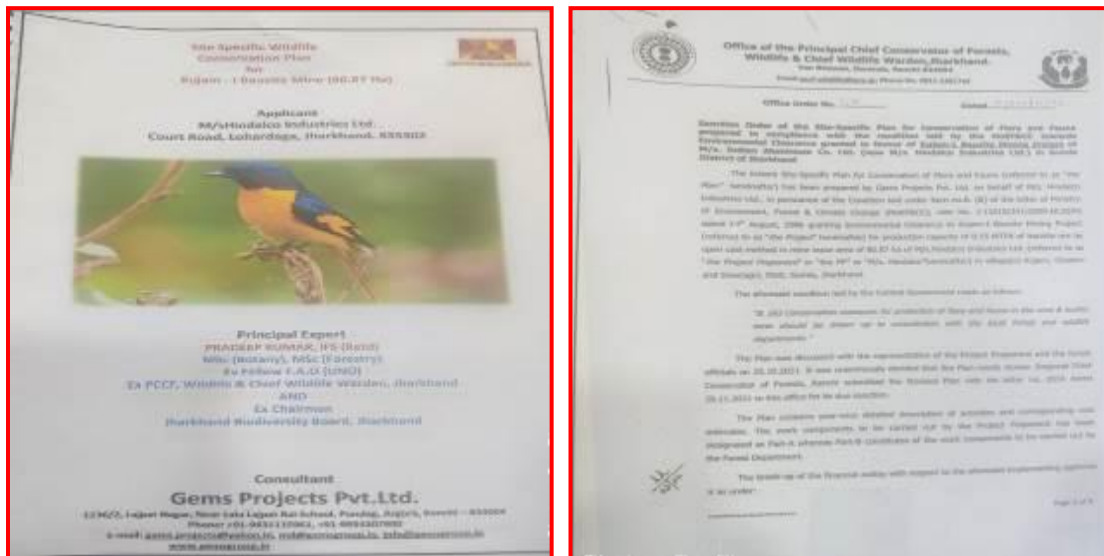
**Condition 3-** The Project Proponent shall make necessary alternative arrangements for livestock feed by developing grazing land with a view to compensating those areas which are coming within the mine lease. The development of such grazing land shall be done in consultation with the State Government. In this regard, Project Proponent should essentially implement the directions of the Hon'ble Supreme Court with regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded/ protected against felling and plantation of such trees should be promoted.

**Reply to Condition 3-** The mine is currently non-operational due to the exhaustion of mineral reserves. The Final Mine Closure Plan (FMCP) was approved by the Indian Bureau of Mines (IBM). The entire land was acquired in accordance with applicable laws while the mine was operational. As per the agreement with the District Collector (DC), the land was acquired on a lease basis in consultation with the State Government and with the consent of the landowners. After completing mining operations, followed by reclamation, the land was returned to the landowners for agricultural purposes or plantation, whichever is desired by them (landowners/villagers). Hence, the quality of the land was not deteriorated, and there was no need to create grazing land. No cutting or felling of trees was involved in the mining process.

**Condition 4-** The Project Proponent shall undertake all precautionary measures for conservation and protection of endangered flora and fauna and Schedule-I species during mining operation. A Wildlife Conservation Plan shall be prepared for the same clearly

**delineating action to be taken for conservation of flora and fauna. The Plan shall be approved by Chief Wildlife Warden of the State Govt.**

**Reply to Condition 4-** We have prepared Site-Specific Wildlife Conservation Plan (WLCP) in consultation with State Forest Department and obtained approval letter from Principal Chief Conservator of Forest, Wildlife & Chief Wildlife Warden, Jharkhand via Office Order No. 50 dated 03.12.2021 for conservation and protection of flora and fauna in the core and buffer zone for Kujam I Bauxite Mine. However, Mine is located outside the eco-sensitive zone.



### Site-Specific Wildlife Conservation Plan

**Condition 5- And implemented in consultation with the State Forest and Wildlife Department. A copy of the Wildlife Conservation Plan and its implementation status (annual) shall be submitted to the Regional Office of the Ministry.**

**Reply to Condition 5-** Noted and complied with. A Site-Specific Wildlife Conservation Plan (WLCP) has been prepared in consultation with the State Forest Department and approved by the PCCF (Wildlife), Jharkhand. As per the approved WLCP, we receive a demand note from the DFO each year and make the corresponding payment accordingly. A copy of the latest payment receipt is enclosed herewith as **Annexure 10**.

**Condition 6- The Project proponent shall not cut trees / carry out tree felling in leased out area without the permission of competent authority.**

**Reply to Condition 6-**No cutting of trees/ felling of trees were involved in the mining process.

### J. Public hearing and human health issues:

**Condition 1-** The Project Proponent shall appoint an Occupational Health Specialist for Regular as well as Periodical medical examination of the workers engaged in the mining

activities. as per the DGMS guidelines. The records shall be maintained properly. PP shall also carry out Occupational health check-ups in respect of workers which are having ailments, like BP, diabetes, habitual smoking. etc. The check-ups shall be undertaken once in six months and necessary remedial/ preventive measures be taken. A status report on the same may be sent to MoEF&CC Regional Office and DGMS on a half-yearly basis.

**Reply to Condition 1-** Being adhered to. Periodical medical examination of the workers of Kujam group of mines is being carried out and records are being maintained by Medical Officer. IME/PME record is attached in compliance report as **Annexure 6**.

**Condition 2- .** The Project Proponent must demonstrate commitment to work towards 'Zero Harm' from their mining activities and carry out Health Risk Assessment (HRA) for identification workplace hazards and assess their potential risks to health and determine appropriate control measures to protect the health and wellbeing of workers and nearby community. The proponent shall maintain accurate and systematic records of the HRA. The HRA for neighborhood has to focus on Public Health Problems like Malaria, Tuberculosis, HIV, Anaemia, Diarrhea in children under five, respiratory infections due to biomass cooking. The proponent shall also create awareness and educate the nearby community and workers for Sanitation. Personal Hygiene, Hand washing, not to defecate in the open, Women Health and Hygiene (Providing Sanitary Napkins), hazard of tobacco and alcohol use. The Proponent shall carry out base line HRA for all the categories of workers and thereafter every five years.

**Reply to Condition 2-** Regular awareness programs are being conducted to educate the local community on healthcare, sanitation, hygiene, and related topics. We organized an awareness drive on heat waves at the Kujam group of Mines operational areas and distributed ORS packets to workers and staff and distributed the “Poshan Kit” to TB patient to enhance their nutrition and support recovery. Additionally, rural medical camps are being organized every Friday. Educational programs are also regularly provided to local villagers, focusing on women's health and hygiene, as well as the hazards of tobacco and alcohol use.

All workers and company staff are provided with appropriate PPE. We continue to conduct IME/PME to ensure the health and well-being of workers in the mines.



Medical Camp programme in nearby villages





Distribution of Poshan Kit



Awareness programme in nearby schools

**Condition 3-** The Proponent shall carry out Occupational health surveillance which be a part of HRA and include Biological Monitoring where practical and feasible, and the tests and investigations relevant to the exposure (e.g. for Dust X-Ray chest: For Noise Audiometric: for Lead Exposure Blood Lead. For Welders Full Ophthalmologic Assessment: for Manganese Miners a complete Neurological Assessment by a Certified Neurologist and Manganese (Mn) Estimation in Blood: For Inorganic Chromium- Fortnightly skin inspection of hands and forearms by a responsible person. Except routine tests all tests would be carried out in a Lab accredited by NABH. Records of Health Surveillance must be kept for 30 years, including the results of and the records of Physical examination and tests. The record of exposure due to materials like Asbestos, Hard Rock Mining, Silica, Gold, Kaolin, Aluminum, Iron, Manganese, Chromium, Lead, Uranium needs to be handed over to the Mining Department of the State in case the life of the mine is less than 30 years. It would be obligatory for the State Mines Departments to make arrangements for the safe and secure storage of the records including X-Ray. Only conventional X-Ray will be accepted for recording purposes and not the digital one). X-Ray must meet ILO criteria (17 x14 inches and of good quality).

**Reply to Condition 3-** Occupational health surveillance is being conducted in regular intervals by specialized doctors and nurses. Rural medical camps are being organized every Friday. Periodical medical examination of the workers engaged in the project is being carried out and records are being maintained by Medical Officer. IME/PME record is attached in compliance report as **Annexure 6**.

**Condition 4-** The Proponent shall maintain a record of performance indicators for workers which includes. (a) there should not be a significant decline in their Body Mass Index, and it should stay between 18.5 -24.9, (b) the Final Chest X-Ray compared with the base line X-Ray should not show any capacities (c) At the end of their leaving job there should be no Diminution in their Lung Functions Forced Expiratory Volume in one second (FEV1), Forced Vital Capacity (FVC), and the ratio) unless they are smokers which has to be adjusted, and the effect of age, (d) their hearing should not be affected. As a proof an Audiogram (first and last need to be presented), (c) they should not have developed any Persistent Back Pain, Neck Pain, and the movement of their Hip, Knee and other joints should have a normal range of movement. (f) they should not have suffered loss of any body part. The record of the same should be submitted to the Regional Office, MoEF&CC annually along with details of the relief and compensation paid to workers having the above indications.



**Reply to Condition 4-** Noted and being complied with. However, Regular and periodical medical examination of the workers engaged in the Kujam Group of mines are being carried out and records are being maintained. IME/PME record is attached herewith as **Annexure 6**.

**Condition 5-The Project Proponent shall ensure that Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.**

**Reply to Condition 5-** Personnel working in dusty areas are provided with proper respiratory devices. Regular training is being conducted on occupational health and work safety environments.

**Condition 6-Project Proponent shall make provision for the housing for workers/labours or shall construct labor camps within/outside (company owned land) with necessary basic infrastructure/ facilities like fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche for kids etc. The housing may be provided in the form of temporary structures which can be removed after the completion of the project-related infrastructure. The domestic wastewater should be treated with STP in order to avoid contamination of underground water.**

**Reply to Condition 6-** Temporary rest shelters have been constructed for laborers. As most of the workers/labours are from local village, there is no need for labor camps.

**Condition 7- The activities proposed in the Action plan prepared for addressing the issues raised during the Public Hearing shall be completed as per the budgetary provisions mentioned in the Action Plan and within the stipulated time frame. The Status Report on implementation of Action Plan shall be submitted to the concerned Regional Office of the Ministry along with District Administration.**

**Reply to Condition 7-** Noted. The issues raised during the Public Hearing have been implemented as per the budgetary provisions.

**Condition 8- Measures should be taken for control of noise levels below prescribed norms in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs /muffs.**

**Reply to Condition 8-** Noise level is maintained below prescribed norms and is being monitored by NABL accredited laboratory. The report is attached as **Annexure 2**. All the workers engaged in operations of HEMM are provided with earplugs.

#### **K. Corporate Environment Responsibility (CER):**

**Condition 1- The activities and budget earmarked for Corporate Environmental Responsibility (CER) as per Ministry's O.M No 22-65/20 1 7-IA. II (M) dated 01.05.2018 or as proposed by EAC should be kept in a separate bank account. The activities proposed for CER shall be implemented in a time bound manner and annual report of implementation of the same along with documentary proof viz. photographs, purchase document, latitude & longitude of**

**infrastructure developed & road constructed needs to be submitted to Regional Office MoEF&CC annually along with audited statement.**

**Reply to Condition 1-** Every year, the funds earmarked for corporate environmental responsibility is being budgeted separately and its expenditure is being reported to the regional office of Ministry. The copy of the same is attached as **Annexure 5**.

**Condition 2-**Project Proponent shall keep the funds earmarked for environmental protection measures in a separate account and refrain from diverting the same for other purposes. The Year wise expenditure of such funds should be reported to the MoEF&CC and its concerned Regional Office.

**Reply to Condition 2-** Every year, the funds earmarked for environmental protection measures is being budgeted separately and its expenditure is being reported to the regional office of Ministry. The copy of the same is attached as **Annexure 5**.

**Condition 3-** The funds earmarked for environmental protection measures should be kept in a separate account and should not be diverted for other purposes. Year wise expenditure should be reported to the Jharkhand State Pollution Control Board, Ranchi. PP shall carry out CSR activities as per Government Guidelines (% of Profit / turnover) or at least Rs 1 per ton whichever is higher.

**Reply to Condition 3-** Every year, the funds earmarked for CSR measures is being budgeted separately as per the govt. guidelines and its expenditure is being reported to the Ministry and JSPCB. The copy of the same is attached as **Annexure 5**.

**Condition 4-** The environmental statement for each financial year ending 31<sup>st</sup> March in Form-V as is mandated to be submitted by the project proponent to the Jharkhand State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along the status of compliance of EC conditions and shall also be sent to the concerned Regional Office of JSPCB by e-mail.

**Reply to Condition 4-** Environment statement is being submitted regularly to Member Secretary, JSPCB. The status of compliance with the EC conditions is also submitted to the Regional Office of JSPCB and uploaded on the company's website on a regular basis..

#### **L. Miscellaneous:**

**Condition 1-** The Project Proponent shall prepare a digital map (land use & land cover) of the entire lease area once in five years for the purpose of monitoring land use pattern and submit a report concerned Regional Office of the MoEF & CC.

**Reply to Condition 1 –** Being Complied. Digital Map of land use and land cover is being prepared and submitted to IBM Ranchi. The same is attached herewith as **Annexure 9**.

**Condition 2- The Project Authorities should inform the Regional office regarding the date of financial closures and final approval of the project by the concerned authorities start of land development work.**

**Reply to Condition 2-** The Final Mine Closure Plan (FMCP), along with the Financial Assurance, has been approved by the Indian Bureau of Mines and subsequently submitted to the Regional Office of the Ministry of Environment, Forest and Climate Change (MoEF&CC). The financial closure is planned for 31<sup>st</sup> March 2026.

**Condition 3- It shall be mandatory on the project management to submit six (06) monthly compliance report in respect of the stipulated prior environmental clearance terms and conditions in hard copies and soft copies to the regulatory authority concerned Regional office of MoEF & CC at Ranchi and Jharkhand State Pollution Control Board (J.S.P.C.B.). Ranchi JCPCB SEIAA.**

**Reply to Condition 3-** Six monthly reports on the status of the EC are being submitted regularly.

**Condition 4- A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall report directly to the Head of the Organization. An adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEF&CC.**

**Reply to Condition 4-** A separate environmental management cell with suitable qualified personnel has been set up under the control of a Senior Executive, who is reporting directly to the Head of the Organization. The same is attached herewith as **Annexure 3**.

**Condition 5- The concerned Regional Office of the MoEF&CC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEF&CC officer(s) by furnishing the requisite data / information /monitoring reports.**

**Reply to Condition 5-** Noted and Agreed.

**Condition 6- Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act. 1986.**

**Reply to Condition 6-** Noted.

**Condition 7- The Ministry / SEIAA / SEAC may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.**

**Reply to Condition 7-** Noted.

**Condition 8- The Ministry /SEIAA /SEAC reserves the right to stipulate additional conditions if found necessary. The Company in a time-bound manner shall implement these conditions.**

**Reply to Condition 8-** Noted & Agreed.

**Condition 9- No blasting shall be carried out after sunset. Blasting operation shall be carried out only during Daytime, Controlled blasting shall be practiced. Mitigative measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented.**

**Reply to Condition 9-** The mine is currently non-operational due to the exhaustion of mineral reserves. The Final Mine Closure Plan (FMCP) has been approved by the Indian Bureau of Mines (IBM), and mine closure activities are being carried out in accordance with the approved plan. At present, no blasting is being carried out. Earlier, controlled blasting methods were practiced, and a ground vibration study was conducted. Appropriate efforts and mitigative measures were taken to minimize the impact of blasting.

**Condition 10- Drilling shall either be operated with dust extractors or equipped with a water injection system.**

**Reply to Condition 10-** Wet drilling practice was adopted when the mine was operational.

**Condition 11- Pre-placement medical examination and periodical medical examination of the workers engaged in the project conducted by a Registered Medical Officer shall be carried out and records maintained.**

**Reply to Condition 11-** Pre-placement medical examination and periodical medical examination of the workers engaged in the Kujam group of mines are being carried out and records maintained as per statute. IME/PME report is attached as **Annexure-6**.

**Condition 12- Provision shall be made for the housing of construction labor at a suitable place away from the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets / septic tanks, safe drinking water, medical health care, etc. The housing may be in the form of temporary structures to be removed after the completion of the project.**

**Reply to Condition 12-** All the necessary basic facilities has been provided to the workers. Also, as most of the workers/laborers are from local village, so there is no need of housing infrastructure/ labor camps.

**Condition 13-Proper Safety measures as per statutory requirement shall be implemented around the mined-out Pit prior to closure of site.**

**Reply to Condition 13-** Noted and being adhered to.

**Condition 14- The Project Proponent shall submit six monthly report on the expenditure incurred on environmental management plan submitted by them.**

**Reply to Condition 14-** Environmental Expenditure is being submitted six-monthly. The report is attached as **Annexure 5**.

**Condition 15- Since blasting and mining on Hillock / Rock out crop may also be carried out. Suitable scheme for access / ramp to the highest elevation with gradient shall be submitted for approval from competent authorities.**

**Reply to Condition 15-** The mine is currently non-operational due to the exhaustion of mineral reserves. The Final Mine Closure Plan (FMCP) has been approved by the Indian Bureau of Mines (IBM), and mine closure activities are being carried out in accordance with the approved plan. Therefore, no blasting is currently being carried out.

**Condition 16- A separate environmental management /monitoring cell with suitable qualified personnel should be set up under the control of a Senior Executive who will report directly to the Head of the Organization.**

**Reply to Condition 16-** A separate environmental management cell with suitable qualified personnel has been set up under the control of a Senior Executive, who is reporting directly to the Head of the Organization. The same is being attached herewith as **Annexure 3**

**Condition 17- The Jharkhand State Pollution Control Board, Ranchi directly or through its Regional Office shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) by furnishing the requisite data information /monitoring reports.**

**Reply to Condition 17-** Noted and Agreed.

**Condition 18- A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, Zila Parishad / Municipal Corporation, Urban Local Body and the Local NGO if any from whom suggestions/ representations, if any were received while processing the proposal. The clearance letter shall also be put on the website of the company by the project proponent.**

**Reply to Condition 18-** A copy of the clearance letter has been submitted to panchayat office and Zila parishad. The acknowledgment copy is attached as **Annexure 8**. No suggestions were received from urban bodies/ local NGOs while processing the proposal. The clearance letter has been uploaded on the company website.

**Condition 19- It shall be mandatory for the project management to submit six (06) monthly compliance report in respect of the stipulated prior environmental clearance terms and conditions in hard copies and soft copies to the regulatory authority concerned Regional Office of MoEF & CC at Ranchi and Jharkhand State Pollution Control Board (J.S.P.C.B.) Ranchi/SEIAA/CPCB.**

**Reply to Condition 19-** The six-monthly compliance reports of EC conditions are being submitted regularly to MoEF&CC, CPCB, and JSPCB.

**Condition 20- Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act. 1986.**

**Reply to Condition 20-** Noted.

**Condition 21-** The Authority reserves the right to add any new condition or modify the above conditions to revoke the clearance if conditions stipulated above are not implemented to the satisfaction of Authority or for that matter for any other Administrative reason.

**Reply to Condition 21-** Noted and agreed.

**Condition 22-** In case of any deviation or alteration in the project proposed from those submitted to SEIAA, Jharkhand for clearance, a fresh reference should be made to SEIAA to assess the adequacy of the conditions imposed and to incorporate any new conditions if required.

**Reply to Condition 22-** Noted and agreed.

**Condition 23-** The above stipulations would be enforced among others under the Water (Prevention & Control of Pollution) Act, 1974. the Air (Prevention & Control of Pollution) Act. 1981 the Environment (Protection) Act, 1986. Hazardous and other Wastes (Management and Transboundary Movement) Rules. 2016 and the Public Liability Insurance Act. 1991 along with their amendments and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/ High Court of Jharkhand and another Court of Law relating to the subject matter.

**Reply to Condition 23-** Noted.

**Condition 24-** The SEIAA. Jharkhand or any other competent Authority may alter modify the above conditions or stipulate any further condition in the interest of Environment protection.

**Reply to Condition 24-** Noted and agreed.

**Condition 25-**The Environmental Clearance accorded shall be valid for the period of lease of the mine. The PP shall not increase production rate and alter lease area during the validity of Environmental Clearance.

**Reply to Condition 25-** Noted and agreed.

**Condition 26-**Any Appeal against this Environmental Clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

**Reply to Condition 26-** Noted.



**Piezometer Monitoring Report**

**Mine: Kujam - I Bauxite Mine (80.87 Ha)**

<b>S No</b>	<b>Month</b>	<b>Ground Water Level (BGL) in meter</b>
1	<b>Apr-25</b>	<b>33.21</b>
2	<b>May-25</b>	<b>33.41</b>
3	<b>Jun-25</b>	<b>33.37</b>
4	<b>Jul-25</b>	<b>33.18</b>
5	<b>Aug-25</b>	<b>33.02</b>
6	<b>Sep-25</b>	<b>32.91</b>



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CIN:-U74999JH2022PTC019065  
PAN:-KAACE3673M  
GST:-20AAACE3673M12X

Accredited by:-  
NABL with certificate number: E-1062  
(Bureau of Standards India) Pvt. Ltd.  
Certified by:-  
ISO 9001:2015 and ISO 45001:2018



## Analytical Test Certificate

Annexure - 2

Unique Lab Report No.	TC1288725000000397	Discipline	Chemical
Report Unique ID	RL0144251716	Group	Atmospheric Pollution
Issue date/time	28.04.2025/ 10:08	Sub Group	Ambient Air Quality

Report Issue to M/s - HINDALCO INDUSTRIES LIMITED VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302 MONITORING SITE :KUJAM I BAUXITE MINE	Contact Person Contact Number Email Id Order Date Order Number	Mr. Ankit Das +91 9971034775 ankit.das@adityabirla.com 31.03.2025/ 10:10 13612313868
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References of Quality Management System (Steps of Traceability Chain)			
Customer Registration No.	EPIC/OTH/0144	Sample Booking Number	EPIC-251716
Sample(s) Code	251716 (A) (B) (C) (D)	Sample Receipt (D/T)	21.04.2025/17:24

Sampling References			
Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R036
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2013-15)		
Sampling Start (D/T)	19.04.2025/ 11:20	Sampling End (D/T)	20.04.2025/ 07:05
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Karan Kumar & Team
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling			
Weather condition	Clear	Temperature (°C)	29
		Humidity %	49
		Wind direction	270°-90°

Sampling Location(s) with GPS coordinate(s)			
S. Location A	Kujam Quarry 448	GPS coordinate	23°18' 25.41"/84°19' 03.19"
S. Location B	Talabikanta 4 A13	GPS coordinate	23°18' 11.06"/84°17' 40.12"
S. Location C	4 A11 Football Ground	GPS coordinate	23°18' 36.18"/84°17' 38.10"
S. Location D	Camp	GPS coordinate	23°18' 53.11"/84°17' 27.09"

Date(s) of performance of the laboratory activities			
Test start date	21.04.2025/ 18:15	Test completion date	26.04.2025/ 17:30

### --Test Result --

Sl	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Particulate Matter (PM <sub>10</sub> )	IS:5182 (P-23) 2022	µg/m³	75.98	77.96	76.91	74.93	100 (24 hr)
2.	Fine Particulate Matter (PM <sub>2.5</sub> )	IS 5182 (P-24) 2019	µg/m³	33.45	32.98	32.67	31.75	60(24 hr)
3.	Sulphur Dioxide (SO <sub>2</sub> )	IS:5182 (P-02) 2023	µg/m³	8.10	8.12	7.17	7.62	80(24 hr)
4.	Nitrogen Dioxide (NO <sub>2</sub> )	IS:5182 (P-06) 2022	µg/m³	20.79	22.05	23.51	21.58	80(24 hr)
5.	Ozone (O <sub>3</sub> )	IS:5182 (P-09) 2019	µg/m³	31.22	34.59	33.62	32.77	180(1 hr)
6.	Ammonia (NH <sub>3</sub> )	IS:5182 (P-25) 2018	µg/m³	43.96	44.86	41.70	40.76	400(24 hr)
7.	Lead (Pb)	IS:5182(P-22) 2019	µg/m³	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	1.0(24 hr)
8.	Nickel (Ni)	IS:5182(P-26) 2020	ng/m³	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
9.	Arsenic (As)	USEPA IO 3.2:1999	ng/m³	BDL (MDL-0.001)	BDL (MDL-0.001)	BDL (MDL-0.001)	BDL (MDL-0.001)	-

### --Test Result End --

Prescribed Limit	Environmental (Protection) Rules-1986, Schedule VI.
Operational Status	Unit was Operational During sampling.
Analysed by - A.K. SINGH	



Checked by  
(ER. Karan)  
Technical Head

Verified & Issue by  
(Umesh Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.



# EPIC LabTech Private Limited

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CIN: U74999JH2020PTC015685

PAN: AAHCE3613M

GST: 20AAHCE3613M1ZK

Accredited by:-

Bureau Veritas Pvt. Ltd. (Certi-India)

Certified by:-

ISO 16043:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL0144251716	Group	Atmospheric Pollution
Issue date/time	28.04.2025/ 10:08	Sub Group	Ambient Air Quality

Report Issue to M/s - HINDALCO INDUSTRIES LIMITED VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302 MONITORING SITE : KUJAM I BAUXITE MINES	Contact Person Contact Number Email Id Order Date Order Number	Mr. Ankit Das +91 9871034775 ankit.das@adityabirla.com 31.03.2025/ 10:10 13612313868
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### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0144	Sample Booking Number	EPIC-251716
Sample(s) Code	251716 (A) (B) (C) (D)	Sample Receipt (D/T)	21.04.2025/ 17:24

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)		
Sampling Start (D/T)	19.04.2025/ 11:20	Sampling End (D/T)	20.04.2025/ 07:05
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Karan Kumar & Team
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Clear	Temperature (°C)	29	Humidity %	49	Wind direction	270°-90°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Kujam Quarry 449	GPS coordinate	23° 18' 25.41" / 84° 19' 03.19"
S. Location B	Talabkhanta 4 A13	GPS coordinate	23° 18' 11.06" / 84° 17' 40.12"
S. Location C	4 A11 Football Ground	GPS coordinate	23° 18' 36.18" / 84° 17' 36.10"
S. Location D	Camp	GPS coordinate	23° 18' 53.11" / 84° 17' 27.09"

### Date(s) of performance of the laboratory activities

Test start date	21.04.2025/ 18:15	Test completion date	26.04.2025/ 17:30
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### --Test Result --

Sl	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Benzene (C <sub>6</sub> H <sub>6</sub> )	IS:5182(P-11) 2006	µg/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
2.	Benzo (a) Pyrene (Bap)- Particulate phase only	IS:5182(P-12) 2004	ng/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
3.	Carbon Monoxide (CO)	EPIC/LAB/SOP/API/01/00	mg/m <sup>3</sup>	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	-

### --Test Result End --

Prescribed Limit	Environmental (Protection) Rules-1986, Schedule VII.
Operational Status	Unit was Operational During sampling.
Analysed by - JJ.1888	



Checked by  
(E.N. Kumar)  
Technical Head

Verified & Issued by  
(Ankit Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand





# EPIC LabTech Private Limited



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CIN: U14999MH2022PTC039885  
PAN: AAHCE3613M  
GST: 25AAHCE3611M1Z

Accredited by:-  
NABL, accreditation number TC-12887  
Jharkhand State Pollution Control Board  
Certified by:-  
ISO 15189:2013 and ISO 45001:2018

TC-12887

## Analytical Test Certificate

Unique Lab Report No.	TC1288725000000398	Discipline	Chemical
Report Unique ID	RL0144251717	Group	Atmospheric Pollution
Issue date/time	28.04.2025/ 10:11	Sub Group	Ambient Air Quality

Report Issue to M/s - HINDALCO INDUSTRIES LIMITED VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302 MONITORING SITE : KUJAM I BAUXITE MINES	Contact Person Contact Number Email Id Order Date Order Number	Mr. Ankit Das +91 9971034775 ankit.das@adityabirla.com 31.03.2025/ 10:10 13612313868
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### References of Quality Management System (Typical Traceability Chain)

Customer Registration No.	EPIC/OTH/0144	Sample Booking Number	EPIC-251717
Sample(s) Code	251717	Sample Receipt (D/T)	21.04.2025/17:33

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)		
Sampling Start (D/T)	20.04.2025/ 10:45	Sampling End (D/T)	21.04.2025/ 07:00
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Karan Kumar & Team
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Clear	Temperature (°C)	29	Humidity %	49	Wind direction	270°-90°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Near Pakri Gada Village	GPS coordinate	23° 20' 01.26"/84° 14' 17.70"
S. Location B	Near Pol Pol Village	GPS coordinate	23° 18' 48.04"/84° 18' 18.35"
S. Location C	Near Shakhupani Village	GPS coordinate	23° 19' 22.76"/84° 15' 33.71"
S. Location D	Near Dipa Kujam Village	GPS coordinate	23° 18' 18.91"/84° 14' 55.35"

### Date(s) of performance of the laboratory activities

Test start date	21.04.2025/ 18:05	Test completion date	26.04.2025/ 17:35
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### --Test Result--

Sl	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Particulate Matter (PM <sub>10</sub> )	IS:5182 (P-23) 2022	µg/m <sup>3</sup>	70.97	68.99	67.92	67.08	100 (24 hr)
2.	Fine Particulate Matter (PM <sub>2.5</sub> )	IS 5182 (P-24) 2019	µg/m <sup>3</sup>	30.98	29.61	29.27	28.31	60(24 hr)
3.	Sulphur Dioxide (SO <sub>2</sub> )	IS:5182 (P-02) 2023	µg/m <sup>3</sup>	07.13	07.48	07.98	07.86	80(24 hr)
4.	Nitrogen Dioxide (NO <sub>2</sub> )	IS:5182 (P-06) 2022	µg/m <sup>3</sup>	24.56	23.51	21.67	20.15	80(24 hr)
5.	Ozone (O <sub>3</sub> )	IS:5182 (P-08) 2019	µg/m <sup>3</sup>	31.81	30.60	29.70	27.57	160(1 hr)
6.	Ammonia (NH <sub>3</sub> )	IS:5182 (P-25) 2018	µg/m <sup>3</sup>	42.26	41.00	42.30	39.11	400(24 hr)
7.	Lead (Pb)	IS:5182(P-22) 2019	µg/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	1.0(24 hr)
8.	Nickel (Ni)	IS:5182(P-26) 2020	ng/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
9.	Arsenic (As)	USEPA IO 3.2:1999	ng/m <sup>3</sup>	BDL (MDL-0.001)	BDL (MDL-0.001)	BDL (MDL-0.001)	BDL (MDL-0.001)	-

### --Test Result End--

Prescribed Limit	Environmental (Protection) Rules-1986, Schedule VII.
Operational Status	Units Operational During sampling.

Analysed by - A. K. SINGH



Checked by  
(A.K. Kumar)  
Technical Head

Verified & Issued by  
(Ankit Das)  
Laboratory Head

Authorized Signatory

(Page 1 of 1)



# EPIC LabTech Private Limited

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CIN:-U74999(JH2022PT061568)  
PAN:-AAHCE3611M  
GST:-26AAHCE3611M1Z9

Accredited by:-  
Jharkhand State Pollution Control Board  
Certified by:-  
ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL0144251717	Group	Atmospheric Pollution
Issue date/time	28.04.2025/ 10:11	Sub Group	Ambient Air Quality

Report Issue to			
M/s - HINDALCO INDUSTRIES LIMITED	Contact Person	Mr. Ankit Das	
VILLAGE-COURT ROAD,	Contact Number	+91 9971034775	
POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA,	Email Id	ankit.das@adityabirla.com	
STATE-JHARKHAND, INDIA 835302	Order Date	31.03.2025/ 10:10	
MONITORING SITE: KUJAM I BAUXITE MINE	Order Number	13612313888	

References of Quality Management System(Steps of Traceability Chain)			
Customer Registration No.	EPIC/OTH/0144	Sample Booking Number	EPIC-251717
Sample(s) Code	251717 (A) (B) (C) (D)	Sample Receipt (D/T)	21.04.2025/17:33

Sampling References			
Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/038
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)		
Sampling Start (D/T)	20.04.2025/ 10:45	Sampling End (D/T)	21.04.2025/ 07:00
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Karan Kumar & Team
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling							
Weather condition	Clear	Temperature (°C)	29	Humidity %	49	Wind direction	270°-90°

Sampling Location(s) with GPS coordinate(s)			
S. Location A	Near Pakri Gada Village	GPS coordinate	23° 20' 01.26" / 84° 14' 17.70"
S. Location B	Near Pol Pol Village	GPS coordinate	23° 18' 46.04" / 84° 16' 18.35"
S. Location C	Near Shakhupani Village	GPS coordinate	23° 19' 22.76" / 84° 15' 33.71"
S. Location D	Near Dipa Kujam Village	GPS coordinate	23° 18' 18.91" / 84° 14' 55.35"

Date(s) of performance of the laboratory activities			
Test start date	21.04.2025/ 18:05	Test completion date	26.04.2025/ 17:35

### --Test Result --

Sl	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Benzene (C <sub>6</sub> H <sub>6</sub> )	IS:5182(P-11) 2006	µg/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
2.	Benzo (a) Pyrene (Bap)- Particulate phase only	IS:5182(P-12) 2004	ng/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
3.	Carbon Monoxide (CO)	EPIC/LAB/SOP/AP/01/00	mg/m <sup>3</sup>	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	-

### --Test Result End --

Prescribed Limit	Environmental (Protection) Rules-1986, Schedule VII.
Operational Status	Unit was Operational During sampling.
Analysed by -AL3808	



Checked by  
(S.K. Kumar)  
Technical Head

Verified & Issued by  
(Ankit Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand





# EPIC LabTech Private Limited



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CIN - U14300MH2022PTC000024  
PAN - AANCE3075M  
GSTIN - 33AAHCE3075M2X

Accredited by:-  
NABL, with certificate number TC - 12887  
NABL and State Pollution Control Board  
Certified by:-  
ISO 9001:2015 and ISO 45001:2018

TC-12887

## Analytical Test Certificate

Unique Lab Report No.	TC1288725000000399	Discipline	Chemical
Report Unique ID	RL0144251718	Group	Water
Issue date/time	28.04.2025/ 10:13	Sub Group	Drinking Water

Report Issue to <b>M/s - HINDALCO INDUSTRIES LIMITED</b> VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302 <b>MONITORING SITE : KUJAM I BAUXITE MINE</b>	Contact Person Contact Number Email Id Order Date Order Number	Mr. Ankit Das +91 9971034775 ankit.das@adityabirta.com 31.03.2025/ 10:10 13612313888
---	--	--

References of Quality Management System(Shree of Traceability Chain)			
Customer Registration No.	EPIC/OTH/0144	Sample Booking Number	EPIC-251718
Sample(s) Code	251718	Sample Receipt (D/T)	21.04.2025/17:38

Sampling References			
Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling method used	IS : 3025 (Part-1) 1987, R-2003		
Sampling Start (D/T)	20.04.2025/ 11:55	Sampling End (D/T)	20.04.2025/ 12:15
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Karan Kumar & Team
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling			
Weather condition	Clear	Temperature (°C)	29
		Humidity %	49
		Wind direction	270°-90°
Sampling Location(s) with GPS coordinate(s)			
S. Location A	Canteen	GPS coordinate	23°18' 50.49"/84°17' 30.44"

Date(s) of performance of the laboratory activities			
Test start date	21.04.2025/ 18:00	Test completion date	27.04.2025/ 13:00

### --Test Result --

Sl	Test Parameters	Method used	Unit	Results	Limits	
					Acceptable Limit	Permissible Limit
1.	pH value at 24.8°C	IS 3025 (P-11) 2022	-	6.58	6.5-8.5	No relaxation
2.	Turbidity	IS 3025 (P-10) 1984	NTU	0.64	1	5
3.	Colour	IS 3025 (P-04) 2021	Hazen	<5	5	15
4.	Odour	IS 3025 (P-06) 2018	-	Agreeable	Agreeable	Agreeable
5.	Taste	IS 3025 (P-07) 2017	-	Agreeable	Agreeable	Agreeable
6.	Total Dissolved Solids (TDS)	IS 3025 (P-16) 2023	mg/l	98.00	500	2000
7.	Chloride (as Cl)	IS 3025 (P-32) 2019	mg/l	15.76	250	1000
8.	Total Alkalinity (as CaCO <sub>3</sub> )	IS 3025 (P-23) 2019	mg/l	54.00	200	600
9.	Total Hardness (as CaCO <sub>3</sub> )	IS 3025 (P-21) 2009	mg/l	68.00	200	600
10.	Calcium (as Ca)	IS 3025 (P-40) 1991	mg/l	9.62	75	200
11.	Free Residual Chlorine	IS 3025 (P-26) 1986	mg/l	BDL(MDL-0.4)	0.2	1
12.	Sulphate (as SO <sub>4</sub> )	IS 3025 (P-24/Sec-1)2022	mg/l	1.30	200	400
13.	Nitrate (as NO <sub>3</sub> )	APHA 4500 B 2023	mg/l	0.98	45	No relaxation
14.	Phenolic Compound	IS 3025 (P-43/Sec-1) 2022	mg/l	BDL(MDL-0.001)	0.001	0.002
15.	Magnesium (as Mg)	APHA 3500 Mg E 2023	mg/l	10.69	30	100



Accredited by -  
 NABL, your American Neighbor (C - USA)  
 Worldwide Quality Institute (WQI) Board  
 Certified by -  
 ISO 9001:2015 and ISO 45001:2018





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CIN: U74999JH2022PTC000481 Accredited by:

PAISI-AANCE0611M

GST-20AAHCE0611M12X

Indian State Pollution Control Board

Certified by:

ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL0144251718	Group	Water
Issue date/time	28.04.2025/ 10:13	Sub Group	Drinking Water

Report Issue to		Contact Person	Mr. Ankit Das
M/s - HINDALCO INDUSTRIES LIMITED		Contact Number	+91 9971034775
VILLAGE-COURT ROAD,		Email Id	ankit.das@adityabirla.com
POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA,		Order Date	31.03.2025/ 10:10
STATE-JHARKHAND, INDIA 835302		Order Number	13612313868
MONITORING SITE : KUJAM I BAUXITE MINE			

References of Quality Management System (Steps of Traceability Chain)			
Customer Registration No.	EPIC/OTH/0144	Sample Booking Number	EPIC- 251718
Sample(s) Code	251718	Sample Receipt (D/T)	21.04.2025/17:36

Sampling References			
Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling method used	IS : 3025 (Part-1) 1987, R-2003		
Sampling Start (D/T)	20.04.2025/ 11:55	Sampling End (D/T)	20.04.2025/ 12:15
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Karan Kumar & Team
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling							
Weather condition	Clear	Temperature (°C)	29	Humidity %	49	Wind direction	270°-90°

Sampling Location(s) with GPS coordinate(s)			
S. Location A	Canteen	GPS coordinate	23°18' 50.49"/84°17' 30.44"

Date(s) of performance of the laboratory activities			
Test start date	21.04.2025/ 18:00	Test completion date	27.04.2025/ 13:00

### --Test Result --

Sl	Test Parameters	Method used	Unit	Results	Limits	
					Acceptable Limit	Permissible Limit
1.	Fluoride (as F)	APHA 4500 F-C 2023	mg/l	BDL(MDL-0.1)	1.0	1.5
Group-Residues and Contaminants in Water				Sub Group-Trace Metals Elements		
2.	Aluminum	IS 3025 (P-55):2019	mg/l	BDL(MDL-0.1)	0.03	0.2
3.	Boron	IS 3025 (P-57):2021	mg/l	BDL(MDL-0.1)	0.5	1.0
4.	Polychlorinated biphenyls	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.2)	0.5	No relaxation
5.	Polynuclear Aromatic Hydrocarbons (PAH)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.05)	0.1	No relaxation
Group-Residues and Contaminants in Water				Sub Group-Pesticides		
6.	Alachlor	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	20	No relaxation
7.	Atrazine	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	2.0	No relaxation
8.	Dieldrin	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.02)	0.03	No relaxation
9.	Alpha HCH	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.005)	0.01	No relaxation
10.	Beta HCH	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.02)	0.04	No relaxation
11.	Butachlor	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	125.0	No relaxation
12.	Chlpyrifos	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	30.0	No relaxation
13.	Delta HCH	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.02)	0.04	No relaxation
14.	Ethion	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	3.0	No relaxation





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CIN:-U74999JH2020PTC019645  
PAN:-AANCC361M  
GST:-26AANCC361M1Z3

Accredited by:-  
Bharat and State Pollution Control Board  
Certified by:-  
ISO 9001:2015 and ISO 15189:2013

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL0144251718	Group	Water
Issue date/time	28.04.2025/ 10:13	Sub Group	Drinking Water

### Report Issue to

**M/s - HINDALCO INDUSTRIES LIMITED**  
VILLAGE-COURT ROAD,  
POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA,  
STATE-JHARKHAND, INDIA 835302  
**MONITORING SITE : KUJAM I BAUXITE MINE**

**Contact Person** Mr. Ankit Das  
**Contact Number** +91 9971034775  
**Email Id** [ankit.das@adityabirla.com](mailto:ankit.das@adityabirla.com)  
**Order Date** 31.03.2025/ 10:10  
**Order Number** 13612313868

15. Gamma- HCH(Lindane)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	2.0	No relaxation
16. Malathion	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	190.0	No relaxation
17. Methyl parathion	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.2)	0.3	No relaxation
18. Monocrotophos	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	1.0	No relaxation
19. Phorate	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	2.0	No relaxation
20. DDT (o, p and p, p-isomer of DDT, DDE and DDD)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	1.0	No relaxation
21. Endosulfan (alpha, beta, and sulphate)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.05)	0.4	No relaxation

--Test Result End --

**Prescribed Limit** IS 10500:2021  
**Operational Status** Unit was Operational During sampling.  
**Analysed by** -Pratish Kumar/ Anjali Kumar



Checked by  
(E.K. Kumar)  
Technical Head

Verified & Issue by  
(Girish Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand







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CIN: U74900JH2022PTC016985  
PAN: AAHCE3351M  
GST: 20AAHCE3351M1Z3

Accredited by -  
NABL with Accreditation Number IC-13867  
Jharkhand State Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 45001:2018



## Analytical Test Certificate

Unique Lab Report No.	TC1288725000000400	Discipline	Chemical
Report Unique ID	RL0144251720	Group	Water
Issue date/time	28.04.2025/ 10:17	Sub Group	Ground Water

Report Issue to <b>M/s - HINDALCO INDUSTRIES LIMITED</b> VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302 <b>MONITORING SITE: KUJAM I BAUXITE MINE</b>	Contact Person Contact Number Email Id Order Date Order Number	Mr. Ankit Das +91 9971034775 ankit.das@adityabirla.com 31.03.2025/ 10:10 13612313868
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References of Quality Management System (Steps of Incompleteness Date)			
Customer Registration No.	EPIC/OTH/0144	Sample Booking Number	EPIC-251720
Sample(s) Code	251720	Sample Receipt (D/T)	21.04.2025/17:41

Sampling References			
Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/RV036
Sampling method used	IS : 3025 (Part-1) 1987, R-2003		
Sampling Start (D/T)	20.04.2025/ 15:12	Sampling End (D/T)	20.04.2025/ 15:25
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Karan Kumar & Team
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling							
Weather condition	Clear	Temperature (°C)	29	Humidity %	49	Wind direction	270°-90°

Sampling Location(s) with GPS coordinate(s)			
S. Location A	Near Shakhupani Village	GPS coordinate	23° 19' 22.76" / 84° 15' 33.71"

Date(s) of performance of the laboratory activities			
Test start date	21.04.2025/ 16:00	Test completion date	27.04.2025/ 13:00

### --Test Result--

Sl	Test Parameters	Method used	Unit	Results	Limits	
					Acceptable Limit	Permissible limit
1.	pH value at 25°C	IS 3025 (P-11) 2022	-	6.85	6.5-8.5	No relaxation
2.	Turbidity	IS 3025 (P-10) 1984	NTU	0.89	1	5
3.	Colour	IS 3025 (P-04) 2021	Hazen	<5	5	15
4.	Odour	IS 3025 (P-05) 2018	-	Agreeable	Agreeable	Agreeable
5.	Taste	IS 3025 (P-07) 2017	-	Agreeable	Agreeable	Agreeable
6.	Total Dissolved Solids (TDS)	IS 3025 (P-16) 2023	mg/l	136	500	2000
7.	Chloride (as Cl)	IS 3025 (P-32) 2019	mg/l	19.71	250	1000
8.	Total Alkalinity(as CaCO <sub>3</sub> )	IS 3025 (P-23) 2019	mg/l	64	200	600
9.	Total Hardness (as CaCO <sub>3</sub> )	IS 3025 (P-21) 2009	mg/l	96	200	600
10.	Calcium (as Ca)	IS 3025 (P-40) 1991	mg/l	12.83	75	200
11.	Free Residual Chlorine	IS 3025 (P-26) 1986	mg/l	BDL(MDL-0.4)	0.2	1
12.	Sulphate (as SO <sub>4</sub> )	IS 3025 (P-24/Sec-1)2022	mg/l	2.9	200	400
13.	Nitrate (as NO <sub>3</sub> )	APHA 4500 B 2023	mg/l	1.19	45	No relaxation
14.	Phenolic Compound	IS 3025 (P-43/Sec-1) 2022	mg/l	BDL(MDL-0.001)	0.001	0.002
15.	Magnesium (as Mg)	APHA 3500 Mg E 2023	mg/l	15.55	30	100



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QMS - U18996140227TC09944  
PAN - AAMC3361M  
GST - 25AARCE301M12X

Accredited by:-  
NABL vide certificate Number: N-12027  
(Jharkhand State Pollution Control Board)  
Certified by:-  
ISO 9001:2015 and ISO 45001:2018



## Analytical Test Certificate

Unique Lab Report No.	TC1288725000000400	Discipline	Chemical
Report Unique ID	RL0144251720	Group	Water
Issue date/time	28.04.2025/ 10:17	Sub Group	Ground Water

Report Issue to <b>M/s - HINDALCO INDUSTRIES LIMITED</b> VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302 <b>MONITORING SITE: KUJAM I BAUXITE MINE</b>	Contact Person Contact Number Email Id Order Date Order Number	Mr. Ankit Das +91 9971034775 ankit.das@adityabirla.com 31.03.2025/ 10:10 13612313868
--	--	--

Group - Residues and Contaminants in Water			Sub Group- Trace Metals Elements		
16. Copper(as Cu)	APHA 3111 B 2023	mg/l	BDL(MDL-0.2)	0.05	1.5
17. Iron (as Fe)	APHA 3111 B 2023	mg/l	BDL(MDL-0.1)	1.0	No relaxation
18. Lead (as Pb)	APHA 3111 B 2023	mg/l	BDL(MDL-0.01)	0.01	No relaxation
19. Cadmium (as Cd)	APHA 3111 B 2023	mg/l	BDL(MDL-0.003)	0.003	No relaxation
20. Total Chromium (as Cr)	APHA 3111 B 2023	mg/l	BDL(MDL-0.05)	0.05	No relaxation
21. Nickel (as Ni)	APHA 3111 B 2023	mg/l	BDL(MDL-0.02)	0.02	No relaxation
22. Total Arsenic (as As)	APHA 3114 B 2023	mg/l	BDL(MDL-0.005)	0.01	0.05
23. Selenium (as Se)	APHA 3114 B 2023	mg/l	BDL(MDL-0.005)	0.01	No relaxation
24. Manganese (as Mn)	APHA 3111 B 2023	mg/l	BDL(MDL-0.09)	0.1	0.3
25. Zinc(as Zn)	APHA 3111 B 2023	mg/l	BDL(MDL-0.04)	5	15

--Test Result End--

Prescribed Limit	IS 10500:2021
Operational Status	Unit was Operational During sampling.
Analysed by -Pratima Kumar/ Anjali Kumar	



Checked by  
(B.N. Kumar)  
Technical Head

Verified & Issued by  
(Anish Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand





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epiclabtech@gmail.com

Lab No: JFPRM/JH/2022/PTC/019485 Accredited by:-

PAH - AAHCE 3011M

GST: CGAHCCE1610M12X

Jharkhand State Pollution Control Board

Certified by:-

ISO 9001:2015 and ISO 14001:2015

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL0144251720	Group	Water
Issue date/time	28.04.2025/ 10:17	Sub Group	Ground Water

Report Issue to MM/s - HINDALCO INDUSTRIES LIMITED VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302 MONITORING SITE: KUJAM I BAUXITE MINE	Contact Person Contact Number Email Id Order Date Order Number	Mr. Ankit Das +91 9871034775 ankit.das@adityabirla.com 31.03.2025/ 10:10 13612313868
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References of Quality Management System(Steps of Traceability Chain)			
Customer Registration No.	EPIC/OTH/0144	Sample Booking Number	EPIC-251720
Sample(s) Code	251720	Sample Receipt (D/T)	21.04.2025/17:41

Sampling References			
Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling method used	IS: 3025 (Part-1) 1987, R-2003		
Sampling Start (D/T)	20.04.2025/ 15:12	Sampling End (D/T)	20.04.2025/ 15:25
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Karan Kumar & Team
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling							
Weather condition	Clear	Temperature (°C)	29	Humidity %	49	Wind direction	270°-90°

Sampling Location(s) with GPS coordinate(s)			
S. Location A	Near Shakhupani Village	GPS coordinate	23° 19' 22.76"/ 84° 15' 33.71"

Date(s) of performance of the laboratory activities			
Test start date	21.04.2025/ 18:00	Test completion date	27.04.2025/ 13:00

### --Test Result --

Sl	Test Parameters	Method used	Unit	Results	Limits	
					Acceptable Limit	Permissible limit
1.	Fluoride (as F)	APHA 4500 F-C 2023	mg/l	BDL(MDL-0.1)	1.0	1.5
Group-Residues and Contaminants in Water				Sub Group-Trace Metals Elements		
2.	Aluminum	IS 3025 (P-55):2019	mg/l	BDL(MDL-0.1)	0.03	0.2
3.	Boron	IS 3025 (P-57):2021	mg/l	BDL(MDL-0.1)	0.5	1.0
4.	Polychlorinated biphenyls	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.2)	0.5	No relaxation
5.	Polynuclear Aromatic Hydrocarbons (PAH)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.05)	0.1	No relaxation
Group-Residues and Contaminants in Water				Sub Group-Pesticides		
6.	Alachlor	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	20	No relaxation
7.	Atrazine	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	2.0	No relaxation
8.	Dieldrin	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.02)	0.03	No relaxation
9.	Alpha HCH	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.005)	0.01	No relaxation
10.	Beta HCH	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.02)	0.04	No relaxation
11.	Butachlor	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	125.0	No relaxation
12.	Chlorpyrifos	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	30.0	No relaxation
13.	Delta HCH	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.02)	0.04	No relaxation
14.	Ethion	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	3.0	No relaxation



# EPIC LabTech Private Limited

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Dir - 17/09/2022/PC/19683

PAN - AANCE5633M

GST - 05AAMCE5633M32K

Accredited by :-

Roachband Vaidya Mahila Samithi

Certified by :-

ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RLD144251720	Group	Water
Issue date/time	28.04.2025/ 10:17	Sub Group	Ground Water

### Report Issue to

**MM/s - HINDALCO INDUSTRIES LIMITED**  
**VILLAGE-COURT ROAD,**  
**POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA,**  
**STATE-JHARKHAND, INDIA 835302**  
**MONITORING SITE: KUJAM I BAUXITE MINE**

**Contact Person** Mr. Ankit Das  
**Contact Number** +91 9871034775  
**Email Id** ankit.das@adityabirla.com  
**Order Date** 31.03.2025/ 10:10  
**Order Number** 13612313868

15.	Gamma-HCH(Lindane)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	2.0	No relaxation
16.	Malathion	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	190.0	No relaxation
17.	Methyl parathion	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.2)	0.3	No relaxation
18.	Monocrotophos	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	1.0	No relaxation
19.	Phorate	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	2.0	No relaxation
20.	DDT (o, p and p, p-isomer of DDT, DDE and DDD)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	1.0	No relaxation
21.	Endosulfan (alpha, beta, and sulphate)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.05)	0.4	No relaxation

--Test Result End --

**Prescribed Limit** IS 10500:2021  
**Operational Status** Unit was Operational During sampling.  
**Analysed by** -Pradeep Kumar/ Ajay Kumar



*[Signature]*  
**Checked by**  
**(Pradeep Kumar)**  
**Technical Head**

*[Signature]*  
**Verified & Issued by**  
**(Anish Das)**  
**Laboratory Head**

**Authorized Signatory**  
**EPIC LabTech Pvt. Ltd.**  
**Ranchi, Jharkhand**





# EPIC LabTech Private Limited

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CIN - U74900JH2022PTC019482  
PAN - AAHCK3011M  
GST - 29AAHCK3011N1Z3

Accredited by:-  
Bharatmati State Pollution Control Board  
Certified by:-  
ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Biological
Report Unique ID	RL0144251721	Group	Water
Issue date/time	28.04.2025/ 10:19	Sub Group	Ground Water

### Report Issue to

M/S-HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE: KUJAM I BAUXITE MINE

Contact Person  
Contact Number  
Email Id  
Order Date  
Order Number

Mr. Ankit Das  
+91 9971034775  
ankit.das@adityabirla.com  
31.03.2025/ 10:10  
13612313868

### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/QTH/0144	Sample Booking Number	EPIC-251721
Sample(s) Code	251721	Sample Receipt (D/T)	21.04.2025/17:42

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling method used	IS : 3025 (Part-1) 1987, R-2003& IS 1622 1981		
Sampling Start (D/T)	20.04.2025/ 15:12	Sampling End (D/T)	20.04.2025/ 15:25
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Karan Kumar & Team
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Clear	Temperature (°C)	29	Humidity %	49	Wind direction	270°-90°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Near Shakhupani Village	GPS coordinate	23° 19' 22.76" / 84° 15' 33.71"
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### Date(s) of performance of the laboratory activities

Test start date	21.04.2025/ 18:00	Test completion date	27.04.2025/ 13:00
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### --Test Result --

Sl	Test Parameters	Method used	Unit	Results	Limits
1.	Total Coliform	IS 15185 2002	Per 100 ml	Not Detected	Shall not be detectable in any 100 ml sample
2.	E. Coli	IS 15185 2002	Per 100 ml	Not Detected	

### --Test Result End --

Prescribed Limit  
Operational Status

IS 10500:2021  
Unit was Operational During sampling.

Analysed by -Pratish Kumar/ Anjali Kumar



Checked by  
(H.N. Kumar)  
Technical Head

Verified & Issue by  
(Anish Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand





# EPIC LabTech Private Limited



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CIN: - 07499954H2022PTC015685 Accredited by: Noida with certificate number TC- 13887  
Jharkhand State Pollution Control Board  
PAN: - AANICE3611M  
GST: - 20AAICE3611M1ZK  
Certified by: ISO 15189:2015 and ISO 45001:2018

TC-12887

## Analytical Test Certificate

Unique Lab Report No.	TC1288725000000572	Discipline	Chemical
Report Unique ID	RL0177252135	Group	Atmospheric Pollution
Issue date/time	26.05.2025/ 11:50	Sub Group	Ambient Air Quality

### Report Issue to

M/s -HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE : KUJAM I BAUXITE MINE

Contact Person Mr. Ankit Das  
Contact Number +91 9971034775  
Email Id ankit.das@adityabirla.com  
Order Date 31.03.2025/ 10:10  
Order Number 13612313868

### References of Quality Management System (Scope of Traceability Chain)

Customer Registration No.	EPIC/OTH/0177	Sample Booking Number	EPIC- 252135
Sample(s) Code	252135 (A) (B) (C) (D)	Sample Receipt (D/T)	19.05.2025/ 12:25

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	15.05.2025/ 11:49	Sampling End (D/T)	16.05.2025/ 08:20
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Vishal Kumar & Team
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Clear	Temperature (°C)	26	Humidity %	46	Wind direction	270°-90°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Kujam Quarry 449	GPS coordinate	23° 18' 25.41"/ 84° 19' 03.19"
S. Location B	Talabkhanta 4 A13	GPS coordinate	23° 18' 11.06"/ 84° 17' 40.12"
S. Location C	4 A11 Football Ground	GPS coordinate	23° 18' 36.18"/ 84° 17' 38.10"
S. Location D	Camp	GPS coordinate	23° 18' 53.11"/ 84° 17' 27.09"

### Date(s) of performance of the laboratory activities

Test start date	19.05.2025/ 12:45	Test completion date	24.05.2025/ 17:45
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### -Test Results-

Sl	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Particulate Matter (PM <sub>10</sub> )	IS:5182 (P-23) 2022	µg/m <sup>3</sup>	77.03	70.01	74.97	82.03	100 (24 hr)
2.	Fine Particulate Matter (PM <sub>2.5</sub> )	IS 5182 (P-24) 2019	µg/m <sup>3</sup>	36.85	35.30	33.90	39.10	60(24 hr)
3.	Sulphur Dioxide (SO <sub>2</sub> )	IS:5182 (P-02) 2023	µg/m <sup>3</sup>	09.29	12.37	10.53	10.89	80(24 hr)
4.	Nitrogen Dioxide (NO <sub>2</sub> )	IS:5182 (P-06) 2022	µg/m <sup>3</sup>	22.20	25.67	21.04	16.78	60(24 hr)
5.	Ammonia (NH <sub>3</sub> )	IS:5182 (P-25) 2018	µg/m <sup>3</sup>	48.05	43.83	40.58	45.21	400(24 hr)
6.	Ozone (O <sub>3</sub> )	IS:5182 (P-09) 2019	µg/m <sup>3</sup>	35.77	33.26	30.76	26.61	180(1 hr)
7.	Lead (Pb)	IS:5182(P-22) 2019	µg/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	1.0(24 hr)
8.	Nickel (Ni)	IS:5182(P-26) 2020	ng/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	
9.	Arsenic (As)	USEPA IO 3.2:1999	ng/m <sup>3</sup>	BDL (MDL-0.001)	BDL (MDL-0.001)	BDL (MDL-0.001)	BDL (MDL-0.001)	

### -Test Results End -

Prescribed Limit Environmental (Protection) Rules-1986, Schedule VII.  
Operational Status Unit was Operational During sampling.  
Analyzed by - AK Sinha



Reviewed by  
(R.N. Kumar)  
Technical Head

Issue by  
(Anish Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand

Contracted Rules: 1. The laboratory accepts responsibility for content of this report. 2. That performed at laboratory's permanent facility, at specific environmental condition as without required and results relate only to the sample tested in prescribed Date & time. 3. The Test report shall not be reproduced full or in part & can't be used as proof in the court of law. 4. Any complaint about this report should be communicated in writing within 30-days of its issue. 5. Total liability of EPIC LabTech Pvt. Ltd. will be limited to involved amount only. 6. All disputes are subjected to Ranchi Jurisdiction and maximum liability of the laboratory does not exceed the testing and sampling charges. 7. Opinion does not imply endorsement of the tested product by laboratory. Under no circumstances, laboratory accepts any liability for use or misuse of this report. 8. Where the results are from external provider are marked as "mark".

Abbreviations: BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantification).





# EPIC LabTech Private Limited

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Contact: 0651 4866352, 98357 86477, 93049 73884, epiclabtech@gmail.com  
CIN: U74999JH2022PTC019683, PAN: AANCE3613M, GST: 22AANCE3613M1ZX  
Accredited by: National Bureau of Assurance (NBA) for Environmental Testing, Accredited by: ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL0177252135	Group	Atmospheric Pollution
Issue date/time	26.05.2025/ 11:50	Sub Group	Ambient Air Quality

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302 MONITORING SITE : KUJAM I BAUXITE MINE	Contact Person Contact Number Email Id Order Date Order Number	Mr. Ankit Das +91 9971034775 ankit.das@adityabirla.com 31.03.2025/ 10:10 13612313868
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### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0177	Sample Booking Number	EPIC- 252135
Sample(s) Code	252135 (A) (B) (C) (D)	Sample Receipt (D/T)	19.05.2025/ 12:25

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	15.05.2025/ 11:49	Sampling End (D/T)	16.05.2025/ 08:20
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Vishal Kumar & Team
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Clear	Temperature (°C)	26	Humidity %	46	Wind direction	270°-90°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Kujam Quarry 449	GPS coordinate	23° 18' 25.41" / 84° 19' 03.10"
S. Location B	Talabkhanta 4 A13	GPS coordinate	23° 18' 11.06" / 84° 17' 40.12"
S. Location C	4 A11 Football Ground	GPS coordinate	23° 18' 36.10" / 84° 17' 36.10"
S. Location D	Camp	GPS coordinate	23° 18' 53.11" / 84° 17' 27.09"

### Date(s) of performance of the laboratory activities

Test start date	19.05.2025/ 12:45	Test completion date	24.05.2025/ 17:45
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### --Test Results--

Sl	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Benzene (C <sub>6</sub> H <sub>6</sub> )	IS:5182(P-11) 2006	µg/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
2.	Benzo (a) Pyrene (Bap)- Particulate phase only	IS:5182(P-12) 2004	ng/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
3.	Carbon Monoxide (CO)	EPIC/LAB/SOP/AP/01/00	mg/m <sup>3</sup>	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	-

### --Test Results End--

Prescribed Limit	Environmental (Protection) Rules-1986, Schedule VII.
Operational Status	Unit was Operational During sampling.
Analysed by - A.K. Sinha	



Reviewed by  
(E.K. Kumar)  
Technical Head







# EPIC LabTech Private Limited

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CIN - U74999JH2022PTC019685  
PAN - AANCE2611M  
GST - 20AANCE3611M12X

Accredited by -  
NABL, ACC-012544 Number TC-10887  
Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 45001:2018



TC-12887

## Analytical Test Certificate

Unique Lab Report No.	TC1288725000000573	Discipline	Chemical
Report Unique ID	RL0177252136	Group	Atmospheric Pollution
Issue date/time	26.05.2025/ 11:52	Sub Group	Ambient Air Quality

### Report Issue to

M/s -HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST. LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE : KUJAM I BAUXITE MINE

Contact Person Mr. Ankit Das  
Contact Number +91 9971034775  
Email Id ankit.das@adityabirla.com  
Order Date 31.03.2025/ 10:10  
Order Number 13612313868

### References of Quality Management System (Steps of Traceability Data)

Customer Registration No.	EPIC/OTH/0177	Sample Booking Number	EPIC- 252136
Sample(s) Code	252136 (A) (B) (C) (D)	Sample Receipt (D/T)	19.05.2025/ 12:30

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	18.05.2025/ 11:22	Sampling End (D/T)	17.05.2025/ 08:21
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Vishal Kumar & Team
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Clear	Temperature (°C)	26	Humidity %	46	Wind direction	270°-90°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Near Pakri Gada Village	GPS coordinate	23° 20' 01.26" / 84° 14' 17.70"
S. Location B	Near Pol Pol Village	GPS coordinate	23° 18' 46.04" / 84° 16' 18.35"
S. Location C	Near Shakhupani Village	GPS coordinate	23° 19' 22.76" / 84° 15' 33.71"
S. Location D	Near Dipa Kujam Village	GPS coordinate	23° 18' 18.91" / 84° 14' 55.35"

### Date(s) of performance of the laboratory activities

Test start date	19.05.2025/ 12:40	Test completion date	24.05.2025/ 17:50
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### --Test Results--

Sl	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Particulate Matter (PM <sub>10</sub> )	IS:5182 (P-23) 2002	µg/m <sup>3</sup>	62.16	69.03	67.17	75.43	100 (24 hr)
2.	Fine Particulate Matter (PM <sub>2.5</sub> )	IS:5182 (P-24) 2019	µg/m <sup>3</sup>	30.29	29.64	26.01	32.76	60(24 hr)
3.	Sulphur Dioxide (SO <sub>2</sub> )	IS:5182 (P-02) 2003	µg/m <sup>3</sup>	07.93	08.31	08.71	10.19	80(24 hr)
4.	Nitrogen Dioxide (NO <sub>2</sub> )	IS:5182 (P-06) 2002	µg/m <sup>3</sup>	19.56	20.90	21.54	23.30	80(24 hr)
5.	Ammonia (NH <sub>3</sub> )	IS:5182 (P-25) 2018	µg/m <sup>3</sup>	34.09	30.84	35.71	37.34	400(24 hr)
6.	Ozone (O <sub>3</sub> )	IS:5182 (P-09) 2019	µg/m <sup>3</sup>	26.11	23.96	27.18	25.04	180(1 hr)
7.	Lead (Pb)	IS:5182(P-22) 2019	µg/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	1.0(24 hr)
8.	Nickel (Ni)	IS:5182(P-26) 2020	ng/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
9.	Arsenic (As)	USEPA IO 3.2:1999	ng/m <sup>3</sup>	BDL (MDL-0.001)	BDL (MDL-0.001)	BDL (MDL-0.001)	BDL (MDL-0.001)	-

### --Test Results End --

Prescribed Limit Environmental (Protection) Rules-1986, Schedule VI.

Operational Status Unit was Operational During sampling.

Analysed by - A.K. Sinha



Reviewed by  
(E.K. Kumar)  
Technical Head

Issue by  
(Omish Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand

Disclaimer Note: [ 1. The laboratory accepts responsibility for content of this report ] & Test performed at laboratory's permanent facility at specific environmental conditions as method required and results relate only to the sample tested in prescribed Date & time. [ 2. The Test report shall not be reproduced full or in part & can't be used as proof in the court of law. ] & Any complaint about this report should be communicated in writing within 10 days of its issue. [ 3. Total liability of EPIC LabTech Pvt. Ltd. will be limited to invoiced amount only. ] & All disputes are subjected to Ranchi Jurisdiction and maximum liability of the laboratory does not exceed the testing and sampling charges. [ 7. Opinion does not imply endorsement of the tested product by laboratory. Under no circumstances, laboratory accepts any caused by use or misuse of this report. ] & Where the results are from external provider are marked as \* mark. ]

Abbreviations: - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantitation).





# EPIC LabTech Private Limited

Address:- C/o - R.K. Tripathi, Indrapuri, Road No. - 5, Ranchi, Jharkhand - 834001, India  
 Phone: 0651-4886192, 98337 89677, 93049 73994  
 Email: epiclabtech@gmail.com  
 CIN: U74999JH2022PTC019685 Accredited by:- National State Pollution Control Board  
 PAN: AAHCE3611M  
 GST: 20AAHCE3611M1ZK  
 Certified by:- ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL0177252136	Group	Atmospheric Pollution
Issue date/time	26.05.2025/ 11:52	Sub Group	Ambient Air Quality

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302 MONITORING SITE : KUJAM I BAUXITE MINE	Contact Person Contact Number Email Id Order Date Order Number	Mr. Ankit Das +91 9871034775 ankit.das@adityabirla.com 31.03.2025/ 10:10 13612313668
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### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0177	Sample Booking Number	EPIC-252136
Sample(s) Code	252136 (A) (B) (C) (D)	Sample Receipt (D/T)	19.05.2025/ 12:30

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	16.05.2025/ 11:22	Sampling End (D/T)	17.05.2025/ 08:21
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Vishal Kumar & Team
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Clear	Temperature (°C)	26	Humidity %	46	Wind direction	270°-90°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Near Pakri Gada Village	GPS coordinate	23° 20' 01.26" / 84° 14' 17.70"
S. Location B	Near Pol Pol Village	GPS coordinate	23° 18' 46.04" / 84° 16' 16.35"
S. Location C	Near Shakhupani Village	GPS coordinate	23° 19' 22.76" / 84° 15' 33.71"
S. Location D	Near Dipa Kujam Village	GPS coordinate	23° 18' 18.91" / 84° 14' 55.35"

### Date(s) of performance of the laboratory activities

Test start date	19.05.2025/ 12:40	Test completion date	24.05.2025/ 17:50
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### -Test Results-

Sl	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Benzene (C <sub>6</sub> H <sub>6</sub> )	IS:5182(P-11) 2006	µg/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
2.	Benzo (a) Pyrene (Bap)- Particulate phase only	IS:5182(P-12) 2004	ng/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
3.	Carbon Monoxide (CO)	EPIC/LAB/SOP/AP/01/00	mg/m <sup>3</sup>	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	-

### -Test Results End -

Prescribed Limit	Environmental (Protection) Rules-1986, Schedule VII.
Operational Status	Unit was Operational During sampling.
Analysed by - A.K Sirha	



Reviewed by  
(E.K. Kumar)  
Technical Head





# EPIC LabTech Private Limited



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CIN: U74999JH2022PTC295085, PAN: AAKICE3611M, GST: 20AAKICE3611M1ZK  
Accredited by: NABL, with certificate number TC - 12887, Jharkhand State Pollution Control Board  
Certified by: ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	TC1288725000000574	Discipline	Chemical
Report Unique ID	RL0177252137	Group	Atmospheric Pollution
Issue date/time	26.05.2025/ 11:54	Sub Group	Ambient Noise

Report Issue to		Contact Person	Mr. Ankit Das
M/s - HINDALCO INDUSTRIES LIMITED		Contact Number	+91 9971034775
VILLAGE: COURT ROAD, POST OFFICE-LOHARDAGA,		Email Id	ankit.das@adityabirla.com
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302		Order Date	31.03.2025/ 10:10
MONITORING SITE : KUJAM I BAUXITE MINE		Order Number	13612313868

References of Quality Management System (Steps of Traceability Chain)			
Customer Registration No.	EPIC/OTH/0177	Sample Booking Number	EPIC- 252137
Sample(s) Code	252137 (A) (B) (C) (D)	Sample Receipt (D/T)	19.05.2025/ 12:37

Sampling References			
Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	15.05.2025/ 11:49	Sampling End (D/T)	16.05.2025/ 06:20
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Vishal Kumar & Team
Sampling method used	IS 9889:1981 (RA 2020) & CPCB Method S.O.50 (E) dated 11/01/2010		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling			
Weather condition	Clear	Temperature (°C)	26
		Humidity %	46
		Wind direction	270°-90°

Sampling Location(s) with GPS coordinate(s)			
S. Location A	Kujam Quarry 449	GPS coordinate	23° 18' 25.41"/ 84° 19' 03.19"
S. Location B	Talabkharla 4 A13	GPS coordinate	23° 18' 11.06"/ 84° 17' 40.12"
S. Location C	4 A11 Football Ground	GPS coordinate	23° 18' 36.18"/ 84° 17' 38.10"
S. Location D	Camp	GPS coordinate	23° 18' 53.11"/ 84° 17' 27.09"

Date(s) of performance of the laboratory activities			
Test start date	19.05.2025/ 12:52	Test completion date	24.05.2025/ 18:00

--Test Results--								
Sl	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	L <sub>eq</sub> (Day time)	IS: 9889:1981	dB (A)	44.0	48.2	47.2	53.1	75
2.	L <sub>eq</sub> (Night time)	IS: 9889:1981	dB (A)	38.3	36.3	40.4	42.4	70

--Test Results End--								
Prescribed Limit	Environmental (Protection) Rules-1986, Schedule III.							
Operational Status	Unit was Operational During sampling.							
Analysed by -A.K. Saha								



Reviewed by  
(S.K. Kumar)  
Technical Head







# EPIC LabTech Private Limited

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CIN: U74999JH2022PTC019583  
PAN: AAKCE3613M  
GST: 20AAHCE3613MTX

Accredited by -  
NABL, certificate number TC - 1387  
Jharkhand State Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 45001:2018



## Analytical Test Certificate

Unique Lab Report No.	TC1268725000000714	Discipline	Chemical
Report Unique ID	RL02102525001	Group	Atmospheric Pollution
Issue date/time	20.06.2025/ 17:05	Sub Group	Ambient Air Quality

### Report Issued to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE: KUJAM I BAUXITE MINE

Contact Person Mr. Ankit Das  
Contact Number +91 9971034775  
Email Id ankit.das@adityabirla.com  
Order Date 31.03.2025/ 10:10  
Order Number 13612313868

### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0210	Sample Booking Number	EPIC- 25250 D1
Sample(s) Code	2525001(A) (B) (C) (D)	Sample Receipt (D/T)	16.06.2025/ 10:18

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	12.06.2025/ 11:55	Sampling End (D/T)	13.06.2025/ 08:41
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Vishal Kumar & Team
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Clear	Temperature (°C)	32	Humidity %	55	Wind direction	90°-270°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Kujam Quarry 449	GPS coordinate	23° 18' 25.41" / 84° 19' 03.19"
S. Location B	Talabkhanta 4 A13	GPS coordinate	23° 18' 11.06" / 84° 17' 40.12"
S. Location C	4 A11 Football Ground	GPS coordinate	23° 18' 36.18" / 84° 17' 38.10"
S. Location D	Camp	GPS coordinate	23° 18' 53.11" / 84° 17' 27.09"

### Data(s) of performance of the laboratory activities

Test start date	16.06.2025/ 10:33	Test completion date	20.06.2025/ 15:15
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### -Test Results-

Sl	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Particulate Matter (PM <sub>10</sub> )	IS:5182 (P-23) 2022	µg/m <sup>3</sup>	75.21	68.28	72.24	80.17	100 (24 hr)
2.	Fine Particulate Matter (PM <sub>2.5</sub> )	IS:5182 (P-34) 2019	µg/m <sup>3</sup>	35.47	34.36	31.04	37.13	60(24 hr)
3.	Sulphur Dioxide (SO <sub>2</sub> )	IS:5182 (P-02) 2023	µg/m <sup>3</sup>	08.22	11.35	09.01	09.40	80(24 hr)
4.	Nitrogen Dioxide (NO <sub>2</sub> )	IS:5182 (P-06) 2022	µg/m <sup>3</sup>	20.08	23.25	19.03	22.20	80(24 hr)
5.	Ammonia (NH <sub>3</sub> )	IS:5182 (P-35) 2016	µg/m <sup>3</sup>	47.08	42.21	39.29	43.18	400(24 hr)
6.	Ozone (O <sub>3</sub> )	IS:5182 (P-09) 2019	µg/m <sup>3</sup>	34.34	31.12	29.29	27.18	180(1 hr)
7.	Lead (Pb)	IS:5182(P-22) 2019	µg/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	1.0(24 hr)
8.	Nickel (Ni)	IS:5182(P-26) 2020	ng/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
9.	Arsenic (As)	USEPA IO 3.2:1999	ng/m <sup>3</sup>	BDL (MDL-0.001)	BDL (MDL-0.001)	BDL (MDL-0.001)	BDL (MDL-0.001)	-

### -Test Results End -

Prescribed Limit	Environmental (Protection) Rules-1986, Schedule VII.
Operational Status	Unit was Operational During sampling.
Analysed by - Archana Gornai	



Reviewed by  
S.R. Kumar  
Technical Read

Analysed by  
Ankit Das  
Laboratory Read

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand

Page 1 of 1

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Abbreviations: BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantitation).





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PAN:-AAHCE3811M  
GST:-20AAHCE3811M12X

Accredited by :-  
Bharhwar State Pollution Control Board  
Certified by :-  
ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL02102525001	Group	Atmospheric Pollution
Issue date/time	20.06.2025/ 17:05	Sub Group	Ambient Air Quality

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE: KUJAM I BAUXITE MINE

Contact Person  
Contact Number  
Email Id  
Order Date  
Order Number

Mr. Ankit Das  
+91 9971034775  
ankit.das@adityabirla.com  
31.03.2025/ 10:10  
13612313868

### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0210	Sample Booking Number	EPIC- 252501
Sample(s) Code	252501 (A) (B) (C) (D)	Sample Receipt (D/T)	16.06.2025/ 10:18

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	12.06.2025/ 11:55	Sampling End (D/T)	13.06.2025/ 08:41
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Vishal Kumar & Team
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Clear	Temperature (°C)	32	Humidity %	55	Wind direction	90°-270°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Kujam Quarry 449	GPS coordinate	23° 18' 25.41" / 84° 19' 03.19"
S. Location B	Talabkhanta 4 A13	GPS coordinate	23° 18' 11.06" / 84° 17' 40.12"
S. Location C	4 A11 Football Ground	GPS coordinate	23° 18' 36.18" / 84° 17' 38.10"
S. Location D	Camp	GPS coordinate	23° 18' 53.11" / 84° 17' 27.09"

### Date(s) of performance of the laboratory activities

Test start date	16.06.2025/ 10:33	Test completion date	20.06.2025/ 15:15
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### --Test Results--

Sl	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Benzene (C <sub>6</sub> H <sub>6</sub> )	IS:5182(P-11) 2006	µg/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
2.	Benzo (a) Pyrene (Bap)- Particulate phase only	IS:5182(P-12) 2004	ng/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
3.	Carbon Monoxide (CO)	EPIC/LAB/SOP/AP/01/00	mg/m <sup>3</sup>	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	-

### --Test Results End --

Prescribed Limit Environmental (Protection) Rules-1986, Schedule VII.

Operational Status Unit was Operational During sampling.

Analysed by - Archana Gorein



Reviewed by  
(B.R. Kumar)  
Technical Head







# EPIC LabTech Private Limited



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CIN - U74999/JH2022PTC019685  
PAN - AAKCE3613M  
GST - 20AAHCE3613MT29

Accredited by -  
NABL, certificate number SC - 13801  
Jharkhand State Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 45001:2018

TC-12887

## Analytical Test Certificate

Unique Lab Report No.	TC1288725000000715	Discipline	Chemical
Report Unique ID	RL02102525002	Group	Atmospheric Pollution
Issue date/time	20.06.2025/ 17:07	Sub Group	Ambient Air Quality

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE - COURT ROAD, POST OFFICE - LOHARDAGA,  
DIST. - LOHARDAGA, STATE - JHARKHAND, INDIA 835302  
MONITORING SITE: KUJAM I BAUXITE MINE

Contact Person Mr. Ankit Das  
Contact Number +91 9971034775  
Email Id ankit.das@adityabirla.com  
Order Date 31.03.2025/ 10:10  
Order Number 13612313868

### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0210	Sample Booking Number	EPIC- 252502
Sample(s) Code	252502 (A) (B) (C) (D)	Sample Receipt (D/T)	16.06.2025/ 10:20

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	13.06.2025/ 12:20	Sampling End (D/T)	14.06.2025/ 10:20
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Vishal Kumar & Team
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Clear	Temperature (°C)	32	Humidity %	55	Wind direction	90°-270°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Near Pakri Gada Village	GPS coordinate	23° 20' 01.26" / 84° 14' 17.70"
S. Location B	Near Pol Pul Village	GPS coordinate	23° 18' 46.04" / 84° 16' 18.35"
S. Location C	Near Shakhupani Village	GPS coordinate	23° 19' 22.76" / 84° 15' 33.71"
S. Location D	Near Dipa Kujam Village	GPS coordinate	23° 18' 18.91" / 84° 14' 55.35"

### Data(s) of performance of the laboratory activities

Test start date	16.06.2025/ 10:40	Test completion date	20.06.2025/ 15:22
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### -Test Results-

Sl	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Particulate Matter (PM <sub>10</sub> )	IS:5182 (P-23) 2022	µg/m <sup>3</sup>	60.35	67.09	65.04	74.09	100 (24 hr)
2.	Fine Particulate Matter (PM <sub>2.5</sub> )	IS 5182 (P-24) 2019	µg/m <sup>3</sup>	28.27	28.82	24.39	31.59	80(24 hr)
3.	Sulphur Dioxide (SO <sub>2</sub> )	IS:5182 (P-02) 2023	µg/m <sup>3</sup>	06.26	07.44	08.61	09.40	80(24 hr)
4.	Nitrogen Dioxide (NO <sub>2</sub> )	IS:5182 (P-06) 2022	µg/m <sup>3</sup>	17.97	19.03	20.08	22.20	80(24 hr)
5.	Ammonia (NH <sub>3</sub> )	IS:5182 (P-25) 2018	µg/m <sup>3</sup>	32.14	29.22	33.12	36.04	400(24 hr)
6.	Ozone (O <sub>3</sub> )	IS:5182 (P-09) 2019	µg/m <sup>3</sup>	24.32	22.18	25.04	24.32	180(1 hr)
7.	Lead (Pb)	IS:5182(P-22) 2019	µg/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	1.0(24 hr)
8.	Nickel (Ni)	IS:5182(P-26) 2020	ng/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
9.	Arsenic (As)	USEPA IO 3.2-1999	ng/m <sup>3</sup>	BDL (MDL-0.001)	BDL (MDL-0.001)	BDL (MDL-0.001)	BDL (MDL-0.001)	-

### -Test Results End -

Prescribed Limit	Environmental (Protection) Rules-1986, Schedule VII.
Operational Status	Unit was Operational During sampling.

Analysed by - Archana Gargan



Reviewed by  
(B.N. Kumar)  
Technical Head

Issue by  
(Gresh Gadi)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand





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✉ epiclabtech@gmail.com

ON: 4749981H2022PTC219585 Accredited by:  
Jharkhand State Pollution Control Board  
PAN: AANCE2811M  
GST: 20AAHCE3811M12X  
Certified by:  
ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL02102525002	Group	Atmospheric Pollution
Issue date/time	20.06.2025/ 17:07	Sub Group	Ambient Air Quality

### Report Issued to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE: KUJAM I BAUXITE MINE

Contact Person Mr. Ankit Das  
Contact Number +91 9971034775  
Email Id ankit.das@adityabirla.com  
Order Date 31.03.2025/ 10:20  
Order Number 13612313868

### References of Quality Management System (Steps of Traceability Detail)

Customer Registration No.	EPIC/OTH/0210	Sample Booking Number	EPIC- 252502
Sample(s) Code	252502 (A) (B) (C) (D)	Sample Receipt (D/T)	16.06.2025/ 10:20

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	13.06.2025/ 12:20	Sampling End (D/T)	14.06.2025/ 10:40
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Vishal Kumar & Team
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Clear	Temperature (°C)	32	Humidity %	55	Wind direction	90°-270°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Near Pakri Gada Village	GPS coordinate	23° 20' 01.26" / 84° 14' 17.70"
S. Location B	Near Poi Poi Village	GPS coordinate	23° 18' 46.04" / 84° 16' 18.36"
S. Location C	Near Shukhuapani Village	GPS coordinate	23° 19' 22.76" / 84° 15' 33.71"
S. Location D	Near Dipa Kujam Village	GPS coordinate	23° 18' 18.91" / 84° 14' 55.35"

### Date(s) of performance of the laboratory activities

Test start date	16.06.2025/ 10:40	Test completion date	20.06.2025/ 15:22
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### --Test Results--

Sl	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Benzene (C <sub>6</sub> H <sub>6</sub> )	IS:5182(P-11) 2006	µg/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
2.	Benzo (a) Pyrene (Bap)- Particulate phase only	IS:5182(P-12) 2004	ng/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
3.	Carbon Monoxide (CO)	EPIC/LAB/SOP/AP/01/06	mg/m <sup>3</sup>	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	-

### --Test Results End--

Prescribed Limit Environmental (Protection) Rules-1986, Schedule VII.  
Operational Status Unit was Operational During sampling.  
Analysed by - Archana Goina



Reviewed by  
(B.K. Kumar)  
Technical Head





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CIN: U74999JH2022PTC019485 Accredited by -  
Ranchi State Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 45001:2018  
PAN: AAHCE2611M  
GST: 20AAHCE2611MTX

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RLD2102525003	Group	Atmospheric Pollution
Issue date/time	20.06.2025/ 17:09	Sub Group	Work Zone Noise

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE: KUJAM I BAUXITE MINE

Contact Person Mr. Ankit Das  
Contact Number +91 9971034775  
Email Id ankit.das@adityabirla.com  
Order Date 31.03.2025/ 10:10  
Order Number 13612313868

### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0210	Sample Booking Number	EPIC- 252503
Sample(s) Code	252503 (A) (B) (C) (D)	Sample Receipt (D/T)	16.06.2025/ 10:26

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/038
Sampling Start (D)	13.06.2025	Sampling End (D)	13.06.2025
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Vishal Kumar & Team
Sampling method used	IS 9989:1981 (RA 2020) & CPCB Method S.O.50 (E) dated 11/01/2010		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Clear	Temperature (°C)	32	Humidity %	55	Wind direction	90°-270°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Drilling at Working Pit	GPS coordinate	23° 18' 10.45" / 84° 17' 41.09"
S. Location B	Kujam I Bauxite Mine (80.67 Ha)	GPS coordinate	23° 18' 09.10" / 84° 17' 35.54"

### Date(s) of performance of the laboratory activities

Test start date	16.06.2025/ 10:44	Test completion date	20.06.2025/ 15:28
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### -Test Results-

Sl	Test Parameters	Method used	Unit	Results		Limits
				A	B	
1.	$L_{eq}$	IS: 9989:1981	dB (A)	73.6	70.9	85

### -Test Results End -

Prescribed Limit NIOSH - Publication No. 96-126 in 1072, Table 1-1  
Operational Status Unit was Operational During sampling.

Analyzed by - Archana Sarain



Reviewed by  
(R.K. Kumar)  
Technical Head

12  
12/06/25  
Done by  
(Vishal Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand







# EPIC LabTech Private Limited

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ON-U749950H2022P1C015585  
PAN-AANCE3011M  
GST-20AAHCE3011M12X

Accredited by -  
NABL, Lab certificate Number TC-12887  
(Jharkhand State Pollution Control Board)  
Certified by -  
ISO 9001:2015 and ISO 45001:2018



## Analytical Test Certificate

Unique Lab Report No.	TC1288725000000891	Discipline	Chemical
Report Unique ID	RL02372529024	Group	Atmospheric Pollution
Issue date/time	19.07.2025/ 17:12	Sub Group	Ambient Air Quality

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE: KUJAM I BAUXITE MINE

Contact Number  
Email Id  
Order Date  
Order Number

Mr. Ankit Das  
+91 9871034775  
ankit.das@adityabirla.com  
31.03.2025/ 10:10  
13612313868

### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0237	Sample Booking Number	EPIC-2529024
Sample(s) Code	2529024 (A) (B) (C) (D)	Sample Receipt (D/T)	15.07.2025/ 11:35

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	12.07.2025/ 11:55	Sampling End (D/T)	13.07.2025/ 08:06
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	25	Humidity %	72	Wind direction	40°-220°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Kujam Quarry 449	GPS coordinate	23° 18' 25.41" / 84° 19' 03.19"
S. Location B	Talabkhanta 4 A13	GPS coordinate	23° 18' 11.06" / 84° 17' 40.12"
S. Location C	4 A11 Football Ground	GPS coordinate	23° 18' 36.18" / 84° 17' 38.10"
S. Location D	Camp	GPS coordinate	23° 18' 53.11" / 84° 17' 27.09"

### Data(s) of performance of the laboratory activities

Test start date	15.07.2025/ 11:55	Test completion date	19.07.2025/ 15:55
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### -Test Results-

Sl	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Particulate Matter (PM <sub>10</sub> )	IS:5182 (P-23) 2022	µg/m <sup>3</sup>	71.11	64.49	68.63	76.59	100 (24 hr)
2.	Fine Particulate Matter (PM <sub>2.5</sub> )	IS 5182 (P-34) 2019	µg/m <sup>3</sup>	31.26	30.28	27.3	33.92	60(24 hr)
3.	Sulphur Dioxide (SO <sub>2</sub> )	IS:5182 (P-02) 2022	µg/m <sup>3</sup>	07.10	10.68	08.71	06.73	80(24 hr)
4.	Nitrogen Dioxide (NO <sub>2</sub> )	IS:5182 (P-06) 2022	µg/m <sup>3</sup>	18.66	21.97	17.60	20.94	80(24 hr)
5.	Ammonia (NH <sub>3</sub> )	IS:5182 (P-25) 2018	µg/m <sup>3</sup>	43.35	38.57	36.02	39.20	400(24 hr)
6.	Ozone (O <sub>3</sub> )	IS:5182 (P-09) 2019	µg/m <sup>3</sup>	30.04	27.86	25.33	23.16	180(1 hr)
7.	Lead (Pb)	IS:5182(P-22) 2019	µg/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	1.0(24 hr)
8.	Nickel (Ni)	IS:5182(P-26) 2020	ng/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	
9.	Arsenic (As)	USEPA IO 3.2:1999	ng/m <sup>3</sup>	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	

### -Test Results End -

Prescribed Limit	Environmental (Protection) Rules-1986, Schedule VII
Operational Status	Unit was Operational During sampling.

Analyzed by - Vishal Mangaraj



Reviewed by  
(S.K. Kumar)  
Technical Head

Issue by  
(Ankur Das)  
Laboratory Head

Authorized Signatory

EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand

Page 1 of 1

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Abbreviation: - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantification).





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## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL02372529024	Group	Atmospheric Pollution
Issue date/time	19.07.2025/ 17:12	Sub Group	Ambient Air Quality

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE: KUJAM BAUXITE MINE

Contact Person Mr. Ankit Das  
Contact Number +91 9971034775  
Email Id ankit.das@adityabirla.com  
Order Date 31.03.2025/ 10:10  
Order Number 13612313868

### References of Quality Management System (Stage of Traceability Chain)

Customer Registration No.	EPIC/OTH/0237	Sample Booking Number	EPIC-2529024
Sample(s) Code	2529024 (A) (B) (C) (D)	Sample Receipt (D/T)	15.07.2025/ 11:35

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	12.07.2025/ 11:55	Sampling End (D/T)	13.07.2025/ 08:06
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	25	Humidity %	72	Wind direction	40°-220°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Kujam Quarry 449	GPS coordinate	23° 18' 25.41" / 84° 19' 03.19"
S. Location B	Talabkhanta 4 A13	GPS coordinate	23° 18' 11.06" / 84° 17' 40.12"
S. Location C	4 A11 Football Ground	GPS coordinate	23° 18' 36.18" / 84° 17' 38.10"
S. Location D	Camp	GPS coordinate	23° 18' 53.11" / 84° 17' 27.09"

### Date(s) of performance of the laboratory activities

Test start date	15.07.2025/ 11:55	Test completion date	19.07.2025/ 15:55
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### -Test Results-

Sl	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Benzene (C <sub>6</sub> H <sub>6</sub> )	IS-5182(P-11) 2006	µg/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
2.	Benzo (a) Pyrene (Bap)- Particulate phase only	IS-5182(P-12) 2004	ng/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
3.	Carbon Monoxide (CO)	EPIC/LAB/SOP/AR/01/00	mg/m <sup>3</sup>	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	-

### -Test Results End-

Prescribed Limit Environmental (Protection) Rules-1986, Schedule VII.

Operational Status Unit was Operational During sampling.

Analysed by - Vishal Mangaraj



Reviewed by  
(B.K. Kumar)  
Technical Head







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PAN - AARCE3011M  
GST - 20AARCE3611MT2X

Accredited by :-  
NABL, with certificate number TC - 12887  
Jharkhand State Pollution Control Board  
Certified by :-  
ISO 9001:2015 and ISO 45001:2018



## Analytical Test Certificate

Unique Lab Report No.	TC1288725000000692	Discipline	Chemical
Report Unique ID	RL02372529025	Group	Atmospheric Pollution
Issue date/time	19.07.2025/ 17:14	Sub Group	Ambient Air Quality

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE: KUJAM I BAUXITE MINE

Contact Person Mr. Ankit Das  
Contact Number +91 9971034775  
Email Id ankit.das@adityabirla.com  
Order Date 31.03.2025/ 10:10  
Order Number 13612313668

### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0237	Sample Booking Number	EPIC-2529025
Sample(s) Code	2529025 (A) (B) (C) (D)	Sample Receipt (D/T)	15.07.2025/ 11:36

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	13.07.2025/ 11:26	Sampling End (D/T)	14.07.2025/ 08:36
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	25	Humidity %	70	Wind direction	20°-220°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Near Pakri Gada Village	GPS coordinate	23° 20' 01.26" / 84° 14' 17.70"
S. Location B	Near Poi Poi Village	GPS coordinate	23° 18' 46.04" / 84° 16' 18.35"
S. Location C	Near Shakhupani Village	GPS coordinate	23° 19' 22.76" / 84° 15' 33.71"
S. Location D	Near Dipa Kujam Village	GPS coordinate	23° 18' 18.91" / 84° 14' 55.35"

### Data(s) of performance of the laboratory activities

Test start date	15.07.2025/ 11:56	Test completion date	19.07.2025/ 15:56
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### -Test Results-

Sl	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Particulate Matter (PM <sub>10</sub> )	IS:5182 (P-23) 2022	µg/m³	56.60	63.21	61.92	70.41	100 (24 hr)
2.	Fine Particulate Matter (PM <sub>2.5</sub> )	IS:5182 (P-34) 2019	µg/m³	24.89	24.32	20.76	27.23	60(24 hr)
3.	Sulphur Dioxide (SO <sub>2</sub> )	IS:5182 (P-02) 2023	µg/m³	06.97	06.75	07.54	08.30	80(24 hr)
4.	Nitrogen Dioxide (NO <sub>2</sub> )	IS:5182 (P-06) 2022	µg/m³	28.75	25.37	29.76	32.93	80(24 hr)
5.	Ammonia (NH <sub>3</sub> )	IS:5182 (P-25) 2018	µg/m³	28.69	25.82	29.64	32.83	400(24 hr)
6.	Ozone (O <sub>3</sub> )	IS:5182 (P-09) 2019	µg/m³	20.27	18.82	21.35	20.99	180(1 hr)
7.	Lead (Pb)	IS:5182(P-22) 2019	µg/m³	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	1.0(24 hr)
8.	Nickel (Ni)	IS:5182(P-26) 2020	ng/m³	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	
9.	Arsenic (As)	USEPA IO 3.2-1999	ng/m³	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	

### -Test Results End -

Prescribed Limit Environmental (Protection) Rules-1986, Schedule VII.  
Operational Status Unit was Operational During sampling.

Analysed by - Vishal Mangaraj

Reviewed by  
(S.N. Kumar)  
Technical Head

Issued by  
(Green Seal)  
Laboratory Head

Authorized Signatory

EPIC LabTech Pvt. Ltd. Page 1 of 1

Ranchi, Jharkhand

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CIN - U74999JH2022PTC219683  
RAN - AANCE3611M  
GST - 20AANCE3611M1Z8

Accredited by -  
Jharkhand State Pollution Control Board  
Certified by -  
ISO 14001:2015 and ISO 45001:2018

## Analysical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL02372529025	Group	Atmospheric Pollution
Issue date/time	19.07.2025/ 17:14	Sub Group	Ambient Air Quality

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE: KUJAM I BAUXITE MINE

Contact Person Mr. Ankit Das  
Contact Number +91 9971034775  
Email Id ankit.das@adityabirla.com  
Order Date 31.03.2025/ 10:10  
Order Number 13612313868

### References of Quality Management System (Steps of Traceability Data)

Customer Registration No.	EPIC/OTH/0237	Sample Booking Number	EPIC-2529025
Sample(s) Code	2529025 (A) (B) (C) (D)	Sample Receipt (D/T)	15.07.2025/ 11:30

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	13.07.2025/ 11:26	Sampling End (D/T)	14.07.2025/ 08:36
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	25	Humidity %	70	Wind direction	20°-220°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Near Pakri Gada Village	GPS coordinate	23° 20' 01.26" / 84° 14' 17.70"
S. Location B	Near Poi Poi Village	GPS coordinate	23° 18' 46.04" / 84° 16' 18.38"
S. Location C	Near Shakhupani Village	GPS coordinate	23° 19' 22.76" / 84° 15' 33.71"
S. Location D	Near Dipa Kujam Village	GPS coordinate	23° 18' 18.91" / 84° 14' 55.35"

### Data(s) of performance of the laboratory activities

Test start date	15.07.2025/ 11:56	Test completion date	19.07.2025/ 15:56
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### -Test Results-

Sl	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Benzene (C <sub>6</sub> H <sub>6</sub> )	IS 5182(P-11) 2006	µg/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
2.	Benzo (a) Pyrene (Bap)- Particulate phase only	IS 5182(P-12) 2004	ng/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
3.	Carbon Monoxide (CO)	EPIC/LAB/SOP/AP/01/00	mg/m <sup>3</sup>	BDL (MDL-1.6)	BDL (MDL-1.6)	BDL (MDL-1.6)	BDL (MDL-1.6)	-

### -Test Results End -

Prescribed Limit Environmental (Protection) Rules-1986, Schedule VII.

Analysed by - Vishal Mangaraj



Reviewed by  
(R.K. Kumar)  
Technical Head







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PAN-AAHCE3611M  
GST-20AAHCE3611M1ZX

Accredited by -  
NABL, vide certificate number TC-1350/  
Jharkhand State Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 45001:2018



TC-12887

## Analysical Test Certificate

Unique Lab Report No.	TC1288725000000893	Discipline	Chemical
Report Unique ID	RL02372529026	Group	Water
Issue date/time	19.07.2025/ 17:16	Sub Group	Drinking Water

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST -LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE: KUJAM I BAUXITE MINE

Contact Person Mr. Ankit Das  
Contact Number +91 9971034775  
Email Id ankit.das@adityabirla.com  
Order Date 31.03.2025/ 10:10  
Order Number 13612313868

### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0237	Sample Booking Number	EPIC-2529026
Sample(s) Code	2529026	Sample Receipt (D/T)	15.07.2025/ 11:37

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	13.07.2025/ 12:10	Sampling End (D/T)	13.07.2025/ 12:20
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Vishal Kumar & Team
Sampling method used	IS : 3025 (Part-1) 1987, R-2003		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	25	Humidity %	70	Wind direction	40°-220°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Canteen	GPS coordinate	23° 18' 50.49" / 84° 17' 30.44"
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### Date(s) of performance of the laboratory activities

Test start date	15.07.2025/ 11:57	Test completion date	19.07.2025/ 16:00
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### --Test Result--

Sl	Test Parameters	Method used	Unit	Results	Limits	
					Acceptable Limit	Permissible Limit
1.	pH value at 25°C	IS 3025 (P-11) 2022	-	6.75	6.5-8.5	No relaxation
2.	Turbidity	IS 3025 (P-10) 1984	NTU	0.76	1	5
3.	Colour	IS 3025 (P-04) 2021	Hazen	<5	5	15
4.	Odour	IS 3025 (P-05) 2018	-	Agreeable	Agreeable	Agreeable
5.	Taste	IS 3025 (P-07) 2017	-	Agreeable	Agreeable	Agreeable
6.	Total Dissolved Solids (TDS)	IS 3025 (P-16) 2023	mg/l	94.00	500	2000
7.	Chloride (as Cl)	IS 3025 (P-32) 2019	mg/l	14.86	250	1000
8.	Total Alkalinity (as CaCO <sub>3</sub> )	IS 3025 (P-23) 2019	mg/l	51.00	200	600
9.	Total Hardness (as CaCO <sub>3</sub> )	IS 3025 (P-21) 2009	mg/l	65.00	200	600
10.	Calcium (as Ca)	IS 3025 (P-40) 1991	mg/l	09.22	75	200
11.	Free Residual Chlorine	IS 3025 (P-26) 1989	mg/l	BDL(MDL-0.4)	0.2	1
12.	Sulphate (as SO <sub>4</sub> )	IS 3025 (P-24/Sec-1)2022	mg/l	1.10	200	400
13.	Nitrate (as NO <sub>3</sub> )	APHA 4500 B 2023	mg/l	0.92	45	No relaxation
14.	Phenolic Compound	IS 3025 (P-43/Sec-1) 2022	mg/l	BDL(MDL-0.001)	0.001	0.002
15.	Magnesium (as Mg)	APHA 3500 Mg E 2023	mg/l	10.47	30	100



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✉ epiclabtech@gmail.com

CIN:-U74999JH2022PTC019685  
PAN:-AAHCE381M  
GST:-20AAHCE381M12X

Accredited by:-  
NABL, Lab certificate Number TC-12887  
Jharkhand State Pollution Control Board  
Certified by:-  
ISO 9001:2015 and ISO 45001:2018

TC-12887

## Analytical Test Certificate

Unique Lab Report No.	TC1288725000000893	Discipline	Chemical
Report Unique ID	RL02372529026	Group	Water
Issue date/time	19.07.2025/ 17:16	Sub Group	Drinking Water

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE: KUJAM I BAUXITE MINE

Contact Person Mr. Ankit Das  
Contact Number +91 9971034775  
Email id ankit.das@lodyabirla.com  
Order Date 31.03.2025/ 10:10  
Order Number 13612313868

### Group - Residues and Contaminants in Water

### Sub Group - Trace Metals Elements

16. Copper (as Cu)	APHA 3111 B 2023	mg/l	BDL(MDL-0.2)	0.05	1.5
17. Iron (as Fe)	APHA 3111 B 2023	mg/l	BDL(MDL-0.1)	1.0	No relaxation
18. Lead (as Pb)	APHA 3111 B 2023	mg/l	BDL(MDL-0.01)	0.01	No relaxation
19. Cadmium (as Cd)	APHA 3111 B 2023	mg/l	BDL(MDL-0.003)	0.003	No relaxation
20. Total Chromium (as Cr)	APHA 3111 B 2023	mg/l	BDL(MDL-0.05)	0.05	No relaxation
21. Nickel (as Ni)	APHA 3111 B 2023	mg/l	BDL(MDL-0.02)	0.02	No relaxation
22. Total Arsenic (as As)	APHA 3114 B 2023	mg/l	BDL(MDL-0.005)	0.01	0.05
23. Selenium (as Se)	APHA 3114 B 2023	mg/l	BDL(MDL-0.005)	0.01	No relaxation
24. Manganese (as Mn)	APHA 3111 B 2023	mg/l	BDL(MDL-0.09)	0.1	0.3
25. Zinc (as Zn)	APHA 3111 B 2023	mg/l	BDL(MDL-0.04)	5	15

—Test result End—

Prescribed Limit IS 10500:2023  
Operational Status Unit was Operational During sampling.  
Analysed by - Vishal Mangaraj



Reviewed by  
(E.K. Kumar)  
Technical Read

Issued by  
(Anish Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand



Page 2 of 2

**Disclaimer Note** | 1. The laboratory accepts responsibility for content of this report | 2. Test performed at laboratory's permanent facility at specific environmental condition as method required and results relate only to the sample tested as prescribed Date & time | 3. The Test report shall not be reproduced full or in part & can't be used as proof in the court of law | 4. Any complaint about this report should be communicated in writing within 10 days of its issue | 5. Total liability of EPIC LabTech Pvt. Ltd. will be limited to nominal amount only | 6. All disputes are subjected to Ranchi Jurisdiction and maximum liability of the laboratory does not exceed the testing and sampling charges | 7. Opinion does not imply endorsement of the tested product by laboratory. Under no circumstances, laboratory accepts any liability caused by use or misuse of this report. | 8. When the results are from external provider are marked as "mark".  
**Abbreviation** - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantitation).





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ON: - U74999W2022PTC019685

PAN: - AAKCE3615M

GST: - 20AAKCE3615M12X

Recognized by:-

Jharkhand State Pollution Control Board

Certified by:-

ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL02372529026	Group	Water
Issue date/time	19.07.2025/ 17:16	Sub Group	Drinking Water

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE -JHARKHAND, INDIA 835302  
MONITORING SITE: KUJAM I BAUXITE MINE

Contact Person Mr. Ankit Das  
Contact Number +91 9971034775  
Email Id ankit.das@adityabirla.com  
Order Date 31.03.2025/ 10:10  
Order Number 13612313868

### References of Quality Management System (Days of Traceability Data)

Customer Registration No.	EPIC/OTH/0237	Sample Booking Number	EPIC-2529026
Sample(s) Code	2529026	Sample Receipt (D/T)	15.07.2025/ 11:37

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	13.07.2025/ 12:10	Sampling End (D/T)	13.07.2025/ 12:20
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	IS: 3025 (Part-1) 1987, R-2003		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	25	Humidity %	70	Wind direction	40°-220°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Canteen	GPS coordinate	23° 18' 50.49" / 84° 17' 30.44"
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### Data(s) of performance of the laboratory activities

Test start date	15.07.2025/ 11:57	Test completion date	19.07.2025/ 16:00
-----------------	-------------------	----------------------	-------------------

### -Test Result-

Sl	Test Parameters	Method used	Unit	Results	Limits	
					Acceptable Limit	Permissible Limit
1.	Fluoride (as F)	APHA 4500 F-C 2023	mg/l	BDL(MDL-0.1)	1.0	1.5
Group-Residues and Contaminants in Water				Sub Group-Trace Metals Elements		
2.	Aluminum	IS 3025 (P-55):2019	mg/l	BDL(MDL-0.1)	0.03	0.2
3.	Boron	IS 3025 (P-57):2021	mg/l	BDL(MDL-0.1)	0.5	1.0
4.	Polychlorinated biphenyls	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.2)	0.5	No relaxation
5.	Polynuclear Aromatic Hydrocarbons (PAH)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.05)	0.1	No relaxation
Group-Residues and Contaminants in Water				Sub Group-Pesticides		
6.	Alachlor	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.8)	20	No relaxation
7.	Atrazine	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	2.0	No relaxation
8.	Dieldrin	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.02)	0.03	No relaxation
9.	Alpha HCH	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.005)	0.01	No relaxation
10.	Beta HCH	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.02)	0.04	No relaxation
11.	Butachlor	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	125.0	No relaxation
12.	Chlorpyrifos	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	30.0	No relaxation
13.	Delta HCH	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.02)	0.04	No relaxation
14.	Ethion	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	3.0	No relaxation



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PAN - AAHC8361M  
GST - 20AAHC8361M1ZK

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Certified by -  
ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL02372529026	Group	Water
Issue date/time	19.07.2025/ 17:16	Sub Group	Drinking Water

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE: KUJAM I BAUXITE MINE

Contact Person  
Contact Number  
Email Id  
Order Date  
Order Number

Mr. Ankit Das  
+91 9971034775  
ankit.das@adityabirla.com  
31.03.2025/ 10:10  
13612313868

15.	Gamma- HCH(Lindane)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	2.0	No relaxation
16.	Malathion	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	190.0	No relaxation
17.	Methyl parathion	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.2)	0.3	No relaxation
18.	Monocrotophos	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	1.0	No relaxation
19.	Phorate	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	2.0	No relaxation
20.	DDT (o, p and p, p-isomer of DDT, DDE and DDD)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	1.0	No relaxation
21.	Endosulfan (alpha, beta, and sulphate)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.05)	0.4	No relaxation

-Test result End -

Prescribed Limit  
Operational Status  
Analysed by - Vishal Mangaraj

IS 10500:2012  
Unit was Operational During sampling



Reviewed by  
(S.K. Kumar)  
Technical Head

Assesed by  
(Anish Das)  
Laboratory Head  
Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand



Page 2 of 2

**Contractual Note** | 1. The laboratory accepts responsibility for content of this report | 2. Test performed at laboratory's permanent facility at specific environmental condition as method required and results relate only to the sample tested in prescribed Date & time | 3. The Test report shall not be reproduced full or in part & can't be used as proof in the court of law. | 4. Any complaint about this report should be communicated in writing within 10 days of its issue | 5. Total liability of EPIC LabTech Pvt. Ltd. will be limited to involved amount only | 6. All disputes are subjected to Ranchi Jurisdiction and maximum liability of the laboratory does not exceed the testing and sampling charges | 7. Opinion does not imply endorsement of the tested product by laboratory. Under no circumstances, laboratory accepts any liability by use or misuse of this report. | 8. When the results are from external provider are marked as "mark." |

**Abbreviation** - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LQO (Limit of Quantitation) |





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CIN - U74999JH2022PTC219685  
PAN - AAKHCE3611M  
GST - 20AAHCE3611M1ZK

Accredited by:-  
Jharkhand State Pollution Control Board  
Certified by:-  
ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Biological
Report Unique ID	RL02372529027	Group	Water
Issue date/time	19.07.2025/ 17:1	Sub Group	Drinking Water

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE : KUJAM I BAUXITE MINE

Contact Person Mr. Ankit Das  
Contact Number +91 9971034775  
Email Id ankit.das@adityabirla.com  
Order Date 31.03.2025/ 10:10  
Order Number 13612313868

### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0237	Sample Booking Number	EPIC-2529027
Sample(s) Code	2529027	Sample Receipt (D/T)	15.07.2025/ 11:37

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	13.07.2025/ 12:10	Sampling End (D/T)	13.07.2025/ 12:20
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	IS : 3025 (Part-1) 1987, R-2003		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	25	Humidity %	70	Wind direction	20°-220°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Canteen	GPS coordinate	23° 18' 50.49" / 84° 17' 30.44"
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### Date(s) of performance of the laboratory activities

Test start date	15.07.2025/ 12:30	Test completion date	19.07.2025/ 16:25
-----------------	-------------------	----------------------	-------------------

### --Test Result--

Sl	Test Parameters	Method used	Unit	Results	Limits
1.	Total Coliform	IS 15185 2002	Per 100 ml	Not Detected	Shall not be detectable in any 100 ml sample
2.	E. Coli	IS 15185 2002	Per 100 ml	Not Detected	

### --Test result End --

Prescribed Limit IS 10500:2021  
Operational Status Unit was Operational During sampling.  
Analysed by - Sujata Kumari



Reviewed by  
(BA Kumar)  
Technical Head

Issued by  
(Anish Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand





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PAN:-AAHCE3611M  
GST:-27AAHCE3611M1ZK

Accredited by:-  
NABL with certificate number TC-12887  
Jharkhand State Pollution Control Board  
Certified by:-  
ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	TC1288725000001049	Discipline	Chemical
Report Unique ID	RL02682534073	Group	Atmospheric Pollution
Issue date/time	28.08.2025/ 17:00	Sub Group	Ambient Air Quality

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE : KUJAM I BAUXITE MINE

Contact Person Mr. Ankit Das  
Contact Number +91 9971034775  
Email Id ankit.das@adityabirla.com  
Order Date 31.03.2025/ 10:10  
Order Number 13612313868

### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0269	Sample Booking Number	EPIC-2534073
Sample(s) Code	2534073 (A) (B) (C) (D)	Sample Receipt (D/T)	23.08.2025/ 10:24

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	20.08.2025/ 11:56	Sampling End (D/T)	21.08.2025/ 08:30
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Pawan Deep Bhagat & Team
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition:	Cloudy	Temperature (°C)	28	Humidity %	70	Wind direction	180°-360°
--------------------	--------	------------------	----	------------	----	----------------	-----------

### Sampling Location(s) with GPS coordinate(s)

S. Location A	Kujam Quarry 449	GPS coordinate	23° 18' 25.41" N 84° 19' 03.19" E
S. Location B	Talabkhanta 4 A13	GPS coordinate	23° 16' 11.00" N 84° 17' 40.12" E
S. Location C	4 A11 Football Ground	GPS coordinate	23° 18' 36.18" N 84° 17' 38.10" E
S. Location D	Camp	GPS coordinate	23° 18' 53.11" N 84° 17' 27.08" E

### Date(s) of performance of the laboratory activities

Test start date	23.08.2025/ 10:44	Test completion date	28.08.2025/ 16:00
-----------------	-------------------	----------------------	-------------------

### -Test Results-

Sl	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Particulate Matter (PM <sub>10</sub> )	IS:5182 (P-23) 2022	µg/m³	70.87	64.04	68.22	76.07	100 (24 hr)
2.	Fine Particulate Matter (PM <sub>2.5</sub> )	IS:5182 (P-24) 2019	µg/m³	30.76	29.77	27.21	33.17	60(24 hr)
3.	Sulphur Dioxide (SO <sub>2</sub> )	IS:5182 (P-02) 2023	µg/m³	07.11	10.16	08.37	08.23	60(24 hr)
4.	Nitrogen Dioxide (NO <sub>2</sub> )	IS:5182 (P-06) 2022	µg/m³	17.56	21.31	17.11	20.02	80(24 hr)
5.	Ammonia (NH <sub>3</sub> )	IS:5182 (P-25) 2018	µg/m³	43.03	38.25	35.38	38.88	400(24 hr)
6.	Ozone (O <sub>3</sub> )	IS:5182 (P-08) 2019	µg/m³	29.67	27.14	35.97	22.80	180(1 hr)
7.	Lead (Pb)	IS:5182(P-22) 2019	µg/m³	BDL (MDL:0.1)	BDL (MDL:0.1)	BDL (MDL:0.1)	BDL (MDL:0.1)	1.0(24 hr)
8.	Nickel (Ni)	IS:5182(P-26) 2020	ng/m³	BDL (MDL:0.1)	BDL (MDL:0.1)	BDL (MDL:0.1)	BDL (MDL:0.1)	
9.	Arsenic (As)	USEPA IO 3.2:1999	ng/m³	BDL (MDL:0.001)	BDL (MDL:0.001)	BDL (MDL:0.001)	BDL (MDL:0.001)	

### -Test Results End -

Prescribed Limit Environmental (Protection) Rules-1986, Schedule VII.  
Operational Status Unit was Operational During sampling.

Analysed by - Vishal Mangaraj



Reviewed by  
G.N. Kumar  
Technical Head

Issued by  
Ankit Das  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.





# EPIC LabTech Private Limited

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CIN - U24999JH2022PTC019685  
PAN - AAHCE3811M  
GST - 20AAHCE3811M1ZK

Accredited by -  
Bharat State Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 45001:2018

## Analysis Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL02692534073	Group	Atmospheric Pollution
Issue date/time	28.08.2025/ 17:00	Sub Group	Ambient Air Quality

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST -LOHARDAGA, STATE -JHARKHAND, INDIA 835302  
MONITORING SITE : KUJAM I BAUXITE MINE

Contact Person Mr. Ankit Das  
Contact Number +91 9971034775  
Email Id ankit.das@adityabirla.com  
Order Date 31.03.2025/ 10:10  
Order Number 13612313868

### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0269	Sample Booking Number	EPIC-2534073
Sample(s) Code	2534073 (A) (B) (C) (D)	Sample Receipt (D/T)	23.08.2025/ 10:24

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	20.08.2025/ 11:56	Sampling End (D/T)	21.08.2025/ 08:30
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Pawan Deep Bhagat & Team
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	28	Humidity %	70	Wind direction	180°-360°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Kujam Quarry 449	GPS coordinate	23° 18' 25.41" / 84° 19' 03.19"
S. Location B	Talabkhanta 4 A13	GPS coordinate	23° 18' 11.06" / 84° 17' 40.12"
S. Location C	4 A11 Football Ground	GPS coordinate	23° 18' 36.18" / 84° 17' 38.10"
S. Location D	Camp	GPS coordinate	23° 18' 53.11" / 84° 17' 27.09"

### Date(s) of performance of the laboratory activities

Test start date	23.08.2025/ 10:44	Test completion date	28.08.2025/ 16:00
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### -Test Results-

Sl.	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Benzene (C <sub>6</sub> H <sub>6</sub> )	IS:5182(P-11) 2006	µg/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
2.	Benzo (a) Pyrene (Bap)- Particulate phase only	IS:5182(P-12) 2004	ng/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
3.	Carbon Monoxide (CO)	EPIC/LAB/SOP/AP/01/00	mg/m <sup>3</sup>	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	-

### -Test Results End -

Prescribed Limit Environmental (Protection) Rules-1986, Schedule VII.

Operational Status Unit was Operational During sampling.

Analyzed by - Vishal Mangaraj



*[Signature]*  
Reviewed by  
(R.K. Kumar)  
Technical Head







# EPIC LabTech Private Limited



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CIN:-U74999JH2022PTC019685  
PAN:-AAHLE2811M  
GST:-27AAHCE3601M12X

Accredited by -  
NABL, vide certificate number TC-12887  
Jharkhand State Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 45001:2018

TC-12887

## Analytical Test Certificate

Unique Lab Report No.	TC1288725000001060	Discipline	Chemical
Report Unique ID	RL02662534074	Group	Atmospheric Pollution
Issue date/time	28.08.2025/ 17:03	Sub Group	Ambient Air Quality

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE : KUJAM I BAUXITE MINE

Contact Person Mr. Ankit Das  
Contact Number +91 9971034775  
Email Id ankit.das@adityabirla.com  
Order Date 31.03.2025/ 10:10  
Order Number 13612313868

### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0269	Sample Booking Number	EPIC-2534074
Sample(s) Code	2434074 (A) (B) (C) (D)	Sample Receipt (D/T)	23.08.2025/ 10:25

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	21.08.2025/ 11:27	Sampling End (D/T)	22.08.2025/ 09:08
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Pawan Deep Bhagat & Team
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	28	Humidity %	70	Wind direction	180°-360°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Near Pakri Gado Village	GPS coordinate	23° 20' 01.28" / 84° 14' 17.70"
S. Location B	Near Pol Pol Village	GPS coordinate	23° 18' 46.04" / 84° 16' 18.36"
S. Location C	Near Shakhupani Village	GPS coordinate	23° 19' 22.78" / 84° 15' 33.71"
S. Location D	Near Dipa Kujam Village	GPS coordinate	23° 18' 18.91" / 84° 14' 55.35"

### Date(s) of performance of the laboratory activities

Test start date	23.08.2025/ 10:45	Test completion date	28.08.2025/ 16:00
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### -Test Results-

Sl	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Particulate Matter (PM <sub>10</sub> )	IS:5182 (P-23) 2022	µg/m <sup>3</sup>	56.19	63.00	61.42	70.01	100 (24 hr)
2.	Fine Particulate Matter (PM <sub>2.5</sub> )	IS:5182 (P-24) 2019	µg/m <sup>3</sup>	24.32	24.30	20.46	27.09	60 (24 hr)
3.	Sulphur Dioxide (SO <sub>2</sub> )	IS:5182 (P-02) 2023	µg/m <sup>3</sup>	06.17	06.42	07.34	07.82	80 (24 hr)
4.	Nitrogen Dioxide (NO <sub>2</sub> )	IS:5182 (P-06) 2022	µg/m <sup>3</sup>	27.82	24.16	28.06	31.04	80 (24 hr)
5.	Ammonia (NH <sub>3</sub> )	IS:5182 (P-25) 2016	µg/m <sup>3</sup>	28.07	25.50	29.32	32.51	400 (24 hr)
6.	Ozone (O <sub>3</sub> )	IS:5182 (P-09) 2019	µg/m <sup>3</sup>	19.90	18.09	20.99	20.27	180 (1 hr)
7.	Lead (Pb)	IS:5182 (P-22) 2019	µg/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	1.0 (24 hr)
8.	Nickel (Ni)	IS:5182 (P-26) 2020	ng/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
9.	Arsenic (As)	USEPA IO 3.2:1999	ng/m <sup>3</sup>	BDL (MDL-0.001)	BDL (MDL-0.001)	BDL (MDL-0.001)	BDL (MDL-0.001)	-

### -Test Results End -

Prescribed Limit Environmental (Protection) Rules-1986, Schedule VII.  
Operational Status Unit was Operational During sampling.

Analysed by - Vishal Mangaraj



Reviewed by  
(B.N. Kumar)  
Technical Head

Issue by  
(Anish Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand





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CIN - U24399JH2022PTC019683  
PAN - AAHCE3010M  
GST - 20AAHCE3381M1Z4

Accredited by:-  
Jharkhand State Pollution Control Board  
Certified by:-  
ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL02692534074	Group	Atmospheric Pollution
Issue date/time	28.08.2025/ 17:03	Sub Group	Ambient Air Quality

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE : KUJAM I BAUXITE MINE

Contact Person Mr. Ankit Das  
Contact Number +91 9971034775  
Email Id ankit.das@adityabirla.com  
Order Date 31.03.2025/ 10:10  
Order Number 13612313868

### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0269	Sample Booking Number	EPIC-2534074
Sample(s) Code	2434074 (A) (B) (C) (D)	Sample Receipt (D/T)	23.08.2025/ 10:25

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	21.08.2025/ 11:27	Sampling End (D/T)	22.08.2025/ 09:08
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Pawan Deep Bhagat & Team
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	26	Humidity %	70	Wind direction	180°-360°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Near Pakri Gada Village	GPS coordinate	23° 20' 01.26" / 84° 14' 17.70"
S. Location B	Near Pol Pol Village	GPS coordinate	23° 18' 46.04" / 84° 16' 18.35"
S. Location C	Near Shakhupani Village	GPS coordinate	23° 19' 22.76" / 84° 15' 33.71"
S. Location D	Near Dipa Kujam Village	GPS coordinate	23° 18' 18.91" / 84° 14' 55.35"

### Date(s) of performance of the laboratory activities

Test start date	23.08.2025/ 10:45	Test completion date	28.08.2025/ 16:00
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### -Test Results-

Sl	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Benzene (C <sub>6</sub> H <sub>6</sub> )	IS:5182(P-11) 2006	ug/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
2.	Benzo (a) Pyrene (Bap)- Particulate phase only	IS:5182(P-12) 2004	ng/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
3.	Carbon Monoxide (CO)	EPIC/LAB/SOP/AF/01/00	mg/m <sup>3</sup>	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	-

### -Test Results End-

Prescribed Limit Environmental (Protection) Rules-1986, Schedule VII.

Operational Status Unit was Operational During sampling.

Analyzed by - Vishal Mangaraj



Reviewed by  
(R.K. Kumar)  
Technical Head





# EPIC LabTech Private Limited



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CIN-U74999(JH2022PTC078685)  
PAN-AAACE3803M  
GST-23AAHCE3803MH29

Accredited by:-  
NABL, vide certificate Number TC-1500  
Jharkhand State Pollution Control Board  
Certified by:-  
ISO 9001:2015 and ISO 45001:2018

TC-12887

## Analysical Test Certificate

Unique Lab Report No.	TC1288725000001051	Discipline	Chemical
Report Unique ID	RL02662534075	Group	Water
Issue date/time	28.08.2025/ 17:06	Sub Group	Ground Water

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE : KUJAM I BAUXITE MINE

Contact Person Mr. Ankit Das  
Contact Number +91 9971034775  
Email Id ankit.das@adityabirla.com  
Order Date 31.03.2025/ 10:10  
Order Number 13612313868

### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0289	Sample Booking Number	EPIC-2534075
Sample(s) Code	2534075	Sample Receipt (Dr/T)	23.08.2025/ 10:27

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/038
Sampling Start (D/T)	21.08.2025/ 15:25	Sampling End (D/T)	21.08.2025/ 15:35
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Pawan Deep Bhagat & Team
Sampling method used	IS : 3025 (Part-1) 1987, R-2003		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	28	Humidity %	70	Wind direction	180°-350°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Near Shakhupani Village	GPS coordinate	23° 19' 22.78" / 84° 15' 33.71"
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### Date(s) of performance of the laboratory activities

Test start date	23.08.2025/ 10:47	Test completion date	28.08.2025/ 15:30
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### --Test Result--

Sl	Test Parameters	Method used	Unit	Results	Limits	
					Acceptable Limit	Permissible limit
1.	pH value at 25°C	IS 3025 (P-11) 2022	-	6.99	6.5-8.5	No relaxation
2.	Turbidity	IS 3025 (P-10) 1984	NTU	0.94	1	5
3.	Colour	IS 3025 (P-04) 2021	Hazen	<5	5	15
4.	Odour	IS 3025 (P-06) 2018	-	Agreeable	Agreeable	Agreeable
5.	Taste	IS 3025 (P-07) 2017	-	Agreeable	Agreeable	Agreeable
6.	Total Dissolved Solids (TDS)	IS 3025 (P-16) 2023	mg/l	133.00	500	2000
7.	Chloride (as Cl)	IS 3025 (P-32) 2019	mg/l	18.61	250	1000
8.	Total Alkalinity (as CaCO <sub>3</sub> )	IS 3025 (P-23) 2019	mg/l	60.00	200	600
9.	Total Hardness (as CaCO <sub>3</sub> )	IS 3025 (P-21) 2009	mg/l	91.00	200	600
10.	Calcium (as Ca)	IS 3025 (P-40) 1991	mg/l	12.23	75	200
11.	Free Residual Chlorine	IS 3025 (P-26) 1986	mg/l	BDL(MDL-0.4)	0.2	1
12.	Sulphate (as SO <sub>4</sub> )	IS 3025 (P-24/Sec-1)2022	mg/l	2.50	200	400
13.	Nitrate (as NO <sub>3</sub> )	APHA 4500 B 2023	mg/l	1.10	45	No relaxation
14.	Phenolic Compound	IS 3025 (P-43/Sec-1) 2022	mg/l	BDL(MDL-0.001)	0.001	0.002
15.	Magnesium (as Mg)	APHA 3500 MgE 2023	mg/l	10.47	30	100





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CTN:-UT4909/H2022PTC019683  
PAN:-AAHCE3801M  
GST:-27AAHCE3801M1Z8

Accredited by:-  
Indic. use certificate Number TC- 12887  
Jharkhand State Pollution Control Board  
Certified by:-  
ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	TC1288725000001051	Discipline	Chemical
Report Unique ID	RL02662534075	Group	Water
Issue date/time	28.08.2025/ 17:06	Sub Group	Ground Water
Report Issue to		Contact Person	
M/s - HINDALCO INDUSTRIES LIMITED		Mr. Ankit Das	
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,		Contact Number	
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302		+91 9871034775	
MONITORING SITE : KUJAM I BAUXITE MINE		Email Id	
		ankit.das@adityabirla.com	
		Order Date	
		31.03.2025/ 10:10	
		Order Number	
		13612313868	

### Group - Residues and Contaminants in Water,

### Sub Group - Trace Metals Elements

16. Copper (as Cu)	APHA 3111 B 2023	mg/l	BDL(MDL-0.2)	0.05	1.5
17. Iron (as Fe)	APHA 3111 B 2023	mg/l	BDL(MDL-0.1)	1.0	No relaxation
18. Lead (as Pb)	APHA 3111 B 2023	mg/l	BDL(MDL-0.01)	0.01	No relaxation
19. Cadmium (as Cd)	APHA 3111 B 2023	mg/l	BDL(MDL-0.003)	0.003	No relaxation
20. Total Chromium (as Cr)	APHA 3111 B 2023	mg/l	BDL(MDL-0.05)	0.05	No relaxation
21. Nickel (as Ni)	APHA 3111 B 2023	mg/l	BDL(MDL-0.02)	0.02	No relaxation
22. Total Arsenic (as As)	APHA 3114 B 2023	mg/l	BDL(MDL-0.005)	0.01	0.05
23. Selenium (as Se)	APHA 3114 B 2023	mg/l	BDL(MDL-0.005)	0.01	No relaxation
24. Manganese (as Mn)	APHA 3111 B 2023	mg/l	BDL(MDL-0.05)	0.1	0.3
25. Zinc(as Zn)	APHA 3111 B 2023	mg/l	BDL(MDL-0.04)	5	15

--Test result End --

Prescribed Limit IS 10500:2021  
Operational Status Unit was Operational During sampling.  
Analysed by - Pappu Kumar



Reviewed by  
(P.K. Kumar)  
Technical Head

Issued by  
(Ankit Das)  
Laboratory Head  
Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand



Page 2 of 2

**Contractual Note** | 1. The laboratory accepts responsibility for content of this report | 2. Test performed at laboratory's permanent facility at specific environmental conditions as method required and results relate only to the sample tested as presented Date & time | 3. The Test report shall not be reproduced full or in part & can't be used as proof in the court of law. | 4. Any complaint about this report should be communicated in writing within 10 days of its issue | 5. Total liability of EPIC LabTech Pvt. Ltd. will be limited to incurred amount only. | 6. All disputes are subject to Ranchi Jurisdiction and maximum liability of the laboratory does not exceed the testing and sampling charges | 7. Opinion does not imply endorsement of the tested product by laboratory. Under no circumstances, laboratory accepts any liability by use or misuse of this report. | 8. When the results are from external provider are marked as "such".  
**Abbreviation** - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantification).



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CIN:-U74999JH2022PTC019685  
PAN:-AAHCE3011M  
GST:-29AAHCE3011M1ZK

Accredited by:-  
Pollution Control Board,  
Jharkhand  
Certified by:-  
ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL02692534075	Group	Water
Issue date/time	28.08.2025/ 17:06	Sub Group	Ground Water

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST -LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE : KUJAM I BAUXITE MINE

Contact Person Mr. Ankit Das  
Contact Number +91 9971034775  
Email Id ankit.das@adityabirla.com  
Order Date 31.03.2025/ 10:10  
Order Number 13612313868

### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0269	Sample Booking Number	EPIC-2534075
Sample(s) Code	2534075	Sample Receipt (D/T)	23.08.2025/ 10:27

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	21.08.2025/ 15:25	Sampling End (D/T)	21.08.2025/ 16:35
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Pawan Deep Bhagat & Team
Sampling method used	IS : 3025 (Part-1) 1987, R-2003		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	28	Humidity %	70	Wind direction	180°-360°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Near Shakhupani Village	GPS coordinate	23° 19' 22.76" / 84° 15' 33.71"
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### Date(s) of performance of the laboratory activities

Test start date	23.08.2025/ 10:47	Test completion date	28.08.2025/ 15:30
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### -Test Result-

Sl	Test Parameters	Method used	Unit	Results	Limits	
					Acceptable Limit	Permissible limit
1.	Fluoride (as F)	APHA 4500 F-C 2023	mg/l	BDL(MDL-0.1)	1.0	1.5

### Group-Residues and Contaminants in Water

### Sub Group-Trace Metals Elements

2.	Aluminum	IS 3025 (P-55):2019	mg/l	BDL(MDL-0.1)	0.03	0.2
3.	Boron	IS 3025 (P-57):2021	mg/l	BDL(MDL-0.1)	0.5	1.0
4.	Polychlorinated biphenyls	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.2)	0.5	No relaxation
5.	Polynuclear Aromatic Hydrocarbons (PAH)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.05)	0.1	No relaxation

### Group-Residues and Contaminants in Water

### Sub Group-Pesticides

6.	Alachlor	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	20	No relaxation
7.	Atrazine	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	2.0	No relaxation
8.	Dieldrin	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.02)	0.03	No relaxation
9.	Alpha HCH	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.005)	0.01	No relaxation
10.	Beta HCH	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.02)	0.04	No relaxation
11.	Butachlor	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	125.0	No relaxation
12.	Chlopyrifos	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	20.0	No relaxation
13.	Delta HCH	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.02)	0.04	No relaxation
14.	Ethion	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	3.0	No relaxation





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CIN - U74999JH2022PTC016685  
PAN - AAMCE3811M  
GST - 27AAMCE3811M1Z9

Accredited by:-  
Jharkhand State Pollution Control Board  
Certified by:-  
ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL02692534075	Group	Water
Issue date/time	28.08.2025/ 17:06	Sub Group	Ground Water

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE : KUJAM I BAUXITE MINE

Contact Person  
Contact Number  
Email Id  
Order Date  
Order Number

Mr. Ankit Das  
+91 9971034775  
ankit.das@edityabirla.com  
31.03.2025/ 10:10  
13612313868

15. Gamma- HCH(Lindane)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	2.0	No relaxation
16. Malathion	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	190.0	No relaxation
17. Methyl parathion	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.2)	0.3	No relaxation
18. Monocrotophos	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	1.0	No relaxation
19. Phorate	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	2.0	No relaxation
20. DDT (o, p and p, p-isomer of DDT, DDE and DDD)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	1.0	No relaxation
21. Endosulfan (alpha, beta, and sulphate)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.05)	—	

—Test result End—

Prescribed Limit

Operational Status

Analysed by -Pappu Kumar

Unit was Operational During sampling.



  
Verified by  
(P. Kumar)  
Technical Head

  
Issued by  
(Ankit Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand



Page 2 of 2

**Disclaimer:** 1. The laboratory accepts responsibility for content of this report. 2. Test performed at laboratory's permanent facility at specific environmental condition as method required and results relate only to the sample tested in prescribed Date & time. 3. The Test report shall not be reproduced full or in part & can't be used as proof in the court of law. 4. Any complaint about this report should be communicated in writing within 10 days of its issue. 5. Total liability of EPIC LabTech Pvt. Ltd. will be limited to incurred amount only. 6. All disputes are subjected to Ranchi Jurisdiction and maximum liability of the laboratory does not exceed the testing and sampling charges. 7. Opinion does not imply endorsement of the tested product by laboratory. Under no circumstances, laboratory accepts any caused by use or misuse of this report. 8. When the results are from external provider are marked as "Data".

**Abbreviation:** - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantification).





# EPIC LabTech Private Limited

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☎ 93048 73994  
✉ epiclabtech@gmail.com

CIN: U74399JY2022PTC019653  
PAN: AAHCE361YM  
GST: 20AAHCE361YM1ZK

Accredited by -  
Hazardous Waste Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Biological
Report Unique ID	RL02692534076	Group	Water
Issue date/time	28.08.2025/ 17:09	Sub Group	Ground Water

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST -LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE : KUJAM I BAUXITE MINE

Contact Person Mr. Ankit Das  
Contact Number +91 9971034775  
Email Id ankit.das@adityabirla.com  
Order Date 31.03.2025/ 10:10  
Order Number 13612313868

### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0269	Sample Booking Number	EPIC-2534076
Sample(s) Code	2534076	Sample Receipt (D/T)	23.08.2025/ 10:27

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	21.08.2025/ 15:25	Sampling End (D/T)	21.08.2025/ 15:35
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Pawan Deep Bhagat & Team
Sampling method used	IS : 3025 (Part-1) 1987, R-2003		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	28	Humidity %	70	Wind direction	180°-360°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Near Shakhupani Village	GPS coordinate	23° 19' 22.76" / 84° 15' 33.71"
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### Date(s) of performance of the laboratory activities

Test start date	23.08.2025/ 10:47	Test completion date	28.08.2025/ 15:30
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### --Test Result--

Sl	Test Parameters	Method used	Unit	Results	Limits
1.	Total Coliform	IS 15185:2002	Per 100 ml	Not Detected	Shall not be detectable in any 100 ml sample
2.	E. Coli	IS 15185:2002	Per 100 ml	Not Detected	

### --Test result End --

Prescribed Limit IS 10500:2021  
Operational Status Unit was Operational During sampling.  
Analysed by - Sajita Kumari



Reviewed by  
(S.R. Kumar)  
Technical Head

Issued by  
(Sheesh Das)  
Laboratory Head

Authorized Laboratory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand



# EPIC LabTech Private Limited



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✉ epiclabtech@gmail.com

CIN-U74999JH2022PTC018685  
PAN-AAHCE3811M  
GST-20AAHCE3811M1ZK

Accredited by:-  
NABL, with certificate number TC-15807  
Jharkhand State Pollution Control Board  
Certified by:-  
ISO 9001:2015 and ISO 45001:2018

TC-12887

## Analytical Test Certificate

Unique Lab Report No.	TC1288725000001052	Discipline	Chemical
Report Unique ID	RL02692634077	Group	Water
Issue date/time	26.08.2025/ 17:12	Sub Group	Surface Water

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE : KUJAM I BAUXITE MINE

Contact Person	Mr. Ankit Das
Contact Number	+91 9971034775
Email Id	ankit.das@adityabirla.com
Order Date	31.03.2025/ 10:10
Order Number	13612313868

### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0269	Sample Booking Number	EPIC-2534077
Sample(s) Code	2534077	Sample Receipt (D/T)	23.08.2025/ 10:28

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	21.08.2025/ 16:10	Sampling End (D/T)	21.08.2025/ 16:20
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Pawan Deep Bhagat & Team
Sampling method used	IS : 3025 (Part-1) 1987, R-2003		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	28	Humidity %	70	Wind direction	180°-360°
-------------------	--------	------------------	----	------------	----	----------------	-----------

### Sampling Location(s) with GPS coordinate(s)

S. Location A	Chotang Kujam	GPS coordinate	23° 18' 49.59" / 84° 17' 42.11"
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### Date(s) of performance of the laboratory activities

Test start date	23.08.2025/ 10:48	Test completion date	26.08.2025/ 15:30
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### -Test Result-

Sl	Test Parameters	Method used	Unit	Results	Limits
1.	pH value at 25°C	IS 3025 (P-11) 2022	-	6.47	-
2.	Turbidity	IS 3025 (P-10) 1984	NTU	0.12	-
3.	Colour	IS 3025 (P-04) 2021	Hazen	5	-
4.	Odour	IS 3025 (P-05) 2018	-	Agreeable	-
5.	Taste	IS 3025 (P-07) 2017	-	Agreeable	-
6.	Total Dissolved Solids (TDS)	IS 3025 (P-16) 2023	mg/l	168.00	-
7.	Chloride (as Cl)	IS 3025 (P-22) 2019	mg/l	12.13	-
8.	Total Alkalinity (as CaCO <sub>3</sub> )	IS 3025 (P-23) 2019	mg/l	30.00	-
9.	Total Hardness (as CaCO <sub>3</sub> )	IS 3025 (P-21) 2009	mg/l	40.16	-
10.	Calcium (as Ca)	IS 3025 (P-40) 1991	mg/l	14.41	-
11.	Free Residual Chlorine	IS 3025 (P-26) 1999	mg/l	BDL(MDL 0.4)	-
12.	Sulphate (as SO <sub>4</sub> )	IS 3025 (P-24/Sec-1) 2022	mg/l	1.80	-
13.	Nitrate (as NO <sub>3</sub> )	APHA 4500 B 2023	mg/l	1.74	-
14.	Phenolic Compound	IS 3025 (P-43/Sec-1) 2022	mg/l	BDL(MDL 0.001)	-





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CIN - U74999JH2022PTC019685  
PAN - AAHCE3811M  
GST - 23AAHCE3811M1ZK

Accredited by -  
NABL, accreditation number TC-12887  
Jharkhand State Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	TC1288725000001052	Discipline	Chemical
Report Unique ID	RL028862534077	Group	Water
Issue date/time	28.08.2025/ 17:12	Sub Group	Surface Water

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE : KUJAM I BAUXITE MINE

Contact Person  
Contact Number  
Email Id  
Order Date  
Order Number

Mr. Ankit Das  
+91 9971034775  
ankit.das@adityabirla.com  
31.03.2025/ 10:10  
13612313868

### Group - Residues and Contaminants in Water,

### Sub Group - Trace Metals Elements

15. Copper (as Cu)	APHA 3111 B 2023	mg/l	BDL(MDL-0.2)	-
16. Iron (as Fe)	APHA 3111 B 2023	mg/l	BDL(MDL-0.1)	-
17. Lead (as Pb)	APHA 3111 B 2023	mg/l	BDL(MDL-0.01)	-
18. Cadmium (as Cd)	APHA 3111 B 2023	mg/l	BDL(MDL-0.003)	-
19. Total Chromium (as Cr)	APHA 3111 B 2023	mg/l	BDL(MDL-0.05)	-
20. Nickel (as Ni)	APHA 3111 B 2023	mg/l	BDL(MDL-0.02)	-
21. Total Arsenic (as As)	APHA 3114 B 2023	mg/l	BDL(MDL-0.005)	-
22. Selenium (as Se)	APHA 3114 B 2023	mg/l	BDL(MDL-0.005)	-
23. Manganese (as Mn)	APHA 3111 B 2023	mg/l	BDL(MDL-0.08)	-
24. Zinc (as Zn)	APHA 3111 B 2023	mg/l	BDL(MDL-0.04)	-

--Test result End --

Prescribed Limit  
Operational Status

Unit was Operational During sampling.

Analysed by - Pappu kumar



Reviewed by  
(S.K. Kumar)  
Technical Head

Issued by  
(Anshu Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand







# EPIC LabTech Private Limited

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CIN-U74999JH2022PTC019685  
PAN-AAHCE3811M  
GST-25AAHCE3811M1ZK

Accredited by -  
Jharkhand State Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL02692534077	Group	Water
Issue date/time	26.08.2025/ 17:12	Sub Group	Surface Water

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE : KUJAM I BAUXITE MINE

Contact Person Mr. Ankit Das  
Contact Number +91 9971034775  
Email Id ankit.das@adityabirla.com  
Order Date 31.03.2025/ 10:10  
Order Number 13612313868

### References of Quality Management System (Scope of Traceability Chain)

Customer Registration No.	EPIC/OTH/0269	Sample Booking Number	EPIC-2534077
Sample(s) Code	2534077	Sample Receipt (D/T)	23.08.2025/ 10:28

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	21.08.2025/ 16:10	Sampling End (D/T)	20.08.2025/ 16:25
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Vishal Kumar & Team
Sampling method used	IS : 3025 (Part-1) 1987, R-2003		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	28	Humidity %	70	Wind direction	180°-360°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Chotang, Kujam	GPS coordinate	23° 16' 49.58"/ 84° 17' 42.11
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### Date(s) of performance of the laboratory activities

Test start date	23.08.2025/ 10:48	Test completion date	26.08.2025/ 15:30
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### -Test Result-

Sl.	Test Parameters	Method used	Unit	Results	Limits
1.	Fluoride (as F)	APHA 4500 F-C 2023	mg/l	BDL(MDL-0.1)	-
<b>Group-Residues and Contaminants in Water</b>				<b>Sub Group-Trace Metals Elements</b>	
2.	Aluminum	IS 3025 (P-55):2019	mg/l	BDL(MDL-0.1)	-
3.	Boron	IS 3025 (P-57):2021	mg/l	BDL(MDL-0.1)	-
4.	Polychlorinated biphenyls	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.2)	-
5.	Polynuclear Aromatic Hydrocarbons (PAH)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.05)	-
<b>Group-Residues and Contaminants in Water</b>				<b>Sub Group-Pesticides</b>	
6.	Alachlor	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	-
7.	Atrazine	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	-
8.	Dieldrin	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.02)	-
9.	Alpha HCH	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.005)	-
10.	Beta HCH	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.02)	-
11.	Butachlor	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	-
12.	Chlorpyrifos	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	-
13.	Delta HCH	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.02)	-
14.	Ethion	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	-



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CIN: U74999JH2022PTC019683  
PAN: AAHCE3813M  
GST: 20AAHCE3811M1ZK

Accredited by:-  
Bharatpur State Pollution Control Board  
Certified by:-  
ISO 9001:2015 and ISO 45001:2018

## Insufficient Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RLD2692534077	Group	Water
Issue date/time	28.08.2025/ 17:12	Sub Group	Surface Water

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST -LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE : KUJAM I BAUXITE MINE

Contact Person  
Contact Number  
Email Id  
Order Date  
Order Number

Mr. Ankit Das  
+91 9971034775  
ankit.das@adityabirda.com  
31.03.2025/ 10:10  
13612313868

15.	Gamma- HCH(Lindane)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	-
16.	Malathion	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	-
17.	Methyl parathion	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.2)	-
18.	Monocrotophos	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	-
19.	Phorate	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	-
20.	DDT (o, p and p, p-isomer of DDT, DDE and DDD)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.5)	-
21.	Endosulfan (alpha, beta, and sulphate)	EPIC/LAB/SOP/WA/01/00	µg/l	BDL(MDL-0.05)	-

--Test result End --

Prescribed Limit  
Operational Status

Unit was Operational During sampling.

Analysed by - Pappu Kumar



  
Reviewed by  
(S.K. Kumar)  
Technical Head

  
Issued by  
(Anish Das)  
Laboratory Head

AUTHORIZED SIGNATORY  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand



Page 2 of 2

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**Abbreviation** - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantification) |





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CIN:-U74399JH2022PTC010585  
PAN:-AAHCE3610M  
GST:-29AAHCE3610M1Z6

Accredited by:-  
Bharat State Pollution Control Board  
Certified by:-  
ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Biological
Report Unique ID	RL02662534078	Group	Water
Issue date/time	28.08.2025/ 17:15	Sub Group	Surface Water

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST -LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE : KUJAM I BAUXITE MINE

Contact Person	Mr. Ankit Das
Contact Number	+91 9971034775
Email Id	ankit.das@adityabirla.com
Order Date	31.03.2025/ 10:10
Order Number	13612313868

### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/02669	Sample Booking Number	EPIC-2534078
Sample(s) Code	2534078	Sample Receipt (D/T)	23.08.2025/ 10:28

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	21.08.2025/ 16:10	Sampling End (D/T)	21.08.2025/ 16:20
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Pawan Deep Bhagat & Team
Sampling method used	IS : 3025 (Part-1) 1987, R-2003		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	28	Humidity %	70	Wind direction	180°-360°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Chotang Kujam	GPS coordinate	23° 16' 49.59" / 84° 17' 42.11"
---------------	---------------	----------------	---------------------------------

### Date(s) of performance of the laboratory activities

Test start date	23.08.2025/ 10:48	Test completion date	28.08.2025/ 15:30
-----------------	-------------------	----------------------	-------------------

### --Test Result--

Sl	Test Parameters	Method used	Unit	Results	Limits
1.	Total Coliform	IS 15185:2002	Per 100 ml	390	—
2.	E. Coli	IS 15185:2002	Per 100 ml	270	—

### --Test result End --

### Prescribed Limit

### Operational Status

Analysed by - Sujata Kumari

Unit was Operational During sampling.



  
Reviewed by  
(R.K. Kumar)  
Technical Head

  
Issued by  
(Ankit Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand





# EPIC LabTech Private Limited



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CIN - U74999HR2022PTC039665

PAN - AAHCE3877M

GST - 29AAHCE3877M1Z3

Accredited by:-

NABL, acc. no. 1501

Sulphur Dioxide Pollution Control Board

Certified by:-

ISO 9001:2015 and ISO 45001:2018

TC-12887

## Analytical Test Certificate

Unique Lab Report No.	TC1288725000001219	Discipline	Chemical
Report Unique ID	RL02972538023	Group	Atmospheric Pollution
Issue date/time	20-09-2025/15:00	Sub Group	Ambient Air Quality

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST. LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE: KUJAM I BAUXITE MINE

Contact Person Mr. Ankit Das  
Contact Number +91 9871034775  
Email Id ankit.das@adityabirla.com  
Order Date 31.03.2025/ 10:10  
Order Number 13612313868

### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0297	Sample Booking Number	EPIC-2538023
Sample(s) Code	2538023 (A) (B) (C) (D)	Sample Receipt (D/T)	16.09.2025/ 10:36

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	13.09.2025/ 12:08	Sampling End (D/T)	14.09.2025/ 08:31
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Pawan Deep Bhagat & Team
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	28	Humidity %	67	Wind direction	180°-0°
-------------------	--------	------------------	----	------------	----	----------------	---------

### Sampling Location(s) with GPS coordinate(s)

S. Location A	Kujam Quarry 449	GPS coordinate	23° 18' 25.41" / 84° 19' 03.19"
S. Location B	Talabkhanta 4 A13	GPS coordinate	23° 18' 11.06" / 84° 17' 40.12"
S. Location C	4 A11 Football Ground	GPS coordinate	23° 18' 36.18" / 84° 17' 38.10"
S. Location D	Camp	GPS coordinate	23° 18' 53.11" / 84° 17' 27.09"

### Date(s) of performance of the laboratory activities

Test start date	16.09.2025/ 10:56	Test completion date	20.09.2025/ 14:50
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### -Test Results-

Sl	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Particulate Matter (PM <sub>10</sub> )	IS:5182 (P-23) 2022	µg/m <sup>3</sup>	57.81	65.79	61.96	55.89	100 (24 hr)
2.	Fine Particulate Matter (PM <sub>2.5</sub> )	IS 5182 (P-24) 2019	µg/m <sup>3</sup>	22.76	26.28	28.28	27.75	60(24 hr)
3.	Sulphur Dioxide (SO <sub>2</sub> )	IS:5182 (P-02) 2023	µg/m <sup>3</sup>	07.89	11.04	09.06	09.44	80(24 hr)
4.	Nitrogen Dioxide (NO <sub>2</sub> )	IS:5182 (P-06) 2022	µg/m <sup>3</sup>	19.72	22.99	18.60	20.77	80(24 hr)
5.	Ammonia (NH <sub>3</sub> )	IS:5182 (P-25) 2018	µg/m <sup>3</sup>	29.64	29.32	29.00	29.96	400(24 hr)
6.	Ozone (O <sub>3</sub> )	IS:5182 (P-09) 2019	µg/m <sup>3</sup>	20.27	20.63	19.18	18.82	180(1 hr)
7.	Lead (Pb)	IS:5182(P-22) 2018	µg/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	1.0(24 hr)
8.	Nickel (Ni)	IS:5182(P-26) 2020	ng/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	
9.	Arsenic (As)	USEPA IO 3.2:1999	ng/m <sup>3</sup>	BDL (MDL-0.001)	BDL (MDL-0.001)	BDL (MDL-0.001)	BDL (MDL-0.001)	

### -Test Results End -

Prescribed Limit Environmental (Protection) Rules-1986, Schedule VII  
Operational Status Unit was Operational During sampling.

Analysed by - Vishal Mangaraj



Reviewed by  
(S.K. Kumar)  
Technical Head

Issue by  
(Shresh Thakur)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.

Page 1 of 1

**Disclaimer:** 1. The laboratory accepts responsibility for content of this report. 2. Test performed at laboratory's permanent facility. 3. Specific environmental conditions as tested required and results relate only to the sample tested in prescribed date & time. 4. The Test report shall not be reproduced full or in part & can't be used as proof in the court of law. 5. Any irregularities about this report should be communicated in writing within 10 days of its issue. 6. Total liability of EPIC LabTech Pvt. Ltd. will be limited to invoiced amount only. 7. All disputes are subjected to Buxar Jurisdiction and maximum liability of the laboratory does not exceed the testing and sampling charges. 8. Opinion does not imply endorsement of the tested product by laboratory. Under no circumstances, laboratory accepts any liability for use or misuse of this report. 9. When the results are from external provider are marked as "mark".

**Abbreviation:** - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantification).





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CIN - U74999/JH2022PTC019553  
PAN - AAHCE261YM  
GST - 20AAHCE261YM12X

Accredited by -  
Jharkhand State Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL02972538023	Group	Atmospheric Pollution
Issue date/time	20-09-2025/15:00	Sub Group	Ambient Air Quality

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE : KUJAM I BAUXITE MINE

Contact Person Mr. Ankit Das  
Contact Number +91 9971034775  
Email Id ankit.das@adityabirla.com  
Order Date 31.03.2025/ 10:10  
Order Number 13612313868

### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0297	Sample Booking Number	EPIC-2538023
Sample(s) Code	2538023 (A) (B) (C) (D)	Sample Receipt (D/T)	16.09.2025/ 10:36

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	13.09.2025/ 12:08	Sampling End (D/T)	14.09.2025/ 08:31
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Pawan Deep Bhagat & Team
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	28	Humidity %	67	Wind direction	180°-0°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Kujam Quarry 449	GPS coordinate	23° 18' 25.41" / 84° 19' 03.19"
S. Location B	Talabkhanta 4 A13	GPS coordinate	23° 18' 11.06" / 84° 17' 40.12"
S. Location C	4 A11 Football Ground	GPS coordinate	23° 18' 36.18" / 84° 17' 38.10"
S. Location D	Camp	GPS coordinate	23° 18' 53.11" / 84° 17' 27.09"

### Date(s) of performance of the laboratory activities

Test start date	16.09.2025/ 10:56	Test completion date	20.09.2025/ 14:50
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### -Test Results-

Sl.	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Benzene (C <sub>6</sub> H <sub>6</sub> )	IS:5182(P-11) 2006	µg/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
2.	Benzo (a) Pyrene (Bap)- Particulate phase only	IS:5182(P-12) 2004	ng/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
3.	Carbon Monoxide (CO)	EPIC/LAB/SOP/AP/01/00	mg/m <sup>3</sup>	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	-

### -Test Results End-

Prescribed Limit Environmental (Protection) Rules-1986, Schedule VII.

Operational Status Unit was Operational During sampling.

Analysed by - Vishal Mangaraj



Reviewed by  
(S.N. Kumar)  
Technical Head







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CIN:-U74309JH2022PTC019085  
PAN:-AAHCE3010M  
GST:-20AAHCE3011M12X

Accredited by -  
NABL, Lab Certificate Number TC-12887  
Participate State Pollution Control Board  
Certified by -  
ISO 9001:2015 and ISO 45001:2018



## Analytical Test Certificate

Unique Lab Report No.	TC1288725000001220	Discipline	Chemical
Report Unique ID	RL02972538024	Group	Atmospheric Pollution
Issue date/time	20-09-2025/15:03	Sub Group	Ambient Air Quality

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE : KUJAM I BAUXITE MINE

Contact Person Mr. Ankit Das  
Contact Number +91 9971034775  
Email Id ankit.das@edityabirra.com  
Order Date 31.03.2025/ 10:10  
Order Number 13612313868

### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0297	Sample Booking Number	EPIC-2538024
Sample(s) Code	2538024 (A) (B) (C) (D)	Sample Receipt (D/T)	16.09.2025/ 10:37

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	14.09.2025/ 11:35	Sampling End (D/T)	15.09.2025/ 09:09
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Powan Deep Bhagat & Team
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	28	Humidity %	67	Wind direction	180°-0°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Near Pakri Gada Village	GPS coordinate	23° 20' 01.26" / 84° 14' 17.70"
S. Location B	Near Pui Poi Village	GPS coordinate	23° 18' 46.04" / 84° 16' 18.35"
S. Location C	Near Shakhupani Village	GPS coordinate	23° 19' 22.76" / 84° 15' 33.71"
S. Location D	Near Dipa Kujam Village	GPS coordinate	23° 18' 18.91" / 84° 14' 55.35"

### Date(s) of performance of the laboratory activities

Test start date	16.09.2025/ 10:57	Test completion date	20.09.2025/ 14:50
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### --Test Results--

Sl.	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Particulate Matter (PM <sub>10</sub> )	IS:5182 (P-23) 2022	µg/m³	57.57	64.72	62.40	59.93	100 (24 hr)
2.	Fine Particulate Matter (PM <sub>2.5</sub> )	IS 5182 (P-24) 2019	µg/m³	25.43	25.89	21.53	29.04	60(24 hr)
3.	Sulphur Dioxide (SO <sub>2</sub> )	IS:5182 (P-02) 2020	µg/m³	06.36	07.11	07.83	08.54	80(24 hr)
4.	Nitrogen Dioxide (NO <sub>2</sub> )	IS:5182 (P-06) 2022	µg/m³	18.71	19.74	18.65	19.60	80(24 hr)
5.	Ammonia (NH <sub>3</sub> )	IS:5182 (P-25) 2018	µg/m³	29.64	26.14	30.92	33.79	400(24 hr)
6.	Ozone (O <sub>3</sub> )	IS:5182 (P-09) 2019	µg/m³	21.35	19.90	22.44	21.71	180(1 hr)
7.	Lead (Pb)	IS:5182(P-22) 2019	µg/m³	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	1.0(24 hr)
8.	Nickel (Ni)	IS:5182(P-26) 2020	ng/m³	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	
9.	Arsenic (As)	(USEPA IO 3.2.1999)	ng/m³	BDL (MDL-0.001)	BDL (MDL-0.001)	BDL (MDL-0.001)	BDL (MDL-0.001)	

### --Test Results End --

Prescribed Limit	Environmental (Protection) Rules-1986, Schedule VII.
Operational Status	Unit was Operational During sampling.

Analyzed by - Vishal Mangara



*[Signature]*  
Reviewed by  
(S.N. Kumar)  
Technical Head

*[Signature]*  
Issued by  
(Vishal Mangara)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand





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CIN:-U74899JH2022PTC019685  
PAN:-AAHCE3015M  
GST:-20AAHCE3015M1Z3

Accredited by:-  
National Metrology Institute (NMI) India  
Certified by:-  
ISO 9001:2015 and ISO 14001:2015

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL02972538024	Group	Atmospheric Pollution
Issue date/time	20-09-2025/15:03	Sub Group	Ambient Air Quality

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE : KUJAM I BAUXITE MINE

Contact Person Mr. Ankit Das  
Contact Number +91 9971034775  
Email Id ankit.das@adityabirla.com  
Order Date 31.03.2025/ 10:10  
Order Number 13612313868

### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0297	Sample Booking Number	EPIC-2538024
Sample(s) Code	2538024 (A) (B) (C) (D)	Sample Receipt (D/T)	16.09.2025/ 10:37

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	14.09.2025/ 11:35	Sampling End (D/T)	16.09.2025/ 09:09
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Pawan Deep Bhagat & Team
Sampling method used	IS 5182 and CPCB Air Manual Volume - 1 (NAAQM/36/2012-13)		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	28	Humidity %	67	Wind direction	180°-0°
-------------------	--------	------------------	----	------------	----	----------------	---------

### Sampling Location(s) with GPS coordinate(s)

S. Location A	Near Pakri Gada Village	GPS coordinate	23° 20' 01.26" / 84° 14' 17.70"
S. Location B	Near Poi Poi Village	GPS coordinate	23° 18' 46.04" / 84° 16' 18.35"
S. Location C	Near Shakhupani Village	GPS coordinate	23° 19' 22.76" / 84° 15' 33.71"
S. Location D	Near Dipa Kujam Village	GPS coordinate	23° 18' 18.91" / 84° 14' 55.35"

### Data(s) of performance of the laboratory activities

Test start date	16.09.2025/ 10:57	Test completion date	20.09.2025/ 14:50
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### -Test Results-

Sl	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Benzene (C <sub>6</sub> H <sub>6</sub> )	IS:5182(P-11) 2006	µg/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
2.	Benzo (a) Pyrene (Bap)- Particulate phase only	IS:5182(P-12) 2004	ng/m <sup>3</sup>	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	BDL (MDL-0.1)	-
3.	Carbon Monoxide (CO)	EPIC/LAB/SOP/AP/01/00	mg/m <sup>3</sup>	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	BDL (MDL-1.8)	-

### -Test Results End-

Prescribed Limit Environmental (Protection) Rules-1986, Schedule VI.  
Operational Status Unit was Operational During sampling.  
Analysed by - Vishal Mangra



Reviewed by  
(E.K. Kumar)  
Technical Head





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CIN: U74999JH2022PTC019585  
PAN: AAHCE100M  
GST: 20AAHCE3011M1CX

Accredited by:-  
NABL, vide certificate number TC-12887  
Hazardous Waste Pollution Control Board  
Certified by:-  
ISO 9001:2015 and ISO 45001:2018



TC-12887

## Analysis Test Certificate

Unique Lab Report No.	TC1288725000001221	Discipline	Chemical
Report Unique ID	RL02972538025	Group	Pollution & Environment
Issue date/time	20-09-2025/15:06	Sub Group	Soil/Sediments

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE: KUJAM I BAUXITE MINE

Contact Person	Mr. Ankit Das
Contact Number	+91 9871034775
Email Id	ankit.das@adityabirla.com
Order Date	31.03.2025/ 10:10
Order Number	13612313868

### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0297	Sample Booking Number	EPIC-2538025
Sample(s) Code	2538025	Sample Receipt (D/T)	16.09.2025/ 10:38

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	13.09.2025/ 16:30	Sampling End (D/T)	13.09.2025/ 16:40
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Pawan Deep Bhagat & Team
Sampling method used	IS: 3025 (Part-1) 1987, R-2003		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	28	Humidity %	67	Wind direction	180°-0°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Kujam Quarry 449	GPS coordinate	23° 18' 25.45" / 84° 19' 03.22"
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### Date(s) of performance of the laboratory activities

Test start date	16.09.2025/ 11:35	Test completion date	20.09.2025/ 14:50
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### -Test Result-

Sl	Test Parameters	Method used	Unit	Results	Limits
1.	pH value at 25.7°C	MAGI 2011	-	6.80	-
2.	Available Phosphorus	MAGI 2011	Kg/ha	26.9	-
3.	Available Potassium	MAGI 2011	Kg/ha	70.90	-
4.	Organic Carbon	MAGI 2011	%	1.31	-
5.	Electrical Conductivity	MAGI 2011	µs/cm	147.6	-
6.	Magnesium	MAGI 2011	mg/kg	39.54	-
7.	Nitrogen	MAGI 2011	%	0.12	-
8.	Arsenic (as As)	USEPA 3050 B 1996	mg/kg	BDL(MDL-0.006)	-
9.	Cadmium (as Cd)	USEPA 3050 B 1996	mg/kg	0.7	-
10.	Selenium (as Se)	USEPA 3050 B 1996	mg/kg	BDL(MDL-0.006)	-

### -Test result End -

#### Prescribed Limit

#### Operational Status

Analysed by - Ishika Singh

Unit was Operational During sampling.

Reviewed by  
(R.N. Kumar)  
Technical Head

Issued by  
(Ankit Das)  
Laboratory Head

Authorized Signatory

Page 2 of 1

Gafostrated Notes: 1. The Laboratory accepts responsibility for content of this report. 2. Test performed at laboratory's permanent facility, or specific environmental conditions as notified required and results relate only to the sample tested in prescribed Date & time. 3. The Test report shall not be reproduced full or in part without the prior approval of the court of law. 4. Any complaint about this report should be communicated in writing within 30 days of its issue. 5. Total liability of EPIC LabTech Pvt. Ltd. will be limited to increased amount only. 6. All disputes are subjected to Ranchi Jurisdiction and exclusive liability of the laboratory does not cover the testing and sampling charges. 7. Opinion does not imply endorsement of the tested product by laboratory. Under no circumstances, laboratory accepts any liability for use or misuse of this report. 8. When the results are from external provider are marked as \* mark. 9.

Abbreviation: BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantitation).





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CIN - U74999JH2022PTC019685  
PAN - AANICE3606M  
GST - 20AAHCE3611M1ZK

Accredited by -  
Bharat Heavy Engineering Limited  
Certified by -  
ISO 9001:2015 and ISO 14001:2015

## Analysis Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL02972538025	Group	Pollution & Environment
Issue date/time	20-09-2025/15:06	Sub Group	Soil/Sediments

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE : KUJAM I BAUXITE MINE

Contact Person	Mr. Ankit Das
Contact Number	+91 9971034775
Email Id	ankit.das@adityabirla.com
Order Date	31.03.2025/ 10:10
Order Number	13612313668

### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0297	Sample Booking Number	EPIC-2538025
Sample(s) Code	2538025	Sample Receipt (D/T)	16.09.2025/ 10:38

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	13.09.2025/ 16:30	Sampling End (D/T)	13.09.2025/ 16:40
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Pawan Deep Bhagat & Team
Sampling method used	IS : 3025 (Part-1) 1987, R-2003		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	28	Humidity %	67	Wind direction	180°-0°
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### Sampling Location(s) with GPS coordinate(s)

S. Location A	Kujam Quarry 449	GPS coordinate	23° 18' 25.45" / 84° 19' 03.22"
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### Date(s) of performance of the laboratory activities

Test start date	16.09.2025/ 11:35	Test completion date	20.09.2025/ 15:00
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### -Test Result-

Sl	Test Parameters	Method used	Unit	Results	Limits
1.	Chloride (as Cl)	EPIC/LAB/SOPPE/01/00	%	0.041	-
2.	Mercury (as Hg)	USEPA 3050 B 1996	mg/kg	BDL(MDL-0.005)	-

### -Test result End -

### Operational Status

Unit was Operational During sampling.

Analysed by - Pawan Kumar



Reviewed by  
(R.K. Kumar)  
Technical Head

Issued by  
(Anshu Das)  
Laboratory Head

Authorized Signatory  
EPIC LabTech Pvt. Ltd.  
Ranchi, Jharkhand





# EPIC LabTech Private Limited



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CIN: U74999JH2022PTC019685  
PAN: AAHCE3603M  
GST: 20AAHCE3603M1ZK

Accredited by -  
NABL vide certificate number NC-12887  
Participates in Proficiency Control Schemes  
Certified by -  
ISO 9001:2015 and ISO 45001:2018

TC-12887

## Analysical Test Certificate

Unique Lab Report No.	TC1288725000001222	Discipline	Chemical
Report Unique ID	RL02972538026	Group	Water
Issue date/time	20-09-2025/15:09	Sub Group	Surface Water

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302 MONITORING SITE: KUJAM I BAUXITE MINE	Contact Person Contact Number Email Id Order Date Order Number	Mr. Ankit Das +91 9971034775 ankit.das@adityabirla.com 31.03.2025/ 10:10 13612313868
--	--	--

### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0297	Sample Booking Number	EPIC-2538026
Sample(s) Code	2538026	Sample Receipt (D/T)	16.09.2025/ 10:39

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	13.09.2025/ 15:25	Sampling End (D/T)	13.09.2025/ 15:37
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Pawan Deep Bhagat & Team
Sampling method used	IS : 3025 (Part-1) 1987, R-2003		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	28	Humidity %	67	Wind direction	180°-360°
-------------------	--------	------------------	----	------------	----	----------------	-----------

### Sampling Location(s) with GPS coordinate(s)

S. Location A	Kujam Quarry 449	GPS coordinate	23° 18' 25.39" / 84° 19' 03.17"
---------------	------------------	----------------	---------------------------------

### Date(s) of performance of the laboratory activities

Test start date	16.09.2025/ 11:10	Test completion date	20.09.2025/ 14:35
-----------------	-------------------	----------------------	-------------------

### --Test Result--

Sl	Test Parameters	Method used	Unit	Results	Limits
1.	pH value at 25°C	IS 3025 (P-11) 2022	-	6.46	-
2.	Total Dissolved Solids (TDS)	IS 3025 (P-16) 2022	mg/l	115.0	-
3.	Calcium (as Ca)	IS 3025 (P-40) 1991	mg/l	8.21	-

### Group - Residues and Contaminants in Water,

### Sub Group - Trace Metals Elements

4.	Iron (as Fe)	APHA 3111 B 2023	mg/l	BDL(MDL-0.1)	-
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### --Test result End --

Operational Status Unit was Operational During sampling.

Analysed by - Pappu Kumar



Reviewed by  
(E.K. Kumar)  
Technical Head





# EPIC LabTech Private Limited

Address:-  
C/o - R.K. Tripathi, Indrapur,  
Road No. - 3, Ranchi,  
Jharkhand - 834005, India

☎ 0351-4666332  
☎ 98357 86677  
☎ 93049 71884  
✉ epiclabtech@gmail.com

ON - Q74899H2022P1C319485  
PAN - AARCE3611M  
GST - 20AARCE3611M12X

Accredited by:-  
NABL (ISO 9001:2015 Conformity)  
Certified by:-  
ISO 9001:2015 and ISO 45001:2018

## Analytical Test Certificate

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL02972538026	Group	Water
Issue date/time	20-09-2025/15:09	Sub Group	Surface Water

### Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED  
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,  
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302  
MONITORING SITE : KUJAM I BAUXITE MINE

Contact Person Mr. Ankit Das  
Contact Number +91 9971034775  
Email Id ankit.das@adityabirla.com  
Order Date 31.03.2025/ 10:10  
Order Number 13612313868

### References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0297	Sample Booking Number	EPIC-2538026
Sample(s) Code	2538026	Sample Receipt (D/T)	16.09.2025/ 10:39

### Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	13.09.2025/ 15:25	Sampling End (D/T)	13.09.2025/ 15:37
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Pawan Deep Bhagat & Team
Sampling method used	IS : 3025 (Part-1) 1987, R-2003		
Description/condition of sample	Receipt sample(s) were fit for analysis.		

### Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	28	Humidity %	67	Wind direction	180°-360°
-------------------	--------	------------------	----	------------	----	----------------	-----------

### Sampling Location(s) with GPS coordinate(s)

S. Location A	Kujam Quarry 449	GPS coordinate	23° 18' 25.39" / 84° 19' 03.17"
---------------	------------------	----------------	---------------------------------

### Date(s) of performance of the laboratory activities

Test start date	16.09.2025/ 11:10	Test completion date	20.09.2025/ 14:35
-----------------	-------------------	----------------------	-------------------

### --Test Result--

Sl	Test Parameters	Method used	Unit	Results	Limits
1.	Dissolve Oxygen (DO)	IS 3025 (P-38) 1988	mg/l	2.80	-
2.	Temperature	IS 3025 (P-09) 1986	°C	25.2	-
3.	BOD (3days at 27°C)	IS 3025 (P-44) 2000	mg/l	3.00	-
4.	COD	IS 3025 (P-58) 2006	mg/l	40.0	-
5.	Total Suspended Solids (TSS)	IS 3025 (P-17) 2022	mg/l	12.00	-
6.	Oil & Grease	IS 3025 (P29) 2021	mg/l	BDL(MDL-04)	-

### Group - Residues and Contaminants in Water,

### Sub Group - Trace Metals Elements

7.	Aluminum (as Al)	IS 3025 (P-55) 2003	mg/l	BDL(MDL-0.1)	-
----	------------------	---------------------	------	--------------	---

### --Test result End --

Operational Status Unit was Operational During sampling.

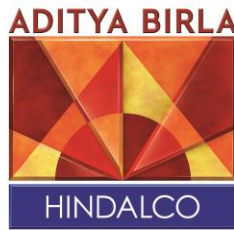
Analysed by - Pappu Kumar



Reviewed by  
(E.R. Kumar)  
Technical Head







## **Annexure 3**

Date – 01.11.2025

### **Office Order**

Environmental Cell has been re-constituted for Kujam Group of Mines (Kujam-I and Kujam-II Bauxite Mine), comprising below mentioned team members. The team will ensure compliance with the Environment Acts, Rules & Regulations in respect of the said mines of Hindalco Industries Limited.

1. Mr. Vangalapudi Kumar (Coordinator)
2. Mr. Biswajeet Deogharia (Geologist)
3. Mr. Girija Tamrakar (Environment Engineer)
4. Mr. Anand Prakash Tiwari (Environment Engineer)

The Undersigned is the in charge of above Environment Management Cell constituted for the purpose of ensuring compliances of environmental acts, rules and regulations for the above mines.

A handwritten signature in blue ink, appearing to be "Basudev Gangopadhyay".

**Basudev Gangopadhyay**  
**AVP (Planning, Environment & Compliance)**

## Annexure 4

Production, Mined Out, Back Filled and Over Burden removal from April 2025 to September 2025								
S No	Name of the Mines	Mining lease area (ha)	Production Capacity (MT)*	Lease Period*	Production (MT)	Mined out area (ha)	Backfilled area (ha)	Over burden (Cu.M)
1	Bagru Bauxite Mine	75.41	85000	22.01.1974 to 31.03.2030	NIL	NIL	NIL	NIL
2	Bhusar Bauxite Mine	65.31	280000	11.07.1981 to 31.03.2030	79390	0.21	0.45	87427.68
3	Hisri (New) Bauxite Mine	14.55	100000	19.07.1981 to 31.03.2030	41829	0.11	0.23	13246.30
4	Pakhar (8.09) Bauxite Mine	8.09	80000	16.05.1973 to 31.03.2030	NIL	NIL	NIL	NIL
5	Pakhar (35.12) Bauxite Mine	35.12	200000	17.04.1975 to 31.03.2030	NIL	NIL	NIL	NIL
6	Pakhar (115.13) Bauxite Mine	115.13	300000	19.07.1996 to 31.03.2030	124975	1.58	0.50	153576.56
7	Sherangdag-A Bauxite Mine	155.81	260000	16.10.1974 to 31.03.2030	500	0.03	0.01	0.00
8	Serangdag-B Bauxite Mine	77.89	100000	04.10.1978 to 31.03.2030	57100	2.01	1.60	70755.24
9	Jalim & Sanai Bauxite Mine	12.14	50000	16.10.1974 to 31.03.2030	8547	0.13	0.10	8842.10
10	Gurdari Bauxite Mine	584.19	325000	23.03.1985 to 22.03.2035	94470	4.30	3.31	125642.99
11	Kujam - I Bauxite Mine	80.87	150000	13.03.2006 to 12.03.2056	NIL	NIL	NIL	NIL
12	Kujam - II Bauxite Mine	157.38	300000	24.03.2006 to 23.03.2056	63140	1.67	0.51	56988.56
13	Amtipani Bauxite Mine	190.95	150000	13.03.2006 to 12.03.2056	93765	3.168	1.21	209999.64



**Annexure 4**

<b>Minerals &amp; Minerals Limited</b>								
14	Pakhar (109.507) Bauxite Mine	109.507	280000	26.07.2008 to 25.07.2058	100280	1.630	0.72	175833.99
15	Pakhar (15.58) Bauxite Mine	15.58	60000	28.04.1965 to 31.03.2030	NIL	NIL	NIL	NIL
16	Bimarla Bauxite Mine	134.526	300000	18.07.2009 to 17.07.2059	77100	0.849	0.30	62788.97
17	Amtipani Chirodih Bauxite Mine	130.01	450000	11.01.2017 to 10.01.2067	157400	5.320	4.600	218030.43

\*Static information about the mines included in the above table



**Basudev Gangopadhyay**  
**AVP (Planning, Environment and Compliance)**

## Annexure-5

### **BREAK UP THE COST OF ENVIRONMENTAL MEASURES DURING THE YEAR 2025-26**

The composite cost during the year 2025-26 for environmental protection & pollution control by Jharkhand Mines division of M/s Hindalco Industries Ltd & M/s Minerals & Minerals Ltd for implementation of the suggested measures in EC at our all the operating mines in the state of Jharkhand-namely Bagru (75.41 ha), Hisri New (14.55 ha), Bhusar (65.31 ha), Pakhar (115.13 ha), Pakhars (109.507 ha), Pakhar (15.58 ha), Pakhar (8.09 ha), Pakhar (35.12 ha), Sherangdag (155.81 ha), Serangdag (77.89 ha), Jalim & Sanai (12.14 ha), Bimarla Bauxite Mines (134.526 ha), Gurdari (584.19 ha), Amtipani (190.95 ha), Kujam I (80.87 ha) Kujam II (157.38 ha), and Amtipani Chirodih (130.01 ha) Bauxite mines.

S. No	Description	Budget (in Rupees) FY 2025-26 (From Apr'25 to Sep'25)	Actual (in Rupees) FY 2025-26 (From Apr'25 to Sep'25)
1	Pollution Control and Environmental Monitoring	1,71,00,000	59,45,184
2	Reclamation/ Back filing & Rehabilitation**	2,04,00,000	1,19,00,000
3	Green belt, Plantation & Water sprinkling arrangement	1,20,00,000	42,73,045
4	Rural Development	7,92,00,000	2,59,84,599

\*\*Part of OB removed cost



Basudev Gangopadhyay  
AVP (Planning, Environment & Compliance)



OHC/H5

**FORM – O**

(See rule 29F (2) and 29L)  
Report of medical examination under rule 29B  
(To be issued in triplicate)\*\*

Certificate No. KUJAM IME-009

Certified that Shri/Shrimati BIRSU ASUR ..... employed as  
WORKMAN ..... in KUJAM BAUXITE MINES ..... mine, Form B No.

..... has been examined for an initial / periodical medical examination. He/she appears  
to be 34 years of age. The findings of the examining authority are given in the attached sheet.

It is considered that Shri/Shrimati BIRSU ASUR .....

(a) is medically **fit** for any employment in mines.

(b) is suffering from ..... and is medically **unfit** for

(i) any employment in mine; or

(ii) any employment below ground; or

(iii) any employment or work .....

(c) is suffering from ..... and should get this disability cured/controlled  
and should be again examined within a period of ..... months. He/She will appear for re -examination  
with the result of test of ..... and the  
opinion of ..... Specialist from .....

He/She may be permitted/ not permitted to carry on his duties during this period.



Place : RAJENDRA HOSPITAL, Lohardaga

Date : 19/11/2025

Signature of the examining authority

Dr. OM PRAKASH DUBEY

Sr. CONSULTANT

033297/BMC-2002  
Name and designation in Block letters

Hindalco Mines Divi., Lohardaga

Req No -33297, BR-2002

\*\* One copy of the certificate shall be handed over to the person concerned and another copy shall be sent to the manager of the mine concerned by registered post; and the third copy shall be retained by the examining authority,

## Form 59

[See rules 115 (2)]

**Pollution Under Control Certificate**

Authorised By :  
Government of Jharkhand

Date : 20/04/2025  
Time : 11:52:22 AM  
Validity upto : 19/10/2025



Certificate SL. No. : JH00700100013110  
Registration No. : JH08H4549  
Date of Registration : 02/Nov/2011  
Month & Year of Manufacturing : March-2011  
Valid Mobile Number : \*\*\*\*\*8309  
Emission Norms : Bharat (Trem) Stage III A  
Fuel : DIESEL  
PUC Code : JH0070010  
GSTIN :  
Fees : Rs.300.00  
MIL observation : No

Vehicle Photo with Registration plate  
60 mm x 30 mm



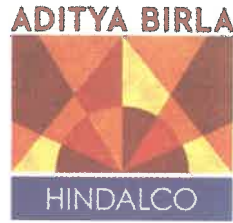
Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	0.4

This PUC certificate is system generated through the national register of motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to <https://puc.parivahan.gov.in>

Authorised Signature with stamp of PUC Operator  
60mm x 20 mm

JH08H4549  
[Signature]  
21.04.2025



Ref No: HIL/LHD/ENV/Kujam I / 371

Date: 19.10.2023

To

District Industries Centre,  
Gumla, Jharkhand.

**Sub:** Intimation of revalidated EC grant of Kujam I Bauxite Mine (Area: 80.87 Ha) of Hindalco Industries Limited, with production capacity of Bauxite 150000 TPA near Villages: Kujam, Dewragini & Chatam, Taluka: Bishunpur, District: Gumla, Jharkhand.

Sir,

We would like to bring this to your notice that revalidated EC has been granted for Kujam I Bauxite Mine by SEIAA, Jharkhand.

A copy of issued Environmental Clearance is attached along with this letter for your ready reference.

Thanking You,

Yours Sincerely  
For Hindalco Industries Ltd

(Basudev Gangopadhyay)  
AVP (Planning, Environment & Compliance)



Received  
20/10/2023





Ref No: HIL/LHD/ENV/Kujam I / 373

Date: 19.10.2023

To

Zilla Parishad,  
Gumla, Jharkhand.

**Sub:** Intimation of revalidated EC grant of Kujam I Bauxite Mine (Area: 80.87 Ha) of Hindalco Industries Limited, with production capacity of Bauxite 150000 TPA near Villages: Kujam, Dewragini & Chatam, Taluka: Bishunpur, District: Gumla, Jharkhand.

Sir,

We would like to bring this to your notice that revalidated EC has been granted for Kujam I Bauxite Mine by SEIAA, Jharkhand.

A copy of issued Environmental Clearance is attached along with this letter for your ready reference.

Thanking You,

Yours Sincerely  
For **Hindalco Industries Ltd**

(Basudev Gangopadhyay)  
AVP (Planning, Environment & Compliance)

SEIAA  
20/10/23



Ref No: HIL/LHD/ENV/Kujam I / 368

Date: 19.10.2023

To  
The Deputy Commissioner,  
Office of the Deputy Commissioner (District General Branch),  
New Collectorate Building Nag-01, Room No.-09,  
Gumla, Pin 835207 (Jharkhand)

**Sub:** Intimation of revalidated EC grant of Kujam I Bauxite Mine (Area: 80.87 Ha) of Hindalco Industries Limited, with production capacity of Bauxite 150000 TPA near Villages: Kujam, Dewragini & Chatam, Taluka: Bishunpur, District: Gumla, Jharkhand.

Sir,

We would like to bring this to your notice that revalidated EC has been granted for Kujam I Bauxite Mine by SEIAA, Jharkhand.

A copy of issued Environmental Clearance is attached along with this letter for your ready reference.

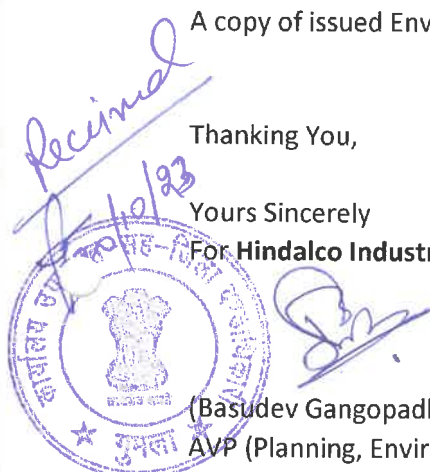
Thanking You,

Yours Sincerely

For Hindalco Industries Ltd

(Basudev Gangopadhyay)

AVP (Planning, Environment & Compliance)



Hindalco Industries Limited

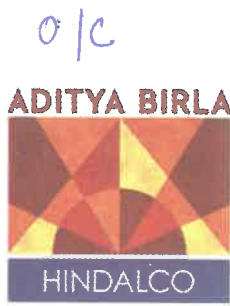
Mines Division, Court Road, Lohardaga 835302, Jharkhand, India

T: +91 6526 224112/224015/223113 | E: hindalco@adityabirla.com | W: www.hindalco.com

Registered Office: Ahura Centre, 1st Floor, B Wing, Mahakali Caves Road, Andheri (East), Mumbai 400 093, India

T: +91 22 6691 7000 | F: +91 22 6691 7001

Corporate ID No.: L27020MH1958PLC011238



Ref No: HIL/LHD/ENV/Kujam I / 370

Date: 19.10.2023

To  
The Dy. Director General of Forest (C)  
Ministry of Environment, Forests and Climate Changes  
2nd Floor, Headquarter-Jharkhand State Housing Board  
Harmu Chowk, Ranchi, Jharkhand-834002.

**Sub:** Intimation of revalidated EC grant of Kujam I Bauxite Mine (Area: 80.87 Ha) of Hindalco Industries Limited, with production capacity of Bauxite 150000 TPA near Villages: Kujam, Dewragini & Chatam, Taluka: Bishunpur, District: Gumla, Jharkhand.

Sir,

We would like to bring this to your notice that revalidated EC has been granted for Kujam I Bauxite Mine by SEIAA, Jharkhand.

A copy of issued Environmental Clearance is attached along with this letter for your ready reference.

Thanking You,

Yours Sincerely  
For Hindalco Industries Ltd

(Basudev Gangopadhyay)  
AVP (Planning, Environment & Compliance)







Ref No: HIL/LHD/ENV/Kujam I / 369

Date: 19.10.2023

To

The Member Secretary,  
Jharkhand State Pollution Control Board,  
TA Building, Dhurwa,  
Ranchi (Jharkhand).

**Sub:** Intimation of revalidated EC grant of Kujam I Bauxite Mine (Area: 80.87 Ha) of Hindalco Industries Limited, with production capacity of Bauxite 150000 TPA near Villages: Kujam, Dewragini & Chatam, Taluka: Bishunpur, District: Gumla, Jharkhand.

Sir,

We would like to bring this to your notice that revalidated EC has been granted for Kujam I Bauxite Mine by SEIAA, Jharkhand.

A copy of issued Environmental Clearance is attached along with this letter for your ready reference.

Thanking You,

Yours Sincerely  
For Hindalco Industries Ltd

(Basudev Gangopadhyay)  
AVP (Planning, Environment & Compliance)





Ref No: HIL/LHD/ENV/Kujam I / 367

Date: 19.10.2023

To

Gram Panchayat Mukhiya,  
Panchayat Bhawan, Chirodih,  
Block-Bishunpur, Gumla.

**Sub:** Intimation of revalidated EC grant of Kujam I Bauxite Mine (Area: 80.87 Ha) of Hindalco Industries Limited, with production capacity of Bauxite 150000 TPA near Villages: Kujam, Dewragini & Chatam, Taluka: Bishunpur, District: Gumla, Jharkhand.

Sir,

We would like to bring this to your notice that revalidated EC has been granted for Kujam I Bauxite Mine by SEIAA, Jharkhand.

A copy of issued Environmental Clearance is attached along with this letter for your ready reference.

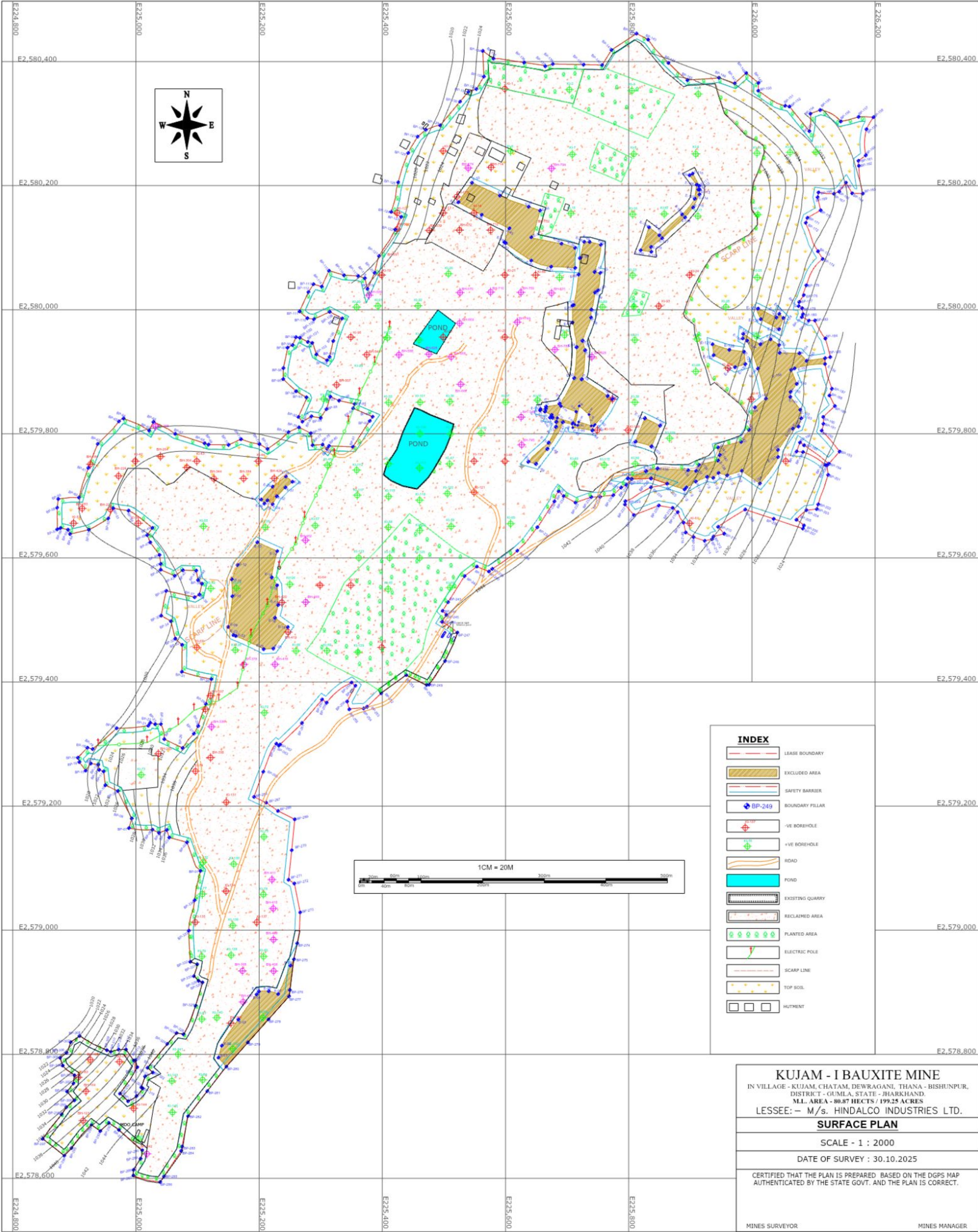
Thanking You,

Yours Sincerely  
For **Hindalco Industries Ltd**

(Basudev Gangopadhyay)  
AVP (Planning, Environment & Compliance)

*Handwritten signature*  
मुखिया  
ग्राम पंचायत-चिरोडीह









Ref: HIL/JH/DFO-LOHARDAGA/WLCP Fees/143

Date: 27.06.2025

To,  
Divisional Forest Officer,  
Lohardaga, Jharkhand

**Sub:** Payment of Rs. 387.344 Lakhs (Rupees Three Hundred Eighty-Seven Lakhs Thirty-Four Thousand Four Hundred Only) towards Wildlife Conservation Plan fees as per sanctioned order by PCCF, Wildlife, Ranchi for our all-bauxite mines of Hindalco Industries Limited and Minerals & Minerals Limited in Lohardaga Forest Division, Jharkhand.

**Ref:** (i) Your Letter no. 597 dated 10.06.2025 (ii) Your Letter no. 598 dated 10.06.2025  
(iii) Your Letter no. 599 dated 10.06.2025

Dear Sir,

The Wildlife Conservation Plans for following Bauxite mines of Hindalco Industries Ltd and Minerals & Minerals Limited have been approved by PCCF, Wildlife, Ranchi. Subsequently, we have received the demand notes from your good office as per the allocated fund mentioned in the sanctioned/approved documents.

As per the demand note received from your good office, a total amount of an amount of **Rs. 387.344 Lakhs (Rupees Three Hundred Eighty-Seven Lakhs Thirty-Four Thousand Four Hundred Only)** has to be paid to the Divisional Forest Officer, Lohardaga as per the sanctioned budget mentioned in the approved report according to the EC condition.

Therefore, we are submitting three demand drafts amounting to **Rs. 387.344 Lakhs (Rupees Three Hundred Eighty-Seven Lakhs Thirty-Four Thousand Four Hundred Only)** against the Wildlife Conservation Plan for the following bauxite mines of Hindalco Industries Ltd. and Minerals & Minerals Limited. The details of the bank drafts are as follows:

S. No.	Your reference Letter No	Amount in Demand note	Mining Project	Demand Draft (DD) In Favour of	Amount (Rs)	DD No. dated
	597 dated 10.06.2025	246.684 Lakhs	Bagru, Bhusar, Hisri New and Hisri Old, Pakhar (115.13 Ha), Pakhar (109.507 Ha), Pakhar (15.577 Ha) Shrengdag (155.81 Ha), Serengdag (140.07 Ha), Jalim & Sanai (12.14 Ha)	Range Officer of Forest, Lohardaga	246.684 Lakhs	567891 dated 19.06.2025
	599 dated 10.06.2025	124.560 Lakhs	Amtipani, Gurdari, Kujam-I and Kujam-II	Range Officer of Forest, Banari	124.560 Lakhs	567890 dated 19.06.2025
3	598 dated 10.06.2025	16.10 Lakhs	Amtipani Chirodih (130.01 Ha)	Range Officer of Forest, Banari	16.10 Lakhs	642410 dated 20.06.2025
<b>Total</b>		<b>387.344 Lakhs</b>	-		<b>387.344 Lakhs</b>	-

Please acknowledge the receipt.

Thanking You,  
Sincerely Yours,

(Basudev Gangopadhyay)  
AVP (Planning, Environment & Compliance)

Encl: As above

#### Hindalco Industries Limited

Mines Division, Court Road, Lohardaga 835302, Jharkhand, India | T: +91 6526 223163  
Corporate Office: 6th & 7th Floor, Birla Birla Centurion, Pandurang Budhakar Marg, Worli, Mumbai-400030, India  
T: +91 22 66626666/626105555 | F: +91 22 62610400/62610500  
Registered Office: 21st Floor, One Unity Center, Senapati Bapat Marg, Prabhadevi, Mumbai - 400013, India  
T: +91 22 69477000/69477150 | F: +91 22 69477001/69477090  
W: www.hindalco.com | E: hilinvestors@adityabirla.com