



HIL/LHD/ENV/MoEF&CC/636

Date: 26th May 2026

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-II (157.38 Ha) Bauxite Mining project of M/s Hindalco Industries Limited, Gumla Jharkhand for the period from **October 2025 to March 2026**.

Ref: Environmental Clearance letter No. J-11015/297/2011-IA.II (M), dated 21st July 2015.

Dear Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for **Kujam-II (157.38 Ha)** Bauxite Mining project of **M/s Hindalco Industries Limited** located in Gumla, Jharkhand for the period from **October 2025 to March 2026** for your kind perusal please.

The lease details are as below:

Lease area (ha)	Production Capacity (MT)	Lease Period
157.38	300000	24.03.2006 to 23.03.2056

Hope you will find the same in order.

Thanking You

Yours faithfully,
For **Hindalco Industries Limited**

R R P Ambastha
Head - Compliance

Enclosure: - As Above

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Name of the Project : **Kujam II Bauxite Mine (157.38 ha)**
M/s Hindalco Industries Limited

Environment Clearance No & date : **J-11015/297/2011-IA. II (M) dated 21.07.2015.**

Period of compliance Report : **From 1st October 2025 to 31st March 2026**

A. Specific Conditions

Condition 1- Implementation of all the conditions as specified in earlier EC vide no. J-11015/242/2005-1A.II (M), dated 14.08.2006 and shall be complied by M/s Hindalco Industries Limited.

Reply to Condition 1 – Already Implemented. Certified compliance reports duly submitted to MoEF&CC, New Delhi by its Regional Office, Ranchi.

Condition 2- Environmental clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court of Jharkhand and any other Court of Law, if any, as may be applicable to this project.

Reply to Condition 2- Noted.

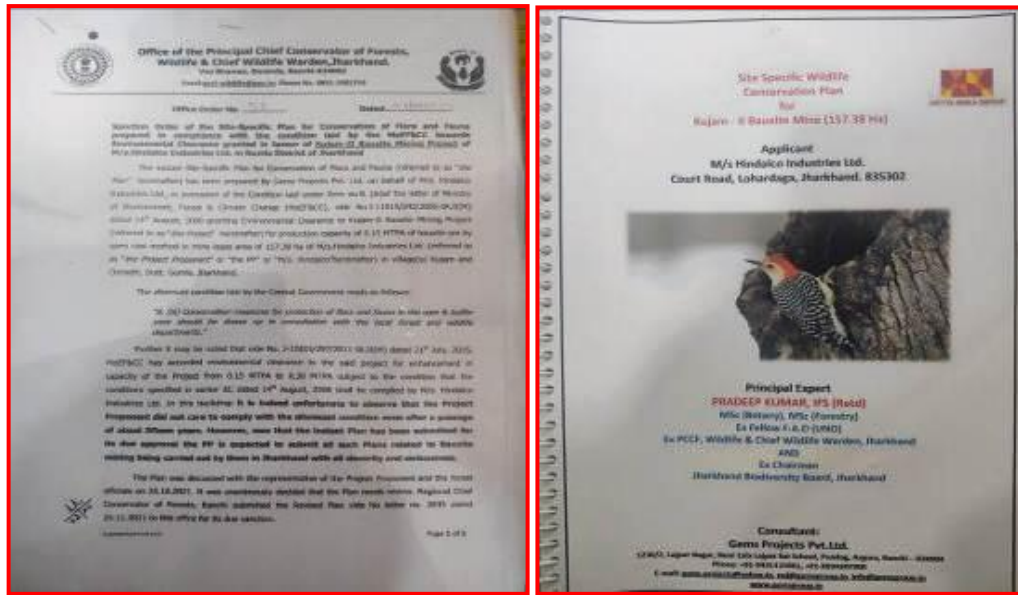
Condition 3- The environmental clearance is valid for 13 years as the life of mine is 13 years.

Reply to Condition 3- Noted. This may be extended subject to the enhancement of reserves in due course of mining, in line with the applicable EIA notification.

Condition 4- Environmental clearance is subject to obtaining clearance, if any, under the Wildlife (Protection) Act, 1972 from the competent authority, as may be applicable to this project.

Reply to Condition 4- We understand this is not applicable to this project. Mine is located outside an eco-sensitive zone.

However, we have prepared Site-Specific Wildlife Conservation Plan (WLCP) in consultation with State Forest Department and also obtained approval letter from Principal Chief Conservator of Forest, Wildlife & Chief Wildlife Warden, Jharkhand via Office Order No. 51 dated 03.12.2021 for conservation and protection of flora and fauna in the core and buffer zone for Kujam II Bauxite Mine. A copy of same Approval letter has been submitted to your good office on 21.02.2022



Site Specific Wildlife Conservation Plan

Condition 5- The Project Proponent shall obtain Consent to Operate from the State Pollution Control Board, Jharkhand and effectively implement all the conditions stipulated therein.

Reply to Condition 5 - We have obtained Consent to Operate (CTO) from the State Pollution Control Board, Jharkhand, and its stipulated conditions have been implemented effectively. Our existing Consent to Operate (CTO) is valid till 31.12.2026.

Condition 6- No mining activities will be allowed in forest area for which the Forest Clearance is not available.

Reply to Condition 6- Noted. There is no forest area involved within the lease. Therefore, there is no need for forest clearance.

Condition 7- Project Proponent has to conduct a study from an Institution of Repute on the impact of Bauxite dust on crop productivity for agricultural land located around mines and mitigation measures to be implemented by Project Proponent to reduce the impact.

Reply to Condition 7- Study conducted and report prepared. It may be noted that agriculture activity is being carried out in nearby areas, and no adverse effect of mining operation is noticed. Mitigation measures suggested in the study report are being implemented.

Condition 8- Project Proponent has to implement the Recommendation by the Institute for Crops most suited in this environment and training the farmers to switch over to new cropping system which will sustain nutrient loading.

Reply to Condition 8- Study conducted and report prepared. It may be noted that agriculture activity is being carried out in nearby areas, and no adverse effect of mining operation is noticed. Mitigation measures suggested in the study report are being implemented.

Condition 9- Implementation of the Recommendations of National Institute of Miners Health for ensuring good occupational environment for mine workers.

Reply to Condition 9- As per recommendations, occupational health surveillance is being conducted periodically by specialized doctors and nurses. Regular training is being conducted on occupational health and work safety environments.

Condition 10- Use of mechanical devices with total mechanization and reducing use of explosives.

Reply to Condition 10- We are using rock breakers as mechanical devices to minimize the use of explosives. Soft strata are being completely excavated without use of any explosives. We are using Nonel for blasting and ensuring the optimal use of explosives. Additionally, we are exploring the use of centric rippers for excavating hard strata to further reduce the use of explosives.

Condition 11- Concurrent reclamation of mined out areas.

Reply to Condition 11- Concurrent back filling and reclamation are being carried out in mined out areas.



Concurrent reclamation

Condition 12- Use of an effective sprinkler system to suppress fugitive dust on haul road and other transport roads and comprehensive study for slope stabilization of mine benches and OB dumps in one year.

Reply to Condition 12- Effective water sprinkling is being done to suppress fugitive dust on haul road and other transport roads by mobile water tanker. The Mining Plan has already been approved by IBM, Ranchi and safety measures like benches height and slope are being maintained as per the guidelines issued by DGMS. Currently, there is no OB dump present in the mine lease area.



Mobile Water Tanker with Sprinkling Facilities.

Condition 13- Implementation of Action Plan on the issues raised during the Public Hearing. The proponent shall complete all the tasks as per the action plan submitted with the budgetary provisions during the public hearing held on 11.07.2013. The issues raised during Public Hearing were discussed during the Meeting, which inter-alia, included, local employment, regular water spraying to prevent pollution and socio-economic development i.e. water facilities, medical and education etc. As per the villagers' requirements, it was informed by the Proponent that they would prefer to take care of local employment, assistance in medical, drinking water and education facilities etc. These have been incorporated in the action plan with budgetary provisions.

Reply to Condition 13- Noted. The issues raised during the Public Hearing dated 11.07.2013 are being implemented as per the budgetary provisions.

Condition 14- Implementation of Recommendation of Compliance Report by Regional Office of Ministry of Environment, Forest and Climate Change.

Reply to Condition 14- Recommendations of Compliance Report by Regional Office, Ranchi are being implemented.

Condition 15- Washing of all transport vehicles should be done inside the mining lease.

Reply to Condition 15- Being complied. Washing Ramp with Oil & Grease Trap system has been made for Washing of all transport vehicles within mining lease.



Washing Ramp with Oil and Grease Trap

Condition 16- A comprehensive ore evacuation plan for all existing mines of the Project Proponent in the area may be made by streamlining transport of ore based on proper study.

Reply to Condition 16- Ore evacuation plan has been prepared, and the transport of ore has been streamlined based on study. The SOP for transport is framed and in place.

Condition 17- Regular and periodical medical examination of the workers engaged in the project shall be carried out and records maintained; also, Occupational health check-ups for workers having some ailments like BP, diabetes, habitual smokers, etc. shall be undertaken once in six months and necessary remedial/preventive measures taken accordingly.

Reply to Condition 17- Regular and periodical medical examination of the workers engaged in the project is being carried out and records are being maintained by Medical Officer. Occupational health surveillance is being conducted periodically by specialized doctors and nurses.

Condition 18- Implementation of Environment Management Policy of the Company w.r.t, judicious use of Mineral resources for growth & development synchronizing mining & environment with prosperity.

Reply to Condition 18- Environment Management Policy of the Company w.r.t, judicious use of Mineral resources for growth & development synchronizing mining & environment with prosperity is being implemented. Mining is being carried out in a scientific and eco-friendly manner as per the Mining Plan.

Condition 19- Specific programmes be initiated especially covering education, health care, livelihood generation, infrastructure development & promotion of sports & culture for SC/ST population; Regular monitoring of ground water table to be carried out, as also the depth of water available in the network of existing wells, by constructing new piezometers as required.

Reply to Condition 19- All these aspects are covered under CSR activities, which are being carried out in and around the area. Regular monitoring of the ground water table is being carried out through installation of piezometer. The copy of the same report is attached herewith as **Annexure-1**.



Piezometer installed at mine.

Condition 20- Effective safeguard measures, such as regular water sprinkling, shall be carried out in critical areas prone to air pollution and having high levels of PM10 and PM2.5 such as haul roads, loading and unloading points and transfer points. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.

Reply to Condition 20- Effective safeguard measures, such as regular water sprinkling is being carried out in critical areas such as haul roads, loading and unloading points and transfer points.

Regular Ambient Air Quality (AAQ) monitoring is being carried out by NABL accredited Laboratory, and all parameters are found within the norms prescribed by the Central Pollution Control Board. Monitoring report of AAQ is attached herewith as **Annexure-2**. Photographs of Water Tanker is attached herewith below.



Mobile Water Tanker with Sprinkling Facilities

Condition 21- Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examinations of the workers should be drawn and followed accordingly. Occupational health and safety measures for workers who are having some ailments like BP, diabetes, or are habitual smokers, should have health check-up once in six months.

Reply to Condition 21- Pre-placement medical examination and periodical medical examination of the workers engaged in the project are being carried out and records maintained as per statute.

Condition 22- Stratified layer system of plantation to be adopted in consultation with the State Govt., which would effectively mitigate the additional dust, sound and vibration.

Reply to Condition 22- Progressive plantation of native species is being carried out in and around mining leases, reclaimed areas etc. in consultation with local forest department on regular basis. During FY 2025-26 till September, a total of 7106 saplings have been planted on reclaimed area. Cumulative 12.7 ha areas have been planted till date. In addition to these agricultural activities (bio plantation) are going on reclaimed land as per the consent from landowners. The Green belt development program is in progress with the progress of mining activities.






Condition 23- The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water and ground water for the project.

Reply to Condition 23- Rainwater harvested during rainy season is being used for sprinkling on haul roads and raising plantation. No natural water resource/ground water is being used for mining purposes.

However, No Objection Certificate (NOC) for ground water abstraction has been obtained for drinking purposes only from CGWB/CGWA. The Photograph of Rainwater Pond and Ground Water NOC are attached below.



Rainwater Harvesting Pond



भारत सरकार
जल संसाधन विभाग
और गंगा संवर्धन बोर्ड
संघीय जल सचिवालय
Government of India
Ministry of Jal Shakti
Department of Water Resources,
River Development & Ganga Rejuvenation
Central Ground Water Authority

(भूजल नििकासी हेतु अनापत्ति प्रमाण पत्र)
NO OBJECTION CERTIFICATE (NOC) FOR GROUND WATER ABSTRACTION

Project Name:	Kujam II Bauxite Mine (157.38 Ha)						
Project Address:	Kujam II Bauxite Mine, VIII - Kujam And Chirodih, Dist - Gumla						
Village:	Kujam	Block:	Bishunpur				
District:	Gumla	State:	Jharkhand				
Pin Code:							
Communication Address:	Hindalco Industries Ltd, Hindalco Complex, Court Road, P.O - Lohardaga, Lohardaga, Lohardaga, Jharkhand - 835302						
Address of CGWB Regional Office:	Central Ground Water Board Mid Eastern Region, 6th & amp; 7th Floor, Lok Nayak Jai Prakash Bhawan, Fraser Road Dak Banglow, Patna, Bihar - 800011						
1. NOC No.:	CGWANOC/MIN/REN/2/2024/9801	2. Date of Issuance	01/08/2024				
3. Application No.:	21-4496/JH/MIN/2019	4. Category: (GWRE 2023)	Safe				
5. Project Status:	Existing Ground Water	6. NOC Type:	Renewal				
7. Valid from:	18/09/2024	8. Valid up to:	17/09/2026				
9. Ground Water Abstraction Permitted:							
Fresh Water		Saline Water		Dewatering		Total	
m ³ /day	m ³ /year	m ³ /day	m ³ /year	m ³ /day	m ³ /year	m ³ /day	m ³ /year
9.50	3467.50						

NOC for Ground water

Condition 24- The mining operations shall be restricted to above ground water table, and it should not intersect groundwater table. In case of working below ground water table, prior approval of the Ministry of Environment, Forest and Climate Change and Central Ground Water Authority shall be obtained, for which a detailed hydro-geological study shall be carried out.

Reply to Condition 24- Noted. Since shallow depth mining is being carried out, hence there is no intersection with the groundwater table. In future also, working zones will be restricted to above ground water tables. We undertake that no mining is/was carried out below ground water table and the same status will be maintained in future also.

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 25- The pollution due to transportation load on the environment will be effectively controlled & water sprinkling will also be done regularly. Vehicles with PUC only will be allowed to ply. The mineral transportation shall be carried out through covered trucks only and the vehicles carrying the mineral shall not be overloaded. Project should obtain 'PUC' certificate from all the vehicles from authorized pollution testing Centre.

Reply to Condition 25- Regular water sprinkling is being carried out along haul roads, loading and unloading points and transfer points to suppress the dust pollution. All measures are being taken to control vehicular emission. Regular maintenance of vehicles is undertaken to minimize vehicular emission. Vehicles with valid PUC certificates are allowed to transport the mineral. All vehicles are covered with tarpaulins, and non-overloading guidelines are being followed during transportation of mineral.



Tarpaulin covered Truck



Mobile Water Tanker with sprinkling facilities.

Condition 26- There shall be planning, developing and implementing facility of rainwater harvesting measures on long term basis in consultation with Regional Director, Central Groundwater Board, and implementation of conservation measures to augment ground water resources in the area in consultation with Central Ground Water Board.

Reply to Condition 26- A detailed plan to augment groundwater has been prepared, and suitable measures like the creation of water harvesting ponds, etc., are being taken for the augmentation of groundwater in the area, in consultation with the Central Ground Water Board.

Condition 27- Regular monitoring of ground water table to be carried out at the upstream and depth of water available in the dug well is to be measured. Monitoring to be done by establishing a network of existing wells and constructing new piezometers.

Reply to Condition 27- Regular monitoring of the ground water table is being carried out through installation of piezometer. The copy of the same report is attached herewith as **Annexure-1**.

Condition 28- Monitoring of Ambient Air Quality to be carried out based on the Notification 2009, as amended from time to time by the Central Pollution Control Board.

Reply to Condition 28- We have already 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**.

Condition 29- The project proponent shall ensure that no natural water course and/or water resources shall be obstructed due to any mining operations.

Reply to Condition 29- As shallow depth mining is being carried out, there is no intersection of the groundwater table during the mining operation at present and in the future. No natural watercourse and/or water resource is being and will be obstructed due to mining operations.

Condition 30- The topsoil, if any, shall temporarily be stored at earmarked site(s) only and it should not be kept unutilized for long. The topsoil shall be used for land reclamation and plantation. The over burden (OB) generated during the mining operations shall be stacked at earmarked dump site(s) only and it should not be kept active for a long period of time. The maximum height of the dumps shall not exceed 8m and width 20 m and overall slope of the dumps shall be maintained to 45°. The OB dumps should be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles shall be undertaken for stabilization of the dump. The entire excavated area shall be backfilled and afforested. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office located at Ranchi on six monthly basis.

Reply to Condition 30- Topsoil is being stacked properly with proper slope as and when required for reclamation and rehabilitation. Sequential backfilling and reclamation of the mined-out area are being exercised for which topsoil is being spread on backfilled area for reclamation. Currently, there is no OB dump present in the mine lease area.

The mining is being carried out as per the approved mining plan. Monitoring and management of rehabilitated areas is being done through effective supervision. Data pertaining to backfilling is enclosed as **Annexure 4**. Compliance status is being submitted to MoEF&CC on six monthly basis.

Condition 31- Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, mineral and OB dumps to prevent run off of water and flow of sediments directly into the river and other water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly de silted particularly after monsoon and maintained properly. The drains, settling tanks and check dams of appropriate size, gradient and length shall be constructed both around the mine pit and over burden dumps to prevent run off of water and flow of sediments directly into the river and other water bodies and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of sit material. Sedimentation pits shall be constructed at the corners of the garland drains and de silted at regular intervals.

Reply to Condition 31- To collect & manage rainwater during monsoon, part of mined out area is used as a settling tank for the runoff. Rainwater stored is being used for watering the mine area, roads, green belt development and sprinkling as necessary. Catch drains, Garland drains of appropriate size are being constructed in both around the mine pit to prevent runoff of water and flow of sediments directly into the agricultural field and water bodies, if applicable. Sump of adequate capacity is being provided and maintained as required. Currently, there is no OB dump present in the mine lease area.



Garland drains around mine pit to prevent runoff.



Check drain and Siltation pit around mine pit to prevent runoff.

Condition 32- Dimension of the retaining wall at the toe of over burden dumps and OB benches within the mine to check run-off and siltation shall be based on the rain fall data.

Reply to Condition 32- There is no external dump within the mine lease area as on date.

However, to collect & manage rainwater during monsoon, part of mined out area is used as a settling tank for the runoff. Rainwater stored is being used for watering the mine area, roads, green belt development and sprinkling as necessary.

Catch drains, Garland drains of appropriate size are being constructed in both around the mine pit to prevent runoff of water and flow of sediments directly into the agricultural field and water bodies, if applicable.

Condition 33- Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of PM10 and PM2.5 such as haul road, loading and unloading point and transfer points. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard. 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.

Reply to Condition 33- Regular water sprinkling is being carried out in critical areas prone to air pollution such as haul road, loading and unloading point and transfer points. Regular Ambient Air Quality (AAQ) monitoring is being carried out by NABL accredited Laboratory and all parameters found within the norms prescribed by the Central Pollution Control Board. Regular monitoring of surface water (springs/perennial nallahs) is being conducted. Monitoring report of AAQ and water quality are attached herewith as **Annexure-2**.

Condition 34- Blasting operation shall be carried out only during the daytime. Controlled blasting shall be practiced. The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented. Drills shall either be operated with dust extractors or equipped with a water injection system.

Reply to Condition 34- Blasting time is fixed during Lunch Time i.e. 1.00 PM-2.00 PM. We have control blasting permission. Controlled blasting method is in practice. Ground vibration study has been conducted periodically. Efforts and mitigative measures are being taken to reduce the impact of the blast. Wet Drilling practice is adopted at our mines.



Wet Drilling

Condition 35- Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, Mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

Reply to Condition 35- Local laborers are employed who are resident in nearby villages. However, Safe Drinking water, mobile health care facilities etc. are being provided in nearby villages under CSR programs. Necessary infrastructures and facilities for office staff are in place at Netarhat plateau.



Health Camp

Condition 36- A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment, Forest and Climate Change. 5 years in advance of final mine closure for approval.

Reply to Condition 36- A Final Mine Closure Plan along with details of corpus fund will be submitted to the Ministry of Environment, Forest and Climate Change in appropriate time for approval as per applicable guidelines and timelines mentioned in MCDR/IBM guidelines who are competent authority to approve the same. Based on present resource estimate and peak rated production capacity mentioned in EC, Mining operation is being carried out.

B. General Conditions

Condition 1- No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment, Forest and Climate Change.

Reply to Condition 1- Noted.

Condition 2- No change in the calendar plan including excavation, quantum of bauxite ore and waste should be made.

Reply to Condition 2- Calendar plan including excavation, quantum of mineral bauxite and waste is being done as per IBM approved mining plan and in scientific manner. Data pertaining to excavation, quantum of mineral bauxite etc. are mentioned in report attached as **Annexure 4**.

Condition 3- The critical parameters such as PM10 (size less than 10 micrometer), PM2.5 (size less than 2.5 micrometer), NO in the ambient air within the impact zone, peak particle

velocity at 300m distance or within the nearest habitation, whichever is closer shall be monitored periodically. Further, quality of discharged water shall also be monitored [TDS, DO, PH and Total Suspended Solids (TSS)]. The monitored data shall be uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the Company in public domain. The circular No. J-20012/1/2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change, which is available on the website of the Ministry www.envfor.nic.in shall also be referred in this regard for its compliance.

Reply to Condition 3- Monitoring of AAQ and water quality is being done. Monitored data is being uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the Company in public domain. Monitoring reports are attached as **Annexure 2**.

Condition 4- Four ambient air quality-monitoring stations should be established in the core zone as well as buffer zone for PM10, PM2.5, SO2 & NOx monitoring. Location of the stations should be decided based on the ecologically sensitive targets and the frequency of monitoring should be undertaken in consultation with the State Pollution Control Board. Data on ambient air quality should be regularly submitted to the Ministry including its Regional Office located at Ranchi and the State Pollution Control Board/Central Pollution Control Board once in six months.

Reply to Condition 4- We have already 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**.

Condition 5- Fugitive dust emissions from all the sources should be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points should be provided and properly maintained.

Reply to Condition 5- Mobile water tankers with sprinkling facility have been provided along the haul roads, loading, unloading & at transfer points to suppress the dust generation.



Mobile Water Tanker with sprinkling facilities

Condition 6- Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs / muffs.

Reply to Condition 6- Measures are being taken for control of noise levels below 85 dB (A) in the work environment. Workers engaged in operation of HEMM, etc. has been provided with ear plug / muffs. The noise level monitoring is being conducted at a regular interval. The noise level is within the prescribed norms. Report is attached as **Annexure 2**.

Condition 7- Regular monitoring of water quality upstream and downstream of water bodies shall be carried out and record of monitoring data should be maintained and submitted to the Ministry of Environment, Forest and Climate Change, its Regional Office, Ranchi, Central Ground water Authority, Regional Director, Central Ground water Board, State Pollution Control Board and Central Pollution Board.

Reply to Condition 7- Regular monitoring of Water quality upstream and downstream of water bodies are being carried and reported to reported to the concerned authorities. Monitoring report is attached as **Annexure- 2**.

Condition 8- Regular monitoring of ground water level and quality shall be carried out in constructing new piezometers during the mining operation. The monitoring shall be carried out four times in a year - pre- monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected may be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, Ranchi, Central Ground Water Authority and Regional Director, Central Ground Water Board.

Reply to Condition 8- We are not using ground water for mining purposes. Shallow depth mining is being 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 ground water level and water quality reports are being sent regularly to regional office of Ministry, CGWA and JSPCB. The Ground water level from October 2025 to March 2026 and quality Monitoring report of Post-Monsoon and Winter season are attached as **Annexure 1 & 2**.

Condition 9- Industrial wastewater (workshop and wastewater from the mine) should be properly collected and treated so as to conform to the standards prescribed under GSR 422 (E) dated 19m May, 1993 and 31' December 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.

Reply to Condition 9- There is no industrial wastewater generation from mining operation. We are not discharging any wastewater outside the mine lease area. However, negligible amount of wastewater is generated in workshop from washing vehicles and Oil & grease trap system is already installed for treatment of this effluent. The treated water is in close circuit and is being reused for

washing vehicles 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**. Photograph of Oil and grease traps is attached below.



Washing Ramp with Oil and Grease Trap

Condition 10- 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 10- 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 sessions on Safety and health aspects on regular basis.

Condition 11- A separate environmental management 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 11- 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 12- 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 Ministry and its Regional Office located at Ranchi.

Reply to Condition 12- Every year, the funds earmarked for environmental protection measures is budgeted separately and their expenditure is being reported to the Ministry. The copy of the same is attached to **Annexure 5**.

Condition 13- The project authorities should inform the Regional Office located at Ranchi regarding the date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.

Reply to Condition 13- This is an operative mine hence provision related to financial closure is not applicable.

Condition 14- The Regional Office of this Ministry located at Ranchi shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.

Reply to Condition 14- Noted & Agreed.

Condition 15- The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment, Forest and Climate Change, its Regional Office, Ranchi, Central Pollution Control Board and State Pollution Control Board.

Reply to Condition 15- Six-monthly reports on the implementation status of the stipulated environmental safeguards, as per EC conditions, are being submitted regularly.

Condition 16- The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment, Forest and Climate Change, its Regional Office, Ranchi, Central Pollution Control Board and State Pollution Control Board.

Reply to Condition 16- Six-monthly reports on the implementation status of the stipulated environmental safeguards, as per EC conditions, are being submitted to the MoEF&CC, CPCB and JSPCB, Ranchi.

Condition 17- A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been received while processing the proposal.

Reply to Condition 17- Complied. A copy of the clearance letter has already been submitted.

Condition 18- State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and Collector's office/ Tehsildar's Office for 30 days.

Reply to Condition 18- Noted. The EC Letter has been submitted to JSPCB for display of the same at its Regional office and other government offices.

Condition 19- The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded

environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment, Forest and Climate Change at <http://envfor.nic.in> and a copy of the same should be forwarded to the Regional Office of this Ministry located Ranchi

Reply to Condition 19- Noted and complied. The information on the grant of the EC has been published in two local newspapers (Hindustan and Dainik Jagran) on 27.07.2015. The copy of the advertisement has already been submitted to the Regional Office of the MoEF&CC.

.....XXX.....

Piezometer Monitoring Report

Mine: Kujam - II Bauxite Mine (157.38 Ha)

S No	Month	Ground Water Level (BGL) in meter
1	Oct-25	32.61
2	Nov-25	32.92
3	Dec-25	33.08
4	Jan-26	33.17
5	Feb-26	33.32
6	Mar-26	33.49



EPIC LabTech Private Limited



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CIN:-U74999JH2022PTC019683
PAN:-AAHCE3611M
GST:-20AAHCE3611MT2X

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.	TC1288725000001347	Discipline	Chemical
Report Unique ID	RL03282542005	Group	Atmospheric Pollution
Issue date/time	18.10.2025/ 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 II BAUXITE MINE	Contact Person Contact Number Email Id Order Date Order Number	Mr. Girija Tamrakar +91 9111006074 girija.tamrakar@adityabirta.com 31.03.2025/ 10:10 13612313868
--	--	--

References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0328	Sample Booking Number	EPIC-2542005
Sample(s) Code	2542005 (A) (B) (C) (D)	Sample Receipt (D/T)	14.10.2025/ 11:10

Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	12.10.2025/ 10:55	Sampling End (D/T)	13.10.2025/ 10:36
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	Cloudy	Temperature (°C)	26	Humidity %	66	Wind direction	60°-240°
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Sampling Location(s) with GPS coordinate(s)

S. Location A	Kujam-II Weigh Bridge	GPS coordinate	23°18' 50.04"/ 84° 17' 30.27"
S. Location B	Nawatoli Quarry	GPS coordinate	23°18' 29.12"/ 84° 17' 35.69"
S. Location C	Quarry-195	GPS coordinate	23°18' 21.96"/ 84° 17' 57.47"
S. Location D	Bhattipat	GPS coordinate	23°18' 45.95"/ 84° 17' 49.04"

Date(s) of performance of the laboratory activities

Test start date	14.10.2025/ 11:30	Test completion date	18.10.2025/ 15:00
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--Test Results--

Sl	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Particulate Matter (PM ₁₀)	IS:5182 (P-23) 2022	µg/m ³	58.16	60.99	59.19	54.30	100 (24 hr)
2.	Fine Particulate Matter (PM _{2.5})	IS 5182 (P-24) 2019	µg/m ³	26.63	22.21	20.81	22.83	60(24 hr)
3.	Sulphur Dioxide (SO ₂)	IS:5182 (P-02) 2023	µg/m ³	08.65	09.01	07.94	06.85	80(24 hr)
4.	Nitrogen Dioxide (NO ₂)	IS:5182 (P-06) 2022	µg/m ³	18.27	19.24	19.19	16.17	80(24 hr)
5.	Ammonia (NH ₃)	IS:5182 (P-25) 2018	µg/m ³	29.08	29.40	30.34	29.71	400(24 hr)
6.	Ozone (O ₃)	IS:5182 (P-09) 2019	µg/m ³	17.59	17.94	18.30	18.66	180(1 hr)
7.	Lead (Pb)	IS:5182(P-22) 2019	µg/m ³	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 ³	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 ³	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
(H.N. Kumar)
Technical Head

Issue by
(Jimesh Das)
Laboratory Head

Authorized Signatory
EPIC LabTech Pvt. Ltd.
Ranchi, Jharkhand



EPIC LabTech Private Limited

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PAN:-AAHCE3611M
GST:-20AAHCE3611MTZX

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	RL03282542005	Group	Atmospheric Pollution
Issue date/time	18.10.2025/ 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 II BAUXITE MINE

Contact Person Mr. Girija Tamrakar
Contact Number +91 9111006074
Email Id girija.tamrakar@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/0328	Sample Booking Number	EPIC-2542005
Sample(s) Code	2542005 (A) (B) (C) (D)	Sample Receipt (D/T)	14.10.2025/ 11:10

Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	12.10.2025/ 10:55	Sampling End (D/T)	13.10.2025/ 10:36
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	Cloudy	Temperature (°C)	26	Humidity %	66	Wind direction	60°-240°
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Sampling Location(s) with GPS coordinate(s)

S. Location A	Kujam-II Weigh Bridge	GPS coordinate	23°18' 50.04"/ 84° 17' 30.27"
S. Location B	Nawatoli Quarry	GPS coordinate	23°18' 29.12"/ 84° 17' 35.69"
S. Location C	Quarry-195	GPS coordinate	23°18' 21.96"/ 84° 17' 57.47"
S. Location D	Bhattipat	GPS coordinate	23°18' 45.95"/ 84° 17' 49.04"

Date(s) of performance of the laboratory activities

Test start date	14.10.2025/ 11:30	Test completion date	18.10.2025/ 15:00
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--Test Results--

Sl	Test Parameters	Method used	Unit	Results				Limits
				A	B	C	D	
1.	Benzene (C ₆ H ₆)	IS:5182(P-11) 2006	µg/m ³	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 ³	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 ³	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



B.N. Kumar
Reviewed by
(B.N. Kumar)
Technical Head



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



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PAN:-AAHCE3611M
GST:-20AAHCE3611M1ZX

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	RL03282542006	Group	Atmospheric Pollution
Issue date/time	18.10.2025/ 17:03	Sub Group	DG Stack

Report Issue to

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

Contact Person	Mr. Girija Tamrakar
Contact Number	+91 9111006074
Email Id	girija.tamrakar@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/0328	Sample Booking Number	EPIC-2542006
Sample(s) Code	2542006	Sample Receipt (D/T)	14.10.2025/ 11:12

Sampling References

Type of Industry	Bauxite Mines	Ref. of Sampling Plan	EPIC/LAB/R/036
Sampling Start (D/T)	12.10.2025/ 14:40	Sampling End (D/T)	12.10.2025/ 15:50
Mode of Sampling	Conducted by laboratory	Sample collected by	Mr. Vishal Kumar & Team
Sampling method used	IS: 11255 & CPCB Guideline (Lats/80/2013-14)		
Description/condition of sample	Receipt sample(s) were fit for analysis		

Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	26	Humidity %	66	Wind direction	60°-240°
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Sampling Location(s) with GPS coordinate(s)

S. Location	Stack	GPS coordinate	23° 18' 59.58" / 84° 14' 44.18"
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Field observation by laboratory's personnel

Stack Description (Shape & Material)	Circular/ Metal
Emission Source	DG
Stack Gas Temperature (K)	411

Type of fuel Used	HSD
Total production Capacity (Electricity)	20 KVA
Barometric Pressure (P Bar) mmHg	746.0

Date(s) of performance of the laboratory activities

Test start date/time	14.10.2025/ 11:30	Test completion date/time	18.10.2025/ 13:00
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--Test Result--

Sl	Parameters	Test Method	Units	Results	Limits
1.	Stack gas Velocity	IS 11255 (Part 3)2018	m/s	11.46	-
2.	Volumetric Flow Rate	IS 11255 (Part 3)2018	Nm ³ /hr	112.72	-
3.	Particulate Matter (PM)	IS 11255 (Part 1)2019	mg/Nm ³	35.49	-
4.	Sulphur Dioxide (SO ₂)	IS 11255 (Part 2)2019	mg/Nm ³	40.98	-
5.	Oxides of Nitrogen (NO _x)	IS 11255 (Part 7)2022	mg/Nm ³	123.97	-
6.	Carbon Monoxide (CO)	IS 13270 2009	%	BDL (MDL-0.5)	-
7.	Carbon Dioxide (CO ₂)	IS 13270 2009	%	5.5	-

--Test Result End --

Operational Status Unit was Operational during sampling.

Analysed by - Vishal Mangaraj




Reviewed by
(B.N. Kumar)
Technical Head



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Abbreviation - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantitation). |



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CIN:-U74999JH2022PTC019685
PAN:-AAHCE3611M
GST:-20AAHCE3611MTZX

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

Analytical Test Report

Unique Lab Report No.	TC1288725000001488	Discipline	Chemical
Report Unique ID	RL03672548007	Group	Atmospheric Pollution
Issue date/time	28.11.2025/ 17:04	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 II BAUXITE MINE

Contact Person Mr. Girija Tamrakar
Contact Number +91 9111006074
Email Id girija.tamrakar@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/0368	Sample Booking Number	EPIC-2548007
Sample(s) Code	2548007 (A) (B) (C) (D)	Sample Receipt (D/T)	24.11.2025/ 11:03

Sampling References

Type of Industry	Bauxite Mines	Status while Sampling	Operational <input type="checkbox"/> Non-Operational <input checked="" type="checkbox"/>
Sampling Start (D/T)	22.11.2025/ 10:30	Sampling End (D/T)	23.11.2025/ 08:45
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	24	Humidity %	65	Wind direction	0°-180°
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Sampling Location(s) with GPS coordinate(s)

S. Location A	Kujam-II Weigh Bridge	GPS coordinate	23°18' 50.04"/84° 17' 30.27"
S. Location B	Nawatoll Quarry	GPS coordinate	23°18' 29.12"/84° 17' 35.69"
S. Location C	Quarry-195	GPS coordinate	23°18' 21.96"/84° 18' 57.47"
S. Location D	Bhattipat	GPS coordinate	23°18' 45.92"/84° 17' 49.04"

Date(s) of performance of the laboratory activities

Test start date	24.11.2025/ 11:20	Test completion date	28.11.2025/ 14:05
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--Test Results Start--

Sl	Tested Parameters	Method used	Unit	LoQ	Results				Limits <small>(Scheme 10)</small>
					A	B	C	D	
1.	Particulate Matter (PM ₁₀)	IS:5182 (P-23) 2022	µg/m ³	10	59.75	61.61	60.49	55.56	100 (24 hr)
2.	Fine Particulate Matter (PM _{2.5})	IS 5182 (P-24) 2019	µg/m ³	8	27.80	23.44	21.24	23.47	60 (24 hr)
3.	Sulphur Dioxide (SO ₂)	IS:5182 (P-02) 2023	µg/m ³	5	09.60	10.55	08.63	07.80	80 (24 hr)
4.	Nitrogen Dioxide (NO ₂)	IS:5182 (P-06) 2022	µg/m ³	6	19.55	20.50	20.71	17.51	80 (24 hr)
5.	Ozone (O ₃)	IS:5182 (P-09) 2019	µg/m ³	10	18.89	18.54	19.59	19.24	180 (1 hr)
6.	Ammonia (NH ₃)	IS:5182 (P-25) 2018	µg/m ³	10	30.84	30.54	31.74	30.24	400 (24 hr)
7.	Lead (Pb)	IS:5182(P-22) 2019	µg/m ³	0.1	BDL	BDL	BDL	BDL	1.0 (24 hr)
8.	Nickel (Ni)	IS:5182(P-26) 2020	ng/m ³	5	BDL	BDL	BDL	BDL	-
9.	Arsenic (As)	USEPA IO 3.2:1999	ng/m ³	2	BDL	BDL	BDL	BDL	-

--Test Results End --

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

Analysed by - Rajesh Varma



[Signature]
Reviewed by
(B.N. Kumar)
Technical Head

Test Report End

[Signature]
Issue by
(Umesh Das)
Laboratory Head

Authorized Signatory
EPIC LabTech Pvt. Ltd.
Ranchi, Jharkhand

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Abbreviation - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantitation). |



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PAN:-AAHCE3611M
GST:-20AAHCE3611M1ZK

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

Analytical Test Report

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL03672548007	Group	Atmospheric Pollution
Issue date/time	28.11.2025/17:04	Sub Group	Ambient Air Quality

Report Issue to	Contact Person	Mr. Girija Tamrakar
M/s - HINDALCO INDUSTRIES LIMITED	Contact Number	+91 9111006074
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302	Email Id	girija.tamrakar@adityabirta.com
MONITORING SITE : KUJAM II BAUXITE MINE	Order Date	31.03.2025/10:10
	Order Number	13612313868

References of Quality Management System (Steps of Traceability Chain)			
Customer Registration No.	EPIC/OTH/0368	Sample Booking Number	EPIC-2548007
Sample(s) Code	2548007 (A) (B) (C) (D)	Sample Receipt (D/T)	24.11.2025/11:03

Sampling References			
Type of Industry	Bauxite Mines	Status while Sampling	Operational <input type="checkbox"/> Non-Operational <input checked="" type="checkbox"/>
Sampling Start (D/T)	22.11.2025/10:30	Sampling End (D/T)	23.11.2025/08:45
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling							
Weather condition	Cloudy	Temperature (°C)	24	Humidity %	65	Wind direction	0°-180°

Sampling Location(s) with GPS coordinate(s)			
S. Location A	Kujam-II Weigh Bridge	GPS coordinate	23°18' 50.04" / 84° 17' 30.27"
S. Location B	Nawatoli Quarry	GPS coordinate	23°18' 29.12" / 84° 17' 35.69"
S. Location C	Quarry-195	GPS coordinate	23°18' 21.96" / 84° 17' 57.47"
S. Location D	Bhattipal	GPS coordinate	23°18' 45.92" / 84° 17' 49.04"

Date(s) of performance of the laboratory activities			
Test start date	24.11.2025/11:20	Test completion date	28.11.2025/14:05

--Test Results Start--									
Sl	Tested Parameters	Method used	Unit	LoQ	Results				Limits
					A	B	C	D	
1.	Benzene (as C ₆ H ₆)	IS 5182 (P-11): 2006	µg/m ³	1	BDL	BDL	BDL	BDL	-
2.	Benzo(a) Pyrene (BaP) <small>Particulate Phase</small>	IS 5182 (P-12): 2004	ng/m ³	0.5	BDL	BDL	BDL	BDL	-
3.	Carbon Monoxide (CO)	EPIC/LAB/SOP/AP/01	mg/m ³	1.8	BDL	BDL	BDL	BDL	-
--Test Results End --									

Prescribed Limit Environmental (Protection) Rules-1986, Schedule-VII.
Analysed by - Rajesh Varma



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

Test Report End

[Signature]
Issue by
(Limesh Das)
Laboratory Head

Authorized Signatory
EPIC LabTech Pvt. Ltd.
Ranchi, Jharkhand



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PAN:-AAHCE3611M
GST:-20AAHCE3611M1ZX

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 Report

Unique Lab Report No.	TC1288725000001489	Discipline	Chemical
Report Unique ID	RL03672548008	Group	Water
Issue date/time	28.11.2025/ 17:07	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 II BAUXITE MINE

Contact Person: Mr. Girija Tamrakar
Contact Number: +91 9111006074
Email Id: girija.tamrakar@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/0368	Sample Booking Number	EPIC-2548008
Sample(s) Code	2548008	Sample Receipt (D/T)	24.11.2025/ 11:04

Sampling References

Type of Industry	Bauxite Mines	Status while Sampling	Operational <input checked="" type="checkbox"/> Non-Operational <input type="checkbox"/>
Sampling Start (D/T)	22.11.2025/ 15:30	Sampling End (D/T)	22.11.2025/ 15:40
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	24	Humidity %	65	Wind direction	0°-180°
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Sampling Location(s) with GPS coordinate(s)

S. Location A	Canteen	GPS coordinate	23° 18' 51.15" / 84° 17' 29.17"
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Date(s) of performance of the laboratory activities

Test start date	24.11.2025/ 11:24	Test completion date	28.11.2025/ 15:00
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--Test Result Start--

Sl	Tested Parameters	Method used	Unit	LoQ	Results	Limits	
						Acceptable Limit	Permissible limit
1.	pH value at 25°C	IS 3025 (P-11) 2022	-	0.7	6.81	6.5-8.5	No relaxation
2.	Turbidity	IS 3025 (P-10) 1984	NTU	0.3	0.65	1	5
3.	Colour	IS 3025 (P-04) 2021	Hazen	5.0	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	10	158.00	500	2000
7.	Chloride (as Cl)	IS 3025 (P-32) 2019	mg/l	5	19.71	250	1000
8.	Total Alkalinity (as CaCO ₃)	IS 3025 (P-23) 2019	mg/l	10	66.00	200	600
9.	Total Hardness (as CaCO ₃)	IS 3025 (P-21) 2009	mg/l	10	90.00	200	600
10.	Calcium (as Ca)	IS 3025 (P-40) 1991	mg/l	10	9.62	75	200
11.	Free Residual Chlorine	IS 3025 (P-26) 1986	mg/l	0.6	BDL	0.2	1
12.	Sulphate (as SO ₄)	IS 3025 (P-24/Sec-1)2022	mg/l	0.3	2.50	200	400
13.	Nitrate (as NO ₃)	APHA 4500 B 2023	mg/l	0.4	0.983	45	No relaxation
14.	Phenolic Compound	IS 3025 (P-43/Sec-1) 2022	mg/l	0.001	BDL	0.001	0.002
15.	Magnesium (as Mg)	APHA 3500 Mg E 2023	mg/l	0.3	16.03	30	100

Contractual Notes | 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 invoiced 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 * mark. |
Abbreviation: - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantitation). |



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CIN:-U74999JH2022PTC019685
PAN:-AAHCE3611M
GST:-20AAHCE3611M1ZX

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

Analytical Test Report

Unique Lab Report No.	TC1288725000001489	Discipline	Chemical
Report Unique ID	RL03672548008	Group	Water
Issue date/time	28.11.2025/ 17:07	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 II BAUXITE MINE

Contact Person Mr. Girija Tamrakar
Contact Number +91 9111006074
Email Id girija.tamrakar@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	0.1	BDL	0.05	1.5
17.	Iron (as Fe)	APHA 3111 B 2023	mg/l	0.1	BDL	1.0	No relaxation
18.	Lead (as Pb)	APHA 3111 B 2023	mg/l	0.01	BDL	0.01	No relaxation
19.	Cadmium (as Cd)	APHA 3111 B 2023	mg/l	0.003	BDL	0.003	No relaxation
20.	Total Chromium (as Cr)	APHA 3111 B 2023	mg/l	0.01	BDL	0.05	No relaxation
21.	Nickel (as Ni)	APHA 3111 B 2023	mg/l	0.02	BDL	0.02	No relaxation
22.	Total Arsenic (as As)	APHA 3114 B 2023	mg/l	0.005	BDL	0.01	0.05
23.	Selenium (as Se)	APHA 3114 B 2023	mg/l	0.005	BDL	0.01	No relaxation
24.	Manganese (as Mn)	APHA 3111 B 2023	mg/l	0.09	BDL	0.1	0.3
25.	Zinc (as Zn)	APHA 3111 B 2023	mg/l	0.04	BDL	5	15

--Test Result End --

Prescribed Limit IS 10500:2012
Analysed by - Pappu Kumar



Reviewed by
(B.N. Kumar)
Technical Head

Test Report End

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



Contractual Notes | 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 invoiced 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 * mark. |
Abbreviation: - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantitation).



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PAN:-AAHCE3611M
GST:-20AAHCE3611M12X

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

Analytical Test Report

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL03672548008	Group	Water
Issue date/time	28.11.2025/ 17:07	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 II BAUXITE MINE

Contact Person Mr. Girija Tamrakar
 Contact Number +91 9111006074
 Email Id girija.tamrakar@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/0368	Sample Booking Number	EPIC-2548008
Sample(s) Code	2548008	Sample Receipt (D/T)	24.11.2025/ 11:04

Sampling References

Type of Industry	Bauxite Mines	Status while Sampling	Operational <input checked="" type="checkbox"/> Non-Operational <input type="checkbox"/>
Sampling Start (D/T)	22.11.2025/ 15:30	Sampling End (D/T)	22.11.2025/ 15:40
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	24	Humidity %	65	Wind direction	0°-180°
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Sampling Location(s) with GPS coordinate(s)

S. Location A	Canteen	GPS coordinate	23° 18' 51.15"/84° 17' 29.17"
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Date(s) of performance of the laboratory activities

Test start date	24.11.2025/ 11:24	Test completion date	28.11.2025/ 15:00
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--Test Result Start--

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



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GST:-20AAHCE3611MTZX

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ISO 9001:2015 and ISO 45001:2018

Analytical Test Report

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL03672548008	Group	Water
Issue date/time	28.11.2025/ 17:07	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 II BAUXITE MINE

Contact Person Mr. Girija Tamrakar
Contact Number +91 9111006074
Email Id girija.tamrakar@adityabirla.com
Order Date 31.03.2025/ 10:10
Order Number 13612313868

Sl. No.	Parameter	Method	Unit	Result	Standard	Remarks
14.	Ethion	EPIC/LAB/SOP/WA/01/00	µg/l	0.5	BDL	3.0 No relaxation
15.	Gamma- HCH(Lindane)	EPIC/LAB/SOP/WA/01/00	µg/l	0.5	BDL	2.0 No relaxation
16.	Malathion	EPIC/LAB/SOP/WA/01/00	µg/l	0.5	BDL	190.0 No relaxation
17.	Methyl parathion	EPIC/LAB/SOP/WA/01/00	µg/l	0.2	BDL	0.3 No relaxation
18.	Monocrotophos	EPIC/LAB/SOP/WA/01/00	µg/l	0.5	BDL	1.0 No relaxation
19.	Phorate	EPIC/LAB/SOP/WA/01/00	µg/l	0.5	BDL	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	0.5	BDL	1.0 No relaxation
21.	Endosulfan (alpha, beta, and sulphate)	EPIC/LAB/SOP/WA/01/00	µg/l	0.05	BDL	0.4 No relaxation

--Test Result End --

Prescribed Limit IS 10500:2012

Analysed by - Pappu Kumar



(Signature)
Reviewed by
(B.N. Kumar)
Technical Head

Test Report End

(Signature)
Issued by
(Limesh Das)
Laboratory Head

Authorized Signatory
EPIC LabTech Pvt. Ltd.
Ranchi, Jharkhand





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CIN:-U74999JH2022PTC019685
PAN:-AAHCE3611M
GST:-20AAHCE3611MTZX

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

Analytical Test Report

Unique Lab Report No.	N/A	Discipline	Biological
Report Unique ID	RL03672548009	Group	Water
Issue date/time	28.11.2025/ 17:10	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 II BAUXITE MINE

Contact Person Mr. Girija Tamrakar
Contact Number +91 9111006074
Email Id girija.tamrakar@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/0368	Sample Booking Number	EPIC-2548009
Sample(s) Code	2548009	Sample Receipt (D/T)	24.11.2025/ 11:05

Sampling References

Type of Industry	Bauxite Mines	Status while Sampling	Operational <input checked="" type="checkbox"/> Non-Operational <input type="checkbox"/>
Sampling Start (D/T)	22.11.2025/ 15:30	Sampling End (D/T)	22.11.2025/ 15:40
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	24	Humidity %	65	Wind direction	0°-180°
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Sampling Location(s) with GPS coordinate(s)

S. Location A	Canteen	GPS coordinate	23° 18' 51.15"/84° 17' 29.17"
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Date(s) of performance of the laboratory activities

Test start date	24.11.2025/ 11:05	Test completion date	28.11.2025/ 15:30
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--Test Result Start--

Sl	Tested Parameters	Method used	Unit	LoQ	Results	Limits
1.	Total Coliform	IS 15185 2002	Per 100 ml	1.1	Not Detected	Shall not be detectable in any 100 ml sample
2.	E. Coli	IS 15185 2002	Per 100 ml	1.1	Not Detected	

--Test Result End --

Prescribed Limit IS 10500:2012

Analysed by - Ishika Singh



B.N. Kumar
Reviewed by
(B.N. Kumar)
Technical Head

Test Report End

Umesh Das
28/11/25
Issued by
(Umesh Das)
Laboratory Head

Authorized Signatory
EPIC LabTech Pvt. Ltd.
Ranchi, Jharkhand





EPIC LabTech Private Limited



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CIN:-U74999JH2022PTC019685
PAN:-AAHCE3611M
GST:-20AAHCE3611MTZX

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

TC-12887

Analytical Test Report

Unique Lab Report No.	TC1288725000001490	Discipline	Chemical
Report Unique ID	RL03672548010	Group	Water
Issue date/time	28.11.2025/ 17:13	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 II BAUXITE MINE	Contact Person	Mr. Girija Tamrakar
	Contact Number	+91 9111006074
	Email Id	girija.tamrakar@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/0368	Sample Booking Number	EPIC-2548010
Sample(s) Code	2548010	Sample Receipt (D/T)	24.11.2025/ 11:06

Sampling References

Type of Industry	Bauxite Mines	Status while Sampling	Operational <input checked="" type="checkbox"/> Non-Operational <input type="checkbox"/>
Sampling Start (D/T)	22.11.2025/ 14:10	Sampling End (D/T)	22.11.2025/ 14:20
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	24	Humidity %	65	Wind direction	0°-180°
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Sampling Location(s) with GPS coordinate(s)

S. Location A	Near Main Gate	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	24.11.2025/ 11:26	Test completion date	28.11.2025/ 15:00
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--Test Result Start--

Sl	Tested Parameters	Method used	Unit	LoQ	Results	Limits	
						Acceptable Limit	Permissible limit
1.	pH value at 25.2°C	IS 3025 (P-11) 2022	-	0.7	6.95	6.5-8.5	No relaxation
2.	Turbidity	IS 3025 (P-10) 1984	NTU	0.3	0.78	1	5
3.	Colour	IS 3025 (P-04) 2021	Hazen	5.0	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	10	212	500	2000
7.	Chloride (as Cl)	IS 3025 (P-32) 2019	mg/l	5	20.69	250	1000
8.	Total Alkalinity (as CaCO ₃)	IS 3025 (P-23) 2019	mg/l	10	80.00	200	600
9.	Total Hardness (as CaCO ₃)	IS 3025 (P-21) 2009	mg/l	10	104.00	200	600
10.	Calcium (as Ca)	IS 3025 (P-40) 1991	mg/l	10	10.42	75	200
11.	Free Residual Chlorine	IS 3025 (P-26) 1986	mg/l	0.6	BDL	0.2	1
12.	Sulphate (as SO ₄)	IS 3025 (P-24/Sec-1) 2022	mg/l	0.3	3.60	200	400
13.	Nitrate (as NO ₃)	APHA 4500 B 2023	mg/l	0.4	1.78	45	No relaxation
14.	Phenolic Compound	IS 3025 (P-43/Sec-1) 2022	mg/l	0.001	BDL	0.001	0.002
15.	Magnesium (as Mg)	APHA 3500 Mg E 2023	mg/l	0.3	18.95	30	100

Contractual Notes | 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 proscribed 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 invoiced 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 * mark. |

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



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PAN:-AAHCE3611M
GST:-20AAHCE3611M1ZX

Accredited by -
NABL, vide certificate number TC- 13887
Jharkhand State Pollution Control Board
Certified by -
ISO 9001:2015 and ISO 45001:2018

Analytical Test Report

Unique Lab Report No.	TC1288725000001490	Discipline	Chemical
Report Unique ID	RL03672548010	Group	Water
Issue date/time	28.11.2025/ 17:13	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 II BAUXITE MINE

Contact Person Mr. Girija Tamrakar
Contact Number +91 9111006074
Email Id girija.tamrakar@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	0.1	BDL	0.05	1.5	
17. Iron (as Fe)	APHA 3111 B 2023	mg/l	0.1	BDL	1.0	No relaxation	
18. Lead (as Pb)	APHA 3111 B 2023	mg/l	0.01	BDL	0.01	No relaxation	
19. Cadmium (as Cd)	APHA 3111 B 2023	mg/l	0.003	BDL	0.003	No relaxation	
20. Total Chromium (as Cr)	APHA 3111 B 2023	mg/l	0.01	BDL	0.05	No relaxation	
21. Nickel (as Ni)	APHA 3111 B 2023	mg/l	0.02	BDL	0.02	No relaxation	
22. Total Arsenic (as As)	APHA 3114 B 2023	mg/l	0.005	BDL	0.01	0.05	
23. Selenium (as Se)	APHA 3114 B 2023	mg/l	0.005	BDL	0.01	No relaxation	
24. Manganese (as Mn)	APHA 3111 B 2023	mg/l	0.09	BDL	0.1	0.3	
25. Zinc (as Zn)	APHA 3111 B 2023	mg/l	0.04	BDL	5	15	

--Test Result End --

Prescribed Limit IS 10500:2012
Analysed by - Pappu Kumar



Reviewed by
(B.N. Kumar)
Technical Head

Test Report End

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



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



EPIC LabTech Private Limited

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CIN:-U74999JH2022PTC019685
PAN:-AAHCE3611M
GST:-20AAHCE3611M12X

Accredited by >
(Jharkhand State Pollution Control Board)
Certified by >
ISO 9001:2015 and ISO 45001:2018

Analytical Test Report

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL03672548010	Group	Water
Issue date/time	28.11.2025/17:13	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 II BAUXITE MINE

Contact Person - Mr. Girija Tamrakar
Contact Number +91 9111006074
Email Id girija.tamrakar@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/0368	Sample Booking Number	EPIC-2548010
Sample(s) Code	2548010	Sample Receipt (D/T)	24.11.2025/11:06

Sampling References

Type of Industry	Bauxite Mines	Status while Sampling	Operational <input checked="" type="checkbox"/> Non-Operational <input type="checkbox"/>
Sampling Start (D/T)	22.11.2025/14:10	Sampling End (D/T)	22.11.2025/14:20
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	24	Humidity %	65	Wind direction	0°-180°
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Sampling Location(s) with GPS coordinate(s)

S. Location A	Near Main Gate	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	24.11.2025/11:26	Test completion date	28.11.2025/15:00
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--Test Result Start--

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

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



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CIN:-U74999JH2022PTC019685
PAN:-AAHCE3611M
GST:-20AAHCE3611M1ZX

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

Analytical Test Report

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL03672548010	Group	Water
Issue date/time	28.11.2025/ 17:13	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 II BAUXITE MINE

Contact Person - Mr. Girija Tamrakar
Contact Number - +91 9111006074
Email Id - girija.tamrakar@adityabirla.com
Order Date - 31.03.2025/ 10:10
Order Number - 13612313868

Sl. No.	Parameter	Method	Unit	Concentration	BDL	Relaxation
14.	Ethion	EPIC/LAB/SOP/WA/01/00	µg/l	0.5	BDL	No relaxation
15.	Gamma- HCH(Lindane)	EPIC/LAB/SOP/WA/01/00	µg/l	0.5	BDL	No relaxation
16.	Malathion	EPIC/LAB/SOP/WA/01/00	µg/l	0.5	BDL	No relaxation
17.	Methyl parathion	EPIC/LAB/SOP/WA/01/00	µg/l	0.2	BDL	No relaxation
18.	Monocrotophos	EPIC/LAB/SOP/WA/01/00	µg/l	0.5	BDL	No relaxation
19.	Phorate	EPIC/LAB/SOP/WA/01/00	µg/l	0.5	BDL	No relaxation
20.	DDT (o, p and p, p-isomer of DDT, DDE and DDD)	EPIC/LAB/SOP/WA/01/00	µg/l	0.5	BDL	No relaxation
21.	Endosulfan (alpha, beta, and sulphate)	EPIC/LAB/SOP/WA/01/00	µg/l	0.05	BDL	No relaxation

--Test Result End --

Prescribed Limit IS 10500:2012

Analysed by - Pappu Kumar



Reviewed by
(B.N. Kumar)
Technical Head

Test Report End

Issued by
(Umesh Das)
Laboratory Head

Authorized Signatory
EPIC LabTech Pvt. Ltd.
Ranchi, Jharkhand





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Analytical Test Report

Unique Lab Report No.	N/A	Discipline	Biological
Report Unique ID	RL03672548011	Group	Water
Issue date/time	28.11.2025/ 17:16	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 II BAUXITE MINE

Contact Person Mr. Girija Tamrakar
Contact Number +91 9111006074
Email Id girija.tamrakar@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/0368	Sample Booking Number	EPIC-2548011
Sample(s) Code	2548011	Sample Receipt (D/T)	24.11.2025/ 11:06

Sampling References

Type of Industry	Bauxite Mines	Status while Sampling	Operational <input checked="" type="checkbox"/> Non-Operational <input type="checkbox"/>
Sampling Start (D/T)	22.11.2025/ 14:10	Sampling End (D/T)	22.11.2025/ 14:20
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	24	Humidity %	65	Wind direction	0°-180°
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Sampling Location(s) with GPS coordinate(s)

S. Location A	Near Main Gate	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	24.11.2025/ 12:45	Test completion date	28.11.2025/ 15:30
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--Test Result Start--

Sl	Tested Parameters	Method used	Unit	LoQ	Results	Limits
1.	Total Coliform	IS 15185 2002	Per 100 ml	1.1	Not Detected	Shall not be detectable in any 100 ml sample
2.	E. Coli	IS 15185 2002	Per 100 ml	1.1	Not Detected	

--Test Result End --

Prescribed Limit IS 10500:2012

Analysed by - Ishika Singh



Reviewed by
(B.N. Kumar)
Technical Head

Test Report End

Issued by
(Umesh Das)
Laboratory Head

Authorized Signatory
EPIC LabTech Pvt. Ltd.
Ranchi, Jharkhand



EPIC LabTech Private Limited



Address:-
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GST:-20AAHCE3611M1ZK

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 Report

Unique Lab Report No.	TC1288725000001491	Discipline	Chemical
Report Unique ID	RL03672548012	Group	Water
Issue date/time	28.11.2025/ 17:19	Sub Group	Waste Water (Effluent)

Report Issue to

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

Contact Person Mr. Girija Tamrakar
Contact Number +91 9111006074
Email Id girija.tamrakar@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/0368	Sample Booking Number	EPIC-2548012
Sample(s) Code	2548012	Sample Receipt (D/T)	24.11.2025/ 11:07

Sampling References

Type of Industry	Bauxite Mines	Status while Sampling	Operational <input checked="" type="checkbox"/> Non-Operational <input type="checkbox"/>
Sampling Start (D/T)	22.11.2025/ 15:55	Sampling End (D/T)	22.11.2025/ 16:05
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	24	Humidity %	65	Wind direction	0°-180°
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Sampling Location(s) with GPS coordinate(s)

S. Location A	Work Shop Outlet	GPS coordinate	23° 18' 50.72" / 84° 17' 28.74"
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Date(s) of performance of the laboratory activities

Test start date	24.11.2025/ 11:27	Test completion date	28.11.2025/ 15:00
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--Test Result Start--

Sl	Tested Parameters	Method used	Unit	LoQ	Results	Limits
1.	pH value at 25°C	IS 3025 (P-11) 2022	-	0.7	6.82	6.5-8.5
2.	BOD (3 days at 27°C)	IS 3025 (P-44) 2000	mg/l	0.3	12.00	-
3.	COD	IS 3025 (P-58) 2006	mg/l	8.0	100.0	150.0
4.	Oil & Grease	IS 3025 (P-39) 2021	mg/l	4.0	BDL	10.0
5.	Total Suspended Solid	IS 3025 (P-17) 2022	mg/l	10.0	32.00	50.0
6.	Phosphate	IS 3025 (P-31/Sec-1) 2022	mg/l	0.2	1.08	-
7.	Zinc (as Zn)	APHA 3111 B 2023	mg/l	0.04	BDL	-

--Test Result End --

Prescribed Limit Environmental (Protection) Rules-1986, Schedule -I, Serial No.114.

Analysed by - Pappu Kumar



Reviewed by
(B.N. Kumar)
Technical Head

Test Report End



Contractual Notes | 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 invoiced 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 * mark. |
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PAN:-AAHCE3611M
GST:-20AAHCE3611M1ZX

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

Analytical Test Report

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL03672548012	Group	Water
Issue date/time	28.11.2025/ 17:19	Sub Group	Waste Water (Effluent)

Report Issue to

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

Contact Person Mr. Girija Tamrakar
Contact Number +91 9111006074
Email Id girija.tamrakar@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/0368	Sample Booking Number	EPIC-2548012
Sample(s) Code	2548012	Sample Receipt (D/T)	24.11.2025/ 11:07

Sampling References

Type of Industry	Bauxite Mines	Status while Sampling	Operational <input checked="" type="checkbox"/> Non-Operational <input type="checkbox"/>
Sampling Start (D/T)	22.11.2025/ 15:55	Sampling End (D/T)	22.11.2025/ 16:05
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	24	Humidity %	65	Wind direction	0°-180°
-------------------	--------	------------------	----	------------	----	----------------	---------

Sampling Location(s) with GPS coordinate(s)

S. Location A	Work Shop Outlet	GPS coordinate	23° 18' 50.72"/ 84° 17' 28.74"
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Date(s) of performance of the laboratory activities

Test start date	24.11.2025/ 11:27	Test completion date	28.11.2025/ 15:00
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--Test Result Start--

Sl	Tested Parameters	Method used	Unit	LoQ	Results	Limits
1.	Total Dissolve Solids (TDS)	IS 3025 (P-16) 2023	mg/l	10	638.0	-
2.	Dissolve Oxygen (DO)	IS 3025 (P-38) 1986	mg/l	0.2	1.30	-

--Test Result End --

Prescribed Limit Environmental (Protection) Rules-1986, Schedule -I, Serial No.114.

Analysed by - Pappu Kumar



R.N. Kumar
Reviewed by
(R.N. Kumar)
Technical Head

Test Report End

Umesh Das
Issued by
(Umesh Das)
Laboratory Head



Contractual Notes | 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 invoiced 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 * mark. |
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GST:-20AAHCE3611M12X

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 Report

Unique Lab Report No.	TC1288725000001491	Discipline	Chemical
Report Unique ID	RL03672548012	Group	Water
Issue date/time	28.11.2025/ 17:19	Sub Group	Waste Water (Effluent)

Report Issue to

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

Contact Person Mr. Girija Tamrakar
Contact Number +91 9111006074
Email Id girija.tamrakar@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/0368	Sample Booking Number	EPIC-2548012
Sample(s) Code	2548012	Sample Receipt (D/T)	24.11.2025/ 11:07

Sampling References

Type of Industry	Bauxite Mines	Status while Sampling	Operational <input checked="" type="checkbox"/> Non-Operational <input type="checkbox"/>
Sampling Start (D/T)	22.11.2025/ 15:55	Sampling End (D/T)	22.11.2025/ 16:05
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	24	Humidity %	65	Wind direction	0°-180°
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Sampling Location(s) with GPS coordinate(s)

S. Location A	Work Shop Outlet	GPS coordinate	23° 18' 50.72" / 84° 17' 28.74"
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Date(s) of performance of the laboratory activities

Test start date	24.11.2025/ 11:27	Test completion date	28.11.2025/ 15:00
-----------------	-------------------	----------------------	-------------------

--Test Result Start--

Sl	Tested Parameters	Method used	Unit	LoQ	Results	Limits
1.	pH value at 25°C	IS 3025 (P-11) 2022	-	0.7	6.82	6.5-8.5
2.	BOD (3 days at 27°C)	IS 3025 (P-44) 2000	mg/l	0.3	12.00	-
3.	COD	IS 3025 (P-58) 2006	mg/l	8.0	100.0	150.0
4.	Oil & Grease	IS 3025 (P-39) 2021	mg/l	4.0	BDL	10.0
5.	Total Suspended Solid	IS 3025 (P-17) 2022	mg/l	10.0	32.00	50.0
6.	Phosphate	IS 3025 (P-31/Sec-1) 2022	mg/l	0.2	1.08	-
7.	Zinc (as Zn)	APHA 3111 B 2023	mg/l	0.04	BDL	-

--Test Result End --

Prescribed Limit Environmental (Protection) Rules-1986, Schedule-4, Serial No.114.

Analysed by - Pappu Kumar



Reviewed by
(B.N. Kumar)
Technical Head

Test Report End

Issued by
(Umesh Das)
Laboratory Head

Authorized Signatory
EPIC LabTech Pvt. Ltd.
Ranchi, Jharkhand



EPIC LabTech Private Limited

Address:-

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CIN:-U74999JH2022PTC019685

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Accredited by :-

Jharkhand State Pollution Control Board

Certified by :-

ISO 9001:2015 and ISO 45001:2018

Analytical Test Report

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL03672548012	Group	Water
Issue date/time	28.11.2025/17:19	Sub Group	Waste Water (Effluent)

Report Issue to

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

Contact Person Mr. Girija Tamrakar
Contact Number +91 9111006074
Email Id girija.tamrakar@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/0368	Sample Booking Number	EPIC-2548012
Sample(s) Code	2548012	Sample Receipt (D/T)	24.11.2025/11:07

Sampling References

Type of Industry	Bauxite Mines	Status while Sampling	Operational <input checked="" type="checkbox"/> Non-Operational <input type="checkbox"/>
Sampling Start (D/T)	22.11.2025/15:55	Sampling End (D/T)	22.11.2025/16:05
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	24	Humidity %	65	Wind direction	0°-180°
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Sampling Location(s) with GPS coordinate(s)

S. Location A	Work Shop Outlet	GPS coordinate	23° 18' 50.72" / 84° 17' 28.74"
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Date(s) of performance of the laboratory activities

Test start date	24.11.2025/11:27	Test completion date	28.11.2025/15:00
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--Test Result Start--

Sl	Tested Parameters	Method used	Unit	LoQ	Results	Limits
1.	Total Dissolve Solids (TDS)	IS 3025 (P-16) 2023	mg/l	10	638.0	-
2.	Dissolve Oxygen (DO)	IS 3025 (P-38) 1986	mg/l	0.2	1.30	-

--Test Result End --

Prescribed Limit Environmental (Protection) Rules-1986, Schedule -I, Serial No.114.

Analysed by - Pappu Kumar



[Signature]

Reviewed by
(R.N. Kumar)
Technical Head

Test Report End

[Signature]
28/11/25

Issued by
(Umesh Das)
Laboratory Head

Authorized Signatory
EPIC LabTech Pvt. Ltd.
Ranchi, Jharkhand



EPIC LabTech Private Limited



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CIN:-U74999JH2022PTC019685
PAN:-AAHCE3611M
GST:-20AAHCE3611M1Zx

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

TC-12887

Analytical Test Report

Unique Lab Report No.	TC1288725000001605	Discipline	Chemical
Report Unique ID	RL04062550016	Group	Atmospheric Pollution
Issue date/time	13.12.2025/ 16:26	Sub Group	Ambient Air Quality

Report Issue to		Contact Person	Mr. Girija Tamrakar
M/s - HINDALCO INDUSTRIES LIMITED		Contact Number	+91 9111006074
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302		Email Id	girija.tamrakar@adityabirla.com
MONITORING SITE : KUJAM II BAUXITE MINE		Order Date	31.03.2025/ 10:10
		Order Number	13612313868

References of Quality Management System (Steps of Traceability Chain)			
Customer Registration No.	EPIC/OTH/0406	Sample Booking Number	EPIC-2550016
Sample(s) Code	2550016 (A) (B) (C) (D)	Sample Receipt (D/T)	11.12.2025/ 11:00

Sampling References			
Type of Industry	Bauxite Mines	Status while Sampling	Operational <input checked="" type="checkbox"/> Non-Operational <input type="checkbox"/>
Sampling Start (D/T)	09.12.2025/ 10:15	Sampling End (D/T)	10.12.2025/ 08:30
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Rajesh Prajapati & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling			
Weather condition	Cloudy	Temperature (°C)	21
		Humidity %	59
		Wind direction	90°-270°

Sampling Location(s) with GPS coordinate(s)			
S. Location A	Kujam-II Weigh Bridge	GPS coordinate	23°18' 50.04"/84° 17' 30.27"
S. Location B	Nawatoli Quarry	GPS coordinate	23°18' 29.12"/84° 17' 35.69"
S. Location C	Quarry-195	GPS coordinate	23°18' 21.96"/84° 18' 57.47"
S. Location D	Bhattipat	GPS coordinate	23°18' 45.92"/84° 17' 49.04"

Date(s) of performance of the laboratory activities			
Test start date	11.12.2025/ 11:50	Test completion date	13.12.2025/ 15:30

Sl	Tested Parameters	Method used	Unit	LoQ	Results				Limits
					A	B	C	D	
1.	Particulate Matter (PM ₁₀)	IS:5182 (P-23) 2022	µg/m ³	10	61.65	63.78	62.39	57.71	100 (24 hr)
2.	Fine Particulate Matter (PM _{2.5})	IS 5182 (P-24) 2019	µg/m ³	8	28.72	24.34	22.57	24.77	60 (24 hr)
3.	Sulphur Dioxide (SO ₂)	IS:5182 (P-02) 2023	µg/m ³	5	10.31	11.25	09.32	08.47	80 (24 hr)
4.	Nitrogen Dioxide (NO ₂)	IS:5182 (P-06) 2022	µg/m ³	6	21.33	23.43	21.86	18.64	80 (24 hr)
5.	Ozone (O ₃)	IS:5182 (P-09) 2019	µg/m ³	10	18.89	19.24	19.94	20.64	180 (1 hr)
6.	Ammonia (NH ₃)	IS:5182 (P-25) 2018	µg/m ³	10	31.44	31.14	32.33	31.74	400 (24 hr)
7.	Lead (Pb)	IS:5182(P-22) 2019	µg/m ³	0.1	BDL	BDL	BDL	BDL	1.0 (24 hr)
8.	Nickel (Ni)	IS:5182(P-26) 2020	ng/m ³	5	BDL	BDL	BDL	BDL	-
9.	Arsenic (As)	USEPA IO 3.2:1999	ng/m ³	2	BDL	BDL	BDL	BDL	-

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

Analysed by - Rajesh Varma



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

Test Report End

[Signature]
Issue by
(Ajmesh Das)
Laboratory Head
Authorized Signatory
EPIC LabTech Pvt. Ltd.
Ranchi, Jharkhand

Contractual Notes | 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 | 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 invoiced 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 * mark. |
Abbreviation: - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantitation).



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GST:-20AAHCE3611M1ZK

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

Analytical Test Report

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL04062550016	Group	Atmospheric Pollution
Issue date/time	13.12.2025/ 16:26	Sub Group	Ambient Air Quality

Report Issue to		Contact Person	Mr. Girija Tamrakar
M/s - HINDALCO INDUSTRIES LIMITED		Contact Number	+91 9111006074
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,		Email Id	girija.tamrakar@adityabirla.com
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302		Order Date	31.03.2025/ 10:10
MONITORING SITE : KUJAM II BAUXITE MINE		Order Number	13612313868

References of Quality Management System (Steps of Traceability Chain)			
Customer Registration No.	EPIC/OTH/0406	Sample Booking Number	EPIC-2550016
Sample(s) Code	2550016 (A) (B) (C) (D)	Sample Receipt (D/T)	11.12.2025/ 11:00

Sampling References			
Type of Industry	Bauxite Mines	Status while Sampling	Operational <input checked="" type="checkbox"/> Non-Operational <input checked="" type="checkbox"/>
Sampling Start (D/T)	09.12.2025/ 10:15	Sampling End (D/T)	10.12.2025/ 08:30
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Rajesh Prajapati & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling							
Weather condition	Cloudy	Temperature (°C)	21	Humidity %	59	Wind direction	90°-270°

Sampling Location(s) with GPS coordinate(s)			
S. Location A	Kujam-II Weigh Bridge	GPS coordinate	23°18' 50.04"/ 84° 17' 30.27"
S. Location B	Nawatoli Quarry	GPS coordinate	23°18' 29.12"/ 84° 17' 35.69"
S. Location C	Quarry-195	GPS coordinate	23°18' 21.96"/ 84° 17' 57.47"
S. Location D	Bhattipat	GPS coordinate	23°18' 45.92"/ 84° 17' 49.04"

Date(s) of performance of the laboratory activities			
Test start date	11.12.2025/ 11:50	Test completion date	13.12.2025/ 15:30

--Test Results Start--									
Sl	Tested Parameters	Method used	Unit	LoQ	Results				Limits
					A	B	C	D	
1.	Benzene (as C ₆ H ₆)	IS 5182 (P-11): 2006	µg/m ³	1	BDL	BDL	BDL	BDL	-
2.	Benzo(a) Pyrene (BaP) <small>Particulate Phase</small>	IS 5182 (P-12): 2004	ng/m ³	0.5	BDL	BDL	BDL	BDL	-
3.	Carbon Monoxide (CO)	EPIC/LAB/SOP/AP/01	mg/m ³	1.8	BDL	BDL	BDL	BDL	-
--Test Results End--									

Prescribed Limit Environmental (Protection) Rules-1986, Schedule -VII.
Analysed by - Rajesh Varma



B.N. Kumar
Reviewed by
(B.N. Kumar)
Technical Head

Test Report End

Umesh Das
Issue by
(Umesh Das)
Laboratory Head

Authorized Signatory
EPIC LabTech Pvt. Ltd.
Ranchi, Jharkhand



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



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CIN:-U74999JH2022PTC010685
PAN:-AAHCE3611M
GST:-20AAHCE3611M1ZK

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

Analytical Test Report

Unique Lab Report No.	TC1288725000001606	Discipline	Chemical
Report Unique ID	RL04062550017	Group	Atmospheric Pollution
Issue date/time	13.12.2025/ 16:29	Sub Group	Ambient Noise

Report Issue to

M/s - HINDALCO INDUSTRIES LIMITED VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA, DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302 MONITORING SITE : KUJAM II BAUXITE MINE	Contact Person Mr. Girija Tamrakar Contact Number +91 9111006074 Email Id girija.tamrakar@adityabirla.com Order Date 31.03.2025/ 10:10 Order Number 13612313868
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References of Quality Management System (Steps of Traceability Chain)

Customer Registration No.	EPIC/OTH/0406	Sample Booking Number	EPIC-2550017
Sample(s) Code	2550017 (A) (B) (C) (D)	Sample Receipt (D/T)	11.12.2025/ 11:02

Sampling References

Type of Industry	Bauxite Mines	Status while Sampling	Operational <input checked="" type="checkbox"/> Non-Operational <input checked="" type="checkbox"/>
Sampling Start (D/T)	09.12.2025/ 10:15	Sampling End (D/T)	10.12.2025/ 08:30
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Rajesh Prajapati & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	21	Humidity %	59	Wind direction	90°-270°
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Sampling Location(s) with GPS coordinate(s)

S. Location A	Kujam-II Weigh Bridge	GPS coordinate	23°18' 50.04"/ 84° 17' 30.27"
S. Location B	Nawatoli Quarry	GPS coordinate	23°18' 29.12"/ 84° 17' 35.69"
S. Location C	Quarry-195	GPS coordinate	23°18' 21.96"/ 84° 17' 57.47"
S. Location D	Bhattipat	GPS coordinate	23°18' 45.92"/ 84° 17' 49.04"

Date(s) of performance of the laboratory activities

Test start date	11.12.2025/ 11:50	Test completion date	13.12.2025/ 15:15
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--Test Results Start--

Sl	Tested Parameters	Method used	Unit	LoQ	Results				Limits
					A	B	C	D	
1.	L _{eq} (Day time)	IS: 9989:1981	dB (A)	30	53.6	47.2	43.3	47.5	75
2.	L _{eq} (Night time)	IS: 9989:1981	dB (A)	30	43.0	38.5	37.2	39.0	70

--Test Results End--

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

Analysed by - Rajesh Varma

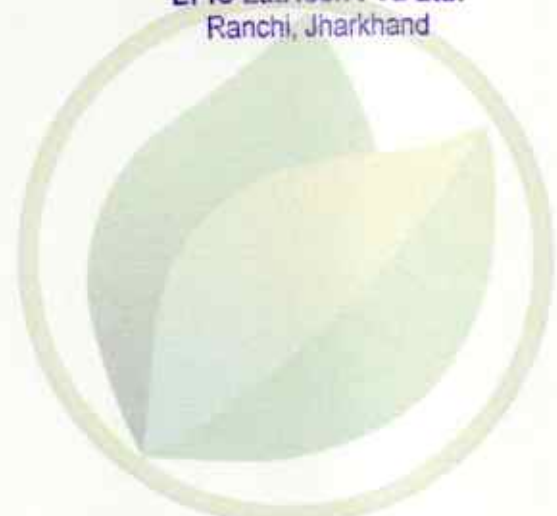


[Signature]
Reviewed by
(B.N. Kumar)
Technical Head

Test Report End

[Signature]
Issue by
(Umash Dey)
Laboratory Head

Authorized Signatory
EPIC LabTech Pvt. Ltd.
Ranchi, Jharkhand



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



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

Analytical Test Report

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL04062550018	Group	Atmospheric Pollution
Issue date/time	13.12.2025/ 16:32	Sub Group	Work Zone Noise

Report Issue to		Contact Person	Mr. Girija Tamrakar
M/s - HINDALCO INDUSTRIES LIMITED		Contact Number	+91 9111006074
VILLAGE-COURT ROAD, POST OFFICE-LOHARDAGA,		Email Id	girija.tamrakar@adityabirla.com
DIST.-LOHARDAGA, STATE-JHARKHAND, INDIA 835302		Order Date	31.03.2025/ 10:10
MONITORING SITE : KUJAM II BAUXITE MINE		Order Number	13612313868

References of Quality Management System (Steps of Traceability Chain)			
Customer Registration No.	EPIC/OTH/0406	Sample Booking Number	EPIC-2550018
Sample(s) Code	2550018 (A) (B)	Sample Receipt (D/T)	11.12.2025/ 11:03

Sampling References			
Type of Industry	Bauxite Mines	Status while Sampling	Operational <input checked="" type="checkbox"/> Non-Operational <input type="checkbox"/>
Sampling Start (D)	09.12.2025	Sampling End (D)	09.12.2025
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Rajesh Prajapati & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling							
Weather condition	Cloudy	Temperature (°C)	21	Humidity %	50	Wind direction	90°-270°

Sampling Location(s) with GPS coordinate(s)			
S. Location A	Compressor at Quarry No.2	GPS coordinate	23° 18' 50.50" / 84° 17' 29.04"
S. Location B	Kujam II Bauxite Mine (157.38 Ha)	GPS coordinate	23° 18' 20.66" / 84° 17' 59.23"

Date(s) of performance of the laboratory activities			
Test start date	11.12.2025/ 11:50	Test completion date	13.12.2025/ 15:40

--Test Results Start--							
Sl	Tested Parameters	Method used	Unit	LoQ	A	B	Limits
1.	L _{eq} (Day time)	IS: 9989:1981	dB (A)	30	76.9	70.8	85
--Test Results End--							

Prescribed Limit NIOSH-Publication No. 99-126 in 1972
Analysed by - Rajesh Varma



Reviewed by
(B.N. Kumar)
Technical Head

Test Report End

Issue by
(Vimlesh Gaur)
Laboratory Head

Authorized Signatory
EPIC LabTech Pvt. Ltd.
Ranchi, Jharkhand



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Certified by :-
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Test Report



Unique Lab Report No.	TC1288726000000053	Discipline	Chemical
Report Unique ID	RL04352603007	Group	Atmospheric Pollution
Issue date/time	15.01.2026/17:39	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 II BAUXITE MINE

Contact Person	Mr. Girija Tamrakar
Contact Number	+91 9111006074
Email Id	girija.tamrakar@adityabiria.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/0435	Sample Booking Number	EPIC-2603007
Sample(s) Code	2603007 (A) (B) (C) (D)	Sample Receipt (D/T)	12.01.2026/11:17

Sampling References

Type of Industry	Bauxite Mines	Status while Sampling	Operational <input checked="" type="checkbox"/> Non-Operational <input type="checkbox"/>
Sampling Start (D/T)	10.01.2026/10:26	Sampling End (D/T)	11.01.2026/08:37
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	22	Humidity %	58	Wind direction	0°-180°
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Sampling Location(s) with GPS coordinate(s)

S. Location A	Kujam-II Weigh Bridge	GPS coordinate	23°18'50.04"/84°17'30.27"
S. Location B	Nawatoli Quarry	GPS coordinate	23°18'29.12"/84°17'35.69"
S. Location C	Quarry-195	GPS coordinate	23°18'21.96"/84°18'57.47"
S. Location D	Bhattipat	GPS coordinate	23°18'45.92"/84°17'49.04"

Date(s) of performance of the laboratory activities

Test start date	12.01.2026/13:25	Test completion date	15.01.2026/14:50
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--Test Results Start--

Sl	Tested Parameters	Method used	Unit	LoQ	Results				Limits
					A	B	C	D	
1.	Particulate Matter (PM ₁₀)	IS:5182 (P-23) 2022	µg/m ³	10	62.34	64.53	63.44	58.63	100 (24 hr)
2.	Fine Particulate Matter (PM _{2.5})	IS 5182 (P-24) 2019	µg/m ³	8	29.26	25.45	23.02	25.39	60 (24 hr)
3.	Sulphur Dioxide (SO ₂)	IS:5182 (P-02) 2023	µg/m ³	5	11.05	12.27	10.26	09.34	80 (24 hr)
4.	Nitrogen Dioxide (NO ₂)	IS:5182 (P-06) 2022	µg/m ³	6	21.39	22.25	22.60	19.30	80 (24 hr)
5.	Ozone (O ₃)	IS:5182 (P-09) 2019	µg/m ³	10	21.57	21.21	22.28	22.64	180 (1 hr)
6.	Ammonia (NH ₃)	IS:5182 (P-25) 2018	µg/m ³	10	32.56	32.27	33.43	32.85	400 (24 hr)
7.	Lead (Pb)	IS:5182(P-22) 2019	µg/m ³	0.1	BDL	BDL	BDL	BDL	1.0 (24 hr)
8.	Nickel (Ni)	IS:5182(P-26) 2020	ng/m ³	5	BDL	BDL	BDL	BDL	-
9.	Arsenic (As)	USEPA IO 3.2:1999	ng/m ³	2	BDL	BDL	BDL	BDL	-
10.	Benzene (as C ₆ H ₆)	IS 5182 (P-11): 2006	µg/m ³	1	BDL	BDL	BDL	BDL	-
11.	Benzo(a) Pyrene (BaP) <small>Particulate Phase</small>	IS 5182 (P-12): 2004	ng/m ³	0.5	BDL	BDL	BDL	BDL	-

--Test Results End --

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

Analysed by - Rajesh Varma



[Signature]
Reviewed by
(B.N. Kumar)
Technical Head

****Test Report End****

[Signature]
Issued by
(Umesh Das)
Laboratory Head

Authorized Signatory
EPIC LabTech Pvt. Ltd.
Ranchi, Jharkhand

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

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CIN:-U74999JH2022PTC019685
PAN:-AAHCE3611M
GST:-20AAHCE3611M1ZK

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

Test Report

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL04352603007	Group	Atmospheric Pollution
Issue date/time	15.01.2026/ 17:39	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 II BAUXITE MINE

Contact Person	Mr. Girija Tamrakar
Contact Number	+91 9111006074
Email Id	girija.tamrakar@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/0435	Sample Booking Number	EPIC-2603007
Sample(s) Code	2603007 (A) (B) (C) (D)	Sample Receipt (D/T)	12.01.2026/ 11:17

Sampling References

Type of Industry	Bauxite Mines	Status while Sampling	Operational <input checked="" type="checkbox"/> Non-Operational <input type="checkbox"/>
Sampling Start (D/T)	10.01.2026/ 10:26	Sampling End (D/T)	11.01.2026/ 08:37
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	22	Humidity %	58	Wind direction	0°-180°
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Sampling Location(s) with GPS coordinate(s)

S. Location A	Kujam-II Weigh Bridge	GPS coordinate	23°18' 50.04"/84° 17' 30.27"
S. Location B	Nawatoli Quarry	GPS coordinate	23°18' 29.12"/84° 17' 35.69"
S. Location C	Quarry-195	GPS coordinate	23°18' 21.96"/84° 17' 57.47"
S. Location D	Bhattipat	GPS coordinate	23°18' 45.92"/84° 17' 49.04"

Date(s) of performance of the laboratory activities

Test start date	12.01.2026/ 13:25	Test completion date	15.01.2026/ 14:50
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--Test Results Start--

Sl	Tested Parameters	Method used	Unit	LoQ	Results				Limits
					A	B	C	D	
1.	Carbon Monoxide (CO)	EPIC/LAB/SOP/AP/01	mg/m ³	1.8	BDL	BDL	BDL	BDL	-

--Test Results End --

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

Analysed by - Rajesh Varma



Reviewed by
(B.N. Kumar)
Technical Head

****Test Report End****

Issue by
(Ajmesh Das)
Laboratory Head

Authorized Signatory
EPIC LabTech Pvt. Ltd.
Ranchi, Jharkhand



Contractual Notes | 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 invoiced 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 * mark. |
Abbreviations - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantitation). |



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CIN:-U74999JH2022PTC019685
PAN:-AAHCE36T1M
GST:-20AAHCE36T1M1ZX

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Jharkhand State Pollution Control Board
Certified by :-
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Test Report



Unique Lab Report No.	TC1288726000000054	Discipline	Chemical
Report Unique ID	RL04352603008	Group	Water
Issue date/time	15.01.2026/ 17:42	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 II BAUXITE MINE

Contact Person Mr. Girija Tamrakar
Contact Number +91 9111006074
Email Id girija.tamrakar@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/0435	Sample Booking Number	EPIC-2603008
Sample(s) Code	2603008	Sample Receipt (D/T)	12.01.2026/ 11:18

Sampling References

Type of Industry	Bauxite Mines	Status while Sampling	Operational <input checked="" type="checkbox"/> Non-Operational <input type="checkbox"/>
Sampling Start (D/T)	10.01.2026/ 13:30	Sampling End (D/T)	10.01.2026/ 13:45
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	22	Humidity %	58	Wind direction	0°-180°
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Sampling Location(s) with GPS coordinate(s)

S. Location A	Dardhari Nadi (Up Stream)	GPS coordinate	23° 18' 17.54"/84° 17' 04.42"
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Date(s) of performance of the laboratory activities

Test start date	12.01.2026/ 11:38	Test completion date	15.01.2026/ 15:55
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--Test Result Start--

Sl	Tested Parameters	Method used	Unit	LoQ	Results	Limits
1.	pH value at 25.3°C	IS 3025 (P-11) 2022	-	0.7	6.65	-
2.	Turbidity	IS 3025 (P-10) 1984	NTU	0.3	0.95	-
3.	Colour	IS 3025 (P-04) 2021	Hazen	5.0	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	10	192.0	-
7.	Chloride (as Cl)	IS 3025 (P-32) 2019	mg/l	5	14.28	-
8.	Total Alkalinity (as CaCO ₃)	IS 3025 (P-23) 2019	mg/l	10	32.00	-
9.	Total Hardness (as CaCO ₃)	IS 3025 (P-21) 2009	mg/l	10	42.17	-
10.	Calcium (as Ca)	IS 3025 (P-40) 1991	mg/l	10	13.63	-
11.	Free Residual Chlorine	IS 3025 (P-26) 1986	mg/l	0.6	BDL	-
12.	Sulphate (as SO ₄)	IS 3025 (P-24/Sec-1) 2022	mg/l	0.3	2.0	-
13.	Nitrate (as NO ₃)	APHA 4500 B 2023	mg/l	0.4	2.1	-
14.	Phenolic Compound	IS 3025 (P-43/Sec-1) 2022	mg/l	0.001	BDL	-
15.	Magnesium (as Mg)	APHA 3500 Mg E 2023	mg/l	0.3	1.98	-



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GST:-20AAHCE3611M12X

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Test Report



Unique Lab Report No.	TC1288726000000054	Discipline	Chemical
Report Unique ID	RL04352603008	Group	Water
Issue date/time	15.01.2026/17:42	Sub Group	Surface Water

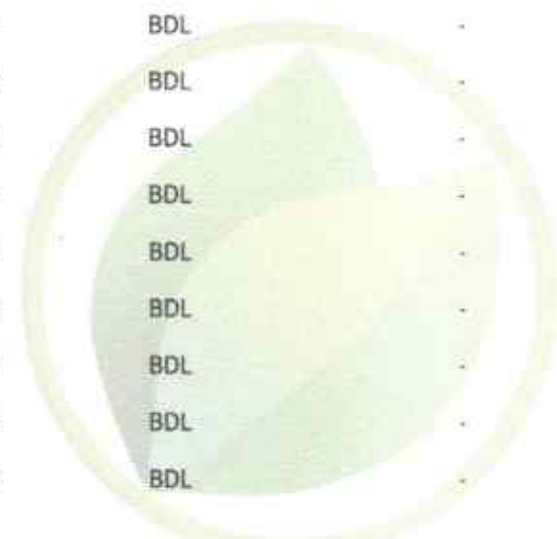
Report Issue to

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

Contact Person Mr. Girija Tamrakar
Contact Number +91 9111006074
Email Id girija.tamrakar@adityabirla.com
Order Date 31.03.2025/10:10
Order Number 13612313868

16. Fluoride (as F)	APHA 4500 F-C 2023	mg/l	0.1	BDL	-
Group - Residues and Contaminants in Water,					Sub Group - Trace Metals Elements
17. Copper (as Cu)	APHA 3111 B 2023	mg/l	0.1	BDL	-
18. Iron (as Fe)	APHA 3111 B 2023	mg/l	0.1	BDL	-
19. Lead (as Pb)	APHA 3111 B 2023	mg/l	0.01	BDL	-
20. Cadmium (as Cd)	APHA 3111 B 2023	mg/l	0.003	BDL	-
21. Total Chromium (as Cr)	APHA 3111 B 2023	mg/l	0.01	BDL	-
22. Nickel (as Ni)	APHA 3111 B 2023	mg/l	0.02	BDL	-
23. Total Arsenic (as As)	APHA 3114 B 2023	mg/l	0.005	BDL	-
24. Selenium (as Se)	APHA 3114 B 2023	mg/l	0.005	BDL	-
25. Manganese (as Mn)	APHA 3111 B 2023	mg/l	0.06	BDL	-
26. Zinc (as Zn)	APHA 3111 B 2023	mg/l	0.04	BDL	-

Group - Residues and Contaminants in Water,					Sub Group - Pesticides
27. a-BHC	USEPA 8081 B:2007	µg/l	0.1	BDL	-
28. Aldrin	USEPA 8081 B:2007	µg/l	0.03	BDL	-
29. b-BHC	USEPA 8081 B:2007	µg/l	0.1	BDL	-
30. Cis-Chlordane	USEPA 8081 B:2007	µg/l	0.1	BDL	-
31. d-BHC	USEPA 8081 B:2007	µg/l	0.1	BDL	-
32. dieldrin	USEPA 8081 B:2007	µg/l	0.1	BDL	-
33. Endosulfan I	USEPA 8081 B:2007	µg/l	0.1	BDL	-
34. Endosulfan Sulfate	USEPA 8081 B:2007	µg/l	0.1	BDL	-
35. Endosulfan II	USEPA 8081 B:2007	µg/l	0.1	BDL	-
36. Endrin aldehyde	USEPA 8081 B:2007	µg/l	0.1	BDL	-
37. Endrin Ketone	USEPA 8081 B:2007	µg/l	0.1	BDL	-
38. g-BHC	USEPA 8081 B:2007	µg/l	0.1	BDL	-
39. Heptachlor	USEPA 8081 B:2007	µg/l	0.1	BDL	-





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Test Report



Unique Lab Report No.	TC1288726000000054	Discipline	Chemical
Report Unique ID	RL04352603008	Group	Water
Issue date/time	15.01.2026/ 17:42	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 II BAUXITE MINE

Contact Person Mr. Girija Tamrakar
Contact Number +91 9111006074
Email Id girija.tamrakar@adityabirla.com
Order Date 31.03.2025/ 10:10
Order Number 13612313868

40.	Heptachlor epoxide isomer B	USEPA 8081 B:2007	µg/l	0.2	BDL	-
41.	Methoxychlor	USEPA 8081 B:2007	µg/l	0.1	BDL	-
42.	P,P-DDD	USEPA 8081 B:2007	µg/l	0.5	BDL	-
43.	P,P-DDE	USEPA 8081 B:2007	µg/l	0.5	BDL	-
44.	P,P-DDT	USEPA 8081 B:2007	µg/l	0.5	BDL	-
45.	transchlordan	USEPA 8081 B:2007	µg/l	0.1	BDL	-

--Test Result End--

Analysed by - Pappu Kumar



Reviewed by
(B.N. Kumar)
Technical Head

Issued by
(Umesh Das)
Laboratory Head

****Test Report End****

Authorized Signatory
EPIC LabTech Pvt. Ltd.
Ranchi, Jharkhand



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Accredited by:-
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Certified by:-
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Test Report

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL04352603008	Group	Water
Issue date/time	15.01.2026/ 17:42	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 II BAUXITE MINE

Contact Person	Mr. Girija Tamrakar
Contact Number	+91 9111006074
Email Id	girija.tamrakar@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/0435	Sample Booking Number	EPIC-2603008
Sample(s) Code	2603008	Sample Receipt (D/T)	12.01.2026/ 11:18

Sampling References

Type of Industry	Bauxite Mines	Status while Sampling	Operational <input checked="" type="checkbox"/> Non-Operational <input type="checkbox"/>
Sampling Start (D/T)	10.01.2026/ 13:30	Sampling End (D/T)	10.01.2026/ 13:45
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	22	Humidity %	58	Wind direction	0°-180°
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Sampling Location(s) with GPS coordinate(s)

S. Location A	Dardhari Nadi (Up Stream)	GPS coordinate	23° 18' 17.54"/ 84° 17' 04.42"
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Date(s) of performance of the laboratory activities

Test start date	12.01.2026/ 11:38	Test completion date	15.01.2026/ 15:55
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--Test Result Start--

Sl	Tested Parameters	Method used	Unit	LoQ	Results	Limits
1.	Polychlorinated biphenyls	EPIC/LAB/SOP/WA/01/00	µg/l	0.2	BDL	-
2.	Polynuclear Aromatic Hydrocarbons (PAH)	EPIC/LAB/SOP/WA/01/00	µg/l	0.05	BDL	-
Group-Residues and Contaminants in Water						Sub Group- Trace Metals Elements
3.	Aluminum	IS 3025 (P-55):2019	mg/l	0.1	BDL	-
4.	Boron	IS 3025 (P-57):2021	mg/l	0.1	BDL	-

--Test Result End --

Analysed by - Pappu Kumar



Reviewed by
(B.N. Kumar)
Technical Head

****Test Report End****

Issued By
(Umesh Das)
Laboratory Head

Authorized Signatory
EPIC LabTech Pvt. Ltd.
Ranchi, Jharkhand

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GST:-20AAHCE36T1M12X

Accredited by :-
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Certified by :-
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Test Report

Unique Lab Report No.	N/A	Discipline	Biological
Report Unique ID	RL04352603009	Group	Water
Issue date/time	15.01.2026/ 17:45	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 II BAUXITE MINE

Contact Person Mr. Girija Tamrakar
Contact Number +91 9111006074
Email Id girija.tamrakar@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/0435	Sample Booking Number	EPIC-2603009
Sample(s) Code	2603009	Sample Receipt (D/T)	12.01.2026/ 11:19

Sampling References

Type of Industry	Bauxite Mines	Status while Sampling	Operational <input checked="" type="checkbox"/> Non-Operational <input type="checkbox"/>
Sampling Start (D/T)	10.01.2026/ 13:30	Sampling End (D/T)	10.01.2026/ 13:45
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	22	Humidity %	58	Wind direction	0°-180°
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Sampling Location(s) with GPS coordinate(s)

S. Location A	Dardhari Nadi (Up Stream)	GPS coordinate	23° 18' 17.54"/ 84° 17' 04.42"
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Date(s) of performance of the laboratory activities

Test start date	12.01.2026/ 11:39	Test completion date	15.01.2026/ 15:55
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--Test Result Start--

Sl	Tested Parameters	Method used	Unit	LoQ	Results	Limits
1.	Total Coliform	IS 15185 2002	Per 100 ml	-	440	
2.	E.Coli	IS 15185 2002	Per 100 ml	-	310	

--Test Result End--

Analysed by - Ishika Singh




Reviewed by
(B.N. Kumar)
Technical Head

****Test Report End****


Issued by
(Umesh Das)
Laboratory Head

Authorized Signatory
EPIC LabTech Pvt. Ltd.
Ranchi, Jharkhand



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Jharkhand State Pollution Control Board
Certified by :-
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Test Report



Unique Lab Report No.	TC1288726000000055	Discipline	Chemical
Report Unique ID	RL04352603010	Group	Water
Issue date/time	15.01.2026/ 17:48	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 II BAUXITE MINE

Contact Person Mr. Girija Tamrakar
Contact Number +91 9111006074
Email Id girija.tamrakar@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/0435	Sample Booking Number	EPIC-2603010
Sample(s) Code	2603010	Sample Receipt (D/T)	12.01.2026/ 11:20

Sampling References

Type of Industry	Bauxite Mines	Status while Sampling	Operational <input checked="" type="checkbox"/> Non-Operational <input type="checkbox"/>
Sampling Start (D/T)	10.01.2026/ 15:40	Sampling End (D/T)	10.01.2026/ 15:50
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/035
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	22	Humidity %	58	Wind direction	0°-180°
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Sampling Location(s) with GPS coordinate(s)

S. Location A	Dardhari Nadi (Down Stream)	GPS coordinate	23° 18' 59.87"/ 84° 17' 06.64"
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Date(s) of performance of the laboratory activities

Test start date	12.01.2026/ 11:40	Test completion date	15.01.2026/ 15:55
-----------------	-------------------	----------------------	-------------------

--Test Result Start--

Sl	Tested Parameters	Method used	Unit	LoQ	Results	Limits
1.	pH value at 25.2°C	IS 3025 (P-11) 2022	-	0.7	6.58	-
2.	Turbidity	IS 3025 (P-10) 1984	NTU	0.3	0.92	-
3.	Colour	IS 3025 (P-04) 2021	Hazen	5.0	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	10	198.0	-
7.	Chloride (as Cl)	IS 3025 (P-32) 2019	mg/l	5	13.30	-
8.	Total Alkalinity (as CaCO ₃)	IS 3025 (P-23) 2019	mg/l	10	34.00	-
9.	Total Hardness (as CaCO ₃)	IS 3025 (P-21) 2009	mg/l	10	44.18	-
10.	Calcium (as Ca)	IS 3025 (P-40) 1991	mg/l	10	14.43	-
11.	Free Residual Chlorine	IS 3025 (P-26) 1986	mg/l	0.6	BDL	-
12.	Sulphate (as SO ₄)	IS 3025 (P-24/Sec-1) 2022	mg/l	0.3	1.80	-
13.	Nitrate (as NO ₃)	APHA 4500 B 2023	mg/l	0.4	1.99	-
14.	Phenolic Compound	IS 3025 (P-43/Sec-1) 2022	mg/l	0.001	BDL	-
15.	Magnesium (as Mg)	APHA 3500 Mg E 2023	mg/l	0.3	1.98	-



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GST:-20AAHCE3611M12X

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

Test Report



Unique Lab Report No.	TC1288726000000055	Discipline	Chemical
Report Unique ID	RL04352603010	Group	Water
Issue date/time	15.01.2026/ 17:48	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 II BAUXITE MINE

Contact Person - Mr. Girija Tamrakar
Contact Number - +91 9111006074
Email Id - girija.tamrakar@adityabirla.com
Order Date - 31.03.2025/ 10:10
Order Number - 13612313868

Sl. No.	Parameter	Standard	Unit	Result	Limit	Remarks
16.	Fluoride (as F)	APHA 4500 F-C 2023	mg/l	0.1	BDL	-
Group - Residues and Contaminants in Water, Sub Group - Trace Metals Elements						
17.	Copper (as Cu)	APHA 3111 B 2023	mg/l	0.1	BDL	-
18.	Iron (as Fe)	APHA 3111 B 2023	mg/l	0.1	BDL	-
19.	Lead (as Pb)	APHA 3111 B 2023	mg/l	0.01	BDL	-
20.	Cadmium (as Cd)	APHA 3111 B 2023	mg/l	0.003	BDL	-
21.	Total Chromium (as Cr)	APHA 3111 B 2023	mg/l	0.01	BDL	-
22.	Nickel (as Ni)	APHA 3111 B 2023	mg/l	0.02	BDL	-
23.	Total Arsenic (as As)	APHA 3114 B 2023	mg/l	0.005	BDL	-
24.	Selenium (as Se)	APHA 3114 B 2023	mg/l	0.005	BDL	-
25.	Manganese (as Mn)	APHA 3111 B 2023	mg/l	0.09	BDL	-
26.	Zinc (as Zn)	APHA 3111 B 2023	mg/l	0.04	BDL	-

Sl. No.	Parameter	Standard	Unit	Result	Limit	Remarks
Group - Residues and Contaminants in Water, Sub Group - Pesticides						
27.	a-BHC	USEPA 8081 B:2007	µg/l	0.1	BDL	-
28.	Aldrin	USEPA 8081 B:2007	µg/l	0.03	BDL	-
29.	b-BHC	USEPA 8081 B:2007	µg/l	0.1	BDL	-
30.	Cis-Chlordane	USEPA 8081 B:2007	µg/l	0.1	BDL	-
31.	d-BHC	USEPA 8081 B:2007	µg/l	0.1	BDL	-
32.	dieldrin	USEPA 8081 B:2007	µg/l	0.1	BDL	-
33.	Endosulfan I	USEPA 8081 B:2007	µg/l	0.1	BDL	-
34.	Endosulfan Sulfate	USEPA 8081 B:2007	µg/l	0.1	BDL	-
35.	Endosulfan II	USEPA 8081 B:2007	µg/l	0.1	BDL	-
36.	Endrin aldehyde	USEPA 8081 B:2007	µg/l	0.1	BDL	-
37.	Endrin Ketone	USEPA 8081 B:2007	µg/l	0.1	BDL	-
38.	g-BHC	USEPA 8081 B:2007	µg/l	0.1	BDL	-
39.	Heptachlor	USEPA 8081 B:2007	µg/l	0.1	BDL	-



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CIN:-U74999JH2022PTC019685
PAN:-AAHCE3611M
GST:-20AAHCE3611M1ZX

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

Test Report



Unique Lab Report No.	TC1288726000000055	Discipline	Chemical
Report Unique ID	RL04352603010	Group	Water
Issue date/time	15.01.2026/ 17:48	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 II BAUXITE MINE

Contact Person Mr. Girija Tamrakar
Contact Number +91 9111006074
Email Id girija.tamrakar@adityabirla.com
Order Date 31.03.2025/ 10:10
Order Number 13612313868

Sl. No.	Parameter	Standard	Unit	Result	Limit	Remarks
40.	Heptachlor epoxide isomer B	USEPA 8081 B:2007	µg/l	0.1	BDL	-
41.	Methoxychlor	USEPA 8081 B:2007	µg/l	0.1	BDL	-
42.	P,P-DDD	USEPA 8081 B:2007	µg/l	0.5	BDL	-
43.	P,P-DDE	USEPA 8081 B:2007	µg/l	0.5	BDL	-
44.	P,P-DDT	USEPA 8081 B:2007	µg/l	0.5	BDL	-
45.	transchlordan	USEPA 8081 B:2007	µg/l	0.1	BDL	-

--Test Result End --

Analysed by - Pappu Kumar



(Signature)
Reviewed by
(B.N. Kumar)
Technical Head

(Signature)
15/01/26
Issued by
(Umesh Das)
Laboratory Head

****Test Report End****

Authorized Signatory
EPIC LabTech Pvt. Ltd.
Ranchi, Jharkhand



EPIC LabTech Private Limited



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PAN:-AAKCE3611M
GST:-20AAHCE3611M1ZX

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

Test Report

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL04352603010	Group	Water
Issue date/time	15.01.2026/ 17:48	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 II BAUXITE MINE

Contact Person Mr. Girija Tamrakar
Contact Number +91 9111006074
Email Id girija.tamrakar@adityabirta.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/0435	Sample Booking Number	EPIC-2603010
Sample(s) Code	2603010	Sample Receipt (D/T)	12.01.2026/ 11:20

Sampling References

Type of Industry	Bauxite Mines	Status while Sampling	Operational <input checked="" type="checkbox"/> Non-Operational <input type="checkbox"/>
Sampling Start (D/T)	10.01.2026/ 15:40	Sampling End (D/T)	10.01.2026/ 15:50
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	22	Humidity %	58	Wind direction	0°-180°
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Sampling Location(s) with GPS coordinate(s)

S. Location A	Dardhari Nadi (Down Stream)	GPS coordinate	23° 18' 59.87"/ 84° 17' 06.64"
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Date(s) of performance of the laboratory activities

Test start date	12.01.2026/ 11:40	Test completion date	15.01.2026/ 15:55
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--Test Result Start--

Sl	Tested Parameters	Method used	Unit	LoQ	Results	Limits
1.	Polychlorinated biphenyls	EPIC/LAB/SOP/WA/01/00	µg/l	0.2	BDL	-
2.	Polynuclear Aromatic Hydrocarbons (PAH)	EPIC/LAB/SOP/WA/01/00	µg/l	0.05	BDL	-
Group-Residues and Contaminants in Water						Sub Group-Trace Metals Elements
3.	Aluminum	IS 3025 (P-55):2019	mg/l	0.1	BDL	-
4.	Boron	IS 3025 (P-57):2021	mg/l	0.1	BDL	-

--Test Result End--

Analysed by - Pappu Kumar




Reviewed by
(B.N. Kumar)
Technical Head

****Test Report End****


Issued by
(Umesh Das)
Laboratory Head

Authorized Signatory
EPIC LabTech Pvt. Ltd.
Ranchi, Jharkhand

EPIC LabTech Private Limited



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CIN:-U74999JH2022PTC010685
PAN:-AARCE3611M
GST:-20AAHCE3611M1ZK

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

Test Report

Unique Lab Report No.	N/A	Discipline	Biological
Report Unique ID	RL04352603011	Group	Water
Issue date/time	15.01.2026/ 17:51	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 II BAUXITE MINE**

Contact Person Mr. Girija Tamrakar
Contact Number +91 9111006074
Email Id girija.tamrakar@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/0435	Sample Booking Number	EPIC-2603011
Sample(s) Code	2603011	Sample Receipt (D/T)	12.01.2026/ 11:21

Sampling References

Type of Industry	Bauxite Mines	Status while Sampling	Operational <input checked="" type="checkbox"/> Non-Operational <input type="checkbox"/>
Sampling Start (D/T)	10.01.2026/ 15:40	Sampling End (D/T)	10.01.2026/ 15:50
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling

Weather condition	Cloudy	Temperature (°C)	22	Humidity %	58	Wind direction	0°-180°
-------------------	--------	------------------	----	------------	----	----------------	---------

Sampling Location(s) with GPS coordinate(s)

S. Location A	Dardhari Nadi (Down Stream)	GPS coordinate	23° 18' 59.87" / 84° 17' 06.64"
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Date(s) of performance of the laboratory activities

Test start date	12.01.2026/ 11:41	Test completion date	15.01.2026/ 15:55
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--Test Result Start--

Sl	Tested Parameters	Method used	Unit	LoQ	Results	Limits
1.	Total Coliform	IS 15185 2002	Per 100 ml	-	450	
2.	E.Coli	IS 15185 2002	Per 100 ml	-	320	

--Test Result End--

Analysed by - Ishika Singh




Reviewed by
(B.N. Kumar)
Technical Head

****Test Report End****


Issued by
(Umesh Das)
Laboratory Head

Authorized Signatory
EPIC LabTech Pvt. Ltd.
Ranchi, Jharkhand



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Jharkhand State Pollution Control Board
Certified by -
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Test Report



Unique Lab Report No.	TC1288726000000168	Discipline	Chemical
Report Unique ID	RL04662607023	Group	Atmospheric Pollution
Issue date/time	16.02.2026/ 12:03	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 II BAUXITE MINE

Contact Person	Mr. Girija Tamrakar
Contact Number	+91 9111006074
Email Id	girija.tamrakar@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/0466	Sample Booking Number	EPIC-2607023
Sample(s) Code	2607023 (A) (B) (C) (D)	Sample Receipt (D/T)	13.02.2026/11:48

Sampling References

Type of Industry	Bauxite Mines	Status while Sampling	Operational <input checked="" type="checkbox"/> Non-Operational <input type="checkbox"/>
Sampling Start (D/T)	11.02.2026/ 11:40	Sampling End (D/T)	12.02.2026/ 09:50
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling

Weather condition	Clear	Temperature (°C)	27	Humidity %	52	Wind direction	90°-270°
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Sampling Location(s) with GPS coordinate(s)

S. Location A	Kujam-II Weigh Bridge	GPS coordinate	23°18' 50.04"/ 84° 17' 30.27"
S. Location B	Nawatoli Quarry	GPS coordinate	23°18' 29.12"/ 84° 17' 35.69"
S. Location C	Quarry-195	GPS coordinate	23°18' 21.96"/ 84° 18' 57.47"
S. Location D	Bhattipat	GPS coordinate	23°18' 45.92"/ 84° 17' 49.04"

Date(s) of performance of the laboratory activities

Test start date	13.02.2026/ 13:40	Test completion date	16.02.2026/ 10:10
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--Test Results Start--

Sl	Tested Parameters	Method used	Unit	LoQ	Results				Limits
					A	B	C	D	
1.	Particulate Matter (PM ₁₀)	IS:5182 (P-23) 2022	µg/m ³	10	61.51	63.71	62.86	57.96	100 (24 hr)
2.	Fine Particulate Matter (PM _{2.5})	IS 5182 (P-24) 2019	µg/m ³	8	28.47	24.62	22.17	24.53	60 (24 hr)
3.	Sulphur Dioxide (SO ₂)	IS:5182 (P-02) 2023	µg/m ³	5	11.46	12.68	11.04	09.75	90 (24 hr)
4.	Nitrogen Dioxide (NO ₂)	IS:5182 (P-06) 2022	µg/m ³	6	23.28	23.55	24.52	20.63	90 (24 hr)
5.	Ozone (O ₃)	IS:5182 (P-09) 2019	µg/m ³	10	24.08	23.72	25.16	24.80	180 (1 hr)
6.	Ammonia (NH ₃)	IS:5182 (P-25) 2018	µg/m ³	10	33.72	34.02	35.47	34.60	400 (24 hr)
7.	Lead (Pb)	IS:5182(P-22) 2019	µg/m ³	0.1	BDL	BDL	BDL	BDL	1.0 (24 hr)
8.	Nickel (Ni)	IS:5182(P-26) 2020	ng/m ³	5	BDL	BDL	BDL	BDL	-
9.	Arsenic (As)	USEPA IO 3.2-1999	ng/m ³	2	BDL	BDL	BDL	BDL	-
10.	Benzene (as C ₆ H ₆)	IS 5182 (P-11): 2006	µg/m ³	1	BDL	BDL	BDL	BDL	-
11.	Benzo(a) Pyrene (BaP) <small>Particulate Phase</small>	IS 5182 (P-12): 2004	ng/m ³	0.5	BDL	BDL	BDL	BDL	-

--Test Results End --

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

Analysed by - Rajesh Varma



Reviewed by
(B.R. Kumar)
Technical Head

Issue by
(Anish Das)
Laboratory Head

****Test Report End****

Authorized Signatory
EPIC LabTech Pvt. Ltd.
Ranchi, Jharkhand

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Abbreviation - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantitation). |

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GST:-20AAHCE3611M1Z

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

Test Report

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL04662607023	Group	Atmospheric Pollution
Issue date/time	16.02.2026/ 12:03	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 II BAUXITE MINE

Contact Person Mr. Girija Tamrakar
Contact Number +91 9111006074
Email Id girija.tamrakar@adityabirta.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/0466	Sample Booking Number	EPIC-2607023
Sample(s) Code	2607023 (A) (B) (C) (D)	Sample Receipt (D/T)	13.02.2026/11:48

Sampling References

Type of Industry	Bauxite Mines	Status while Sampling	Operational <input checked="" type="checkbox"/> Non-Operational <input type="checkbox"/>
Sampling Start (D/T)	11.02.2026/ 11:40	Sampling End (D/T)	12.02.2026/ 09:50
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling

Weather condition	Clear	Temperature (°C)	27	Humidity %	52	Wind direction	90°-270°
-------------------	-------	------------------	----	------------	----	----------------	----------

Sampling Location(s) with GPS coordinate(s)

S. Location A	Kujam-II Weigh Bridge	GPS coordinate	23°18' 50.04"/ 84° 17' 30.27"
S. Location B	Nawatoli Quarry	GPS coordinate	23°18' 29.12"/ 84° 17' 35.69"
S. Location C	Quarry-195	GPS coordinate	23°18' 21.96"/ 84° 17' 57.47"
S. Location D	Bhattipat	GPS coordinate	23°18' 45.92"/ 84° 17' 49.04"

Date(s) of performance of the laboratory activities

Test start date	13.02.2026/ 13:40	Test completion date	16.02.2026/ 10:10
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--Test Results Start--

Sl	Tested Parameters	Method used	Unit	LoQ	Results				Limits
					A	B	C	D	
1.	Carbon Monoxide (CO)	EPIC/LAB/SOP/AP/01	mg/m ³	1.6	BDL	BDL	BDL	BDL	-

--Test Results End --

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

Analysed by - Rajesh Varma




Reviewed by
(B.N. Kumar)
Technical Head


Issue by
(Umesh Das)
Laboratory Head

****Test Report End****

Authorized Signatory
EPIC LabTech Pvt. Ltd.
Ranchi, Jharkhand



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



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

Test Report



Unique Lab Report No.	TC1288726000000169	Discipline	Chemical
Report Unique ID	RL04662607024	Group	Pollution & Environment
Issue date/time	16.02.2026/ 12:06	Sub Group	Waste Water (Effluent)

Report Issue to

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

Contact Person Mr. Girija Tamrakar
Contact Number +91 9111006074
Email Id girija.tamrakar@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/0466	Sample Booking Number	EPIC-2607024
Sample(s) Code	2607024	Sample Receipt (D/T)	13.02.2026/ 11:50

Sampling References

Type of Industry	Bauxite Mines	Status while Sampling	Operational <input checked="" type="checkbox"/> Non-Operational <input type="checkbox"/>
Sampling Start (D/T)	11.02.2026/ 16:09	Sampling End (D/T)	11.02.2026/ 16:18
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling

Weather condition Clear Temperature (°C) 27 Humidity % 52 Wind direction 90°-270°

Sampling Location(s) with GPS coordinate(s)

S. Location A Work Shop Outlet GPS coordinate 23° 18' 50.72"/ 84° 17' 28.74"

Date(s) of performance of the laboratory activities

Test start date 13.02.2026/ 12:10 Test completion date 16.02.2026/ 10:55

--Test Result Start--

Sl	Tested Parameters	Method used	Unit	LoQ	Results	Limits
1.	pH value at 25.1°C	IS 3025 (P-11) 2022	-	1.5	6.52	6.5-8.5
2.	BOD (3 days at 27°C)	IS 3025 (P-44) 2000	mg/l	0.3	12.5	-
3.	COD	IS 3025 (P-58) 2006	mg/l	8.0	96.00	150.0
4.	Oil & Grease	IS 3025 (P-39) 2021	mg/l	4.0	BDL	10.0
5.	Total Suspended Solid	IS 3025 (P-17) 2022	mg/l	10.0	34.00	50.0
6.	Total Dissolve Solids (TDS)	IS 3025 (P-16) 2023	mg/l	10	625.0	-
7.	Phosphate	IS 3025 (P-31/Sec-1) 2022	mg/l	0.2	1.08	-
8.	Zinc (as Zn)	APHA 3111 B 2023	mg/l	0.04	BDL	5.0

--Test Result End --

Prescribed Limit Environmental (Protection) Rules-1986, Schedule -I, Serial No.114.

Analysed by - Pappu Kumar



Reviewed by
(B.N. Kumar)
Technical Head

****Test Report End****

Issued by
(Umesh Das)
Laboratory Head

Authorized Signatory
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PAN:-AAHCE3611M
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Accredited by:-
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Certified by:-
ISO 9001:2015 and ISO 45001:2018

Test Report

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL04662607024	Group	Pollution & Environment
Issue date/time	16.02.2026/ 12:06	Sub Group	Waste Water (Effluent)

Report Issue to

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

Contact Person Mr. Girija Tamrakar
Contact Number +91 9111006074
Email Id girija.tamrakar@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/0466	Sample Booking Number	EPIC-2607024
Sample(s) Code	2607024	Sample Receipt (D/T)	13.02.2026/ 11:50

Sampling References

Type of Industry	Bauxite Mines	Status while Sampling	Operational <input checked="" type="checkbox"/> Non-Operational <input type="checkbox"/>
Sampling Start (D/T)	11.02.2026/ 16:09	Sampling End (D/T)	11.02.2026/ 16:18
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Akash Kumar & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling

Weather condition Clear Temperature (°C) 27 Humidity % 52 Wind direction 90°-270°

Sampling Location(s) with GPS coordinate(s)

S. Location A Work Shop Outlet GPS coordinate 23° 18' 50.72"/84° 17' 28.74"

Date(s) of performance of the laboratory activities

Test start date 13.02.2026/ 12:10 Test completion date 16.02.2026/ 10:55

--Test Result Start--

Sl	Tested Parameters	Method used	Unit	LoQ	Results	Limits
1.	Dissolve Oxygen (DO)	IS 3025 (P-38) 1986	mg/l	0.2	1.4	-

--Test Result End --

Prescribed Limit Environmental (Protection) Rules-1986, Schedule -I, Serial No.114.

Analysed by - Pappu Kumar




Reviewed by
(B.N. Kumar)
Technical Head


Issued by
(Umesh Das)
Laboratory Head

****Test Report End****

Authorized Signatory
EPIC LabTech Pvt. Ltd.
Ranchi, Jharkhand





EPIC LabTech Private Limited



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CIN:-U74999JH2022PTC019685
PAN:-AAHCE3611M
GST:-20AAHCE3611M12X

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

Test Report



Unique Lab Report No.	TC1288726000000330	Discipline	Chemical
Report Unique ID	RL05052612011	Group	Atmospheric Pollution
Issue date/time	19.03.2026/ 16:52	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 II BAUXITE MINE

Contact Person Mr. Girija Tamrakar
Contact Number +91 9111006074
Email Id girija.tamrakar@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/0505	Sample Booking Number	EPIC-2612011
Sample(s) Code	2612011 (A) (B) (C) (D)	Sample Receipt (D/T)	16.03.2026/ 11:25

Sampling References

Type of Industry	Bauxite Mines	Status while Sampling	Operational <input checked="" type="checkbox"/> Non-Operational <input type="checkbox"/>
Sampling Start (D/T)	13.03.2026/ 12:10	Sampling End (D/T)	14.03.2026/ 10:15
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Rajesh Prajapati & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling

Weather condition	Clear	Temperature (°C)	24	Humidity %	56	Wind direction	270°-90°
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Sampling Location(s) with GPS coordinate(s)

S. Location A	Kujam-II Weigh Bridge	GPS coordinate	23°18' 50.04"/84° 17' 30.27"
S. Location B	Nawatoli Quarry	GPS coordinate	23°18' 29.12"/84° 17' 35.69"
S. Location C	Quarry-195	GPS coordinate	23°18' 21.96"/84° 18' 57.47"
S. Location D	Bhattipat	GPS coordinate	23°18' 45.92"/84° 17' 49.04"

Date(s) of performance of the laboratory activities

Test start date	16.03.2026/ 12:20	Test completion date	19.03.2026/ 14:10
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--Test Results Start--

Sl	Tested Parameters	Method used	Unit	LoQ	Results				Limits
					A	B	C	D	
1.	Particulate Matter (PM ₁₀)	IS:5182 (P-23) 2022	µg/m ³	10	62.56	64.77	63.49	58.82	100 (24 hr)
2.	Fine Particulate Matter (PM _{2.5})	IS 5182 (P-24) 2019	µg/m ³	8	29.85	25.55	23.68	25.39	60 (24 hr)
3.	Sulphur Dioxide (SO ₂)	IS:5182 (P-02) 2023	µg/m ³	5	10.74	11.59	10.34	08.59	80 (24 hr)
4.	Nitrogen Dioxide (NO ₂)	IS:5182 (P-06) 2022	µg/m ³	8	22.68	22.34	24.00	19.93	80 (24 hr)
5.	Ozone (O ₃)	IS:5182 (P-09) 2019	µg/m ³	10	26.24	25.52	27.68	26.60	180 (1 hr)
6.	Ammonia (NH ₃)	IS:5182 (P-25) 2018	µg/m ³	10	34.60	35.76	36.92	35.47	400 (24 hr)
7.	Lead (Pb)	IS:5182(P-22) 2019	µg/m ³	0.1	BDL	BDL	BDL	BDL	1.0 (24 hr)
8.	Nickel (Ni)	IS:5182(P-26) 2020	ng/m ³	5	BDL	BDL	BDL	BDL	-
9.	Arsenic (As)	USEPA IO 3.2:1999	ng/m ³	2	BDL	BDL	BDL	BDL	-
10.	Benzene (as C ₆ H ₆)	IS 5182 (P-11): 2006	µg/m ³	1	BDL	BDL	BDL	BDL	-
11.	Benzo(a) Pyrene (BaP) <small>Particulate Phase</small>	IS 5182 (P-12): 2004	ng/m ³	0.5	BDL	BDL	BDL	BDL	-

--Test Results End --

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

Analysed by - Rajesh N. Singh



Reviewed by
(B.N. Kumar)
Technical Head

****Test Report End****

Issue by
(Umesh Gaud)
Laboratory Head

Authorized Signatory
EPIC LabTech Pvt. Ltd.
Ranchi, Jharkhand

Contractual Notes | 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 invoiced 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 * mark. |
Abbreviation: - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantitation) |

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PAN:-AAHCE3611M
GST:-20AAHCE3611MTZX

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

Test Report

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL05052612011	Group	Atmospheric Pollution
Issue date/time	19.03.2026/ 16:52	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 II BAUXITE MINE

Contact Person Mr. Girija Tamrakar
Contact Number +91 9111006074
Email Id girija.tamrakar@adityabirta.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/0505	Sample Booking Number	EPIC-2612011
Sample(s) Code	2612011 (A) (B) (C) (D)	Sample Receipt (D/T)	16.03.2026/ 11:25

Sampling References

Type of Industry	Bauxite Mines	Status while Sampling	Operational <input checked="" type="checkbox"/> Non-Operational <input checked="" type="checkbox"/>
Sampling Start (D/T)	13.03.2026/ 12:10	Sampling End (D/T)	14.03.2026/ 10:15
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Rajesh Prajapati & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling

Weather condition	Clear	Temperature (°C)	24	Humidity %	56	Wind direction	270°-90°
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Sampling Location(s) with GPS coordinate(s)

S. Location A	Kujam-II Weigh Bridge	GPS coordinate	23°18' 50.04"/84° 17' 30.27"
S. Location B	Nawatoli Quarry	GPS coordinate	23°18' 29.12"/84° 17' 35.69"
S. Location C	Quarry-195	GPS coordinate	23°18' 21.96"/84° 17' 57.47"
S. Location D	Bhattipat	GPS coordinate	23°18' 45.92"/84° 17' 49.04"

Date(s) of performance of the laboratory activities

Test start date	16.03.2026/ 12:20	Test completion date	19.03.2026/ 14:10
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--Test Results Start--

Sl	Tested Parameters	Method used	Unit	LoQ	Results				Limits
					A	B	C	D	
1.	Carbon Monoxide (CO)	EPIC/LAB/SOP/AP/01	mg/m ³	1.0	BDL	BDL	BDL	BDL	-

--Test Results End --

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

Analysed by - Rajesh Varma

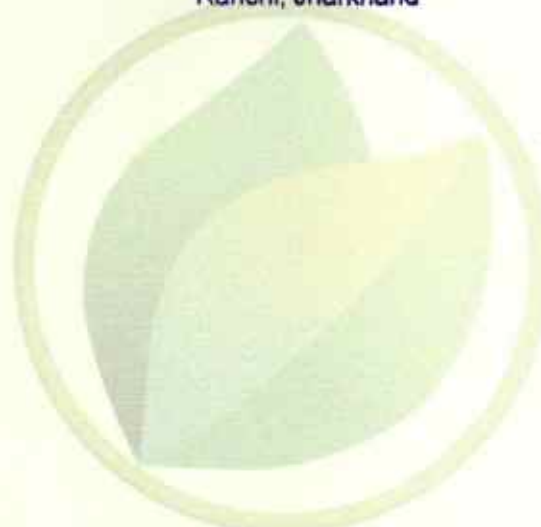


Reviewed by
(B.N. Kumar)
Technical Head

****Test Report End****

Issue by
(Umesh Das)
Laboratory Head

Authorized Signatory
EPIC LabTech Pvt. Ltd.
Ranchi, Jharkhand



Contractual Notes | 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 invoiced 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 * mark. |
Abbreviations: - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantitation). |



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PAN:-AAHCE3611M
GST:-20AAHCE3611M1ZK

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

Test Report



Unique Lab Report No.	TC1288726000000331	Discipline	Chemical
Report Unique ID	RL05052612012	Group	Water
Issue date/time	19.03.2026/ 16:55	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 II BAUXITE MINE**

Contact Person	Mr. Girija Tamrakar
Contact Number	+91 9111006074
Email Id	girija.tamrakar@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/0505	Sample Booking Number	EPIC-2612012
Sample(s) Code	2612012	Sample Receipt (D/T)	16.03.2026/ 11:26

Sampling References

Type of Industry	Bauxite Mines	Status while Sampling	Operational <input checked="" type="checkbox"/> Non-Operational <input type="checkbox"/>
Sampling Start (D/T)	13.03.2026/ 14:38	Sampling End (D/T)	13.03.2026/ 14:45
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Rajesh Prajapati & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling

Weather condition	Clear	Temperature (°C)	24	Humidity %	56	Wind direction	270°-90°
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Sampling Location(s) with GPS coordinate(s)

S. Location A	Canteen	GPS coordinate	23° 18' 51.15"/84° 17' 29.17"
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Date(s) of performance of the laboratory activities

Test start date	16.03.2026/ 11:46	Test completion date	19.03.2026/ 15:00
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--Test Result Start--

Sl	Tested Parameters	Method used	Unit	LoQ	Results	Limits	
						Acceptable Limit	Permissible limit
1.	pH value at 25.5°C	IS 3025 (P-11) 2022	-	1.5	6.91	6.5-8.5	No relaxation
2.	Turbidity	IS 3025 (P-10) 1984	NTU	0.3	0.71	1	5
3.	Colour	IS 3025 (P-04) 2021	Hazen	5.0	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	10	164.0	500	2000
7.	Chloride (as Cl)	IS 3025 (P-32) 2019	mg/l	5	20.69	250	1000
8.	Total Alkalinity (as CaCO ₃)	IS 3025 (P-23) 2019	mg/l	10	68.00	200	600
9.	Total Hardness (as CaCO ₃)	IS 3025 (P-21) 2009	mg/l	10	92.00	200	600
10.	Calcium (as Ca)	IS 3025 (P-40) 1991	mg/l	10	11.22	75	200
11.	Free Residual Chlorine	IS 3025 (P-26) 1986	mg/l	0.6	BDL	0.2	1
12.	Sulphate (as SO ₄)	IS 3025 (P-24/Sec-1) 2022	mg/l	0.3	3.00	200	400
13.	Nitrate (as NO ₃ -N)	IS 3025 (P-34/Sec-1) 2023	mg/l	0.4	1.41	45	No relaxation
14.	Phenolic Compound	IS 3025 (P-43/Sec-1) 2022	mg/l	0.001	BDL	0.001	0.002
15.	Magnesium (as Mg)	APHA 3500 Mg E 2023	mg/l	0.3	15.55	30	100



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Accredited by -
NABL vide certificate Number TC- 12887
Jharkhand State Pollution Control Board
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Test Report



Unique Lab Report No.	TC1288726000000331	Discipline	Chemical
Report Unique ID	RL05052612012	Group	Water
Issue date/time	19.03.2026/ 16:55	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 II BAUXITE MINE**

Contact Person **Mr. Girija Tamrakar**
Contact Number **+91 9111006074**
Email Id **girija.tamrakar@adityabirla.com**
Order Date **31.03.2025/ 10:10**
Order Number **13612313868**

Sl. No.	Parameter	Standard	Unit	Result	Relaxation	Sub Group
16.	Fluoride (as F)	APHA 4500 F-D2023	mg/l	0.1	BDL	1.0
Group - Residues and Contaminants in Water, Sub Group - Trace Metals Elements						
17.	Copper (as Cu)	APHA 3111 B 2023	mg/l	0.1	BDL	0.05
18.	Iron (as Fe)	APHA 3111 B 2023	mg/l	0.1	BDL	1.0
19.	Lead (as Pb)	APHA 3111 B 2023	mg/l	0.01	BDL	No relaxation
20.	Cadmium (as Cd)	APHA 3111 B 2023	mg/l	0.003	BDL	0.003
21.	Total Chromium (as Cr)	APHA 3111 B 2023	mg/l	0.01	BDL	0.05
22.	Nickel (as Ni)	APHA 3111 B 2023	mg/l	0.02	BDL	0.02
23.	Total Arsenic (as As)	APHA 3114 B 2023	mg/l	0.005	BDL	0.01
24.	Selenium (as Se)	APHA 3114 B 2023	mg/l	0.005	BDL	0.01
25.	Manganese (as Mn)	APHA 3111 B 2023	mg/l	0.09	BDL	0.1
26.	Zinc (as Zn)	APHA 3111 B 2023	mg/l	0.04	BDL	5
Group - Residues and Contaminants in Water, Sub Group - Pesticides						
27.	Aldrin	USEPA 8081 B:2007	µg/l	0.03	BDL	0.03
28.	dieldrin	USEPA 8081 B:2007	µg/l	0.03	BDL	0.03

--Test Result End --

Prescribed Limit IS 10500:2012
Analysed by - Pappu Kumar



Reviewed by
(B.N. Kumar)
Technical Head

****Test Report End****

Issued by
(Umesh Das)
Laboratory Head

Authorized Signatory
EPIC LabTech Pvt. Ltd.
Ranchi, Jharkhand

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

Test Report

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL05052612012	Group	Water
Issue date/time	19.03.2026/ 16:55	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 II BAUXITE MINE

Contact Person Mr. Girija Tamrakar
Contact Number +91 9111006074
Email Id girija.tamrakar@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/0505	Sample Booking Number	EPIC-2612012
Sample(s) Code	2612012	Sample Receipt (D/T)	16.03.2026/ 11:26

Sampling References

Type of Industry	Bauxite Mines	Status while Sampling	Operational <input checked="" type="checkbox"/> Non-Operational <input checked="" type="checkbox"/>
Sampling Start (D/T)	13.03.2026/ 14:38	Sampling End (D/T)	13.03.2026/ 14:45
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Rajesh Prajapati & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling

Weather condition	Clear	Temperature (°C)	24	Humidity %	56	Wind direction	270°-90°
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Sampling Location(s) with GPS coordinate(s)

S. Location A	Canteen	GPS coordinate	23° 18' 51.15"/84° 17' 29.17"
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Date(s) of performance of the laboratory activities

Test start date	16.03.2026/ 11:46	Test completion date	19.03.2026/ 15:00
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--Test Result Start--

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

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PAN:-AAHCE3611M
GST:-29AAHCE3611M1ZX

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

Test Report

Unique Lab Report No.	N/A	Discipline	Chemical
Report Unique ID	RL05052612012	Group	Water
Issue date/time	19.03.2026/ 16:55	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 II BAUXITE MINE

Contact Person
Contact Number
Email Id
Order Date
Order Number

Mr. Girija Tamrakar
+91 9111006074
girija.tamrakar@adityabirta.com
31.03.2025/ 10:10
13612313868

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

--Test Result End --

Prescribed Limit IS 10500:2012

Analysed by - Pappu Kumar




Reviewed by
(B.N. Kumar)
Technical Head

****Test Report End****


Issued by
(Umesh Das)
Laboratory Head

Authorized Signatory
EPIC LabTech Pvt. Ltd.
Ranchi, Jharkhand



Page 2 of 2

Contractual Notes | 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 invoiced 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 * mark. |
Abbreviation - BDL (Below Detectable Limit), MDL (Minimum Detectable Limit), LoQ (Limit of Quantitation).

EPIC LabTech Private Limited



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CIN:-U74999JH2022PTC019685
PAN:-AAHCE3611M
GST:-20AAHCE3611M1ZK

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

Test Report

Unique Lab Report No.	N/A	Discipline	Biological
Report Unique ID	RL05052612013	Group	Water
Issue date/time	19.03.2026/ 16:58	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 II BAUXITE MINE

Contact Person Mr. Girija Tamrakar
Contact Number +91 9111006074
Email Id girija.tamrakar@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/0505	Sample Booking Number	EPIC-2612013
Sample(s) Code	2612013	Sample Receipt (D/T)	16.03.2026/ 11:27

Sampling References

Type of Industry	Bauxite Mines	Status while Sampling	Operational <input checked="" type="checkbox"/> Non-Operational <input checked="" type="checkbox"/>
Sampling Start (D/T)	13.03.2026/ 14:38	Sampling End (D/T)	13.03.2026/ 14:45
Mode of Sampling	Conducted by Laboratory	Sample collected by	Mr. Rajesh Prajapati & Team
Sampling method used	EPIC/SOP/SM/01/00	Ref. of Sampling Plan	EPIC/LAB/R/036
Description/condition of sample	Receipt sample(s) were fit for analysis.		

Environmental Condition during sampling

Weather condition	Clear	Temperature (°C)	24	Humidity %	56	Wind direction	270°-90°
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Sampling Location(s) with GPS coordinate(s)

S. Location A	Canteen	GPS coordinate	23° 18' 51.15"/84° 17' 29.17"
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Date(s) of performance of the laboratory activities

Test start date	16.03.2026/ 11:47	Test completion date	19.03.2026/ 15:00
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--Test Result Start--

Sl	Tested Parameters	Method used	Unit	LoQ	Results	Limits
1.	Coliform Bacteria	IS 15185 2016	Per 100 ml	-	Absent	Shall not be detectable in any 100 ml sample
2.	E. Coli	IS 15185 2016	Per 100 ml	-	Absent	

--Test Result End --

Prescribed Limit IS 10500:2012
Analysed by - Ishika Singh

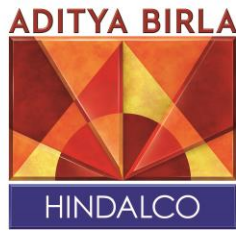



Reviewed by
(B.N. Kumar)
Technical Head


Issued by
(Umesh Daa)
Laboratory Head

****Test Report End****

Authorized Signatory
EPIC LabTech Pvt. Ltd.
Ranchi, Jharkhand



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.

Basudev Gangopadhyay
AVP (Planning, Environment & Compliance)

Annexure 4

Production, Mined Out, Back Filled and Over Burden removal from October 2025 to March 2026								
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	89066	0.650	0.915	33436.80
3	Hisri (New) Bauxite Mine	14.55	100000	19.07.1981 to 31.03.2030	41184	0.655	0.920	996.270
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	171180	3.820	2.310	271049.97
7	Sherangdag-A Bauxite Mine	155.81	260000	16.10.1974 to 31.03.2030	75150	2.850	1.700	158752.125
8	Serangdag-B Bauxite Mine	77.89	100000	04.10.1978 to 31.03.2030	42330	0.860	0.730	47018.623
9	Jalim & Sanai Bauxite Mine	12.14	50000	16.10.1974 to 31.03.2030	NIL	NIL	NIL	NIL
10	Gurdari Bauxite Mine	584.19	325000	23.03.1985 to 22.03.2035	130240	4.520	4.270	225170.36
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	63685	3.120	4.284	65548.95
13	Amtipani Bauxite Mine	190.95	150000	13.03.2006 to 12.03.2056	55635	4.960	5.050	192519.545

Annexure 4

Minerals & Minerals Limited								
14	Pakhar (109.507) Bauxite Mine	109.507	280000	26.07.2008 to 25.07.2058	178350	1.590	1.950	270329.705
15	Pakhar (15.58) Bauxite Mine	15.58	60000	28.04.1965 to 31.03.2030	46150	0.380	0.038	16378.345
16	Bimarla Bauxite Mine	134.526	300000	18.07.2009 to 17.07.2059	54300	3.871	0.910	114143.750
17	Amtipani Chirodih Bauxite Mine	130.01	450000	11.01.2017 to 10.01.2067	152300	5.600	4.860	299385.013

*Static information about the mines included in the above table



R R P Ambastha
Head - Compliance

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 Oct'25 to Mar'26)	Actual (in Rupees) FY 2025-26 (From Oct'25 to Mar'26)
1	Pollution Control and Environmental Monitoring	1,71,00,000	88,71,710
2	Reclamation/ Back filing & Rehabilitation**	2,04,00,000	34,88,940
3	Green belt, Plantation & Water sprinkling arrangement	1,20,00,000	87,33,877
4	Rural Development	7,92,00,000	7,39,52,956

**Part of OB removed cost



R R P Ambastha
Head - Compliance