

Date: 16th May 2025

#### HIL/LHD/ENV/MoEF&CC/060

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

**Sub:** Six Monthly EC Compliance Report for Bhusar (65.31 Ha) Bauxite Mining Project of M/s Hindalco Industries Limited, Lohardaga Jharkhand for the period from October 2024 to March 2025.

Ref: Environmental Clearance Letter No. J-11015/184/2011-IA II (M), dated 17<sup>th</sup> June 2013.

Dear Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for Bhusar (65.31 Ha) Bauxite Mining Project of M/s Hindalco Industries Limited, Lohardaga Jharkhand for the period from October 2024 to March 2025 for your kind perusal please.

The lease details are below:

Lease area (ha)	<b>Production Capacity (MT)</b>	Lease Period
65.31	280000	11.07.1981 to 31.03.2030

Hope you will find the same in order.

Thanking You

Yours faithfully,

For Hindalco Industries Limited

**Basudev Gangopadhyay** 

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

Enclosure: - As Above

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 : Bhusar Bauxite Mine (65.31 ha)

M/s Hindalco Industries Limited

Environment Clearance No & date : J-11015/184/2011-IA. II (M), dated 17.06.2013

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

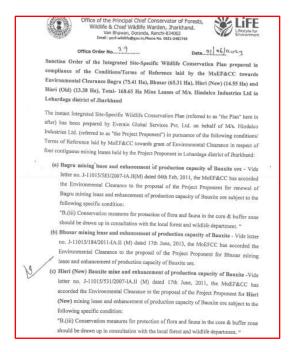
#### **Specific Conditions: -**

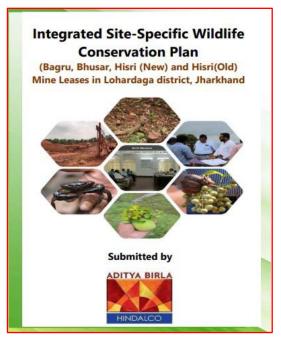
Condition i: - All the conditions stipulated by State Pollution Control Board in their NOC shall be effectively implemented.

**Reply:** - Implementations of stipulated conditions in NOC are fulfilled post which consent to operate has been obtained from time to time. Existing consent to operate is valid up to 30.09.2027.

Condition ii: - Environmental clearance is subject to obtaining clearance under the wildlife (Protection) Act, 1972 from the competent authority, as may be applicable to this project.

**Reply: -** This is not applicable for this mine as this mine is located tentatively 20 kms away from nearest Eco sensitive zone. However, we have prepared Integrated Site-specific Wildlife Conservation Plan and obtained approval via obtained approval from by PCCF, Wildlife, Ranchi vide Office Order No.29 dated 01.06.2023. A copy of same is enclosed below:





Condition iii: - The mining operations shall be restricted to above ground water table and it should not intersect groundwater table. Prior approval of the Ministry of Environment & Forests and Central Ground Water Authority shall be obtained for mining below water table.

**Reply: -** Shallow depth mining is being done and does not intersect the ground water. In future also, working zone will be restricted to above ground water table. We assure that no mining is/was carried out below groundwater table and the same status will be maintained in future also.

Condition iv: - The project proponent shall ensure that no natural watercourse shall be obstructed due to any mining operations.

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

Condition v: - Topsoil should be stacked with proper slope at earmarked site(s) only with adequate measures and should be used for reclamation and rehabilitation of mined out areas.

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



Reclaimed area

Condition vi: - The entire waste generated shall be backfilled and there shall be no external over burden dump left at the end of the mine life. The entire backfilled area shall be reclaimed by plantation. The back filling should be carried out in such a manner that it is restored to the normal ground level. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status

should be submitted to the Ministry of Environment as Forests and its Regional Office, Bhubaneswar on six monthly basis.

**Reply:** - Backfilling and reclamation are being done concurrently by overburden. No OB dump is present in mines. The mining is being carried out as per the approved mining plan. Data pertaining to backfilling is enclosed as **Annexure 4.** Monitoring and management of rehabilitated areas is being done through effective supervision. Compliance status is being submitted to MoEF&CC on six monthly bases. Now, the Regional office of MoEF&CC is in Ranchi.

Condition vii: - Catch drains and siltation ponds of appropriate size should be constructed for the working pit, temporary OB dumps, if any and mineral dumps to arrest flow of silt and sediment. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted, particularly after monsoon, and maintained properly. Garland drain of appropriate size, gradient and length shall be constructed for both mine pit and temporary dumps 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 collect & manage rainwater during monsoon, part of mined out area is used as settling tank for the runoff. Rainwater stored is being used for watering the mine area, roads, green belt development and sprinkling as necessary. Catch drains, Garland drains of appropriate size are being constructed in both around the mine pit to prevent runoff of water and flow of sediments directly into the agricultural field and water bodies, if applicable. Sump of adequate capacity is being provided and maintained as required. No active external dump exists in mine.



Garland drain

Condition viii: -Dimension of the retaining wall at the toe of temporary dumps and OB benches within the mine to check run-off and siltation should be based on the rain fall data.

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

Condition ix: - Plantation shall be raised in an area of 52.50 ha including a 7.5m wide green belt in the safety zone around the mining lease by planting the native species around ML area, backfilled and reclaimed area, around water body, roads etc. in consultation with the local DFO/Agriculture Department at the end of life of mine. The density of the trees should be around 2500 plants per ha.

**Reply:** - It is already in practice. Phase wise plantation of native species in consultation with forest department has been carried out within safety zone and mined out/reclaimed pits. During FY 2024-25, a total of 5395 nos. saplings have been planted within the mining lease. Cumulative 45.74 ha areas have been planted till date. In addition to this, agricultural activity is going on reclaimed land as per the consent from landowners. Greenbelt development programme is in progress with progress of mining activities. Photographs enclosed below:







Plantation at mine

Condition x: - Regular water sprinkling should be carried out in critical areas prone to air pollution and having high levels of SPM and RSPM such as haul road, loading and unloading point and transfer points. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.

**Reply: -** Mobile water tankers have been provided for sprinkling of water in critical areas to suppress dust. Additionally, we have also installed a Mist Fog Cannon to suppress the dust at the transfer point. AAQ parameters are monitored on regular basis in the mine. Monitoring Report is attached as **Annexure 2**.





**Dust suppression through water tanker** 

**Mist Fog Cannon** 

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

Condition xii: - Regular monitoring of ground water level and quality should be carried out in and around the mine lease 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 i.e. January, April-May, August, November and the data thus collected may be sent regularly to Ministry of Environment and Forests, its Regional Office, Bhubaneswar; Central Ground Water Authority and Central Ground Water Board.

**Reply:** - Since, 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 also. Regular monitoring of groundwater level and quality of the area is being carried out by establishing a network of existing wells/Piezometers. Reports are being sent regularly to the regional office of Ministry, CGWA and JSPCB. The Ground water level from October 2024 to March 2025 and quality Monitoring report of post-monsoon season and Winter season is attached as **Annexure 1 & 2**. Now, Regional office of MoEF&CC is in Ranchi.



**Piezometer** 

Condition xiii: - The project authorities should obtain prior approval of the competent authority for drawl of groundwater if any, required for the project.

**Reply:-** We are not using any ground water for mining purposes. Suitable arrangement has been made for collection and storage of rainwater in harvesting pond. Water drawn from rainwater harvesting pond is being used for sprinkling on haul roads and for raising plantation. However, No Objection Certificate (NOC) for ground water abstraction has been obtained from CGWA/CGWB for drinking purposes only. The copy of the NOC CGWA is attached below:





NOC for Groundwater

Rainwater Harvesting Pond

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

**Reply: -** Bauxite is transported through ropeway from mine to Lohardaga siding. However, Regular maintenance of HEMM/vehicles and all measures are being taken to control vehicular emission.



Ropeway transportation- eco-friendly

Condition xv:- 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:-** Blasting time is fixed during 1.00 PM - 2.00 PM. Controlled blasting method is in practice. Ground vibration study has been conducted periodically. All efforts are being taken to mitigate impact of blasting.

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

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

Condition xvii: - Consent to operate should be obtained from SPCB before starting/enhanced production from the mine.

**Reply: -** We have already obtained the Consent to Operate for Bauxite as per the production capacity mentioned in EC. Existing CTO is valid up to 30.09.2027.

Condition xviii :- 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: -** Progressive mine closure plan along with mining scheme has been approved by IBM. Final mine closure plan will be prepared in due time. Based on present resource estimate, and peak rated production capacity mentioned in EC, Mining operation is being carried out.

#### **General Conditions: -**

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

**Reply: -** Noted.

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

**Reply:** - Calendar plan including excavation, quantum of mineral bauxite and waste is being done as per IBM approved mining scheme. The report is attached as **Annexure-4**.

Condition iii: - Four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for PM10, SO2 as 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: -** We have already established four ambient air quality monitoring stations in core zone as well as buffer zone. Monitoring is being carried out and reported to the concerned authorities. Report is attached as **Annexure 2.** 

Condition iv: - 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: -** Suitable water spraying system is already available. To arrest fugitive dust proper water sprinkling is being carried out on haul roads, loading and unloading and at transfer points. Mist cannon is also installed. Photographs attached above.

Condition v: 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:** - Noise monitoring is being done regularly. Workers engaged in operation of HEMMs, etc. has 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 vi: -Industrial wastewater (workshop and wastewater from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422(E) dated 19th May 1993 and 31st December 03 or as amended from time to time. Oil and grease trap should be installed before discharge of effluents from workshop.

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



Effluent Treatment Plant (ETP)

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

Condition vii: -Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.

**Reply:** - All the workers have been provided with PPEs including dust mask and dust respirators. Apart from PPEs distribution to all workers, we are also providing adequate safety training and conducting awareness session on Safety and health aspects on regular basis.

Condition viii: - Occupational health surveillance programme of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.

**Reply: -** Periodical Occupational health surveillance program of the workers is being carried out and records maintained as per statute.

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

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

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

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

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

**Reply:** - Noted and Agreed. Now, the Regional Office of MoEF&CC is in Ranchi.

Condition xii: - The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Office, Bhubaneswar, Central Pollution Control Board and State Pollution Control Board.

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

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

**Reply: -** Complied. A copy of clearance letter has been already submitted.

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

**Reply:** - It is an operational mine. Hence provisions related to financial closure is not applicable.

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

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

Condition xvi:- 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 at Bhubaneswar.

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

### **Piezometer Monitoring Report**

Mine: Bhusar Bauxite Mine (65.31 Ha)

S No	Month	Ground Water Level (BGL) in meter
1	Oct-24	34.12
2	Nov-24	34.21
3	Dec-24	34.45
4	Jan-25	34.52
5	Feb-25	34.87
6	Mar-25	35.16

# ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

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

Bhusar Bauxite Mine-Environmental Monitoring Report

October 2024



# CONTENT

Hind	alco Industries : Bhusar Bauxite Mine Environmental Monitoring Report	October 2024
	Bhusar Bauxite Mine	
	AMBIENT AIR QUALITY- CORE ZONE	
1	Near View Point 1 (Bhusar Mine Pit I)	
2	Near View Point 2 (Bhusar Mine Pit II)	
3	Near Rest Shelter	
+	Near GTS Point	
	AMBIENT AIR QUALITY- BUFFER ZONE	
1	Near Daldaliya Village	
2	Aditya School Gangupara	
3	Ropeway unloading station	
4	Ropeway Angle Station	





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

### ENGINEERING SERVICES PVT. LTD.

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1C-1356

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/6193	Report Release Date	: 25.10.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400004084F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/7222
		Location	: Near View Point-I(Bhusar Mine Pit I)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	Bhusar Bauxite Mine(65,31ha) : 15.10.2024 to 16.10.2024 : 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

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (9C)	: 28	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%)	: 64	4	Weather Condition	: Partly 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	58	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	25	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	9.7	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	μg/m³	IS 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/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	0.011	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>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 1

Technical Manager

The Document stated as Test Report, to issued by the Laboratory order General Terms and Conductors, only on Company letter band in pre-approved formst. The results shown in the Test Report refer or relaters only to the polasitatives done by the Laboratory order General Terms and Conductors, only on Company letter band in pre-approved formst. The results shown in the Test Report refer or relaters only to the polasitatives done by the Laboratory or responsible for all the information or data provided on the report, except the information which is provided by the client. The Report remote be reportlessed except in fall and any part of the report is not taken one of content, without prior written approved of the Laboratory. The Report in fall or in part shall not be published. Adverse, used for any legal actions actions prior provisions has been excepted from the Management of the Laboratory. Attention is drawn to the institution of inhibity, companished issues. Any unsufficient distribution of the content or apparents of the Test Report is infamiliar indicated as specified. Are type of Observations or Complemes regarding the Reports shall be done within 15days from the Date of Test Report related assented. After the time period stated before, no complemes will be accepted. The entire Time schedule recruised in Test Report is in 24kmes format. Althorisation and N.A. Our Applicable). BDL (Selow Baraction Limits). LDL (Lower Detection Limits).



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

## ENGINEERING SERVICES PVT. LTD.

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### TEST REPORT

Test Report No.	: ELES/RNC/2024/6194	Report Release Date	: 25.10.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400004085F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/7223 : Near View Point-2(Bhusar Mine Pit I) Bhusar Bauxite Mine(65.31ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 15.10.2024 to 16.10.2024 : 18.10.2024 : Ambient Air
Mines Status : Operational Sampling Proces	Sampling Procedure	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 18.10.2024 to 24.10.2024	Sampling Done By Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATIO	N		
1	Average Temperature (°C) : 28	2	Barometric Pressure (mmH	g) : 740
3	Relative Humidity (%) : 64	4	Weather Condition	: Partly 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	33	60 (24hrs)
Sulphur Di-Oxide (SO <sub>3</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	8.6	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	1S 5182 (Part- 6): 2022	19.1	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m³	1S 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	0.013	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>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)

Akash Kumar Quality Manager

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

Authorised Signatory Dr. Deependra Kumar Sinha

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 (IHARKHAND) GST NO:- 20AAECE9713D1Z4

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### TEST REPORT

Test Report No.	: ELES/RNC/2024/6195	Report Release Date	: 25.10.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400004086F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/7224 : Near Rest Shelter Bhusar Bauxite Mine (65.31ha)
Address	Status Sample Received Date Type of Sample Sampling Procedure	Sampling Date Sample Received Date	: 15.10.2024 to 16.10.2024 : 18.10.2024
Mines Status		: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	Sampling Done By Sample Condition		: ELES Pvt. Ltd. : Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 28	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%)	: 64	.4	Weather Condition	: Partly 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	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/Sec1): 2023	10.6	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	21.5	80 (24hrs)	
Ozone (O <sub>3</sub> )	μg/m³	1S 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	0.012	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>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)	

Reviewed by
Akash Kumar

Quality Manager

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

Authorised Signal

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

Page 1 of 1

Technical Manager

The December stated to Test Report, is issued by the Laboratory under General Terms and Conditions, only an Coopputy latter head in pre-opposed formst. The results shown in the Test Report reflects only to the job analysis show by the Laboratory only. The information stated on the Test Report reflects the findings does by the Laboratory at the time of involvement only and within the lumin of client's instructions. The Laboratory is preparable for all the information or data provided on the report except the information of provided by the client. The Report annuel be reproduced except in find and any part of the report is not taken out of content, without prior written approach of the Laboratory. The Report in field on its part shall not be published, advantage, and the saw legal actions indees prior permission has been secured from the Management of the Laboratory. Attention is desert in the limitation of hability, compensation and production issues. Any consultanced abstration & deletification of the content or approximate of the Laboratory may be presented to the fulless entired in the finding extent of the laboratory of the Test Report is understood and offenders may be presented to the fulless entired in the finding extent of the laboratory of the Test Report in Regulatory busines are to be entired as specified. Any type of Charactions or Complaints regulating the Report is in 24binars format. Abbrevious used N.A.(Not Applicable), 20th, Orlehow Detection Limits; LDE, (Lower Detection Limits).



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

## ENGINEERING SERVICES PVT. LTD.

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TC-10567

### TEST REPORT

Test Report No.	: ELES/RNC/2024/6196	Report Release Date	: 25.10.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400004087F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/7225 : Near GTS Point Bhusar Bauxite Mine (65,31ha)	
Address	s Status : Operational Sample Received Date Type of Sample Sampling Procedure Sampling Done By		: 15.10.2024 to 16.10.2024 : 18.10.2024	
Mines Status		: Ambient Air : ELES/DOC/SMPL/02		
Period of Analysis		: ELES Pvt. Ltd. : Sealed & Preserved		

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 28	2	Barometric Pressure (mml	Ig) : 740
3	Relative Humidity (%) : 64	4	Weather Condition	: Partly 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	31	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	1S 5182 (Part- 6): 2022	20.3	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	0.013	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)	

AkasiRenigrand by Quality Manager

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

Authorised Signators

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

Technical Manager

Page 1 of 1 The Document stand to Test Report, in issued by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved Genus. The results shown as the Test Report refer or relates only to the july tradysis done by the Laboratory only. The information mated on the Tart Report reflects the findings done by the Laboratory at the time of involvement only and within the limits of cheer's instructions. The Laboratory is responsible for all the information or data provided on the report, except the information is provided by the cheer. The Report except the report is full and any part of the report is not taken out of context, without prior written approved of the Laboratory. The Report is full 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 deswered the Escalation of Robbits, correspondence and jurisdiction of the Laboratory Attention is deswered the Escalation of Robbits, correspondence and jurisdiction is successful observations. A fabrification of the content or appearance of the Text Report is unlessful and offenders may be presented to the fabrification of the law. All the samples are returned for 30days from the Date of releasements of the Text Report. The samples from Regulatory bodies are to be returned as openful. Any type of Observations or Complaints, required the Report shall be done within 15 days from the Date of Text Report returned issued. After the time period stand before, no complaints will be accepted. The outer Time schedule mentioned in Text Report is no 24 hours formy. Abstraction used. N.A. (Net Applicable), BEL Observation Limits |



PLOT NO 30, MANSAROVAN ENCLAYE, TUPUDANA HATIA, KANCHI-BEROOS (HARIGHAND) GST MD-20AASCER/LIDEZA

### ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/6189	Report Release Date	: 25.10.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03,2024
ULR No.	: TCL35872400004080F		

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

Mi	TEOROLOGICAL INFOR	MATION			
Ŧ	Average Temperature ("C)	:27	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%)	: 65	4	Weather Condition	: Partly Cloudy

Discipline: Chemic	na!	Group:	Atmospheric l	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	ug/m³	IS 5182 (Part- 23): 2022	60	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part-24): 2019	30	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part- 2/Sec1): 2023	10.9	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	20.2	80 (24hrs)
Ozone (O <sub>3</sub> )	μ <u>α</u> /m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>2</sub> )	ug/m²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>2</sup>	IS 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	ug/m³	IS 5182 (Part- 22): 2019	0.005	1 (24hrs)
Nickel (Ni)	ng/m²	JS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C <sub>a</sub> H <sub>a</sub> )	µg/m³	ELES/GC/SQP/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\*\*\*\*

Dr. Deepengriew dissweight Ph. D. Environmental Engg.

Akash Kamar Se Omatiny Managar

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Page 1 of 1

The Decement stated to Tair Report, in incred by the Laboratory under General Terral and Consistent, unity and Company Series head in par-appeared from the enable shares in the Tool Report refer to relate soft to the job analysis flare by the Laborary with The inflormation moved in the Test Report inflorm the findings date by the Laborary is the time of involvement only and within the limits of chain's instructions. The Entertoxy is responsible for all the information or date provided on the report, except the information which is provided by the others. The Report name to represent accounts, full and any part of the report is not taken out of content, without price within appeared of the Laboratory. The Report is full or so part shall not be produced, which is not for any legal actions to the produced has been sound from the Management of the Laboratory. Action in the Management of the Laboratory action in the Management of the Laboratory action in the Management of the Management of the Laboratory action in the Management of the Management of the San action of the Management of the Laboratory action of the Management of th Reports about the device without U.S. Super from the Date of Time Report relie and least. After the inexperied aread before, or acceptable will be attended. The motor Your sallowed mentions by Tori Report is in 14 most forcest. Authorisation and 10 in Print Application, 1997, (Below Detection Lines), LDC, (Lower Departure Level)



PLOT NO-30, AUTHEAROVAR ENCLAVE, TUPUDANIA HATTA, RANCHI-834003 (IHARKHAHD) 65T HO.- MAAFCEIZISDIZI



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TEST REPORT

Test Report No.	: ELES/RNC/2024/6190	Report Release Date	: 25.10.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400004081F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/7219 : Aditya School Gangupara Bagru Bauxite Mine (75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 14.10.2024 to 15.10.2024 : 18.10.2024
Mines Status	: Non 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

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

Discipline: Chemic	al	Group:	Atmospheric l	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23): 2022	64	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	30	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	1S 5182 (Part- 2/Sec1); 2023	6.6	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m³	IS 5182 (Part- 6): 2022	17.5	80 (24hrs)
Ozone (Oz)	µg/m²	IS 5182 (Part-9): 2019	<29.0	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)	1.05	2 (8hrs)
Lead (Pb)	µg/m.	IS 5182 (Part- 22): 2019	0.005	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<5.0	20 (Annual)
Arsenic (As)	ing/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C <sub>1</sub> H <sub>8</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(Annisl)

Reviewed by Akush Kumar

Quality, Manager

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

Authorised Signatory

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

Page 1 of 1

Technical Manager

The Discount stand as Dee Report is bound by the Laboratory under Command Combiners, only on Company later hand as per-approved former. The combiners as the Even Report reflects the findings done for the Laboratory or the time of combiners on the Tap Report reflects the findings done for the Laboratory or the time of combiners only and within the limits of close's metrodome. The Laboratory wells, for all the attenuation to that provided as the report, except the information by the time of combiners only and within a provided by the close the Report of the Information of the Caboratory of the Report of the Appetent of the Information of Informa



PEOT NO 30, MANSABOVAR EVOLAVE TUPUDANA HATEA, RANCHI-834003 UHURKHANDI GST NO - 204 A2CES 7 LEGIZE

### ENGINEERING SERVICES PVT. LYD.

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#### TEST REPORT

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

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindako Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/7220 : Ropeway Unloading Station Bagru Bauxite Mine (75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 14.10.2024 to 15.10.2024 : 18.10.2024 : Ambient Air	
Mines Status	: Non Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 18.10.2024 to 24.10.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd.  1 Scaled & Preserved	

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

Discipline: Chemic	in	Group:	Atmospheric !	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	ug/m³	IS-5182 (Part- 23): 2022	71	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	15 5182 (Part- 2/Sec1): 2023	8.4	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	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</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	IS 5182 (Part- 22): 2019	0.017	1 (24hrs)
Nickel (Ni)	ngin <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>s</sub> H <sub>d</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 ARBSH KUTTON

Quality Manager

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

Dr. Deependra Williamsinha Ph. D. Environmental Engg.

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Page 1 of 1

The Document stand on Tiest Report, in known by the Laboratory woder General Terms and Conductors, notice and Congruey Jerus hand to pre-approved frames. The regular absent in the Taint Report ratio as solver, only to the july analysis done by the Labourney andy. The substration manual on the Tent Report reflects the findings date by the Labourney as the time of invalvement; andy and within the limits of client's improcessors. The Laboratory is responsible for all the information or date provided on the report, except the enforcement reject is provided by the orient. The Mayori current his repossibled average or full and any part of the report is not taken mit of contract, without prior without approval of the Laboratory. The Rayon to full or in your shall not be positively, advanted, count for any legal actions on the support of the Laboratory and provided the positive of the Management of the Laboratory. Accounts to the full of countries and provided from Any association and the support of the Cost Report is unlessful and affirmation may be provided in the full or common of the formation and provided for the full or common of the full or countries of the Rayon of the Sangharous and provided for the Sangharous and the Sangh Report that he first retire 190es from the Date of Test Report referred totals. After the water possible based before an exceptions will be accepted. The arter Time effect to the property of the Time of the Common Control Control



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TEST REPORT

Test Report No.	: ELES/RNC/2024/6192	Report Release Date	: 25.10.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	· TC 135872400004083F			

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

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

at	Group:	Atmospheric l	Pollution
Unit	Test Protocol	Result	Regulatory Limit
μg/m³	IS 5182 (Part- 23): 2022	66	100 (24hrs)
µg/m³	1S 5182 (Part- 24): 2019	31	60 (24hrs)
ng/m³	IS 5182 (Part-2/Sec1): 2023	7.9	80 (24hrs)
μg/m <sup>1</sup>	IS 5182 (Part- 6): 2022	20.9	80 (24hrs)
his/m <sub>y</sub>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
mg/m³	1S 5182 (Part- 10): 2019 (NDIR Method)	1,02	2 (8hrs)
μg/m <sup>4</sup>	IS 5182 (Part- 22): 2019	< 0.002	1 (24hrs)
ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
ng/m²	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
µg/m³	ELES/GC/SOF/06: 2023	<2.5	05(Annual)
ng/m <sup>7</sup>	ELES/GC/SOP/05: 2023	<0.5	01(Annual)
	μg/m <sup>3</sup>	Unit   Test Protocol     μg/m³   IS 5182 (Part- 23): 2022     μg/m³   IS 5182 (Part- 24): 2019     μg/m³   IS 5182 (Part- 2/Sec1): 2023     μg/m³   IS 5182 (Part- 6): 2022     μg/m³   IS 5182 (Part- 9): 2019     μg/m³   IS 5182 (Part- 25): 2018     μg/m³   IS 5182 (Part- 10): 2019     μg/m³   IS 5182 (Part- 10): 2019     μg/m³   IS 5182 (Part- 22): 2019     μg/m³   IS 5182 (Part- 22): 2019     μg/m³   IS 5182 (Part- 26): 2020     μg/m³   ELES/GC/SOP/06: 2023	Unit Test Protocol Result  μg/m³ IS 5182 (Purt- 23): 2022 66  μg/m³ IS 5182 (Purt- 24): 2019 31  μg/m³ IS 5182 (Purt- 24): 2023 7.9  μg/m³ IS 5182 (Purt- 2/Sec1): 2023 7.9  μg/m³ IS 5182 (Purt- 6): 2022 20.9  μg/m³ IS 5182 (Purt- 9): 2019 <20.0  μg/m³ IS 5182 (Purt- 25): 2018 <10.0  mg/m³ IS 5182 (Purt- 10): 2019 (NDIR Method)  μg/m³ IS 5182 (Purt- 22): 2019 <0.002  ng/m³ IS 5182 (Purt- 25): 2020 <6.0  ng/m³ ELES/AIR/SOP/01: 2021 <2.0  μg/m³ ELES/AIR/SOP/01: 2021 <2.0

Reviewed by Akash Kumar Quality Manager

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

Dr. Deeplikeri Kilmiersinoa Ph. D. Environmental Engg.

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Page 1 of 1

The Deciment stand or Tast Rayer, is must by the Laboratory under General Toyon and Conditions, only on Company letter had in pre-approved forms: The results shown in the Toyon. refer or season only to the polymalysis drove by the Laboratory only. The influences could be the Tase Report reflects the findings from by the Laboratory at the time of involvement only and willing the limits of client's instructions. The Laboratory is responsible for all the definences or that perceived on the report, encaps the refinances which is provided by the others. The Report cannot be reproduced except to full and any part of the superior and taken and of numbers, without power worken approved of the Laboratory. The Report is full or in part shall not be excluded, adversors, send for any logal actions refer to produce that have been produced and proof of the Management of the Laboratory. According to the Contract of Statistics of Statistics and Statistics and adversors. A full financial of the tracters in appearance of the Year Report is unlocated and officially many be produced by the full of release source of the Report is supplied as a statistical or the Statistic of the national or the Report of the Report is the supplied as a statistical or smallest the statistics and officially allowed the Statistics and the Reports that he done within integral from the One of Tan Report released again. After the time period stood before, as exercise Report to 14 Discuss Forms, Address and SOV (Not Applicables, HOL: Delice Descripe Limit), Lttl. Hower Descripe Limit. E. After the time proved priced before an emphasis will be account. The social Time satisfied time

# ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

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

Jharkhand.

Bhusar Bauxite Mine-Environmental Monitoring Report

November 2024

# CONTENT

Hind	alco Industries : Bhusar Bauxite Mine Environmental Monitoring Report November 2024
	Bhusar Bauxite Mine
	AMBIENT AIR QUALITY- CORE ZONE
1	Near View Point 1 (Bhusar Mine Pit I)
2	Near View Point 2 (Bhusar Mine Pit II)
3	Near Rest Shelter
4	Near GTS Point
	AMBIENT AIR QUALITY- BUFFER ZONE
1	Near Daldaliya Village
2	Aditya School Gangupara
3	Ropeway unloading station
4	Ropeway Angle Station
	Drinking Water





PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) G5T NO:- 20AAECE9713D1Z4

## ENGINEERING SERVICES PVT. LTD.

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TC-1358T

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/6832	Report Release Date	: 26.11.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400004704F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/8035 : Near View Point-1(Bhusar Mine Pit I) Bhusar Bauxite Mine(65.31ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 18.11.2024 to 19.11.2024 : 21.11.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 21.11.2024 to 26.11.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 25	2	Barometric Pressure (mm	Hg) : 740	
3	Relative Humidity (%) : 48	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	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	11.7	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)	<1.0	2 (8hrs)		
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.014	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 Akash Kumar

Quality Manager

Page 1 of 1

The Electrons states for Record, applied of the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved Remat. The results shown in the Test Report refers or relates only 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 limits of client's interference which is provided by the client. The Report reflects the findings done by the Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the client. content be reproduced except in full and any part of the report is not taken out of content, without prior written approval of the Laboratory. The Report is full 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 drawn to the limitation of feabling, computeration and justidiction. somes. Any anauthorized abstraction & folsofication of the content or appearance of the Test Report is unfowful and offenders may be prosecuted to the follow extent of the law. All the samples are nationed for 20 days from the Date of release from the Test Report. The samples from Regulatory hodies are to be retained as specified. Any type of Observations or Complaints regarding the Reports shall be done wattout 15 days from the Date of Test Report released/storact. After the time period stored before, no complaints will be accepted. The entire Time schedule mannioned in Turn Report is in 24hours format. Abbreviation used: N/A (Not Applicable); HDL (Below Detection Limit); J.Dl. (Lower Detection Limit).



PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-B34003 (JHARKHAND) GST NO:- 20AAECE9713D1Z4

## ENGINEERING SERVICES PVT. LTD.

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TC-13587

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/6833	Report Release Date	: 26.11.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400004705F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/8036 : Near View Point-2(Bhusar Mine Pit I) Bhusar Bauxite Mine(65,31ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 18.11.2024 to 19.11.2024 : 21.11.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 21.11.2024 to 26.11.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%)	: 48	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	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	11.3	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	22.6	80 (24hrs)	
Ozone (Oz)	μg/m³	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)	1.08	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/m²	ELES/GC/SOP/05: 2023	< 0.5	01(Annual)	

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Authorised Signatory
Akash Kumar

Dunlity Manager

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The Document stated as Set Report, Observed by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved foresit. The results shown in the Test Report reflects the findings done by the Laboratory at the time of irrestrement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided on the report, escaps the information which is provided by the aliant. The Report cannot be represented except in full and any part of the report is not taken out of compat, without prior written approval of the Laboratory. The Report is full are in part shall not be published, advertise, small for any legal actions online prior permission has been secured from the Management of the Laboratory. Attention is drawn to the limitation of liability, compensation issues. Any anauthorized observers of falcification of the common or appearance of the Test Report is unlawful and offenders may be prosecuted to the fallest extent of the law. All the samples are returned for Moloys from the Data of release/some of the Test Report released/sound before, no complaints will be accepted. The annex Time achieves municipally and Report is in 24hours former. Abhurvation used N/A (Not Applicable), BDI, (Below Detection Limit), LDI. (Limit Detection Limit).



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

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### TEST REPORT

Test Report No.	: ELES/RNC/2024/6834	Report Release Date	: 26.11.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400004706F	111111111111111111111111111111111111111		

CUSTOMER DET	and the latest and th	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/8037	
		Location	: Near Rest Shelter Bhusar Bauxite Mine (65.31ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 18.11.2024 to 19.11.2024	
		Sample Received Date	: 21,11,2024	
		Type of Sample	: Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 21.11.2024 to 26.11.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

M	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg	: 740
3	Relative Humidity (%)	: 48	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	13.3	80 (24hrs)		
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	25.1	80 (24hrs)		
Ozone (O <sub>2</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	1S 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Ph)	µg/m³	IS 5182 (Part- 22): 2019	0.017	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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Authorised Signatory Akesh Kumar

Page I of I.

The Document stated as a contract of NS Lubrerrory under General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report references the findings done by the Lubrerrory at the sine of involvement only and soften the latest of the first the information of the information of the provided on the report, except the information which is provided by the client. The Report cannot be reportly in full and any part of the report is not taken out of content, without prior written approval of the Lubrerrory. The Report in full or in part shall on the published, advertise, used for any legal actions achieve prior personaise has been accuract from the Management of the Lubrarrory. Advention is drawn to the limitation of liability, compensation and principles are returned for any legal actions action prior personaise has been accurated from the Management of the Lubrarrory. Advention is drawn to the limitation of liability, compensation and principles are returned for any legal actions of the country of the country of the laboratory of the laboratory. All the contents approximate the first Report is included in Country from the Date of release/score of the law. All the samples from Regulatory bodies are to be estated as specified. Any type of Observations or Comptains regarding the Report is in 74hours format. Although the format N/A (Not Applicable; HDL (Below Detection Limit), LDL (Lower Detection Limit).



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

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TC-13587

#### TEST REPORT

Test Report No.	: ELES/RNC/2024/6835	Report Release Date	: 26.11.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400004707F			

CUSTOMER DET	CUSTOMER DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/8038
		Location	: Near GTS Point
	_		Bhusar Bauxite Mine (65.31ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 18.11.2024 to 19.11.2024
		Sample Received Date	: 21.11.2024
		Type of Sample	: Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
	21 11 2021 - 27 11 2021	Sampling Done By	: ELES Pvt, Ltd.
Period of Analysis	: 21.11.2024 to 26.11.2024	Sample Condition	: Sealed & Preserved

M	METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg	g) : 740	
3	Relative Humidity (%)	: 48		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	39	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m³	IS 5182 (Part- 2/Sec1): 2023	11.2	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)	1.11	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.016	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)	

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

Authorised Signatory Akash Kumar

Quality Manager

Page 1 of 1

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## ENVIRONMENTAL LABORATO

PEOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHAJIKHAND) GST NO:- 20AAECES713D124



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TEST REPORT

Test Report No.	: ELES/RNC/2024/6820	Report Release Date	: 25,11,2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400604692F			

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

METEOROLOGICAL INFORMATION						
1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 742	
3	Relative Humidity (%)	:31	4	Weather Condition	: Clear	

Discipline: Chemic	al.	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Maner (PM10)	μg/m <sup>3</sup>	15 5182 (Pwit-23): 2022	64	100 (24ins)		
Particulate Matter (PM2.5)	μg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	32	60 (24hrs)		
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	11.4	80 (24hrs)		
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	24.1	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/m <sup>®</sup>	IS 5182 (Part- 22): 2019	0.009	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>6</sub> )	µg/m <sup>9</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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\*\*\*\*End of Report\*\*\*\*

Authorised Signatory Akash Kumar Duality Manager

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (HARKHAND) 65T NO-20ARECERTISO124



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TEST REPORT

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

CUSTOMER DET	CUSTOMER DETAILS		
Customer Name	: Hindulco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/7964
		Location	: Aditya School Gangupara Bagru Bauxite Mine (75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 17.11.2024 to 18.11.2024
		Sample Received Date	: 19.11.2024
		Type of Sample	: Ambient Air
Mines Status	: Non Operational	Sampling Procedure	: ELES/DOC/SMPL/02
100000	10 11 2024 - 25 11 2024	Sampling Done By	: ELES Pvt Ltd.
Period of Analysis	: 19.11.2024 to 25.11.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION				
1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 742	
3	Relative Humidity (%)	: 53	4	Weather Condition	: Clear	27

Discipline: Chemic	al	Group:	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m	15.5182 (Part-23); 2022	04	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	9.1	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	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/m³	IS 5182 (Part- 10); 2019 (NDfR-Method)	1.05	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.008	I (24hrs)	
Nickel (Ni)	ng/m³	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	01(Annual)	

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

Authorised Signatory

Akash Kumar Musiky Managas

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Page 1 of 1

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## *ENVIRONMENTAL LABORATORIE*

PLOT NO-30, MANUAROVAR ENCLAVE TUPUDANA HATIA, RANCHI-1134003 (JHARKHAND) GST NO: 2004/ECE97130124



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#### TEST REPORT

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

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

Mi	ETEOROLOGICAL INFORM	ATION		
1	Average Temperature (9C)	25 2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%)	51 4	Weather Condition	: Clear

Discipline: Chemic	al.	Group:	Atmospheric !	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Fatticulate Matter (Fix110)	µg/m <sup>3</sup>	15 5182 (Part- 23): 2022	ūÿ	100 (24ins)
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24); 2019	36	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m³	IS 5182 (Part- 2/Sec1): 2023	10.2	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m³	IS 5182 (Part- 6): 2022	22.8	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m³	IS 5182 (Part-9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	pg/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 (Ph)	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/m²	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)

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

Authorised Signatory Akash Kumar

Quality Manager

Page 1 of 1

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PLOT NO-SO, MANISAROVAR ENCLAVE, TUPLIDANA HATIA, RANCHI-834003 (HARIKHAND) G57 NO:+20/(4ECE)713D124



Email: Infattlelespi.co.in , eles ranchithemall.com

Phone no.: 0651-2299103 Website: www.elespl.co.in



### TEST REPORT

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

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindatco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/7966
		Location	: Ropeway Angle Station Bagru Bauxite Mine (75,41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 17.11.2024 to 18.11.2024
		Sample Received Date	: 19.11.2024
		Type of Sample	: Ambient Air
Mines Status	: Non Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 19.11.2024 to 25.11.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

ME	TEOROLOGICAL INFORMATION		
	Average Temperature (°C) : 25	2	Barometric Pressure (mmHg) : 742
3	Relative Humidity (%) : 51	4	Weather Condition : Clear

Discipline: Chemic	eal la	Group:	Atmospheric !	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Farriculate Matter (FM10)	µg/m	15 5182 (Pm1- 23); 2022	66	100 (24ms)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	35	60 (24hrs)
Sulphur Dì-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	25.7	80 (24hrs)
Ozone (O <sub>2</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)	1.08	2 (8hrs)
Lead (Pb)	μ <u>ρ</u> /m³	IS 5182 (Part- 22): 2019	0.009	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>8</sub> )	ha/m,	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 Akash Kumar

Quality Manager

Page 1 of 3

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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

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#### TEST REPORT

Test Report No.	: ELES/RNC/2024/6950	Report Release Date	: 30.11.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400004819F		

CUSTOMER DET	AILS	SAMPLE DETAILS				
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2024/DW/8102 : 19.11.2024 : 22.11.2024			
Address	: Lohardaga, Jharkhand-835302	Type of Sample Source of Sample Location of Sample	: Drinking Water : Tap Water : Near Laboratory			
Mines Status	: Operational	Sampling Procedure	(Bhusar Bauxite Mines) : ELES/DOC/SMPL/01			
Period of Analysis	: 22.11.2024 to 30.11.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved			

Discipline : Chemical		Group :	Water	Regulatory Limit as per IS 10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
pH (at 24.6 °C)		APHA 24th Ed.2023, 4500-H	6.72	6,5-8.5	No Relaxation
Turbidity	NTU	APHA 24th Ed.2023, 2130 B	0.73	1.0	5.0
Taste	740	APHA 24th Ed.2023, 2160 C	Agreeable	Agreeable	Agrecable
Odour	),5,	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	324	500	2000
Chloride (as CI)	mg/L	APHA 24th Ed.2023, 4500 CI B	8.0	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>5</sub> )	mg/L	APHA 24th Ed.2023, 2320 B	123	200	600
Total Hardness (as CaCO <sub>2</sub> )	mg/L	APHA 24th Ed.2023, 2340 C	138	200	600
Sulphate (as SO <sub>4</sub> )	mg/L	APHA 24 <sup>th</sup> Ed.2023, 4500 SO <sub>4</sub> <sup>-2</sup> -E	BDL (DL: 1.0)	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

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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/2024/6950 Report Release Date : 30.11.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400004819F

Discipline : Chemic	al	Grou	up: Water	er Regulatory Limit as per IS10500:2012	
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	33.3	75	200
Anionic Surfactants (as MBAS)	mg/L	APHA 24th Ed.2023, 5540-C	BDL (DL: 0.025)	0.2	1.0
Discipline: Chemic	cal	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	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 24th Ed.2023; 3111B	0.075	1.0	No Relaxation
Lead (as Pb)	mg/L	APHA 24th 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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TC-13587

### TEST REPORT

Test Report No. : ELES/RNC/2024/6950 Report Release Date : 30.11.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400004819F

Discipline: Chemical		Group: Residues in Water		Regulatory Limit	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Zinc (as Zn)	mg/L	APHA 24th 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)	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)	125	
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)	3.0	
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)	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)		
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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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/2024/6950 Report Release Date : 30.11.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400004819F

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	Group: Water			
Total Coliform (Qualitative)	Per 100 mL	IS 15185: 2021	Not Detected	Shall not be detected		
Escherichia coli (Qualitative)	Per 100 mL	IS 15185: 2021	Not Detected			

Reviewed by Akash Kumar Qwality 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

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#### TEST REPORT

Test Report No.	: ELES/RNC/2024/6950	Report Release Date	: 30.11.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

CUSTOMER DET	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/2024/DW/8102 : 19.11.2024 : 22.11.2024 : Drinking Water : Tap Water : Near Laboratory		
Mines Status	: Operational	Sampling Procedure	(Bhusar Bauxite Mines) : ELES/DOC/SMPL/01		
Period of Analysis	: 22.11.2024 to 30.11.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved		

Discipline: Chemical		Group: Water		Regulatory Limit as per 1S 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 Ovality Manager \*\*\*\*End of Report\*\*\*\*

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

Technical Manager

#### Page I of I

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# ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

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

Bhusar Bauxite Mine-Environmental Monitoring Report

December 2024



## CONTENT

Hind:	alco Industries : Bhusar Bauxite Mine Environmental Monitoring Report	December 2024
	Bhusar Bauxite Mine	
	AMBIENT AIR QUALITY- CORE ZONE	
1	Near View Point 1 (Bhusar Mine Pit I)	
2	Near View Point 2 (Bhusar Mine Pit II)	
3	Near Rest Shelter	
4)	Near GTS Point	
	AMBIENT AIR QUALITY- BUFFER ZONE	
1/	Near Daldaliya Village	
2	Aditya School Gangupara	
3	Ropeway unloading station	
4	Ropeway Angle Station	& Engl



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/2024/7535	Report Release Date	: 21.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400005390F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/8839	
		Location	: Near View Point-I(Bhusar Mine Pit I) Bhusar Bauxite Mine(65.31ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 12.12.2024 to 13.12.2024	
		Sample Received Date	: 14.12.2024	
		Type of Sample	: Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 14,12.2024 to 21.12.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	METEOROLOGICAL INFORMATION					
1	Average Temperature (°C) : 19	2	Barometric Pressure (mmHg	: 728		
3	Relative Humidity (%) : 47	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	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 (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	28.1	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/m²	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³:	IS 5182 (Part- 22): 2019	0.017	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.

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Technical Manager

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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-15567

### TEST REPORT

Test Report No.	: ELES/RNC/2024/7536	Report Release Date	: 21.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	- TC135872400005391F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/8840	
		Location	: Near View Point-2(Bhusar Mine Pit I Bhusar Bauxite Mine(65.31ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	; 12.12.2024 to 13.12.2024	
TANGET CONT.		Sample Received Date	: 14.12.2024	
		Type of Sample	: Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 14.12.2024 to 21.12.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

M	ETEOROLOGICAL INFORMATION	N			
1	Average Temperature (°C) : 19	2	Barometric Pressure (mm	Hg) : 728	
3	Relative Humidity (%) : 47	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	47	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	24.1	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)	1.13	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 Akash Kumar

Quality Manager

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

Authorised Signatory

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

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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-13587

### TEST REPORT

Test Report No.	: ELES/RNC/2024/7537	Report Release Date	: 21.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400005392F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/8841	
		Location	: Near Rest Shelter Bhusar Bauxite Mine (65.31ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 12.12.2024 to 13.12.2024	
		Sample Received Date	: 14.12.2024	
		Type of Sample	: Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 14.12.2024 to 21.12.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 19	2	Barometric Pressure (mmHg)	: 728
3	Relative Humidity (%) : 47	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	77	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	14.7	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	28.3	80 (24hrs)
Ozone (O <sub>1</sub> )	µg/m³	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonía (NH <sub>3</sub> )	hg/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/m <sup>λ</sup>	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 Akash Kumar Quality Manager

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

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

fechnical Manager

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TC-13587

### TEST REPORT

Test Report No.	: ELES/RNC/2024/7538	Report Release Date	: 21.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400005393F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/8842 : Near GTS Point Bhusar Bauxite Mine (65.31ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 12.12.2024 to 13.12.2024 : 14.12.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 14.12.2024 to 21.12.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 19	2	Barometric Pressure (mm	Hg) : 728	
3	Relative Humidity (%) : 47	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	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	27.2	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)	1.18	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 Akash Kumar

Quality Manager

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Authorised Signatory Dr. Deependra Kumar Sinha

Ph. D. Environmental Fo

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TC-12667

#### TEST REPORT

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

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

M	ETEOROLOGICAL INFOR	MATION				
-1	Average Temperature (°C)	: 19	2	Barometric Pressure (mmHg)	: 728	
3	Relative Humidity (%)	: 47	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	66	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	10.2	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	22.8	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	htt/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	0.011	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>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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TC-LISEF

#### TEST REPORT

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

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/8828 : Aditya School Gangupara Bagru Bauxite Mine (75.41ha)	
Address	; Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 12.12.2024 to 13.12.2024 : 14.12.2024 : Ambient Air	
Mines Status	; Non Operational	Type of Sample 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)	: 19	2	Barometric Pressure (mmHg)	: 728
	Relative Humidity (%)	: 47	4	Weather Condition	: Clcar

Discipline : Chemic	al	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	30	60 (24hrs)		
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	11.5	80 (24hrs)		
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m³	15 5182 (Part- 6): 2022	20.8	80 (24hrs)		
Ozone (O <sub>1</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)	1.09	2 (8hrs)		
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.011	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>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 Kuma Quality Manager

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

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

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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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TO-15807

#### TEST REPORT

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

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

Mi	METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 728	
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	73	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	41	60 (24hrs)
Sulphur Di-Oxîde (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1); 2023	12.8	80 (24hrs)
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part- 6): 2022	24.3	80 (24hrs)
Ozone (O <sub>1</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	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>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)



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

Authorised Signator

Authorised Signatory
Dr. Deependra Rumar 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:- 28AAECE9713D124

### ENGINEERING SERVICES PVT. LTD.

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TO-13567

#### TEST REPORT

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

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

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 728
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	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	15.1	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	27.4	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m <sup>3</sup>	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH <sub>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)	1.12	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

Akash Kumar

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

Authorised Signatory

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

Curilly Manager

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Technical Manager

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# ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

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

Bhusar Bauxite Mine-Environmental Monitoring Report

January- 2025



## CONTENT

Hind:	alco Industries : Bhusar Bauxite Mine Environmental Monitoring Report	January 2025
	Bhusar Bauxite Mine	
	AMBIENT AIR QUALITY- CORE ZONE	
1	Near View Point 1 (Bhusar Mine Pit I)	
2	Near View Point 2 (Bhusar Mine Pit II)	
3	Near Rest Shelter	
4	Near GTS Point	
	AMBIENT AIR QUALITY- BUFFER ZONE	
1	Near Daldaliya Village	
2	Aditya School Gangupara	
3	Ropeway unloading station	
4	Ropeway Angle Station	
	Surface Water	
	Soil	



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



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TC-13587

### TEST REPORT

Test Report No.	: ELES/RNC/2025/0329	Report Release Date	: 15.01.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000000321F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2025/AA/0132	
		Location	: Near View Point-1(Bhusar Mine Pit I) Bhusar Bauxite Mine(65,31ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 07.01.2025 to 08.01.2025	
	TOOL PROCESS OF A SAME PARTY CONTROL OF THE SAME PARTY.	Sample Received Date	: 09.01.2025	
		Type of Sample	: Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
North dark Ameliants	-00.01.2025 - 15.01.2025	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 09.01.2025 to 15.01.2025	Sample Condition	: Sealed & Preserved	

1	Average Temperature (°C)	: 17	2	Barometric Pressure (mmHg)	: 727	
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	40	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	27.5	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)	1.21	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.024	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>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)	

Reviewed by Akash Kumar

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

Quality Manager

Page I of I

Technical Manager

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

### ENGINEERING SERVICES PVT. LTD.

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TC-12597

### TEST REPORT

Test Report No.	: ELES/RNC/2025/0330	Report Release Date	: 15.01.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000000322F	11110		

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2025/AA/0133 : Near View Point-2(Bhusar Mine Pit I) Bhusar Bauxite Mine(65.31ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 07.01.2025 to 08.01.2025 : 09.01.2025	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 09.01.2025 to 15.01.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

M	METEOROLOGICAL INFORMATION				
1	Average Temperature (*C)	:17	2	Barometric Pressure (mmHg)	: 727
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	77	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	10.9	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	25.4	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)	1.28	2 (8hrs)	
Lead (Pb)	μg/m <sup>3</sup>	IS 5182 (Part- 22): 2019	0.031	1 (24hrs)	
Nickel (Ni)	ng/m <sup>5</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 Akash Kumar Quality Manager

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

Katinho

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

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TC-13587

### TEST REPORT

Test Report No.	: ELES/RNC/2025/0331	Report Release Date	: 15.01.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000000323F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	; Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2025/AA/0134 : Near Rest Shelter Bhusar Bauxite Mine (65,31ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 07.01.2025 to 08.01.2025 : 09.01.2025
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 09.01.2025 to 15.01.2025	Sampling Done By Sample Condition	: ELES Pvt, Ltd. : Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 17	2	Barometric Pressure (mmHg)	: 727
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/m <sup>3</sup>	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	12.2	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	1S 5182 (Part- 6): 2022	24.9	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 (NDFR Method)	1.29	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 Akash Kumar

Quality Manage

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

Authorised Signatory Dr. Deependra Kumar Sinha

Ph. D. Environmental Engg.

of 1 Technical Manager

Page I of I

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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/2025/0332	Report Release Date	: 15.01.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000000324F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2025/AA/0135 : Near GTS Point Bhusar Bauxite Mine (65.31ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 07.01.2025 to 08.01.2025 : 09.01.2025 : Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 09.01.2025 to 15.01.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 17	2	Barometric Pressure (mmHg)	: 727
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	73	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part-24); 2019	36	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	25.5	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)	1.25	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>s</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 \*\*\*\*End of Report\*\*\*\*

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Quality Manager

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-B34003 (JHARKHAND) GST NO: 20AAECE9713D124

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TG-1308

#### TEST REPORT

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

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2025/AA/0122
		Location	: Near Daldaliya Village
		1	Bagru Bauxite Mine (75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 06.01.2025 to 07.01.2025
		Sample Received Date	: 09.01.2025
		Type of Sample	: Ambient Air
Mines Status	: Non Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	- 00 01 2025 to 15 01 2027	Sampling Done By	: ELES Pvt. Ltd.
renod of Analysis	; 09.01.2025 to 15.01.2025	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATI	ON		
1	Average Temperature (°C) : 19	2	Barometric Pressure (mmHg	1 727
3	Relative Humidity (%) :57	4	Weather Condition	; Clear

Discipline: Chemic	ai	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	39	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	25.3	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/m <sup>3</sup>	IS 5182 (Part- 22); 2019	0.014	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ru/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

Akash Kumar Quality Manage

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

Authorised Signatory Dr. Deependra Rumar Sinha

Ph. D. Environmental Engg.

Technical Manager

Page Lof-L

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 28AASCE97130124

### ENGINEERING SERVICES PVT. LTD.

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TO-93507

#### TEST REPORT

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

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

M	ETEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 19	2	Barometric Pressure (mm	Hg) : 727	
3	Relative Humidity (%) : 57	4	Weather Condition	: Clear	

Discipline : Chemic	ent	Group:	Atmospheric l	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/m <sup>3</sup>	IS 5182 (Part- 24): 2019	35	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m³	IS 5182 (Part- 2/Sec1): 2023	13.1	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	24.4	80 (24hrs)
Ozone (O <sub>2</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<28.0	100 (8hrs)
Ammonia (NH <sub>2</sub> )	µg/m"	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.15	2 (8hrs)
Lead (Pb)	μg/m <sup>λ</sup>	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>4</sub> H <sub>4</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.

Page 1 of 1

Technical Manager

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TEST REPORT

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

AILS	SAMPLE DETAILS		
: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2025/AA/0124	
	Location	: Ropeway Unloading Station Bagru Bauxite Mine (75.41ha)	
: Lohardaga, Jharkhand-835302	Sampling Date	: 06.01.2025 to 07.01.2025	
	Sample Received Date	: 09.01.2025	
	Type of Sample	: Ambient Air	
: Non Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
: 09.01.2025 to 15.01.2025	Control of the Contro	: ELES Pvt. Ltd. : Sealed & Preserved	
	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Non Operational	: Hindalco Industries Limited  : Location  : Lohardaga, Jharkhand-835302  : Non Operational  Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	

M	ETEOROLOGICAL INFORMA	TION		
1	Average Temperature (°C) : 19	2	Barometric Pressure (mmHg	; 727
3	Relative Humidity (%) : 57	4	Weather Condition	: Clear

Discipline: Chemic	cal	Group:	Atmospheric !	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2022	78	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	13,4	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)	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	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/m²	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C <sub>6</sub> H <sub>6</sub> )	μg/m <sup>†</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\*\*\*\*

Authorised Signatory Dr. Deependra Kumar Sinha

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Page 1 of 1

Technical Manager

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TC-1556

### TEST REPORT

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

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2025/AA/0125	
		Location	: Ropeway Angle Station Bagru Bauxite Mine (75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 06.01.2025 to 07.01.2025	
1130 5020711.	Section of the sectio	Sample Received Date	: 09.01.2025	
		Type of Sample	: Ambient Air	
Mines Status	: Non Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 09.01.2025 to 15.01.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

Ĭ.	Average Temperature (°C) : 19	2	Barometric Pressure (mm)	Hg) : 727
3	Relative Humidity (%) : 57		Weather Condition	: Clear

Discipline: Chemic	cal	Group:	Atmospheric l	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	41	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	26,1	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	0.018	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>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	(Inpunc)10

Reviewed by Akpsh Kumar

Quality Manager

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

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

Page 1 of 1

Technical Manager

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70,4388

### TEST REPORT

Test Report No.	: ELES/RNC/2025/0425	Report Release Date	: 20.01.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000000417F			

CUSTOMER DET	CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2025/SW/0140 : 07.01.2025 : 09.01.2025		
Address	: Lohardaga, Jharkhand-835302	Type of Sample Location of Sample	: Surface Water : Near GTS Point- Bhusar		
Mines Status	: Operational	Sampling Procedure	Bauxite Mines (65.31ha) : ELES/DOC/SMPL/01		
Period of Analysis	; 09.01.2025 to 17.01.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved		

Discipline : Chemical		Group:	Group: Water		
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)	
pH (at 24.5 °C)		IS 3025 (Part-11): 2022	6.50	6.5-8.5	
Temperature	°C	IS 3025 (Part 9): 2023	19.0	22	
Chemical Oxygen Demand (COD)	mg/L	IS 3025 (Part-58): 2023	BDL (DL: 4.0)	-	
Biochemical Oxygen Demand (BOD) (@ 20°C for 5 days)	mg/L	APHA 24th Ed.2023; 5210B	BDL (DL: 1.0)	3.0	
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part-16): 2023	55.0	1500	
Total Suspended Solids (TSS)	mg/L	IS 3025 (Part-17); 2022	2.0	-	
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	**	

#### Page 1 of 2

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

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70/13587

#### TEST REPORT

Test Report No.	: ELES/RNC/2025/0425	Report Release Date	: 20.01.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000000417F	,		

Discipline: Chemical		Group: Residues in	Group: Residues in Water	
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
Aluminum (as Al)	mg/L	1S 3025 (Part-55) :2003; RA2019	BDL (DL: 0.02)	=//
Iron (as Fe)	mg/L	APHA 24th Ed.2023; 3111B	0.119	50

Remarks: pH & Temperature done at site.

Reviewed by

Akash Kumar Quality Managor \*\*\*\*End of Report\*\*\*\*

Or. Deependra Kumar Sinha

Ph. D. Environmental Engg. Technical Manager

Page 2 of 2

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TC/13887

#### TEST REPORT

Test Report No.	: ELES/RNC/2025/0424	Report Release Date	: 20.01.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000000416F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	; Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2025/SL/0139 : 08.01.2025 : 09.01.2025
Address	: Lohardaga, Jharkhand-835302	Type of Sample Location of Sample	: Soil : Near Dump Yard, Bhusar Bauxite Mines (65.31 ha)
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/05
Period of Analysis	: 09.01.2025 to 17.01.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed

Discipline ; Chemical		Group: Pollution & Environment	
Parameter	Unit	Test Protocol	Result
pH (1:2) at 24.5 °C		IS 2720 (Part-26): 2021	7.52
Conductivity (1:2) at 24.5 °C	μS/cm	IS 14767; 2021	386
Total Organic Carbon (TOC)	%	Soil Testing in India: 2011 (Walkley & Black Method)	2.67
Available Phosphorus (as P)	kg/ha	Soil Testing in India; 2011	5.72
Potassium (as K)	mg/kg	IS 9497; 2020	1650
Available Nitrogen	%	Soil Testing in India; 2011	5.32
Chloride (as Cl) (1:2)	%	ELES/SOIL/SOP/01: 2021	0.014
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)

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### ENGINEERING SERVICES PVT. LTD.

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TG-13587

### TEST REPORT

Test Report No.	: ELES/RNC/2025/0424	Report Release Date	: 20.01.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000000416F			

Discipline: Chemical		Group: Pollution & Environment	
Parameter	Unit	Test Protocol	Result
Magnesium (as Mg)	mg/kg	Soil Testing in India; 2011	2800
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 Kumar Sinha Ph. D. Environmental Engg. Technical Manager

Page 2 of 2

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### TEST REPORT

Test Report No.	: ELES/RNC/2025/0424	Report Release Date	: 20.01.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

4 7 7 7 7 7 7 7	The second secon	
co Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2025/SL/0139 : 08.01.2025 : 09.01.2025
laga, Jharkhand-835302	Type of Sample Location of Sample	: Soil : Near Dump Yard, Bhusar Bauxite Mines (65.31 ha)
ional	Sampling Procedure	: ELES/DOC/SMPL/05
2025 to 17.01.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed
	daga, Jharkhand-835302 tional 2025 to 17.01.2025	Sampling Date Sample Received Date Type of Sample Location of Sample Sampling Procedure Sampling Procedure Sampling Done By

Discipline : Chemical		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\*\*\*\*

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.

Bhusar Bauxite Mine-Environmental Monitoring Report

February 2025



# CONTENT

Hind	alco Industries : Bhusar Bauxite Mine Environmental Monitoring Report	February 2025
	Bhusar Bauxite Mine	SHIPPING TO THE PARTY OF THE PA
	AMBIENT AIR QUALITY- CORE ZONE	
1.	Near View Point 1 (Bhusar Mine Pit I)	
2	Near View Point 2 (Bhusar Mine Pit II)	
3	Near Rest Shelter	
4	Near GTS Point	
	AMBIENT AIR QUALITY- BUFFER ZONE	
1	Near Daldaliya Village	
2	Aditya School Gangupara	
3	Ropeway unloading station	
4	Ropeway Angle Station	
	Drinking Water	







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

## ENGINEERING SERVICES PVT. LTD.

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TC-13587

#### TEST REPORT

Test Report No.	: ELES/RNC/2025/1126	Report Release Date	: 22.02.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000001104F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2025/AA/1109 : Near View Point-1(Bhusar Mine Pit I) Bhusar Bauxite Mine(65,31ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 13.02.2025 to 14.02.2025 : 15.02.2025
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 15.02.2025 to 22.02.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

M	ETEOROLOGICAL INFORMATION	N		
1	Average Temperature (°C) : 21	2	Barometric Pressure (mn	nHg) : 725
3	Relative Humidity (%) : 57	4	Weather Condition	; Clear

Discipline : Chemic	cal	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	45	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1); 2023	12.5	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	1S 5182 (Part- 6): 2022	37.1	80 (24hrs)	
Ozone (O <sub>1</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)	1.26	2 (8hrs)	
Lead (Pb)	μg/m <sup>2</sup>	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

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

Authorised Signatory

Akash Kumar

Page Lof I

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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/2025/1127	Report Release Date	: 22.02.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000001105F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2025/AA/1110
		Location	: Near View Point-2(Bhusar Mine Pit I) Bhusar Bauxite Mine(65.31ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 13.02.2025 to 14.02.2025
Authess	- Limitings, similaring 555502	Sample Received Date	: 15.02.2025
		Type of Sample	: Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 15.02.2025 to 22.02.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

М	ETEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 21	2	Barometric Pressure (mml	lg) : 727	
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	85	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	13.3	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	33.8	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)	1.37	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.036	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

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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/2025/1128	Report Release Date	: 22.02.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001106F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2025/AA/1111
		Location	: Near Rest Shelter
			Bhusar Bauxite Mine (65.31ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 13.02.2025 to 14.02.2025
Address	. Columbigat, Flat Kiland 055502	Sample Received Date	: 15.02.2025
		Type of Sample	: Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
BEATE PLOCED TO NO.	TO STANDARD THE STANDARD STAND	Sampling Done By	: ELES Pvl. Ltd.
Period of Analysis	: 15.02.2025 to 22.02.2025	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORM	IATION			
1	Average Temperature (°C)	: 21	2	Barometric Pressure (mmHg)	: 727
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	81	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	14.5	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	31.2	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)	1.33	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.033	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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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/2025/1129	Report Release Date	: 22.02.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000001107F			

CUSTOMER DET	AILS	SAMPLE DETAILS	U1
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2025/AA/1112
		Location	: Near GTS Point Bhusar Bauxite Mine (65.31ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 13.02.2025 to 14.02.2025 : 15.02.2025
VC S		Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational		The state of the s
Period of Analysis	: 15.02.2025 to 22.02.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature ("C) : 21	2	Barometric Pressure (mm	Hg) : 725
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	77	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	12.5	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	28.6	80 (24hrs)
Ozone (O <sub>2</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonía (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)	1.15	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22); 2019	0.027	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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Quality Managur

Page 1 of 1

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CIN: U74999H2018FTC011125

## ENVIRONMENTAL LABORATORIES &

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



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TO-13557

### TEST REPORT

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

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

MI	TEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 727
	Relative Humidity (%)	: 58	4	Weather Condition	: Clear

Discipline : Chemic	cal	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	42	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	27.1	80 (24hrs)	
Ozone (O <sub>3</sub> )	μg/m³	1S 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	0.018	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

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

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Page 1 of 1

Page 1 of 1

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

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TC-13567

### TEST REPORT

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

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

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 727
3	Relative Humidity (%)	: 58	4	Weather Condition	: Clear

Discipline : Chemier	ıl	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	38	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1); 2023	12.2	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	26.4	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)	1.24	2 (8hrs)
Lead (Pb)	ha/m,	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>s</sub> H <sub>0</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

Page 1 of 1

The Dossovers stand as Test Report, is somed by the Laboratory under General Terms and Coordinate, only on Company latter head as pre-approved format. The results shows as the Test Report reflects the fluidings done by the Laboratory of the discussion of the information of clearly and within the limits of clearly assumed by the Laboratory of the clear the information of clearly assumed by the clear the information of clearly assumed by the clear the information of the information of



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

## ENGINEERING SERVICES PVT. LTD.

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TC-13597

TEST REPORT

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

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

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 727
3	Relative Humidity (%)	: 56	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	12.9	80 (24hrs)		
Nitrogen Dí-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	23.8	80 (24hrs)		
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH <sub>x</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	0.014	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>a</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

Alesh Kumar

Page I of I

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FLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) 657 NO:- 20AAECE9713D124

### ENGINEERING SERVICES PVT. LTD.

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TC-105ET

### TEST REPORT

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

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

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

Discipline: Chemi	cal	Group:	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	78	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	13.6	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>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)	1.23	2 (8hrs)		
Lead (Pb)	μg/m <sup>3</sup>	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)-Pyrens	ng/m³	ELES/GC/SOP/05: 2023	< 0.5	01(Annual)		

Reviewed by

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

Authorised Signatory

Page 1 of I

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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/2025/1190	Report Release Date	: 24.02.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001162F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2025/DW/1120	
		Sampling Date	: 13.02.2025	
		Sample Received Date	: 15.02.2025	
4.71	: Lohardaga, Jharkhand-835302	Type of Sample	: Drinking Water	
Address		Source of Sample	: TAP Water	
		Location of Sample	: Time Office	
			(Bhusar Bauxite Mines)	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 15.02.2025 to 22.02.2025	Sampling Done By	: ELES Pvt. Ltd.	
STONE STREET	0.000 (2.	Sample Condition	: Sealed & Preserved	

Discipline : Chemical		Group :	Water	Regulatory Limit as per IS 10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
pH (at 24.7°C)	5€:	APHA 24th Ed.2023, 4500-H+	6.68	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 24th Ed.2023, 2130 B	0.28	1.0	5.0
Taste		APHA 24th Ed.2023, 2160 C	Agreeable	Agreeable	Agreeable
Odour	25	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	378	500	2000
Chloride (ns Cl)	mg/L	APHA 24th Ed.2023, 4500 Cl B	9.5	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	174	200	600
Total Hardness (as CaCO <sub>3</sub> )	mg/L	APHA 24th Ed.2023, 2340 C	188	200	600
Sulphate (as SO <sub>4</sub> )	mg/L	APHA 24 <sup>th</sup> Ed.2023, 4500 SO <sub>4</sub> -2-E	BDL (DL: 1.0)	200	400
Nitrate (as NO <sub>3</sub> )	mg/L	APHA 24 <sup>th</sup> Ed.2023, 4500 NO <sub>3</sub> -B	BDL (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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: 28.03.2024

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TC-13587

### TEST REPORT

Work Order Date

Test Report No. : ELES/RNC/2025/1190 Report Release Date : 24.02.2025

ULR No. : TC1358725000001162F

: 13612312113

Discipline: Chemic	al	Gro	up: Water	processor and the contract of	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	1S 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	49.8	75	200
Anionic Surfactants (as MBAS)	mg/L	APHA 24th Ed.2023, 5540-C	BDL (DL: 0.025)	0.2	1.0
Discipline : Chemic	cal	Gre	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	IS 3025 (Part 42): 2019	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	0.072	1.0	No Relaxation
Lead (as Pb)	mg/L	APHA 24th 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-B34003 (JHARKHAND) GST NO:- 20AAECE9713D1Z4

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TC-1358T

### TEST REPORT

Test Report No. : ELES/RNC/2025/1190 Report Release Date : 24.02.2025

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC1358725000001162F

Discipline : Chemical		Group : Resid	lues in Water	Regulatory Limit as per IS10500:2012		
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit	
Zinc (as Zn)	mg/L	APHA 24th 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	125	
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)	3.0		
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)	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)			
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.	10	
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:- 20AAECE9713D1Z4

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TC-13667

#### TEST REPORT

Test Report No.	: ELES/RNC/2025/1190	Report Release Date	: 24.02.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024

ULR No. : TC1358725000001162F

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	Not Detected	Chall and by detected	
Escherichia coli (Qualitative)	Per 100 ml.	IS 15185: 2021	Not Detected	Shall not be detected	

Remarks: pH done at Site.

Reviewed by

Akash Kumar Quality Managar \*\*\*\*End of Report\*\*\*\*

**Authorised Signatory** 

Dr. Deependra Komar 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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Website: www.elespl.co.in

#### TEST REPORT

Test Report No.	: ELES/RNC/2025/1190	Report Release Date	: 24.02.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024

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/1120 : 13.02.2025 : 15.02.2025 : Drinking Water : TAP Water : Time Office	
Mines Status	: Operational	Sampling Procedure	(Bhusar Bauxite Mines) : ELES/DOC/SMPL/01	
Period of Analysis	: 15.02.2025 to 24.02.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

Discipline: Chemical		Group: Water		Regulatory Limit as per IS 10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Mineral Oil*	mg/L	IS 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 Menaca \*\*\*\*End of Report\*\*\*\*

Authorised Signatory

Dr. Deependra Kontar Sinha Ph. D. Environmental Engg. Technical Managur

### Page 1 of 1

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"Saxo Bushstonmont, Susse Frances"

# ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

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

Bhusar Bauxite Mine-Environmental Monitoring Report

March 2025



## CONTENT

Hinda	deo Industries : Bhusar Bauxite Mine Environmental Monitoring Report	March 2025
	Bhusar Bauxite Mine	
	AMBIENT AIR QUALITY- CORE ZONE	
1	Near View Point 1 (Bhusar Mine Pit I)	
2	Near View Point 2 (Bhusar Mine Pit II)	
3	Near Rest Shelter	
4	Near GTS Point	
	AMBIENT AIR QUALITY- BUFFER ZONE	
1	Near Daldaliya Village	
2	Aditya School Gangupara	
3	Ropeway unloading station  Ropeway Angle Station	5 S Fo
4	Ropeway Angle Station	6.8
	AMBIENT NOISE	131
	WORKZONE NOISE	101



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

: 60

### ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Report Release Date : 24.03.2025 Test Report No. : ELES/RNC/2025/1989

: 28.03.2024 Work Order Date Work Order No. : 13612312113

: TC1358725000001947F ULR No.

Relative Humidity (%)

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2025/AA/2131 : Near View Point-1(Bhusar Mine Pit I) Bhusar Bauxite Mine(65.31ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 11.03.2025 to 12.03.2025 : 17.03.2025	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis			: Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION				
	Average Temperature (°C) : 27	2	Barometric Pressure (mmHg)	: 720	
_	Relative Humidity (%) : 60	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	43	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	34.8	80 (24hrs)	
Ozone (O <sub>1</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)	1.18	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/m¹	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C <sub>6</sub> H <sub>6</sub> )	μg/m <sup>3</sup>	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	
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Reviewed by Akash Kumar

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

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

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Page 1 of 1

Technical Manager

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TC-13587

### TEST REPORT

Test Report No.	: ELES/RNC/2025/1990	Report Release Date	: 24.03.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
*** ** **	TC1125072500000101040T		

: TC1358725000001948F ULR No.

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2025/AA/2132 : Near View Point-2(Bhusar Mine Pit 1) Bhusar Bauxite Mine(65.31ha)	
Address : Lohardaga	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 11.03.2025 to 12.03.2025 : 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	

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 27	2	Barometric Pressure (mmHg)	: 720
_	Relative Humidity (%) : 60	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	81	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	15.3	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	30.1	80 (24hrs)	
Ozone (O <sub>1</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/m <sup>3</sup>	IS 5182 (Part- 10); 2019 (NDIR Method)	1.24	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.027	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>e</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 Akash Kumar

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

Dr. Audiorised Signature inha

Ph. D. Environmental Engg.

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Page 1 of 1

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/2025/1991	Report Release Date	: 24.03.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001949F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2025/AA/2133 : Near Rest Shelter Bhusar Bauxite Mine (65.31ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 11.03.2025 to 12.03.2025 : 17.03.2025
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 17.03.2025 to 24.03.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
T	Average Temperature (°C)	: 27	2	Barometric Pressure (mmHg)	: 720
	Relative Humidity (%)	: 60	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	86	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	IS 5182 (Part-2/Sec1): 2023	15.1	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	27.2	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)	1.20	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.032	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)



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

Authorised Signatory

Dr. Deependra Kumar Sinha

Ph. D. Environmental Engg.

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TC-13587

### TEST REPORT

Test Report No.	: ELES/RNC/2025/1992	Report Release Date	: 24.03.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000001950F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2025/AA/2134 : Near GTS Point Bhusar Bauxite Mine (65.31ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 11.03.2025 to 12.03.2025 : 17.03.2025
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 17.03.2025 to 24.03.2025	Sampling Done By Sample Condition	: Sealed & Preserved

#### METEOROLOGICAL INFORMATION : 720 Barometric Pressure (mmHg) 2 Average Temperature (°C) : 27 Weather Condition : Clear 4 : 60 Relative Humidity (%)

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	45	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	13.2	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part- 6): 2022	33.8	80 (24hrs)	
Ozone (O <sub>3</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)	1.22	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.030	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>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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Authorised Signatory Dr. Deependra Kumar Sinha

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Page 1 of 1

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TC-13587

### TEST REPORT

Test Report No.	: ELES/RNC/2025/1744	Report Release Date	: 19.03.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
IT P No	· TC1358725000001703F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2025/AA/1915 : Near Duldaliya Village Bagru Bauxite Mine (75,41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 10.03.2025 to 11.03.2025 : 12.03.2025
Mines Status	: Non Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 12.03.2025 to 19.03.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

M	ETEOROLOGICAL INFOR	MATION		4		
1	Average Temperature (°C)	: 28	2	Barometric Pressure (mmHg)	± 720	
3	Relative Humidity (%)	: 60	4	Weather Condition	; Clear	

Discipline : Chemic	al	Group:	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m <sup>2</sup>	IS 5182 (Part- 23): 2022	70	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	12.2	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)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0,022	1 (24hrs)	
Nickel (Ni)	ng/m²	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m²	ELES/AIR/SOP/01: 2021	<2.0	96 (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

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

Dr. Deependra Kimar Sinna Ph D Environmental Engg

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Akauh Kumar

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TC-1358

### TEST REPORT

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

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

MI	ETEOROLOGICAL INFORMAT	TION		
1	Average Temperature (°C) : 28	2	Barometric Pressure (mmHg)	: 720
3	Relative Humidity (%) : 60	4	Weather Condition	: Clear

Discipline : Chemic	at a	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/m <sup>3</sup>	IS 5182 (Part- 24): 2019	42	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	28.1	80 (24hrs)	
Ozone (O <sub>3</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)	1.22	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/m²	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C <sub>s</sub> H <sub>4</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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Reviewed by

Aleash Kumar

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

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

Tychnical Manager

Page Lof 1

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



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

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CIN: U7499SUH2018FTC011125

#### TEST REPORT

Test Report No.	: ELES/RNC/2025/1746	Report Release Date	: 19.03.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001705F	110000000000000000000000000000000000000	

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

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 28	2	Barometric Pressure (mmHg)	: 720
3	Relative Humidity (%)	: 60	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/m³	IS 5182 (Part- 24): 2019	44	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	11.5	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>1</sub> )	μg/m³	1S 5182 (Part- 6): 2022	25.5	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	0.026	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>4</sub> H <sub>4</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

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

Authorised Signatury Dr. Deependra Kumar Sinha

Ph. D. Environmental Engg.

Page 1 of 1

Technical Manager

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### ENGINEERING SERVICES PVT. LTD.

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

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



70-13587

### TEST REPORT

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

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

M	METEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 28	2	Barometric Pressure (mmH	lg) ; 720	
3	Relative Humidity (%) : 60	4	Weather Condition	: Clear	

Discipline : Chemic	21	Group:	Atmospheric l	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	48	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part- 2/Sec1): 2023	12.9	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> )	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)	pg/m³	1S 5182 (Part- 22): 2019	0.024	1 (24hrs)
Nickel (Ni)	ng/m <sup>†</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>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)

Reviewed by Akesh Kumar

Quality

"""End of Report" ###

Authorised Signatory Dr. Deependra Kumar Sinha

Ph. O. Environmental Engo

Page 1 of 3
The Document stand on Tust Report, is issued by the Laboratory make General Terms and Conditions, only an Company terms head in Technology forms from the Technology and the Technology and the Indian standard for the physical forms of the Indian standard for the Indian of the Indian standard in the Indian of the Indian standard which is provided by the Caboratory is responsible for all the information or data provided on the super, source the adheritation which is provided by the Charles The Report. named by report and the later of the report is not selected, without price written approval of the Laboratory. The Report in full or in part shall not be published, advertise, used for any legal actions unless price particular has been secured from the Management of the Laboratory. Attention is thrown in the limitation of Rafifley, compensation and principles on when Any examples also been proportional of the laboratory of remained for AC-trys from the Date of references of the Test Report. The nameless from Repulsions to the remained or sparified. Any type of Observations or Completes regarding the Reports shall be done within 15-large from the Observations regarding the Reports shall be done within 15-large from the Observation and Support references when the best of Yest Report references with the same period stored before, as completes with be accepted. The contraction and the following the Report to in Test Report to in Test



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TC-13587

#### TEST REPORT

Test Report No.	: ELES/RNC/2025/2017	Report Release Date	: 24.03.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
III R No.	: TC1358725000001975F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sampling Date Sampling Received Date Type of Sample Sampling procedure Sampling Done By	: 11.03.2025 to 12.03.2025 : 17.03.2025 : Ambient Noise : ELES/DOC/SMPL/03 : ELES Pvt. Ltd.	
Mines Status	: Operational	Period of Analysis	: 17.03.2025 to 22.03.2025	

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 27	2	Barometric Pressure (mm)	Hg) : 720
3	Relative Humidity (%) : 60	4	Weather Condition	: Clear

Discipline : Chemical			Group: Atn	ospheric l	Pollution
Location	Unit	Test Protocol	Resu	ilt	Regulatory Limit (Industrial Zone)
			Time	Lou	
Bhusar Mines Pit- 1, Bhusar Bauxite Mines (65.31ha)	dB(A)	IS 9989: 2020	Day Time	65	75 dB(A) Day Time &
Sample ID: ELES/RNC/2025/AN/2159			Night Time	49	70 dB(A) Night Time

Reviewed by Akush Kumar Quality Manager

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Authorised Signatory Dr. Deependra Kumar Sinha

Ph. D. Environmental Engg.

Technical Manager

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### ENGINEERING SERVICES PVT. LTD.

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



TC-13587

### TEST REPORT

Test Report No.	: ELES/RNC/2025/2022	Report Release Date	: 24.03.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001980F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sampling Date Sampling Received Date Type of Sample Sampling procedure Sample Drawn By	: 12.03.2025 : 17.03.2025 : Workzone Noise : ELES/DOC/SMPL/03 : ELES Pvt. Ltd.	
Mines Status	: Operational	Period of Analysis	: 17.03,2025 to 22.03,2025	

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C) : 29	2	Barometric Pressure (mmHg)	: 720	
3	Relative Humidity (%) : 61	4	Weather Condition	: Clear	

Location	Unit	Test Protocol	Result		Regulatory Limit (Industrial Zone)	
Bhusar Mines Pit- II,			Time	$L_{eq}$		
Bhusar Bauxite Mine (65.31ha)	dB(A)	IS 4758: 2017	Day Time	70	90 dB(A)	
Sample ID: ELES/RNC/2025/WN/2164						

Reviewed by Akash Kumar Quality Manager

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

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#### **Annexure 3**

Date - 01.05.2025

#### **Office Order**

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

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

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

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

Basudev Gangopadhyay
AVP (Planning, Environment and Compliance)

#### 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

Basudev Gangopadhyay

AVP (Planning, Environment & Compliance)