

Date: 16.05.2025

HIL/LHD/ENV/MoEF&CC/074

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

**Sub:** Compliance Report of EC conditions for Amtipani Bauxite Mining project of M/s Hindalco Industries Limited located in Dist- Gumla, Jharkhand for the period October'24 to March'25.

Ref: Environmental Clearance letter no J-11015/241/2005-IA II (M) dated 14<sup>th</sup> August 2006

Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for **Amtipani** Bauxite mining project of **M/s Hindalco Industries Limited** located in Gumla, Jharkhand for the period October'24 to March'25.

The lease details are as below:

Lease area (ha)	Production Capacity (MT)	Lease Period	
190.95	150000	13.03.2006 to 12.03.2056	

Hope you will find the same in order.

Thanking You

Yours Sincerely

FOR HINDALCO INDUSTRIES LIMITED

(Basudev Gangopadhyay)

AVP (Planning, Environment & Compliance)

Enclosure: - As Above

CC: <u>ro.ranchi-mef@gov.in</u>, <u>mef@ori.nic.in</u>, <u>mef@nic.in</u>, <u>mef.or@nic.in</u>, <u>mscb.cpcb@nic.in</u>, <u>zokolkatta.cpcb@nic.in</u>, <u>ranchijspcb@gmail.com</u>, <u>roranchi47@gmail.com</u>

Name of the Project : Amtipani Bauxite Mine (190.95 ha)

M/s Hindalco Industries Ltd

Environment Clearance No & date : J - 11015/241/2005-IA, II (M), dated 14.08.2006.

Period of compliance Report : From 1st October 2024 to 31st March 2025

#### **Specific Conditions**

Condition 1- All the conditions stipulated by the State Pollution Control Board in their NOC should be effectively implemented.

**Reply to Condition 1-** Implementations of stipulated conditions in NOC are full filled post which consent to operate has been granted by SPCB from time to time. The existing consent to operate is valid up to 31.12.2025. Productions of bauxite are within limits specified in Consent to Operate.

Condition 2- The mining operations shall not intersect the groundwater table. Prior approval of the MoEF and CGWA shall be obtained for mining below the water table.

**Reply to Condition 2-** Since shallow depth mining is being carried out, hence there is no intersection with the groundwater table. In future also, working zones will be restricted to above ground water tables. We undertake that no mining is carried out below ground water table and the same status will be maintained in future also. Moreover, we regularly monitor the groundwater table through the installation of a piezometer. A copy of the water level report is attached herewith as **Annexure-1**.

Condition 3- 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 to Condition 3-** Land acquisition is being carried out with permission of competent authority of State Government, i.e. concerned Deputy Commissioner (D.C.) under CNT Act. The land lease agreement has been made with raiyat (Landowner) after permission of the State Govt with provision of returning the land as per norms set by D.C. The compensation and facilities are being provided as per the norms set in the agreement. Thus, land acquisition has the approval of the State Government.

Condition 4- Topsoil shall be stacked properly with proper slope with adequate measures and should be used for reclamation and rehabilitation of mined out areas.

**Reply to Condition 4-**. Topsoil is being stacked temporally properly with proper slope as and when required for reclamation and rehabilitation. Sequential backfilling and reclamation of mined out area are being exercised for which topsoil is being spread on backfilled area for reclamation. The mining is being

carried out as per the approved mining plan. Monitoring and management of rehabilitated areas is being done through effective supervision. Data pertaining to backfilling is enclosed as **Annexure 4** 



Reclaimed area

Condition 5- The waste generated in the initial period shall be dumped temporarily and backfilled in the mined-out area. There shall be no permanent external OB dump in the project area. Concurrent backfilling should start from the fifth year onwards. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forests on six monthly basis.

**Reply to Condition 5-** Overburden and waste rock are being used for concurrent backfilling, and topsoil is being spread on the backfilled area for reclamation. Currently, there is no OB dump present in the mine lease area. Monitoring and management of rehabilitated areas continues until vegetation becomes self-sustaining through supervision. Data pertaining to backfilling is enclosed as **Annexure 4.** Compliance status is being submitted to MoEF&CC on six monthly basis.

Condition 6- Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from soil and mineral dump. 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 drains (size, gradient and length) shall be constructed for mine pit and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material. Sedimentation pits should be constructed at the corners of the garland drains and desilted at regular intervals.

**Reply to Condition 6-** 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.





Retaining wall and siltation pit to prevent solid wash-off.



Garland drains around Mine pit.

Condition 7- Plantation shall be raised in an area of 79.3 ha including a green belt of adequate width by planting the native species around the ML area, roads, etc. in consultation with the local DFO/Agriculture Department. The density of the trees should be around 1500 plants per ha.

**Reply to Condition 7-** Progressive plantation of native species is being carried out in and around mining lease, reclaimed area etc. in consultation with local forest department on regular basis. During FY 2024-25, a total of 3645 nos. saplings have been planted in the mining premises. Cumulative 19.55 ha areas have been planted till date. In addition to this agricultural activity is going on in reclaimed land with the consent of landowners. The Green belt development programme is in progress with the progress of mining activities.





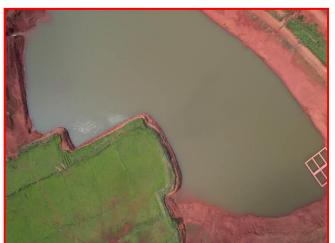




Plantation and Agricultural activity on reclaimed land and Safety zone

Condition 8- 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 to Condition 8-** A detailed plan to augment groundwater has been prepared, and suitable measures like the creation of water harvesting ponds, etc., are being taken for the augmentation of groundwater in the area, in consultation with the Central Ground Water Board.





Rainwater Harvesting Pond at Mines

Condition 9- 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 monitoring should be carried out four times in a year - pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected may be sent regularly to MOEF, Central Ground Water Authority and Regional Director Central Ground Water Board.

**Reply to Condition 9-** We are not using ground water for mining purposes. Shallow depth mining is being carried out, hence there is no intersection of ground water table during the mining operation at present and in future. A piezometer has been installed for monitoring of ground water level. The ground water level and water quality reports are being sent regular to regional office of Ministry, CGWA and JSPCB. The same is attached herewith as **Annexure 1 & 2**.



Piezometer Installed at Mine

Condition 10- Prior permission from the competent authority should be obtained for the drawl of water from the surface water bodies.

**Reply to Condition 10-** We are not using any water from natural streams/ ground water for mining operation. Rainwater harvesting ponds with proper fencing have been already constructed in the mine premises. Rainwater harvested during rainy season is being used for sprinkling on haul roads and raising plantation.

However, we have already obtained NOC for extraction of ground water from CGWA/ CGWB for drinking purposes only. The copy of same NOC is attached below.

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NOC for Ground water Extraction

Condition 11- The project proponent shall monitor the spring discharge on long term basis (at least one major spring) both in terms of quantity and quality of water and records maintained. Six monthly reports should be submitted to the Ministry of Environment and Forests and its Regional Office located at Bhubaneswar.

**Reply to Condition 11-** Water Monitoring of Spring is being conducted and Analysis report is attached as **Annexure 2**. Six monthly report is being submitted regularly. Now, the Regional office of MoEF&CC is in Ranchi.

Condition 12- Vehicular emissions should be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and in the transportation of minerals. The vehicles should be covered with a tarpaulin and shall not be overloaded.

**Reply to Condition 12-** To keep vehicular emissions under control, vehicles are periodically checked & repaired. All measures are being taken to control vehicular emission. All vehicles are covered with tarpaulins, and non-overloading guidelines are being followed during transportation of mineral. Photograph of Tarpaulin Covered Vehicle is attached below.



Ore Transportation with tarpaulin covered truck.

Condition 13- Drills should either be operated with dust extractors or should be equipped with a water injection system.

**Reply to Condition 13-** Wet drilling is in practice.



Wet drilling is in practice.

Condition 14- Blasting operation should be carried out only during the daytime. Controlled blasting should be practiced. The mitigative measures for control of ground vibrations and to arrest fly rocks and boulders should be implemented.

**Reply to Condition 14-** Blasting time is fixed during Lunch Time i.e. 1.00 PM -2.00 PM. Controlled blasting method is in practice. Ground vibration study has been conducted periodically. All efforts such as use of Nonel and delay, reduction in charge per delay etc. are being taken to mitigate impact of blasting.

Condition 15- Consent to operate should be obtained from SPCB prior to start of production of mine.

**Reply to Condition 15-** We have obtained Consent to operate prior to start of production. The existing consent to operate is valid up to 31.12.2025

Condition 16- Sewage treatment plants should be installed for the colony. ETP should also be provided for workshops and wastewater generated from mining operations.

**Reply to Condition 16-** No wastewater is generated from our mining operation. However, only negligible amount of effluent is being generated from workshop and Oil & grease trap system is already installed for treatment of this effluent. The treated water is in close circuit and being reused for washing of vehicle in the workshop. We are not discharging any wastewater outside the mine lease area.

Furthermore, the quality of this treated water is being monitored regularly and the monitoring report is enclosed herewith as **Annexure 2.** The sewage water from domestic uses is being collected through individual Septic Tank and followed by Soak Pit.





Oil and Grease Trap at Mines

Condition 17- Land ouster and land loser/affected people should be compensated and rehabilitated as per the National Policy on Resettlement and Rehabilitation of project Affected Families (NPRR), 2003

**Reply to Condition 17-** Land ouster and land loser/affected people are being compensated and rehabilitated as per statute/guidelines.

Condition 18- The higher benches of the excavated void to be converted into water reservoir shall be terraced and afforested to stabilize the slopes. Peripheral fencing shall be done along the excavated area.

**Reply to Condition 18-** Water reservoir/harvesting pond has been terraced and afforested to stabilize slopes. Peripheral fencing provided along excavated area.

Condition 19- A Final Mine Closure Plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.

**Reply to Condition 19-** Mining Plan along with progressive mine closure plan has been approved by Indian Bureau of Mines. Final Mine Closure Plan will be submitted in due time as per applicable guidelines and timelines mentioned in MCDR/IBM guidelines, who are competent authority to approve the same. Based on present resource estimate and peak rated production capacity mentioned in EC, Mining operation is being carried out.

#### **General Conditions**

Condition 1- No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.

**Reply to Condition 1- Noted** 

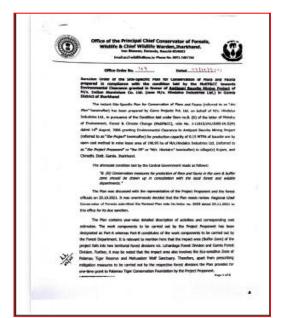
Condition 2- No change in the calendar plan including excavation, quantum of mineral bauxite and waste should be made.

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

Condition 3- 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 departments.

**Reply to Condition 3-** We have prepared Site-Specific Wildlife Conservation Plan (WLCP) in consultation with State Forest Department and obtained approval letter from Principal Chief Conservator of Forest, Wildlife & Chief Wildlife Warden, Jharkhand via Office Order No. 49 dated 02.12.2021 for conservation and protection of flora and fauna in the core and buffer zone for Amtipani Bauxite Mine.

A copy of same Approval letter has been submitted to your good office on 21.02.2022.





Site Specific Wildlife Conservation Plan

Condition 4- Four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RPM, SPM, SO2, NOx monitoring. Location of the stations should be decided based on the meteorological 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 to Condition 4-** We have already established four ambient air quality monitoring stations in the core zone as well as buffer zone. Monitoring is being carried out and reported to the concerned authorities. Monitoring Report is attached as **Annexure 2**.

Condition 5- Data on ambient air quality (RPM, SPM, SO2 and NOx) should be regularly submitted to the Ministry including its Regional office located at Bhopal and the State Pollution Control Board / Central Pollution Control Board once in six months.

**Reply to Condition 5-** Being adhered to. Monitoring Reports for the reporting period are attached as **Annexure-2**. Now, the Regional office of MoEF&CC is in Ranchi.

Condition 6- Fugitive dust emissions from all the sources should be controlled regularly. Water spraying arrangement on haul roads, loading, and unloading and at transfer points should be provided and properly maintained.

**Reply to Condition 6-** Mobile water tanker with sprinkling facility has been provided along the haul roads, loading, unloading & at transfer points to suppress the dust generation.



Mobile water tanker for dust suppression

Condition 7- Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs / muffs.

**Reply to Condition 7-** Noise monitoring is being done regularly. Workers engaged in the operation of HEMMs, etc., have also been provided with PPEs such as ear plugs and earmuffs. Monitoring of noise level is being conducted at various locations of the work zone area.

Report is attached as **Annexure 2.** 

Condition 8- Industrial wastewater (workshop and wastewater from the mine) should be properly collected and treated so as to confirm to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.

**Reply to Condition 8-** 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 of vehicles and Oil & grease trap system is already installed for treatment of this effluent. The treated water is in close circuit and being reused for washing of 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 herewith as **Annexure- 2.** 

Photograph of Oil and grease traps is already attached below.





Oil and Grease Trap at Mines

Condition 9- Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects. 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 to Condition 9-** 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 session on Safety and health aspects on a regular basis. Periodical Occupational health surveillance program of the workers is being carried out and records maintained as per statute.

Condition 10- A separate environmental management cell with suitable qualified personnel should be set up under the control of a Senior Executive, who will report directly to the Head of the Organization.

**Reply to Condition 10-** A separate environmental management cell with suitable qualified personnel has been set up under the control of a Senior Executive, who is reporting directly to the Head of the Organization. The same is attached herewith as **Annexure 3.** 

Condition 11- The project authorities should inform the Regional Office located at Bhubaneswar regarding the date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.

**Reply to Condition 11-** This is an operating mine, hence provision related to financial closure not applicable. Currently, the Regional Office is in Ranchi.

Condition 12- The funds earmarked for environmental protection measures should be kept in a 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 Bhubaneswar.

**Reply to Condition 12-** Every year, the funds earmarked for environmental protection measures is being budgeted separately 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 13- The project authorities should inform the Regional Office located at Bhubaneswar regarding the date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.

**Reply to Condition 13-** This is an operating mine, hence provision related to financial closure not applicable. Currently, the Regional Office is in Ranchi.

Condition 14- 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 to Condition 14- Noted and Agreed. Currently, the Regional Office of MoEF&CC is in Ranchi.

Condition 15- A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom and suggestion / representation has been received while processing the proposal.

Reply to Condition 15- Complied. A copy of clearance letter has already submitted.

Condition 16- State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and Collector's office/ Tehsildar's Office for 30 days.

**Reply to Condition 16-** Noted. The EC Letter has been submitted to JSPCB for display of same at its Regional office and other government offices.

Condition 17- The project authorities should advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment and Forests at http://envfor.nic.in and a copy of the same should be forwarded to the Regional Office of this Ministry located Bhubaneswar.

**Reply to Condition 17-** 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. Now, the Regional office of MoEF&CC is in Ranchi.

#### **Annexure-1**

### **Piezometer Monitoring Report**

Mine: Amtipani Bauxite Mine

S No	Month	Ground Water Level (BGL) (in meters)		
1	Oct-24	31.35		
2	Nov-24	31.65		
3	Dec-24	31.89		
4	Jan-25	32.84		
5	Feb-25	33.06		
6	Mar-25	32.95		

# ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT.LTD.

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

Amtipani Bauxite Mine-Environmental Monitoring Report

October 2024



# CONTENT

4	Hindalco Industries : Amtipani Bauxite Mine Environmental Monitoring Report October 2024
	Amtipani Bauxite Mine
	AMBIENT AIR QUALITY- CORE ZONE
1	Mine Entrance Gate
2	Near Mine Office/WB
3	Mines Near Quarry – 1F
4	Mines Near Quarry – 7C
	AMBIENT AIR QUALITY- BUFFER ZONE
1	Near PakriGada Village
2	Near Pol Pol Village
3	Near Shakhuapani Village
4	Near DipaKujam Village







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

### ENGINEERING SERVICES PVT. LTD.

Email: Info@elespl.co.in , eles.ranchi@gmail.com

Phone no.: 0651-2290103 Website: www.elespl.co.in



T6:43981

### TEST REPORT

Test Report No.	: ELES/RNC/2024/6293	Report Release Date	: 26.10.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400004176F			

CUSTOMER DET	AILS	SAMPLE DETAILS			
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/7343		
		Location	: Mine Entrance Gate		
			Amtipani Bauxite Mine (190.95 ha)		
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 17.10.2024 to 18.10.2024		
£356345-552		Sample Received Date	: 21.10.2024		
		Type of Sample	: Ambient Air		
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02		
	v og myskomerstern avend at læteret	Sampling Done By	: ELES Pvt. Ltd.		
Period of Analysis	: 21.10.2024 to 26.10.2024	Sample Condition	: Sealed & Preserved		

MI	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 27	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%)	: 69	4	Weather Condition	: Cloudy

Discipline: Chemic	al	Group:	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit			
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	62	100 (24hrs)			
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	38	60 (24hrs)			
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2/Sec1): 2023	6.9	80 (24hrs)			
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	22.6	80 (24hrs)			
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)			
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)			
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)			
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.015	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 (C <sub>6</sub> H <sub>6</sub> )	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

Page 1 of 1

The Document stated in Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in Technical Managers, shown in the Tast Report refer or relates only to the judicinallysis slowe by the Laboratory only. The information stand on the Test Report reflects the findings dose by the Laboratory at the time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided on the supert, escarge the information which is provided by the client. The Report control for reproduced recept in full and any part of the report is not taken out of contest, without prior written approval of the Laboratory. The Report is full or in pure shall not be published. advertise, used for any legal actions unless prior permission has been secured from the Management of the Laboratory. Attention is drawn to the limitation of liability, compensation and jurisdiction stones. Any unauthorized alteration & fabilication of the content or appearance of the Test Report is unlawful and offunders may be prosecuted to the fullest rotent of the law. All the samples are retained for 30days from the Onto of release some of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complaints regarding the Reports shall be done within 15days from the Date of Test Report released issued. After the time period stated before, no complaints will be screpted. The entire Time schedule mentioned in Year Report is to 24hours format. Abbreviation used: N/A (Not Applicable), BOL (Balow Detection Limit), LDL (Lower Detection Limit).



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

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TE-MINE

### TEST REPORT

Test Report No.	: ELES/RNC/2024/6294	Report Release Date	: 26.10.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400004177F	<del></del>	

CUSTOMER DET	AILS	SAMPLE DETAILS				
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/7344			
		Location.	: Near Mine Office/WB			
			Amtipani Bauxite Mine (190.95 ha : 17.10.2024 to 18.10.2024			
Address	: Lohardaga, Jharkhand-835302	Sampling Date				
		Sample Received Date	: 21.10.2024			
		Type of Sample	: Ambient Air			
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd. : Sealed & Preserved			
Period of Analysis	: 21.10.2024 to 26.10.2024	Sampling Done By Sample Condition				

METEOROLOGICAL INFORMATION							
1	Average Temperature (°C)	: 27	2	Barometric Pressure (mmHg)	: 740		
3	Relative Humidity (%)	: 69	4	Weather Condition	: Cloudy		

Discipline : Chemic	al	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m <sup>3</sup>	IS 5182 (Part- 23): 2022	61	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	32	60 (24hrs)		
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec 1): 2023	7.4	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part- 6): 2022	23.8	80 (24hrs)		
Ozone (O3)	μg/m²	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	< 0.002	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 (C <sub>6</sub> H <sub>6</sub> )	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\*\*\*\*

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

Technical Manager

Page 1 of I

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

### ENGINEERING SERVICES PVT. LTD.

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10-13567

### TEST REPORT

Test Report No.	: ELES/RNC/2024/6295	Report Release Date	: 26.10.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400004178F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/7345
		Location	: Mines Near Quarry - 1F
			Amtipani Bauxite Mine (190.95 ha)
Address	: Lobardaga, Jharkhand-835302	Sampling Date	: 17.10.2024 to 18.10.2024
r. t. m. to the		Sample Received Date	: 21.10.2024
		Type of Sample	: Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
6 1 1 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	21 10 2021 - 27 10 2021	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 21.10.2024 to 26.10.2024	Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION				
1 Average Temperature (°C) : 27	2	Barometric Pressure (mmHg)	: 740	
3 Relative Humidity (%) : 69	4	Weather Condition	: Cloudy	

Discipline : Chemic	al	Group:	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	60	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	34	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	7.8	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	22.4	80 (24hrs)	
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	1S 5182 (Part- 22); 2019	0.011	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 (C <sub>s</sub> H <sub>6</sub> )	µg/m²	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

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Dr. Debpharies & Signaris inha Ph. D. Environmental Engg.

Technical Manager

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

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TC-13567

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/6296	Report Release Date	: 26.10.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400004179F	111		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/7346
		Location	: Mines Near Quarry - 7C
			Amtipani Bauxite Mine (190.95 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 17.10.2024 to 18.10.2024
2 1001 035	. Levina daga, min kimine sococe	Sample Received Date	: 21.10.2024
		Type of Sample	: Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 21.10.2024 to 26.10.2024	Sample Condition	: Sealed & Preserved

MI	TEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 27	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%)	: 69	4.	Weather Condition	: Cloudy

Discipline : Chemic	al	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	63	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	34	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	8.9	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	28.1	80 (24hrs)	
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.012	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 (C <sub>6</sub> H <sub>6</sub> )	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

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

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Page 1 of 1 Technical Manager
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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATEL RAINCHU-SEARDS (IHARKHAMD) GST NO:- 20A4EC69719D124



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TEST REPORT

Test Report No.	: ELES/RNC/2024/6201	Report Release Date	: 25.10.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
III D No	- TC135977400004002C			

ALLEN LYES, 1 17-1250 (740000040571

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaya, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date	: ELES/RNC/2024/AA/7230 : Near Pakri Gada Village : 16.10.2024 to 17.10.2024 : 18.10.2024
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 18.10.2024 to 24.10.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
i	Average Temperature (°C)	: 27	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%)	: 64	4	Weather Condition	: Partly Cloudy

Discipline: Chemie	cal	Group:	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	61	100 (24hrs)
Particulate Matter (PM2.5)	ug/m <sup>1</sup>	IS 5182 (Part- 24): 2019	33	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m³	IS 5182 (Part- 2/Sec 1); 2023	7.8	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>1</sub> )	µg/m³	IS 5182 (Part- 6): 2022	25.7	80 (24hrs)
Ozone (O <sub>1</sub> )	hē/m²	IS 5182 (Part- 9): 2019	<20.0	100 (Shrs)
Ammonia (NH <sub>2</sub> )	ug/m <sup>3</sup>	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	15.5182 (Part- 22): 2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m²	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenio (As)	ng/m/	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C <sub>s</sub> H <sub>a</sub> )	µg/m²	ELES/GC/SOP/06: 2023	<2.5	OS(Annual)
Bonzo-(a)-Pyrene	ng/m <sup>1</sup>	ELES/GC/SOP/05: 2023	<0.5	O1(Annual)

Reviewed by Axaub Kumar Chrafity Manager

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Technical Manager

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPLIDANA HATEA, RANCHI-\$34003 (HARKHAND) GST NO:- 2044ECE97130124



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#### TEST REPORT

Test Report No.	: ELES/RNC/2024/6202	Report Release Date	: 25.10.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400004093F			

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lobarduga, Jharkhand-835302	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/7231 : Near Pol Pol Village : 16.10.2024 to 17.10.2024
Mines Status	Operational	Sample Received Date Type of Sample Sampling Procedure	: 18.10.2024 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 18.10.2024 to 24.10.2024	<ul> <li>Sampling Done By</li> <li>Sample Condition</li> </ul>	: ELES Pvt. Ltd. : Sealed & Preserved

IETEOROLOGICAL INFORMATION			
Average Temperature (°C) : 27	2	Barometric Pressure (mmH	g) : 742
Relative Humidity (%) : 64	-4	Weather Condition	: Partly Cloudy

Discipline: Chemi-	cal	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m <sup>2</sup>	IS 5182 (Part- 23): 2022	59	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	33	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m²	IS 5182 (Part- 2/Sec 1): 2023	6.9	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	23.7	80 (24hrs)
Ozone (O <sub>2</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m³	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m²	IS 5182 (Part- 10): 2019 (NDIR Method)	0,1>	2 (Shrs)
Lead (Pb)	µg/m²	IS 5182 (Part- 22); 2019	<0.002	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 (C.H.)	pg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrenis	ng/m <sup>3</sup>	ELES/GC/SOP/05: 2023	< 0.5	01(Annual)

Reviewed by Akash Kumar

Cambry Manager

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

La Market

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

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#### TEST REPORT

Test Report No.	: ELES/RNC/2024/6203	Report Release Date	: 25.10.2024	
Work Order No.	: 13612312113	Work Order Date	: 28,03,2024	
ULR No.	: TC135872400004094F			

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/7232 : Near Shakhuapani Village : 16.10.2024 to 17.10.2024
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample	: 18.10.2024 : Ambient Air
Mines Status	; Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 18.10.2024 to 24.10.2024	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 27	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%)	: 64	4	Weather Condition	: Partly Cloudy

Discipline: Chemia	:n1	Group:	Atmospheric	Podution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	58	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	30	60 (24hrs)
Suiphur Di-Oxide (SO <sub>2</sub> )	µg/m³	IS 5182 (Part- 2/Sec 1): 2023	7.4	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	20.8	80 (24hrs)
Ozone (O <sub>3</sub> )	11g/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>2</sub> )	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	1S 5182 (Part- 10); 2019 (NDTR Method)	<1.0	2 (8hrs)
Lead (Pb)	ug/m³	IS 5182 (Part- 22); 2019	0.010	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 (C <sub>6</sub> H <sub>5</sub> )	µy/m	ELES/GC/SOP/06: 2023	<2.5	05(Amusl)
Benzo-(a)-Pyrene	ng/m	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by
Akash Kuman
Quality Managar

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

Authorities Stand

Dr. D. Environmental Engg. Technical Manager

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75-5300

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/6204	Report Release Date	: 25.10.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400004095F			

CUSTOMER DET	CUSTOMER DETAILS		
Customer Name Address	: Hindaico Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date	: ELES/RNC/2024/AA/7233 : Near Dipa Kujam Village : 16.10.2024 to 17.10.2024 : 18.10.2024
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 18.10.2024 to 24.10.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

Barometric Pressure (mmHg) : 742  Weather Condition : Partly Cloudy
77

Discipline: Chemic	cal	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	53	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	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	6.6	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	22.8	80 (24hrs)
Ozone (O <sub>1</sub> )	ug/m'	IS 5182 (Part- 9): 2019	<20.0	100 (Shrs)
Ammonia (NH <sub>2</sub> )	µg/m³	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)	hikim <sub>3</sub>	IS 5182 (Part- 22); 2019	0.011	1 (24hrs)
Nickel (Ni)	ng/m²	IS 5182 (Part- 26): 2020	<6.0	20 (Armusl)
Arsenic (As)	ng/m²	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C <sub>4</sub> H <sub>4</sub> )	µg/m²	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 Camilly Manager

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

Authorised Signatory

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

Page 1 of 1 Technical Manager

The Discount stated is Test Report is found by the Laboratory unit. There and Conditions, only on Company better head to pre-approved former. The results share to the reflect only to the policiously of the Laboratory only. The information around on the Test Report reflects the findings there by the Laboratory of the blue of producing only and expenses the findings of the report of the Laboratory of the Laboratory of the control of the Laboratory of the Laboratory of the control of the Laboratory of the Laborato

## ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT.LTD.

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

Amtipani Bauxite Mine-Environmental Monitoring Report

November- 2024



## CONTENT

	Amtipani Bauxite Mine
	-AMBIENT AIR QUALITY- CORE ZONE
1	Mine Entrance Gate
2	Near Mine Office/WB
3	Mines Near Quarry – 1F
4	Mines Near Quarry – 7C
	AMBIENT AIR QUALITY- BUFFER ZONE
İ	Near PakriGada Village
2	Near Pol Pol Village
3	Near Shakhuapani Village
4	Near DipaKujam Village
	Drinking Water





PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20A4ECE9713D1Z4

### ENGINEERING SERVICES PVT. LTD.

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TC-13587

### TEST REPORT

Test Report No.	: ELES/RNC/2024/7025	Report Release Date	: 02.12.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400004894F		

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/8231	
		Location	: Mine Entrance Gate	
	: Lohardaga, Jharkhand-835302		Amtipani Bauxite Mine (190.95 ha)	
Address		Sampling Date	: 22.11.2024 to 23.11.2024	
		Sample Received Date	: 25.11.2024	
		Type of Sample	· Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	. 35 11 2024 02 12 2024	Sampling Done By	: ELES Pvt. Ltd.	
renog of Analysis	: 25.11.2024 to 02.12.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION				
4	Average Temperature (°C) : 20	2	Barometric Pressure (mml	Hg) : 740	
3	Relative Humidity (%) : 44		Weather Condition	: Clear	

Discipline : Chemic	cal	Group:	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/m³	IS 5182 (Part- 24): 2019	35	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	9,3	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part- 6): 2022	24.3	80 (24hrs)	
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.22	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.019	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 (C <sub>6</sub> H <sub>6</sub> )	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

menta

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

Authorised Signatory
Akash Kumar

Quality Manager

Page I of I

The Dictionant stated as Telegrant, is possible to absoratory under General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report refer or relative only to the job School across the Laboratory units. The information stated on the Test Report reflects the findings done by the Laboratory at the time of involvement only and within the limits of client's matriceously. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by this client. The Report cannot be reproduced except in field and any part of the report is not taken out of context, without prior written approval of the Laboratory. The Report in field or in part shall not be published, advertise, used for any legal actions unless prior permission has been secured from the Management of the Laboratory. Attention is desired to the limitation of liability, compensation and paradiction issues. Any unauthorized alteration & fabrillation of the content or appearance of the Test Report is imported unit offundant may be prosecuted to the fallest extent of the law. All the samples are recailed for Manys from the Data of references on the Test Report from Regulatory bodies are to be retained as specified. Any type of Observations or Compliants regarding the Report is in 24hours format. Abbreviation used: N.A.(Not Applicable): BDL (Below Detection Limit), LDL (Lower Detection Limit).



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

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TC-13587

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/7026	Report Release Date	: 02.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400004895F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/8232	
		Location	: Near Mine Office/WB	
			Amtipani Bauxite Mine (190.95 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 22.11.2024 to 23.11.2024	
A Suffestion		Sample Received Date	: 25.11.2024	
	tus : Operational	Type of Sample Sampling Procedure	: Ambient Air	
Mines Status			: ELES/DOC/SMPL/02	
Desired of Assistant	. 25 11 2024 02 12 2024	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 25.11.2024 to 02.12.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 20	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%)	: 44	4	Weather Condition	: Clear

Discipline: Chemic	af	Group:	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	70	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	38	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	12.7	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	25.3	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.22	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.012	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 (C <sub>6</sub> H <sub>6</sub> )	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

IEI UBU

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

Authorised Signatory

Akash Kumar Ovality Manager

Page 1 of 1

The Hocument stated and Stripester panel by the Laboratory under General Terms and Coordinates, only on Company letter head in pre-approved format. The results shown in the Test Report refer or relates only to the polyfical stripester to the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory at the time of involvement only and within the imms of client a restrainment. The Laboratory is responsible for all the information or data provided on the import, except the information which is provided by the client. The Report cannot be reproduced except in full and any part of the report is not taken out of context, without prior senten approval of the Laboratory. The Report in full are up part shall not be published, advertise, used for any legal actions unless prior permission has been secured from the Management of the Laboratory. Attention to the limitation of liability, compensation and previously and influenced alteration & fallation of the content or apparentness of the Test Report is unlawful and offenders may be prosucated to the fullest extent of the law. All the samples are retained for 30 days from the Date of release of the Test Report The samples from Regulatory bodies are to be remined as specified. Any type of Observations or Compliants regarding the Reports shall be done within 15 days from the Date of Test Report relatated/insueri. After the time period stand before, no compliants will be necessed. The entire Time subschile mentioned in Test Report is in 24 hours format. Abbreviation used N/A (Not Applicable), BDI. (Below Detection Limit), LDI. (Lower Detection Limit).



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

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TC-13587

### TEST REPORT

Test Report No.	: ELES/RNC/2024/7027	Report Release Date	: 02.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400004896F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/8233	
		Location	: Mines Near Quarry - 1F	
			Amtipani Bauxite Mine (190.95 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 22.11.2024 to 23.11.2024	
		Sample Received Date	: 25.11.2024	
		Type of Sample	: Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Barder I a P. A. and R. A.		Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 25.11.2024 to 02.12.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORM	ATION			
1	Average Temperature (°C) :	20	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%) :	44	4	Weather Condition	: Clear

Discipline : Chemic	al	Group:	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23); 2022	69	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	37	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	11.7	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part- 6): 2022	24.6	80 (24hrs)	
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>2</sub> )	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.016	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 (C <sub>6</sub> H <sub>6</sub> )	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)	

\*\*\*\*Fn

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

Authorised Signatory

Quality Manager

Page 1 of 1

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

## ENGINEERING SERVICES PVT. LTD.

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TC-13887

### TEST REPORT

Test Report No.	: ELES/RNC/2024/7028	Report Release Date	: 02.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400004897F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/8234	
		Location	: Mines Near Quarry - 7C	
			Amtipani Bauxite Mine (190.95 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 22.11.2024 to 23.11.2024	
		Sample Received Date	: 25.11.2024	
		Type of Sample	: Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Z. mar var v v v v v v v v v v v v v v v v v		Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 25.11.2024 to 02.12.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	RMATION		and the second second	
1	Average Temperature (°C)	: 20	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%)	: 44	4	Weather Condition	: Clear

Discipline : Chemic	al	Group:	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	74	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	39	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec 1): 2023	13.2	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	32.4	80 (24hrs)	
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.22	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.018	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 (C <sub>6</sub> H <sub>6</sub> )	μg/m²	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

Vernanna

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

**Authorised Signatory** Akash Kumar

Contity Manager

Page 1 of I

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PLOT NO-30, MARSAROV/UR ENCLAVE, TUPUDAHA HATIA, HANCHI-834003 (JHARKHAND) GST NO> 20AAECE9713D1Z4

### ENGINEERING SERVICES PVT, LTD.

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### TEST REPORT

Test Report No.	: ELES/RNC/2024/7017	Report Release Date	: 02.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400004886F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/8223 : Near Pakri Gada Village : 21.11.2024 to 22.11.2024
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample	: 25.11.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES Pvr. Ltd.
Period of Analysis	: 25.11.2024 to 02.12.2024	Sample Condition	; Sealed & Preserved

MI	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 20	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%)	: 45	4	Weather Condition	: Clear

Discipline: Chemis	nil.	Group:	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	66	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	37	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m³	IS 5182 (Part- 2/Sec1); 2023	9.3	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	μg/m <sup>3</sup>	IS 5182 (Part- 6): 2022	28.1	80 (24hrs)	
Ozone (O <sub>i</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>2</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.19	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	<0.002	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 (C <sub>6</sub> H <sub>6</sub> )	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	O1(Annual)	

Reviewed by

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

Authorised Signatory

Akesh Kumar Chantity Manager

Page 1 of 1

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PLOT NO-30, IKANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) 6ST NO:-20AAECE9713D124

### ENGINEERING SERVICES PVI. LTD.

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1979208

### TEST REPORT

Test Report No.	: ELES/RNC/2024/7018	Report Release Date	: 02.12.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400004887F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindaloo Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/8224 : Near Pol Pol Village
Address	: Lohardaga, Jhurkhand-835302	Sampling Date Sample Received Date	: 21.11.2024 to 22.11.2024 : 25.11.2024
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 25.11.2024 to 02.12.2024	Sample Condition	: Sealed & Preserved

Mi	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 20	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%)	: 45	4	Weather Condition	: Clear

Discipline: Chemica	d .	Group:	Atmospheric l	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limi
Particulate Matter (PM10)	htő/m <sub>2</sub>	IS 5182 (Part- 23): 2022	63	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	35	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	8.6	80 (24hrs)
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part- 6): 2022	22.4	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m <sup>x</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	-1S 5182 (Part- 22): 2019	< 0.002	l (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m²	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C <sub>6</sub> H <sub>6</sub> )	ug/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	< 0.5	01(Annual)

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

Reviewed by

-bt.)

Authorised Signatory
Akash Kumar
Ovality Manager

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENGLAVE, TUPUDANA. HATIA, RANCHI-834003 (THARKHAND) 6ST NO:- 20AAECE97130124

### ENGINEERING SERVICES PVT. LTD.

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#### TEST REPORT

Test Report No.	: ELES/RNC/2024/7019	Report Release Date	: 02.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400004888F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/8225 : Near Shakhuapani Village : 21,11,2024 to 22,11,2024
Address	: Lohardaga, Tharkhand-835302	Sample Received Date Type of Sample	: 25.11.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 25.11,2024 to 02.12,2024	Sample Condition	: Sealed & Preserved

NE	TEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 20	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%)	: 45	4	Weather Condition	: Clear

Discipline : Chemic	nl	Group:	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	68	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	39	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	1S 5182 (Part- 2/Sec1): 2023	11.8	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	JS 5182 (Part- 6): 2022	22.2	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	μg/m²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m³ -	IS 5182 (Part- 22): 2019	0.012	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 (C <sub>6</sub> H <sub>6</sub> )	μg/m²	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

-04

American

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

Authorised Signatory
Akesh Kumar
Quality Manager

Page 1 of 1

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PLOT NO 30, MANSAROVAR ENCLAVE, TUPUDANA HATIA; RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713DJZ4

### ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	; ELES/RNC/2024/7020	Report Release Date	: 02.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400004889F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/8226 : Near Dipa Kujam Village
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 21.11.2024 to 22.11.2024 : 25.11.2024
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 25.11.2024 to 02.12.2024	Sampling Done By Sample Condition	: Sealed & Preserved

ME	TEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 20	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%)	: 45	4	Weather Condition	: Clear

Discipline: Chemic	al	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	61	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m²	IS 5182 (Part- 24): 2019	35	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	11.1	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part- 6): 2022	23.4	80 (24hrs)	
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>2</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m²	IS 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part- 22); 2019	0.018	1 (24hrs)	
Nickel (Ni)	ng/m	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/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	< 0.5	DI(Annual)	

Reviewed by

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

Anthorised Signatory

Archity Manager

Page 1 of 1

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

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TC-13587

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/7048	Report Release Date	: 02.12.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400004917F		

CUSTOMER DET	TAILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/DW/8254	
		Sampling Date	: 23.11.2024	
44		Sample Received Date	: 25.11.2024	
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Type of Sample	: Drinking Water	
Address	: Lohardaga, Jharkhand-835302	Source of Sample	: Tap Water	
		Location of Sample	: Store Room	
			(Amtipani Bauxite Mines)	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 25.11.2024 to 02.12.2024	Sampling Done By	: ELES Pvt. Ltd.	
remod of Analysis	- 23.11.2024 W W2.12.2024	Sample Condition	: Sealed & Preserved	

Discipline : Chemical		Group	: Water	Regulatory Limit	
Discipline: Chemical		Group	vvater	as per 1S	10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
pH (at 24.8℃)	23	APHA 24th Ed.2023, 4500-H	6.58	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 24th Ed.2023, 2130 B	0.04	1.0	5.0
Taste		APHA 24th Ed.2023, 2160 C	Agreeable	Agreeable	Agreeable
Odour	E.	IS 3025 (Part-5) :2018	Agreeable	Agreeable	Agreeable
Colour	Hazen	APHA 24th Ed.2023, 2120B&D	1.6	5.0	15
Total Dissolved Solids (TDS)	mg/L	APHA 24th Ed.2023, 2540B,C&D	138	500	2000
Chloride (as Cl)	mg/L	APHA 24th Ed.2023, 4500 CI B	6.93	250	1000
Fluoride (as F)	mg/L	APHA 24 <sup>th</sup> Ed.2023, 4500 F-D	BDL (DL: 0.1)	1.0	1.5
Total Alkalinity (as CaCO <sub>3</sub> )	mg/L	APHA 24th Ed.2023, 2320 B	70.0	200	600
Total Hardness (as CaCO <sub>±</sub> )	mg/L	APHA 24th Ed.2023, 2340 C	53.0	200	600
Sulphate (as SO <sub>4</sub> )	mg/L	APHA 24th Ed.2023, 4500 SO <sub>4</sub> -2-E	1.28	200	400
Nitrate (as NO <sub>3</sub> )	mg/L	APHA 24th Ed.2023, 4500 NO <sub>3</sub> -B	BDL (DL: 0.5)	45	No Relaxation

### Page 1 of 4

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Work Order No.

# ENVIRONMENTAL LABORATORIES &

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

## ENGINEERING SERVICES PVT. LTD.

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TC-13587

#### TEST REPORT

: 02.12.2024 Test Report No. : ELES/RNC/2024/7048 Report Release Date Work Order Date : 28.03.2024

ULR No.	: 1C135872400004917F

: 13612312113

Discipline : Chemic	al	Grou	ip: Water		ory Limit 10500:2012
Parameter Unit		Test Protocol	Result	Acceptable Limit	Permissible Limit
Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/L	IS 3025 (Part 43/Sec1): 2022	BDL (DL: 0.001)	0.001	0.002
Free Residual Chlorine (RFC)	mg/L	IS 3025 (Part-26): 2021	BDL (DL: 0.1)	0.2(Min)	1.0(Min)
Calcium (as Ca)	mg/L	APHA 24th Ed.2023, 3500 Ca B	15.8	75	200
Anionic Surfactants (as MBAS)	mg/L	APHA 24 <sup>th</sup> Ed.2023, 5540-C	BDL (DL: 0.025)	0.2	1.0
Discipline : Chemic	al	Gro	oup: Residues i	n Water	
Aluminum (as Al)	mg/L	IS 3025 (Part-55) :2003; RA2019	BDL (DL: 0.02)	0.03	0.2
Arsenic (as As)	mg/L	IS 3025 (Part-37): 2022	BDL (DL: 0.005)	0.01	No Relaxation
Boron (as B)	mg/L	IS 3025 (Part-57) : 2021	BDL (DL: 0.2)	0.5	1.0
Cadmium (as Cd)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.003)	0.003	No Relaxation
Total Chromium (as Cr)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.03)	0.05	No Relaxation
Copper (as Cu)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.03)	0.05	1.5
Cyanide (as CN)	mg/L	APHA 24th Ed.2023, 4500 CN-E	BDL (DL: 0.012)	0.05	No Relaxation
Iron (as Fe)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	0.088	1.0	No Relaxation
Lead (as Pb)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.01)	0.01	No Relaxation
Manganese (as Mn)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.05)	0.1	0.3
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 2019	BDL (DL: 0.001)	0.001	No Relaxation
Selenium (as Se)	mg/L	IS 3025 (Part-56): 2019	BDL (DL: 0.01)	0.01	No Relaxation

### Page 2 of 4

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

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TC-13581

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/7048	Report Release Date	: 02.12.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400004917F		

Discipline : Chemical Group : Residues in Water			Annual Control of the Person of the Con-	ory Limit 0500:2012		
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit	
Zinc (as Zn)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.1)	5.0	15	
Polynuclear Aromatic Hydrocarbons (PAH)	μg/L	ELES/GC/SOP/04: 2023	BDL (DL: 0.05)	0.1	No Relaxation	
Polychlorinated biphenyls (PCB)	μg/L	ELES/GC/SOP/03: 2023	BDL (DL: 0.1)	0.5	No Relaxation	
Pesticides				Li	mit	
Alachlor	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	3	20	
Atrazine	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2	.0	
Butachlor	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1	25	
Chlorpyriphos	μg/I.	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)		30	
Ethion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	3	.0	
Malathion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	J	90	
Methyl parathion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.1)	0	30	
Monocrotophos	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1	.0	
Phorate	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2	1.0	
Phorate Sulphone	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)		r#	
Dieldrin	μg/L	ELES/GC/SOP/02: 2023	BDL (DL; 0.01)	0	.03	
Alpha HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.006)	0	.01	
Beta HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	0	.04	

Page 3 of 4

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

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TC-13587

### TEST REPORT

Test Report No.	: ELES/RNC/2024/7048	Report Release Date	: 02,12,2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

ULR No. : TC135872400004917F

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

Reviewed by

Akash Kumar Qeality Manager \*\*\*\*End of Report\*\*\*\*

Authorised Signatory

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

Page 4 of 4

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

ENGINEERING SERVICES PVT. LTD.

Email: info@elespl.co.in , eles.ranchi@gmail.com Phone no.: 0651-2290103

Website: www.elespl.co.in

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/7048	Report Release Date	: 02.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

CUSTOMER DET	TAILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/DW/8254	
		Sampling Date	: 23.11.2024	
		Sample Received Date	: 25.11.2024	
Address	: Lohardaga, Jharkhand-835302	Type of Sample	: Drinking Water	
		Source of Sample	: Tap Water	
		Location of Sample	: Store Room	
	n = =		(Amtipani Bauxite Mines)	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 25.11.2024 to 02.12.2024	Sampling Done By	: ELES Pvt. Ltd.	
reriou of Analysis	. 23.11.2024 to 02.12.2024	Sample Condition	: Sealed & Preserved	

Discipline : Che	mical	Cropp Water		The second second	ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Mineral Oil*	mg/L	1S 3025 (Part-39): 2021, Clause 6 Infrared Spectroscopic method.	BDL (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

#### Page 1 of 1

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# ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT.LTD.

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

ring Figure & Engure Amtipani Bauxite Mine-Environmental Monitoring Report

December 2024

## CONTENT

	Amtipani Bauxite Mine
	AMBIENT AIR QUALITY- CORE ZONE
1	Mine Entrance Gate
2	Near Mine Office/WB
3	Mines Near Quarry – IF
4	Mines Near Quarry – 7C
	AMBIENT AIR QUALITY- BUFFER ZONE
1	Near PakriGada Village
2	Near Pol Pol Village
3	Near Shakhunpani Village
ij.	Near Dipakujam Village



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TC-13567

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/7590	Report Release Date	: 23.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400005444F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/8877	
The state of the s		Location	: Mine Entrance Gate	
			Amtipani Bauxite Mine (190.95 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 13.12.2024 to 14.12.2024	
a second work	and the second second	Sample Received Date	: 16.12.2024	
		Type of Sample	: Ambient Air	
Mines Status	ines Status : Operational Sampling Procedure		: ELES/DOC/SMPL/02	
	Sampling Done By	: ELES Pvt. Ltd.		
Period of Analysis	: 16.12.2024 to 23.12.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 18	2	Barometric Pressure (mmHg	3) : 720
3	Relative Humidity (%) : 45	4	Weather Condition	: Clear

Discipline : Chemic	al	Group:	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23); 2022	72	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	38	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	12.4	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	26.8	80 (24hrs)	
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.31	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.025	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 (C <sub>6</sub> H <sub>6</sub> )	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 E.

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Technical Manager

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

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TC-13087

### TEST REPORT

Test Report No. : ELES/RNC/2024/7591 Report Release Date : 23.12.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400005445F

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindaico Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/8878 : Near Mine Office/WB	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	Amtipani Bauxite Mine (190.95 ha) : 13.12.2024 to 14.12.2024 : 16.12.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 16.12.2024 to 23.12.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 720
3	Relative Humidity (%)	: 45	4	Weather Condition	: Clear

Discipline: Chemic	al	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/m³	IS 5182 (Part- 24): 2019	41	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	1S 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	27.1	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.22	2 (8hrs)
Lead (Pb)	μg/m³	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/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C <sub>6</sub> H <sub>6</sub> )	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 Akesh Kumar

Quality Manager

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

Ph. D. Environmental Engg.

reconnest Manager

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TC-13587

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/7592	Report Release Date	: 23.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400005446F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/8879	
		Location	: Mines Near Quarry - 1F	
			Amtipani Bauxite Mine (190.95 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 13.12.2024 to 14.12.2024	
***************************************		Sample Received Date	: 16.12.2024	
		Type of Sample	: Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
		Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 16.12.2024 to 23.12.2024	Sample Condition	: Sealed & Preserved	
	1			

METEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 18	2	Barometric Pressure (mmHg	) : 720
3	Relative Humidity (%) : 45	4	Weather Condition	; Clear

Discipline : Chemic	al	Group:	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	77	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	40	60 (24hrs)		
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	13.3	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part- 6): 2022	26.2	80 (24hrs)		
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.28	2 (8hrs)		
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.022	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 (C <sub>6</sub> H <sub>6</sub> )	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 Akesh Kumar Quality Manager

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

Authorised Signatory Dr. Deependra Rumar Sinha

Ph. D. Environmental Engg.

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Technical Manager

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TC-13587

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/7593	Report Release Date	: 23.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400005447F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/8880 : Mines Near Quarry – 7C Amtipani Bauxite Mine (190.95 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 13.12.2024 to 14.12.2024 : 16.12.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 16.12.2024 to 23.12.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 720
3	Relative Humidity (%)	: 45	4	Weather Condition	: Clear

Discipline : Chemic	at	Group:	Atmospheric !	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	79	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	41	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	12.5	80 (24hrs)
Nitrogen Di-Oxide (NO2)	μg/m³	1S 5182 (Part- 6): 2022	35.2	80 (24hrs)
Ozone (O <sub>x</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.29	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.026	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 (C <sub>6</sub> H <sub>6</sub> )	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\*\*\*\*

Drawberised Signater Sinha

Ph. D. Environmental Engg.

Technical Manager

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70-13587

#### TEST REPORT

Test Report No. : ELES/RNC/2024/7531 Report Release Date : 21.12.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400005386F

CUSTOMER DET	AILS	SAMPLE DETAILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/8835 : Near Pakri Gada Village : 12.12.2024 to 13.12.2024		
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample	: 14,12.2024 : Ambient Air		
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.		
Period of Analysis	: 14.12.2024 to 21.12.2024	Sample Condition	: Sealed & Preserved		

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 21	2	Barometric Pressure (mmHg)	: 720
3	Relative Humidity (%)	: 49	4	Weather Condition	: Clear

Discipline : Chemic	al	Group:	Atmospheric l	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	69	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	40	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	11.7	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	30.4	80 (24hrs)
Ozone (O <sub>5</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (Shrs)
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.19	2 (8hrs)
Lead (Pb)	µg/m²	1S 5182 (Part- 22): 2019	< 0.002	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 (CoH6)	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

1 1 1

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

Dr. Deependra Kumar Sinha

Ph. D. Environmental Engg.

Technical Manager

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

### ENGINEERING SERVICES PVT. LTD.

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TG-12587

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/7532	Report Release Date	: 21.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400005387F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date	: ELES/RNC/2024/AA/8836 : Near Pol Pol Village : 12.12.2024 to 13.12.2024 : 14.12.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 14.12,2024 to 21.12.2024	Sample Condition	: Scaled & Preserved	

M	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 21	2	Barometric Pressure (mmHg)	: 720
3	Relative Humidity (%)	: 49	4	Weather Condition	: Clear

Discipline: Chemic	al	Group:	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	67	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	38	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	10.3	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m³	IS 5182 (Part- 6): 2022	24.7	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.28	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.018	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 (C <sub>8</sub> H <sub>6</sub> )	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\*\*\*\*

Kaline

Dr. Authorised Signator Sinha Ph. D. Environmental Engg. Technical Manager

Page 1 of 1

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

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TC-13587

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/7533	Report Release Date	: 21.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400005388F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/8837 : Near Shakhuapani Village : 12.12.2024 to 13.12.2024	
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample	: 14.12.2024 : Ambient Air	
Mines Status : Operational		Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 14.12.2024 to 21.12.2024	Sample Condition	: Sealed & Preserved	

Mi	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	:21	2	Barometric Pressure (mmHg)	: 720
3	Relative Humidity (%)	: 49	4.	Weather Condition	: Clear

Discipline: Chemic	al	Group:	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	1S 5182 (Part- 23): 2022	65	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	35	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2/Sec1): 2023	10.5	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	24.8	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.019	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 (C <sub>6</sub> H <sub>6</sub> )	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 Signatur

Ph. D. Environmental Engg.
Technical Manager

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

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TC-13587

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/7534	Report Release Date	: 21.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400005389F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/8838 : Near Dipa Kujam Village
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 12.12.2024 to 13.12.2024 : 14.12.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02
Period of Analysis	: 14.12.2024 to 21.12.2024	Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 21	2	Barometric Pressure (mmHg)	: 720
3	Relative Humidity (%)	: 49	4	Weather Condition	: Clear

Discipline: Chemic	al	Group:	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	65	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	38	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	13.3	80 (24hrs)
Nitrogen Di-Oxide (NO2)	μg/m³	1S 5182 (Part- 6): 2022	25.7	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.32	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.022	I (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 (C <sub>6</sub> H <sub>6</sub> )	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.

Tochnical 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.

## Amtipani Bauxite Mine-Environmental Monitoring Report

January- 2025



## CONTENT

	Hindalco Industries : Amtipani Bauxite Mine Environmental Monitoring Report	January 2025
	Amtipani Bauxite Mine	
	AMBIENT AIR QUALITY- CORE ZONE	
1	Mine Entrance Gate	
2	Near Mine Office/WB	
3	Mines Near Quarry – 1F	
4	Mines Near Quarry – 7C	
	AMBIENT AIR QUALITY- BUFFER ZONE	
Ţ	Near PakriGada Village	
2	Near Pol Pol Village	
3	Near Shakhuapani Village	
4	Near DipaKujam Village	
	Surface Water	
	Soil Soil	O/



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

### ENGINEERING SERVICES PVT. LTD.

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TC-10567

#### TEST REPORT

Test Report No.	: ELES/RNC/2025/0556	Report Release Date	: 24.01.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
III.R No.	· TC1358725000000547F			

CUSTOMER DET	AILS	SAMPLE DETAILS	,
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2025/AA/0402
		Location	: Mine Entrance Gate
			Amtipani Bauxite Mine (190.95 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 14.01.2025 to 15.01,2025
	The state of the s	Sample Received Date	: 17.01.2025
		Type of Sample	: Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
	182,222, 272,222	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 17.01.2025 to 24.01.2025	Sample Condition	: Sealed & Preserved

MI	TEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 720
3	Relative Humidity (%)	: 54	4	Weather Condition	: Clear

Discipline : Chemic	al	Group:	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	76	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	41	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	1S 5182 (Part- 2/Sec1): 2023	10.7	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	28.2	80 (24hrs)
Ozone (O <sub>5</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>1</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.24	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.020	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 (C <sub>6</sub> H <sub>6</sub> )	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

Page 1 of 1

Technical Manager

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834083 (JHARKHAND) GST NO:- 20AAECE9713D124

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TC-13587

#### TEST REPORT

Test Report No.	: ELES/RNC/2025/0557	Report Release Date	: 24.01.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
III.R No.	· TC1358725000000548F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2025/AA/0403
		Location	: Near Mine Office/WB
			Amtipani Bauxite Mine (190.95 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 14.01.2025 to 15.01.2025
rudiess	. Estimongia, stantalian ossisse	Sample Received Date	: 17.01.2025
		Type of Sample	: Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt, Ltd.
Period of Analysis	: 17.01.2025 to 24.01.2025	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	RMATION				
1	Average Temperature ("C)	; 18	2	Barometric Pressure (mmHg)	: 720	
3	Relative Humidity (%)	: 54	4	Weather Condition	: Clear	

Discipline: Chemic	al	Group:	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	71	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	35	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	11.8	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	24.3	80 (24hrs)	
Ozone (O <sub>2</sub> )	μg/m³	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.29	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.16	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 (C <sub>6</sub> H <sub>6</sub> )	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.

Page I of I

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

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TC-13501

#### TEST REPORT

Test Report No.	: ELES/RNC/2025/0558	Report Release Date	: 24.01.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000000549F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2025/AA/0404
		Location	: Mines Near Quarry - 1F
		Committee of the Commit	Amtipani Bauxite Mine (190.95 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 14.01.2025 to 15.01.2025
2.48160.560	- Water and Beat Asset bernary and the Control	Sample Received Date	: 17.01.2025
		Type of Sample	: Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
20 201 325 27 2	02.25.232.2 21019222	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 17.01.2025 to 24.01.2025	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 18	2	Barometric Pressure (mm	Hg) : 720	
3	Relative Humidity (%) : 54	4.	Weather Condition	: Clear	

Discipline : Chemic	al	Group:	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	79	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m <sup>2</sup>	IS 5182 (Part- 24): 2019	43	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	15.1	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part- 6): 2022	29.5	80 (24hrs)	
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.33	2 (8hrs)	
Lead (Pb)	μg/m²	IS 5182 (Part- 22): 2019	0.022	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 (C <sub>6</sub> H <sub>6</sub> )	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

ing Managa

\*\*\*\*End of Report\*\*\*\* Akash Kumar

Authorised Signatory

Dr. Deependra Kumar Sinha

Page 1 of 1

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

### ENGINEERING SERVICES PVT. LTD.

Email: info@elespl.co.in , eles.ranchi@gmail.com

Phone no.: 0651-2290103 Website: www.elespl.co.in



TC-13587

TEST REPORT

Test Report No.	: ELES/RNC/2025/0559	Report Release Date	: 24.01.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

ULR No. : TC1358725000000550F

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2025/AA/0405
		Location	: Mines Near Quarry - 7C
			Amtipani Bauxite Mine (190.95 ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 14.01.2025 to 15.01.2025
2.7000		Sample Received Date	: 17.01.2025
		Type of Sample	: Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
ACTO O DEL A UL		Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 17.01.2025 to 24.01.2025	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 18	2	Barometric Pressure (mml	Hg) : 720
3	Relative Humidity (%) : 54	4	Weather Condition	: Clear

Discipline : Chemic	al	Group:	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	75	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	34	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m³	1S 5182 (Part- 2/Sec1): 2023	9.8	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	30.3	80 (24hrs)	
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.35	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.021	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 (C <sub>6</sub> H <sub>6</sub> )	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.

Page 1 of 1

Technical Manager

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

## ENGINEERING SERVICES PVT. LTD.

Email: info@elespi.co.in , eles.ranchi@gmail.com

Phone no.: 0651-2290103 Website: www.elespl.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2025/0511	Report Release Date	: 22.01.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000000502F			

AILS	SAMPLE DETAILS	
: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2025/AA/0323
	Location	: Near Pakri Gada Village
1	Sampling Date	: 13.01.2025 to 14.01.2025
: Lohardaga, Jharkhand-835302	Sample Received Date	: 15.01.2025
	Type of Sample	: Ambient Air
: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
- 15 01 2025 to 21 01 2025	Statement Statement Company of the Statement C	: ELES Pvt. Ltd. : Sealed & Preserved
	: Lohardaga, Jharkhand-835302	: Hindalco Industries Limited  : Location  : Location  Sampling Date  Sample Received Date  Type of Sample  Sampling Procedure  Sampling Procedure  Sampling Done By

MI	ETEOROLOGICAL INFOR!	MATION			
1	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 720
3	Relative Humidity (%)	: 53	4	Weather Condition	; Clear

Discipline : Chemic	al	Group:	Atmospheric l	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	44	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1); 2023	13.3	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	33.1	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m²	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>5</sub> )	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.23	2 (8hrs)
Lead (Pb)	μg/m³	1S 5182 (Part- 22): 2019	<0.002	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 (C <sub>6</sub> H <sub>6</sub> )	μg/m <sup>7</sup>	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 Akosh Kumar Quality Manager

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

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

Technical Manager.

Page I of I

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) 6ST NO:- 20AAECE9713D124

### ENGINEERING SERVICES PVT. LTD.

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Phone no.; 0651-2290103 Website: www.elespl.co.in



TG-12067

#### TEST REPORT

Test Report No.	: ELES/RNC/2025/0512	Report Release Date	: 22.01.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000000503F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2025/AA/0324
		Location	: Near Pol Pol Village
		Sampling Date	: 13.01.2025 to 14.01.2025
Address	: Lohardaga, Jharkhand-835302	Sample Received Date	: 15.01.2025
		Type of Sample	; Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
N.M.172-20 (2.105)		<ul> <li>Sampling Done By</li> </ul>	: ELES Pvt. Ltd.
Period of Analysis	: 15.01.2025 to 21.01.2025	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFORMATIO	ON		
1	Average Temperature (°C) :18	2	Barometric Pressure (mm	Hg) : 720
3	Relative Humidity (%) : 53	4	Weather Condition	; Clear

Discipline: Chemic	al	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	69	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	41	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	12.6	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	25.1	80 (24hrs)	
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.22	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2019	0.020	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 (C <sub>6</sub> H <sub>6</sub> )	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 Anash Kumar Quality Manager

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

Authorised Signatory

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

Technical Manager

Page 1 of 1

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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/2025/0513	Report Release Date	: 22.01.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000000504F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2025/AA/0325 : Near Shakhuapani Village : 13.01.2025 to 14.01.2025
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample	: 15.01.2025 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 15.01.2025 to 21.01.2025	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 720
3	Relative Humidity (%)	: 53	4	Weather Condition	: Clear

Discipline : Chemic	al	Group:	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	69	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/m³	1S 5182 (Part- 2/Sec1): 2023	12.2	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	26.1	80 (24hrs)
Ozone (O <sub>x</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.023	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AJR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C <sub>6</sub> H <sub>6</sub> )	μg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m²	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by Akash Kumar Quality Manager

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

Dr. Deeperland NametroInha Ph. D. Environmental Engg. Technical Manager

Page 1 of 1

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

### ENGINEERING SERVICES PVT. LTD.

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#### TEST REPORT

Test Report No.	: ELES/RNC/2025/0514	Report Release Date	: 22.01.2025
Work Order No.	: 13612312113	Work Order Date	; 28.03.2024
ULR No.	: TC1358725000000505F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2025/AA/0326 : Near Dipa Kujam Village : 13.01.2025 to 14.01.2025
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample	: 15.01.2025 : Ambient Air
Mines Status	; Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 15.01.2025 to 21.01.2025	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION				
1	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 720	
	Relative Humidity (%)	: 53	4	Weather Condition	: Clear	

Discipline : Chemic	al	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	69	100 (24hrs)
Particulate Matter (PM2.5)	μg/m <sup>1</sup>	IS 5182 (Part- 24): 2019	34	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	15.1	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	27.3	80 (24hrs)
Ozone (O <sub>3</sub> )	pg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.23	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.022	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26); 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m¹	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C <sub>s</sub> H <sub>e</sub> )	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 Manage.

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

Dr. Deependra Rumar Sinha

Ph. D. Environmental Engg.

Technical Manager

Page 1 of 1

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

### ENGINEERING SERVICES PVT. LTD.

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TC-13587

### TEST REPORT

Test Report No.	: ELES/RNC/2025/0610	Report Release Date	: 27.01.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000000592F		

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2025/SW/0415 : 15.01.2025 : 17.01.2025
Address	: Lohardaga, Jharkhand-835302	Type of Sample Location of Sample	: Surface Water : Near RWPH- I, Amtipani Bauxite Mine (190.95 ha)
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01
Period of Analysis	: 17.01.2025 to 24.01.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : 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 24.7 °C)	:2	IS 3025 (Part-11): 2022	6.56	6.5-8.5
Temperature	°C	IS 3025 (Part 9): 2023	18.0	
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 24th Ed.2023; 5210B	1.4	3.0
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part-16): 2023	128	1500
Total Suspended Solids (TSS)	mg/L	IS 3025 (Part-17): 2022	9.2	
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	5.7	

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

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TC-13567

### TEST REPORT

Test Report No.	: ELES/RNC/2025/0610	Report Release Date	: 27.01.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000000592F		

Discipline : Chemica	al	Group: Residues in	Water	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
Aluminum (as Al)	mg/L	IS 3025 (Part-55) :2003; RA2019	BDL (DL; 0.02)	-
Iron (as Fe)	mg/L	APHA 24th Ed.2023; 3111B	0.114	50

Remarks: pH & Temperature done at site.

AuBenieund by Quality Manager

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

Authorised Signatory

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

Page 2 of 2

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TC-13987

### TEST REPORT

Test Report No.	: ELES/RNC/2025/0614	Report Release Date	: 27.01.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000000596F		

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2025/SL/0419 : 15.01.2025 : 17.01.2025
Address	: Lohardaga, Jharkhand-835302	Type of Sample Location of Sample	: Soil : Near Quarry 1F, Amtipani Bauxite Mines (190.95ha)
Mines Status	es Status : Operational Sampling Procedure		: ELES/DOC/SMPL/05 : ELES Pvt. Ltd.
Period of Analysis	: 17.01.2025 to 24.01.2025	Sampling Done By Sample Condition	: Sealed

Discipline: Chemical		Group: Pollution & I	Environment
Parameter	Unit	Test Protocol	Result
pH (1:2) at 24.5 °C		IS 2720 (Part-26): 2021	5.21
Conductivity (1:2) at 24.5 °C	μS/cm	IS 14767: 2021	251
Total Organic Carbon (TOC)	9/4	Soil Testing in India: 2011 (Walkley & Black Method)	0.50
Available Phosphorus (as P)	kg/ha	Soil Testing in India; 2011	4.84
Potassium (as K)	mg/kg	IS 9497: 2020	1750
Available Nitrogen	%	Soil Testing in India; 2011	13.7
Chloride (as Cl) (1:2)	%	ELES/SOIL/SOP/01: 2021	0.003
Arsenic (as As)	mg/kg	ELES/SOIL/SOP/28: 2023	BDL (DL: 0.01)
Cadmium (as Cd)	mg/kg	US EPA 3050 A&B: 1996	BDL (DL: 0.1)
Lead (as Pb)	mg/kg	US EPA 3050 A&B: 1996	BDL (DL: 0.1)

Page 1 of 2

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TC-15587

#### TEST REPORT

Test Report No.	: ELES/RNC/2025/0614	Report Release Date	: 27.01.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
IILR No.	: TC1358725000000596F		

Discipline : Chemical		Group: Pollution & Environment	
Parameter	Unit	Test Protocol	Result
Magnesium (as Mg)	mg/kg	Soil Testing in India; 2011	2440
Mercury (as Hg)	mg/kg	US EPA 7473 : 2007	BDL (DL: 0.01)

Reviewed by Akash Kumar Quality Manager

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

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

Page 2 of 2

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### TEST REPORT

Test Report No.	: ELES/RNC/2025/0614	Report Release Date	: 27.01.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2025/SL/0419
		Sampling Date	: 15,01.2025
		Sample Received Date	: 17.01.2025
Address	: Lohardaga, Jharkhand-835302	Type of Sample	: Soil
		Location of Sample	: Near Quarry 1F, Amtipani Bauxite Mines (190.95ha)
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/05
Period of Analysis	: 17.01.2025 to 24.01.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed

Discipline : Chemic	al	Group: Pollution &	Environment
Parameter	Unit	Test Protocol	Result
Selenium (as Se)	mg/kg	US EPA 3050 B : 1996	BDL (DL: 0.01)

Reviewed by Akash Kumar

Quality Manager

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

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.

## Amtipani Bauxite Mine-Environmental Monitoring Report

February 2025



## CONTENT

	Hindalco Industries : Amtipani Bauxite Mine Environmental Monitoring Report February 2025
	Amtipani Bauxite Mine
	AMBIENT AIR QUALITY- CORE ZONE
1	Mine Entrance Gate
2	Near Mine Office/WB
3	Mines Near Quarry – 1F
4	Mines Near Quarry – 7C
	AMBIENT AIR QUALITY- BUFFER ZONE
1	Near PakriGada Village
2	Near Pol Pol Village
3	Near Shakhuapani Village
4	Near DipaKujam Village
	Drinking Water
	Stack







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TC-13587

#### TEST REPORT

Test Report No.	: ELES/RNC/2025/1307	Report Release Date	: 28.02.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001278F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2025/AA/1337
	The state of the s	Location	: Mine Entrance Gate
			Amtipani Bauxite Mine (190.95 ha
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 18.02.2025 to 19.02.2025
/\duicss		Sample Received Date	: 21.02.2025
		Type of Sample	: Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
W. Maria Cara Maria	1000 March 1000	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 21.02.2025 to 28.02.2025	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 720
_	Relative Humidity (%)	: 54	4	Weather Condition	: Clear

Discipline : Chemic	al	Group:	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	76	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	41	60 (24hrs)		
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	10.7	80 (24hrs)		
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	28.2	80 (24hrs)		
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.24	2 (8hrs)		
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.020	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AJR/SOP/01: 2021	<2.0	06 (Annual)		
Benzene (C <sub>6</sub> H <sub>6</sub> )	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

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

Authorised Signatory

Quality Man

Page 1 of 1

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TC-13587

#### TEST REPORT

Test Report No.	: ELES/RNC/2025/1308	Report Release Date	: 28.02.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000001279F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2025/AA/1338 : Near Mine Office/WB
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	Amtipani Bauxite Mine (190.95 ha) : 18.02.2025 to 19.02.2025 : 21.02.2025
Mines Status	: Operational	Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 21.02.2025 to 28.02.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 21	2	Barometric Pressure (mmHg	() : 720
-	Relative Humidity (%) : 59	4	Weather Condition	: Clear

Discipline : Chemic	al	Group:	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	71	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	35	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	11.8	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	24.3	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>2</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.29	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.016	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 (C <sub>6</sub> H <sub>6</sub> )	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

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

Authorised Signatory
Altash Kumar

Page 1 of 1

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TC-13567

#### TEST REPORT

Test Report No.	: ELES/RNC/2025/1309	Report Release Date	: 28.02.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000001280F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2025/AA/1339 : Mines Near Quarry – 1F	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	Amtipani Bauxite Mine (190.95 ha) : 18.02.2025 to 19.02.2025 : 21.02.2025	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 21.02.2025 to 28.02.2025	Sampling Done By Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 720
3	Relative Humidity (%)	: 54	4	Weather Condition	: Clear

Discipline : Chemic	al	Group:	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	1S 5182 (Part- 23): 2022	79	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	43	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	15.1	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	29.5	80 (24hrs)	
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10); 2019 (NDIR Method)	1.33	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part- 22); 2019	0.022	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 (C <sub>6</sub> H <sub>6</sub> )	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

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

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Page 1 of 1

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

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TC-13507

#### TEST REPORT

Test Report No.	: ELES/RNC/2025/1310	Report Release Date	: 28.02.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001281F		

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2025/AA/1340	
		Location	: Mines Near Quarry – 7C Amtipani Bauxite Mine (190.95 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 18.02.2025 to 19.02.2025	
		Sample Received Date	: 21.02.2025	
		Type of Sample	: Ambient Air	
Mines Status	: Operational : 21.02.2025 to 28.02.2025	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis		Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
I	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 720
3	Relative Humidity (%)	: 54	4	Weather Condition	: Clear

Discipline : Chemic	al	Group:	Group: Atmospheric Pollution		
Parameter Unit		Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	75	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	34	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	9.8	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part- 6): 2022	30.3	80 (24hrs)	
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.35	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.021	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 (C <sub>6</sub> H <sub>6</sub> )	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)	

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

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Page 1 of 1

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

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TEST REPORT

Test Report No.	: ELES/RNC/2025/1218	Report Release Date	: 25.02.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000001189F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2025/AA/1246 : Near Pakri Gada Village : 17.02.2025 to 18.02.2025	
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample	: 19.02.2025 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 19.02.2025 to 25.02.2025	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mml	Hg) : 720
3	Relative Humidity (%)	: 57	4	Weather Condition	: Clear

Discipline : Chemic	al	Group:	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit			
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	77	100 (24hrs)			
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	46	60 (24hrs)			
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	12.4	80 (24hrs)			
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	35.5	80 (24hrs)			
Ozone (O <sub>2</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)			
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)			
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.42	2 (8hrs)			
Lead (Pb)	µg/rn³	IS 5182 (Part- 22): 2019	< 0.002	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 (C <sub>4</sub> H <sub>b</sub> )	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)			

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Alunorisea Signato Akosh Kumar

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) 65T NO:- 20AAECE9713D1Z4

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TC-13587

### TEST REPORT

Test Report No.	: ELES/RNC/2025/1219	Report Release Date	: 25.02.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000001190F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2025/AA/1247 : Near Pol Pol Village : 17.02.2025 to 18.02.2025	
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample	: 19.02.2025 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt Ltd.	
Period of Analysis	: 19.02.2025 to 25.02.2025	Sample Condition	: Sealed & Preserved	

METEOROLOGICAL INFORMATION					
1	Average Temperature ("C)	: 22	2	Barometric Pressure (mmHg)	: 720
3	Relative Humidity (%)	: 57	4	Weather Condition	; Clear

Discipline : Chemic	al	Group:	Atmospheric l	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	43	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	11.8	80 (24hrs)
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part- 6): 2022	28.2	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.28	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.022	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 (C <sub>s</sub> H <sub>s</sub> )	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)

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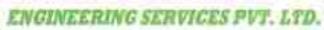
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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D1Z4



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TC-13567

### TEST REPORT

Test Report No.	: ELES/RNC/2025/1220	Report Release Date	: 25.02.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000001191F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2025/AA/1248 : Near Shakhuapani Village	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 17.02.2025 to 18.02.2025 : 19.02.2025 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 19.02.2025 to 25.02.2025	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 720
3	Relative Humidity (%)	: 57	4	Weather Condition	: Clear

Discipline : Chemic	al	Group:	Atmospheric !	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	79	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	42	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	1S 5182 (Part- 2/Sec1): 2023	12.5	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	29.5	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)
Animonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.026	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenie (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C <sub>4</sub> H <sub>6</sub> )	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)

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TC-13587

### TEST REPORT

Test Report No.	: ELES/RNC/2025/1221	Report Release Date	: 25.02.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000001192F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2025/AA/1249
		Location	: Near Dipa Kujam Village
		Sampling Date	: 17.02.2025 to 18.02.2025
Address	: Lohardaga, Jharkhand-835302	Sample Received Date	: 19.02.2025
		Type of Sample	: Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Minica orang	. Operational	<ul> <li>Sampling Done By</li> </ul>	: ELES Pvt. Ltd.
Period of Analysis	: 19.02.2025 to 25.02.2025	Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 720
3	Relative Humidity (%)	: 57	4	Weather Condition	: Clear

Discipline: Chemic	al	Group:	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	75	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	42	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	13.5	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	31.6	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.28	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.025	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 (C <sub>6</sub> H <sub>6</sub> )	μg/m <sup>1</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

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TC-13567

#### TEST REPORT

Test Report No.	: ELES/RNC/2025/1347	Report Release Date	: 01.03.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001318F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2025/DW/1333 : 18.02.2025 : 21.02.2025 : Drinking Water : Tap Water : Near Store Room (Amtipani Bauxite Mines)	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 21.02.2025 to 01.03.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

Discipline : Chemical Group :			Water		ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
pH (at 24.7 °C)		APHA 24 <sup>th</sup> Ed.2023, 4500-H	6.52	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 24th Ed.2023, 2130 B	0.21	1.0	5.0
Taste	120	APHA 24th Ed.2023, 2160 C	Agreeable	Agreeable	Agreeable
Odour	(2)	IS 3025 (Part-5) :2018	Agreeable	Agreeable	Agreeable
Colour	Hazen	APHA 24th Ed.2023, 2120B&D	1.0	5.0	15
Total Dissolved Solids (TDS)	mg/L	APHA 24th Ed.2023, 2540B,C&D	259	500	2000
Chloride (as Cl)	mg/L	APHA 24th Ed.2023, 4500 Cl B	19.1	250	1000
Fluoride (as F)	mg/L	APHA 24th Ed.2023, 4500 F-D	BDL (DL: 0.1)	1.0	1.5
Total Alkalinity (as CaCO <sub>3</sub> )	mg/L	APHA 24th Ed.2023, 2320 B	120	200	600
Total Hardness (as CaCO <sub>3</sub> )	mg/L	APHA 24th Ed.2023, 2340 C	106	200	600
Sulphate (as SO <sub>4</sub> )	mg/L	APHA 24th Ed.2023, 4500 SO <sub>4</sub> -2-E	3.46	200	400
Nitrate (as NO <sub>3</sub> )	mg/L	APHA 24 <sup>th</sup> Ed.2023, 4500 NO <sub>3</sub> -B	BDL (DL: 0.5)	45	No Relaxation

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Work Order No.

# ENVIRONMENTAL LABORATORIES &

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

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: 28.03.2024

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TC-13587

### TEST REPORT

Work Order Date

Test Report No. : ELES/RNC/2025/1347 Report Release Date : 01.03.2025

ULR No. : TC1358725000001318F

: 13612312113

Discipline : Chemica	al	Grou	ip: Water		ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	mg/L	IS 3025 (Part 43/Sec1): 2022	BDL (DL: 0.001)	0.001	0.002
Free Residual Chlorine (RFC)	mg/L	IS 3025 (Part-26): 2021	BDL (DL: 0.1)	0,2(Min)	1.0(Min)
Calcium (as Ca)	mg/L	APHA 24th Ed.2023, 3500 Ca B	27.9	75	200
Anionic Surfactants (as MBAS)	mg/L	APHA 24th Ed.2023, 5540-C	BDL (DL: 0.025)	0.2	1.0
Discipline : Chemic	al	Gro	oup: Residues i	n Water	
Aluminum (as Al)	mg/L	IS 3025 (Part-55) :2003; RA2019	BDL (DL: 0.02)	0.03	0.2
Arsenic (as As)	mg/L	IS 3025 (Part-37); 2022	BDL (DL: 0.005)	0.01	No Relaxation
Boron (as B)	mg/L	IS 3025 (Part-57): 2021	BDL (DL: 0.2)	0.5	1.0
Cadmium (as Cd)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.003)	0.003	No Relaxation
Total Chromium (as Cr)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.03)	0.05	No Relaxation
Copper (as Cu)	mg/L	1S 3025 (Part 42): 2019	BDL (DL: 0.03)	0.05	1.5
Cyanide (as CN)	mg/L	APHA 24 <sup>th</sup> Ed.2023, 4500 CN-E	BDL (DL: 0.012)	0.05	No Relaxation
Iron (as Fe)	mg/L	APHA 24th Ed.2023; 3111B	0.062	1.0	No Relaxation
Lead (as Pb)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.01)	0.01	No Relaxation
Manganese (as Mn)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.05)	0.1	0.3
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 2019	BDL (DL: 0.001)	0.001	No Relaxation
Selenium (as Se)	mg/L	IS 3025 (Part-56): 2019	BDL (DL: 0.01)	0.01	No Relaxation

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

## ENGINEERING SERVICES PVT. LTD.

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10,13507

### TEST REPORT

 Test Report No.
 : ELES/RNC/2025/1347
 Report Release Date
 : 01.03.2025

 Work Order No.
 : 13612312113
 Work Order Date
 : 28.03.2024

 ULR No.
 : TC1358725000001318F

Discipline : Chemical Group : Residues in Water				ory Limit 0500:2012		
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit	
Zinc (as Zn)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL; 0.1)	5.0	15	
Polynuclear Aromatic Hydrocarbons (PAH)	μg/L	ELES/GC/SOP/04: 2023	BDL (DL: 0.05)	0,1	No Relaxation	
Polychlorinated biphenyls (PCB)	μg/L	ELES/GC/SOP/03: 2023	BDL (DL: 0.1)	0.5	No Relaxation	
Pesticides				Li	mit	
Alachlor	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	- 7	20	
Atrazine	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2	2.0	
Butachlor	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1	25	
Chlorpyriphos	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)		30	
Ethion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	3	3.0	
Malathion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	190		
Methyl parathion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.1)	0	.30	
Monocrotophos	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	į	1.0	
Phorate	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2.0		
Phorate Sulphone	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)		<u> </u>	
Dieldrin	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.01)	0	.03	
Alpha HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.006)	0	.01	
Beta HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	0	.04	

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TC-13587

### TEST REPORT

Test Report No.	: ELES/RNC/2025/1347	Report Release Date	: 01.03.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001318F		

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

Remarks: pH done at Site.

Reviewed by

Alcesh Kumar Quality Manager \*\*\*\*End of Report\*\*\*\*

Authorised Signatory

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

Page 4 of 4

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D1Z4 ENGINEERING SERVICES PVT. LTD.

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#### TEST REPORT

Test Report No.	: ELES/RNC/2025/1347	Report Release Date	: 01.03.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2025/DW/1333 : 18.02.2025 : 21.02.2025	
Address	: Lohardaga, Jharkhand-835302	Type of Sample Source of Sample Location of Sample	: Drinking Water : Tap Water : Near Store Room	
Mines Status	: Operational	Sampling Procedure	(Amtipani Bauxite Mines) : ELES/DOC/SMPL/01	
Period of Analysis	: 21.02.2025 to 01.03.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

Discipline: Che	mical	Group: Wa	ter	The second second	ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Mineral Oil*	mg/L	1S 3025 (Part-39): 2021, Clause 6 Infrared Spectroscopic method.	BDL (DL: 0.01)	0.5	No Relaxation

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

Reviewed by

Akash Kumur Quality Managa: \*\*\*\*End of Report\*\*\*\*

Authorised Signatory

Dr. Deependra Komar Sinha Pts. D. Environmental Engg.

Technical Manager

### Page 1 of 1

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TC-115E7

### TEST REPORT

Test Report No.	: ELES/RNC/2025/1293	Report Release Date	: 28.02.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000001264F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2025/SM/1296 : Amtipani Bauxite Mine (190.95 ha), DG (15 KVA)	
Address Mines Status	: Lohardaga, Jharkhand-835302 : Operational	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: 19.02.2025 : 21.02.2025 : Flue Gas : ELES/DOC/SMPL/02(A) : ELES Pvt. Ltd.	
Period of Analysis	: 21.02.2025 to 28.02.2025	Sample Condition	: Sealed	

1	Particular of the Plant	: Bauxite Mines
2	Emission Due to	: Burning of HSD
3	Stack Connected to	: DG 15 KVA
4	Material of Construction of Stack	: MS
5	Stack Height from Ground Level (m)	: 3.2
6	Height of Sampling Port from Ground Level (m)	: 3.2
7	Inner Diameter of Stack at Sampling Point (m)	: 0.076
8	Shape of the Stack	: Circular
9	Working Load of the Stack	: 15 KVA
10	Pollution Control System	: N/A
П	Ladder & Platform	; Temporary

FU	EL CHARACTERISTICS DETAILS	
1	Type of Fuel Used	: HSD
2	Fuel Consumption	: N/A
3	Calorific Value of Fuel (Keal/Kg)	: N/A

Page 1 of 2

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

## ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2025/1293	Report Release Date	: 28.02.2025

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC1358725000001264F

Discipline : Cl	nemical	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Results	
Particulate Matter (PM)	mg/Nm³	IS 11255(Part-1): 2023	37	
Sulphur Di-Oxide (SO <sub>2</sub> )	mg/Nm³	USEPA 6C: 2017	18	
Oxides of Nitrogen (NO <sub>x</sub> )	mg/Nm <sup>3</sup>	USEPA 7E: 2020	159	
Carbon Monoxide (CO)	mg/Nm³	USEPA 10B; 2017	37	
Carbon Di-Oxide (CO <sub>2</sub> )	%	USEPA 3A: 2017	5.5	
Flue Gas Temperature	°C	IS 11255 (Part-3): 2018	161	
Barometric Pressure	mmHg	IS 11255 (Part-3): 2018	720	
Velocity of Flue Gas	m/sec	IS 11255 (Part-3); 2018	10.14	
Quantity of Gas Flow	Nm³/hr	IS 11255 (Part-3): 2018	73	

Reviewed by

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

Authorised Signatory

Alumb Kumar Camity teamager

Page 2 of 2

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# ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT.LTD.

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

Amtipani Bauxite Mine-Environmental Monitoring Report

March 2025



## CONTENT

	Hindalco Industries : Amtipani Bauxite Mine Environmental Monitoring Report March 2025
	Amtipani Bauxite Mine
	AMBIENT AIR QUALITY- CORE ZONE
1	Mine Entrance Gate
2	Near Mine Office/WB
3	Mines Near Quarry – 1F
4	Mines Near Quarry – 7C
	AMBIENT AIR QUALITY- BUFFER ZONE
1	Near PakriGada Village
2	Near Pol Pol Village
3	Near Shakhunpani Village
4	Near DipaKujam Village
	AMBIENT NOISE
	WORKZONE NOISE
	SPRING WATER
1	Jhapa Jhuri



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

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TC-13567

### TEST REPORT

Test Report No. : ELES/RNC/2025/2005 Report Release Date : 24.03.2025

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC1358725000001963F

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2025/AA/2147	
		Location	: Mine Entrance Gate	
			Amtipani Bauxite Mine (190.95 ha	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 15.03.2025 to 16.03.2025	
a process with	The state of the s	Sample Received Date	: 17.03.2025	
		Type of Sample	: Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
NAMES SOUTH		Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 17.03.2025 to 24.03.2025	Sample Condition	: Sealed & Preserved	

MI	METEOROLOGICAL INFORMATION					
1:	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 715	
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear	

Discipline : Chemic	al	Group:	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit			
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	83	100 (24hrs)			
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	47	60 (24hrs)			
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	1S 5182 (Part- 2/Sec1): 2023	11.9	80 (24hrs)			
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part- 6): 2022	35.1	80 (24hrs)			
Ozone (O3)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)			
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)			
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.05	2 (8hrs)			
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.018	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 (C <sub>6</sub> H <sub>6</sub> )	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 Kumze

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

Ph. D. Environmental Engo.

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Page 1 of 1

Technical Manager

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

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TO-13587

#### TEST REPORT

Test Report No.	: ELES/RNC/2025/2006	Report Release Date	: 24.03.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000001964F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2025/AA/2148	
		Location	: Near Mine Office/WB	
			Amtipani Bauxite Mine (190.95 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 15.03.2025 to 16.03.2025	
		Sample Received Date	: 17.03.2025	
		Type of Sample	: Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
		Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 17.03.2025 to 24.03.2025	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORMA	TION			
1	Average Temperature (°C) : 2	5	2	Barometric Pressure (mmHg)	: 715
3	Relative Humidity (%) : 5	8	4	Weather Condition	: Clear

Discipline : Chemic	al	Group:	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	76	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	34	60 (24hrs)		
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	12.3	80 (24hrs)		
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	25.7	80 (24hrs)		
Ozone (O <sub>5</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH <sub>3</sub> )	μg/m²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.25	2 (8hrs)		
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.02	1 (24hrs)		
Nickel (Ni)	ng/m³	1S 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		
Benzene (C <sub>s</sub> H <sub>s</sub> )	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

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

Authorised Signatory
Dr. Deependra Kumar Sinha

Quality Managur

Akash Kumar

Page 1 of 1

Ph. D. Environmental Engy

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



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TC-13587

### TEST REPORT

Test Report No.	: ELES/RNC/2025/2007	Report Release Date	: 24.03.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000001965F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2025/AA/2149	
		Location	: Mines Near Quarry - 1F	
			Amtipani Bauxite Mine (190.95 ha	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 15.03,2025 to 16.03.2025	
		Sample Received Date	: 17.03.2025	
		Type of Sample	: Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
	- <del>i</del>	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 17.03.2025 to 24.03.2025	Sample Condition	: Sealed & Preserved	

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	; 715
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear

Discipline : Chemic	al	Group:	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	80	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	42	60 (24hrs)		
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	12.7	80 (24hrs)		
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	28.5	80 (24hrs)		
Ozone (O <sub>3</sub> )	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.30	2 (8hrs)		
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.022	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 (C <sub>6</sub> H <sub>6</sub> )	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)		

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

Authorised Signatory Dr. Deependra Kumar Sinha

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

### ENGINEERING SERVICES PVT. LTD.

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TC-13567

### TEST REPORT

Test Report No.	: ELES/RNC/2025/2008	Report Release Date	: 24.03.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000001966F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2025/AA/2150	
		Location	: Mines Near Quarry - 7C	
			Amtipani Bauxite Mine (190.95 ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 15,03.2025 to 16.03.2025	
13777772	7-2-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	Sample Received Date	: 17.03.2025	
		Type of Sample	: Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
		Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 17.03.2025 to 24.03.2025	Sample Condition	: Sealed & Preserved	

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 25	-2	Barometric Pressure (mmHg)	; 715
3.	Relative Humidity (%)	: 58	4	Weather Condition	: Clear

Discipline : Chemic	al	Group:	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	72	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	33	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	13.6	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	29.2	80 (24hrs)
Ozone (O <sub>5</sub> )	μg/m³	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.14	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.020	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 (C <sub>6</sub> H <sub>6</sub> )	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 kash Kumar

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

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



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TC-15587

#### TEST REPORT

Test Report No.	: ELES/RNC/2025/1997	Report Release Date	: 24.03.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
IILR No.	: TC1358725000001955F	"		

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2025/AA/2139	
		Location	: Near Pakri Gada Village	
		Sampling Date	: 12.03.2025 to 13.03.2025	
Address	: Lohardaga, Jharkhand-835302	Sample Received Date	: 17.03.2025	
		Type of Sample	: Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 17.03.2025 to 24.03.2025	Sampling Done By Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (%C)	:27	2	Barometric Pressure (mmHg)	: 715
3	Relative Humidity (%)	: 59	4	Weather Condition	; Clear

Discipline : Chemic	al	Group:	Atmospheric l	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	72	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	41	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1); 2023	13.8	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	32.4	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10); 2019 (NDIR Method)	1.35	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22); 2019	< 0.002	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 (C <sub>6</sub> H <sub>6</sub> )	ng/m <sup>1</sup>	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\*\*\*\*

Compa

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

rechnicarmanager

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CIN: U749991H2018FTC012123

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



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TC-13567

TEST REPORT

Test Report No.	: ELES/RNC/2025/1998	Report Release Date	: 24.03.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000001956F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2025/AA/2140	
Address	: Lohardaga, Jharkhand-835302	Location Sampling Date Sample Received Date	: Near Pol Pol Village : 12,03,2025 to 13,03,2025 : 17,03,2025	
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 17.03.2025 to 24.03.2025	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	RMATION				
1	Average Temperature (°C)	: 27	2	Barometric Pressure (mmHg)	: 715	
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear	

Discipline: Chemic	ral	Group:	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	77	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	45	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	12.3	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	26.5	80 (24hrs)	
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1,31	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part- 22); 2019	0.026	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 (C <sub>6</sub> H <sub>6</sub> )	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)	

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Ouality Manager

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

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

Teplinion/Manager

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AA6CE9713D1Z4



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TC-13587

#### TEST REPORT

Test Report No.	: ELES/RNC/2025/1999	Report Release Date	: 24.03.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
III.R No.	: TC1358725000001957F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2025/AA/2141
		Location	: Near Shakhuapani Village
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 12.03.2025 to 13.03.2025
Address	. Longi daga, Markhand-655502	Sample Received Date	: 17.03.2025
		Type of Sample	: Ambient Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 17.03.2025 to 24.03.2025	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 27	2	Barometric Pressure (mmHg	3) : 715
3	Relative Humidity (%) : 59	4	Weather Condition	: Clear

Discipline: Chemic	al	Group:	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit			
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	74	100 (24hrs)			
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	40	60 (24hrs)			
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	9.8	80 (24hrs)			
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part- 6); 2022	24.3	80 (24hrs)			
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)			
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)			
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)			
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.033	l (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	OI(Annual)			

Reviewed by Akash Kumar Quality Manager

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

- Colina

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

rechnical Manager

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



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TC-13587

### TEST REPORT

Test Report No.	: ELES/RNC/2025/2000	Report Release Date	; 24.03.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001958F		

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2025/AA/2142 : Near Dipa Kujam Village : 12.03.2025 to 13.03.2025	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 17.03.2025 : 17.03.2025 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 17.03.2025 to 24.03.2025	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	:27	2	Barometric Pressure (mmHg)	4715
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear

Discipline: Chemic	al	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	79	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	45	60 (24hrs)		
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	1S 5182 (Part- 2/Sec1); 2023	12.9	80 (24hrs)		
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	29.2	80 (24hrs)		
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH <sub>2</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10); 2019 (NDIR Method)	1.20	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 (C <sub>6</sub> H <sub>6</sub> )	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 Altosh Kumar

Quality Manager

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

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

---Toolmical Manager

Page 1 of 1

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

## ENGINEERING SERVICES PVT. LTD.

Email: info@elespl.co.in, eles.ranchi@amail.com

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TC-13587

### TEST REPORT

Test Report No.	: ELES/RNC/2025/2020	Report Release Date	: 24.03.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001978F		

CUSTOMER DE	TAILS	SAMPLE DETAILS			
Customer Name	: Hindalco Industries Limited	Sampling Date Sampling Received Date	: 15.03.2025 to 16.03.2025 : 17.03.2025		
Address	: Lohardaga, Jharkhand-835302	Type of Sample Sampling procedure Sampling Done By	: Ambient Noise : ELES/DOC/SMPL/03 : ELES Pvt. Ltd.		
Mines Status	: Operational	Period of Analysis	: 17.03.2025 to 22.03.2025		

M	METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 715	
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear	

Discipline: Chemical	Group: Atn	ospheric l	ollution		
Location	Unit	Test Protocol	Rest	ılt	Regulatory Limit (Industrial Zone)
	dB(A)	IS 9989: 2020	Time	Leg	
Near Mine Office, Amtipani Bauxite Mine (190.95 ha)			Day Time	66	75 dB(A) Day Time &
Sample ID: ELES/RNC/2025/AN/2162			Night Time	46	70 dB(A) Night Time

Reviewed by Akash Kumar Quality Managor

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

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

Page 1 of 1

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

## ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2025/2050	Report Release Date	: 25.03.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000002007F		

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	; ELES/RNC/2025/SW/2170 : 15.03.2025 : 17.03.2025 : Surface Water : Spring Water : Jhapa Jhuri, Amtipani Bauxite
Mines Status Period of Analysis	: Operational : 17.03.2025 to 24.03.2025	Sampling Procedure Sampling Done By Sample Condition	Mine (190.95 ha) : ELES/DOC/SMPL/01 : ELES Pvt. Ltd. : Scaled & Preserved

Discipline : Chemical		Gr	oup: Water	Tolerance Limits	
Parameter	Unit Test Protocol		Result	as per IS 2296-1992 Class C (Inland Surface Water	
pH (at 24.9 °C)	140	IS 3025 (Part-11): 2022	6.65	6,5-8,5	
Colour	Hazen	IS 3025 (Part -4): 2021	2.4	300	
Odour	1.51	IS 3025 (Part-5): 2018	Unobjectionable	-555	
Turbidity	NTU	IS 3025 (Part-10): 2023	0.48		
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part-16): 2023	145	1500	
Total Alkalinity (as CaCO <sub>3</sub> )	mg/L	IS 3025 (Part-23): 2023	55.0		
Total Hardness (as CaCO <sub>3</sub> )	mg/L	IS 3025 (Part-21): 2019	62.7	₩	
Sulphate (as SO <sub>4</sub> )	mg/L	IS 3025 (Part-24/Sec1): 2022	7.6	400	
Chloride (as Cl)	mg/L	IS 3025 (Part-32): 2019	14.5	600	
Fluoride (as F)	mg/L	IS 3025 (Part-60): 2019	0.114	1.5	
Nitrate (as NO <sub>5</sub> )	mg/L	APHA 24th Ed.2023, 4500 NO <sub>3</sub> -B	2.05	50	

#### Page 1 of 4

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Work Order No.

# ENVIRONMENTAL LABORATORIES &

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

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TO-13587

TEST REPORT

Report Release Date : 25.03.2025 Test Report No. : ELES/RNC/2025/2050 Work Order Date : 28.03.2024

ULR No. : TC1358725000002007F

: 13612312113

Discipline : Chemical		Group: Wa	ter	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water
Free Residual Chlorine (RFC)	mg/L	IS 3025 (Part-26): 2021	BDL (DL: 0.1)	<b></b>
Phenols Compounds (as C <sub>6</sub> H <sub>5</sub> OH)	mg/L	IS 3025 (Part-43/Sec1): 2022	BDL (DL: 0.001)	0.005
Calcium (as Ca)	mg/L	IS 3025 (Part-40): 2019	16.5	Je.
Discipline : Chen	nical	Gre	oup: Residues	in Water
Aluminum (as Al)	mg/L	IS 3025 (Part-55): 2003;RA2019	BDL (DL: 0.02)	: **= :
Arsenic (as As)	mg/L	IS 3025 (Part 37):2022	BDL (DL: 0.005)	0.2
Boron (as B)	mg/L	IS 3025 (Part-57): 2021	BDL (DL: 0.2)	**
Cadmium (as Cd)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.003)	0.01
Total Chromium (as Cr)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.03)	0.05
Copper (as Cu)	mg/L	IS 3025 (Part 42): 2019	BDL (DL: 0.03)	1.5
Iron (as Fe)	mg/L	APHA 24th Ed.2023; 3111B	0.135	50
Lead (as Pb)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.01)	0.1
Manganese (as Mn)	mg/L	APHA 24 <sup>th</sup> Ed.2023; 3111B	BDL (DL: 0.05)	25
Mercury (as Hg)	mg/L	IS 3025 (Part-48); 2019	BDL (DL: 0.001)	2-
Selenium (as Se)	mg/L	1S 3025(Part-56): 2019	BDL (DL: 0.01)	0.05
Zinc (as Zn)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.1)	15

#### Page 2 of 4

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

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TC-13587

#### TEST REPORT

Test Report No. : ELES/RNC/2025/2050 Report Release Date : 25.03.2025

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC1358725000002007F

Discipline : Chemie	cal	Group: Residues	in Water	Tolerance Limits	
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water	
Cyanide (as CN)	mg/L	APHA 24th Ed.2023, 4500 CN-E	BDL (DL: 0.012)	0.05	
Polynuclear Aromatic Hydrocarbons (PAH)	μg/L	ELES/GC/SOP/04: 2023	BDL (DL: 0.05)	44	
Pesticides					
Alachlor	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	**	
Atrazine	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	**	
Butachlor	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	**	
Chlorpyriphos	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	••	
Ethion μg/L		ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	770	
Malathion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	22	
Methyl parathion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.1)	***	
Monocrotophos	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	<b>4</b>	
Phorate	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	-	
Phorate Sulphone	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)		
Dieldrin	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.01)		

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

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TC-13567

### TEST REPORT

Test Report No.	: ELES/RNC/2025/2050	Report Release Date	: 25.03.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
III.R No.	: TC1358725000002007F		

Pesticides				Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
Alpha HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.006)	207
Beta HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	=/.
Delta HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	2
Gamma HCH (Lindane)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	+0
Endosulfan (alpha, beta and sulphate)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	=======================================
DDT(o,p and p,p-isomers of DDT) ( DDE and DDD)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	45)
Discipline: Biolo	gical	Gro	oup: Water	
Total Coliform	CFU/100 mL	IS 15185: 2021	69.0	5000
Escherichia coli	CFU/100 mL	IS 15185; 2021	BDL (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

Page 4 of 4

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) G5T NO:- 20AAECE9713D124

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### TEST REPORT

Test Report No.	: ELES/RNC/2025/2050	Report Release Date	: 25.03.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2025/SW/2170 : 15.03.2025 : 17.03.2025 : Surface Water : Spring Water : Jhapa Jhuri, Amtipani Bauxite Mine (190.95 ha)	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 17.03.2025 to 25.03.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

Discipline: Chemic	al	Gro	up: Water	Tolerance Limits	
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)	
Taste	- 4	APHA 24th Ed.2023, 2160C	N/A	122	
Anionic Surfactants (as MBAS)	mg/L	APHA 24th Ed.2023, 5540-C	BDL (DL: 0.025)	1.0	
Mineral Oil*	mg/L	IS 3025 (Part-39):2021 (Clause 6 Infrared Spectroscopic Method)	BDL (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

Page I of I

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

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TC-12587

#### TEST REPORT

Test Report No.	: ELES/RNC/2025/2025	Report Release Date	: 24.03.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000001983F			

CUSTOMER DE	ΓAILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sampling Date	: 16.03.2025	
		Sampling Received Date	: 17.03.2025	
Address	: Lohardaga, Jharkhand-835302	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	
Wines Status	Operational	Period of Analysis	1 17.05.2023 10 2.	

METEOROLOGICAL INFORMATION						
1	Average Temperature (°C)	: 27	2	Barometric Pressure (mmHg)	: 715	
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear	

Location	Unit Test Protocol		Result		Regulatory Limit (Industrial Zone)	
Mines Near Quarry – 7C			Time	$L_{eq}$		
Amtipani Bauxite Mine (190,95 ha)	dB(A)	IS 4758: 2017	and the second		90 dB(A)	
Sample ID: ELES/RNC/2025/WN/2167			Day Time	71		

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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#### **Annexure 3**

Date - 06.11.2024

#### **Office Order**

Environmental Cell has been re-constituted at Amtipani Bauxite Mine (Area 190.95 ha) comprising below mentioned team members. The team will ensure compliance with the Environment Act, Regulation & Rule in respect of the said mines of Hindalco Industries Limited.

- 1. Mr. Yogendra Lilhare (Coordinator)
- 2. Mr. Susovan Samanta (Geologist)
- 3. Mr. Ankit Das (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 act rule and regulation for the above mine.

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	

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

<sup>\*</sup>Static information about the mines included in the above table

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#### 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) FY 2024-25 (From Oct'24 to Mar'25)	Actual (in Rupees) FY 2024-25 (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

<sup>\*\*</sup>Part of OB removed cost

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