



HIL/LHD/ENV/MoEF&CC/061

Date: 16<sup>th</sup> May 2025

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

**Sub:** Six Monthly EC Compliance Report for Hisri New (14.55 Ha) Bauxite Mining Project of M/s Hindalco Industries Limited, Lohardaga Jharkhand for the period from October 2024 to March 2025.

**Ref:** Environmental Clearance Letter No. J-11015/531/2007-IA II (M), dated 17<sup>th</sup> June 2011.

Dear Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for **Hisri New (14.55 Ha) Bauxite Mining project of M/s Hindalco Industries Limited**, Lohardaga Jharkhand for the period from **October 2024 to March 2025** for your kind perusal please.

The lease details are below:

| Lease area (ha) | Production Capacity (MT) | Lease Period             |
|-----------------|--------------------------|--------------------------|
| 14.55           | 100000                   | 19.07.1981 to 31.03.2030 |

Hope you will find the same in order.

Thanking You

Yours faithfully,  
For **Hindalco Industries Limited**

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

Enclosure: - As Above

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**Name of the Project** : **Hisri (New) Bauxite Mine (14.55 ha)**  
**M/s Hindalco Industries Limited**

**Environment Clearance No & date** : **J-11015/531/2007-IA II (M), dated 17.06.2011**

**Period of compliance Report** : **From 1<sup>st</sup> October 2024 to 31<sup>st</sup> March 2025**

**Specific Conditions: -**

**Condition i: -The project proponent shall obtain Consent to Establish and Consent to Operate from the Jharkhand State Pollution Control Board and effectively implement all the conditions stipulated therein.**

**Reply: -** Consent to establish and consent to operate have been obtained prior to start of Mining. Existing consent to operate (CTO) is valid till 31.12.2025. All the stipulated conditions of the CTE/CTO are being implemented effectively.

**Condition ii: -The environmental clearance is subject to forestry clearance.**

**Reply: -** Forest clearance is obtained.

**Condition iii: -The environmental clearance is subject to approval of the state land use Department, Government of Jharkhand for diversion of agricultural land for non-agricultural use.**

**Reply: -** Noted. Entire land has been acquired for mining purposes as per applicable laws.

**Condition iv: -The mining operation shall be restricted to above groundwater table and it should not intersect the ground water table. In case of working below ground water table, prior approval of the Ministry of Environment & Forests and Central Ground Water Authority shall be obtained, for which a detailed hydro – geological study shall be carried out.**

**Reply: -** Shallow depth mining is being done and does not intersect the ground water. Working zones will be restricted to above ground water tables in future also. We undertake that no mining is/was carried out below ground water table and the same status will be maintained in future also.

**Condition v: -The Project proponent shall ensure that no natural watercourse shall be obstructed due to any mining operations. The first order streams and the seasonal nallahs originating from the mining lease area shall be protected.**

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

**Condition vi: -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.**

**Reply: -** Topsoil is being stacked temporally properly with proper slope as and when required. Concurrent backfilling and reclamation of mined out area are being exercised for which topsoil is being spread on backfilled area for reclamation. No OB dump is present in mines. The mining is being carried out as per the approved mining plan. Monitoring and management of rehabilitated areas is being done through effective supervision. The photograph of the reclaimed area is enclosed below:



Reclaimed Area

**Condition vii: -The solid waste generated during the mining operation shall be backfilled and there shall be no external overburden dump left at the end of the mine life. The entire excavated area of 12.19 ha. shall be backfilled and reclaimed by plantation. The backfilling should be carried out in such a manner that it is restored to the normal ground level. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forest on six-month basis.**

**Reply: -** Backfilling and reclamation are being done concurrently by overburden. There is no Overburden dump as of now in the mine lease area. Data pertaining to backfilling is enclosed as **Annexure 4**. Backfilling is a continuous process and is being done commensurate with the progress of mining. Monitoring and management of rehabilitated areas is continued through supervision.

**Condition viii: -Catch drains and siltation ponds of appropriate size should be constructed around the working pit, sub-grade dump, soil and mineral dumps to arrest flow of silt and sediment directly into the agricultural fields, the Kisco Nadi, the Sukri Nadi, the Chungahat nallah, the Barki nallah and other water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted, particularly after monsoon and maintained properly.**

**Garland drain, settling tanks and check dams of appropriate size, gradient and length shall be constructed for both around the mine pit and sub grade dump to prevent run off of water**

and flow sediments directly into the agricultural fields, the Kisco Nadi, the Sukri Nadi, the Chungahat nallah, the Barki nallah 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 setting of silt material. Sedimentation pits should be constructed at the corners of the garland drains and desilted at regular intervals.

**Reply:** - 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. Sump of adequate capacity is being provided and maintained as required. The photograph of the drain is enclosed below:



Garland drain

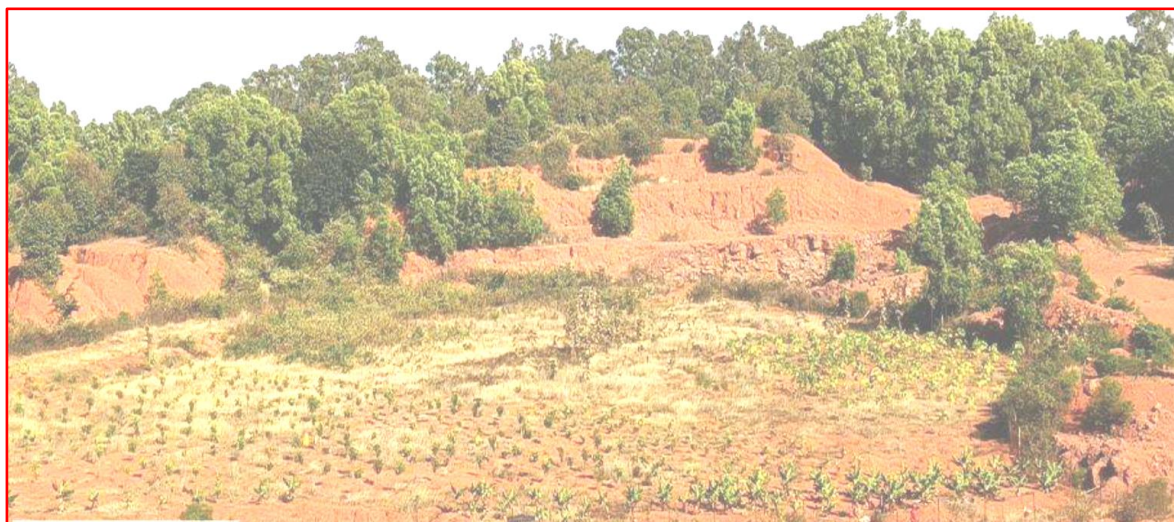
**Condition ix: -Dimension of the retaining wall at the toe of the sub-grade, dump and OB benches within the mine to check run-off and siltation should be based on the rain fall data.**

**Reply:** - There is no temporary dumps within the mining lease area. However, the dimensions of the retaining wall of temporary OB dumps will be maintained based on average rain fall, if required.

**Condition x: -Plantation shall be raised in an area of 12.7 ha including a 7.5 m. wide green belt in the safety zone around the mining lease by planting the native species around ML area, backfilled and reclaimed area, around water body, roads etc. in consultation with the local DFO / Agriculture Department. At least 1500 trees per year shall be planted with a tree density of 1000 trees per hectare. Greenbelt shall be developed all along the mine lease area in a phased manner and shall be completed within first five years.**

**Reply:** - Progressive plantation is being carried out with the progress of mining in and around the Mine lease area. During FY 2024-25, a total of 1730 nos. saplings have been planted within the mining lease. Cumulative 6.30 ha areas have been planted till date. In addition to this, agricultural activity is going on in reclaimed land as per the consent from landowners. The green belt development program is in progress with the progress of mining activities. Plantation photograph attached below:





**Plantation at mine**

**Condition xi: - Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels to particulate matter such as around loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.**

**Reply: -** Effective safeguard measures, such as regular water sprinkling, are being implemented in all critical areas prone to air pollution. Regular Ambient Air Quality (AAQ) monitoring is being carried out by NABL accredited Laboratory and all parameters are found within the prescribed limit. The Monitoring report is attached herewith as **Annexure-2**.

**Condition xii: - The project authority should implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board.**

**Reply: -** Effective measures have already been implemented. A detailed rainwater harvesting plan to augment ground water has been prepared and suitable measures like water harvesting pond etc. are created for augmentation of ground water in the area (Bagru Plateau) in consultation with Central Ground Water Board.

**Condition xiii: - Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and constructing new piezometers during the mining operation. The periodic monitoring [(at least four times in a year – pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) once in each season)] shall be carried out in consultation with the State Ground Water Board/ Central Ground water Authority and the data thus collected may be sent regularly to the Ministry of Environment and Forests and its Regional office Bhubaneswar, The Central Ground Water Authority and the Regional Director, Central Ground Water Board. If at any stage, it is observed that the ground water table is getting depleted due to the mining activity, necessary corrective measures shall be carried out.**

**Reply: -** Since Shallow depth mining is being carried out, there is no intersection of ground water table during the mining operation at present and in future also. A Piezometer has been installed for monitoring of ground water level. Water level and Water quality Reports are being sent regularly to the regional office of Ministry, CGWA/CGWB and JSPCB. The same copy is attached as **Annexure 1 & 2**. Now, Regional office of MoEF&CC is in Ranchi.



**Piezometer**

**Condition xiv: - Monitoring to the springs shall be carried out for the quality and quantity of water regularly so as to ensure that there is no adverse impact on the same due to the project. Records in this regard shall be maintained.**


**Reply: -** Water Monitoring of Spring is being conducted regularly and the Analysis report is attached as **Annexure 2**.

**Condition xv: - It shall be ensured that there is no change in the hydrology of the area due to the project.**

**Reply: -**Noted. We regularly monitor the ground water level, and no adverse changes are observed.

**Condition xvi: - The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water (surface water and ground water) required for the project.**

**Reply:** Rainwater is collected into the rainwater harvesting pond and being used for sprinkling on haul roads, mining activities, and raising plantation. No groundwater or water from natural surface water bodies is being used for mining purposes. However, we have already obtained NOC for extraction of ground water from CGWA/ CGWB for drinking purposes only. The copy of the same is attached below:



भारत सरकार  
जल संसाधन, नदी विकास  
और गंगा संरक्षण विभाग  
केंद्रीय भूमि जल प्राधिकरण  
Government of India  
Ministry of Jal Shakti  
Department of Water Resources,  
River Development & Ganga Rejuvenation  
Central Ground Water Authority

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

|  |   |                         |            |
|--|---|-------------------------|------------|
| Project Name:  | Hsiri (new) Bauxite Mining Project (14.55ha)  |                         |            |
| Project Address:   | Hsiri (new) Bauxite Mining Project, VIII - Hsiri, Champi And Korgo, Tehsil - Kisko, Dist - Lohardaga            |                         |            |
| Village:   | Hsiri   | Block:                  | Kisko      |
| District:  | Lohardaga   | State:                  | Jharkhand  |
| Pin Code:  |   |                         |            |
| Communication Address:   | Hindalco Industries Ltd, Hindalco Complex, Court Road, Lohardaga, P.O. Lohardaga, Lohardaga, Jharkhand - 835302 |                         |            |
| Address of CGWB Regional Office : Central Ground Water Board Mid Eastern Region, 8th & 9th Floor, Lok Nayak Jai Prakash Bhawan, Fraser Road Dak Banglow, Patna, Bihar - 800011 |   |                         |            |
| 1. NOC No.:  | CGWA/NOCMINRENV/2024/9799   | 2. Date of Issuance     | 01/09/2024 |
| 3. Application No.:  | 21-4/498/JHMIN/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:   |   |                         |            |

### NOC Ground Water

**Condition xvii: - Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground Water Board.**

**Reply: -** Suitable rainwater harvesting measures on long term basis have been implemented via the creation of rainwater harvesting pond in consultation with the Central Ground Water Board.

**Condition xviii:- Appropriate mitigative measures shall be taken to prevent pollution of the Kisko Nadi, the Sukri Nadi and other rivers in the buffer zone of the mine, in consultation with the State Pollution Control Board.**

**Reply:-** Appropriate mitigative measures have been taken to prevent pollution of nearby water bodies. The drainage system in the mining lease area is designed to collect all rainwater within the lease into the pit/ rainwater harvesting pond only and ensure that water does not flow outside the boundaries of the mine lease under any circumstances.

**Condition xix :- Vehicular emissions should be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and transportation of mineral from mine face to the Beneficiation plant. The vehicles should be covered with a tarpaulin and shall not be overloaded.**

**Reply:-** Minimum vehicles are being used for transport and all vehicles are covered with tarpaulin. Regular maintenance of vehicles is being done to minimize vehicular emission. Bauxite is also being transported by ropeway from mines to Lohardaga siding.



Ropeway transportation



**Condition xx:-** Blasting operation should be carried out only during the daytime. Controlled blasting should be practiced. The mitigative measures for control of ground vibration and to arrest fly rocks and boulders should be implemented.

**Reply:** - Blasting time is fixed between 1.00 PM - 2.00 PM. Controlled blasting method is in practice. Ground vibration study has been conducted periodically. All efforts and mitigative measures are being implemented to minimize the impact of blasting.

**Condition xxi: -** Drills shall either be operated with dust extractors or equipped with water injection system.

**Reply:** - Wet drilling is in practice.

**Condition xxii: -** Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.

**Reply:-** Water sprinkling is being carried out regularly at mineral handling area, loading and unloading areas to control the dust. The photographs are attached below.



Water sprinkling

**Condition xxiii: -** Sewage treatment plant should be installed for the colony. ETP should also be provided for workshop and wastewater generated from mining operations.

**Reply:** - Sewage water for the working population is treated in a Sewage Treatment Plant (STP), and the treated water is utilized for plantation and gardening purposes only.

There is no industrial wastewater generation from mining operation. We are not discharging any wastewater outside the mine lease area. However, negligible amounts of wastewater is generated in workshop from washing vehicles and Effluent treatment plant (ETP) have been installed for this effluent. The treated water is in close circuit and is being reused for washing vehicles in the workshop.

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





Sewage Treatment Plant (STP)



Effluent treatment plant (ETP)

**Condition xxiii: - The project authorities should undertake sample survey to generate data on pre-project community health status within a radius of 1 Km. from proposed mine**

**Reply:-** Being done through medical camp.

**Condition xxiv: - 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 examination of the workers should be drawn and followed accordingly.**

**Reply:-** As a company, we are truly concerned about the health and safety of our on-site workers and in consideration to that, the health examination camps are being setup / scheduled on a regular basis.

**Condition xxv: - 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 the temporary structures to be removed after the completion of the project.**

**Reply:-** We believe that the wellbeing of all the labours working within the site should be taken care of on a priority basis, so that they can work in a stress-free environment. Therefore, all the necessary infrastructure and basic facilities mentioned above are being taken care of.

**Condition xxvi: - The critical parameters such as RSPM (Particulate matter with size less than 10 µm (i.e. PM<sub>10</sub>, PM<sub>2.5</sub>) and NO<sub>x</sub> in the ambient air within the impact zone, peak particle velocity at 300 m. distance or within the nearest habitation, whichever is closer shall be monitored periodically. Further, quality of discharge 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 and Forests, which is available on the website of the Ministry [www.envfor.nic.in](http://www.envfor.nic.in) shall also be referred in this regard for its compliance.**

**Reply: -** Noted and being adhered. We have established four ambient air quality monitoring stations in the core zone as well as buffer zone. Monitoring of Ambient Air Quality and Treated Water is being carried out by NABL accredited Laboratory and reported to the concerned authorities. The Monitoring Report is attached herewith as **Annexure 2**. Half-yearly EC compliance along with Environmental monitoring reports is being uploaded on company website regularly.

A Display board is already installed in front of mine gate office. We have also installed an online PM10 analyzer at mine site.

**Condition xxvii: - A Final Mine Closure plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forest 5 years in advance of final mine closure for approval.**

**Reply: -** Noted. Progressive Mine Closure Plan duly approved by Indian Bureau of Mines is with us. FMCP (part) is approved by IBM. FMCP for entire lease will be prepared in due time as per applicable guidelines and timelines mentioned in MCDR/IBM guidelines who are competent authority to approve the same. Based on the present resource estimate, and peak rated production capacity mentioned in EC, Mining operation is being carried out.

#### **General Conditions:**

**Condition i: - No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.**

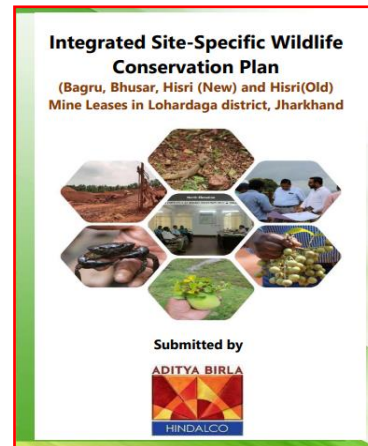
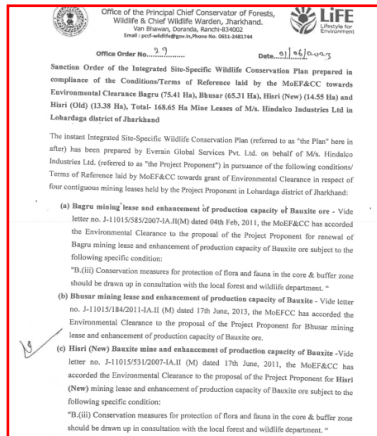
**Reply:-** Noted.

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

**Reply:-** Calendar plan including excavation, quantum of mineral bauxite and waste is being done as per IBM approved mining plan / mining scheme in scientific manner. Mine data detail is attached as **Annexure 4**.

**Condition iii: - Conservation measures for protection of flora and fauna in the core & buffer zone should be drawn up in consultation with the local forest and wildlife department.**

**Reply:-** Conservation measures for protection of flora and fauna in core & buffer zone has been drawn up in consultation with local forest and wildlife department. Also, we prepared Integrated Site-specific Wildlife Conservation Plan (WLCP) and obtained approval from by PCCF, Wildlife, Ranchi vide Office Order No.29 dated 01.06.2023. copy enclosed below:



**Condition iv: - Four ambient air quality monitoring station should be established in the core zone as well as in the buffer zone for RSPM (Particulate matter with size less than 10  $\mu\text{m}$  (i.e.  $\text{PM}_{10}$ ,  $\text{PM}_{2.5}$ ) &  $\text{NO}_x$  monitoring. Location of the stations should be decided based on the metrological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.**

**Reply:-** We have already established four ambient air quality monitoring stations in the core zone as well as buffer zone. Monitoring of Ambient Air Quality is being carried out by NABL accredited Laboratory and reported to the concerned authorities. The Monitoring Report is attached as **Annexure 2.**

**Condition v: - Data on ambient air quality RSPM (Particulate matter with size less than 10  $\mu\text{m}$  i.e.  $\text{PM}_{10}$ ) &  $\text{NO}_x$  should be regularly submitted to the Ministry including its Regional office located at Bhubneshwar and the State Pollution Control Board / Central pollution Control Board once in six months.**

**Reply: -** The monitoring of Ambient Air Quality is conducted by an NABL-accredited Laboratory, and reports are regularly submitted to the MoEF&CC and JSPCB, Ranchi. The monitoring report is attached above. Now, Regional office of MoEF&CC is in Ranchi.

**Condition vi: - Fugitive dust emission from all the sources should be controlled regularly. Water spraying arrangements on haul roads, loading and unloading and at transfer points should be provided and properly maintained.**

**Reply:-** Water spraying arrangements on haul roads, loading and unloading and at transfer points have been provided and properly maintained.

**Condition vii:- Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operation of HEMM, etc. should be provided with ear plug / muffs.**

**Reply:-** 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. The report has been attached as **Annexure 2.**



**Condition viii:- Industrial wastewater (workshops and waste water from the mine) Should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19<sup>th</sup> May, 1993 and 31<sup>st</sup> December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.**

**Reply:-** 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 Effluent treatment plant (ETP) have been installed for 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 monitored regularly and all water parameters are within permissible limits. The monitoring report is attached as **Annexure 2.**



Effluent treatment Plant

**Condition ix:- Personnel working in dusty areas should wear protective respiratory devices and they should also provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.**

**Reply: -** All the workers have been provided with PPEs including dust masks 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 a regular basis. The Periodical Occupational health surveillance program of the workers is being carried out and records maintained as per statute.

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



**Condition xi: - The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office located at Bhubaneshwar.**

**Reply: -** Every year budget is earmarked for environmental protection measures being prepared for purpose and its expenditure is being reported to the ministry. The copy of the same is attached as **Annexure 5**. Now, the Regional Office of MoEF&CC is in Ranchi.

**Condition xii: - The project authorities should inform to the Regional Office located at Bhubaneshwar regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.**

**Reply: -** It is an operational mine. Hence provisions related to financial closure is not applicable. Now, the Regional Office of MoEF&CC is in Ranchi.

**Condition xiii: - The Regional Office of this Ministry located at Bhubaneshwar 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: -** Agreed. Now, the Regional Office of MoEF&CC is in Ranchi.

**Condition xiv: - The project proponent shall submit six monthly report on the status of the compliance of the stipulated environmental Clearance conditions including results of monitoring data (both in hard copies as well as by e-mail) to the Ministry of Environment and Forests, its Regional Officer, Bhubaneshwar, the respective Zonal office of Central Pollution Control Board the State Pollution Control Board. The proponent shall upload the status of compliance of the Environmental Clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the Ministry of Environment and Forests, Bhubaneshwar, the respective Zonal Office of Central Pollution Control Board and State Pollution Control Board.**

**Reply: -** Six monthly reports on status of compliance of stipulated environmental clearance conditions including monitoring report are being submitted to the MoEF&CC, Zonal office of CPCB and JSPCB Ranchi. Now, the Regional Office of MoEF&CC is in Ranchi.

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

**Reply: -** Complied. A copy of the clearance letter has already been submitted and uploaded on website of the Company.

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

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

**Condition xvii:-** The environmental statement for each financial year ending 31<sup>st</sup> March in Form – V as is mandated to be submitted by the project proponent to the concerned Stated pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of the compliance of environmental clearance conditions and shall also be sent to the Regional Office of the Ministry of Environment and Forests, Bhubneshwar by e-mail.

**Reply:** -Environment statement is being submitted regularly to Member Secretary, JSPCB. Also, the status of compliance with environmental clearance conditions is being sent to MoEF&CC and JSPCB, Ranchi on regular basis. Now, the Regional Office of MoEF&CC is in Ranchi.

**Condition xviii:-** The Company shall submit within 3 month their policy towards Corporate Environment Responsibility which should inter-alia address (i) Standard operating process/ procedure to bring into focus any infringements/ deviation/ violation of environmental or forest norms/ conditions, (ii) Hierarchical system or Administrative order of the Company to deal with environmental issues and ensuring compliance with environmental issues and ensuring compliance with Environment Clearance conditions and (iii) System of reporting of non compliance / violation of environmental norms to the Board of Directors of the Company and / or stakeholders or shareholders.

**Reply:** - Policy towards Corporate Environment Responsibility is part of Corporate Environment policy and in place. A copy of our Environmental Policy has already been submitted to the relevant statutory authorities. The company has implemented a system in line with the above policies which address the following points. (i) Standard operating process/procedure to bring into focus any infringements/ deviation/ violation of environmental or forest norms/conditions, (ii) Hierarchical system or administrative order of the company to deal with environmental issues and ensuring compliance EC conditions and (iii) System of reporting of noncompliance.

**Condition xix:-** The project authorities should advertise at least in two local newspapers widely circulated, one of which locality concerned, within 7days 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 and Forests at <http://envfor.nic.in> and a copy of the same should be forwarded to the Regional Office of this Ministry located at Bhubneshwar.

**Reply:** - Noted and complied. The information on grant of the EC has been published in two local newspapers. The copy of the advertisement has already been submitted to the Regional Office of the MoEF&CC. Now, the Regional office of MoEF&CC is in Ranchi.

**Piezometer Monitoring Report**

**Mine: Hisri New Bauxite Mine (14.55 Ha)**

| <b>S No</b> | <b>Month</b> | <b>Ground Water Level (BGL)<br/>in meter</b> |
|-------------|--------------|--|
| 1           | Oct-24       | 34.31  |
| 2           | Nov-24       | 34.14  |
| 3           | Dec-24       | 34.28  |
| 4           | Jan-25       | 34.6   |
| 5           | Feb-25       | 34.91  |
| 6           | Mar-25       | 35.23  |

**ENVIRONMENTAL LABORATORIES & ENGINEERING  
SERVICES PVT. LTD.**

Plot No.30, Mansarovar Enclave, Tupudana, Hatia, Ranchi-834003,  
Jharkhand.

**Hisri (New) Bauxite Mine-Environmental Monitoring Report**

**October 2024**





## CONTENT

| Hindalco Industries : Hisri (New) Bauxite Mine Environmental Monitoring: October 2024 |   |
|---|---|
| Hisri (New) Bauxite Mine  |   |
| AMBIENT AIR QUALITY- CORE ZONE  |   |
| 1   | Near Water Pump                         |
| 2   | Near Old Rest Shelter                   |
| 3   | Near Old Plantation (North West Corner) |
| 4   | Hisri New (Southern Area)               |
| AMBIENT AIR QUALITY- BUFFER ZONE  |   |
| 1   | Near Daldaliya Village                  |
| 2   | Aditya School Gangupara                 |
| 3   | Ropeway unloading station               |
| 4   | Ropeway Angle Station                   |



### TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2024/6205 | Report Release Date : 25.10.2024 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC135872400004096F         |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |   |
|--------------------|-------------------------------|----------------------|---|
| Customer Name      | : Hindaleo Industries Limited | Sample Ref. No.      | : ELES/RNC/2024/AA/7234                               |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Near Water Pump; Hisri (New) Bauxite Mine (14.55ha) |
|                    |                               | Sampling Date        | : 16.10.2024 to 17.10.2024                            |
| Mines Status       | : Operational                 | Sample Received Date | : 18.10.2024  |
| Period of Analysis | : 18.10.2024 to 24.10.2024    | Type of Sample       | : Ambient Air   |
|                    |                               | Sampling Procedure   | : ELES/DOC/SMPL/02                                    |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.                                      |
|                    |                               | Sample Condition     | : Sealed & Preserved                                  |

### METEOROLOGICAL INFORMATION

|   |                               |   |                                  |
|---|-------------------------------|---|----------------------------------|
| 1 | Average Temperature (°C) : 28 | 2 | Barometric Pressure (mmHg) : 742 |
| 3 | Relative Humidity (%) : 59    | 4 | Weather Condition : Clear        |

| Discipline : Chemical                    |                   | Group : Atmospheric Pollution             |        |                  |
|--|-------------------|---|--------|------------------|
| Parameter                                | Unit              | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022                  | 53     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019                  | 24     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec1): 2023              | 7.9    | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                   | 19.3   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019<br>(NDIR Method) | <1.0   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019                  | <0.002 | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                      | <2.5   | 05(Annual)       |
| Benzo-(a)-Pyrene                         | ng/m <sup>3</sup> | ELES/GC/SOP/05: 2023                      | <0.5   | 01(Annual)       |

  
Reviewed by  
Akash Kumar  
Quality Manager

\*\*\*\*End of Report\*\*\*\*

  
Authorised Signatory  
Dr. Deependra Kumar Sinha  
Ph. D. Environmental Engg.  
Technical Manager

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# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
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Website: [www.elespl.co.in](http://www.elespl.co.in)



## TEST REPORT

|                 |                      |                     |              |
|-----------------|----------------------|---------------------|--------------|
| Test Report No. | : ELES/RNC/2024/6206 | Report Release Date | : 25.10.2024 |
| Work Order No.  | : 13612312113        | Work Order Date     | : 28.03.2024 |
| ULR No.         | : TC135872400004097F |                     |              |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |   |
|--------------------|-------------------------------|----------------------|---|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2024/AA/7235                                     |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Near Old Rest Shelter; Hisri (New) Bauxite Mine (14.55ha) |
|                    |                               | Sampling Date        | : 16.10.2024 to 17.10.2024                                  |
| Mines Status       | : Operational                 | Sample Received Date | : 18.10.2024  |
|                    |                               | Type of Sample       | : Ambient Air   |
| Period of Analysis | : 18.10.2024 to 24.10.2024    | Sampling Procedure   | : ELES/DOC/SMPL/02  |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.  |
|                    |                               | Sample Condition     | : Sealed & Preserved  |

| METEOROLOGICAL INFORMATION |                          |      |   |                            |         |
|----------------------------|--------------------------|------|---|----------------------------|---------|
| 1                          | Average Temperature (°C) | : 28 | 2 | Barometric Pressure (mmHg) | : 742   |
| 3                          | Relative Humidity (%)    | : 59 | 4 | Weather Condition          | : Clear |

| Discipline : Chemical                    |                   | Group : Atmospheric Pollution             |        |                  |
|--|-------------------|---|--------|------------------|
| Parameter                                | Unit              | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022                  | 60     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019                  | 32     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec1): 2023              | 9.8    | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                   | 22.4   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019<br>(NDIR Method) | <1.0   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019                  | 0.012  | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                      | <2.5   | 05 (Annual)      |
| Benzo-(a)-Pyrene                         | ng/m <sup>3</sup> | ELES/GC/SOP/05: 2023                      | <0.5   | 01 (Annual)      |



Reviewed by  
Akash Kumar  
Quality Manager

\*\*\*\*End of Report\*\*\*\*



Authorised Signatory  
Dr. Deependra Kumar Sinha  
Ph. D. Environmental Engg.  
Technical Manager

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# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
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## TEST REPORT

|                 |                      |                     |              |
|-----------------|----------------------|---------------------|--------------|
| Test Report No. | : ELES/RNC/2024/6207 | Report Release Date | : 25.10.2024 |
| Work Order No.  | : 13612312113        | Work Order Date     | : 28.03.2024 |
| ULR No.         | : TC135872400004098F |                     |              |

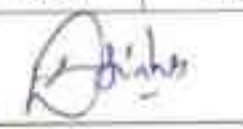
| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |  |
|--------------------|-------------------------------|----------------------|--|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2024/AA/7236                                  |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Near Old Plantation<br>(North West Corner) Hisri (New) |
|                    |                               | Sampling Date        | : 16.10.2024 to 17.10.2024                               |
| Mines Status       | : Operational                 | Sample Received Date | : 18.10.2024   |
|                    |                               | Type of Sample       | : Ambient Air  |
| Period of Analysis | : 18.10.2024 to 24.10.2024    | Sampling Procedure   | : ELES/DOC/SMPL/02                                       |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.   |
|                    |                               | Sample Condition     | : Sealed & Preserved                                     |

| METEOROLOGICAL INFORMATION |                          |      |   |                            |         |
|----------------------------|--------------------------|------|---|----------------------------|---------|
| 1                          | Average Temperature (°C) | : 28 | 2 | Barometric Pressure (mmHg) | : 742   |
| 3                          | Relative Humidity (%)    | : 59 | 4 | Weather Condition          | : Clear |

| Discipline : Chemical                    |                   | Group : Atmospheric Pollution             |        |                  |
|--|-------------------|---|--------|------------------|
| Parameter                                | Unit              | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022                  | 55     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019                  | 30     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec1): 2023              | 6.3    | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                   | 17.8   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019<br>(NDIR Method) | <1.0   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019                  | <0.002 | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                      | <2.5   | 05(Annual)       |
| Benzo-(a)-Pyrene                         | ng/m <sup>3</sup> | ELES/GC/SOP/05: 2023                      | <0.5   | 01(Annual)       |

  
Reviewed by  
**Akash Kumar**  
Quality Manager

\*\*\*\*End of Report\*\*\*\*

  
Authorised Signatory  
**Dr. Deependra Kumar Sinha**  
Ph. D. Environmental Engg.  
Technical Manager

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# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
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## TEST REPORT

|                 |                      |                     |              |
|-----------------|----------------------|---------------------|--------------|
| Test Report No. | : ELES/RNC/2024/6208 | Report Release Date | : 25.10.2024 |
| Work Order No.  | : 13612312113        | Work Order Date     | : 28.03.2024 |
| ULR No.         | : TC135872400004099F |                     |              |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |  |
|--------------------|-------------------------------|----------------------|--|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2024/AA/7237  |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Hisri New (Southern Area)<br>Hisri (New) Bauxite Mine(14.55ha) |
| Mines Status       | : Operational                 | Sampling Date        | : 16.10.2024 to 17.10.2024                                       |
| Period of Analysis | : 18.10.2024 to 24.10.2024    | Sample Received Date | : 18.10.2024   |
|                    |                               | Type of Sample       | : Ambient Air  |
|                    |                               | Sampling Procedure   | : ELES/DOC/SMPL/02   |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.   |
|                    |                               | Sample Condition     | : Sealed & Preserved   |

| METEOROLOGICAL INFORMATION |                          |      |   |                            |         |
|----------------------------|--------------------------|------|---|----------------------------|---------|
| 1                          | Average Temperature (°C) | : 28 | 2 | Barometric Pressure (mmHg) | : 742   |
| 3                          | Relative Humidity (%)    | : 59 | 4 | Weather Condition          | : Clear |

| Discipline : Chemical                    |                   | Group : Atmospheric Pollution             |        |                  |
|--|-------------------|---|--------|------------------|
| Parameter                                | Unit              | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022                  | 58     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019                  | 32     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec1): 2023              | 7.7    | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                   | 19.2   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019<br>(NDIR Method) | <1.0   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019                  | <0.002 | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                      | <2.5   | 05 (Annual)      |
| Benzo-(a)-Pyrene                         | ng/m <sup>3</sup> | ELES/GC/SOP/05: 2023                      | <0.5   | 01 (Annual)      |



Reviewed by  
Akash Kumar  
Quality Manager

\*\*\*\*End of Report\*\*\*\*



Authorised Signatory  
Dr. Deependra Kumar Sinha  
Ph. D. Environmental Engg.  
Technical Manager

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# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
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Phone no.: 0651-2290303  
Website : [www.elespl.co.in](http://www.elespl.co.in)



## TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2024/6189 | Report Release Date : 25.10.2024 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC135872400004080F         |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |  |
|--------------------|-------------------------------|----------------------|--|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2024/AA/7218                                  |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Near Daldaliya Village<br>Bagru Bauxite Mine (75.41ha) |
|                    |                               | Sampling Date        | : 14.10.2024 to 15.10.2024                               |
| Mines Status       | : Non Operational             | Sample Received Date | : 18.10.2024   |
|                    |                               | Type of Sample       | : Ambient Air  |
| Period of Analysis | : 18.10.2024 to 24.10.2024    | Sampling Procedure   | : ELES/DOC/SMPL/02                                       |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.   |
|                    |                               | Sample Condition     | : Sealed & Preserved                                     |

## METEOROLOGICAL INFORMATION

|   |                               |   |                                   |
|---|-------------------------------|---|-----------------------------------|
| 1 | Average Temperature (°C) : 27 | 2 | Barometric Pressure (mmHg) : 742  |
| 3 | Relative Humidity (%) : 65    | 4 | Weather Condition : Partly Cloudy |

Discipline : Chemical

Group : Atmospheric Pollution

| Parameter                           | Unit                     | Test Protocol                             | Result | Regulatory Limit |
|-------------------------------------|--------------------------|---|--------|------------------|
| Particulate Matter (PM10)           | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 23): 2022                  | 60     | 100 (24hrs)      |
| Particulate Matter (PM2.5)          | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 24): 2019                  | 30     | 60 (24hrs)       |
| Sulphur Di-Oxide ( $\text{SO}_2$ )  | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 2/Sec1): 2023              | 10.9   | 80 (24hrs)       |
| Nitrogen Di-Oxide ( $\text{NO}_2$ ) | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 6): 2022                   | 20.2   | 80 (24hrs)       |
| Ozone ( $\text{O}_3$ )              | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia ( $\text{NH}_3$ )           | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                | $\text{mg}/\text{m}^3$   | IS 5182 (Part- 10): 2019<br>(NDIR Method) | <1.0   | 2 (8hrs)         |
| Lead (Pb)                           | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 22): 2019                  | 0.005  | 1 (24hrs)        |
| Nickel (Ni)                         | $\text{ng}/\text{m}^3$   | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                        | $\text{ng}/\text{m}^3$   | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene ( $\text{C}_6\text{H}_6$ )  | $\mu\text{g}/\text{m}^3$ | ELES/GC/SOP/06: 2023                      | <2.5   | 05 (Annual)      |
| Benzo-(a)-Pyrene                    | $\text{ng}/\text{m}^3$   | ELES/GC/SOP/05: 2023                      | <0.5   | 01 (Annual)      |



Reviewed by

Akash Kumar

QA/QC Manager

\*\*\*\*End of Report\*\*\*\*

  
Dr. Deependra Kumar Sinha

Ph. D. Environmental Engg.

Technical Manager

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# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TURIDAHIA  
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Website: www.elespl.co.in



## TEST REPORT

|                 |                      |                     |              |
|-----------------|----------------------|---------------------|--------------|
| Test Report No. | : ELES/RNC/2024/6191 | Report Release Date | : 25.10.2024 |
| Work Order No.  | : 13612312113        | Work Order Date     | : 28.03.2024 |
| ULR No.         | : TC135872400004082F |                     |              |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |   |
|--------------------|-------------------------------|----------------------|---|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2024/AA/7220                                     |
| Address            | : Lohardaga, Jharkhand-835502 | Location             | : Ropeway Unloading Station<br>Bagru Bauxite Mine (75.41ha) |
|                    |                               | Sampling Date        | : 14.10.2024 to 15.10.2024                                  |
| Mines Status       | : Non Operational             | Sample Received Date | : 18.10.2024  |
|                    |                               | Type of Sample       | : Ambient Air   |
| Period of Analysis | : 18.10.2024 to 24.10.2024    | Sampling Procedure   | : ELES/DOC/SMPL/02  |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.  |
|                    |                               | Sample Condition     | : Sealed & Preserved  |

## METEOROLOGICAL INFORMATION

|   |                          |      |   |                            |                 |
|---|--------------------------|------|---|----------------------------|-----------------|
| 1 | Average Temperature (°C) | : 27 | 2 | Barometric Pressure (mmHg) | : 742           |
| 3 | Relative Humidity (%)    | : 65 | 4 | Weather Condition          | : Partly Cloudy |

Discipline : Chemical

Group : Atmospheric Pollution

| Parameter                           | Unit                     | Test Protocol                             | Result | Regulatory Limit |
|-------------------------------------|--------------------------|---|--------|------------------|
| Particulate Matter (PM10)           | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 23): 2022                  | 71     | 100 (24hrs)      |
| Particulate Matter (PM2.5)          | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 24): 2019                  | 33     | 60 (24hrs)       |
| Sulphur Di-Oxide ( $\text{SO}_2$ )  | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 2/Sec I): 2023             | 8.4    | 80 (24hrs)       |
| Nitrogen Di-Oxide ( $\text{NO}_2$ ) | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 6): 2022                   | 23.7   | 80 (24hrs)       |
| Ozone ( $\text{O}_3$ )              | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia ( $\text{NH}_3$ )           | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                | $\text{mg}/\text{m}^3$   | IS 5182 (Part- 10): 2019<br>(NDIR Method) | <1.0   | 2 (8hrs)         |
| Lead (Pb)                           | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 22): 2019                  | 0.017  | 1 (24hrs)        |
| Nickel (Ni)                         | $\text{ng}/\text{m}^3$   | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                        | $\text{ng}/\text{m}^3$   | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene ( $\text{C}_6\text{H}_6$ )  | $\mu\text{g}/\text{m}^3$ | ELES/GC/SOP/06: 2023                      | <2.5   | 05 (Annual)      |
| Benzo(a)-Pyrene                     | $\text{ng}/\text{m}^3$   | ELES/GC/SOP/05: 2023                      | <0.5   | 01 (Annual)      |



Reviewed by  
Anshu Kumar  
Quality Manager

\*\*\*\*End of Report\*\*\*\*



Authorized Signature  
Dr. Deependra Kumar Sinha  
Ph. D. Environmental Engg.  
Technical Manager

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# ENVIRONMENTAL LABORATORIES &

PLOT NO-50, MANJARI ENCLAVE, TURUDANA  
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Website: www.elespl.co.in



## TEST REPORT

|                 |                      |                     |              |
|-----------------|----------------------|---------------------|--------------|
| Test Report No. | : ELES/RNC/2024/6192 | Report Release Date | : 25.10.2024 |
| Work Order No.  | : 13612312113        | Work Order Date     | : 28.03.2024 |
| ULR No.         | : TC135872400004083F |                     |              |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |   |
|--------------------|-------------------------------|----------------------|---|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2024/AA/7221                                 |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Ropeway Angle Station<br>Bagru Bauxite Mine (75.41ha) |
|                    |                               | Sampling Date        | : 14.10.2024 to 15.10.2024                              |
| Mines Status       | : Non Operational             | Sample Received Date | : 18.10.2024  |
|                    |                               | Type of Sample       | : Ambient Air   |
| Period of Analysis | : 18.10.2024 to 24.10.2024    | Sampling Procedure   | : ELES/DOC/SMPL/02                                      |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.  |
|                    |                               | Sample Condition     | : Sealed & Preserved                                    |

## METEOROLOGICAL INFORMATION

|   |                          |      |   |                            |                 |
|---|--------------------------|------|---|----------------------------|-----------------|
| 1 | Average Temperature (°C) | : 27 | 2 | Barometric Pressure (mmHg) | : 742           |
| 3 | Relative Humidity (%)    | : 65 | 4 | Weather Condition          | : Partly Cloudy |

| Discipline : Chemical               |                          | Group : Atmospheric Pollution             |        |                  |
|-------------------------------------|--------------------------|---|--------|------------------|
| Parameter                           | Unit                     | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)           | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 23): 2022                  | 66     | 100 (24hrs)      |
| Particulate Matter (PM2.5)          | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 24): 2019                  | 31     | 60 (24hrs)       |
| Sulphur Di-Oxide ( $\text{SO}_2$ )  | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 2/Sec1): 2023              | 7.9    | 80 (24hrs)       |
| Nitrogen Di-Oxide ( $\text{NO}_2$ ) | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 6): 2022                   | 20.9   | 80 (24hrs)       |
| Ozone ( $\text{O}_3$ )              | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia ( $\text{NH}_3$ )           | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                | $\text{mg}/\text{m}^3$   | IS 5182 (Part- 10): 2019<br>(NDIR Method) | 1.02   | 2 (8hrs)         |
| Lead (Pb)                           | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 22): 2019                  | <0.002 | 1 (24hrs)        |
| Nickel (Ni)                         | $\text{ng}/\text{m}^3$   | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                        | $\text{ng}/\text{m}^3$   | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene ( $\text{C}_6\text{H}_6$ )  | $\mu\text{g}/\text{m}^3$ | ELES/GC/SOP/06: 2023                      | <2.5   | 05 (Annual)      |
| Benzo-(a)-Pyrene                    | $\text{ng}/\text{m}^3$   | ELES/GC/SOP/05: 2023                      | <0.5   | 01 (Annual)      |

  
Reviewed by  
Akash Kumar

Quality Manager

\*\*\*\*End of Report\*\*\*\*

  
Dr. Deependra Kumar Sinha  
Ph. D. Environmental Engg.

Technical Manager

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**"Save Environment, Save Future"**

**ENVIRONMENTAL LABORATORIES & ENGINEERING  
SERVICES PVT. LTD.**

Plot No.30, Mansarovar Enclave, Tupudana, Hatia, Ranchi-834003,  
Jharkhand.

**Hisri (New) Bauxite Mine-Environmental Monitoring Report**

**November 2024**



## CONTENT

| Hindaleo Industries : Hisri (New) Bauxite Mine Environmental Monitoring |   | November 2024 |
|---|---|---------------|
| Hisri (New) Bauxite Mine  |   |               |
| AMBIENT AIR QUALITY- CORE ZONE  |   |               |
| 1   | Near Water Pump                         |               |
| 2   | Near Old Rest Shelter                   |               |
| 3   | Near Old Plantation (North West Corner) |               |
| 4   | Hisri New (Southern Area)               |               |
| AMBIENT AIR QUALITY- BUFFER ZONE  |   |               |
| 1   | Near Daldaliya Village                  |               |
| 2   | Aditya School Gangupara                 |               |
| 3   | Ropeway unloading station               |               |
| 4   | Ropeway Angle Station                   |               |
| Drinking Water  |   |               |







# ENVIRONMENTAL LABORATORIES &

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Website : [www.elespl.co.in](http://www.elespl.co.in)



## TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2024/6836 | Report Release Date : 26.11.2024 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC135872400004708F         |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |  |
|--------------------|-------------------------------|----------------------|--|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2024/AA/8039                                  |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Near Water Pump; Hisri (New)<br>Bauxite Mine (14.55ha) |
|                    |                               | Sampling Date        | : 19.11.2024 to 20.11.2024                               |
| Mines Status       | : Operational                 | Sample Received Date | : 21.11.2024   |
|                    |                               | Type of Sample       | : Ambient Air  |
| Period of Analysis | : 21.11.2024 to 26.11.2024    | Sampling Procedure   | : ELES/DOC/SMPL/02                                       |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.   |
|                    |                               | Sample Condition     | : Sealed & Preserved                                     |

## METEOROLOGICAL INFORMATION

|   |                               |   |                                  |
|---|-------------------------------|---|----------------------------------|
| 1 | Average Temperature (°C) : 25 | 2 | Barometric Pressure (mmHg) : 742 |
| 3 | Relative Humidity (%) : 51    | 4 | Weather Condition : Clear        |

| Discipline : Chemical                    |                   | Group : Atmospheric Pollution             |        |                  |
|--|-------------------|---|--------|------------------|
| Parameter                                | Unit              | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022                  | 59     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019                  | 29     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec1): 2023              | 7.3    | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                   | 21.5   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019<br>(NDIR Method) | <1.0   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019                  | <0.002 | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                      | <2.5   | 05(Annual)       |
| Benzo-(a)-Pyrene                         | ng/m <sup>3</sup> | ELES/GC/SOP/05: 2023                      | <0.5   | 01(Annual)       |



\*\*\*\*End of Report\*\*\*\*

  
Authorized Signatory  
Akash Kumar  
Quality Manager

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# ENVIRONMENTAL LABORATORIES &

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## TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2024/6837 | Report Release Date : 26.11.2024 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC135872400004709F         |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |   |
|--------------------|-------------------------------|----------------------|---|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2024/AA/8040                                     |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Near Old Rest Shelter; Hisri (New) Bauxite Mine (14.55ha) |
|                    |                               | Sampling Date        | : 19.11.2024 to 20.11.2024                                  |
| Mines Status       | : Operational                 | Sample Received Date | : 21.11.2024  |
|                    |                               | Type of Sample       | : Ambient Air   |
| Period of Analysis | : 21.11.2024 to 26.11.2024    | Sampling Procedure   | : ELES/DOC/SMPL/02  |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.  |
|                    |                               | Sample Condition     | : Sealed & Preserved  |

| METEOROLOGICAL INFORMATION |                          |      |   |                            |         |
|----------------------------|--------------------------|------|---|----------------------------|---------|
| 1                          | Average Temperature (°C) | : 25 | 2 | Barometric Pressure (mmHg) | : 742   |
| 3                          | Relative Humidity (%)    | : 51 | 4 | Weather Condition          | : Clear |

| Discipline : Chemical                    |                   | Group : Atmospheric Pollution             |        |                  |
|--|-------------------|---|--------|------------------|
| Parameter                                | Unit              | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022                  | 71     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019                  | 38     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec1): 2023              | 12.2   | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                   | 25.7   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019<br>(NDIR Method) | <1.0   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019                  | 0.016  | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                      | <2.5   | 05(Annual)       |
| Benzo-(a)-Pyrene                         | ng/m <sup>3</sup> | ELES/GC/SOP/05: 2023                      | <0.5   | 01(Annual)       |



\*\*\*\*End of Report\*\*\*\*

  
Authorised Signatory  
Akash Kumar  
Quality Manager

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"Save Environment, Save Future"





# ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
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## TEST REPORT

|                 |                      |                     |              |
|-----------------|----------------------|---------------------|--------------|
| Test Report No. | : ELES/RNC/2024/6838 | Report Release Date | : 26.11.2024 |
| Work Order No.  | : 13612312113        | Work Order Date     | : 28.03.2024 |
| ULR No.         | : TC135872400004710F |                     |              |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |  |
|--------------------|-------------------------------|----------------------|--|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2024/AA/8041                                  |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Near Old Plantation<br>(North West Corner) Hisri (New) |
|                    |                               | Sampling Date        | : 19.11.2024 to 20.11.2024                               |
| Mines Status       | : Operational                 | Sample Received Date | : 21.11.2024   |
|                    |                               | Type of Sample       | : Ambient Air  |
| Period of Analysis | : 21.11.2024 to 26.11.2024    | Sampling Procedure   | : ELES/DOC/SMPL/02                                       |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.   |
|                    |                               | Sample Condition     | : Sealed & Preserved                                     |

| METEOROLOGICAL INFORMATION |                          |      |   |                            |         |
|----------------------------|--------------------------|------|---|----------------------------|---------|
| 1                          | Average Temperature (°C) | : 25 | 2 | Barometric Pressure (mmHg) | : 742   |
| 3                          | Relative Humidity (%)    | : 51 | 4 | Weather Condition          | : Clear |

| Discipline : Chemical                    |                   | Group : Atmospheric Pollution             |        |                  |
|--|-------------------|---|--------|------------------|
| Parameter                                | Unit              | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022                  | 58     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019                  | 27     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec1): 2023              | 7.3    | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                   | 17.8   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019<br>(NDIR Method) | <1.0   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019                  | <0.002 | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                      | <2.5   | 05(Annual)       |
| Benzo-(a)-Pyrene                         | ng/m <sup>3</sup> | ELES/GC/SOP/05: 2023                      | <0.5   | 01(Annual)       |



\*\*\*\*End of Report\*\*\*\*

  
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Akash Kumar  
Quality Manager

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# ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
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## TEST REPORT

|                 |                      |                     |              |
|-----------------|----------------------|---------------------|--------------|
| Test Report No. | : ELES/RNC/2024/6839 | Report Release Date | : 26.11.2024 |
| Work Order No.  | : 13612312113        | Work Order Date     | : 28.03.2024 |
| ULR No.         | : TC135872400604711F |                     |              |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |  |
|--------------------|-------------------------------|----------------------|--|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2024/AA/8042  |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Hisri New (Southern Area)<br>Hisri (New) Bauxite Mine(14.55ha) |
|                    |                               | Sampling Date        | : 19.11.2024 to 20.11.2024                                       |
| Mines Status       | : Operational                 | Sample Received Date | : 21.11.2024   |
|                    |                               | Type of Sample       | : Ambient Air  |
| Period of Analysis | : 21.11.2024 to 26.11.2024    | Sampling Procedure   | : ELES/DOC/SMPL/02   |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.   |
|                    |                               | Sample Condition     | : Sealed & Preserved   |

| METEOROLOGICAL INFORMATION |                          |      |   |                            |         |
|----------------------------|--------------------------|------|---|----------------------------|---------|
| 1                          | Average Temperature (°C) | : 25 | 2 | Barometric Pressure (mmHg) | : 742   |
| 3                          | Relative Humidity (%)    | : 51 | 4 | Weather Condition          | : Clear |

| Discipline : Chemical                    |                   | Group : Atmospheric Pollution             |        |                  |
|--|-------------------|---|--------|------------------|
| Parameter                                | Unit              | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022                  | 64     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019                  | 38     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec1): 2023              | 10.3   | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                   | 22.7   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019<br>(NDIR Method) | <1.0   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019                  | 0.011  | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                      | <2.5   | 05(Annual)       |
| Benzo-(a)-Pyrene                         | ng/m <sup>3</sup> | ELES/GC/SOP/05: 2023                      | <0.5   | 01(Annual)       |



\*\*\*\*End of Report\*\*\*\*

  
Authorised Signatory  
Akash Kumar  
Quality Manager

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# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROYAN ENCLAVE, TIPUDANA  
HATTA, RANCHI-834003 (JHARKHAND)  
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## TEST REPORT

|                 |                      |                     |              |
|-----------------|----------------------|---------------------|--------------|
| Test Report No. | : ELES/RNC/2024/6820 | Report Release Date | : 25.11.2024 |
| Work Order No.  | : 13612312113        | Work Order Date     | : 28.03.2024 |
| ULR No.         | : TCI35872400004692F |                     |              |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |  |
|--------------------|-------------------------------|----------------------|--|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2024/AA/7963                                  |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Near Daldaliya Village<br>Bagru Bauxite Mine (75.41ha) |
|                    |                               | Sampling Date        | : 17.11.2024 to 18.11.2024                               |
| Mines Status       | : Non Operational             | Sample Received Date | : 19.11.2024   |
|                    |                               | Type of Sample       | : Ambient Air  |
| Period of Analysis | : 19.11.2024 to 25.11.2024    | Sampling Procedure   | : ELES/DOC/SMPL/02                                       |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.   |
|                    |                               | Sample Condition     | : Sealed & Preserved                                     |

| METEOROLOGICAL INFORMATION |                          |      |   |                            |         |
|----------------------------|--------------------------|------|---|----------------------------|---------|
| 1                          | Average Temperature (°C) | : 25 | 2 | Barometric Pressure (mmHg) | : 742   |
| 3                          | Relative Humidity (%)    | : 51 | 4 | Weather Condition          | : Clear |

| Discipline : Chemical                    |                   | Group : Atmospheric Pollution             |        |                  |
|--|-------------------|---|--------|------------------|
| Parameter                                | Unit              | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022                  | 64     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019                  | 32     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec1): 2023              | 11.4   | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                   | 24.1   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019<br>(NDIR Method) | <1.0   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019                  | 0.009  | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                      | <2.5   | 05(Annual)       |
| Benzo-(a)-Pyrene                         | ng/m <sup>3</sup> | ELES/GC/SOP/05: 2023                      | <0.5   | 01(Annual)       |



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Authorised Signatory  
Akash Kumar  
Quality Manager

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# ENVIRONMENTAL LABORATORIES &

PLOT NO-36, MANGAROVAR ENCLAVE, TUPUDANA  
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IN 174883IN3058P7C01113

## TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2024/6821 | Report Release Date : 25.11.2024 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC135872400004693F         |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |   |
|--------------------|-------------------------------|----------------------|---|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2024/AA/7964                                   |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Aditya School Gangapara<br>Bagru Bauxite Mine (75.41ha) |
| Mines Status       | : Non Operational             | Sampling Date        | : 17.11.2024 to 18.11.2024                                |
| Period of Analysis | : 19.11.2024 to 25.11.2024    | Sample Received Date | : 19.11.2024  |
|                    |                               | Type of Sample       | : Ambient Air   |
|                    |                               | Sampling Procedure   | : ELES/DOC/SMPL/02  |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.  |
|                    |                               | Sample Condition     | : Sealed & Preserved                                      |

| METEOROLOGICAL INFORMATION |                               |  |   |                                  |  |
|----------------------------|-------------------------------|--|---|----------------------------------|--|
| 1                          | Average Temperature (°C) : 25 |  | 2 | Barometric Pressure (mmHg) : 742 |  |
| 3                          | Relative Humidity (%) : 51    |  | 4 | Weather Condition : Clear        |  |

| Discipline : Chemical                    |                   | Group : Atmospheric Pollution             |        |                  |
|--|-------------------|---|--------|------------------|
| Parameter                                | Unit              | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022                  | 64     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019                  | 33     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec1): 2023              | 9.1    | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                   | 23.4   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019<br>(NDIR Method) | 1.05   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019                  | 0.008  | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                      | <2.5   | 05 (Annual)      |
| Benzo-(a)-Pyrene                         | ng/m <sup>3</sup> | ELES/GC/SOP/05: 2023                      | <0.5   | 01 (Annual)      |



\*\*\*\*End of Report\*\*\*\*

Authorised Signatory  
**Akash Kumar**  
Quality Manager

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# ENVIRONMENTAL LABORATORIES &

PLOT NO-01, MANSAROVAR ENCLAVE, TUMUDAMA  
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Website: [www.elespl.co.in](http://www.elespl.co.in)



TIN: U74903JH2018PTC011125

## TEST REPORT

|                 |                      |                     |              |
|-----------------|----------------------|---------------------|--------------|
| Test Report No. | : ELES/RNC/2024/6822 | Report Release Date | : 25.11.2024 |
| Work Order No.  | : 13612312113        | Work Order Date     | : 28.03.2024 |
| ULR No.         | : TC135872400004694F |                     |              |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |   |
|--------------------|-------------------------------|----------------------|---|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2024/AA/7965                                     |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Ropeway Unloading Station<br>Bagru Bauxite Mine (75.41ha) |
|                    |                               | Sampling Date        | : 17.11.2024 to 18.11.2024                                  |
| Mines Status       | : Non Operational             | Sample Received Date | : 19.11.2024  |
|                    |                               | Type of Sample       | : Ambient Air   |
| Period of Analysis | : 19.11.2024 to 25.11.2024    | Sampling Procedure   | : ELES/DOC/SMPL/02  |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.  |
|                    |                               | Sample Condition     | : Sealed & Preserved  |

## METEOROLOGICAL INFORMATION

|   |                          |      |   |                            |         |
|---|--------------------------|------|---|----------------------------|---------|
| 1 | Average Temperature (°C) | : 25 | 2 | Barometric Pressure (mmHg) | : 742   |
| 3 | Relative Humidity (%)    | : 51 | 4 | Weather Condition          | : Clear |

Discipline : Chemical

Group : Atmospheric Pollution

| Parameter                           | Unit                     | Test Protocol                             | Result | Regulatory Limit |
|-------------------------------------|--------------------------|---|--------|------------------|
| Particulate Matter (PM10)           | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 23): 2022                  | 69     | 100 (24hrs)      |
| Particulate Matter (PM2.5)          | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 24): 2019                  | 36     | 60 (24hrs)       |
| Sulphur Di-Oxide ( $\text{SO}_2$ )  | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 2/Sec1): 2023              | 10.2   | 80 (24hrs)       |
| Nitrogen Di-Oxide ( $\text{NO}_2$ ) | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 6): 2022                   | 22.8   | 80 (24hrs)       |
| Ozone ( $\text{O}_3$ )              | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia ( $\text{NH}_3$ )           | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                | $\text{mg}/\text{m}^3$   | IS 5182 (Part- 10): 2019<br>(NDIR Method) | <1.0   | 2 (8hrs)         |
| Lead (Pb)                           | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 22): 2019                  | 0.012  | 1 (24hrs)        |
| Nickel (Ni)                         | $\text{ng}/\text{m}^3$   | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                        | $\text{ng}/\text{m}^3$   | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene ( $\text{C}_6\text{H}_6$ )  | $\mu\text{g}/\text{m}^3$ | ELES/GC/SOP/06: 2023                      | <2.5   | 05(Annual)       |
| Benzo-(a)-Pyrene                    | $\text{ng}/\text{m}^3$   | ELES/GC/SOP/05: 2023                      | <0.5   | 01(Annual)       |



\*\*\*End of Report\*\*\*

Authorised Signatory  
**Akash Kumar**  
Quality Manager

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# ENVIRONMENTAL LABORATORIES &

PLOT NO-33, MANSAROVAR ENCLAVE, TIPUDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAET97130134

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IN: 174399/H/2023APTC/1115

## TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2024/6823 | Report Release Date : 25.11.2024 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC135872400004695F         |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |   |
|--------------------|-------------------------------|----------------------|---|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2024/AA/7956                                 |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Ropeway Angle Station<br>Bagru Bauxite Mine (75.41ha) |
|                    |                               | Sampling Date        | : 17.11.2024 to 18.11.2024                              |
|                    |                               | Sample Received Date | : 19.11.2024  |
| Mines Status       | : Non Operational             | Type of Sample       | : Ambient Air   |
|                    |                               | Sampling Procedure   | : ELES/DOC/SMPL/02                                      |
| Period of Analysis | : 19.11.2024 to 25.11.2024    | Sampling Done By     | : ELES Pvt. Ltd.  |
|                    |                               | Sample Condition     | : Sealed & Preserved                                    |

| METEOROLOGICAL INFORMATION |                          |      |   |                            |         |
|----------------------------|--------------------------|------|---|----------------------------|---------|
| 1                          | Average Temperature (°C) | : 25 | 2 | Barometric Pressure (mmHg) | : 742   |
| 3                          | Relative Humidity (%)    | : 51 | 4 | Weather Condition          | : Clear |

| Discipline : Chemical                    |                   | Group : Atmospheric Pollution             |        |                  |
|--|-------------------|---|--------|------------------|
| Parameter                                | Unit              | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022                  | 66     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019                  | 35     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec1): 2023              | 13.3   | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                   | 25.7   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019<br>(NDIR Method) | 1.08   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019                  | 0.009  | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                      | <2.5   | 05 (Annual)      |
| Benzo-(a)-Pyrene                         | ng/m <sup>3</sup> | ELES/GC/SOP/05: 2023                      | <0.5   | 01 (Annual)      |



\*\*\*\*End of Report\*\*\*\*

Authorised Signatory  
Akash Kumar  
Quality Manager

Page 1 of 1

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# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAECE9713D1Z4

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### TEST REPORT

|                 |                      |                     |              |
|-----------------|----------------------|---------------------|--------------|
| Test Report No. | : ELES/RNC/2024/6951 | Report Release Date | : 30.11.2024 |
| Work Order No.  | : 13612312113        | Work Order Date     | : 28.03.2024 |
| ULR No.         | : TC135872400004820F |                     |              |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |  |
|--------------------|-------------------------------|----------------------|--|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2024/DW/8103                          |
| Address            | : Lohardaga, Jharkhand-835302 | Sampling Date        | : 20.11.2024                                     |
|                    |                               | Sample Received Date | : 22.11.2024                                     |
|                    |                               | Type of Sample       | : Drinking Water                                 |
| Mines Status       | : Operational                 | Source of Sample     | : Tap Water                                      |
|                    |                               | Location of Sample   | : Hisri New Mines<br>(Hisri (New) Bauxite Mines) |
| Period of Analysis | : 22.11.2024 to 30.11.2024    | Sampling Procedure   | : ELES/DOC/SMPL/01                               |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.                                 |
|                    |                               | Sample Condition     | : Sealed & Preserved                             |

| Discipline : Chemical                    |       | Group : Water  |                  | Regulatory Limit     |                   |
|--|-------|--|------------------|----------------------|-------------------|
|  |       |  |                  | as per IS 10500:2012 |                   |
| Parameter                                | Unit  | Test Protocol  | Result           | Acceptable Limit     | Permissible Limit |
| pH (at 24.6 °C)                          | -     | APHA 24 <sup>th</sup> Ed.2023, 4500-H <sup>+</sup>                   | 6.65             | 6.5-8.5              | No Relaxation     |
| Turbidity                                | NTU   | APHA 24 <sup>th</sup> Ed.2023, 2130 B                                | 0.92             | 1.0                  | 5.0               |
| Taste                                    | -     | APHA 24 <sup>th</sup> Ed.2023, 2160 C                                | Agreeable        | Agreeable            | Agreeable         |
| Odour                                    | -     | IS 3025 (Part-5) :2018   | Agreeable        | Agreeable            | Agreeable         |
| Colour                                   | Hazen | APHA 24 <sup>th</sup> Ed.2023, 2120B&D                               | 1.8              | 5.0                  | 15                |
| Total Dissolved Solids (TDS)             | mg/L  | APHA 24 <sup>th</sup> Ed.2023, 2540B,C&D                             | 268              | 500                  | 2000              |
| Chloride (as Cl)                         | mg/L  | APHA 24 <sup>th</sup> Ed.2023, 4500 Cl B                             | 6.9              | 250                  | 1000              |
| Fluoride (as F)                          | mg/L  | APHA 24 <sup>th</sup> Ed.2023, 4500 F-D                              | BDL<br>(DL: 0.1) | 1.0                  | 1.5               |
| Total Alkalinity (as CaCO <sub>3</sub> ) | mg/L  | APHA 24 <sup>th</sup> Ed.2023, 2320 B                                | 127              | 200                  | 600               |
| Total Hardness (as CaCO <sub>3</sub> )   | mg/L  | APHA 24 <sup>th</sup> Ed.2023, 2340 C                                | 106              | 200                  | 600               |
| Sulphate (as SO <sub>4</sub> )           | mg/L  | APHA 24 <sup>th</sup> Ed.2023, 4500 SO <sub>4</sub> <sup>2-</sup> -E | BDL<br>(DL: 1.0) | 200                  | 400               |
| Nitrate (as NO <sub>3</sub> )            | mg/L  | APHA 24 <sup>th</sup> Ed.2023, 4500 NO <sub>3</sub> -B               | BDL<br>(DL: 0.5) | 45                   | No Relaxation     |

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# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
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CIN: U74999JH2018PTC011125

### TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2024/6951 | Report Release Date : 30.11.2024 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC135872400004820F         |                                  |

| Discipline : Chemical                                      |      | Group : Water                            |                    | Regulatory Limit<br>as per IS10500:2012 |                   |
|--|------|--|--------------------|---|-------------------|
| Parameter  | Unit | Test Protocol                            | Result             | Acceptable Limit                        | Permissible Limit |
| Phenolic Compound<br>(as C <sub>6</sub> H <sub>5</sub> OH) | mg/L | IS 3025 (Part 43/Sec1): 2022             | BDL<br>(DL: 0.001) | 0.001                                   | 0.002             |
| Free Residual Chlorine<br>(RFC)                            | mg/L | IS 3025 (Part-26): 2021                  | BDL<br>(DL: 0.1)   | 0.2(Min)                                | 1.0(Min)          |
| Calcium (as Ca)  | mg/L | APHA 24 <sup>th</sup> Ed.2023, 3500 Ca B | 29.0               | 75                                      | 200               |
| Anionic Surfactants<br>(as MBAS)                           | mg/L | APHA 24 <sup>th</sup> Ed.2023, 5540-C    | BDL<br>(DL: 0.025) | 0.2                                     | 1.0               |
| Discipline : Chemical                                      |      | Group : Residues in Water                |                    |   |                   |
| Aluminum (as Al)   | mg/L | IS 3025 (Part-55) :2003; RA2019          | BDL<br>(DL: 0.02)  | 0.03                                    | 0.2               |
| Arsenic (as As)  | mg/L | IS 3025 (Part-37): 2022                  | BDL<br>(DL: 0.005) | 0.01                                    | No Relaxation     |
| Boron (as B)   | mg/L | IS 3025 (Part-57) : 2021                 | BDL<br>(DL: 0.2)   | 0.5                                     | 1.0               |
| Cadmium (as Cd)  | mg/L | APHA 24 <sup>th</sup> Ed.2023; 3111B     | BDL<br>(DL: 0.003) | 0.003                                   | No Relaxation     |
| Total Chromium (as Cr)                                     | mg/L | APHA 24 <sup>th</sup> Ed.2023; 3111B     | BDL<br>(DL: 0.03)  | 0.05                                    | No Relaxation     |
| Copper (as Cu)   | mg/L | APHA 24 <sup>th</sup> Ed.2023; 3111B     | BDL<br>(DL: 0.03)  | 0.05                                    | 1.5               |
| Cyanide (as CN)  | mg/L | APHA 24 <sup>th</sup> Ed.2023, 4500 CN-E | BDL<br>(DL: 0.012) | 0.05                                    | No Relaxation     |
| Iron (as Fe)   | mg/L | APHA 24 <sup>th</sup> Ed.2023; 3111B     | 0.078              | 1.0                                     | No Relaxation     |
| Lead (as Pb)   | mg/L | APHA 24 <sup>th</sup> Ed.2023; 3111B     | BDL<br>(DL: 0.01)  | 0.01                                    | No Relaxation     |
| Manganese (as Mn)  | mg/L | APHA 24 <sup>th</sup> Ed.2023; 3111B     | BDL<br>(DL: 0.05)  | 0.1                                     | 0.3               |
| Mercury (as Hg)  | mg/L | IS 3025 (Part-48): 2019                  | BDL<br>(DL: 0.001) | 0.001                                   | No Relaxation     |
| Selenium (as Se)   | mg/L | IS 3025 (Part-56): 2019                  | BDL<br>(DL: 0.01)  | 0.01                                    | No Relaxation     |

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## TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2024/6951 | Report Release Date : 30.11.2024 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC135872400004820F         |                                  |

| Discipline : Chemical                   |      | Group : Residues in Water            |                    | Regulatory Limit<br>as per IS10500:2012 |                   |
|---|------|--------------------------------------|--------------------|---|-------------------|
| Parameter                               | Unit | Test Protocol                        | Result             | Acceptable Limit                        | Permissible Limit |
| Zinc (as Zn)                            | mg/L | APHA 24 <sup>th</sup> Ed.2023; 3111B | BDL<br>(DL: 0.1)   | 5.0                                     | 15                |
| Polynuclear Aromatic Hydrocarbons (PAH) | µg/L | ELES/GC/SOP/04: 2023                 | BDL<br>(DL: 0.05)  | 0.1                                     | No Relaxation     |
| Polychlorinated biphenyls (PCB)         | µg/L | ELES/GC/SOP/03: 2023                 | BDL<br>(DL: 0.1)   | 0.5                                     | No Relaxation     |
| Pesticides                              |      |                                      |                    | Limit                                   |                   |
| Alachlor                                | µg/L | ELES/GC/SOP/01: 2023                 | BDL<br>(DL: 0.5)   | 20                                      |                   |
| Atrazine                                | µg/L | ELES/GC/SOP/01: 2023                 | BDL<br>(DL: 0.5)   | 2.0                                     |                   |
| Butachlor                               | µg/L | ELES/GC/SOP/01: 2023                 | BDL<br>(DL: 0.5)   | 125                                     |                   |
| Chlorpyrifos                            | µg/L | ELES/GC/SOP/01: 2023                 | BDL<br>(DL: 0.5)   | 30                                      |                   |
| Ethion                                  | µg/L | ELES/GC/SOP/01: 2023                 | BDL<br>(DL: 0.5)   | 3.0                                     |                   |
| Malathion                               | µg/L | ELES/GC/SOP/01: 2023                 | BDL<br>(DL: 0.5)   | 190                                     |                   |
| Methyl parathion                        | µg/L | ELES/GC/SOP/01: 2023                 | BDL<br>(DL: 0.1)   | 0.30                                    |                   |
| Monocrotophos                           | µg/L | ELES/GC/SOP/01: 2023                 | BDL<br>(DL: 0.5)   | 1.0                                     |                   |
| Phorate                                 | µg/L | ELES/GC/SOP/01: 2023                 | BDL<br>(DL: 0.5)   | 2.0                                     |                   |
| Phorate Sulphone                        | µg/L | ELES/GC/SOP/01: 2023                 | BDL<br>(DL: 0.5)   | --                                      |                   |
| Dieldrin                                | µg/L | ELES/GC/SOP/02: 2023                 | BDL<br>(DL: 0.01)  | 0.03                                    |                   |
| Alpha HCH                               | µg/L | ELES/GC/SOP/02: 2023                 | BDL<br>(DL: 0.006) | 0.01                                    |                   |
| Beta HCH                                | µg/L | ELES/GC/SOP/02: 2023                 | BDL<br>(DL: 0.02)  | 0.04                                    |                   |





# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
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CIN: U74999JH2018PTC011125

### TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2024/6951 | Report Release Date : 30.11.2024 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC135872400004820F         |                                  |

| Pesticides   |            |                      |                   |                       |
|--|------------|----------------------|-------------------|-----------------------|
| Parameter  | Unit       | Test Protocol        | Result            | Limit                 |
| Delta HCH  | µg/L       | ELES/GC/SOP/02: 2023 | BDL<br>(DL: 0.02) | 0.04                  |
| Gamma HCH (Lindane)                                | µg/L       | ELES/GC/SOP/02: 2023 | BDL<br>(DL: 0.02) | 2.0                   |
| Endosulfan<br>(alpha, beta and sulphate)           | µg/L       | ELES/GC/SOP/02: 2023 | BDL<br>(DL: 0.05) | 0.40                  |
| DDT (o,p and p,p-isomers of<br>DDT) ( DDE and DDD) | µg/L       | ELES/GC/SOP/02: 2023 | BDL<br>(DL: 0.05) | 1.0                   |
| Discipline : Biological                            |            | Group : Water        |                   |                       |
| Total Coliform (Qualitative)                       | Per 100 mL | IS 15185: 2021       | Not<br>Detected   | Shall not be detected |
| Escherichia coli (Qualitative)                     | Per 100 mL | IS 15185: 2021       | Not<br>Detected   |                       |

Reviewed by  
Akash Kumar  
Quality Manager

\*\*\*\*End of Report\*\*\*\*

Authorised Signatory  
Dr. Deependra Kumar Sinha  
Ph. D. Environmental Engg.  
Technical Manager

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# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
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## TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2024/6951 | Report Release Date : 30.11.2024 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |  |
|--------------------|-------------------------------|----------------------|--|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2024/DW/8103                          |
| Address            | : Lohardaga, Jharkhand-835302 | Sampling Date        | : 20.11.2024                                     |
|                    |                               | Sample Received Date | : 22.11.2024                                     |
|                    |                               | Type of Sample       | : Drinking Water                                 |
| Mines Status       | : Operational                 | Source of Sample     | : Tap Water                                      |
|                    |                               | Location of Sample   | : Hisri New Mines<br>(Hisri (New) Bauxite Mines) |
| Period of Analysis | : 22.11.2024 to 30.11.2024    | Sampling Procedure   | : ELES/DOC/SMPL/01                               |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.                                 |
|                    |                               | Sample Condition     | : Sealed & Preserved                             |

| Discipline : Chemical |      | Group : Water   |                   | Regulatory Limit<br>as per IS 10500:2012 |                   |
|-----------------------|------|---|-------------------|--|-------------------|
| Parameter             | Unit | Test Protocol   | Result            | Acceptable Limit                         | Permissible Limit |
| Mineral Oil*          | mg/L | IS 3025 (Part-39): 2021,<br>Clause 6 Infrared Spectroscopic method. | BDL<br>(DL: 0.01) | 0.5                                      | No Relaxation     |

Remarks: (\*) Parameters are outsourced to other Lab.

Reviewed by  
**Akash Kumar**  
Quality Manager

\*\*\*\*End of Report\*\*\*\*

Authorised Signatory  
**Dr. Deependra Kumar Sinha**  
Ph. D. Environmental Engg.  
Technical Manager



**ENVIRONMENTAL LABORATORIES & ENGINEERING  
SERVICES PVT. LTD.**

Plot No.30, Mansarovar Enclave, Tupudana, Hatia, Ranchi-834003,  
Jharkhand.

**Hisri (New) Bauxite Mine-Environmental Monitoring Report**

**December 2024**



## CONTENT

| Hindaleo Industries : Hisri (New) Bauxite Mine Environmental Monitoring |   | December 2024 |
|---|---|---------------|
| Hisri (New) Bauxite Mine  |   |               |
| AMBIENT AIR QUALITY- CORE ZONE  |   |               |
| 1   | Near Water Pump                         |               |
| 2   | Near Old Rest Shelter                   |               |
| 3   | Near Old Plantation (North West Corner) |               |
| 4   | Hisri New (Southern Area)               |               |
| AMBIENT AIR QUALITY- BUFFER ZONE  |   |               |
| 1   | Near Daldaliya Village                  |               |
| 2   | Aditya School Gangupara                 |               |
| 3   | Ropeway unloading station               |               |
| 4   | Ropeway Angle Station                   |               |







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### TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2024/7586 | Report Release Date : 23.12.2024 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC135872400005440F         |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |   |
|--------------------|-------------------------------|----------------------|---|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2024/AA/8873                               |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Near Water Pump; Hisri (New) Bauxite Mine (14.55ha) |
|                    |                               | Sampling Date        | : 13.12.2024 to 14.12.2024                            |
| Mines Status       | : Operational                 | Sample Received Date | : 16.12.2024  |
|                    |                               | Type of Sample       | : Ambient Air   |
| Period of Analysis | : 16.12.2024 to 23.12.2024    | Sampling Procedure   | : ELES/DOC/SMPL/02                                    |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.                                      |
|                    |                               | Sample Condition     | : Sealed & Preserved                                  |

| METEOROLOGICAL INFORMATION |                               |  |   |                                  |  |
|----------------------------|-------------------------------|--|---|----------------------------------|--|
| 1                          | Average Temperature (°C) : 20 |  | 2 | Barometric Pressure (mmHg) : 728 |  |
| 3                          | Relative Humidity (%) : 47    |  | 4 | Weather Condition : Clear        |  |

| Discipline : Chemical                    |                   | Group : Atmospheric Pollution             |        |                  |
|--|-------------------|---|--------|------------------|
| Parameter                                | Unit              | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022                  | 67     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019                  | 33     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec1): 2023              | 9.2    | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                   | 24.8   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019<br>(NDIR Method) | <1.0   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019                  | <0.002 | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                      | <2.5   | 05(Annual)       |
| Benzo-(a)-Pyrene                         | ng/m <sup>3</sup> | ELES/GC/SOP/05: 2023                      | <0.5   | 01(Annual)       |

  
Reviewed by  
**Akash Kumar**  
Quality Manager

\*\*\*\*End of Report\*\*\*\*

  
Dr. **Dipendra Kumar Sinha**  
Ph. D. Environmental Engg.  
Technical Manager

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# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
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### TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2024/7587 | Report Release Date : 23.12.2024 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC135872400005441F         |                                  |


| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |   |
|--------------------|-------------------------------|----------------------|---|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2024/AA/8874                                     |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Near Old Rest Shelter; Hisri (New) Bauxite Mine (14.55ha) |
|                    |                               | Sampling Date        | : 13.12.2024 to 14.12.2024                                  |
| Mines Status       | : Operational                 | Sample Received Date | : 16.12.2024  |
|                    |                               | Type of Sample       | : Ambient Air   |
| Period of Analysis | : 16.12.2024 to 23.12.2024    | Sampling Procedure   | : ELES/DOC/SMPL/02  |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.  |
|                    |                               | Sample Condition     | : Sealed & Preserved  |

| METEOROLOGICAL INFORMATION |                          |      |   |                            |         |
|----------------------------|--------------------------|------|---|----------------------------|---------|
| 1                          | Average Temperature (°C) | : 20 | 2 | Barometric Pressure (mmHg) | : 728   |
| 3                          | Relative Humidity (%)    | : 47 | 4 | Weather Condition          | : Clear |

| Discipline : Chemical                    |                   | Group : Atmospheric Pollution             |        |                  |
|--|-------------------|---|--------|------------------|
| Parameter                                | Unit              | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022                  | 78     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019                  | 46     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec1): 2023              | 14.4   | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                   | 27.2   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019<br>(NDIR Method) | <1.0   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019                  | 0.022  | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                      | <2.5   | 05(Annual)       |
| Benzo-(a)-Pyrene                         | ng/m <sup>3</sup> | ELES/GC/SOP/05: 2023                      | <0.5   | 01(Annual)       |

  
Reviewed by  
Akash Kumar  
Quality Manager

\*\*\*\*End of Report\*\*\*\*

  
Authorised Signatory  
Dr. Deependra Kumar Sinha  
Ph. D. Environmental Engg.  
Technical Manager

Page 1 of 1

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# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
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### TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2024/7588 | Report Release Date : 23.12.2024 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC135872400005442F         |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |  |
|--------------------|-------------------------------|----------------------|--|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2024/AA/8875                                  |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Near Old Plantation<br>(North West Corner) Hisri (New) |
|                    |                               | Sampling Date        | : 13.12.2024 to 14.12.2024                               |
| Mines Status       | : Operational                 | Sample Received Date | : 16.12.2024   |
| Period of Analysis | : 16.12.2024 to 23.12.2024    | Type of Sample       | : Ambient Air  |
|                    |                               | Sampling Procedure   | : ELES/DOC/SMPL/02                                       |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.   |
|                    |                               | Sample Condition     | : Sealed & Preserved                                     |

### METEOROLOGICAL INFORMATION

|   |                               |   |                                  |
|---|-------------------------------|---|----------------------------------|
| 1 | Average Temperature (°C) : 20 | 2 | Barometric Pressure (mmHg) : 728 |
| 3 | Relative Humidity (%) : 47    | 4 | Weather Condition : Clear        |

| Discipline : Chemical                    |                   | Group : Atmospheric Pollution             |        |                  |
|--|-------------------|---|--------|------------------|
| Parameter                                | Unit              | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022                  | 67     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019                  | 33     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec I): 2023             | 9.1    | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                   | 22.5   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019<br>(NDIR Method) | 1.12   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019                  | 0.018  | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                      | <2.5   | 05(Annual)       |
| Benzo-(a)-Pyrene                         | ng/m <sup>3</sup> | ELES/GC/SOP/05: 2023                      | <0.5   | 01(Annual)       |

Reviewed by  
**Akash Kumar**  
Quality Manager

\*\*\*\*End of Report\*\*\*\*

Authorised Signatory  
**Dr. Deependra Kumar Sinha**  
Ph. D. Environmental Engrg.

Technical Manager

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# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
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### TEST REPORT

|                 |                      |                     |              |
|-----------------|----------------------|---------------------|--------------|
| Test Report No. | : ELES/RNC/2024/7589 | Report Release Date | : 23.12.2024 |
| Work Order No.  | : 13612312113        | Work Order Date     | : 28.03.2024 |
| ULR No.         | : TC135872400005443F |                     |              |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |  |
|--------------------|-------------------------------|----------------------|--|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2024/AA/8876  |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Hisri New (Southern Area)<br>Hisri (New) Bauxite Mine(14.55ha) |
|                    |                               | Sampling Date        | : 13.12.2024 to 14.12.2024                                       |
| Mines Status       | : Operational                 | Sample Received Date | : 16.12.2024   |
| Period of Analysis | : 16.12.2024 to 23.12.2024    | Type of Sample       | : Ambient Air  |
|                    |                               | Sampling Procedure   | : ELES/DOC/SMPL/02   |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.   |
|                    |                               | Sample Condition     | : Sealed & Preserved   |

| METEOROLOGICAL INFORMATION |                          |      |   |                            |         |
|----------------------------|--------------------------|------|---|----------------------------|---------|
| 1                          | Average Temperature (°C) | : 20 | 2 | Barometric Pressure (mmHg) | : 728   |
| 3                          | Relative Humidity (%)    | : 47 | 4 | Weather Condition          | : Clear |

| Discipline : Chemical                    |                   | Group : Atmospheric Pollution             |        |                  |
|--|-------------------|---|--------|------------------|
| Parameter                                | Unit              | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022                  | 73     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019                  | 42     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec1): 2023              | 12.8   | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                   | 24.3   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019<br>(NDIR Method) | 1.13   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019                  | 0.024  | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                      | <2.5   | 05(Annual)       |
| Benzo-(a)-Pyrene                         | ng/m <sup>3</sup> | ELES/GC/SOP/05: 2023                      | <0.5   | 01(Annual)       |

  
Reviewed by  
Akash Kumar  
Quality Manager

\*\*\*\*End of Report\*\*\*\*

  
Authorised Signatory  
Dr. Deependra Kumar Sinha  
Ph. D. Environmental Engg.  
Technical Manager

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# ENVIRONMENTAL LABORATORIES &

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## TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2024/7523 | Report Release Date : 21.12.2024 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC135872400005378F         |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |  |
|--------------------|-------------------------------|----------------------|--|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2024/AA/8827                                  |
|                    |                               | Location             | : Near Daldaliya Village<br>Bagru Bauxite Mine (75.41ha) |
| Address            | : Lohardaga, Jharkhand-835302 | Sampling Date        | : 12.12.2024 to 13.12.2024                               |
|                    |                               | Sample Received Date | : 14.12.2024   |
| Mines Status       | : Non Operational             | Type of Sample       | : Ambient Air  |
|                    |                               | Sampling Procedure   | : ELES/DOC/SMPL/02                                       |
| Period of Analysis | : 14.12.2024 to 21.12.2024    | Sampling Done By     | : ELES Pvt. Ltd.   |
|                    |                               | Sample Condition     | : Sealed & Preserved                                     |

| METEOROLOGICAL INFORMATION |                          |      |   |                            |         |
|----------------------------|--------------------------|------|---|----------------------------|---------|
| 1                          | Average Temperature (°C) | : 19 | 2 | Barometric Pressure (mmHg) | : 728   |
| 3                          | Relative Humidity (%)    | : 47 | 4 | Weather Condition          | : Clear |

| Discipline : Chemical               |                          | Group : Atmospheric Pollution             |        |                  |
|-------------------------------------|--------------------------|---|--------|------------------|
| Parameter                           | Unit                     | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)           | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 23): 2022                  | 66     | 100 (24hrs)      |
| Particulate Matter (PM2.5)          | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 24): 2019                  | 34     | 60 (24hrs)       |
| Sulphur Di-Oxide ( $\text{SO}_2$ )  | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 2/Sec I): 2023             | 10.2   | 80 (24hrs)       |
| Nitrogen Di-Oxide ( $\text{NO}_2$ ) | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 6): 2022                   | 22.8   | 80 (24hrs)       |
| Ozone ( $\text{O}_3$ )              | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia ( $\text{NH}_3$ )           | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                | $\text{mg}/\text{m}^3$   | IS 5182 (Part- 10): 2019<br>(NDIR Method) | <1.0   | 2 (8hrs)         |
| Lead (Pb)                           | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 22): 2019                  | 0.011  | 1 (24hrs)        |
| Nickel (Ni)                         | $\text{ng}/\text{m}^3$   | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                        | $\text{ng}/\text{m}^3$   | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene ( $\text{C}_6\text{H}_6$ )  | $\mu\text{g}/\text{m}^3$ | ELES/GC/SOP/06: 2023                      | <2.5   | 05 (Annual)      |
| Benzo-(a)-Pyrene                    | $\text{ng}/\text{m}^3$   | ELES/GC/SOP/05: 2023                      | <0.5   | 01 (Annual)      |

  
Reviewed by  
Akash Kumar  
Quality Manager

\*\*\*\*End of Report\*\*\*\*

  
Authorised Signatory  
Dr. Deependra Kumar Sinha  
Ph. D. Environmental Engg.  
Technical Manager

Page 1 of 1

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# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
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## TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2024/7524 | Report Release Date : 21.12.2024 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC135872400005379F         |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |   |
|--------------------|-------------------------------|----------------------|---|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2024/AA/8828                                   |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Aditya School Gangupara<br>Bagru Bauxite Mine (75.41ha) |
|                    |                               | Sampling Date        | : 12.12.2024 to 13.12.2024                                |
| Mines Status       | : Non Operational             | Sample Received Date | : 14.12.2024  |
|                    |                               | Type of Sample       | : Ambient Air   |
| Period of Analysis | : 14.12.2024 to 21.12.2024    | Sampling Procedure   | : ELES/DOC/SMPL/02  |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.  |
|                    |                               | Sample Condition     | : Sealed & Preserved                                      |

## METEOROLOGICAL INFORMATION

|   |                               |   |                                  |
|---|-------------------------------|---|----------------------------------|
| 1 | Average Temperature (°C) : 19 | 2 | Barometric Pressure (mmHg) : 728 |
| 3 | Relative Humidity (%) : 47    | 4 | Weather Condition : Clear        |

| Discipline : Chemical                    |                   | Group : Atmospheric Pollution             |        |                  |
|--|-------------------|---|--------|------------------|
| Parameter                                | Unit              | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022                  | 62     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019                  | 30     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec1): 2023              | 11.5   | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                   | 20.8   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019<br>(NDIR Method) | 1.09   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019                  | 0.011  | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                      | <2.5   | 05 (Annual)      |
| Benzo-(a)-Pyrene                         | ng/m <sup>3</sup> | ELES/GC/SOP/05: 2023                      | <0.5   | 01 (Annual)      |

Reviewed by  
Akash Kumar  
Quality Manager

\*\*\*\*End of Report\*\*\*\*

Authorized Signatory  
Dr. Deependra Kumar Sinha  
Ph. D. Environmental Engg.

Technical Manager





# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
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Website : www.elespl.co.in



## TEST REPORT

|                 |                      |                     |              |
|-----------------|----------------------|---------------------|--------------|
| Test Report No. | : ELES/RNC/2024/7526 | Report Release Date | : 21.12.2024 |
| Work Order No.  | : 13612312113        | Work Order Date     | : 28.03.2024 |
| ULR No.         | : TC135872400005381F |                     |              |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |  |
|--------------------|-------------------------------|----------------------|--|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2024/AA/8830                                  |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Ropeway Angle Station<br>Bagru Bauxite Mine (75.41 ha) |
|                    |                               | Sampling Date        | : 11.12.2024 to 12.12.2024                               |
| Mines Status       | : Non Operational             | Sample Received Date | : 14.12.2024   |
|                    |                               | Type of Sample       | : Ambient Air  |
| Period of Analysis | : 14.12.2024 to 21.12.2024    | Sampling Procedure   | : ELES/DOC/SMPL/02                                       |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.   |
|                    |                               | Sample Condition     | : Sealed & Preserved                                     |

## METEOROLOGICAL INFORMATION

|   |                          |      |   |                            |         |
|---|--------------------------|------|---|----------------------------|---------|
| 1 | Average Temperature (°C) | : 18 | 2 | Barometric Pressure (mmHg) | : 728   |
| 3 | Relative Humidity (%)    | : 45 | 4 | Weather Condition          | : Clear |

| Discipline : Chemical               |                          | Group : Atmospheric Pollution             |        |                  |
|-------------------------------------|--------------------------|---|--------|------------------|
| Parameter                           | Unit                     | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)           | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 23): 2022                  | 70     | 100 (24hrs)      |
| Particulate Matter (PM2.5)          | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 24): 2019                  | 38     | 60 (24hrs)       |
| Sulphur Di-Oxide ( $\text{SO}_2$ )  | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 2/Sec1): 2023              | 15.1   | 80 (24hrs)       |
| Nitrogen Di-Oxide ( $\text{NO}_2$ ) | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 6): 2022                   | 27.4   | 80 (24hrs)       |
| Ozone ( $\text{O}_3$ )              | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia ( $\text{NH}_3$ )           | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                | $\text{mg}/\text{m}^3$   | IS 5182 (Part- 10): 2019<br>(NDIR Method) | 1.12   | 2 (8hrs)         |
| Lead (Pb)                           | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 22): 2019                  | 0.016  | 1 (24hrs)        |
| Nickel (Ni)                         | $\text{ng}/\text{m}^3$   | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                        | $\text{ng}/\text{m}^3$   | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene ( $\text{C}_6\text{H}_6$ )  | $\mu\text{g}/\text{m}^3$ | ELES/GC/SOP/06: 2023                      | <2.5   | 05 (Annual)      |
| Benzo-(a)-Pyrene                    | $\text{ng}/\text{m}^3$   | ELES/GC/SOP/05: 2023                      | <0.5   | 01 (Annual)      |



Reviewed by  
Akash Kumar  
Quality Manager

\*\*\*\*End of Report\*\*\*\*



Authorised Signatory  
Dr. Deependra Kumar Sinha  
Ph. D. Environmental Engg.  
Technical Manager

Page 1 of 1

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Phone no.: 0651-2290103  
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## TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2024/7525 | Report Release Date : 21.12.2024 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC135872400005380F         |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |   |
|--------------------|-------------------------------|----------------------|---|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2024/AA/8829                                     |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Ropeway Unloading Station<br>Bagru Bauxite Mine (75.41ha) |
|                    |                               | Sampling Date        | : 11.12.2024 to 12.12.2024                                  |
| Mines Status       | : Non Operational             | Sample Received Date | : 14.12.2024  |
|                    |                               | Type of Sample       | : Ambient Air   |
| Period of Analysis | : 14.12.2024 to 21.12.2024    | Sampling Procedure   | : ELES/DOC/SMPL/02  |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.  |
|                    |                               | Sample Condition     | : Sealed & Preserved  |

| METEOROLOGICAL INFORMATION |                          |      |   |                            |         |
|----------------------------|--------------------------|------|---|----------------------------|---------|
| 1                          | Average Temperature (°C) | : 18 | 2 | Barometric Pressure (mmHg) | : 728   |
| 3                          | Relative Humidity (%)    | : 45 | 4 | Weather Condition          | : Clear |

| Discipline : Chemical                    |                   | Group : Atmospheric Pollution             |        |                  |
|--|-------------------|---|--------|------------------|
| Parameter                                | Unit              | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022                  | 73     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019                  | 41     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec1): 2023              | 12.8   | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                   | 24.3   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019<br>(NDIR Method) | <1.0   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019                  | 0.016  | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                      | <2.5   | 05 (Annual)      |
| Benzo-(a)-Pyrene                         | ng/m <sup>3</sup> | ELES/GC/SOP/05: 2023                      | <0.5   | 01 (Annual)      |

  
Reviewed by  
Arun Kumar  
Quality Manager

\*\*\*\*End of Report\*\*\*\*

  
Authorised Signatory  
Dr. Deependra Kumar Sinha  
Ph. D. Environmental Engg.  
Technical Manager

Page 1 of 1

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**ENVIRONMENTAL LABORATORIES & ENGINEERING  
SERVICES PVT. LTD.**

Plot No.30, Mansarovar Enclave, Tupudana, Hatia, Ranchi-834003,  
Jharkhand.

**Hisri (New) Bauxite Mine-Environmental Monitoring Report**

**January- 2025**



## CONTENT

| Hindalco Industries : Hisri (New) Bauxite Mine Environmental Monitoring |   | January 2025 |
|---|---|--------------|
| Hisri (New) Bauxite Mine  |   |              |
|   | <b>AMBIENT AIR QUALITY- CORE ZONE</b>   |              |
| 1   | Near Water Pump                         |              |
| 2   | Near Old Rest Shelter                   |              |
| 3   | Near Old Plantation (North West Corner) |              |
| 4   | Hisri New (Southern Area)               |              |
|   | <b>AMBIENT AIR QUALITY- BUFFER ZONE</b> |              |
| 1   | Near Daldaliya Village                  |              |
| 2   | Aditya School Gangupara                 |              |
| 3   | Ropeway unloading station               |              |
| 4   | Ropeway Angle Station                   |              |
|   | <b>Surface Water</b>                    |              |
|   | <b>Soil</b>                             |              |





### TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2025/0400 | Report Release Date : 18.01.2025 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC1358725000000392F        |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |   |
|--------------------|-------------------------------|----------------------|---|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2025/AA/0227                               |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Near Water Pump; Hisri (New) Bauxite Mine (14.55ha) |
| Mines Status       | : Operational                 | Sampling Date        | : 08.01.2025 to 09.01.2025                            |
| Period of Analysis | : 11.01.2025 to 18.01.2025    | Sample Received Date | : 11.01.2025  |
|                    |                               | Type of Sample       | : Ambient Air   |
|                    |                               | Sampling Procedure   | : ELES/DOC/SMPL/02                                    |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.                                      |
|                    |                               | Sample Condition     | : Sealed & Preserved                                  |

### METEOROLOGICAL INFORMATION

|   |                          |      |   |                            |         |
|---|--------------------------|------|---|----------------------------|---------|
| 1 | Average Temperature (°C) | : 17 | 2 | Barometric Pressure (mmHg) | : 728   |
| 3 | Relative Humidity (%)    | : 54 | 4 | Weather Condition          | : Clear |

| Discipline : Chemical                    |                   | Group : Atmospheric Pollution          |        |                  |
|--|-------------------|--|--------|------------------|
| Parameter                                | Unit              | Test Protocol                          | Result | Regulatory Limit |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022               | 69     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019               | 28     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec1): 2023           | 11.5   | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                | 27.2   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018               | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019 (NDIR Method) | <1.0   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019               | <0.002 | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020               | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                  | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                   | <2.5   | 05 (Annual)      |
| Benzo-(a)-Pyrene                         | ng/m <sup>3</sup> | ELES/GC/SOP/05: 2023                   | <0.5   | 01 (Annual)      |

*Akash Kumar*

Reviewed by  
**Akash Kumar**  
Quality Manager

\*\*\*\*End of Report\*\*\*\*

*Dr. Deependra Kumar Sinha*

Authorised Signatory  
**Dr. Deependra Kumar Sinha**  
Ph. D. Environmental Engg.  
Technical Manager





# ENVIRONMENTAL LABORATORIES &

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## TEST REPORT

|                 |                       |                     |              |
|-----------------|-----------------------|---------------------|--------------|
| Test Report No. | : ELES/RNC/2025/0401  | Report Release Date | : 18.01.2025 |
| Work Order No.  | : 13612312113         | Work Order Date     | : 28.03.2024 |
| ULR No.         | : TC1358725000000393F |                     |              |


| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |   |
|--------------------|-------------------------------|----------------------|---|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2025/AA/0228                                     |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Near Old Rest Shelter; Hisri (New) Bauxite Mine (14.55ha) |
|                    |                               | Sampling Date        | : 08.01.2025 to 09.01.2025                                  |
| Mines Status       | : Operational                 | Sample Received Date | : 11.01.2025  |
|                    |                               | Type of Sample       | : Ambient Air   |
| Period of Analysis | : 11.01.2025 to 18.01.2025    | Sampling Procedure   | : ELES/DOC/SMPL/02  |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.  |
|                    |                               | Sample Condition     | : Sealed & Preserved  |

| METEOROLOGICAL INFORMATION |                          |      |   |                            |         |
|----------------------------|--------------------------|------|---|----------------------------|---------|
| 1                          | Average Temperature (°C) | : 17 | 2 | Barometric Pressure (mmHg) | : 728   |
| 3                          | Relative Humidity (%)    | : 54 | 4 | Weather Condition          | : Clear |

| Discipline : Chemical      |       | Group : Atmospheric Pollution             |        |                  |
|----------------------------|-------|---|--------|------------------|
| Parameter                  | Unit  | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)  | µg/m³ | IS 5182 (Part- 23): 2022                  | 73     | 100 (24hrs)      |
| Particulate Matter (PM2.5) | µg/m³ | IS 5182 (Part- 24): 2019                  | 41     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO₂)     | µg/m³ | IS 5182 (Part- 2/Sec1): 2023              | 11.8   | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO₂)    | µg/m³ | IS 5182 (Part- 6): 2022                   | 29.2   | 80 (24hrs)       |
| Ozone (O₃)                 | µg/m³ | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH₃)              | µg/m³ | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)       | mg/m³ | IS 5182 (Part- 10): 2019<br>(NDIR Method) | <1.0   | 2 (8hrs)         |
| Lead (Pb)                  | µg/m³ | IS 5182 (Part- 22): 2019                  | 0.028  | 1 (24hrs)        |
| Nickel (Ni)                | ng/m³ | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)               | ng/m³ | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C₆H₆)             | µg/m³ | ELES/GC/SOP/06: 2023                      | <2.5   | 05(Annual)       |
| Benzo-(a)-Pyrene           | ng/m³ | ELES/GC/SOP/05: 2023                      | <0.5   | 01(Annual)       |

  
Reviewed by  
Akash Kumar  
Quality Manager

\*\*\*\*End of Report\*\*\*\*

  
Authorised Signatory  
Dr. Deependra Kumar Sinha  
Ph. D. Environmental Engg.  
Technical Manager

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# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAECE9713D124

ENGINEERING SERVICES PVT. LTD.

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TC-13887

## TEST REPORT

|                 |                       |                     |              |
|-----------------|-----------------------|---------------------|--------------|
| Test Report No. | : ELES/RNC/2025/0402  | Report Release Date | : 18.01.2025 |
| Work Order No.  | : 13612312113         | Work Order Date     | : 28.03.2024 |
| ULR No.         | : TC1358725000000394F |                     |              |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |  |
|--------------------|-------------------------------|----------------------|--|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2025/AA/0229                                  |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Near Old Plantation<br>(North West Corner) Hisri (New) |
|                    |                               | Sampling Date        | : 08.01.2025 to 09.01.2025                               |
| Mines Status       | : Operational                 | Sample Received Date | : 11.01.2025   |
| Period of Analysis | : 11.01.2025 to 18.01.2025    | Type of Sample       | : Ambient Air  |
|                    |                               | Sampling Procedure   | : ELES/DOC/SMPL/02                                       |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.   |
|                    |                               | Sample Condition     | : Sealed & Preserved                                     |

## METEOROLOGICAL INFORMATION

|   |                          |      |   |                            |         |
|---|--------------------------|------|---|----------------------------|---------|
| 1 | Average Temperature (°C) | : 17 | 2 | Barometric Pressure (mmHg) | : 728   |
| 3 | Relative Humidity (%)    | : 54 | 4 | Weather Condition          | : Clear |

| Discipline : Chemical                    |                          | Group : Atmospheric Pollution            |        |                  |
|--|--------------------------|--|--------|------------------|
| Parameter                                | Unit                     | Test Protocol                            | Result | Regulatory Limit |
| Particulate Matter (PM10)                | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 23): 2022                 | 71     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 24): 2019                 | 30     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 2/Sec1): 2023             | 11.6   | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 6): 2022                  | 24.3   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 9): 2019                  | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 25): 2018                 | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | $\text{mg}/\text{m}^3$   | IS 5182 (Part-10): 2019<br>(NDIR Method) | 1.36   | 2 (8hrs)         |
| Lead (Pb)                                | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 22): 2019                 | 0.024  | 1 (24hrs)        |
| Nickel (Ni)                              | $\text{ng}/\text{m}^3$   | IS 5182 (Part- 26): 2020                 | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | $\text{ng}/\text{m}^3$   | ELES/AIR/SOP/01: 2021                    | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | $\mu\text{g}/\text{m}^3$ | ELES/GC/SOP/06: 2023                     | <2.5   | 05 (Annual)      |
| Benzo-(a)-Pyrene                         | $\text{ng}/\text{m}^3$   | ELES/GC/SOP/05: 2023                     | <0.5   | 01 (Annual)      |



Reviewed by  
Akash Kumar  
Quality Manager

\*\*\*\*End of Report\*\*\*\*



Authorised Signatory  
Dr. Deependra Kumar Sinha  
Ph. D. Environmental Engg.

Technical Manager

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### TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2025/0403 | Report Release Date : 18.01.2025 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC1358725000000395F        |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |  |
|--------------------|-------------------------------|----------------------|--|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2025/AA/0230  |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Hisri New (Southern Area)<br>Hisri (New) Bauxite Mine(14.55ha) |
|                    |                               | Sampling Date        | : 08.01.2025 to 09.01.2025                                       |
| Mines Status       | : Operational                 | Sample Received Date | : 11.01.2025   |
| Period of Analysis | : 11.01.2025 to 18.01.2025    | Type of Sample       | : Ambient Air  |
|                    |                               | Sampling Procedure   | : ELES/DOC/SMPL/02   |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.   |
|                    |                               | Sample Condition     | : Sealed & Preserved   |

### METEOROLOGICAL INFORMATION

|   |                               |   |                                  |
|---|-------------------------------|---|----------------------------------|
| 1 | Average Temperature (°C) : 17 | 2 | Barometric Pressure (mmHg) : 728 |
| 3 | Relative Humidity (%) : 54    | 4 | Weather Condition : Clear        |

| Discipline : Chemical                    |                   | Group : Atmospheric Pollution             |        |                  |
|--|-------------------|---|--------|------------------|
| Parameter                                | Unit              | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022                  | 78     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019                  | 47     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec1): 2023              | 14.4   | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                   | 28.1   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019<br>(NDIR Method) | 1.24   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019                  | 0.031  | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                      | <2.5   | 05(Annual)       |
| Benzo-(a)-Pyrene                         | ng/m <sup>3</sup> | ELES/GC/SOP/05: 2023                      | <0.5   | 01(Annual)       |



Reviewed by  
Akash Kumar  
Quality Manager

\*\*\*\*End of Report\*\*\*\*



Authorised Signatory  
Dr. Deependra Kumar Sinha  
Ph. D. Environmental Engng.

Technical Manager

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# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
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Website: www.elespl.co.in



ICH: U74999JH2018PTC011125

## TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2025/0319 | Report Release Date : 15.01.2025 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC1358725000000311F        |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |  |
|--------------------|-------------------------------|----------------------|--|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2025/AA/0122                                  |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Near Daidaliya Village<br>Bagru Bauxite Mine (75.41ha) |
| Mines Status       | : Non Operational             | Sampling Date        | : 06.01.2025 to 07.01.2025                               |
| Period of Analysis | : 09.01.2025 to 15.01.2025    | Sample Received Date | : 09.01.2025   |
|                    |                               | Type of Sample       | : Ambient Air  |
|                    |                               | Sampling Procedure   | : ELES/DOC/SMPL/02                                       |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.   |
|                    |                               | Sample Condition     | : Sealed & Preserved                                     |

## METEOROLOGICAL INFORMATION

|   |                               |   |                                  |
|---|-------------------------------|---|----------------------------------|
| 1 | Average Temperature (°C) : 19 | 2 | Barometric Pressure (mmHg) : 727 |
| 3 | Relative Humidity (%) : 57    | 4 | Weather Condition : Clear        |

| Discipline : Chemical                    |                   | Group : Atmospheric Pollution             |        |                  |
|--|-------------------|---|--------|------------------|
| Parameter                                | Unit              | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022                  | 71     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019                  | 39     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec1): 2023              | 12.6   | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                   | 25.3   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019<br>(NDIR Method) | <1.0   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019                  | 0.014  | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                      | <2.5   | 05 (Annual)      |
| Benzo-(a)-Pyrene                         | ng/m <sup>3</sup> | ELES/GC/SOP/05: 2023                      | <0.5   | 01 (Annual)      |

Reviewed by  
Akash Kumar  
Quality Manager

\*\*\*\*End of Report\*\*\*\*

Authorized Signatory  
Dr. Deependra Kumar Sinha  
Ph. D. Environmental Engg.

Technical Manager

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CIN: U74999JH2018PTC011125

# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
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TC-43587

## TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2025/0320 | Report Release Date : 15.01.2025 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC1358725000000312F        |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |  |
|--------------------|-------------------------------|----------------------|--|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2025/AA/0123                                |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Aditya School Gangupara Bagru Bauxite Mine (75.41ha) |
|                    |                               | Sampling Date        | : 06.01.2025 to 07.01.2025                             |
| Mines Status       | : Non Operational             | Sample Received Date | : 09.01.2025   |
|                    |                               | Type of Sample       | : Ambient Air  |
| Period of Analysis | : 09.01.2025 to 15.01.2025    | Sampling Procedure   | : ELES/DOC/SMPL/02                                     |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.                                       |
|                    |                               | Sample Condition     | : Sealed & Preserved                                   |

## METEOROLOGICAL INFORMATION

|   |                               |   |                                  |
|---|-------------------------------|---|----------------------------------|
| 1 | Average Temperature (°C) : 19 | 2 | Barometric Pressure (mmHg) : 727 |
| 3 | Relative Humidity (%) : 57    | 4 | Weather Condition : Clear        |

Discipline : Chemical

Group : Atmospheric Pollution

| Parameter                                | Unit                     | Test Protocol                             | Result | Regulatory Limit |
|--|--------------------------|---|--------|------------------|
| Particulate Matter (PM10)                | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 23): 2022                  | 67     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 24): 2019                  | 35     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 2/Sec1): 2023              | 13.1   | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 6): 2022                   | 24.4   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | $\text{mg}/\text{m}^3$   | IS 5182 (Part- 10): 2019<br>(NDIR Method) | 1.15   | 2 (8hrs)         |
| Lead (Pb)                                | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 22): 2019                  | 0.018  | 1 (24hrs)        |
| Nickel (Ni)                              | $\text{ng}/\text{m}^3$   | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | $\text{ng}/\text{m}^3$   | ELES/AIR/SOP/01: 2021                     | <3.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | $\mu\text{g}/\text{m}^3$ | ELES/GC/SOP/06: 2023                      | <2.5   | 05(Annual)       |
| Benzo-(a)-Pyrene                         | $\text{ng}/\text{m}^3$   | ELES/GC/SOP/05: 2023                      | <0.5   | 01(Annual)       |

*[Signature]*

Reviewed by

Aakash Kumar

Quality Manager

\*\*\*\*End of Report\*\*\*\*

*[Signature]*

Authorized Signatory  
Dr. Deependra Kumar Sinha  
Ph. D. Environmental Engg.

Technical Manager

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### TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2025/0321 | Report Release Date : 15.01.2025 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC1358725000000313F        |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |  |
|--------------------|-------------------------------|----------------------|--|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2025/AA/0124                                      |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Ropeway Unloading Station<br>Bagru Bauxite Mine (75.41 ha) |
| Mines Status       | : Non Operational             | Sampling Date        | : 06.01.2025 to 07.01.2025                                   |
| Period of Analysis | : 09.01.2025 to 15.01.2025    | Sample Received Date | : 09.01.2025   |
|                    |                               | Type of Sample       | : Ambient Air  |
|                    |                               | Sampling Procedure   | : ELES/DOC/SMPL/02   |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.   |
|                    |                               | Sample Condition     | : Sealed & Preserved   |

### METEOROLOGICAL INFORMATION

|   |                               |   |                                  |
|---|-------------------------------|---|----------------------------------|
| 1 | Average Temperature (°C) : 19 | 2 | Barometric Pressure (mmHg) : 727 |
| 3 | Relative Humidity (%) : 57    | 4 | Weather Condition : Clear        |

| Discipline : Chemical                    |                   | Group : Atmospheric Pollution             |        |                  |
|--|-------------------|---|--------|------------------|
| Parameter                                | Unit              | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022                  | 78     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019                  | 45     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec1): 2023              | 13.4   | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                   | 25.1   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019<br>(NDIR Method) | <1.0   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019                  | 0.019  | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                      | <2.5   | 05(Annual)       |
| Benzo-(a)-Pyrene                         | ng/m <sup>3</sup> | ELES/GC/SOP/05: 2023                      | <0.5   | 01(Annual)       |



Reviewed by  
**Akash Kumar**  
Quality Manager

\*\*\*\*End of Report\*\*\*\*



Authorized Signatory  
**Dr. Deependra Kumar Sinha**  
Ph. D. Environmental Engg.





CIN: U74999JH2018PTC011125

# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAECE97130124

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Phone no.: 0651-2290103  
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## TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2025/0322 | Report Release Date : 15.01.2025 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC1358725000000314F        |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |   |
|--------------------|-------------------------------|----------------------|---|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2025/AA/0125                                 |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Ropeway Angle Station<br>Bagru Bauxite Mine (75.41ha) |
| Mines Status       | : Non Operational             | Sampling Date        | : 06.01.2025 to 07.01.2025                              |
| Period of Analysis | : 09.01.2025 to 15.01.2025    | Sample Received Date | : 09.01.2025  |
|                    |                               | Type of Sample       | : Ambient Air   |
|                    |                               | Sampling Procedure   | : ELES/DOC/SMPL/02                                      |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.  |
|                    |                               | Sample Condition     | : Sealed & Preserved                                    |

## METEOROLOGICAL INFORMATION

|   |                               |   |                                  |
|---|-------------------------------|---|----------------------------------|
| 1 | Average Temperature (°C) : 19 | 2 | Barometric Pressure (mmHg) : 727 |
| 3 | Relative Humidity (%) : 57    | 4 | Weather Condition : Clear        |

| Discipline : Chemical                    |                   | Group : Atmospheric Pollution             |        |                  |
|--|-------------------|---|--------|------------------|
| Parameter                                | Unit              | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022                  | 74     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019                  | 41     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec1): 2023              | 13.3   | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                   | 26.1   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019<br>(NDIR Method) | 1.20   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019                  | 0.018  | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                      | <2.5   | 05 (Annual)      |
| Benzo(a)Pyrene                           | ng/m <sup>3</sup> | ELES/GC/SOP/05: 2023                      | <0.5   | 01 (Annual)      |

*Akash Kumar*

Reviewed by  
Akash Kumar  
Quality Manager

\*\*\*\*End of Report\*\*\*\*

*Dr. Deependra Kumar Sinha*

Authorised Signatory  
Dr. Deependra Kumar Sinha  
Ph. D. Environmental Engg.

Technical Manager

Page 1 of 1

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**"Save Environment, Save Future"**





# ENVIRONMENTAL LABORATORIES &

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## TEST REPORT

|                 |                       |                     |              |
|-----------------|-----------------------|---------------------|--------------|
| Test Report No. | : ELES/RNC/2025/0426  | Report Release Date | : 20.01.2025 |
| Work Order No.  | : 13612312113         | Work Order Date     | : 28.03.2024 |
| ULR No.         | : TC1358725000000418F |                     |              |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |   |
|--------------------|-------------------------------|----------------------|---|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2025/SW/0234                               |
| Address            | : Lohardaga, Jharkhand-835302 | Sampling Date        | : 08.01.2025  |
|                    |                               | Sample Received Date | : 11.01.2025  |
| Mines Status       | : Operational                 | Type of Sample       | : Surface Water                                       |
|                    |                               | Location of Sample   | : Near Water Pump- Hisri (New) Bauxite Mine (14.55ha) |
| Period of Analysis | : 11.01.2025 to 17.01.2025    | Sampling Procedure   | : ELES/DOC/SMPL/01                                    |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.                                      |
|                    |                               | Sample Condition     | : Sealed & Preserved                                  |

| Discipline : Chemical                               |      | Group : Water                        |               | Tolerance Limits                                   |
|---|------|--------------------------------------|---------------|--|
| Parameter   | Unit | Test Protocol                        | Result        | as per IS 2296-1992 Class C (Inland Surface Water) |
| pH (at 24.6 °C)                                     | -    | IS 3025 (Part-11) : 2022             | 6.57          | 6.5-8.5  |
| Temperature   | °C   | IS 3025 (Part 9): 2023               | 19.0          | --   |
| Chemical Oxygen Demand (COD)                        | mg/L | IS 3025 (Part-58): 2023              | 5.2           | --   |
| Biochemical Oxygen Demand (BOD) (@ 20°C for 5 days) | mg/L | APHA 24 <sup>th</sup> Ed.2023; 5210B | 1.3           | 3.0  |
| Total Dissolved Solids (TDS)                        | mg/L | IS 3025 (Part-16): 2023              | 85.0          | 1500   |
| Total Suspended Solids (TSS)                        | mg/L | IS 3025 (Part-17): 2022              | 3.2           | --   |
| Oil & Grease  | mg/L | IS 3025 (Part-39): 2021              | BDL (DL: 0.1) | 0.1  |
| Calcium (as Ca)                                     | mg/L | IS 3025 (Part-40): 2019              | 4.9           | --   |

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## TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2025/0426 | Report Release Date : 20.01.2025 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC1358725000000418F        |                                  |

| Discipline : Chemical |      | Group : Residues in Water            |                   | Tolerance Limits   |
|-----------------------|------|--------------------------------------|-------------------|--|
| Parameter             | Unit | Test Protocol                        | Result            | as per IS 2296-1992<br>Class C<br>(Inland Surface Water) |
| Aluminum (as Al)      | mg/L | IS 3025 (Part-55) :2003; RA2019      | BDL<br>(DL: 0.02) | --   |
| Iron (as Fe)          | mg/L | APHA 24 <sup>th</sup> Ed.2023; 3111B | 0.091             | 50   |

Remarks: pH & Temperature done at site.



Reviewed by  
**Akash Kumar**  
 Quality Manager

\*\*\*\*End of Report\*\*\*\*



Authorised Signatory  
**Dr. Deependra Kumar Sinha**  
 Ph. D. Environmental Engg.  
 Technical Manager





# ENVIRONMENTAL LABORATORIES &

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## TEST REPORT

|                 |                       |                     |              |
|-----------------|-----------------------|---------------------|--------------|
| Test Report No. | : ELES/RNC/2025/0429  | Report Release Date | : 20.01.2025 |
| Work Order No.  | : 13612312113         | Work Order Date     | : 28.03.2024 |
| ULR No.         | : TC1358725000000421F |                     |              |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |   |
|--------------------|-------------------------------|----------------------|---|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2025/SL/0237                             |
| Address            | : Lohardaga, Jharkhand-835302 | Sampling Date        | : 09.01.2025  |
|                    |                               | Sample Received Date | : 11.01.2025  |
| Mines Status       | : Operational                 | Type of Sample       | : Soil  |
|                    |                               | Location of Sample   | : Near Mines, Hisri (New)<br>Bauxite Mine (14.55ha) |
| Period of Analysis | : 11.01.2025 to 17.01.2025    | Sampling Procedure   | : ELES/DOC/SMPL/05                                  |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.                                    |
|                    |                               | Sample Condition     | : Sealed  |

| Discipline : Chemical         |       | Group : Pollution & Environment                         |                   |
|-------------------------------|-------|---|-------------------|
| Parameter                     | Unit  | Test Protocol   | Result            |
| pH (1:2) at 24.5 °C           | -     | IS 2720 (Part-26): 2021                                 | 7.01              |
| Conductivity (1:2) at 24.5 °C | µS/cm | IS 14767: 2021  | 182               |
| Total Organic Carbon (TOC)    | %     | Soil Testing in India: 2011<br>(Walkley & Black Method) | 0.45              |
| Available Phosphorus (as P)   | kg/ha | Soil Testing in India: 2011                             | 4.56              |
| Potassium (as K)              | mg/kg | IS 9497: 2020   | 1050              |
| Available Nitrogen            | %     | Soil Testing in India: 2011                             | 7.56              |
| Chloride (as Cl) (1:2)        | %     | ELES/SOIL/SOP/01: 2021                                  | 0.035             |
| Arsenic (as As)               | mg/kg | ELES/SOIL/SOP/28: 2023                                  | BDL<br>(DL: 0.01) |
| Cadmium (as Cd)               | mg/kg | US EPA 3050 A&B : 1996                                  | BDL<br>(DL: 0.1)  |
| Lead (as Pb)                  | mg/kg | US EPA 3050 A&B : 1996                                  | BDL<br>(DL: 0.1)  |

### TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2025/0429 | Report Release Date : 20.01.2025 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC1358725000000421F        |                                  |

| Discipline : Chemical |       | Group : Pollution & Environment |                   |
|-----------------------|-------|---------------------------------|-------------------|
| Parameter             | Unit  | Test Protocol                   | Result            |
| Magnesium (as Mg)     | mg/kg | Soil Testing in India: 2011     | 1605              |
| Mercury (as Hg)       | mg/kg | USEPA 7473 : 2007               | BDL<br>(DL: 0.01) |



Reviewed by  
 Akash Kumar  
 Quality Manager

\*\*\*\*End of Report\*\*\*\*



Authorised Signatory  
 Dr. Deependra Kumar Sinha  
 Ph. D. Environmental Engg.  
 Technical Manager





CIN: U74999JH2018PTC011125

# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
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## TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2025/0429 | Report Release Date : 20.01.2025 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |   |
|--------------------|-------------------------------|----------------------|---|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2025/SL/0237                             |
| Address            | : Lohardaga, Jharkhand-835302 | Sampling Date        | : 09.01.2025  |
|                    |                               | Sample Received Date | : 11.01.2025  |
| Mines Status       | : Operational                 | Type of Sample       | : Soil  |
|                    |                               | Location of Sample   | : Near Mines, Hisri (New)<br>Bauxite Mine (14.55ha) |
| Period of Analysis | : 11.01.2025 to 17.01.2025    | Sampling Procedure   | : ELES/DOC/SMPL/05                                  |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.                                    |
|                    |                               | Sample Condition     | : Sealed  |

| Discipline : Chemical |       | Group : Pollution & Environment |                   |
|-----------------------|-------|---------------------------------|-------------------|
| Parameter             | Unit  | Test Protocol                   | Result            |
| Selenium (as Se)      | mg/kg | US EPA 3050 B : 1996            | BDL<br>(DL: 0.01) |

Reviewed by  
Akash Kumar  
Quality Manager

\*\*\*\*End of Report\*\*\*\*

Authorised Signatory  
Dr. Deependra Kumar Sinha  
Ph. D. Environmental Engg.  
Technical Manager

**ENVIRONMENTAL LABORATORIES & ENGINEERING  
SERVICES PVT. LTD.**

Plot No.30, Mansarovar Enclave, Tupudana, Hatia, Ranchi-834003,  
Jharkhand.

**Hisri (New) Bauxite Mine-Environmental Monitoring Report**

**February 2025**





## CONTENT

| Hindalco Industries : Hisri (New) Bauxite Mine Environmental Monitoring |   | February 2025 |
|---|---|---------------|
| Hisri (New) Bauxite Mine  |   |               |
|   | <b>AMBIENT AIR QUALITY- CORE ZONE</b>   |               |
| 1   | Near Water Pump                         |               |
| 2   | Near Old Rest Shelter                   |               |
| 3   | Near Old Plantation (North West Corner) |               |
| 4   | Hisri New (Southern Area)               |               |
|   | <b>AMBIENT AIR QUALITY- BUFFER ZONE</b> |               |
| 1   | Near Daldaliya Village                  |               |
| 2   | Aditya School Gangupara                 |               |
| 3   | Ropeway unloading station               |               |
| 4   | Ropeway Angle Station                   |               |
|   | <b>Drinking Water</b>                   |               |



### TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2025/1210 | Report Release Date : 25.02.2025 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC1358725000001181F        |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |  |
|--------------------|-------------------------------|----------------------|--|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2025/AA/1238                                  |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Near Water Pump; Hisri (New)<br>Bauxite Mine (14.55ha) |
| Mines Status       | : Operational                 | Sampling Date        | : 15.02.2025 to 16.02.2025                               |
| Period of Analysis | : 19.02.2025 to 25.02.2025    | Sample Received Date | : 19.02.2025   |
|                    |                               | Type of Sample       | : Ambient Air  |
|                    |                               | Sampling Procedure   | : ELES/DOC/SMPL/02                                       |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.   |
|                    |                               | Sample Condition     | : Sealed & Preserved                                     |

| METEOROLOGICAL INFORMATION |                          |      |   |                            |         |
|----------------------------|--------------------------|------|---|----------------------------|---------|
| 1                          | Average Temperature (°C) | : 21 | 2 | Barometric Pressure (mmHg) | : 725   |
| 3                          | Relative Humidity (%)    | : 57 | 4 | Weather Condition          | : Clear |

#### Discipline : Chemical

#### Group : Atmospheric Pollution

| Parameter                                | Unit              | Test Protocol                             | Result | Regulatory Limit |
|--|-------------------|---|--------|------------------|
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022                  | 72     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019                  | 36     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec1): 2023              | 13.1   | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                   | 32.6   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019<br>(NDIR Method) | 1.25   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019                  | <0.002 | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                      | <2.5   | 05(Annual)       |
| Benzo-(a)-Pyrene                         | ng/m <sup>3</sup> | ELES/GC/SOP/05: 2023                      | <0.5   | 01(Annual)       |

*Susma Yadav*  
Reviewed by

*Arash Kumar*  
Authorised Signatory  
Quality Assurance

\*\*\*\*End of Report\*\*\*\*





# ENVIRONMENTAL LABORATORIES &

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Phone no.: 0651-2290103  
Website: [www.elespl.co.in](http://www.elespl.co.in)



## TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2025/1211 | Report Release Date : 25.02.2025 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC1358725000001182F        |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |   |
|--------------------|-------------------------------|----------------------|---|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2025/AA/1239                                     |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Near Old Rest Shelter; Hisri (New) Bauxite Mine (14.55ha) |
| Mines Status       | : Operational                 | Sampling Date        | : 15.02.2025 to 16.02.2025                                  |
| Period of Analysis | : 19.02.2025 to 25.02.2025    | Sample Received Date | : 19.02.2025  |
|                    |                               | Type of Sample       | : Ambient Air   |
|                    |                               | Sampling Procedure   | : ELES/DOC/SMPL/02  |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.  |
|                    |                               | Sample Condition     | : Sealed & Preserved  |

## METEOROLOGICAL INFORMATION

|   |                               |   |                                  |
|---|-------------------------------|---|----------------------------------|
| 1 | Average Temperature (°C) : 21 | 2 | Barometric Pressure (mmHg) : 725 |
| 3 | Relative Humidity (%) : 57    | 4 | Weather Condition : Clear        |

### Discipline : Chemical

### Group : Atmospheric Pollution

| Parameter                                | Unit              | Test Protocol                             | Result | Regulatory Limit |
|--|-------------------|---|--------|------------------|
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022                  | 83     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019                  | 47     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec1): 2023              | 12.4   | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                   | 38.3   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019<br>(NDIR Method) | <1.0   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019                  | 0.031  | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                      | <2.5   | 05(Annual)       |
| Benzo-(a)-Pyrene                         | ng/m <sup>3</sup> | ELES/GC/SOP/05: 2023                      | <0.5   | 01(Annual)       |

*Suma Yadav*  
Reviewed by

\*\*\*\*End of Report\*\*\*\*

*[Signature]*  
Authorised Signatory  
Quality Manager

Page 1 of 1

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"Save Environment, Save Future"



### TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2025/1212 | Report Release Date : 25.02.2025 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC1358725000001183F        |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |  |
|--------------------|-------------------------------|----------------------|--|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2025/AA/1240                                  |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Near Old Plantation<br>(North West Corner) Hisri (New) |
| Mines Status       | : Operational                 | Sampling Date        | : 15.02.2025 to 16.02.2025                               |
| Period of Analysis | : 19.02.2025 to 25.02.2025    | Sample Received Date | : 19.02.2025   |
|                    |                               | Type of Sample       | : Ambient Air  |
|                    |                               | Sampling Procedure   | : ELES/DOC/SMPL/02                                       |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.   |
|                    |                               | Sample Condition     | : Sealed & Preserved                                     |

| METEOROLOGICAL INFORMATION |                          |      |   |                            |         |
|----------------------------|--------------------------|------|---|----------------------------|---------|
| 1                          | Average Temperature (°C) | : 21 | 2 | Barometric Pressure (mmHg) | : 725   |
| 3                          | Relative Humidity (%)    | : 57 | 4 | Weather Condition          | : Clear |

| Discipline : Chemical                    |                   | Group : Atmospheric Pollution             |        |                  |
|--|-------------------|---|--------|------------------|
| Parameter                                | Unit              | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022                  | 76     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019                  | 40     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec1): 2023              | 10.2   | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                   | 27.8   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019<br>(NDIR Method) | 1.09   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019                  | 0.018  | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                      | <2.5   | 05(Annual)       |
| Benzo-(a)-Pyrene                         | ng/m <sup>3</sup> | ELES/GC/SOP/05: 2023                      | <0.5   | 01(Annual)       |

*Suma Yadav*  
Reviewed by

*Akash Kumar*  
Authorised Signatory

\*\*\*\*End of Report\*\*\*\*

Akash Kumar  
Quality Manager

Page 1 of 1

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# ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
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## TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2025/1213 | Report Release Date : 25.02.2025 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC1358725000001184F        |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |  |
|--------------------|-------------------------------|----------------------|--|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2025/AA/1241  |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Hisri New (Southern Area)<br>Hisri (New) Bauxite Mine(14.55ha) |
| Mines Status       | : Operational                 | Sampling Date        | : 15.02.2025 to 16.02.2025                                       |
| Period of Analysis | : 19.02.2025 to 25.02.2025    | Sample Received Date | : 19.02.2025   |
|                    |                               | Type of Sample       | : Ambient Air  |
|                    |                               | Sampling Procedure   | : ELES/DOC/SMPL/02   |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.   |
|                    |                               | Sample Condition     | : Sealed & Preserved   |

## METEOROLOGICAL INFORMATION

|   |                               |   |                                  |
|---|-------------------------------|---|----------------------------------|
| 1 | Average Temperature (°C) : 21 | 2 | Barometric Pressure (mmHg) : 725 |
| 3 | Relative Humidity (%) : 57    | 4 | Weather Condition : Clear        |

### Discipline : Chemical

### Group : Atmospheric Pollution

| Parameter                                | Unit                     | Test Protocol                             | Result | Regulatory Limit |
|--|--------------------------|---|--------|------------------|
| Particulate Matter (PM10)                | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 23): 2022                  | 71     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 24): 2019                  | 37     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 2/Sec1): 2023              | 13.3   | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 6): 2022                   | 24.5   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | $\text{mg}/\text{m}^3$   | IS 5182 (Part- 10): 2019<br>(NDIR Method) | 1.33   | 2 (8hrs)         |
| Lead (Pb)                                | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 22): 2019                  | 0.035  | 1 (24hrs)        |
| Nickel (Ni)                              | $\text{ng}/\text{m}^3$   | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | $\text{ng}/\text{m}^3$   | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | $\mu\text{g}/\text{m}^3$ | ELES/GC/SOP/06: 2023                      | <2.5   | 05(Annual)       |
| Benzo-(a)-Pyrene                         | $\text{ng}/\text{m}^3$   | ELES/GC/SOP/05: 2023                      | <0.5   | 01(Annual)       |

*Susma Yadav*  
Reviewed by

\*\*\*\*End of Report\*\*\*\*

*Akash Kumar*  
Authorised Signatory  
Akash Kumar





# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
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## TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2025/1122 | Report Release Date : 22.02.2025 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC1358725000001100F        |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |  |
|--------------------|-------------------------------|----------------------|--|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2025/AA/1105                                  |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Near Daldaliya Village<br>Bagru Bauxite Mine (75.41ha) |
|                    |                               | Sampling Date        | : 12.02.2025 to 13.02.2025                               |
| Mines Status       | : Non Operational             | Sample Received Date | : 15.02.2025   |
|                    |                               | Type of Sample       | : Ambient Air  |
| Period of Analysis | : 15.02.2025 to 22.02.2025    | Sampling Procedure   | : ELES/DOC/SMPL/02                                       |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.   |
|                    |                               | Sample Condition     | : Sealed & Preserved                                     |

## METEOROLOGICAL INFORMATION

|   |                          |      |   |                            |         |
|---|--------------------------|------|---|----------------------------|---------|
| 1 | Average Temperature (°C) | : 22 | 2 | Barometric Pressure (mmHg) | : 727   |
| 3 | Relative Humidity (%)    | : 58 | 4 | Weather Condition          | : Clear |

| Discipline : Chemical                    |                   | Group : Atmospheric Pollution             |        |                  |
|--|-------------------|---|--------|------------------|
| Parameter                                | Unit              | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022                  | 75     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019                  | 42     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec1): 2023              | 11.8   | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                   | 27.1   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019<br>(NDIR Method) | <1.0   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019                  | 0.018  | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                      | <2.5   | 05(Annual)       |
| Benzo-(a)-Pyrene                         | ng/m <sup>3</sup> | ELES/GC/SOP/05: 2023                      | <0.5   | 01(Annual)       |

*Suma Yadav*  
Reviewed by

*Authorised Signatory*  
Quality Manager

\*\*\*\*End of Report\*\*\*\*

Page 1 of 1

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"Same Equipment, Same Results"





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Phone no.: 0651-2290103  
Website: [www.elespl.co.in](http://www.elespl.co.in)



## TEST REPORT

|                 |                       |                     |              |
|-----------------|-----------------------|---------------------|--------------|
| Test Report No. | : ELES/RNC/2025/1123  | Report Release Date | : 22.02.2025 |
| Work Order No.  | : 13612312113         | Work Order Date     | : 28.03.2024 |
| ULR No.         | : TC1358725000001101F |                     |              |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |  |
|--------------------|-------------------------------|----------------------|--|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2025/AA/1106                                    |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Aditya School Gangupara<br>Bagru Bauxite Mine (75.41 ha) |
|                    |                               | Sampling Date        | : 12.02.2025 to 13.02.2025                                 |
| Mines Status       | : Non Operational             | Sample Received Date | : 15.02.2025   |
|                    |                               | Type of Sample       | : Ambient Air  |
| Period of Analysis | : 15.02.2025 to 22.02.2025    | Sampling Procedure   | : ELES/DOC/SMPL/02   |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.   |
|                    |                               | Sample Condition     | : Sealed & Preserved                                       |

## METEOROLOGICAL INFORMATION

|   |                          |      |   |                            |         |
|---|--------------------------|------|---|----------------------------|---------|
| 1 | Average Temperature (°C) | : 22 | 2 | Barometric Pressure (mmHg) | : 727   |
| 3 | Relative Humidity (%)    | : 58 | 4 | Weather Condition          | : Clear |

| Discipline : Chemical               |                          | Group : Atmospheric Pollution             |        |                  |
|-------------------------------------|--------------------------|---|--------|------------------|
| Parameter                           | Unit                     | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)           | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 23): 2022                  | 71     | 100 (24hrs)      |
| Particulate Matter (PM2.5)          | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 24): 2019                  | 38     | 60 (24hrs)       |
| Sulphur Di-Oxide ( $\text{SO}_2$ )  | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 2/Sec1): 2023              | 12.2   | 80 (24hrs)       |
| Nitrogen Di-Oxide ( $\text{NO}_2$ ) | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 6): 2022                   | 26.4   | 80 (24hrs)       |
| Ozone ( $\text{O}_3$ )              | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia ( $\text{NH}_3$ )           | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                | $\text{mg}/\text{m}^3$   | IS 5182 (Part- 10): 2019<br>(NDIR Method) | 1.24   | 2 (8hrs)         |
| Lead (Pb)                           | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 22): 2019                  | 0.018  | 1 (24hrs)        |
| Nickel (Ni)                         | $\text{ng}/\text{m}^3$   | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                        | $\text{ng}/\text{m}^3$   | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene ( $\text{C}_6\text{H}_6$ )  | $\mu\text{g}/\text{m}^3$ | ELES/GC/SOP/06: 2023                      | <2.5   | 05(Annual)       |
| Benzo-(a)-Pyrene                    | $\text{ng}/\text{m}^3$   | ELES/GC/SOP/05: 2023                      | <0.5   | 01(Annual)       |

*Suma Yadav*  
Reviewed by

\*\*\*\*End of Report\*\*\*\*

*Authorised Signatory*





# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
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Website : www.elespl.co.in



## TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2025/1124 | Report Release Date : 22.02.2025 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC1358725000001102F        |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |   |
|--------------------|-------------------------------|----------------------|---|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2025/AA/1107                                     |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Ropeway Unloading Station<br>Bagru Bauxite Mine (75.41ha) |
| Mines Status       | : Non Operational             | Sampling Date        | : 12.02.2025 to 13.02.2025                                  |
| Period of Analysis | : 15.02.2025 to 22.02.2025    | Sample Received Date | : 15.02.2025  |
|                    |                               | Type of Sample       | : Ambient Air   |
|                    |                               | Sampling Procedure   | : ELES/DOC/SMPL/02  |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.  |
|                    |                               | Sample Condition     | : Sealed & Preserved  |

| METEOROLOGICAL INFORMATION |                               |  |   |                                  |  |
|----------------------------|-------------------------------|--|---|----------------------------------|--|
| 1                          | Average Temperature (°C) : 22 |  | 2 | Barometric Pressure (mmHg) : 727 |  |
| 3                          | Relative Humidity (%) : 56    |  | 4 | Weather Condition : Clear        |  |

| Discipline : Chemical                    |                   | Group : Atmospheric Pollution             |        |                  |
|--|-------------------|---|--------|------------------|
| Parameter                                | Unit              | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022                  | 74     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019                  | 40     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec1): 2023              | 12.9   | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                   | 23.8   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019<br>(NDIR Method) | <1.0   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019                  | 0.014  | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                      | <2.5   | 05(Annual)       |
| Benzo-(a)-Pyrene                         | ng/m <sup>3</sup> | ELES/GC/SOP/05: 2023                      | <0.5   | 01(Annual)       |

*Rama Yadav*  
Reviewed by

*[Signature]*  
Authorised Signatory

\*\*\*\*End of Report\*\*\*\*

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# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
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## TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2025/1125 | Report Release Date : 22.02.2025 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC1358725000001103F        |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |   |
|--------------------|-------------------------------|----------------------|---|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2025/AA/1108                                 |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Ropeway Angle Station<br>Bagru Bauxite Mine (75.41ha) |
|                    |                               | Sampling Date        | : 12.02.2025 to 13.02.2025                              |
| Mines Status       | : Non Operational             | Sample Received Date | : 15.02.2025  |
|                    |                               | Type of Sample       | : Ambient Air   |
| Period of Analysis | : 15.02.2025 to 22.02.2025    | Sampling Procedure   | : ELES/DOC/SMPL/02                                      |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.  |
|                    |                               | Sample Condition     | : Sealed & Preserved                                    |

## METEOROLOGICAL INFORMATION

|   |                               |   |                                  |
|---|-------------------------------|---|----------------------------------|
| 1 | Average Temperature (°C) : 22 | 2 | Barometric Pressure (mmHg) : 727 |
| 3 | Relative Humidity (%) : 56    | 4 | Weather Condition : Clear        |

| Discipline : Chemical                    |                          | Group : Atmospheric Pollution             |        |                  |
|--|--------------------------|---|--------|------------------|
| Parameter                                | Unit                     | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)                | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 23): 2022                  | 78     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 24): 2019                  | 45     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 2/Sec1): 2023              | 13.6   | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 6): 2022                   | 29.5   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | $\text{mg}/\text{m}^3$   | IS 5182 (Part- 10): 2019<br>(NDIR Method) | 1.23   | 2 (8hrs)         |
| Lead (Pb)                                | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 22): 2019                  | 0.022  | 1 (24hrs)        |
| Nickel (Ni)                              | $\text{ng}/\text{m}^3$   | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | $\text{ng}/\text{m}^3$   | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | $\mu\text{g}/\text{m}^3$ | ELES/GC/SOP/06: 2023                      | <3.5   | 05 (Annual)      |
| Benzo-(a)-Pyrene                         | $\text{ng}/\text{m}^3$   | ELES/GC/SOP/05: 2023                      | <0.5   | 01 (Annual)      |

*Susma Yadav*  
Reviewed by

*Ashish Kumar*  
Authorised Signatory

\*\*\*\*End of Report\*\*\*\*

Page 1 of 1

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"Good Environment, Good Future"



### TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2025/1301 | Report Release Date : 28.02.2025 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC1358725000001272F        |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |  |
|--------------------|-------------------------------|----------------------|--|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2025/DW/1255                          |
| Address            | : Lohardaga, Jharkhand-835302 | Sampling Date        | : 16.02.2025                                     |
|                    |                               | Sample Received Date | : 19.02.2025                                     |
|                    |                               | Type of Sample       | : Drinking Water                                 |
| Mines Status       | : Operational                 | Source of Sample     | : TAP Water                                      |
|                    |                               | Location of Sample   | : Hisri New Mines<br>(Hisri (New) Bauxite Mines) |
| Period of Analysis | : 19.02.2025 to 27.02.2025    | Sampling Procedure   | : ELES/DOC/SMPL/01                               |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.                                 |
|                    |                               | Sample Condition     | : Sealed & Preserved                             |

| Discipline : Chemical                    |       | Group : Water  |                  | Regulatory Limit<br>as per IS 10500:2012 |                   |
|--|-------|--|------------------|--|-------------------|
| Parameter                                | Unit  | Test Protocol  | Result           | Acceptable Limit                         | Permissible Limit |
| pH (at 24.8 °C)                          | -     | APHA 24 <sup>th</sup> Ed 2023, 4500-H <sup>+</sup>                   | 7.02             | 6.5-8.5                                  | No Relaxation     |
| Turbidity                                | NTU   | APHA 24 <sup>th</sup> Ed.2023, 2130 B                                | 0.13             | 1.0                                      | 5.0               |
| Taste                                    | -     | APHA 24 <sup>th</sup> Ed.2023, 2160 C                                | Agreeable        | Agreeable                                | Agreeable         |
| Odour                                    | -     | IS 3025 (Part-5) :2018   | Agreeable        | Agreeable                                | Agreeable         |
| Colour                                   | Hazen | APHA 24 <sup>th</sup> Ed.2023, 2120B&D                               | 1.0              | 5.0                                      | 15                |
| Total Dissolved Solids (TDS)             | mg/L  | APHA 24 <sup>th</sup> Ed.2023, 2540B,C&D                             | 380              | 500                                      | 2000              |
| Chloride (as Cl)                         | mg/L  | APHA 24 <sup>th</sup> Ed.2023, 4500 Cl B                             | 14.3             | 250                                      | 1000              |
| Fluoride (as F)                          | mg/L  | APHA 24 <sup>th</sup> Ed.2023, 4500 F-D                              | BDL<br>(DL: 0.1) | 1.0                                      | 1.5               |
| Total Alkalinity (as CaCO <sub>3</sub> ) | mg/L  | APHA 24 <sup>th</sup> Ed.2023, 2320 B                                | 188              | 200                                      | 600               |
| Total Hardness (as CaCO <sub>3</sub> )   | mg/L  | APHA 24 <sup>th</sup> Ed.2023, 2340 C                                | 172              | 200                                      | 600               |
| Sulphate (as SO <sub>4</sub> )           | mg/L  | APHA 24 <sup>th</sup> Ed.2023, 4500 SO <sub>4</sub> <sup>-2</sup> -E | 4.48             | 200                                      | 400               |
| Nitrate (as NO <sub>3</sub> )            | mg/L  | APHA 24 <sup>th</sup> Ed.2023, 4500 NO <sub>3</sub> -B               | BDL<br>(DL: 0.5) | 45                                       | No Relaxation     |





# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
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## TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2025/1301 | Report Release Date : 28.02.2025 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC1358725000001272F        |                                  |

| Discipline : Chemical                 |      | Group : Water                            |                    | Regulatory Limit<br>as per IS10500:2012 |                   |
|---------------------------------------|------|--|--------------------|---|-------------------|
| Parameter                             | Unit | Test Protocol                            | Result             | Acceptable Limit                        | Permissible Limit |
| Phenolic Compound<br>(as $C_6H_5OH$ ) | mg/L | IS 3025 (Part 43/Sec1): 2022             | BDL<br>(DL: 0.001) | 0.001                                   | 0.002             |
| Free Residual Chlorine<br>(RFC)       | mg/L | IS 3025 (Part-26): 2021                  | BDL<br>(DL: 0.1)   | 0.2(Min)                                | 1.0(Min)          |
| Calcium (as Ca)                       | mg/L | APHA 24 <sup>th</sup> Ed.2023, 3500 Ca B | 45.5               | 75                                      | 200               |
| Anionic Surfactants<br>(as MBAS)      | mg/L | APHA 24 <sup>th</sup> Ed.2023, 5540-C    | BDL<br>(DL: 0.025) | 0.2                                     | 1.0               |
| Discipline : Chemical                 |      | Group : Residues in Water                |                    |   |                   |
| Aluminum (as Al)                      | mg/L | IS 3025 (Part-55): 2003; RA2019          | BDL<br>(DL: 0.02)  | 0.03                                    | 0.2               |
| Arsenic (as As)                       | mg/L | IS 3025 (Part-37): 2022                  | BDL<br>(DL: 0.005) | 0.01                                    | No Relaxation     |
| Boron (as B)                          | mg/L | IS 3025 (Part-57): 2021                  | BDL<br>(DL: 0.2)   | 0.5                                     | 1.0               |
| Cadmium (as Cd)                       | mg/L | APHA 24 <sup>th</sup> Ed.2023; 3111B     | BDL<br>(DL: 0.003) | 0.003                                   | No Relaxation     |
| Total Chromium (as Cr)                | mg/L | APHA 24 <sup>th</sup> Ed.2023; 3111B     | BDL<br>(DL: 0.03)  | 0.05                                    | No Relaxation     |
| Copper (as Cu)                        | mg/L | IS 3025 (Part 42): 2019                  | BDL<br>(DL: 0.03)  | 0.05                                    | 1.5               |
| Cyanide (as CN)                       | mg/L | APHA 24 <sup>th</sup> Ed.2023, 4500 CN-E | BDL<br>(DL: 0.012) | 0.05                                    | No Relaxation     |
| Iron (as Fe)                          | mg/L | APHA 24 <sup>th</sup> Ed.2023; 3111B     | 0.041              | 1.0                                     | No Relaxation     |
| Lead (as Pb)                          | mg/L | APHA 24 <sup>th</sup> Ed.2023; 3111B     | BDL<br>(DL: 0.01)  | 0.01                                    | No Relaxation     |
| Manganese (as Mn)                     | mg/L | APHA 24 <sup>th</sup> Ed.2023; 3111B     | BDL<br>(DL: 0.05)  | 0.1                                     | 0.3               |
| Mercury (as Hg)                       | mg/L | IS 3025 (Part-48): 2019                  | BDL<br>(DL: 0.001) | 0.001                                   | No Relaxation     |
| Selenium (as Se)                      | mg/L | IS 3025 (Part-56): 2019                  | BDL<br>(DL: 0.01)  | 0.01                                    | No Relaxation     |

Page 2 of 4

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"Save Environment, Save Future"



### TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2025/1301 | Report Release Date : 28.02.2025 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC1358725000001272F        |                                  |

| Discipline : Chemical                   |      | Group : Residues in Water            |                    | Regulatory Limit as per IS10500:2012 |                   |
|---|------|--------------------------------------|--------------------|--------------------------------------|-------------------|
| Parameter                               | Unit | Test Protocol                        | Result             | Acceptable Limit                     | Permissible Limit |
| Zinc (as Zn)                            | mg/L | APHA 24 <sup>th</sup> Ed.2023; 3111B | BDL<br>(DL: 0.1)   | 5.0                                  | 15                |
| Polynuclear Aromatic Hydrocarbons (PAH) | µg/L | ELES/GC/SOP/04: 2023                 | BDL<br>(DL: 0.05)  | 0.1                                  | No Relaxation     |
| Polychlorinated biphenyls (PCB)         | µg/L | ELES/GC/SOP/03: 2023                 | BDL<br>(DL: 0.1)   | 0.5                                  | No Relaxation     |
| Pesticides                              |      |                                      |                    | Limit                                |                   |
| Alachlor                                | µg/L | ELES/GC/SOP/01: 2023                 | BDL<br>(DL: 0.5)   | 20                                   |                   |
| Atrazine                                | µg/L | ELES/GC/SOP/01: 2023                 | BDL<br>(DL: 0.5)   | 2.0                                  |                   |
| Butachlor                               | µg/L | ELES/GC/SOP/01: 2023                 | BDL<br>(DL: 0.5)   | 125                                  |                   |
| Chlorpyrifos                            | µg/L | ELES/GC/SOP/01: 2023                 | BDL<br>(DL: 0.5)   | 30                                   |                   |
| Ethion                                  | µg/L | ELES/GC/SOP/01: 2023                 | BDL<br>(DL: 0.5)   | 3.0                                  |                   |
| Malathion                               | µg/L | ELES/GC/SOP/01: 2023                 | BDL<br>(DL: 0.5)   | 190                                  |                   |
| Methyl parathion                        | µg/L | ELES/GC/SOP/01: 2023                 | BDL<br>(DL: 0.1)   | 0.30                                 |                   |
| Monocrotophos                           | µg/L | ELES/GC/SOP/01: 2023                 | BDL<br>(DL: 0.5)   | 1.0                                  |                   |
| Phorate                                 | µg/L | ELES/GC/SOP/01: 2023                 | BDL<br>(DL: 0.5)   | 2.0                                  |                   |
| Phorate Sulphone                        | µg/L | ELES/GC/SOP/01: 2023                 | BDL<br>(DL: 0.5)   | --                                   |                   |
| Dieldrin                                | µg/L | ELES/GC/SOP/02: 2023                 | BDL<br>(DL: 0.01)  | 0.03                                 |                   |
| Alpha HCH                               | µg/L | ELES/GC/SOP/02: 2023                 | BDL<br>(DL: 0.006) | 0.01                                 |                   |
| Beta HCH                                | µg/L | ELES/GC/SOP/02: 2023                 | BDL<br>(DL: 0.02)  | 0.04                                 |                   |



### TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2025/1301 | Report Release Date : 28.02.2025 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC1358725000001272F        |                                  |

| Pesticides  |            |                      |                   |                       |
|---|------------|----------------------|-------------------|-----------------------|
| Parameter   | Unit       | Test Protocol        | Result            | Limit                 |
| Delta HCH   | µg/L       | ELES/GC/SOP/02: 2023 | BDL<br>(DL: 0.02) | 0.04                  |
| Gamma HCH (Lindane)                               | µg/L       | ELES/GC/SOP/02: 2023 | BDL<br>(DL: 0.02) | 2.0                   |
| Endosulfan<br>(alpha, beta and sulphate)          | µg/L       | ELES/GC/SOP/02: 2023 | BDL<br>(DL: 0.05) | 0.40                  |
| DDT(o,p and p,p-isomers of<br>DDT) ( DDE and DDD) | µg/L       | ELES/GC/SOP/02: 2023 | BDL<br>(DL: 0.05) | 1.0                   |
| Discipline : Biological                           |            | Group : Water        |                   |                       |
| Total Coliform (Qualitative)                      | Per 100 mL | IS 15185: 2021       | Not<br>Detected   | Shall not be detected |
| Escherichia coli (Qualitative)                    | Per 100 mL | IS 15185: 2021       | Not<br>Detected   |                       |

Remarks: pH done at Site.



Reviewed by

Akash Kumar  
Quality Manager

\*\*\*\*End of Report\*\*\*\*



Authorised Signatory

Dr. Deependra Kumar Singh  
Ph. D. Environmental Engg.  
Technical Manager



# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
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## TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2025/1301 | Report Release Date : 28.02.2025 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |  |
|--------------------|-------------------------------|----------------------|--|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2025/DW/1255                          |
| Address            | : Lohardaga, Jharkhand-835302 | Sampling Date        | : 16.02.2025                                     |
|                    |                               | Sample Received Date | : 19.02.2025                                     |
|                    |                               | Type of Sample       | : Drinking Water                                 |
|                    |                               | Source of Sample     | : TAP Water                                      |
| Mines Status       | : Operational                 | Location of Sample   | : Hisri New Mines<br>(Hisri (New) Bauxite Mines) |
| Period of Analysis | : 19.02.2025 to 28.02.2025    | Sampling Procedure   | : ELES/DOC/SMPL/01                               |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.                                 |
|                    |                               | Sample Condition     | : Sealed & Preserved                             |

| Discipline : Chemical |      | Group : Water   |                   | Regulatory Limit<br>as per IS 10500:2012 |                   |
|-----------------------|------|---|-------------------|--|-------------------|
| Parameter             | Unit | Test Protocol   | Result            | Acceptable Limit                         | Permissible Limit |
| Mineral Oil*          | mg/L | IS 3025 (Part-39): 2021,<br>Clause 6 Infrared Spectroscopic method. | BDL<br>(DL: 0.01) | 0.5                                      | No Relaxation     |

Remarks: (\*) Parameters are outsourced to other Lab.

Reviewed by

Akash Kumar  
Quality Manager

\*\*\*\*End of Report\*\*\*\*

Authorised Signatory

Dr. Deependra Kumar Sinha  
Ph. D. Environmental Engg.  
Technical Manager



**ENVIRONMENTAL LABORATORIES & ENGINEERING  
SERVICES PVT. LTD.**

Plot No.30, Mansarovar Enclave, Tupudana, Hatia, Ranchi-834003,  
Jharkhand.

**Hisri (New) Bauxite Mine-Environmental Monitoring Report**

**March 2025**



## CONTENT

| Hindalco Industries : Hisri (New) Bauxite Mine Environmental Monitoring |   | March 2025 |
|---|---|------------|
| Hisri (New) Bauxite Mine  |   |            |
|   | <b>AMBIENT AIR QUALITY- CORE ZONE</b>   |            |
| 1   | Near Water Pump                         |            |
| 2   | Near Old Rest Shelter                   |            |
| 3   | Near Old Plantation (North West Corner) |            |
| 4   | Hisri New (Southern Area)               |            |
|   | <b>AMBIENT AIR QUALITY- BUFFER ZONE</b> |            |
| 1   | Near Daldaliya Village                  |            |
| 2   | Aditya School Gangupara                 |            |
| 3   | Ropeway unloading station               |            |
| 4   | Ropeway Angle Station                   |            |
|   | <b>AMBIENT NOISE</b>                    |            |
|   | <b>WORKZONE NOISE</b>                   |            |
|   | <b>Spring Water</b>                     |            |
| 1   | Daldaliya Village                       |            |







# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAECE9713D124

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## TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2025/2001 | Report Release Date : 24.03.2025 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC1358725000001959F        |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |  |
|--------------------|-------------------------------|----------------------|--|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2025/AA/2143                                  |
|                    |                               | Location             | : Near Water Pump; Hisri (New)<br>Bauxite Mine (14.55ha) |
| Address            | : Lohardaga, Jharkhand-835302 | Sampling Date        | : 12.03.2025 to 13.03.2025                               |
|                    |                               | Sample Received Date | : 17.03.2025   |
|                    |                               | Type of Sample       | : Ambient Air  |
| Mines Status       | : Operational                 | Sampling Procedure   | : ELES/DOC/SMPL/02                                       |
| Period of Analysis | : 17.03.2025 to 24.03.2025    | Sampling Done By     | : ELES Pvt. Ltd.   |
|                    |                               | Sample Condition     | : Sealed & Preserved                                     |

| METEOROLOGICAL INFORMATION |                          |      |   |                             |         |
|----------------------------|--------------------------|------|---|-----------------------------|---------|
| 1                          | Average Temperature (°C) | : 28 | 2 | Barometric Pressure (mm-Hg) | : 720   |
| 3                          | Relative Humidity (%)    | : 60 | 4 | Weather Condition           | : Clear |

| Discipline : Chemical                    |                   | Group : Atmospheric Pollution             |        |                  |
|--|-------------------|---|--------|------------------|
| Parameter                                | Unit              | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022                  | 67     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019                  | 34     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec1): 2023              | 11.9   | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                   | 30.1   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019<br>(NDIR Method) | 1.15   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019                  | <0.002 | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                      | <2.5   | 05(Annual)       |
| Benzo-(a)-Pyrene                         | ng/m <sup>3</sup> | ELES/GC/SOP/05: 2023                      | <0.5   | 01(Annual)       |

Reviewed by  
Akash Kumar

Quality Manager

\*\*\*\*End of Report\*\*\*\*

Authorised Signatory  
Dr. Deependra Kumar Sinha  
Ph. D. Environmental Engg.

Technical Manager

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# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
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## TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2025/2002 | Report Release Date : 24.03.2025 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC1358725000001960F        |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |   |
|--------------------|-------------------------------|----------------------|---|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2025/AA/2144                                     |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Near Old Rest Shelter, Hisri (New) Bauxite Mine (14.55ha) |
|                    |                               | Sampling Date        | : 12.03.2025 to 13.03.2025                                  |
| Mines Status       | : Operational                 | Sample Received Date | : 17.03.2025  |
|                    |                               | Type of Sample       | : Ambient Air   |
| Period of Analysis | : 17.03.2025 to 24.03.2025    | Sampling Procedure   | : ELES/DOC/SMPL/02  |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.  |
|                    |                               | Sample Condition     | : Sealed & Preserved  |

## METEOROLOGICAL INFORMATION

|   |                               |   |                                  |
|---|-------------------------------|---|----------------------------------|
| 1 | Average Temperature (°C) : 28 | 2 | Barometric Pressure (mmHg) : 720 |
| 3 | Relative Humidity (%) : 60    | 4 | Weather Condition : Clear        |

| Discipline : Chemical                    |                   | Group : Atmospheric Pollution             |        |                  |
|--|-------------------|---|--------|------------------|
| Parameter                                | Unit              | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022                  | 79     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019                  | 45     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec1): 2023              | 13.2   | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                   | 34.6   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019<br>(NDIR Method) | <1.0   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019                  | 0.025  | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                      | <2.5   | 05 (Annual)      |
| Benzo-(a)-Pyrene                         | ng/m <sup>3</sup> | ELES/GC/SOP/05: 2023                      | <0.5   | 01 (Annual)      |



Reviewed by

Akash Kumar

Quality Manager

\*\*\*\*End of Report\*\*\*\*



Authorised Signatory

Dr. Deependra Kumar Sinha

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Technical Manager

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## TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2025/2003 | Report Release Date : 24.03.2025 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC1358725000001961F        |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |  |
|--------------------|-------------------------------|----------------------|--|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2025/AA/2145                                  |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Near Old Plantation<br>(North West Corner) Hisri (New) |
|                    |                               | Sampling Date        | : 12.03.2025 to 13.03.2025                               |
| Mines Status       | : Operational                 | Sample Received Date | : 17.03.2025   |
|                    |                               | Type of Sample       | : Ambient Air  |
| Period of Analysis | : 17.03.2025 to 24.03.2025    | Sampling Procedure   | : ELES/DOC/SMPL/02                                       |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.   |
|                    |                               | Sample Condition     | : Sealed & Preserved                                     |

| METEOROLOGICAL INFORMATION |                          |      |   |                            |         |
|----------------------------|--------------------------|------|---|----------------------------|---------|
| 1                          | Average Temperature (°C) | : 28 | 2 | Barometric Pressure (mmHg) | : 720   |
| 3                          | Relative Humidity (%)    | : 60 | 4 | Weather Condition          | : Clear |

| Discipline : Chemical                    |                   | Group : Atmospheric Pollution             |        |                  |
|--|-------------------|---|--------|------------------|
| Parameter                                | Unit              | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022                  | 70     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019                  | 36     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec1): 2023              | 12.6   | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                   | 25.2   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019<br>(NDIR Method) | 1.03   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019                  | 0.012  | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                      | <2.5   | 05 (Annual)      |
| Benzo-(a)-Pyrene                         | ng/m <sup>3</sup> | ELES/GC/SOP/05: 2023                      | <0.5   | 01 (Annual)      |



Reviewed by  
Akash Kumar  
Quality Manager

\*\*\*\*End of Report\*\*\*\*



Authorised Signatory

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# ENVIRONMENTAL LABORATORIES &

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## TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2025/2004 | Report Release Date : 24.03.2025 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC1358725000001962F        |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |  |
|--------------------|-------------------------------|----------------------|--|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2025/AA/2146  |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Hisri New (Southern Area)<br>Hisri (New) Bauxite Mine(14.55ha) |
| Mines Status       | : Operational                 | Sampling Date        | : 12.03.2025 to 13.03.2025                                       |
| Period of Analysis | : 17.03.2025 to 24.03.2025    | Sample Received Date | : 17.03.2025   |
|                    |                               | Type of Sample       | : Ambient Air  |
|                    |                               | Sampling Procedure   | : ELES/DOC/SMPL/02   |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.   |
|                    |                               | Sample Condition     | : Sealed & Preserved   |


| METEOROLOGICAL INFORMATION |                          |      |   |                            |         |
|----------------------------|--------------------------|------|---|----------------------------|---------|
| 1                          | Average Temperature (°C) | : 28 | 2 | Barometric Pressure (mmHg) | : 720   |
| 3                          | Relative Humidity (%)    | : 60 | 4 | Weather Condition          | : Clear |

| Discipline : Chemical                    |                   | Group : Atmospheric Pollution             |        |                  |
|--|-------------------|---|--------|------------------|
| Parameter                                | Unit              | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022                  | 68     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019                  | 33     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec1): 2023              | 12.5   | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                   | 27.3   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019<br>(NDIR Method) | 1.28   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019                  | 0.026  | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                      | <2.5   | 05(Annual)       |
| Benzo-(a)-Pyrene                         | ng/m <sup>3</sup> | ELES/GC/SOP/05: 2023                      | <0.5   | 01(Annual)       |



Reviewed by  
Akash Kumar  
Quality Manager

\*\*\*\*End of Report\*\*\*\*

  
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Technical Manager

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# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
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## TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2025/1744 | Report Release Date : 19.03.2025 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC1358725000001703F        |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |  |
|--------------------|-------------------------------|----------------------|--|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2025/AA/1915                                  |
|                    |                               | Location             | : Near Daldaliya Village<br>Bagru Bauxite Mine (75.41ha) |
| Address            | : Lohardaga, Jharkhand-835302 | Sampling Date        | : 10.03.2025 to 11.03.2025                               |
|                    |                               | Sample Received Date | : 12.03.2025   |
| Mines Status       | : Non Operational             | Type of Sample       | : Ambient Air  |
|                    |                               | Sampling Procedure   | : ELES/DOC/SMPL/02                                       |
| Period of Analysis | : 12.03.2025 to 19.03.2025    | Sampling Done By     | : ELES Pvt. Ltd.   |
|                    |                               | Sample Condition     | : Sealed & Preserved                                     |

| METEOROLOGICAL INFORMATION |                          |      |   |                            |         |
|----------------------------|--------------------------|------|---|----------------------------|---------|
| 1                          | Average Temperature (°C) | : 28 | 2 | Barometric Pressure (mmHg) | : 720   |
| 3                          | Relative Humidity (%)    | : 60 | 4 | Weather Condition          | : Clear |

| Discipline : Chemical                    |                          | Group : Atmospheric Pollution             |        |                  |
|--|--------------------------|---|--------|------------------|
| Parameter                                | Unit                     | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)                | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 23): 2022                  | 70     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 24): 2019                  | 35     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 2/Sec1): 2023              | 12.2   | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 6): 2022                   | 26.5   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | $\text{mg}/\text{m}^3$   | IS 5182 (Part- 10): 2019<br>(NDIR Method) | <1.0   | 2 (8hrs)         |
| Lead (Pb)                                | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 22): 2019                  | 0.022  | 1 (24hrs)        |
| Nickel (Ni)                              | $\text{ng}/\text{m}^3$   | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | $\text{ng}/\text{m}^3$   | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | $\mu\text{g}/\text{m}^3$ | ELES/GC/SOP/06: 2023                      | <2.5   | 05(Annual)       |
| Benzo-(a)-Pyrene                         | $\text{ng}/\text{m}^3$   | ELES/GC/SOP/05: 2023                      | <0.5   | 01(Annual)       |

Reviewed by  
Akash Kumar

Quality Manager

\*\*\*\*End of Report\*\*\*\*

Authorized Signatory  
Dr. Deependra Kumar Sinha  
Ph. D. Environmental Engg.

Technical Manager

Page 1 of 1

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"Save Environment, Save Future"





# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAECE9713D1Z4

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## TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2025/1745 | Report Release Date : 19.03.2025 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC1358725000001704F        |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |   |
|--------------------|-------------------------------|----------------------|---|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2025/AA/1916                                   |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Aditya School Gangupara<br>Bagru Bauxite Mine (75.41ha) |
|                    |                               | Sampling Date        | : 10.03.2025 to 11.03.2025                                |
| Mines Status       | : Non Operational             | Sample Received Date | : 12.03.2025  |
|                    |                               | Type of Sample       | : Ambient Air   |
| Period of Analysis | : 12.03.2025 to 19.03.2025    | Sampling Procedure   | : ELES/DOC/SMPL/02  |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.  |
|                    |                               | Sample Condition     | : Sealed & Preserved                                      |

## METEOROLOGICAL INFORMATION

|   |                               |   |                                  |
|---|-------------------------------|---|----------------------------------|
| 1 | Average Temperature (°C) : 28 | 2 | Barometric Pressure (mmHg) : 720 |
| 3 | Relative Humidity (%) : 60    | 4 | Weather Condition : Clear        |

| Discipline : Chemical                    |                   | Group : Atmospheric Pollution             |        |                  |
|--|-------------------|---|--------|------------------|
| Parameter                                | Unit              | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)                | µg/m <sup>3</sup> | IS 5182 (Part- 23): 2022                  | 76     | 100 (24hrs)      |
| Particulate Matter (PM2.5)               | µg/m <sup>3</sup> | IS 5182 (Part- 24): 2019                  | 42     | 60 (24hrs)       |
| Sulphur Di-Oxide (SO <sub>2</sub> )      | µg/m <sup>3</sup> | IS 5182 (Part- 2/Sec1): 2023              | 13.8   | 80 (24hrs)       |
| Nitrogen Di-Oxide (NO <sub>2</sub> )     | µg/m <sup>3</sup> | IS 5182 (Part- 6): 2022                   | 28.1   | 80 (24hrs)       |
| Ozone (O <sub>3</sub> )                  | µg/m <sup>3</sup> | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia (NH <sub>3</sub> )               | µg/m <sup>3</sup> | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                     | mg/m <sup>3</sup> | IS 5182 (Part- 10): 2019<br>(NDIR Method) | 1.22   | 2 (8hrs)         |
| Lead (Pb)                                | µg/m <sup>3</sup> | IS 5182 (Part- 22): 2019                  | 0.018  | 1 (24hrs)        |
| Nickel (Ni)                              | ng/m <sup>3</sup> | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                             | ng/m <sup>3</sup> | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene (C <sub>6</sub> H <sub>6</sub> ) | µg/m <sup>3</sup> | ELES/GC/SOP/06: 2023                      | <2.5   | 05 (Annual)      |
| Benzo-(a)-Pyrene                         | ng/m <sup>3</sup> | ELES/GC/SOP/03: 2023                      | <0.5   | 01 (Annual)      |

Reviewed by  
Akash Kumar  
Quality Manager

\*\*\*\*End of Report\*\*\*\*

Authorized Signatory  
Dr. Deependra Kumar Sinha  
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Technical Manager

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# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
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## TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2025/1746 | Report Release Date : 19.03.2025 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC1358725000001705F        |                                  |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |   |
|--------------------|-------------------------------|----------------------|---|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2025/AA/1917                                     |
| Address            | : Lohardaga, Jharkhand-835302 | Location             | : Ropeway Unloading Station<br>Bagru Bauxite Mine (75.41ha) |
|                    |                               | Sampling Date        | : 10.03.2025 to 11.03.2025                                  |
| Mines Status       | : Non Operational             | Sample Received Date | : 12.03.2025  |
|                    |                               | Type of Sample       | : Ambient Air   |
| Period of Analysis | : 12.03.2025 to 19.03.2025    | Sampling Procedure   | : ELES/DOC/SMPL/02  |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.  |
|                    |                               | Sample Condition     | : Sealed & Preserved  |

## METEOROLOGICAL INFORMATION

|   |                               |   |                                  |
|---|-------------------------------|---|----------------------------------|
| 1 | Average Temperature (°C) : 28 | 2 | Barometric Pressure (mmHg) : 720 |
| 3 | Relative Humidity (%) : 60    | 4 | Weather Condition : Clear        |

| Discipline : Chemical               |                          | Group : Atmospheric Pollution            |        |                  |
|-------------------------------------|--------------------------|--|--------|------------------|
| Parameter                           | Unit                     | Test Protocol                            | Result | Regulatory Limit |
| Particulate Matter (PM10)           | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 23): 2022                 | 79     | 100 (24hrs)      |
| Particulate Matter (PM2.5)          | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 24): 2019                 | 44     | 60 (24hrs)       |
| Sulphur Di-Oxide ( $\text{SO}_2$ )  | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 2/Sec1): 2023             | 11.5   | 80 (24hrs)       |
| Nitrogen Di-Oxide ( $\text{NO}_2$ ) | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 6): 2022                  | 25.5   | 80 (24hrs)       |
| Ozone ( $\text{O}_3$ )              | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 9): 2019                  | <20.0  | 100 (8hrs)       |
| Ammonia ( $\text{NH}_3$ )           | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 25): 2018                 | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                | $\text{mg}/\text{m}^3$   | IS 5182 (Part- 10): 2019<br>(NIR Method) | <1.0   | 2 (8hrs)         |
| Lead (Pb)                           | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 22): 2019                 | 0.026  | 1 (24hrs)        |
| Nickel (Ni)                         | $\text{ng}/\text{m}^3$   | IS 5182 (Part- 26): 2020                 | <6.0   | 20 (Annual)      |
| Arsenic (As)                        | $\text{ng}/\text{m}^3$   | ELES/AIR/SOP/01: 2021                    | <2.0   | 06 (Annual)      |
| Benzene ( $\text{C}_6\text{H}_6$ )  | $\mu\text{g}/\text{m}^3$ | ELES/GC/SOP/06: 2023                     | <2.5   | 05 (Annual)      |
| Benzo-(a)-Pyrene                    | $\text{ng}/\text{m}^3$   | ELES/GC/SOP/05: 2023                     | <0.5   | 01 (Annual)      |



Reviewed by  
Akash Kumar  
Quality Manager

\*\*\*\*End of Report\*\*\*\*



Authorised Signatory  
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Technical Manager

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# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
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## TEST REPORT

|                 |                       |                     |              |
|-----------------|-----------------------|---------------------|--------------|
| Test Report No. | : ELES/RNC/2025/1747  | Report Release Date | : 19.03.2025 |
| Work Order No.  | : 13612312113         | Work Order Date     | : 28.03.2024 |
| ULR No.         | : TC1358725000001706F |                     |              |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |   |
|--------------------|-------------------------------|----------------------|---|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2025/AA/1918                                 |
|                    |                               | Location             | : Ropeway Angle Station<br>Bagru Bauxite Mine (75.41ha) |
| Address            | : Lohardaga, Jharkhand-835302 | Sampling Date        | : 10.03.2025 to 11.03.2025                              |
|                    |                               | Sample Received Date | : 12.03.2025  |
| Mines Status       | : Non Operational             | Type of Sample       | : Ambient Air   |
|                    |                               | Sampling Procedure   | : ELES/DOC/SMPL/02                                      |
| Period of Analysis | : 12.03.2025 to 19.03.2025    | Sampling Done By     | : ELES Pvt. Ltd.  |
|                    |                               | Sample Condition     | : Sealed & Preserved                                    |

| METEOROLOGICAL INFORMATION |                               |  |   |                                  |  |
|----------------------------|-------------------------------|--|---|----------------------------------|--|
| 1                          | Average Temperature (°C) : 28 |  | 2 | Barometric Pressure (mmHg) : 720 |  |
| 3                          | Relative Humidity (%) : 60    |  | 4 | Weather Condition : Clear        |  |

| Discipline : Chemical               |                          | Group : Atmospheric Pollution             |        |                  |
|-------------------------------------|--------------------------|---|--------|------------------|
| Parameter                           | Unit                     | Test Protocol                             | Result | Regulatory Limit |
| Particulate Matter (PM10)           | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 23): 2022                  | 83     | 100 (24hrs)      |
| Particulate Matter (PM2.5)          | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 24): 2019                  | 48     | 60 (24hrs)       |
| Sulphur Di-Oxide ( $\text{SO}_2$ )  | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 2/Sec1): 2023              | 12.9   | 80 (24hrs)       |
| Nitrogen Di-Oxide ( $\text{NO}_2$ ) | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 6): 2022                   | 27.3   | 80 (24hrs)       |
| Ozone ( $\text{O}_3$ )              | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 9): 2019                   | <20.0  | 100 (8hrs)       |
| Ammonia ( $\text{NH}_3$ )           | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 25): 2018                  | <10.0  | 400 (24hrs)      |
| Carbon Monoxide (CO)                | $\text{mg}/\text{m}^3$   | IS 5182 (Part- 10): 2019<br>(NDIR Method) | 1.28   | 2 (8hrs)         |
| Lead (Pb)                           | $\mu\text{g}/\text{m}^3$ | IS 5182 (Part- 22): 2019                  | 0.024  | 1 (24hrs)        |
| Nickel (Ni)                         | $\text{ng}/\text{m}^3$   | IS 5182 (Part- 26): 2020                  | <6.0   | 20 (Annual)      |
| Arsenic (As)                        | $\text{ng}/\text{m}^3$   | ELES/AIR/SOP/01: 2021                     | <2.0   | 06 (Annual)      |
| Benzene ( $\text{C}_6\text{H}_6$ )  | $\mu\text{g}/\text{m}^3$ | ELES/GC/SOP/06: 2023                      | <2.5   | 05(Annual)       |
| Benzo(a)-Pyrene                     | $\text{ng}/\text{m}^3$   | ELES/GC/SOP/05: 2023                      | <0.5   | 01(Annual)       |

Reviewed by  
Akash Kumar

Quality Manager

\*\*\*\*End of Report\*\*\*\*

Authorized Signatory  
Dr. Deependra Kumar Sinha

Dr. D. Environmental Engg

Page 1 of 1

Technical Manager

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# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
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Phone no.: 0651-2290103  
Website : [www.elespl.co.in](http://www.elespl.co.in)



## TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2025/2019 | Report Release Date : 24.03.2025 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC1358725000001977F        |                                  |

| CUSTOMER DETAILS |                               | SAMPLE DETAILS         |                            |
|------------------|-------------------------------|------------------------|----------------------------|
| Customer Name    | : Hindalco Industries Limited | Sampling Date          | : 12.03.2025 to 13.03.2025 |
| Address          | : Lohardaga, Jharkhand-835302 | Sampling Received Date | : 17.03.2025               |
|                  |                               | Type of Sample         | : Ambient Noise            |
|                  |                               | Sampling procedure     | : ELES/DOC/SMPL/03         |
|                  |                               | Sampling Done By       | : ELES Pvt. Ltd.           |
| Mines Status     | : Operational                 | Period of Analysis     | : 17.03.2025 to 22.03.2025 |

| METEOROLOGICAL INFORMATION |                               |   |                                  |
|----------------------------|-------------------------------|---|----------------------------------|
| 1                          | Average Temperature (°C) : 28 | 2 | Barometric Pressure (mmHg) : 720 |
| 3                          | Relative Humidity (%) : 60    | 4 | Weather Condition : Clear        |

| Discipline : Chemical               |       |               | Group : Atmospheric Pollution |                 |   |
|-------------------------------------|-------|---------------|-------------------------------|-----------------|---|
| Location                            | Unit  | Test Protocol | Result                        |                 | Regulatory Limit (Industrial Zone)                  |
| Hisri (New) Bauxite Mines (14.55ha) | dB(A) | IS 9989: 2020 | Time                          | L <sub>eq</sub> | 75 dB(A)<br>Day Time<br>&<br>70 dB(A)<br>Night Time |
|                                     |       |               | Day Time                      | 68              |   |
| Sample ID:<br>ELES/RNC/2025/AN/2161 |       |               | Night Time                    | 46              |   |

Reviewed by  
**Akash Kumar**  
Quality Manager

\*\*\*\*End of Report\*\*\*\*

Authorised Signatory  
**Dr. Deependra Kumar Sinha**  
Ph. D. Environmental Engg.  
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# ENVIRONMENTAL LABORATORIES &

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TC-13587

## TEST REPORT

|                 |                       |                     |              |
|-----------------|-----------------------|---------------------|--------------|
| Test Report No. | : ELES/RNC/2025/2049  | Report Release Date | : 25.03.2025 |
| Work Order No.  | : 13612312113         | Work Order Date     | : 28.03.2024 |
| ULR No.         | : TC1358725000002006F |                     |              |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |   |
|--------------------|-------------------------------|----------------------|---|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2025/SW/2169                                 |
| Address            | : Lohardaga, Jharkhand-835302 | Sampling Date        | : 12.03.2025  |
|                    |                               | Sample Received Date | : 17.03.2025  |
|                    |                               | Type of Sample       | : Surface Water   |
| Mines Status       | : Operational                 | Source of Sample     | : Spring Water  |
|                    |                               | Location of Sample   | : Daldaliya Village, Hisri (New) Bauxite Mine (14.55ha) |
| Period of Analysis | : 17.03.2025 to 24.03.2025    | Sampling Procedure   | : ELES/DOC/SMPL/01                                      |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.  |
|                    |                               | Sample Condition     | : Sealed & Preserved                                    |

| Discipline : Chemical                    |       | Group : Water  |                 | Tolerance Limits                                   |
|--|-------|--|-----------------|--|
| Parameter                                | Unit  | Test Protocol  | Result          | as per IS 2296-1992 Class C (Inland Surface Water) |
| pH (at 24.9 °C)                          | -     | IS 3025 (Part-11) : 2022                               | 6.79            | 6.5-8.5  |
| Colour                                   | Hazen | IS 3025 (Part -4) : 2021                               | 1.8             | 300  |
| Odour                                    | -     | IS 3025 (Part-5) : 2018                                | Unobjectionable | --   |
| Turbidity                                | NTU   | IS 3025 (Part-10): 2023                                | 1.18            | --   |
| Total Dissolved Solids (TDS)             | mg/L  | IS 3025 (Part-16): 2023                                | 148             | 1500   |
| Total Alkalinity (as CaCO <sub>3</sub> ) | mg/L  | IS 3025 (Part-23) : 2023                               | 59.1            | --   |
| Total Hardness (as CaCO <sub>3</sub> )   | mg/L  | IS 3025 (Part-21): 2019                                | 64.6            | --   |
| Sulphate (as SO <sub>4</sub> )           | mg/L  | IS 3025 (Part-24/Sec1): 2022                           | 6.4             | 400  |
| Chloride (as Cl)                         | mg/L  | IS 3025 (Part-32): 2019                                | 12.6            | 600  |
| Fluoride (as F)                          | mg/L  | IS 3025 (Part-60): 2019                                | BDL (DL: 0.1)   | 1.5  |
| Nitrate (as NO <sub>3</sub> )            | mg/L  | APHA 24 <sup>th</sup> Ed.2023, 4500 NO <sub>3</sub> -B | 2.32            | 50   |

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# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
HATIA, RANCHI-834003 (JHARKHAND)  
GST NO:- 20AAECE9713D1Z4

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Website : [www.elespl.co.in](http://www.elespl.co.in)



## TEST REPORT

|                 |                       |                     |              |
|-----------------|-----------------------|---------------------|--------------|
| Test Report No. | : ELES/RNC/2025/2049  | Report Release Date | : 25.03.2025 |
| Work Order No.  | : 13612312113         | Work Order Date     | : 28.03.2024 |
| ULR No.         | : TC1358725000002006F |                     |              |

| Discipline : Chemical                                      |      | Group : Water                        |                    | Tolerance Limits   |
|--|------|--------------------------------------|--------------------|--|
| Parameter  | Unit | Test Protocol                        | Result             | as per IS 2296-1992<br>Class C<br>(Inland Surface Water) |
| Free Residual Chlorine (RFC)                               | mg/L | IS 3025 (Part-26) : 2021             | BDL<br>(DL: 0.1)   | --   |
| Phenols Compounds<br>(as C <sub>6</sub> H <sub>5</sub> OH) | mg/L | IS 3025 (Part-43/Sec1): 2022         | BDL<br>(DL: 0.001) | 0.005  |
| Calcium (as Ca)  | mg/L | IS 3025 (Part-40): 2019              | 17.2               | --   |
| Discipline : Chemical                                      |      | Group : Residues in Water            |                    |  |
| Aluminum (as Al)   | mg/L | IS 3025 (Part-55): 2003;RA2019       | BDL<br>(DL: 0.02)  | --   |
| Arsenic (as As)  | mg/L | IS 3025 (Part 37):2022               | BDL<br>(DL: 0.005) | 0.2  |
| Boron (as B)   | mg/L | IS 3025 (Part-57): 2021              | BDL<br>(DL: 0.2)   | --   |
| Cadmium (as Cd)  | mg/L | APHA 24 <sup>th</sup> Ed.2023; 3111B | BDL<br>(DL: 0.003) | 0.01   |
| Total Chromium (as Cr)                                     | mg/L | APHA 24 <sup>th</sup> Ed.2023; 3111B | BDL<br>(DL: 0.03)  | 0.05   |
| Copper (as Cu)   | mg/L | IS 3025 (Part 42): 2019              | BDL<br>(DL: 0.03)  | 1.5  |
| Iron (as Fe)   | mg/L | APHA 24 <sup>th</sup> Ed.2023; 3111B | 0.161              | 50   |
| Lead (as Pb)   | mg/L | APHA 24 <sup>th</sup> Ed.2023; 3111B | BDL<br>(DL: 0.01)  | 0.1  |
| Manganese (as Mn)  | mg/L | APHA 24 <sup>th</sup> Ed.2023; 3111B | BDL<br>(DL: 0.05)  | --   |
| Mercury (as Hg)  | mg/L | IS 3025 (Part-48): 2019              | BDL<br>(DL: 0.001) | --   |
| Selenium (as Se)   | mg/L | IS 3025(Part-56): 2019               | BDL<br>(DL: 0.01)  | 0.05   |
| Zinc (as Zn)   | mg/L | APHA 24 <sup>th</sup> Ed.2023; 3111B | BDL<br>(DL: 0.1)   | 15   |

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### TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2025/2049 | Report Release Date : 25.03.2025 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |
| ULR No. : TC1358725000002006F        |                                  |

| Discipline : Chemical                   |      | Group : Residues in Water                |                    | Tolerance Limits   |
|---|------|--|--------------------|--|
| Parameter                               | Unit | Test Protocol                            | Result             | as per IS 2296-1992<br>Class C<br>(Inland Surface Water) |
| Cyanide (as CN)                         | mg/L | APHA 24 <sup>th</sup> Ed.2023, 4500 CN-E | BDL<br>(DL: 0.012) | 0.05   |
| Polynuclear Aromatic Hydrocarbons (PAH) | µg/L | ELES/GC/SOP/04: 2023                     | BDL<br>(DL: 0.05)  | --   |
| <b>Pesticides</b>                       |      |  |                    |  |
| Alachlor                                | µg/L | ELES/GC/SOP/01: 2023                     | BDL<br>(DL: 0.5)   | --   |
| Atrazine                                | µg/L | ELES/GC/SOP/01: 2023                     | BDL<br>(DL: 0.5)   | --   |
| Butachlor                               | µg/L | ELES/GC/SOP/01: 2023                     | BDL<br>(DL: 0.5)   | --   |
| Chlorpyrifos                            | µg/L | ELES/GC/SOP/01: 2023                     | BDL<br>(DL: 0.5)   | --   |
| Ethion                                  | µg/L | ELES/GC/SOP/01: 2023                     | BDL<br>(DL: 0.5)   | --   |
| Malathion                               | µg/L | ELES/GC/SOP/01: 2023                     | BDL<br>(DL: 0.5)   | --   |
| Methyl parathion                        | µg/L | ELES/GC/SOP/01: 2023                     | BDL<br>(DL: 0.1)   | --   |
| Monocrotophos                           | µg/L | ELES/GC/SOP/01: 2023                     | BDL<br>(DL: 0.5)   | --   |
| Phorate                                 | µg/L | ELES/GC/SOP/01: 2023                     | BDL<br>(DL: 0.5)   | --   |
| Phorate Sulphone                        | µg/L | ELES/GC/SOP/01: 2023                     | BDL<br>(DL: 0.5)   | --   |
| Dieldrin                                | µg/L | ELES/GC/SOP/02: 2023                     | BDL<br>(DL: 0.01)  | --   |





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## TEST REPORT

|                 |                       |                     |              |
|-----------------|-----------------------|---------------------|--------------|
| Test Report No. | : ELES/RNC/2025/2049  | Report Release Date | : 25.03.2025 |
| Work Order No.  | : 13612312113         | Work Order Date     | : 28.03.2024 |
| ULR No.         | : TC1358725000002006F |                     |              |

| Pesticides  |            |                      |                    | Tolerance Limits   |
|---|------------|----------------------|--------------------|--|
| Parameter   | Unit       | Test Protocol        | Result             | as per IS 2296-1992<br>Class C<br>(Inland Surface Water) |
| Alpha HCH   | µg/L       | ELES/GC/SOP/02: 2023 | BDL<br>(DL: 0.006) | —  |
| Beta HCH  | µg/L       | ELES/GC/SOP/02: 2023 | BDL<br>(DL: 0.02)  | —  |
| Delta HCH   | µg/L       | ELES/GC/SOP/02: 2023 | BDL<br>(DL: 0.02)  | —  |
| Gamma HCH (Lindane)                               | µg/L       | ELES/GC/SOP/02: 2023 | BDL<br>(DL: 0.02)  | —  |
| Endosulfan<br>(alpha, beta and sulphate)          | µg/L       | ELES/GC/SOP/02: 2023 | BDL<br>(DL: 0.05)  | —  |
| DDT(o,p and p,p-isomers of<br>DDT) ( DDE and DDD) | µg/L       | ELES/GC/SOP/02: 2023 | BDL<br>(DL: 0.05)  | —  |
| Discipline: Biological                            |            | Group : Water        |                    |  |
| Total Coliform                                    | CFU/100 mL | IS 15185: 2021       | $3.36 \times 10^2$ | 5000   |
| Escherichia coli                                  | CFU/100 mL | IS 15185: 2021       | BDL<br>(DL: 1.0)   | —  |

Remarks: pH & RFC done at site.

Reviewed by  
Akash Kumar  
Quality Manager

\*\*\*\*End of Report\*\*\*\*

Authorised Signatory  
Dr. Deependra Kumar Sinha  
Ph. D. Environmental Engg.  
Technical Manager



# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
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## TEST REPORT

|                                      |                                  |
|--------------------------------------|----------------------------------|
| Test Report No. : ELES/RNC/2025/2049 | Report Release Date : 25.03.2025 |
| Work Order No. : 13612312113         | Work Order Date : 28.03.2024     |

| CUSTOMER DETAILS   |                               | SAMPLE DETAILS       |  |
|--------------------|-------------------------------|----------------------|--|
| Customer Name      | : Hindalco Industries Limited | Sample Ref. No.      | : ELES/RNC/2025/SW/2169                                    |
| Address            | : Lohardaga, Jharkhand-835302 | Sampling Date        | : 12.03.2025   |
|                    |                               | Sample Received Date | : 17.03.2025   |
|                    |                               | Type of Sample       | : Surface Water  |
|                    |                               | Source of Sample     | : Spring Water   |
| Mines Status       | : Operational                 | Location of Sample   | : Daldaliya Village, Hisri (New)<br>Bauxite Mine (14.55ha) |
| Period of Analysis | : 17.03.2025 to 25.03.2025    | Sampling Procedure   | : ELES/DOC/SMPL/01   |
|                    |                               | Sampling Done By     | : ELES Pvt. Ltd.   |
|                    |                               | Sample Condition     | : Sealed & Preserved                                       |

| Discipline : Chemical            |      | Group : Water  |                    | Tolerance Limits   |
|----------------------------------|------|--|--------------------|--|
| Parameter                        | Unit | Test Protocol  | Result             | as per IS 2296-1992<br>Class C<br>(Inland Surface Water) |
| Taste                            | -    | APHA 24 <sup>th</sup> Ed.2023, 2160C                               | N/A                | --   |
| Anionic Surfactants<br>(as MBAS) | mg/L | APHA 24 <sup>th</sup> Ed.2023, 5540-C                              | BDL<br>(DL: 0.025) | 1.0  |
| Mineral Oil*                     | mg/L | IS 3025 (Part-39):2021<br>(Clause 6 Infrared Spectroscopic Method) | BDL<br>(DL: 0.05)  | --   |

Remarks: 1. (\*) Parameters are outsourced to other Lab.

Reviewed by  
**Akash Kumar**  
Quality Manager

\*\*\*\*End of Report\*\*\*\*

Authorised Signatory  
**Dr. Deependra Kumar Sinha**  
Ph. D. Environmental Engg.  
Technical Manager





# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA  
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Website: [www.elespl.co.in](http://www.elespl.co.in)



## TEST REPORT

|                 |                       |                     |              |
|-----------------|-----------------------|---------------------|--------------|
| Test Report No. | : ELES/RNC/2025/2024  | Report Release Date | : 24.03.2025 |
| Work Order No.  | : 13612312113         | Work Order Date     | : 28.03.2024 |
| ULR No.         | : TC1358725000001982F |                     |              |

| CUSTOMER DETAILS |                               | SAMPLE DETAILS         |                            |
|------------------|-------------------------------|------------------------|----------------------------|
| Customer Name    | : Hindalco Industries Limited | Sampling Date          | : 13.03.2025               |
| Address          | : Lohardaga, Jharkhand-835302 | Sampling Received Date | : 17.03.2025               |
|                  |                               | Type of Sample         | : Workzone Noise           |
|                  |                               | Sampling procedure     | : ELES/DOC/SMPL/03         |
|                  |                               | Sample Drawn By        | : ELES Pvt. Ltd.           |
| Mines Status     | : Operational                 | Period of Analysis     | : 17.03.2025 to 22.03.2025 |

## METEOROLOGICAL INFORMATION

|   |                          |      |   |                            |         |
|---|--------------------------|------|---|----------------------------|---------|
| 1 | Average Temperature (°C) | : 29 | 2 | Barometric Pressure (mmHg) | : 720   |
| 3 | Relative Humidity (%)    | : 60 | 4 | Weather Condition          | : Clear |

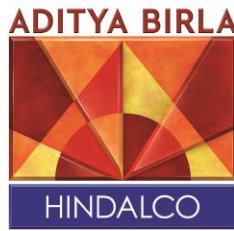
| Location   | Unit  | Test Protocol | Result   |                 | Regulatory Limit<br>(Industrial Zone) |
|--|-------|---------------|----------|-----------------|---------------------------------------|
| South Area –<br>Hisri (New) Bauxite Mine (14.55ha) | dB(A) | IS 4758: 2017 | Time     | L <sub>eq</sub> | 90 dB(A)                              |
|  |       |               | Day Time | 73              |                                       |
| Sample ID:<br>ELES/RNC/2025/WN/2166                |       |               |          |                 |                                       |

Reviewed by  
**Akash Kumar**  
Quality Manager

\*\*\*\*End of Report\*\*\*\*

Authorised Signatory  
**Dr. Deependra Kumar Sinha**  
Ph. D. Environmental Engg.  
Technical Manager

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### **Annexure 3**

Date – 01.05.2025

#### **Office Order**

Environmental Cell has been re-constituted for Bagru Group of Mines (Bagru Bauxite Mine, Bhusar Bauxite Mine and Hisri New Bauxite Mine). This cell consists of the following team members who will ensure compliance with the Environment Acts, Rules & Regulations in respect of the said mines of Hindalco Industries Limited.

1. Mr. Raj Sinha (Coordinator)
2. Mr. Malaya Prusty (Geologist)
3. Mr. Girija Tamrakar (Environment Engineer)
4. Mr. Anand Prakash Tiwari (Environment Engineer)

The Undersigned is the in charge of above Environment Management Cell constituted for the purpose of ensuring compliances of environmental acts, rules and regulations for the above mines.

A handwritten signature in blue ink, appearing to be "Basudev Gangopadhyay", written over a horizontal line.

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



## Annexure 4

| Production, Mined Out, Back Filled and Over Burden removal from October'24 to March'25 |                              |                        |                           |                          |                 |                     |                      |                    |
|--|------------------------------|------------------------|---------------------------|--------------------------|-----------------|---------------------|----------------------|--------------------|
| 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 | 86061           | 1.53                | 0.695                | 88218.66           |
| 3  | Hisri (New) Bauxite Mine     | 14.55                  | 100000                    | 19.07.1981 to 31.03.2030 | 25362           | 0.345               | 0.10                 | 30825.23           |
| 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 | 109753          | 2.12                | 7.6                  | 332929.81          |
| 7  | Sherangdag-A Bauxite Mine    | 155.81                 | 260000                    | 16.10.1974 to 31.03.2030 | 2989            | 0.02                | 0.02                 | 2110.0             |
| 8  | Serangdag-B Bauxite Mine     | 77.89                  | 100000                    | 04.10.1978 to 31.03.2030 | 35253           | 0.756               | 0.35                 | 38119.67           |
| 9  | Jalim & Sanai Bauxite Mine   | 12.14                  | 50000                     | 16.10.1974 to 31.03.2030 | 24760           | 0.13                | 0.08                 | 12444.82           |
| 10   | Gurdari Bauxite Mine         | 584.19                 | 325000                    | 23.03.1985 to 22.03.2035 | 105401          | 4.42                | 3.76                 | 185747.47          |
| 11   | Kujam - I Bauxite Mine       | 80.87                  | 150000                    | 13.03.2006 to 12.03.2056 | NIL             | NIL                 | 2.54                 | NIL                |
| 12   | Kujam - II Bauxite Mine      | 157.38                 | 300000                    | 24.03.2006 to 23.03.2056 | 61250           | 2.40                | 4.72                 | 136798.61          |
| 13   | Amtipani Bauxite Mine        | 190.95                 | 150000                    | 13.03.2006 to 12.03.2056 | 62240           | 4.047               | 6.423                | 255249.72          |

**Annexure 4**

| <b>Minerals &amp; Minerals Limited</b> |                                   |         |        |                             |        |       |       |           |
|--|-----------------------------------|---------|--------|-----------------------------|--------|-------|-------|-----------|
| 14                                     | Pakhar (109.507)<br>Bauxite Mine  | 109.507 | 280000 | 26.07.2008 to<br>25.07.2058 | 112559 | 0.44  | 3.62  | 255124.1  |
| 15                                     | Pakhar (15.58)<br>Bauxite Mine    | 15.58   | 60000  | 28.04.1965 to<br>31.03.2030 | 5015   | 0.26  | 0.42  | 11644.5   |
| 16                                     | Bimarla<br>Bauxite Mine           | 134.526 | 300000 | 18.07.2009 to<br>17.07.2059 | 93500  | 3.956 | 5.37  | 156892.41 |
| 17                                     | Amtipani Chirodih<br>Bauxite Mine | 130.01  | 450000 | 11.01.2017 to<br>10.01.2067 | 114100 | 5.43  | 5.133 | 233823.46 |

\*Static information about the mines included in the above table



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



## Annexure-5

### **BREAK UP THE COST OF ENVIRONMENTAL MEASURES DURING THE YEAR 2024-25**

The composite cost during the year 2024-25 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)<br>FY 2024-25<br>(From Oct'24 to Mar'25) | Actual (in Rupees)<br>FY 2024-25<br>(From Oct'24 to Mar'25) |
|------|---|---|---|
| 1    | Pollution Control and Environmental Monitoring        | 61,35,000.00  | 42,08,879.10  |
| 2    | Reclamation/ Back filing & Rehabilitation**           | 5,62,80,000.00  | 5,32,33,879.71  |
| 3    | Green belt, Plantation & Water sprinkling arrangement | 73,42,000.00  | 43,51,560.28  |
| 4    | Rural Development                                     | 2,75,00,000.00  | 3,13,06,810.81  |

\*\*Part of OB removed cost



Basudev Gangopadhyay  
AVP (Planning, Environment & Compliance)