

Date: 16.05.2025

HIL/LHD/ENV/MoEF&CC/071

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

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

Ref: Environmental Clearance letter no J-11015/136/2006-IA II (M) dated 7th February 2007

Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for **Gurdari (584.19 ha)** Bauxite Mining project of **M/s Hindalco Industries Limited** located in Gumla, Jharkhand for the period October'24 to March'25.

The lease details are below:

Lease area (ha)	Production Capacity (MT)	Lease Period	
584.19	325000	23.03.1985 to 22.03.2035	

Hope you will find the same in order.

Thanking You

Yours Sincerely

FOR HINDALCO INDUSTRIES LIMITED

(Basudev Gangopadhyay)

AVP (Planning, Environment & Compliance)

Enclosure: - As Above

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

Name of the Project : Gurdari Bauxite Mine (584.19 ha)

M/s Hindalco Industries Ltd

Environment Clearance No & date

: J-11015/136/2006-IA. II (M), dated 07.02.2007.

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

A. Specific Conditions

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

Reply to Condition 1 - Implementations of stipulated conditions in NOC are fulfilled post which consent to operate has been granted by SPCB from time to time. The existing consent to operate is valid up to 31.03.2027. Production of bauxite is within limits specified in Consent to Operate.

Condition 2- The Environmental clearance is subject to approval of the state land use Department, Government of Jharkhand for diversion of agricultural land for non-agricultural use.

Reply to Condition 2- Land acquisition is being done with the permission of competent authority of State Government i.e. concerned Deputy Commissioner (D.C.) under CNT Act. The land lease agreement is being done with raiyat (Landowner) after permission of State Govt with provision of returning the land as per the norms set by D.C. The compensation and facilities are being provided as per the norms set in the agreement. Thus, land acquisition has the approval of the State Government.

Condition 3- The exploration shall be completed within 2.5 years and thereafter the proponent shall come up with a firm proposal for mining, based on the estimated reserves. The reclamation plan, post mine land use and progressive greenbelt development plan shall also be prepared and submitted with the revised proposal.

Reply to Condition 3- Required exploration is already done. Mining plan/ Mining Scheme based on current reserves/resource estimate is duly approved by IBM. The reclamation plan, post mine land use and progressive greenbelt development plan have been covered in Mining Plan/Mining scheme which is approved by IBM.

Condition 4- Mining shall not intersect groundwater. The mine working shall be restricted to ground water table. Prior approval of the Ministry of Environment & Forests and Central Ground Water Authority shall be obtained for mining below water table.

Reply to Condition 4- Since shallow depth mining is being carried out, hence there is no intersection with the groundwater table. In future also, working zones will be restricted to above ground water table. We undertake that no mining is/was carried out below ground water table and the same status will be maintained in future also. Moreover, we regularly monitoring the groundwater table through the installation of a piezometer. A copy of the water level report is attached herewith as **Annexure-1.**

Condition 5- Topsoil shall be stacked properly with proper slope with adequate measures and should be used for reclamation and rehabilitation of mined out areas.

Reply to Condition 5- Topsoil is being stacked properly with proper slope as and when required for reclamation and rehabilitation. Sequential backfilling and reclamation of the mined-out area are being exercised for which topsoil is being spread on backfilled area for reclamation. The mining is being carried out as per the approved mining plan. Monitoring and management of rehabilitated areas is being done through effective supervision. Data pertaining to backfilling is enclosed as **Annexure 4**.

Condition 6- The waste generated shall be concurrently backfilled in the mined-out area. There shall be no external OB dump. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forest on a six-month basis.

Reply to Condition 6- Overburden and waste rock are being used for concurrent backfilling, and topsoil is being spread on the backfilled area for reclamation. Currently, there is no OB dump present in the mine lease area. Monitoring and management of rehabilitated areas is continuing until vegetation becomes self-sustaining through supervision. Data pertaining to backfilling is enclosed as **Annexure 4.** Compliance status is being submitted to MoEF&CC on six monthly basis.

Condition 7- Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from mine working. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted particularly after monsoon and maintained properly.

Garland drains (size, gradient and length) shall be constructed for mine pit and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years data) and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper setting of silt material. Sedimentation pits should be constructed at the corners of the garland drains and desilted at regular intervals.

Reply to Condition 7- To collect & manage rainwater during monsoon, part of mined out area is used as a settling tank for the runoff. Rainwater stored is being used for watering the mine area, roads, green belt development and sprinkling as necessary.

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



Garland drain around mine pit.



Catch drain Near mine pit.

Condition 8- Plantation shall be raised in an area of 78.44 ha including a green belt of adequate width by planting the native species around the ML area, roads, reclaimed area etc. in consultation with the local DFO / Agriculture Department. The density of the trees should be around 1500 plants per ha.

Reply to Condition 8- Progressive plantation osf native species is being carried out in and around mining lease, reclaimed area etc. in consultation with local forest department on a regular basis. During FY 2024-25, a total 11,016 saplings have been planted on reclaimed areas. Cumulative 25.58 ha areas have been planted till date. In addition to this agricultural activity is going on reclaimed land as per the consent from the landowners. Rest to be complied during project period.



Plantation and Agriculture on Reclaimed land

Condition 9- The project authority should implement suitable conservation measures to augment ground water resources in area in consultation with Regional Director, Central Ground Water Board.

Reply to Condition 9- A detailed plan to augment groundwater has been prepared, and suitable measures like the creation of water harvesting ponds, etc., are being taken for the augmentation of groundwater in the area, in consultation with the Central Ground Water Board.





Rainwater Harvesting Pond.

Condition 10- Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring should be carried out four times in a year – pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected may be sent regularly to MOEF, Central Ground water Authority and Regional Director Central Ground Water Board.

Reply to Condition 10- We are not using ground water for mining purposes. Shallow depth mining is being carried out, hence there is no intersection of ground water table during the mining operation at present and in future. A piezometer has been installed for monitoring of ground water level. The Water level and water quality reports are being sent regular to regional office of Ministry, CGWA and JSPCB. The same is attached herewith as **Annexure 1 & 2**



Piezometer Installed at Mine

Condition 11- Prior permission from the competent authority should be obtained for drawl of water from the surface water bodies.

Reply to Condition 11- We are not using any water from natural streams/ ground water for mining operation. Rainwater harvesting ponds with proper fencing have been already constructed in the mine premises. Rainwater harvested during the rainy season is being used for sprinkling on haul roads and raising plantation.

However, we have obtained NOC for extraction of ground water from CGWA/ CGWB for drinking purpose only. The copy of the same NOC and photographs of Rainwater harvesting ponds are attached below.

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NOC for Ground water Extraction

Condition 12- Water monitoring both for quality and quantity shall be carried out at four locations namely one spring and three streams. Six monthly report should be submitted to the Ministry of Environment and Forest and its Regional Office located at Bhubaneshwar.

Reply to Condition 12- Water Monitoring of Spring and Stream water are being monitored and Analysis report is attached as **Annexure 2**. Six monthly report is being submitted regularly. Now, the Regional office of MoEF&CC is located in Ranchi.

Condition 13- Vehicular emissions should be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and transportation of minerals. The vehicles should be covered with a tarpaulin and shall not be overloaded.

Reply to Condition 13- To keep vehicular emissions under control, vehicles are periodically checked & repaired. All measures are being taken to control vehicular emission. All vehicles are covered with tarpaulins, and non-overloading guidelines are being followed during transportation of mineral. Photographs of Tarpaulin Covered Vehicle and PUC Certificate are attached below.



Tarpaulin covered Vehicle



PUC Certificate

Condition 14- Drills should either be operated with dust extractors or should be equipped with a water injection system.

Reply to Condition 14- Wet drilling is in practice.



Wet drilling is being carried out.

Condition 15- Blasting operation should be carried out only during the daytime. Controlled blasting should be practiced. The mitigative measures for control of ground vibration and to arrest fly rocks and boulders should be implemented.

Reply to Condition 15- Blasting time is fixed during Lunch Time i.e. 1.00 PM-2.00 PM. We have control blasting permission. Controlled blasting method is in practice. Ground vibration study has been conducted periodically. Efforts and mitigative measures are being taken to reduce the impact of the blast.

Condition 16- Consent to operate should be obtained from SPCB prior to start of enhanced production from the mine.

Reply to Condition 16- We have already obtained the Consent to Operate for Bauxite Ore as per production capacity mentioned in EC.

Condition 17- Sewage treatment plant should be installed for the colony. ETP should also be provided for workshops and wastewater generated from mining operations.

Reply to Condition 17- No wastewater is generated from our mining operation. However, only negligible amount of effluent is being generated from workshop and Oil & grease trap system is already installed for treatment of this effluent. The treated water is in close circuit and being reused for washing of vehicle in the workshop. We are not discharging any wastewater outside the mine lease area. Furthermore, the quality of this treated water is being monitored regularly and the monitoring report is enclosed herewith as **Annexure 2.**

The sewage water from domestic uses is being collected through individual Septic Tank and followed by Soak Pit.



Washing Ramp with Oil and Grease trap

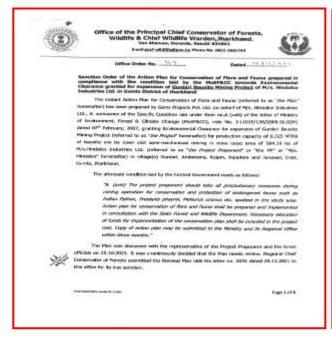
Condition 18- The project proponent should take all precautionary measures during mining operation for conservation and protection of endangered fauna such as Indian Python, <u>Presbytis phayrei</u>, <u>Melsurus ursinus</u> etc. Spotted in the study area. Action plan for conservation of flora and fauna shall be prepared and implemented in consultation with the State Forest and Wildlife Department. The necessary allocation of funds for implementation of the conservation plan shall be made and the funds so allocated shall be included in the project cost. A copy of the action plan may be submitted to the Ministry and its Regional Office within 3 months.

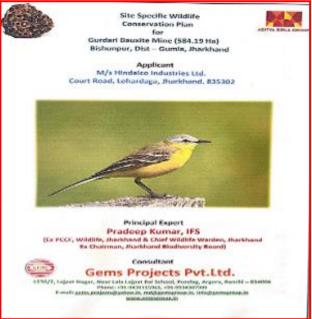
Reply to Condition 18- Safeguard Measures already implemented and being implemented as suggested by forest department are as follows: -

- 1. Minimum level of Noise during Mining.
- 2. Permanent pillars are established within the mine lease area.
- 3. Daily water sprinkling on haul road.
- 4. Transportation is carried out during the daytime only.
- 5. Maintenance of mineral transportation road is being done regularly.
- 6. Social activities are being undertaken in nearby areas etc.

We have also prepared Site-Specific Wildlife Conservation Plan (WLCP) in consultation with State Forest Department and obtained approval letter from Principal Chief Conservator of Forest, Wildlife & Chief Wildlife Warden, Jharkhand via Office Order No. 48 dated 02.12.2021 for conservation and protection of flora and fauna in the core and buffer zone for Gurdari Bauxite Mine.

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





Site Specific Wildlife Conservation Plan

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

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

B. General Conditions

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

Reply to Condition 1- Noted.

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

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

Condition 3- Four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RPM, SPM, SO₂, NO_x monitoring. Location of the stations should be decided based on the metrological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board

Reply to Condition 3- We have already established four ambient air quality monitoring stations in the core zone as well as the buffer zone. Monitoring is being carried out and reported to the concerned authorities. Monitoring Report is attached as **Annexure 2.**

Condition 4- Data on ambient air quality (RPM, SPM, SO₂, NO_x) should be regularly submitted to the Ministry including its Regional office located at Bhubneshwar and the State Pollution Control Board / Central pollution Control Board once in six months.

Reply to Condition 4- Being adhered to. Monitoring Reports for the reporting period are attached as **Annexure-2**. Now, the Regional office of MoEF&CC is in Ranchi.

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

Reply to Condition 5- Water tankers have been provided for sprinkling of water on haul roads and active mining areas to suppress the fugitive dust. Water spraying at loading, unloading, etc. is also being done regularly.



Water Tanker for dust suppression

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

Reply to Condition 6- Noise monitoring is being done regularly. Workers engaged in the operation of HEMMs, etc., have also been provided with PPEs such as ear plugs and earmuffs. Monitoring of noise levels is being conducted at various locations of the work zone area.

The report is attached as **Annexure 2.**

Condition 7- Industrial wastewater (workshops and wastewater from the mine) Should be properly collected and treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time. Oil and grease traps should be installed before discharge of workshop effluents.

Reply to Condition 7- There is no industrial wastewater generation from mining operation. We are not discharging any wastewater outside the mine lease area. However, negligible amount of wastewater is generated in workshop from washing vehicles and Oil & grease trap system is already installed for treatment of this effluent. The treated water is in a closed circuit and being reused for washing vehicles in the workshop.

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

Photograph of Oil and grease traps is already attached below.



Washing Ramp with Oil and Grease trap

Condition 8- Personnel working in dusty areas should wear protective respiratory devices and they should also provide with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.

Reply to Condition 8- All the workers have been provided with PPEs including dust mask and dust respirators. Apart from PPEs distribution to all workers, we are also providing adequate safety training and conducting awareness session on Safety and health aspects on regular basis. Periodical Occupational health surveillance program of the workers is being carried out and records maintained as per statute.

Condition 9- A separate environmental management cell with suitable qualified personnel should be set up under the control of a Senior Executive, who will report directly to the Head of the Organization.

Reply to Condition 9- A separate environmental management cell with suitable qualified personnel has been set up under the control of a Senior Executive, who is reporting directly to the Head of the Organization. The same is attached herewith as **Annexure 3.**

Condition 10- The project authorities should inform the Regional Office located at Bhubaneshwar regarding the date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.

Reply to Condition 10- This is an operating mine. Hence, the provision related to financial closure is not applicable. Now, the regional office of MoEF&CC is in Ranchi.

Condition 11- The funds earmarked for environmental protection measures should be kept in separate accounts 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 to Condition 11- Every year, the funds earmarked for environmental protection measures is being budgeted separately and its expenditure is being reported to the Ministry. The copy of the same is attached as **Annexure 5**. Now, the Regional Office of MoEF&CC is in Ranchi

Condition 12- The Regional Office of this Ministry located at Bhubaneshwar shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.

Reply to Condition 12- Noted and Agreed.

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

Reply to Condition 13- Complied. A copy of the clearance letter has already been submitted.

Condition 14- State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Center and Collector's office / Tehsildar's Office for 30 days.

Reply to Condition 14- Noted. The EC Letter has been submitted to JSPCB for display of same at its regional office and other government offices.

Condition 15- The project authorities should advertise at least in two local newspapers widely circulated, one of which locality concerned, within 7days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment and Forests at http://envfor.nic.in and a copy of the same should be forwarded to the Regional Office of this Ministry located Bhubaneshwar.

Reply to Condition 15- 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 vide letter no HIL/GMO(M)/ENV/140 Dated 23.04.2007. Now, the regional office of MoEF&CC is in Ranchi.

Piezometer Monitoring Report

Mine: Gurdari Bauxite Mine

S No	Month	Ground Water Level (BGL) (in meters)		
1	Oct-24	32.56		
2	Nov-24	32.51		
3	Dec-24	32.13		
4	Jan-25	32.07		
5	Feb-25	32.79		
6	Mar-25	33.38		

ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

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

Gurdari Bauxite Mine-Environmental Monitoring Report

October 2024



CONTENT

Hind	alco Industries : Gurdari Bauxite Mine Environmental Monitoring Report	October 2024
100000	Gurdari Bauxite Mine	
	AMBIENT AIR QUALITY- CORE ZONE	
1	Entrance Gate / Near Mine Office	
2	Neur Karkang Mines	
3	Near Mine Weigh Bridge	
4	Near Dhobi Kutumb	
	AMBIENT AIR QUALITY- BUFFER ZONE	
1 2 3	Near PakriGada Village	
2	Near Pol Pol Village	
3	Near Shakhuapani Village	
4	Near DipaKujam Village	





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

ENGINEERING SERVICES PVT. LTD.

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10/12881

TEST REPORT

Test Report No.	: ELES/RNC/2024/6197	Report Release Date	: 25.10.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400004088F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/7226 : Entrance Gate/Near Mine Office Gurdari Bauxite Mine (584.19ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 15,10:2024 to 16:10:2024 : 18:10:2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Mines Status	: Operational	Type of Sample Sampling Procedure		
Period of Analysis	: 18.10.2024 to 24.10.2024	Sampling Done By Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			25.014
1	Average Temperature (°C)	: 27	2	Barometric Pressure (mmHg)	: 742
3	Relative Humidity (%)	: 65	4	Weather Condition	; Partly Cloudy

Discipline : Chemic	lic	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	34	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2/Sec1): 2023	7.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part- 6): 2022	24.4	80 (24hrs)
Ozone (O ₁)	µg/m³	JS 5182 (Part- 9); 2019	<20.0	100 (8hrs)
Ammonia (NH ₂)	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	0.008	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C ₁ H ₆)	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)

ARREST KIERLEY Quality Manager

****End of Report****

Dr. delberiard Figurer 9Inha Ph. D. Environmental Engg.

Page 1 of 1

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

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TG-13861

TEST REPORT

Test Report No.	: ELES/RNC/2024/6198	Report Release Date	: 25.10.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400004089F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	; Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/7227 : Near Karkang Mines Gurdari Bauxite Mine (584.19ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 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	

METEOROLOGICAL INFORMATION							
1	Average Temperature (°C)	: 27	2	Barometric Pressure (mmHg)	: 742		
3	Relative Humidity (%)	165	74	Weather Condition	: Partly Cloudy		

Discipline : Chemic	al	Group:	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit			
Particulate Matter (PM10)	μg/m³	18 5182 (Part- 23): 2022	60	100 (24hrs)			
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part-24): 2019	36	60 (24hrs)			
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2/Sec1): 2023	10.2	80 (24hrs)			
Nitrogen Di-Oxide (NO ₁)	μg/m ³	IS 5182 (Part- 6): 2022	23.7	80 (24hrs)			
Ozone (O ₃)	μg/m ³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)			
Ammonia (NH ₃)	μg/m³	JS 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)	ug/m³	IS 5182 (Part- 22): 2019	< 0.002	1 (24hrs)			
Nickel (Ni)	ng/m³	IS 5182 (Part-26); 2020	<6.0	20 (Annual)			
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)			
Benzene (C ₄ H ₄)	μg/m ¹	ELES/GC/SOP/06; 2023	<2.5	05(Annual)			
Benzo-(a)-Pyrene	ng/m¹	ELES/GC/SOP/05: 2023	<0.5	01(Annual)			

Reviewed by

****End of Report****

Authorised Signatory

Dr. Deependra Kumar Sinha

Plu D. Environmental Engg

Akash Kumar Quality Manage

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 204AECE9723D124

CINEERING SERVICES PVT. LTD

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

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



TG/13587

TEST REPORT

Test Report No.	: ELES/RNC/2024/6199	Report Release Date	: 25.10.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400004090F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	; Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/7228 : Near Mine Weigh Bridge Gurdari Bauxite Mine (584.19ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 15.10.2024 to 16.10.2024 : 18.10.2024	
Mines Status	Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 18.10.2024 to 24.10.2024	Sampling Done By Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFORMATION	(
1	Average Temperature (°C) : 27	2	Barometric Pressure (mm	Hg) : 742
-	Relative Humidity (%) : 65	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	74	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	42	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	18 5182 (Part-2/Sec1): 2023	13.1	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	1S 5182 (Part- 6): 2022	30.5	80 (24hrs)	
Ozone (O ₃)	µg/m ³	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₅)	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	0.009	I (24hrs)	
Nickel (Ni)	ng/m	1S 5182 (Part- 26); 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (CcH ₆)	μg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m ³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	
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Reviewed by Akash Kumar

Quality Manager

****End of Report****

Authorised Signatory Dr. Deependra Kumar Sinha

Ph. D. Environmental Enga

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Technical Manager

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20A4ECE97330124

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TC-THET

TEST REPORT

Test Report No.	: ELES/RNC/2024/6200	Report Release Date	: 25.10.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400004091F			

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/7229
		Location	: Near Dhobi Kutumb Gurdari Bauxite Mine (584.19ha
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 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

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

Discipline : Chemic	al	Group:	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	TS 5182 (Part-23): 2022	61	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	33	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2/Sec1): 2023	9.8	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m ³	1S 5182 (Part- 6): 2022	26.1	80 (24hrs)	
Ozone (O _i)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₂)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	ES 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/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/m ³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C ₆ H ₆)	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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Dr. Deependra Kumar Sinha

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Technical Manager
The Laboratory under Committee and Conditions, only on Company latter bond in pro-approved forms. The Report softer or colors only in the privately soften by the Laboratory and the information stand on the Test Report reflects the findings does by the Laboratory at the time of provided by the claim. The Report reflects the report in the report in the advances on the information. The Laboratory is responsible for all the information or thus provided on the report in information. Which is provided by the effect. The Report consist by reproduced except in full and any part of the report is not taken out of consect, without prior contain approved of the Laboratory. The Report to full or in part shall not be particularly noncrine, used for any legal actions unless prine permission has been sectared from the Menagement of the Laboratory. Attention is drawn to the limitation of liability, compensation and sensitions cases. Any unrechostend alteration & fair-illustration of the content or appearance of the Yest Report is relawful and offenders may be prosecuted to the fullest extent of the law. All the samples are consists for Miles from the Date of relaxations of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations in Complete regarding the Report will be done within 15 days from the Date of Test Report relaxated bodies that then partial stand before, no completely will be accepted. The entire Tone schedule mentioned as Test Report is in 145 and format. Abbreviation used: N.A. (Not Applicable), 2021. Relaxation Limit; LDL (Lower Detection Limit).



PLOT NO-30, MANSAROVAR ENCLAVE, TURUDIANA HATVA, RANCKI-854008 (PRAEKHAND) BST NO:- 83446C687150124



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Webbite: www.elespi.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2024/6291	Report Release Date	: 25.10.2824
Work Order No.	13612312113	Work Order Date	: 28.03.2024
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CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindulco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/7230 : Near Pakri Gada Village : 16.10.2024 to 17.10.2024
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample	: 18.10.2024 : Ambient Air
Mines Status	: Operational	perational Sampling Procedure Sampling Done By	
Period of Analysis	: 18.10.2024 to 24.10.2024	Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

М	METEOROLOGICAL INFORMATION							
T	Average Temperature (*C) : 27	2	Barometric Pressure (mmHg)	1.742				
3	Relative Humidity (%) : 64	-4	Weather Condition	: Partly Cloudy				

Discipline: Chemic	id	Group:	Atmospheric l	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Maner (PMT0)	µg/m³	18 5182 (Part-23): 2022	61	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24); 2019	33	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	15:5181 (Part-2/Sec1): 2023	7.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	15 51 82 (Part- 6): 2022	25.7	80 (24hrs)
Oxone (O ₅)	ug/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH _i)	ng/m³	15 51 k2 (Part- 25); 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	1\$ 5182 (Part- 10); 2019 (NDIR Method)	<3.0	2 (8hrs)
Lead (Pb)	HB/III)	IS 5182 (Part- 22): 2019	< 0.002	1 (24hm)
Nickel (Ni)	ng/m²	IS 5182 (Part+26): 2020	56.0	20 (Annual)
Amenic (As)	ng/m ¹	ELES/AIR/SOP/01: 2021	<2,0	06 (Annual)
Benzent (C ₄ H ₅)	#g/m³	ELES/GC/SOP/06: 2023	<2.5	95(Amust)
Bento-(n)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	Ol(Annusi)

Reviewed by Akouti Kuthat

Quality Manager

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Dr. Despended Similar Sinha Ph. D. Environmental Engg. Technical Manager

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PLOT NO-38. MARSAROVAR ENCLAVE, TUPLICAMS MATIA, RANCHI-SE-LOGE (INVANOTANO) GST NO: 20A4ECE97130134



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TEST REPORT

Test Report No.	: ELES/RNC/2024/6202	Report Release Date	125.10.2024	
Work Order No.	: 13612312113	Work Order Date	128.03.2024	
ULR No.	: TC135872400004093F			

CUSTOMER DET	AHLS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Tharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample	: ELES/RNC/2024/AA/7231 : Near Pol Pol Village : 16.10,2024 to 17.10.2024 : 18.10,2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/01 : ELES PVI, Ltd.	
Period of Analysis	: 18.10.2024 to 24.10.2024	Sample Condition	: Sealed & Preserved	

M	METEOROLOGICAL INFORMATION					
I	Average Temperature (PC) : 27	(2)	Barometric Pressure (mm)	Hg) : 742		
3	Relative Humidity (%) : 64	-4	Weather Condition	: Partly Cloudy		

Discipline: Chemic	eal I	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PMT0)	μg/m²	IS 5182 (Part- 23): 2022	59	100 (24hm)	
Particulate Matter (PM2.5)	µg/m²	IS 5182 (Part- 24): 2019	33	60 (24hrs)	
Sulphur Di-Oxide (50z)	µg/m³	IS 5182 (Payt- 2/Soc1): 2023	6.9	80 (24hrs)	
Nitrogen Di-Oxide (NO ₁)	µg/m³	ES 5182 (Part- 6): 2022	23.7	80 (24hrs)	
Ozone (O ₁)	ug/m²	TS 5182 (Part- 9): 2019	<20.0	100 (8hm)	
Ammonia (NH ₂)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	15 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Leud (Pb)	ug/m³	IS 5182 (Part- 22): 2019	<0.002	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/im ³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C _i H ₄)	µg/m²	ELES/GC/SOP/06: 2023	<1.5	95(Annuil)	
Benzo (a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	< 0.5	01(Annus)	

Reviewed by

Axest Kumpt Quality Manager ****End of Report****

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

Technical Manager

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PLOT MO-30, MANSAROWAR ENGLAVE, TUMUDANA HATTA, ZANICHI 624003 (INAEROYAND) 65T NO-20445CE97130124

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Email: <u>info@elesal.co.in</u> . eles.machi@gmail.com

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TEST REPORT

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

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hinduico Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/7232 : Near Shakhuapani Village : 16,10,2024 to 17,10,2024
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample	: 18.10.2024 : Ambient Air
Mines Status	; Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 18.10.2024 to 24.10.2024	Sample Condition	Scaled & Preserved

M	ETEOROLOGICAL INFOR	MATION			
I	Average Temperature (°C)	: 27	2	Barometric Pressure (mmHg)	: 742
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)	ug/m ¹	TS 5182 (Part- 23): 2022	58	100 (24firs)	
Particulate Matter (PM2.5)	ug/m³	IS 5182 (Part-24): 2019	30	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	ug/m³	IS 5182 (Part- 2/Sect): 2023	7,4	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	µg/m³	1S 5182 (Part- 6): 2022	20.8	80 (24hrs)	
Ozone (O ₂)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH _d)	µg/m²	(\$ 5182 (Part- 25); 2018.	<10.0	400 (24hrs)	
Carbon Monorade (CO)	mg/m³	15 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (To)	pg/m ¹	IS 5182 (Part- 22): 2019	0.010	1 (24hrs)	
Nickel (Ni)	ng/m³	18 511/2 (Part- 26): 2010	<6.0	20 (Annual)	
Amenic (As)	ng/m	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Berszene (C ₄ H ₄)	µg/m²	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Bearc-(a)-Pyrene	ng/m²	ELES/GC/SOP/05: 2023	41.5	Ol(Annual)	

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Reviewed by Akash Kumai Quality Manager

name End of Reportation

Dr. Die beriter Alleman Sinha Ph. D. Environmental Engg. Technical Manager

Page 1 of L

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110/5388

TEST REPORT

Test Report No.	: ELES/RNC/2024/6204	Report Release Date	: 25.10.2024	
Work Order No.	: 13612312113	Work Order Date	± 28.03.2024	
ULR No.	1 TC135872400004095F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindulco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/7233 : Near Dipa Kujam Village : 16,10,2024 to 17,10,2024
Address	: Lohardaga, Thurkhund-835302	Sample Received Date Type of Sample	: 18.10.2024 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvl. Ltd.
Period of Analysis	: 18.10.2024 to 24.10.2024	Sample Condition	: Smiled & Preserved

METEOROLOGICAL INFORMATION

TAX.	ETEUROLOGICAL INFO	CHATION			
1	Average Temperature (°C)	27	2	Barometric Pressure (mmHg)	2 742
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/m ³	IS 5182 (Part- 23): 2022	53	100 (24hrs)		
Particulate Matter (PM2.5)	μ <u>g</u> /m ²	IS-5182 (Part-24): 2019	27	60 (24hcs)		
Sulphur Di-Oxide (SO ₂)	µg/m ²	TS 5182 (Part- 2/Sec1); 2023	5.6	88 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	µg/m³-	IS 5182 (Part- 6): 2022	22.8	80 (24hrs)		
Ozone (O _i)	µg/m?	IS 5182 (Part- 9); 2019	<20.0	100 (8hm)		
Ammonia (NH _z)	µg/m²	13:5182 (Part-25): 2018	<10.0	400 (24hrs)		
Carison Monoxide (CO)	mg/m³	15 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	pg/m³	IS 5182 (Part- 22): 2019	0.011	1 (24h/s)		
Nickel (Ni)	ng/m	IS 5182 (Part- 26): 2020	<5,0	20 (Annual)		
Amenic (As)	ng/m²	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		
Benzene (C _i H _i)	pg/m²	ELES/GC/SOP/06: 2023	<2.5	65(Annual)		
Betteo-(a)-Pyrana	ng/m¹	ELES/GC/SOP/05: 2023	<0.5	01(Annual)		

Reviewed by Akash Kumar

Quality Monage:

****End of Report****

Anthorised Signatory

Dr. Deependra Kumar Sinha Ph. D. Environmental Enga,

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Technical Manager

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ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

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

Gurdari Bauxite Mine-Environmental Monitoring Report

November 2024



CONTENT

Hind	laleo Industries : Gurdari Bauxite Mine Environmental Monitoring Report November 2024
	Gurdari Bauxite Mine
	AMBIENT AIR QUALITY- CORE ZONE
li I	Entrance Gate / Near Mine Office
2	Near Karkang Mines
3	Near Mine Weigh Bridge
4	Near Dhobi Kutumb
	AMBIENT AIR QUALITY- BUFFER ZONE
1	Near PakriGada Village
2	Near Pol Pol Village
3	Near Shakhuapani Village
4:	Near DipaKujam Village
	Drinking Water
	Effluent Water





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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/7013	Report Release Date	: 02.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400004882F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/8219 : Entrance Gate/Near Mine Office	
Address	(Labordon Book) 2 020202	Sampling Date	Gurdari Bauxite Mine (584.19ha) ; 20.11.2024 to 21.11.2024	
Address	: Lohardaga, Jharkhand-835302	Sample Received Date	; 25.11.2024	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 25.11.2024 to 02.12.2024	Sampling Done By Sample Condition	; ELES Pvt. Ltd. ; Sealed & Preserved	

Mi	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 21	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%)	: 45	4	Weather Condition	: Clear

Discipline: Chemic	eat	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	39	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- 2/Sec1): 2023	12.2	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part- 6): 2022	27.2	80 (24hrs)	
Ozone (O ₃)	µg/m*	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m ¹	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.06	2 (8hrs)	
Lead (Pb)	µg/m²	IS 5182 (Part- 22); 2019	0.008	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 ₄ H ₆)	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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Page 1 of 1

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

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10-13867

TEST REPORT

Test Report No.	: ELES/RNC/2024/7014	Report Release Date	: 02.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400004883F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/8220	
		Location	: Near Karkang Mines Gurdari Bauxite Mine (584.19ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 20,11,2024 to 21,11,2024	
	A.C. WOODES IN FOUNDAMENT AND SOCIETY	Sample Received Date	: 25.11.2024	
		Type of Sample	: Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 25.11.2024 to 02.12.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

M	ETEOROLOGICAL INFOR	RMATION				
1	Average Temperature (°C)	:21	2	Barometric Pressure (mml-	lg) : 740	
3	Relative Humidity (%)	: 45	4	Weather Condition	: Clear	

Discipline : Chemic	ent .	Group:	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23); 2022	67	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part-24): 2019	43	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- 2/Sec1): 2023	13.7	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	25.2	80 (24hrs)	
Ozone (O ₂)	μg/m³	1S-5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₂)	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	0.011	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 ₆ H ₆)	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
Ovality Manager

Page 1 of 1

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TEST REPORT

Test Report No.	: ELES/RNC/2024/7015	Report Release Date	: 02.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400004884F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/8221	
		Location	: Near Mine Weigh Bridge Gurdari Bauxite Mine (584.19ha)	
Address	1 Lohardaga, Jharkhand-835302	Sampling Date	: 20.11.2024 to 21.11.2024	
		Sample Received Date	: 25.11.2024	
		Type of Sample	: Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By Sample Condition	: ELES/DOC/SMPL/02	
Period of Analysis	: 25.11.2024 to 02.12.2024		: ELES Pvt. Ltd. : Sealed & Preserved	

M	ETEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 21	2	Barometric Pressure (mm	Hg) : 740	
3	Relative Humidity (%) : 45	4	Weather Condition	; Clear	

Discipline: Chemic	al	Group:	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23); 2022	83	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	49	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- 2/Sec1): 2023	15.4	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	33.1	80 (24hrs)	
Ozone (O _s)	μg/m³	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₁)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monuxide (CO)	mg/m³	IS 5182 (Part- 10); 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	1S 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 ₆ H ₆)	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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The Laboratory under General Terms and Constraints, only on Company lance hand as pro-approved forms. The results shown in the Test Report the Laboratory only. The information would not the Test Report selects the findings done by the Laboratory or the time of incohormant only and the Laboratory is responsible for all the administrate or data provided on the report, except the information which is provided by the allest. The Report carrow be reproduced accept to full and any part of the report is not taken out of context, without print written approval of the Laboratory. The Report is full or in part shall not be guidished. adverses, used for any legal actions unless prior permission and p nationed for Follows from the Date of release/trace of the Test Report. The samples from Regulatory hodies are to be removed as openified. Any type of Observations or Complaints regarding the Reports shall be done within 15 days from the Date of Test Report released/instead. After the tests period stated before, no compliants will be accepted. The entire Tests solvedule memoused in Test Report is in 34bours former, Aldrewsteins used: N.A (Net Applicable), HDL (Holm Operation Limit), LDL (Lower Detection Limit)



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TEST REPORT

Test Report No.	: ELES/RNC/2024/7016	Report Release Date	: 02.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	- TC135872400004885F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/8222	
		Location	: Near Dhobi Kutumb	
			Gurdari Bauxite Mine (584.19ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 20.11.2024 to 21.11.2024	
F100011-2101.		Sample Received Date	: 25,11,2024	
		Type of Sample	: Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
M. 1. 4 . 7 4 . 4 . 1. 1.	22 1 2 20 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 25.11.2024 to 02.12.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFORMA	TION		
1	Average Temperature (°C) : 2	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%) :45	5 4	Weather Condition	: Clear

Discipline : Chemic	al	Group:	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limi
Particulate Matter (PM10)	µg/m³	IS 5182 (Part- 23); 2022	66	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ¹	IS 5182 (Part- 24); 2019	38	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part- 2/Sec1); 2023	12.1	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	24.4	80 (24hrs)
Ozone (O ₃)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	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/m²	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C ₆ H ₆)	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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Akash Kumar

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TEST REPORT

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

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindulco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/8223 : Near Pakri Gada Village : 21.11.2024 to 22.11.2024	
Address	: Lohardagu, Jharkhand-855302	Sample Received Date Type of Sample	: 25:11.2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 25.11.2024 to 02.12.2024	Sample Condition	; Sealed & Preserved	

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

Discipline: Chemic	cal	390 0	Group: Atmospheric Pollution			
Parameter	Unit	Test Pr	otocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Par	(-23): 2022	66	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m²	IS 5182 (Par	t- 24): 2019	37	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	15 51 82 (Part-	2/Sec1): 2023	9.3	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m	IS:5182 (Pa	rt- 6): 2022	28.1	80 (24hrs)	
Ozone (O ₁)	ug/m"	IS 5182 (Par	t- 9); 2019	<20.0	100 (Shrs)	
Ammonia (NH ₃)	µg/m³	IS 5182 (Par	(+25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ¹	IS 5182 (Part (NDIR N		1.19	2 (8hrs)	
Lead (Pb)	µg/m³	IS-5182 (Part	- 22): 2019	<0.002	1 (24hrs)	
Nickel (Ni)	ng/m1	IS 5182 (Par	(-26); 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m'	ELES/AIR/S	OP/01: 2021	<2.0	06 (Annual)	
Henzene (C ₄ H ₄)	µg/m²	ELES/GC/SC	P/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SC	P/05: 2023	<0.5	01(Annual)	

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TEST REPORT

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

CUSTOMER DETAILS		SAMPLE DETAILS	and a state of the
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/8224 : Near Pol Pol Village : 21.11.2024 to 22.11.2024
Address	; Lohardaga, Jharkhund-835302	Sampling Date Sample Received Date Type of Sample	: 25.11.2024 : Amblent Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pv. Ltd.
Period of Analysis	: 25.11.2024 to 02.12,2024	Sample Condition	: Sealed & Preserved

ME	TEOROLOGICAL INFORMATIO	V			
1	Average Temperature (°C) : 20	2	Barometric Pressure (mm)	(g) : 740	
3	Relative Humidity (%) 45	4	Weather Condition	: Clenr	0.0

Discipline: Chemic	lu	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/m*	IS 5182 (Part- 24); 2019	35	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part-2/Sec1): 2023	8.6	80 (24hrs)
Nitrogen Di-Oxide (NO ₁)	μg/m³	IS 5182 (Part- 6): 2022	22,4	80 (24hrs)
Ozone (O ₃)	µg/m ¹	1S 5182 (Part- 9): 2019	<20.0	100 (Shrs)
Ammonia (NH ₂)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10); 2019 (NISR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m²	IS 5182 (Part- 22); 2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (CeH ₄)	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

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Page 1 of 1

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TEST REPORT

Tesi Report No.	: ELES/RNC/2024/7019	Report Release Dute	: 92.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400004888F		7.00	

CUSTOMER DET	AILS	SAMPLE DETAILS	No. and the second seco
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/8225 : Near Shakhuapani Village : 21.11.2024 to 22.11.2024
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample	: 25.11.2024 : Ambient Air
Mines Status	: Operational Sampling Procedure Sampling Done By		: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 25.11.2024 to 02.12.2024	Sample Condition	: Sealed & Preserved

М	ETEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 20	2	Barometric Pressure (mm)	lg) : 740	
3	Relative Humidity (%) : 45	4	Weather Condition	: Clear	

Discipline: Chemic	al	Group:	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2022	68	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part-24); 2019	39	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- 2/Sec1): 2023	11.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	15 5182 (Part- 6): 2022	22.2	80 (24hrs)
Ozone (O ₃)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m ¹	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)	μ <u>e</u> /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 ₆ H ₆)	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 Akesh Kumar Gwellty Mannoor

Page I of i

The December stated or Test Representation by the Lebouarry gode: Octoral Texts and Conditions, only on Company latter hand to pro-opproved from the create shown in the Test Report The December should be first Effective and by the Laboratory and the form of Conditions, only on Company and to be improved from the Condition when the first forms of the condition of the condi Rapar & is 34keurs Faunt. Africa aims and 16th (Nor Applicable), 6th offices Deputies Limbs, CDL (Loren Deputies Limbs)



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TEST REPORT

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

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

METEOROLOGICAL INFORMATION			
1 Average Temperature (°C) : 20	2	Barometric Pressure (mmHg)	: 740
3 Relative Humidity (%) : 45	4	Weather Condition	: Clear

Discipline: Chemis	:ali	Group:	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part- 23): 2022	61	100 (24hrs)
Particulate Matter (PM2.5)	µg/m²	1S 5182 (Part- 24); 2019	35	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2/Sec1): 2023	11.1	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m ³	1S 5182 (Part- 6): 2022	23.4	80 (24hrs)
Ozone (O ₁)	µg/m³	18:5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₂)	µg/m³	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)
Curbon Monoxide (CO)	mg/m³	TS 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 (CsHe)	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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Reviewed by

****End of Report****

Authorised Signatory

Gestity Manager

Page 1 of 1

Page 1 of 1

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

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TO-13597

TEST REPORT

Test Report No.	: ELES/RNC/2024/7046	Report Release Date	: 02.12.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400004915F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2024/DW/8252 : 21,11:2024 : 25,11:2024	
Address	: Lohardaga, Jharkhand-835302	Type of Sample Source of Sample Location of Sample	: Drinking Water : Tap Water : Near Entrance Gate	
Mines Status	: Operational	Sampling Procedure	(Gurdari Bauxite Mines) : ELES/DOC/SMPL/01	
Period of Analysis	: 25.11.2024 to 02.12.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved	

Discipline : Chemical	Group	Group: Water		Regulatory Limit as per IS 10500:2012	
Discipline: Carinical	Group				
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
pH (at 24.8 °C)		APHA 24th Ed.2023, 4500-H	6.54	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 24th Ed.2023, 2130 B	0.64	0.1	5.0
Taste		APHA 24th Ed.2023, 2160 C	Agreeable	Agreeable	Agreeable
Odour	125	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	46.7	500	2000
Chloride (as Cl)	mg/L	APHA 24 th Ed.2023, 4500 Cl B	11.5	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 ₃)	mg/L	APHA 24th Ed.2023, 2320 B	14.4	200	600
Total Hardness (as CaCO ₂)	mg/L	APHA 24th Ed.2023, 2340 C	21.4	200	600
Sulphate (as SO ₄)	mg/L	APHA 24th Ed.2023, 4500 SO ₄ -2-E	2.59	200	400
Nitrate (as NO ₃)	mg/L	APHA 24 th Ed.2023, 4500 NO ₃ -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:- 20AAECE97130124

ENGINEERING SERVICES PVT. LTD.

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

: 28.03.2024

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



TC-13587

TEST REPORT

Work Order Date

Test Report No. ; ELES/RNC/2024/7046 Report Release Date : 02.12.2024

ULR No. : TC135872400004915F

: 13612312113

Discipline : Chemic	al	Grou	ip: Water	The second and the second and	ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Phenolic Compound (as C ₆ H ₅ 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	4.8	75	200
Anionic Surfactants (ns MBAS)	mg/L	APHA 24th Ed.2023, 5540-C	BDL (DL: 0.025)	0.2	1.0
Discipline: Chemic	al	Gro	oup : Residues i	n Water	
Aluminum (as Al)	mg/L	IS 3025 (Part-55) :2003; RA2019	BDL (DL: 0.02)	0.03	0.2
Arsenic (as As)	mg/L	IS 3025 (Part-37): 2022	BDL (DL: 0.005)	10.0	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	0.067	1.0	No Relaxation
Lead (as Pb)	mg/L	APHA 24 th 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
Sclenium (as Se)	mg/L	IS 3025 (Part-56): 2019	BDL (DL: 0.01)	0.01	No Relaxation

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) 6ST NO:- 20A4ECE9713D1Z4

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10-13687

TEST REPORT

Test Report No. : ELES/RNC/2024/7046 Report Release Date : 02.12.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400004915F

Discipline: Chemical		Group: Resid	lues in Water	Regulatory Limit as per 1510500:2012	
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			11 13 13 13 13 13	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)	1	25
Chlorpyriphos	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)		10
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)	1	90
Methyl parathion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.1)	0	30
Monocrotophos	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1	.0
Phorate	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2	.0
Phorate Sulphone	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)		4
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:- 20AAECE9713D124

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TEST REPORT

Test Report No. : ELES/RNC/2024/7046 Report Release Date : 02.12.2024

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC135872400004915F

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

Reviewed by Akash Kumar Genity Manager

****End of Report****

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

Page 4 of 4

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TEST REPORT

Test Report No.	: ELES/RNC/2024/7046	Report Release Date	: 02.12.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2024/DW/8252 : 21.11.2024 : 25.11.2024 : Drinking Water : Tap Water : Near Entrance Gate (Gurdari Bauxite Mines)
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01
Period of Analysis	: 25.11.2024 to 02.12.2024	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

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

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

Reviewed by

Akash Kumar Quality Manager ****End of Report****

Authorised Signatory Dr. Deependra Kumar Sinha

Ph. D. Environmental Engg.

Technical litanager

Page 1 of 1

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TEST REPORT

LES/RNC/2024/7053	Report Release Date	: 02.12.2024	
3612312113	Work Order Date	: 28.03.2024	
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ULR No. : TC135872400004922F

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2024/EF/8259 : 22.11.2024 : 25.11.2024
Address	: Lohardaga, Jharkhand-835302	Type of Sample Source of Sample	: Effluent Water : Work Shop Effluent - Gurdari Bauxite Mines (584.19 ha)
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/01 : ELES Pvt. Ltd.
Period of Analysis	: 25.11.2024 to 02.12.2024	Sample Condition	: Sealed & Preserved

Discipline : Chemical		Group: Pollution & 1	Environment	Discharge Lim EPR, 1986 Sc	
Parameter	Unit	Test Protocol	Result	Inland Surface Water	Land for Irrigation
pH (at 24.7 °C)	**	APHA 24th Ed.2023,4500-H	6.21	5.5-9.0	5.5-9.0
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part-16): 2023	548	566	40
Total Suspended Solids (TSS)	mg/L	IS 3025 (Part-17): 2022	32.4	100	200
Dissolved Oxygen (DO)	mg/L	IS 3025 (Part-38): 2019	6.7	2***	
Biochemical Oxygen Demand (BOD) (at 27 °C for 3 days)	mg/L	1S 3025 (Part-44): 2023	7.6	30	100
Chemical Oxygen Demand (COD)	mg/L	IS 3025 (Part-58); 2023	58.4	250	-
Dissolved Phosphate (as P)	mg/L	IS 3025 (Part-31/Sec-1): 2022	BDL (DL: 0.5)	5.0	2
Fluoride (as F)	mg/L	IS 3025 (Part-60); 2019	0.582	2.0	1.5
Sulphide (as S)	mg/L	IS 3025 (Part-29) : 2019	BDL (DL: 0.04)	2.0	÷
Oil & Grease	mg/L	IS 3025 (Part-39): 2021	1.6	10	10

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TEST REPORT

Test Report No.	: ELES/RNC/2024/7053	Report Release Date	: 02.12.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400004922F	111.00.00.00.00.00.00.00.00.00.00.00.00.	

Discipline : Chemi	cal	Group: Res	idues in Water	Discharge Limi EPR, 1986 Sc	
Parameter	Unit	Test Protocol	Result	Inland Surface Water	Land for Irrigation
Lead (as Pb)	mg/L	APHA 24 th Ed.2023, 3111 B	BDL. (DL: 0.01)	0.1	725
Manganese (as Mn)	mg/L	APHA 24th Ed.2023, 3111 B	0.068	2.0	<u></u>
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 2019	BDL (DL: 0.001)	0.01	:#6
Nickel (as Ni)	mg/L	APHA 24th Ed.2023, 3111 B	BDL (DL; 0.01)	3.0	255
Zinc (as Zn)	mg/L	APHA 24th Ed.2023, 3111 B	0.122	5.0	246

Reviewed by

Akash Kumar Geality Manager ****End of Report****

Authorised Signatory

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

Page 2 of 2

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ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

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

Gurdari Bauxite Mine-Environmental Monitoring Report

December 2024



CONTENT

Hind	alco Industries : Gurdari Bauxite Mine Environmental Monitoring Report	December 2024
	Gurdari Bauxite Mine	
	AMBIENT AIR QUALITY- CORE ZONE	
T:	Entrance Gate / Near Mine Office	
2	Near Karkang Mines	
3	Near Mine Weigh Bridge	
4	Near Dhobi Kutumb	
	AMBIENT AIR QUALITY- BUFFER ZONE	
1	Near PakriGada Village	
2	Near Pol Pol Village	
3	Near Shakhuapani Village	
4	Near DipaKujum Village	A Envi



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TEST REPORT

Test Report No.	: ELES/RNC/2024/7527	Report Release Date	: 21.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

ULR No. : TC135872400005382F

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/8831
		Location	: Entrance Gate/Near Mine Office Gurdari Bauxite Mine (584,19ha
Address	: Lohardaga, Jharkhand-835302	Sampling Date	; 11.12.2024 to 12.12.2024
		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 INFOR	MATION				
1	Average Temperature (°C)	: 21	2	Barometric Pressure (mmHg)	: 720	
3	Relative Humidity (%)	: 50	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	41	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- 2/Sec1): 2023	13.8	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	29.4	80 (24hrs)	
Ozone (O ₁)	μg/m³	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	pg/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	(S 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 _k H _n)	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

Page 1 of 1

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TEST REPORT

Test Report No.	: ELES/RNC/2024/7528	Report Release Date	: 21.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

ULR No. : TC135872400005383F

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/8832
		Location	: Near Karkang Mines Gurdari Bauxite Mine (584.19ha
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 11.12.2024 to 12.12.2024
100011000		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) : 21	2	Barometric Pressure (mml	Hg) : 720	
3	Relative Humidity (%) : 50	4	Weather Condition	; Clear	

al	Group:	Group: Atmospheric Pollution		
Unit	Test Protocol	Result	Regulatory Limit	
μg/m³	1S 5182 (Part- 23): 2022	71	100 (24hrs)	
μg/m³	IS 5182 (Part- 24): 2019	45	60 (24hrs)	
μg/m³	IS 5182 (Part- 2/Sec1): 2023	14.2	80 (24hrs)	
μg/m³	IS 5182 (Part- 6): 2022	27.5	80 (24hrs)	
μg/m²	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
mg/m²	IS 5182 (Part- 10): 2019 (NDIR Method)	1.34	2 (8hrs)	
jig/m³	IS 5182 (Part- 22): 2019	0.015	1 (24hrs)	
ng/m"	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
ng/m1	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
μg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	
	Unit µg/m³ µg/m³	Unit Test Protocol μg/m³ 1S 5182 (Part- 23): 2022 μg/m³ 1S 5182 (Part- 24): 2019 μg/m³ 1S 5182 (Part- 2/Sec 1): 2023 μg/m³ 1S 5182 (Part- 6): 2022 μg/m³ 1S 5182 (Part- 9): 2019 μg/m³ 1S 5182 (Part- 25): 2018 mg/m³ 1S 5182 (Part- 10): 2019 (NDIR Method) μg/m³ 1S 5182 (Part- 22): 2019 ng/m³ 1S 5182 (Part- 26): 2020 ng/m³ 1S 5182 (Part- 26): 2020 ng/m³ ELES/AIR/SOP/01: 2021 μg/m³ ELES/GC/SOP/06: 2023	Unit Test Protocol Result μg/m³ 1S 5182 (Part- 23): 2022 71 μg/m³ 1S 5182 (Part- 24): 2019 45 μg/m³ 1S 5182 (Part- 2/Sec 1): 2023 14.2 μg/m³ 1S 5182 (Part- 6): 2022 27.5 μg/m³ 1S 5182 (Part- 6): 2019 <20.0	

Reviewed by Akash Kumar Quality Manager

****End of Report****

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Ph. D. Environmental Engg.

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Technical Manager

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TC-12507

TEST REPORT

Test Report No.	: ELES/RNC/2024/7529	Report Release Date	: 21.12.2024
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC135872400005384F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/8833 : Near Mine Weigh Bridge Gurdari Bauxite Mine (584.19ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 11.12.2024 to 12.12.2024 : 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

M	ETEOROLOGICAL INFORMAT	ON			
1	Average Temperature (°C) : 21	2	Barometric Pressure (mmH	g) : 720	
3	Relative Humidity (%) : 50	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	87	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m²	IS 5182 (Part- 24): 2019	52	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- 2/Sec1): 2023	18.6	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	35,1	80 (24hrs)	
Ozone (O ₃)	µg/m³	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)	
Ammonia (NH ₁)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.42	2 (8hrs)	
Lead (Pb)	μg/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 ₄ H ₄)	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****

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Dr. Deependra Kumar Sinha

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Technical Manager

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TEST REPORT

Test Report No.	: ELES/RNC/2024/7530	Report Release Date	: 21.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400005385F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/8834	
		Location	: Near Dhobi Kutumb	
		15015-0-1117-0-0	Gurdari Bauxite Mine (584,19ha	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 11.12.2024 to 12.12.2024	
Z THERE WILLS		Sample Received Date	: 14.12.2024	
		Type of Sample	: Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
	Programme approach	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 14.12.2024 to 21.12.2024	Sample Condition	: Sealed & Preserved	

METEOROLOGICAL INFORMATION

44.8	ETECHNIA OR AL INFORMATION			
1	Average Temperature (°C) ; 21	2	Barometric Pressure (mmHg	() : 720
3	Relative Humidity (%) : 50	4	Weather Condition	: Clear

Discipline : Chemic	al	Group:	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part- 23): 2022	74	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	40	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part- 2/Sec1): 2023	13.7	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part- 6): 2022	26.3	80 (24hrs)	
Ozone (O ₃)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₂)	μg/m³	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m²	IS 5182 (Part- 10): 2019 (NDIR Method)	1.31	2 (8hrs)	
Lead (Pb)	µg/m²	1S 5182 (Part- 22): 2019	0.025	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C ₆ H ₆)	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 Enen

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Technical Manager

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TO-1356

TEST REPORT

Test Report No.	: ELES/RNC/2024/7531	Report Release Date	: 21.12.2024	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC135872400005386F	I di solato sociali se pos		-

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

Mi	ETEOROLOGICAL INFORM	IATION			
1	Average Temperature (%)	21	2	Barometric Pressure (mmHg)	: 720
3	Relative Humidity (%)	49		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	69	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	40	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- 2/Sec1): 2023	11.7	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	30.4	80 (24hrs)		
Ozone (O ₃)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hn)		
Ammonia (NH ₃)	µg/m³	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.19	2 (8hrs)		
Lend (Pb)	µg/m³	IS 5182 (Part- 22): 2019	< 0.002	I (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 ₆ H ₆)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)		
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)		

Reviewed by Akash Kumar Quality Manager

=*End of Report**

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

Technical Manague

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TC-13881

TEST REPORT

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

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/8836 : Near Pol Pol Village : 12.12.2024 to 13.12.2024	
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample	: 14,12,2024 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 14.12.2024 to 21.12.2024	Sample Condition	: Sealed & Preserved	

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

Discipline : Chemic	al	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23); 2022	67	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	38	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part- 2/Sec1): 2023	10.3	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part- 6): 2022	24.7	80 (24hrs)		
Ozone (O ₃)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.28	2 (8hrs)		
Lead (Pb)	μg/m³	IS 5182 (Part- 22); 2019	0.018	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		
Benzene (C ₆ H ₆)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)		
Benzo-(a)-Pyrene	ng/m²	ELES/GC/SOP/05: 2023	<0.5	01(Annual)		

Reviewed by Akash Kumar

Quality Manager

****End of Report****

Kainha

Ph. D. Environmental Engg. Technical Manager

Page 1 of 1

The Deciminal cutoff as Tool Report, is issued by the Laboratory under General Terms and Conditions, only we Company latter bond in pre-approved foreign this results show in the Laboratory only. The information return in the Tool Report self-ces the findings done by the Laboratory of the store of involvement only and robins the foreign of chief's instructions. The Laboratory only the stiff in all the information of this report of the report, except the information which is provided by the client. The Report example required everage in full and any part of the report is not taken out of content, without prior vectors approved of the Laboratory. The Report in full are in part deall and be published, advantors, much for two again actives retires paint portations the best successful from the Management of the Laboratory. Attention is drawn to the limitation of hidden, compressions made provided on the other states of the states of the content of the remove of the Test Report is reclaimful and allerators may be proceeded to the fullost except of the law. All the complex are trained for Newborn from the Date of Science is not of the Science of the Completion regarding the Reports shall be shown within 15 days from the Oute of Test Report of the lates period stated before, an emophism with the acceptable The active Time religible manifolds and the lates format. Abbreviation and New York (New Applicable), BEM, (Balew Timestell, 1.10), (Lawer Decimes Land).



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ENGINEERING SERVICES PVT. LTD.

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

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



704398

TEST REPORT

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

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

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

Discipline : Chemic	al	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	65	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	35	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m ¹	IS 5182 (Part- 2/Sec1): 2023	10.5	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part- 6): 2022	24.8	80 (24hrs)	
Ozone (O ₃)	µg/m³	1S 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₁)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.019	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C ₆ H ₆)	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 Signate

Ph. D. Environmental Engg. Technical Manager

Page Loft

The December stated as Test Report, is second by the Laboratory under General Terms and Catelaneas, only on the production to pre-approved former the test Report refer or relates only to the jubilitatives done by the Laboratory as the time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the client. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the client. The Expost is not the report of an information approach of the Laboratory. The Expost is full or in part street by published, advantor, used for any legal actions under poor provision has been accorded from the Managament of the Laboratory. The full actions of the laboratory and provided advantory to the institution of the laboratory and the contract of the laboratory. The full action of the laboratory is a superconduction of the laboratory and the contract of the laboratory and laboratory and the laboratory and laboratory and the laboratory and laboratory and



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TC-13067

TEST REPORT

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

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

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

Discipline: Chemic	ial	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	65	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	38	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2/Sec1): 2023	13.3	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	25.7	80 (24hrs)	
Ozone (O ₃)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8lvrs)	
Ammonia (NH ₁)	µg/m²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ¹	IS 5182 (Part- 10); 2019 (NDIR Method)	1.32	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 ₆ H ₆)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	< 0.5	01(Annual)	

Reviewed by Akash Kumar Quality Manager

****End of Report****

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

Technical Mesons

Page 1 of I

The Deciment small or first Report, is issued by the Laboratory under Content Lemm, and Continuous, only on Company lefter need in prosperation from the Laboratory with a first Report reflects that findings dente by the Laboratory or the Laboratory with time of involvement and) and within the lands of client's involvement that time of involvement and) and within the lands of client's involvement to the Laboratory or the Laboratory or the Laboratory is responsible for all the information or data provided in the report, aways the information which is provided by the client. The Report nation he reputationed except is full and any part of the report is not token out of content, without spirotal of the Laboratory. The Report is full or in particular, afternoon, used for any legis actions taken prior perfections has been accounted from the Management of the Laboratory. Attention is drawn to the terminal of the following components and periodicity components and periodicity components of the Test Report is understood and effect the new formation of the laboratory of the laboratory

ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

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

Gurdari Bauxite Mine-Environmental Monitoring Report

January- 2025



CONTENT

Hind	alco Industries : Gurdari Bauxite Mine Environmental Monitoring Report	January 2025
	Gardari Bauxite Mine	
	AMBIENT AIR QUALITY- CORE ZONE	
1	Entrance Gate / Near Mine Office	
2	Near Karkang Mines	
3	Near Mine Weigh Bridge	
4	Near Dhobi Kutumb	
	AMBIENT AIR QUALITY- BUFFER ZONE	
1	Near PakriGada Village	
2.	Near Pol Pol Village	
3	Near Shakhuapani Village	
4	Near DipaKujam Village	
	Surface Water	
	Soil	





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TEST REPORT

Test Report No.	: ELES/RNC/2025/0443	Report Release Date	: 20.01.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000000435F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2025/AA/0262 : Entrance Gate/Near Mine Office Gurdari Bauxite Mine (584.19ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 11.01.2025 to 12.01.2025 : 13.01.2025
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 13.01.2025 to 20.01.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	ETEOROLOGICAL INFORM	ATION	HERE'S		
1	Average Temperature ("C) :	17	2	Barometric Pressure (mmHg)	: 720
3	Relative Humidity (%)	51	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	45	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2/Sec1): 2023	15.2	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	33.8	80 (24hrs)	
Ozone (O ₃)	μg/m²	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₁)	μg/m³	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10); 2019 (NDIR Method)	1.29	2 (8hrs)	
Lead (Pb)	µg/m¹	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 ₀ H ₄)	µg/m³	ELES/GC/SOP/06; 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by Akash Kumar

****End of Report****

Authorised Signatory Dr. Deependra Rumar Sinha

Ph. D. Environmental Engg.

Technical Manager

Page 1 of 1

The Discounter stated as Tast Report, is instead by the Laboratory south Control Lerms and Conditions, only on Company tenter hand as pre-approved format. The meanle shows in the Tast Report refer or relates only to the judyanalysis done by the Laboratory only. The information stated on the Tast Report reflects the findings done by the Laboratory or the rows of accounter only and soften the findings done by the Laboratory or the rows of accounter only and soften the findings done by the Laboratory or the rows of accounter only and soften the findings done by the Laboratory or the rows of accounter on the findings done by the Laboratory and the report counter of the Laboratory and the report of the Laboratory and the information which is provided by the claim. The Report and for any legal actions into prior precisions has been second from the Managiment of the Laboratory. Alteriors in states in the findings done in the published, advantaged abstration, it falsification of the connect or appearance of the Laboratory Advantages only be proceeded to the find of the laboratory of the findings of the finding of the samples from the Date of plants of the finding of the findings of the findings of the findings of the finding of the findings of the fi

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TEST REPORT

Test Report No.	: ELES/RNC/2025/0444	Report Release Date	: 20.01.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000000436F	The state of the s	

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2025/AA/0263
		Location	: Near Karkang Mines
			Gurdari Bauxite Mine (584.19ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 11.01.2025 to 12.01.2025
Frank Con	a Little wash, dississing was are	Sample Received Date	: 13.01.2025
		Type of Sample	: Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
marting of a solution	17.01.2025 - 20.01.2025	Sampling Done By	: ELES Pyt. Ltd.
Period of Analysis	: 13.01.2025 to 20.01.2025	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFOR	MATION				
1	Average Temperature (°C)	: 17	2	Barometric Pressure (mmHg)	: 720	
3	Relative Humidity (%)	: 51	4	Weather Condition	; Clear	

Discipline : Chemic	nl	Group:	Atmospheric)	Pollution	
Parameter Unit		Test Protocol	Result	Regulatory Limi	
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 ₂)	μg/m³	IS 5182 (Part-2/Sec1): 2023	11.7	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	1S 5182 (Part- 6): 2022	30.3	80 (24hrs)	
Ozone (O ₃)	µg/m ²	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₂)	μg/m³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10); 2019 (NDIR Method)	1.44	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part- 22); 2019	0.021	1 (24hrs)	
Nickel (Ni)	ng/m²	IS 5182 (Part- 26); 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C ₀ H ₄)	μg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by Akash Kumar Quality Manager

****End of Report****

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

Technical Manager

Page 1 of 1

The Discourant statist as Test Report, a second by the Laboratory under General Terms and Constructs, only on Company before bend at pre-approved formst. The results discourant title Test Report suffect of references by the Laboratory of the Laboratory and the Laboratory of the Laboratory of the Laboratory of the Laboratory. The Laboratory is respectitive for all the information of data provided to the report, except the information which is provided by the affect. The Report material except in full and may part of the report is not taken on a former, which are provided to the Laboratory. The Report is full or in part shall not be published, information unless prior patronical has been secured from the Managament of the Laboratory. Attention is described and included alternative of the Indication of the current of upper patronical supportant of the Laboratory. Attention is described and included alternative of the Indication of the current of upper patronical and particularly in the Indication of the Construction of the Indication of Indication of

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TEST REPORT

Test Report No.	: ELES/RNC/2025/0445	Report Release Date	: 20.01.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

ULR No. : TC1358725000000437F

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2025/AA/0264 : Near Mine Weigh Bridge Gurdari Bauxite Mine (584.19ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 11.01.2025 to 12.01.2025 : 13.01.2025	
Mines Status	; Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 13.01.2025 to 20.01.2025	Sampling Done By Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 17	1	Barometric Pressure (mmHg)	: 720
3	Relative Humidity (%)	:51	4	Weather Condition	; Clear

Discipline : Chemic	aI.	Group :	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	1S 5182 (Part- 23): 2022	91	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	55	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m³	1S 5182 (Part- 2/Sec1): 2023	15.1	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part- 6): 2022	33.4	80 (24hrs)	
Ozone (O ₂)	µg/m*	IS 5182 (Part- 9): 2019	<20,0	100 (8hrs)	
Ammonia (NH ₁)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.39	2 (8hrs)	
Lead (Pb)	μg/m²	IS 5182 (Part- 22): 2019	0.031	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 ₆ H ₄)	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)	
			0	1	

Reviewed by Akash Kumar

Quality Manager

****End of Report****

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

Page 1 of 1

Technical Manager

The December shared as Test Report, to bound by the Laboratory uniter functed Terms and Conditions, only on Company hear head as pro-approved forms. The creative shows in the Laboratory as the time of involvement only and within the function of closed as reportations. The Laboratory is represented for all the information of data provided on the report secure to the function which is provided by the claim. The Report cannot be reportated overpress to full and any part of the report as not taken and of the Laboratory. Attention is drawn to the laboratory of half and any part of the report as not taken and of the Laboratory. Attention is drawn to the laboratory of half and actions called post-of the report as not taken and of the Laboratory. Attention is drawn to the lambdates of half and actions called a part of the careful and appropriate of the Laboratory and formation of the Laboratory of the function of the Laboratory of the function of the Laboratory and formation of the Laboratory of the careful and reflected and reflected only by promotion of the function of the Laboratory of the Conference of the Laboratory of the Laboratory by the laboratory of the function of the Laboratory of the Laboratory



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TEST REPORT

Test Report No.	: ELES/RNC/2025/0446	Report Release Date	: 20.01.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000000438F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2025/AA/0265 : Near Dhobi Kutumb Gurdari Bauxite Mine (584.19ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 11.01.2025 to 12.01.2025 : 13.01.2025
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 13.01.2025 to 20.01.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

M	ETEOROLOGICAL INFORMATION	1,19,51		
1	Average Temperature (°C) : 17	2	Barometric Pressure (mml	łg) : 720
3	Relative Humidity (%) : 51	4	Weather Condition	: Clear

Discipline: Chemic	al	Group:	Group: Atmospheric Pollution			
Parameter Unit		Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	Particulate Matter (PM10) µg/m ³ 1S 51		70	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	37	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part- 2/Sec1): 2023	11.4	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	22.9	80 (24hrs)		
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 2019	<20.0	100 (8hrs)		
Ammonia (NH ₂)	µg/m³	IS 5182 (Part-25); 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.28	2 (8hrs)		
Lead (Pb)	μg/m ³	1S 5182 (Part- 22): 2019	<0.002	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		
Benzene (C ₆ H ₆)	μg/m ³	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 Kumwr

****End of Report****

Authorised Signatory Dr. Deependra Kumar Sinha

D. Environmental Engg.

Page 1 of 1

Technical Manager

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) BST NO:- 10AAECE97130124

ENGINEERING SERVICES PVT. LTD.

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TC-1350

TEST REPORT

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

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date	: ELES/RNC/2025/AA/0323 : Near Pakri Gada Village : 13.01.2025 to 14.01.2025	
Mines Status	: Operational	Sample Received Date Type of Sample Sampling Procedure	: 15:01.2025 : Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 15.01.2025 to 21.01.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

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

Discipline: Chemic	rat	Group:	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/m ³	IS 5182 (Part- 24): 2019	44	60 (24tus)	
Sulphur Di-Oxide (SO ₁)	µg/m³	IS 5182 (Part-2/Sec1): 2023	13.3	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	33.1	80 (24hrs)	
Ozone (O ₃)	µg/m²	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	ug/m³	IS-5182 (Part-25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.23	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	<0.002	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.6	20 (Annual)	
Arsenic (As)	ng/m³	ELES/A1R/SOP/01: 2021	<2.0	06 (Annual)	
Bunzene (CoHa)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m²	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by Alasah Kumar Quality Manager

****End of Report****

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

Technical Manager

Page 1 of I

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TEST REPORT

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

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

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

Discipline: Chemic	al	Group:	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m ²	IS 5182 (Part- 23): 2022	69	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24); 2019	41	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2/Sec1): 2023	12.6	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part-6): 2022	25.1	80 (24hrs)		
Ozone (O ₂)	μg/m²	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH ₁)	μg/m³	IS 5182 (Part-25): 2018:	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	1S 5182 (Part- 10): 2019 (NDIR Method)	1.22	2 (8hrs)		
Lead (Pb)	µg/m ^T	IS 5182 (Part- 22): 2019	0.020	1 (24hm)		
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	9.0>	20 (Annual)		
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01: 2021	<2.0	96 (Annual)		
Benzene (C _i H _i)	m/m/m	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 Alarah Kumbr Quality Manager

****End of Report****

Authorised Signatory Dr. Deependra Kumar Sinha Ph. D. Environmental Enc.g.

Technical Magages

Page 1 of 1

The December stand as few Report, is most by the Laboratory order Occasion and Conditions, only on Company latter basis in pre-expressed facuat. The results along to the jubicachesis days by the Laboratory sold. The information stated on the Test Report reflects the flexible days by the Laboratory at the stand of the information of the house of clear's formation. The Laboratory is expressed for all the information of the provided occupy in the information of the information which is provided by the effect. The Report contact be expressed occupy to this and are part of the report to not related to expressed occupy to this and are part of the report to not related to expressed of the Laboratory. The Report on field or or part of the report to the report to the Laboratory of the Laboratory. The Report of the Laboratory of the Labor



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3.1

TEST REPORT

Test Report No.	: ELES/RNC/2025/0513	Report Release Date	: 22.01.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03,2024	
ULR No.	: TC1358725000000504F			

Address : Lohardaga, Jharkhand-835302 Location : Near Shakhuapani Villag Sampling Date : 13.01.2025 to 14.01.2025 Sample Received Date : 15.01.2025 : Ambient Air Sampling Procedure : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	CUSTOMER DET	AILS	SAMPLE DETAILS	
Mines Status : Operational Type of Sample : Ambient Air Sampling Procedure : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.		Pro-	Location Sampling Date	: ELES/RNC/2025/AA/0325 : Near Shakhuapani Village : 13.01.2025 to 14.01.2025 : 15.01.2025
HOUSE PORTER OF THE PROPERTY O	Mines Status		Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
	Period of Analysis	: 15.01.2025 to 21.01.2025	TOTAL STREET,	UNIVERSITY OF THE PROPERTY OF

M	METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	; 18	2	Barometric Pressure (mmHg)	: 720	
3	Relative Humidity (%)	: 53	4	Weather Condition	: Clear	

Discipline : Chemic	at	Group:	Atmospheric !	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2022	69	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019.	38	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part-2/Sec1); 2023	12.2	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2022	26.1	80 (24hrs)
Ozone (O ₂)	μg/m ²	JS 5182 (Part- 9): 2019	<20.0	100 (Shrs)
Ammonia (NH ₁)	nīt\a_	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)
Curbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.023	1 (24hrs)
Nickel (Ni)	ng/m²	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	(Annual)
Benzene (C ₄ H ₄)	ng/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 Kurnar Chushly Manager

****End of Report****

Dr. Geophical NonePoinha Ph. D. Environmental Engg. Technical Manager

Page 1 of 1

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TEST REPORT

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

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835362	Sample Ref. No. Location Sampling Date Sample Received Date	: ELES/RNC/2025/AA/0326 : Near Dipa Kujam Village : 13.01.2025 to 14.01.2025 : 15.01.2025
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 15.01.2025 to 21.01.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

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

Discipline: Chemic	al	Group:	Atmospheric l	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m ³	15 5182 (Part-23); 2022	69	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part-24): 2019	34	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2/Sec1): 2023	15.1	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6); 2022	27.3	80 (24hrs)
Ozone (O ₁)	µg/m³	IS 5182 (Part-9): 2019	<20.0	100 (Shrs)
Ammonia (NH ₁)	μg/m³	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	1S 5182 (Part- 10); 2019 (NDR Method)	1.23	2 (8hrs)
Lead (Pb)	µg/m³	TS 5182 (Part- 22); 2019	0.022	1 (24hrs)
Nickel (Ni)	ng/m ¹	IS 5182 (Part-26); 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m²	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (Calla)	11g/m 1	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m²	ELES/GC/SOP/05: 2023	<0.5	01(Annual)

Reviewed by Akash Kumar

Quality Manager

****End of Report****

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

Technical Manager

Page 1 of 1

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TEST REPORT

Test Report No.	: ELES/RNC/2025/0502	Report Release Date	: 22.01.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000000493F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2025/SW/0274 : 12.01.2025 : 13.01.2025	
Address	: Lohardaga, Jharkhand-835302	Type of Sample Location of Sample	: Surface Water : Near Ambakona Pit, Gurdar Bauxite Mines (584,19ha)	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 13.01.2025 to 22.01.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

Discipline: Chemical		Group:	Water	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
pH (at 24.7 °C)	3	IS 3025 (Part-11): 2022	6.80	6.5-8.5
Temperature	°C	IS 3025 (Part 9); 2023	18.0	744.
Chemical Oxygen Demand (COD)	mg/L	IS 3025 (Part-58): 2023	7.8	7 10
Biochemical Oxygen Demand (BOD) (@ 20°C for 5 days)	mg/L	APHA 24th Ed.2023; 5210B	2.0	3.0
Total Dissolved Solids (TDS)	mg/L	1S 3025 (Part-16): 2023	142	1500
Total Suspended Solids (TSS)	mg/L	IS 3025 (Part-17): 2022	15.0	100
Oil & Grease	mg/L	1S 3025 (Part-39): 2021	BDL (DL: 0.1)	0.1
Calcium (as Ca)	mg/L	1\$ 3025 (Part-40): 2019	7.3	355

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TEST REPORT

Test Report No.	: ELES/RNC/2025/0502	Report Release Date	: 22.01.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000000493F			

Discipline: Chemical		Group: Residues in	Group: Residues in Water	
Parameter	Unit	Test Protocol	Result	as per 18 2296-1992 Class C (Inland Surface Water
Aluminum (as Al)	mg/L	IS 3025 (Part-55) :2003; RA2019	BDL (DL: 0.02)	
Iron (as Fe)	mg/L	APHA 24th Ed.2023; 3111B	0.266	50

Remarks: pH & Temperature done at site.

Reviewed by Akash Kumai 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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10/1388

TEST REPORT

Test Report No.	: ELES/RNC/2025/0505	Report Release Date	: 22.01.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000000496F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2025/SL/0277 : 11.01.2025 : 13.01.2025	
Address	: Lohardaga, Jharkhand-835302	Type of Sample Location of Sample	; Soil : Near Dhobi Kutumb, Gurdan	
Mines Status	: Operational	Sampling Procedure	Bauxite Mine (584.19ha) : ELES/DOC/SMPL/05	
Period of Analysis	: 13.01.2025 to 22.01.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed	

Discipline : Chemical		Group: Pollution & Environment		
Parameter	Unit	Test Protocol	Result	
pH (1:2) at 24.4 °C		IS 2720 (Part-26): 2021	6.85	
Conductivity (1:2) at 24.4 °C	µS/cm	IS 14767; 2021	185	
Total Organic Carbon (TOC)	%	Soil Testing in India: 2011 (Walkley & Black Method)	0.65	
Available Phosphorus (as P)	kg/ha	Soil Testing in India; 2011	4.2	
Potassium (as K)	mg/kg	15 9497: 2020	450	
Available Nitrogen	%	Soil Testing in India; 2011	4.48	
Chloride (as Cl) (1:2)	%	ELES/SOIL/SOP/01: 2021	0.017	
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)	
Lend (as Pb)	mg/kg	US EPA 3050 A&B: 1996	BDL (DL: 0.1)	

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YQ-12880

TEST REPORT

Test Report No.	: ELES/RNC/2025/0505	Report Release Date	: 22.01.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000000496F		

Discipline : Chemical		Group: Pollution & Environment	
Parameter	Unit	Test Protocol	Result
Magnesium (as Mg)	mg/kg	Soil Testing in India; 2011	1785
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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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE97130124

ENGINEERING SERVICES PVT. LTD.

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

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

TEST REPORT

Test Report No.	: ELES/RNC/2025/0505	Report Release Date	: 22.01.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2025/SL/0277 : 11.01.2025 : 13.01.2025
Address	: Lohardaga, Jharkhand-835302	Type of Sample Location of Sample	: Soil : Near Dhobi Kutumb, Gurdari Bauxite Mine (584,19ha)
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/05
Period of Analysis	: 13,01,2025 to 22,01,2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed

Discipline: Chemical		Group: Pollution & Environmen	
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 Kanar 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.

Gurdari Bauxite Mine-Environmental Monitoring Report

February 2025

CONTENT

Hind	alco Industries : Gurdari Bauxite Mine Environmental Monitoring Report	February 2025
*	Gurdari Bauxite Mine	
	AMBIENT AIR QUALITY- CORE ZONE	
1	Entrance Gate / Near Mine Office	
2	Near Karkang Mines	
3	Near Mine Weigh Bridge	
4	Near Dhobi Kutumb	
	AMBIENT AIR QUALITY- BUFFER ZONE	
1	Near PakriGada Village	
2	Near Pol Pol Village	
3	Near Shakhuapani Village	
4	Near DipaKujam Village	
	Drinking Water	
	Effluent Water	
	Stack	





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TC-(1558)

TEST REPORT

Test Report No.	: ELES/RNC/2025/1214	Report Release Date	: 25.02.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001185F		

CUSTOMER DET	CUSTOMER DETAILS		and the Children of the Children of the Children
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2025/AA/1242
		Location	: Entrance Gate/Near Mine Office Gurdari Bauxite Mine (584,19ha)
Address : Lohardaga, Jharkhand-835302	- Lobardaca Ibarkhand-835302	Sampling Date	: 15.02.2025 to 16.02.2025
	Sample Received Date	: 19.02.2025	
		Type of Sample	: Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 19.02.2025 to 25.02.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	: 720
3	Relative Humidity (%)	: 57	4.	Weather Condition	: Clear

Discipline : Chemic	al	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part- 23): 2022	84	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	49	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- 2/Sec1): 2023	13.5	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part- 6): 2022	36.1	80 (24hrs)	
Ozone (O ₃)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	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/m³	IS 5182 (Part- 22): 2019	0.018	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 ₆ H ₆)	μg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m¹	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Ama Yadal

****End of Report****

Authorised Signatory

Page 1 of 1

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TC-13587

TEST REPORT

Test Report No.	: ELES/RNC/2025/1215	Report Release Date	: 25.02.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001186F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2025/AA/1243 : Near Karkang Mines Gurdari Bauxite Mine (584.19ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 15.02.2025 to 16.02.2025 : 19.02.2025	
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 19.02.2025 to 25.02.2025	Sampling Done By Sample Condition	; ELES Pvt. Ltd. ; Sealed & Preserved	

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	: 720
_	Relative Humidity (%)	: 57	4	Weather Condition	; Clear

Discipline : Chemic	al	Group:	Group: Atmospheric Pollution			
Parameter Unit		Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	79	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	43	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- 2/Sec1); 2023	13.5	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	26.1	80 (24hrs)		
Ozone (O ₃)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH ₁)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.2	2 (8hrs)		
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.024	I (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Assenie (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		
Benzene (C ₆ H ₆)	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****

Authorised Signatory Akash Kumar

Page 1 of 1

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TC-13587

TEST REPORT

Test Report No.	; ELES/RNC/2025/1216	Report Release Date	: 25.02.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000001187F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2025/AA/1244 : Near Mine Weigh Bridge Gurdari Bauxite Mine (584.19ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 15.02.2025 to 16.02.2025 : 19.02.2025 : Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 19.02.2025 to 25.02.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

METEOROLOGICAL INFORMATION					
1 Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	: 720	
3 Relative Humidity (%)	: 57	4	Weather Condition	: Clear	

Discipline: Chemic	al	Group :	Group: Atmospheric Pollution		
Parameter Unit		Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	94	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	56	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- 2/Sec1): 2023	12.5	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6); 2022	38.3	80 (24hrs)	
Ozone (O ₃)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10); 2019 (NDIR Method)	1.42	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.023	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 ₆ H ₆)	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 Akouh Kumar

Page 1 of 1

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TC-13887

TEST REPORT

Test Report No.	: ELES/RNC/2025/1217	Report Release Date	: 25.02.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000001188F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2025/AA/1245 : Near Dhobi Kutumb Gurdari Bauxite Mine (584.19ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	; 15.02.2025 to 16.02.2025 ; 19.02.2025
Mines Status	: Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 19.02,2025 to 25.02,2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

MI	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	: 720
3	Relative Humidity (%)	: 57	-4	Weather Condition	: Clear

Discipline : Chemic	al	Group :	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	75	100 (24hrs)		
Particulate Matter (PM2,5)	μg/m³	IS 5182 (Part- 24): 2019	39	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2/Sec1): 2023	14.2	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	27.4	80 (24hrs)		
Ozone (O ₃)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	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	0.021	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 ₆ H ₆)	µg/m²	ELES/GC/SOP/06: 2023	<2.5	05(Annual)		
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	Ol(Annual)		

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****End of Report****

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Page 1 of 1

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

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TEST REPORT

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

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2025/AA/1246 : Near Pakri Gada Village : 17,02,2025 to 18,02,2025
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample	: 19.02.2025 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 19.02,2025 to 25.02,2025	Sample Condition	: Sealed & Preserved

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

Discipline : Chemic	al	Group:	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2022	77	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	46	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- 2/Sec1): 2023	12.4	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2022	35.5	80 (24hrs)		
Ozone (O ₃)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH _A)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.42	2 (8hrs)		
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	< 0.002	1 (24hrs)		
Nickel (Ni)	ng/m³	15 5182 (Part- 26); 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		
Benzene (C ₆ H ₆)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)		
Benzo-(a)-Pyreno	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)		

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****End of Report****

Authorised Signatory Alcash Kumar

Quality Manager

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

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TC-13687

TEST REPORT

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

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2025/AA/1247 : Near Pol Pol Village : 17,02,2025 to 18,02,2025
Address	: Lohardaga, Jharkhand-835302	Sample Received Date	: 19.02.2025 : Ambient Air
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 19.02.2025 to 25.02.2025	Sample Condition	: Sealed & Preserved

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

Discipline : Chemic	al	Group:	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	73	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	43	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- 2/Sec1); 2023	11.8	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	28.2	80 (24hrs)	
Ozone (O ₃)	μg/m [†]	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₂)	μg/m²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.28	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	0.022	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	96 (Annual)	
Benzene (C ₄ H ₄)	μg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	

Reviewed by

****End of Report****

Authorised Signatory

Quality Manager

Page 1 of 1

The Donassen mated as Test Report, is isomethy the Laboratory under General Terror and Conditions, only on Company letter head in pre-approved former. The results shown in the Test Report refer or relates only to the jobinstalysis done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory at the time of involvement only and eviding the limits of client's instructions. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the client. The Report within the limits of claim's instruction. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the client. The Report names be improduced except in full and are part of the report in not mice, out of content, without prior vertices approved of the Laboratory. The Report in full or is part shall not be published, advection, used for any legal scients usdans prior permission has been secured from the Management of the Laboratory. Attended in drawn to the limitation of labeling prior permission for the content of the Content of the Content of the Laboratory of the International of the law. All the samples are extended for Midrys from the Date of religious of the Test Report. The samples from Regulatory bodies are to be remined as specified. Any type of Observations or Complaints regarding the Report is in 24 hours from a United States from the Laboratory and the content of the samples from the Laboratory will be accepted. The enter Time schedule openioned in Test Report to in 24 hours former. Abbreviation send: NA (Not Applicable), BCL (Below Determine Limit), Line of Determined Limits.



PLOT NG-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NG:- 20AAECE9713D1Z4

ENGINEERING SERVICES PVT. LTD.

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TC-19587

TEST REPORT

Test Report No.	: ELES/RNC/2025/1220	Report Release Date	: 25.02.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03,2024
ULR No.	± TC1358725000001191F	**	

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date	: ELES/RNC/2025/AA/1248 : Near Shakhuapani Village : 17.02.2025 to 18.02.2025	
Mines Status	: Operational	Sample Received Date Type of Sample Sampling Procedure	: 19.02,2025 : Ambient Air : ELES/DOC/SMPL/02	
(557///www.H5./H11004	Pero County Collins	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 19.02,2025 to 25.02.2025	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORMA	TION		
1	Average Temperature (°C) : 22	2 2	Barometric Pressure (mmHg)	: 720
3	Relative Humidity (%) : 57	7 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	42	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- 2/Sec1): 2023	12.5	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part- 6): 2022	29.5	80 (24hrs)		
Ozone (O ₃)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	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 [‡]	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 ₆ H ₆)	μg/m³	ELES/GC/SOP/06: 2023	<2.5	D5(Annual)		
Benzo-(a)-Pyrene anno 6	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)		

Reviewed by

****End of Report****

Authorised Signatory

Akesh Kumar Guelly Mannear

Page 1 of 1

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

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TO-13387

TEST REPORT

Test Report No.	: ELES/RNC/2025/1221	Report Release Date	: 25.02.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03,2024	
ULR No.	: TC1358725000001192F			

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2025/AA/1249 : Near Dipa Kujam Village : 17,02,2025 to 18,02,2025
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 19.02.2025 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 19.02.2025 to 25.02.2025	Sample Condition	: Sealed & Preserved

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

Discipline: Chemic	al la	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 ₂)	μg/m³	IS 5182 (Part- 2/Sec1): 2023	13.5	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	31.6	80 (24hrs)	
Ozone (O ₃)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m²	IS 5182 (Part- 10): 2019 (NDIR Method)	1.28	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.025	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C ₆ H ₆)	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

Same at

Page I of I

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) 65T NO:- 20AAECF9713D1Z4

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7049907

TEST REPORT

Test Report No.	: ELES/RNC/2025/1299	Report Release Date	: 28.02.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001270F		

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2025/DW/1253 : 15.02.2025 : 19.02.2025 : Drinking Water : TAP Water : Near Entrance Gate	
Mines Status	: Operational	Sampling Procedure	(Gurdari Bauxite Mines) : ELES/DOC/SMPL/01	
Period of Analysis	: 19.02.2025 to 27.02.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Soaled & Preserved	

Discipline : Chemical Group :			Water		ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
pH (at 24.8 °C)	1 23	APHA 24th Ed.2023, 4500-H*	6.56	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 24 th Ed.2023, 2130 B	0.26	1.0	5.0
Taste	-	APHA 24th Ed.2023, 2160 C	Agreeable	Agreeable	Agreeable
Odour	S.	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	342	500	2000
Chloride (as CI)	mg/L	APHA 24th Ed.2023, 4500 CI B	15.3	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 ₁)	mg/L	APHA 24th Ed.2023, 2320 B	142	200	600
Total Hardness (as CaCO ₃)	mg/L	APHA 24th Ed.2023, 2340 C	164	200	600
Sulphate (as SO ₄)	mg/L	APHA 24th Ed.2023, 4500 SO ₄ th-E	9.12	200	400
Nitrate (as NO ₃)	mg/L	APHA 24 th Ed.2023, 4500 NO ₃ -B	3.14	45	No Relaxation

Page 1 of 4

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

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TC-12507

TEST REPORT

 Test Report No.
 : ELES/RNC/2025/1299
 Report Release Date
 : 28.02.2025

 Work Order No.
 : 13612312113
 Work Order Date
 : 28.03.2024

ULR No. : TC1358725000001270F

Discipline : Chemic	al	Gro	ip: Water	The second secon	ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Phenolic Compound (as C ₅ H ₃ 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	43.9	75	200
Anionic Surfactants (as MBAS)	mg/L	APHA 24th Ed.2023, 5540-C	BDL (DL: 0.025)	0,2	1.0
Discipline : Chemic	cal	Gre	oup : Residues i	n Water	
Aluminum (as Al)	mg/L	1S 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 24 th Ed.2023; 3111B	BDL (DL: 0.003)	0.003	No Relaxation
Total Chromium (as Cr)	mg/L	APHA 24 th 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 24th Ed.2023; 3111B	0.047	1.0	No Relaxation
Lead (as Pb)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL; 0.01)	0.01	No Relaxation
Manganese (as Mn)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.05)	0.1	0.3
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 2019	BDL (DL: 0.001)	0.001	No Relaxation
Selenium (as Se)	mg/L	IS 3025 (Part-56): 2019	BDL (DL: 0.01)	0.01	No Relaxation

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20A45KE9713D124

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TE-15507

TEST REPORT

 Test Report No.
 : ELES/RNC/2025/1299
 Report Release Date
 : 28.02.2025

 Work Order No.
 : 13612312113
 Work Order Date
 : 28.03.2024

ULR No. : TC1358725000001270F

Discipline : Chemical		Group: Resid	ues in Water	Regulatory Limit as per 1S10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Zinc (as Zn)	mg/L	APHA 24 th 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
Alachier	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1	20
Atrazine	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2	0.0
Butachlor	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1	25
Chlorpyriphos	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	30	
Ethion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	3.0	
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)		.0
Phorate	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2	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

Page 3 of 4

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 2004ECE97130174

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70-13667

TEST REPORT

Test Report No.	: ELES/RNC/2025/1299	Report Release Date	: 28.02.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001270F		

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	Shall not be detected
Escherichia coli (Qualitative)	Per 100 mL	IS 15185: 2021	Not Detected	and not be detected

Remarks: pH done at Site.

Reviewed by

Ahash Kumar. Quality Manager ****End of Report****

Authorised Signatory

Dr. Deependra Kumor 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:- 20AAECE9713D124 ENGINEERING SERVICES PVT. LTD.

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

Website: www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2025/1299	Report Release Date	: 28.02.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindaico Industries Limited	Sample Ref. No. Sampling Date	: ELES/RNC/2025/DW/1253 : 15.02,2025	
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample Source of Sample Location of Sample	: 19.02.2025 : Drinking Water : TAP Water : Near Entrance Gate	
Mines Status	: Operational	Sampling Procedure	(Gurdari Bauxite Mines) : ELES/DOC/SMPL/01	
Period of Analysis	: 19.02.2025 to 28.02.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Prescryed	

Discipline: Chemical		Group: Water		Annual Street St	ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Mineral Oil*	mg/L	1S 3025 (Part-39): 2021, Clause 6 Infrared Spectroscopic method.	BDL (DL: 0.01)	0.5	No Relaxation

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

Reviewed by

Akash Kumac Quality Manager ****End of Report****

Authorised Signatory

Dr. Deependra Kumbi Sloba Ph. D. Environmental Engg. Technical Discoule

Page 1 of 1

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TEST REPORT

Test Report No. : ELES/RNC/2025/1298 Report Release Date : 28.02.2025

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC1358725000001269F

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date	: ELES/RNC/2025/EF/1252 : 15.02.2025	
		Sample Received Date	: 19.02.2025	
Address	: Lohardaga, Jharkhand-835302	Type of Sample Source of Sample	: Effluent Water : Work Shop Effluent - Gurdar Bauxite Mines (584.19 ha)	
Mines Status	: Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/01 : ELES Pvt. Ltd.	
Period of Analysis	: 19.02.2025 to 27.02.2025	Sample Condition	: Sealed & Preserved	

Discipline : Chemical		Group: Pollution & Environment		Discharge Limits - CPCB EPR, 1986 Schedule VI	
Parameter	Unit	Test Protocol	Result	Inland Surface Water	Land for Irrigation
pH (at 24.8 °C)	-	APHA 24th Ed.2023,4500-H	6.82	5.5-9.0	5.5-9.0
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part-16): 2023	514	**	. 65
Total Suspended Solids (TSS)	mg/L	IS 3025 (Part-17): 2022	12.8	100	200
Dissolved Oxygen (DO)	mg/L	IS 3025 (Part-38): 2019	6.1		=
Biochemical Oxygen Demand (BOD) (at 27 °C for 3 days)	mg/L	IS 3025 (Part-44): 2023	5.0	30	100
Chemical Oxygen Demand (COD)	mg/L	IS 3025 (Part-58): 2023	62.9	250	22
Dissolved Phosphate (as P)	mg/L	1S 3025 (Part-31/Sec-1): 2022	BDL (DL: 0.5)	5.0	
Fluoride (as F)	mg/L	IS 3025 (Part-60); 2019	0.612	2.0	
Sulphide (as S)	mg/L	IS 3025 (Part-29): 2019	BDL (DL: 0.04)	2.0	
Oil & Grease	mg/L	IS 3025 (Part-39): 2021	1.6	10	10

Page 1 of 2

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

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TEST REPORT

Test Report No.	: ELES/RNC/2025/1298	Report Release Date	: 28.02.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

ULR No. : TC1358725000001269F

Discipline : Chemical		Group: Resi	Group: Residues in Water		its – CPCB hedule VI
Parameter	Unit	Test Protocol	Result	Inland Surface Water	Land for Irrigation
Lead (as Pb)	mg/L	APHA 24 th Ed.2023, 3111 B	BDL (DL: 0.01)	0.1	i#i
Manganese (as Mn)	mg/L	APHA 24th Ed.2023, 3111 B	0.152	2.0	870
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 2019	BDL (DL: 0.001)	0.01	***
Nickel (as Ni)	mg/L	APHA 24th Ed.2023, 3111 B	BDL (DL: 0.01)	3.0	**
Zinc (as Zn)	mg/L	APHA 24th Ed.2023, 3111 B	0.169	5.0	3.775

Remarks: pH & DO done at Site.

Reviewed by

Alcoh Kumar Duelity Manager ****End of Report***

Authorised Signatory

Dr. Deependra Kumur Sinha Ph. D. Environmental Engg. Technical #5 leger

Page 2 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2025/1223	Report Release Date	: 25.02.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001194F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2025/SM/1251 : Gurdari (584.19ha) Bauxite Mine DG (62 KVA)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 17.02.2025 : 19.02.2025	
Mines Status	: Operational	Type of Sample Sampling Procedure Sampling Done By	: Flue Gas : ELES/DOC/SMPL/02(A) : ELES Pvt. Ltd.	
Period of Analysis	: 19.02.2025 to 25.02.2025	Sample Condition	: Sealed	

1	Particular of the Plant	Bauxite Mines
2	Emission Due to	: Burning of HSD
3	Stack Connected to	: DG 62 KVA
4	Material of Construction of Stack	: MS
5	Stack Height from Ground Level (m)	::4.5
6	Height of Sampling Port from Ground Level (m)	: 45
7	Inner Diameter of Stack at Sampling Point (m)	: 0.102
8	Shape of the Stack	: Circular
9	Working Load of the Stack	: 62 KVA
10	Pollution Control System	; N/A
11	Ladder & Platform	Temporary

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

Page 1 of 2

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TEST REPORT

Test Report No. : ELES/RNC/2025/1223 Report Release Date : 25.02.2025

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC1358725000001194F

Discipline : Cl	iemical	Group : Atmospher	ric Pollution
Parameter	Unit	Test Protocol	Results
Particulate Matter (PM)	mg/Nm³	IS 11255(Part-1): 2023	44
Sulphur Di-Oxide (SO ₂)	mg/Nm ³	USEPA 6C: 2017	28
Oxides of Nitrogen (NO ₃)	mg/Nm³	USEPA 7E: 2020	85
Carbon Monoxide (CO)	mg/Nm ²	USEPA 10B: 2017	40
Carbon Di- Oxide (CO ₂)	9/6	USEPA 3A: 2017	4.9
Flue Gas Temperature	°C	IS 11255 (Part-3): 2018	161
Barometric Pressure	mmHg	IS 11255 (Part-3): 2018	720
Velocity of Flue Gas	m/sec	IS 11255 (Part-3): 2018	12.37
Quantity of Gas Flow	Nm³/hr	IS 11255 (Part-3): 2018	242

Reviewed by

****End of Report***

Authorised Signatory

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ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT. LTD.

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

Gurdari Bauxite Mine-Environmental Monitoring Report

March 2025

CONTENT

Hind	alco Industries : Gurdari Bauxite Mine Environmental Monitoring Report March 2025
	Gurdari Bauxite Mine
	AMBIENT AIR QUALITY- CORE ZONE
1	Entrance Gate / Near Mine Office
2	Near Karkang Mines
3	Near Mine Weigh Bridge
4	Near Dhobi Kutumb
	AMBIENT AIR QUALITY- BUFFER ZONE
1	Near PakriGada Village
2	Near Pol Pol Village
3	Near Shakhuapani Village
4	Near DipaKujam Village
	AMBIENT NOISE
	WORKZONE NOISE
	Spring Water
1	Jhapa Jhuri
	Stream Water
1	Up Stream (Dhardhari Nadi)
2	Down Stream (Dhardhari Nadi)
3	Up Stream (Shankh Nadi)
4	Down Stream (Shanish Nadi)
5	Up Stream (Koyal River)
6	Down Stream (Koyal River)



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TEST REPORT

 Test Report No.
 : ELES/RNC/2025/1993
 Report Release Date
 : 24.03.2025

 Work Order No.
 : 13612312113
 Work Order Date
 : 28.03.2024

ULR No. : TC1358725000001951F

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2025/AA/2135	
		Location	: Entrance Gate/Near Mine Office Gurdari Bauxite Mine (584,19ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 11.03.2025 to 12.03.2025	
		Sample Received Date	: 17.03.2025	
		Type of Sample	: Ambient Air	
Mines Status	; Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
N	17 02 2027 - 21 02 2027	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 17.03.2025 to 24.03.2025	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	MATION				
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 715	
3	Relative Humidity (%)	:59	4	Weather Condition	: Clear	

Discipline: Chemic	al	Group:	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	88	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	51	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part- 2/Sec1): 2023	14.8	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	34.6	80 (24hrs)		
Ozone (O ₂)	μ <u>α</u> /m³	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.23	2 (8hrs)		
Lead (Pb)	µg/m³	IS 5182 (Part- 22); 2019	0.015	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m ¹	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		
Benzene (C _e H ₆)	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****

Authorised Signatory

Dr. Deependra Kumar Sinha

Ph. D. Environmental Engg.

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Page 1 of 1

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TC-13887

TEST REPORT

Test Report No.	: ELES/RNC/2025/1994	Report Release Date	: 24.03.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000001952F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2025/AA/2136 : Near Karkang Mines Gurdari Bauxite Mine (584.19ha)	
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	

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	26	2	Barometric Pressure (mmHg)	:715
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear

Discipline: Chemic	al	Group:	Atmospheric !	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	84	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	47	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	1S 5182 (Part- 2/Sec1): 2023	12.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	24,3	80 (24hrs)
Ozone (O ₃)	µg/m³	1S 5182 (Part- 9): 2019	<20.0	100 (Shrs)
Ammonia (NH ₃)	μg/m²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.33	2 (8hrs)
Lead (Pb)	μg/m²	IS 5182 (Part- 22): 2019	0.021	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 _s H ₆)	µg/m ³	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 Kemar

****End of Report****

Ph. D. Environmental Engo

Technical Manager

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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/2025/1995	Report Release Date	: 24.03.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000001953F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2025/AA/2137	
	All and the Control of the Control o	Location	: Near Mine Weigh Bridge Gurdari Bauxite Mine (584.19ha	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 11.03.2025 to 12.03.2025	
P.R. Index. of 11 Sc		Sample Received Date	: 17,03.2025	
		Type of Sample	: Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 17.03.2025 to 24.03.2025	Sampling Done By	: ELES Pvt. Ltd.	
Landan and Language	PATRICIA STATE OF THE PARTY OF	Sample Condition	: Sealed & Preserved	

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

Discipline : Chemic	al	Group:	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part-23): 2022	87	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m ³	1S 5182 (Part- 24); 2019	48	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	1S 5182 (Part- 2/Sec1): 2023	11.7	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part- 6): 2022	39.1	80 (24hrs)	
Ozone (O3)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.57	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part- 22); 2019	0.020	1 (24hrs)	
Nickel (Ni)	ng/m ¹	IS 5182 (Part-26); 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C ₄ H _k)	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 Rumar

****End of Report****

Authorised Signatory Dr. Deependra Kumar Sinha

Page 1 of 1

Technical Manager The Decement record in Tort Report, is record by the Laboratory under General Toron and Conditions, only on Company latter hand as pre-approved format. The results down to the Test Report reflects the findings down by the Laboratory only. The influencian stated on the Test Report reflects the findings down by the Laboratory at the store of accompany and a supplementary only. within the limits of chair's immunities. The Laborary is responsible for all the information or data provided on the report, except the information which is provided by the class. The Report cannot be reproduced encays in full and now part of the report is not taken one of content, without price wanten approved of the Laboratory. The Report is full or in part shall see be published. afraction total for any legal actions action prior permission has been secured from the Messgement of the Laboratory. Assuming to drawn to the limitation of lightley, companion and juried atoms. comes. Any amorthmized observation of the content of appropriate of the Test Report is unless bid and effective may be prosessed to the fulfact except of the law. All the complex me retained for 90 days from the Daw of release own of the Test Report. The complex from Regulatory bedieve are to be estained as specified. Any type of Observations or Complexes regarding the Report what be done within 15 days from the Date of Test Report released instant. After the tone period special speed before, we complete to will be accepted. The arrive Time schooleds mentioned in Last Seport is in 24tones format. Althresistion used: 27/5 (Net Applicable); IER. (Below Desarton Limit); EDI, (Lower Desarton Limit).



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

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



TC-13567

TEST REPORT

Test Report No.	: ELES/RNC/2025/1996	Report Release Date	: 24.03.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03,2024
ULR No.	: TC1358725000001954F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2025/AA/2138 : Near Dhobi Kutumb
		E-Williams	Gurdari Bauxite Mine (584.19ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 11.03.2025 to 12.03.2025 : 17.03.2025
		Type of Sample	: Ambient Air
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 17.03.2025 to 24.03.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 715
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear

al	Group:	Group: Atmospheric Pollution		
Unit	Test Protocol	Result	Regulatory Limit	
μg/m ³	IS 5182 (Part- 23): 2022	79	100 (24hrs)	
μg/m³	1S 5182 (Part- 24): 2019	43	60 (24hrs)	
μg/m³	IS 5182 (Part- 2/Sec1): 2023	12.6	80 (24hrs)	
μg/m³	IS 5182 (Part- 6): 2022	29.4	80 (24hrs)	
µg/m³	IS 5182 (Part- 9); 2019	<20.0	100 (8hrs)	
µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
mg/m³	IS 5182 (Part- 10); 2019 (NDIR Method)	1.22	2 (8hrs)	
μg/m³	IS 5182 (Part- 22): 2019	0.016	1 (24hrs)	
ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)	
	μg/m³ μg/m³ μg/m³ μg/m³ μg/m³ μg/m³ μg/m³ μg/m³ ng/m³ μg/m³ μg/m³ μg/m³	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 mg/m³ IS 5182 (Part- 10): 2019 (NDIR Method) μg/m³ IS 5182 (Part- 22): 2019 ng/m³ IS 5182 (Part- 26): 2020 ng/m³ IS 5182 (Part- 26): 2020	Unit Test Protocol Result μg/m³ IS 5182 (Part- 23): 2022 79 μg/m³ IS 5182 (Part- 24): 2019 43 μg/m³ IS 5182 (Part- 2/Sec1): 2023 12.6 μg/m³ IS 5182 (Part- 6): 2022 29.4 μg/m³ IS 5182 (Part- 9): 2019 <20.0	

Reviewed by Akgah Kumar

****End of Report****

Authorised Signatory Dr. Deependra Kumar Sinha

Creatity Manager

- Pill D. Environmental Eng

Page I of I

The Deciminal action of the Report, is issued by the Laboratory under General Trans and Conditions, only or Company latest bend in preparation of the Enteriory of the Laboratory only. The information one of the Test Report reflects the findings done by the Laboratory of the transcription of the information of data provided on the report, except the information which is provided by the classical and the information of data provided on the report, except the information which is provided by the effect in the information of data provided of the Laboratory. The Report is full and any part of the open is not taken out of contract, without given written approved in the Laboratory. The Report is full and any part of the open is not taken out of sentence, without given written approved in the Laboratory. The Report is not part shall not be published, advantaged actions arises point permission has been secured from the Managament of the Laboratory. Assumption is drawn to the limited activities at factories at a presentation of the contract of the Test Report is unlowed and offended may be produced on the full of respect of the Test Report is unlowed and offended may be produced on the full of the supplies are retained for Philips from the Date of the Test Report. The camples from Regulatory bedies are to be retained as equalities. As a type of Observations or Compliance regarding the Regions is a Managament of the Laboratory and the supplies the Region is a Managament of the Laboratory. The entered in Compliance of the Test Report released in the time period stand before, no compliance will be accepted. The entered laborator Region in 24 features forms. Advancement and Managament and Managament and the form the Laboratory and the features and the form the Laboratory and the features and the



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TEST REPORT

 Test Report No.
 : ELES/RNC/2025/1997
 Report Release Date
 : 24.03.2025

 Work Order No.
 : 13612312113
 Work Order Date
 : 28.03.2024

ULR No. : TC1358725000001955F

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

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

Discipline: Chemic	al	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	72	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	41	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	15 5182 (Part- 2/Sec1): 2023	13.8	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	32.4	80 (24hrs)		
Ozone (O ₃)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)		
Ammonia (NH ₂)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDFR Method)	1.35	2 (8hrs)		
Lead (Pb)	µg/m³	IS 5182 (Part- 22): 2019	< 0.002	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)		
Benzene (C ₆ H ₆)	ug/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)		
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	01(Annual)		

Reviewed by
Akash Kumar

Quality Manage

****End of Report****

Authorised Signatory Dr. Deependra Kumar Sinha

Ph. D. Environmental Engg.

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The Determination of the Report is assert by the Laboratory scales Demont Terms and Combinate, only an Company better head in proveparated format. The vende above in the Term Report reflects the findings alone by the Laboratory at the time of morthways it may be included as the impact of the included on the impact of the information. The Laboratory is the time of morthways in the time of morthways in the time of morthways in the time of mortways in the impact in the impact is not other one of manage, without paint within a giptoral of the Laboratory. The Report in the first or in part shall not be published, advection, and the management of the Laboratory. Amendment of the laboratory in the first or in part shall not be published, advection, and the impact in the first in the fallowing of more and published times. Any completioned alternates of Daliferran of the content or appearance of the Tert Report. The assert of the laboratory is provided as a positive of the fallowing of the laboratory reporting to the provided in the fallow of the laboratory of the laboratory in the flagment of the date within 15 days from the Date of Tert Report. The assert extensive was period sensed before, as completes will be accepted. The enter Time schedule maximized in Text Report is an 24 heart forms. Althoroughout used "On (See Applicable), 1915, (Releas Determinational Limit). LESS, (Limits)



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TEST REPORT

 Test Report No.
 : ELES/RNC/2025/1998
 Report Release Date
 : 24.03.2025

 Work Order No.
 : 13612312113
 Work Order Date
 : 28.03.2024

ULR No. : TC1358725000001956F

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2025/AA/2140 : Near Pol Pol Village : 12.03.2025 to 13.03.2025	
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample	: 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	

1	Average Temperature (°C) : 27	2	Barometric Pressure (mml	lg) : 715
	Relative Humidity (%) : 59	4	Weather Condition	: Clear

Discipline: Chemic	eal .	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/m ³	IS 5182 (Part- 24); 2019	45	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- 2/Sec1); 2023	12.3	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part- 6): 2022	26.5	80 (24hrs)	
Ozone (O ₃)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.31	2 (8hrs)	
Lead (Pb)	µg/m!	IS 5182 (Part- 22): 2019	0.026	I (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part- 26): 2020	<6.0	20 (Annual)	
Arsenic (As)	ng/sm³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)	
Benzene (C ₄ H ₄)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	Ol(Annual)	

Angel Replayed by
Quality Managar

****End of Report***

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Dr. Deependill Kamer Sinha Ph. D. Environmental Engg.

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Page 1 of 1

The Discount could as Too Report, is issued by the Laboratory under Green's Termis and Combiners, only on Company letter head in prosperoral forms. The results shown in the Term Report selfer is minimized by the Laboratory at the fine of involvement with the finite of discounts about the Peri Report selfers the findings done by the Laboratory at the finite of involvement with the inside of discounts in the Laboratory at the finite of involvement with the inside of discounts of the majoritation. The Laboratory is responded for all the selfers price weights approved of the Laboratory. The Report is not that the provided on the reports about the report of the laboratory at the contract of the Laboratory at the Laboratory. The Report is not the provided on the provided on the reports of the laboratory at the laboratory at the laboratory at the laboratory. The Report is not the provided on the provided of the Laboratory at the laboratory a



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TEST REPORT

 Test Report No.
 : ELES/RNC/2025/1999
 Report Release Date
 : 24.03.2025

 Work Order No.
 : 13612312113
 Work Order Date
 : 28.03.2024

ULR No. : TC1358725000001957F

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2025/AA/2141 : Noar Shakhuapani Village : 12.03.2025 to 13.03.2025
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample	: 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 INFOR	MATION			
1	Average Temperature (°C)	; 27	2	Barometric Pressure (mmHg)	: 715
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear

Discipline: Chemic	al	Group:	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μ <u>g</u> /m³	IS 5182 (Part- 23): 2022	74	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	40	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	TS 5182 (Part- 2/Sec1): 2023	9.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part- 6): 2022	24.3	80 (24hrs)
Ozone (O ₁)	µg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	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/m²	IS 5182 (Part- 22): 2019	0.033	1 (24hrs)
Nicket (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 ₆ H ₆)	µg/m³	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05: 2023	<0.5	OI(Annual)

Reviewed by

Alash Kumar Quality Manager ****End of Report****

Or. Deependra Kumar Sinha

Ph. D. Environmental Engg.

Page 1 of 1

The Discoursest stated for Nepton, is issued by the Laboratory scalar Constant Letter and Constitions, only on Company letter beard in pre-approved format. The modes shown in the Next Report retire or relation only to the judicinal pass shows by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory at the torse of evolutionates and within the limits of affects in interaction. The Laboratory is responsible for all the sufferences or data provided on the report, except the information which is provided by the claim. The Report states reporting except in full states on part of the report is one ration, out to company without prior written approved of the Laboratory. The Dispose in full on it is not be prioritistical advances, and for any large actions only a permission has been excepted from the East Suggestion of the Art Suggestion of the



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TC-10587

TEST REPORT

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

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date	: ELES/RNC/2035/AA/2142 : Near Dipa Kujam Village : 12.03.2025 to 13.03.2025 : 17.03.2025 : Ambient Air
Mines Status	: Operational	Type of Sample 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	TEOROLOGICAL INFO	RMATION			0	
1	Average Temperature (°C)	: 27	2	Barometric Pressure (mm	Hg) :715	
3	Relative Humidity (%)	:59	4	Weather Condition	Clear	

Discipline : Chemic	enl	Group:	Atmospherie !	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part- 23): 2022	79	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	45	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part- 2/Sec1); 2023	12.9	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	15 5182 (Part- 6): 2022	29.2	80 (24hrs)
Ozone (O ₂)	μg/m³	IS 5182 (Part- 9): 2019	<20.0	100 (8hrs)
Ammonia (NH ₂)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part- 10): 2019 (NDIR Method)	1.20	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part- 22): 2019	0.028	1 (24hrs)
Nickel (Ni)	ng/m³	1S 5182 (Part- 26): 2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01: 2021	<2.0	06 (Annual)
Benzene (C ₆ H ₆)	µg/m²	ELES/GC/SOP/06: 2023	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m ¹	ELES/GC/SOP/05: 2023	< 0.5	01(Annual)

Reviewed by Akash Kumtr

Quality Manager

****End of Report****

Dr. Deepend Rulled Sinha Ph. D. Environmental Engg.

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Page 1 of 1

The Discounts should be Test Report, is instead by the Laboratory waker Grown Turns and Conditions, only on Company letter hand in pre-approved former. The continuous of the Test Report performs the findings show by the Laboratory at the states of involvement and) and writing the limits of algority into actions. The Laboratory is responsible for all the information search on the report, enterpt the information which is provided by the allows the importance which is provided by the allows the report counts to report the information which is provided by the allows the report counts to report the information of the report is not the report of the Laboratory. The Report is full and may part of the report as the first three presents of the Laboratory Attaining the report of the Interior of the Laboratory Attaining of Enteror of the Interior of the Laboratory Attaining the report of the Interior of Interior of the Interior of Inte



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



TEST REPORT

Test Report No.	: ELES/RNC/2025/2018	Report Release Date	: 24.03,2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000001976F		

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) : 26	2	Barometric Pressure (mm	Hg) :715	
3	Relative Humidity (%) : 59	4	Weather Condition	: Clear	

Discipline : Chemical			Group: Atn	nospheric l	Pollution
Location	Unit	Test Protocol	Resu	ılt	Regulatory Limit (Industrial Zone)
Near Mine Office , Gurdari Bauxite Mine (584,19ha) dB(A) IS 9989: 2020	Time	Leg			
	dR(A)	IS 9989: 2020	Day Time	63	75 dB(A) Day Time
Sample ID: ELES/RNC/2025/AN/2160			Night Time	48	70 dB(A) Night Time

Reviewed by Akash Kumar Quality Managar

****End of Report****

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

Page 1 of 1

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

ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2025/2052	Report Release Date	: 25.03.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000002009F	- II - I		

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/SW/2172 : 12.03.2025 : 17.03.2025 : Surface Water : Up Stream : Sankh Nadi, Gurdari Bauxite Mine (584.19ha)	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 17.03.2025 to 24.03.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

Discipline: Chemical		Gr	oup: Water	Tolerance Limits
Parameter	Unit	Test Protocol	Result	us per IS 2296-1992 Class C (Inland Surface Water)
pH (at 24.9 °C)	H	IS 3025 (Part-11): 2022	6.81	6.5-8.5
Colour	Hazen	IS 3025 (Part -4): 2021	3.8	300
Odour	a	IS 3025 (Part-5) : 2018	Unobjectionable	
Turbidity	NTU	IS 3025 (Part-10): 2023	7.43	200
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part-16): 2023	70.0	1500
Total Alkalinity (as CaCO ₂)	mg/L	IS 3025 (Part-23): 2023	22.4	-
Total Hardness (as CaCO ₅)	mg/L	IS 3025 (Part-21): 2019	29.4	**
Sulphate (as SO ₄)	mg/L	IS 3025 (Part-24/Sec1): 2022	7.2	400
Chloride (as CI)	mg/L	IS 3025 (Part-32): 2019	9.7	600
Fluoride (as F)	mg/L	IS 3025 (Part-60): 2019	BDL (DL: 0.1)	1.5
Nitrate (as NO ₃)	mg/L	APHA 24th Ed.2023, 4500 NO ₃ -B	1.42	50

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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/2025/2052 Report Release Date : 25.03.2025

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC1358725000002009F

Discipline: Chemical		Group: Wa	iter	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water
Free Residual Chlorine (RFC)	mg/L	IS 3025 (Part-26): 2021	BDL (DL: 0.1)	**
Phenols Compounds (as C ₆ H ₅ OH)	mg/L	IS 3025 (Part-43/Sec1): 2022	BDL (DL: 0.001)	0.005
Calcium (as Ca)	mg/L	IS 3025 (Part-40); 2019	7.8	++
Discipline : Cher	nical	Gre	oup : Residues	in Water
Aluminum (as AI)	mg/L	IS 3025 (Part-55); 2003;RA2019	BDL (DL: 0.02)	==
Arsenic (as As)	mg/L	IS 3025 (Part 37):2022	BDL (DL: 0.005)	0.2
Boron (as B)	mg/L	IS 3025 (Part-57): 2021	BDL (DL: 0.2)	let.
Cadmium (as Cd)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.003)	0.01
Total Chromium (as Cr)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.03)	0.05
Copper (as Cu)	mg/L	IS 3025 (Part 42): 2019	BDL (DL: 0.03)	1.5
Iron (as Fe)	mg/L	APHA 24th Ed.2023; 3111B	0.213	50
Lead (as Pb)	mg/L	АРИА 24 [®] Ed.2023; 3111В	BDL (DL; 0.01)	0.1
Manganese (as Mn)	mg/L	APHA 24 th Ed 2023; 3111B	BDL (DL: 0.05)	(#)
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 2019	BDL (DL: 0.001)	7,55
Selenium (as Se)	mg/L	IS 3025(Part-56); 2019	BDL (DL: 0.01)	0.05
Zinc (as Zn)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.1)	15

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PLOT NO-3D, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D1Z4

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TEST REPORT

Test Report No. : ELES/RNC/2025/2052 Report Release Date : 25.03.2025

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC1358725000002009F

Discipline : Chemi	cal	Group: Residues	in Water	Tolerance Limits
Parameter Unit		Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
Cyanide (as CN)	mg/L	APHA 24th Ed.2023, 4500 CN-E	BDL (DL: 0.012)	0.05
Polymoclear Aromatic Hydrocarbons (PAH)	µg/1.	ELES/GC/SOP/04: 2023	BDL (DL: 0.05)	(#)
Pesticides				
Alachior	pg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	377.5
Atrazine	μg/f	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	703
Butachlor	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	(2) (
Chlorpyriphos	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	**
Ethion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	922
Malathion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	(ee)
Methyl parathion	μg/L.	ELES/GC/SOP/01: 2023	BDL (DL: 0.1)	377
Monocrotophos	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	**
Phorate	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	5 ** 1
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)	344

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

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7C-13582

TEST REPORT

Test Report No. : ELES/RNC/2025/2052 Report Release Date : 25.03.2025

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC1358725000002009F

Pesticides				Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
Alpha HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.006)	***
Вета НСН	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	
Delta HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	E
Gamma HCH (Lindane)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	(##)
Endosulfan (alpha, beta and sulphate)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	•
DDT(o,p and p,p-isomers of DDT) (DDE and DDD)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	1
Discipline: Biolo	ogical	Gre	oup: Water	
Total Coliform	CFU/100 mL	IS 15185: 2021	3.86×10 ³	5000
Escherichia culi	CFU/100 mL	IS 15185: 2021	53.0	

Remarks: pH & RFC done at site.

Reviewed by Akash Kumar Quality Manager

****End of Report****

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

Page 4 of 4

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D124 ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2025/2052	Report Release Date	: 25.03.2025	
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/SW/2172 : 12.03.2025 : 17.03.2025 : Surface Water : Up Stream : Sankh Nadi, Gurdari Bauxite Mine (584,19ha)	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 17.03.2025 to 25.03.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

Discipline : Chemical Group : Water				Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water
Taste	20	APHA 24th Ed.2023, 2160C	N/A	**
Anionic Surfactants (as MBAS)	mg/L	APHA 24 ^e Ed.2023, 5540-C	BDL (DL: 0.025)	1.0
Mineral Oil*	mg/L	IS 3025 (Part-39):2021 (Clause 6 Infrared Spectroscopic Method)	BDL (DL: 0.05)	-77.

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

Reviewed by Akash Kumar Quality Manager

****End of Report****

Ph. D. Environmental Engg. Technical Manager

Page 1 of 1

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

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7C-1358

TEST REPORT

Test Report No.	: ELES/RNC/2025/2053	Report Release Date	: 25.03.2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000002010F		

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/SW/2173 : 12.03.2025 : 17.03.2025 : Surface Water : Down Stream : Sankh Nadi, Gurdari Bauxite Mine (584.19ha)	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 17.03.2025 to 24.03.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

Discipline: Chemical		Gr	oup: Water	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per 15 2296-1992 Class C (Inland Surface Water)
pH (at 24.9 °C)	14	IS 3025 (Part-11): 2022	6.59	6.5-8.5
Colour	Hazen	15 3025 (Part -4) : 2021	4.0	300
Odour	::=	IS 3025 (Part-5): 2018	Unobjectionable	#5
Turbidity	NTU	IS 3025 (Part-10): 2023	5.88	itte
Total Dissolved Solids (TDS)	mg/L	1S 3025 (Part-16): 2023	106	1500
Total Alkalinity (as CaCO ₁)	mg/L	IS 3025 (Part-23): 2023	32.6	-
Total Hardness (as CaCO ₅)	mg/L	IS 3025 (Part-21): 2019	41.1	120
Sulphate (as SO ₂)	mg/L	IS 3025 (Part-24/Sec1): 2022	8.9	400
Chloride (as CI)	mg/L	IS 3025 (Part-32): 2019	16.5	600
Fluoride (as F)	mg/L	IS 3025 (Part-60): 2019	BDL (DL: 0.1)	1.5
Nitrate (as NO ₃)	mg/L	APHA 24th Ed.2023, 4500 NO ₃ -B	1.95	50

Page 1 of 4

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

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YC-1358

TEST REPORT

Test Report No. : ELES/RNC/2025/2053 Report Release Date : 25.03.2025

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC1358725000002010F

Discipline: Chemical	[Group : Wa	iter	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
Free Residual Chlorine (RFC)	mg/L	IS 3025 (Part-26) : 2021	BDL (DL: 0.1)	
Phenols Compounds (as C ₆ H ₆ OH)	mg/L	1S 3025 (Part-43/Sec1): 2022	BDL (DL: 0.001)	0.005
Calcium (as Ca)	mg/L	1S 3025 (Part-40): 2019	11.0	(111)
Discipline : Cher	nical	Gre	oup: Residues	in Water
Aluminum (as Al)	mg/L	IS 3025 (Part-55); 2003;RA2019	BDL (DL: 0.02)	
Arsenic (as As)	mg/L	IS 3025 (Part 37):2022	BDL (DL: 0.005)	0.2
Boron (as B)	mg/L	IS 3025 (Part-57): 2021	BDL (DL: 0,2)	740
Cadmium (as Cd)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.003)	0.01
Total Chromium (as Cr)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.03)	0.05
Copper (as Cu)	mg/L	IS 3025 (Part 42): 2019	BDL (DL: 0.03)	1.5
Iron (as Fe)	mg/L	APHA 24th Ed.2023; 3111B	0.248	50
Lead (as Pb)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.01)	0.1
Manganese (as Mn)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.05)	**
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 2019	BDL (DL: 0.001)	-
Selenium (as Se)	mg/L	IS 3025(Part-56): 2019	BDL. (DL: 0.01)	0.05
Zinc (as Zn)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.1)	15

Page 2 of 4

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

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TEST REPORT

Test Report No. : ELES/RNC/2025/2053 Report Release Date : 25.03.2025

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC1358725000002010F

Discipline : Chemical Group : Residues in Water				Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
Cyanide (as CN)	mg/l.	APHA 24th Ed.2023, 4500 CN-E	BDL (DL: 0.012)	0.05
Polynuclear Aromatic Hydrocarbons (PAH)	μg/L	ELES/GC/SOP/04; 2023	BDL (DL: 0.05)	
Pesticides			110000000000000000000000000000000000000	
Alachlor	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	[-**]
Atrazine	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2
Butachlor	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	(#)
Chlorpyriphos	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	? ± 5
Ethion	μg/1.	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	ar a
Malathion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	
Methyl parathion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.1)	1.77
Monocrotophos	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	(華)
Phorate	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	>**
Phorate Sulphone	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	
Dieldrin	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.01)	(#)

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

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TC-13587

TEST REPORT

Test Report No. : ELES/RNC/2025/2053 Report Release Date : 25.03.2025

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC1358725000002010F

Pesticides	Tolerance Limits			
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
Alpha HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.006)	378
Beta HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL; 0.02)	228
Delta HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	<u>6</u> €.
Gamma HCH (Lindane)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	
Endosulfan (alpha, beta and sulphate)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	-
DDT(o,p and p.p-isomers of DDT) (DDE and DDD)	μg/L	ELES/GC/SOP/02; 2023	BDL (DL: 0.05)	(41)
Discipline: Biolo	ogical	Gre	oup: Water	
Total Coliform	CFU/100 mL	IS 15185; 2021	2.50×10 ²	5000
Escherichia coli	CFU/100 mL	IS 15185: 2021	BDL (DL: 1.0)	**

Remarks: pH & RFC done at site.

Reviewed by Akash Kumar Quality Manager

****End of Report***

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

Technical Manager

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TEST REPORT

Test Report No.	: ELES/RNC/2025/2053	Report Release Date	: 25.03.2025	
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/SW/2173 : 12.03.2025 : 17.03.2025 : Surface Water : Down Stream : Sankh Nadi, Gurdari Bauxite Mine (584.19ha)	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 17.03.2025 to 25.03.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

Discipline : Chemical Grou			up: Water	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per 1S 2296-1992 Class C (Inland Surface Water)
Taste		APHA 24th Ed:2023, 2169C	N/A	le.
Anionic Surfactants (as MBAS)	mg/L	APHA 24th Ed.2023, 5540-C	BDL (DL: 0.025)	1.0
Mineral Oil*	mg/L	1S 3025 (Part-39):2021 (Clause 6 Infrared Spectroscopic Method)	BDL (DL: 0.05)	: 14

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

Reviewed by Akash Kumar Quality Manager

****End of Report****

Authorised Signatory

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

Page I of 1

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TEST REPORT

Test Report No.	: ELES/RNC/2025/2054	Report Release Date	: 25,03,2025
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024
ULR No.	: TC1358725000002011F		

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/SW/2174 : 12.03.2025 : 17.03.2025 : Surface Water : Up Stream : Dhardhari Nadi, Gurdari Bauxite Mine (584.19ha)	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 17.03.2025 to 24.03.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

Discipline : Chemical			oup: Water	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per 1S 2296-1992 Class C (Inland Surface Water
pH (at 24.9 °C)	i de	IS 3025 (Part-11): 2022	6.51	6.5-8.5
Colour	Hazen	IS 3025 (Part -4): 2021	6.2	300
Odour	: : : : : : : : : : : : : : : : : : :	IS 3025 (Part-5) ; 2018	Unobjectionable	355
Turbidity	NTU	IS 3025 (Purt-10): 2023	12.4	-
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part-16): 2023	58.0	1500
Total Alkalinity (as CaCO ₁)	mg/L	1S 3025 (Part-23): 2023	12.2	-
Total Hardness (as CaCO ₂)	mg/L	IS 3025 (Part-21): 2019	19.6	***
Sulphate (as SO ₄)	mg/L	IS 3025 (Part-24/Sec1): 2022	5.8	400
Chioride (as CI)	mg/L	IS 3025 (Part-32): 2019	10.6	600
Fluoride (as F)	mg/L	IS 3025 (Part-60); 2019	BDL (DL: 0.1)	1.5
Nitrate (as NO ₂)	mg/L	APHA 24th Ed.2023, 4500 NO ₃ -B	0.76	50

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TEST REPORT

Test Report No. : ELES/RNC/2025/2054 Report Release Date : 25.03.2025

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC1358725000002011F

Discipline : Chemical		Group: Wa	der	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
Free Residual Chlorine (RFC)	mg/L	IS 3025 (Part-26) : 2021	BDL (DL: 0.1)	[- 11 2
Phenols Compounds (as C _c H ₅ OH)	mg/L	IS 3025 (Part-43/Sec1): 2022	BDL (DL: 0.001)	0.005
Calcium (as Ca)	mg/L	IS 3025 (Part-40); 2019	5.2	(**)
Discipline : Cher	nical	Gre	oup : Residues	in Water
Aluminum (as Al)	mg/L	1S 3025 (Part-55): 2003;RA2019	BDL (DL: 0.02)	-
Arsenic (as As)	mg/L	IS 3025 (Part 37):2022	BDL (DL: 0.005)	0.2
Boron (as B)	mg/L	IS 3025 (Part-57): 2021	BDL (DL: 0.2)	570
Cadmium (as Cd)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.003)	0.01
Total Chromium (as Cr)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.03)	0.05
Copper (as Cu)	mg/L	IS 3025 (Part 42): 2019	BDL (DL: 0.03)	1.5
Iron (as Fe)	mg/L	APHA 24th Ed.2023; 3111B	0.279	50
Lead (as Pb)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL; 0.01)	0.1
Manganese (as Mn)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.05)	(**)
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 2019	BDL (DL: 0.001)	
Selenium (as Se)	mg/L	IS 3025(Part-56): 2019	BDL (DL: 0.01)	0.05
Zinc (as Zn)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.1)	15

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Service School Commission (Control of Section 1977)



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TEST REPORT

Test Report No. : ELES/RNC/2025/2054 Report Release Date : 25.03.2025

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC1358725000002011F

Discipline : Chemie	cul	Group: Residues	in Water	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
Cyanide (as CN)	mg/L	APHA 24th Ed. 2023, 4500 CN-E	BDL (DL: 0.012)	0.05
Polynuclear Aromatic Hydrocarbons (PAH)	μg/L	ELES/GC/SOP/04: 2023	BDL (DL: 0.05)	#
Pesticides				
Alachlor	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1,000
Atrazine	μg/L,	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	-
Butachlor	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	7: **
Chlorpyriphos	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	(55)
Ethion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	:#3
Malathion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	:#6
Methyl parathion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.1)	(**)
Monocrotophos	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	196
Phorate	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	- 11
Phorate Sulphone	µg/L	ELES/GC/SOP/01: 2023	BDI. (DL: 0.5)	(22)
Dieldrin	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.01)	140

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

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TC-1358

TEST REPORT

Test Report No. : ELES/RNC/2025/2054 Report Release Date : 25.03.2025

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC1358725000002011F

Pesticides				Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per 15 2296-1992 Class C (Inland Surface Water)
Alpha HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.006)	****
Beta HCH	μg/l.	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	7
Delta HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	1940
Gamma HCH (Lindane)	µg/L	ELES/GC/SOP/02: 2023	BDL (DL; 0.02)	4 22 3
Endosulfan (alpha, beta and sulphate)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	920
DDT(e,p and p,p-isomers of DDT) (DDE and DDD)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	(44)
Discipline: Biological		Gre	oup; Water	
Total Caliform	CFU/100 mL	IS 15185; 2021	8.31×10 ²	5000
Escherichia coli	CFU/100 mL	IS 15185; 2021	51.0	

Remarks: pH & RFC done at site.

Reviewed by Akash Kumar Quality Manager

****End of Report****

Authorised Signators
Dr. Deependra Rumar 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:- 20AAECE9713D124

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TEST REPORT

Test Report No.	: ELES/RNC/2025/2054	Report Release Date	: 25.03.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sumple Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2025/SW/2174 : 12.03.2025 : 17.03.2025 : Surface Water : Up Stream : Dhardhari Nadi, Gurdari Bauxite Mine (584.19ha)
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01
Period of Analysis	: 17.03.2025 to 25.03.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

Discipline: Chemic	Discipline: Chemical		Group: Water		
Parameter	Unit	Test Protocol	Result	as per 1S 2296-1992 Class C (Inland Surface Water)	
Tuste	3	APHA 24th Ed.2023, 2160C	N/A	-	
Anionic Surfactants (as MBAS)	mg/L	APHA 24th Ed.2023, 5540-C	BDL (DL: 0.025)	1,0	
Mineral Oil*	mg/L	IS 3025 (Part-39):2021 (Clause 6 Infrared Spectroscopic Method)	BDL (DL: 0.05)		

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

Reviewed by Akash Kumar. Quality Manager

End of Report*

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

Technical Manager

Page | of 1

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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/2025/2055
 Report Release Date
 : 25.03.2025

 Work Order No.
 : 13612312113
 Work Order Date
 : 28.03.2024

ULR No. : TC1358725000002012F

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2025/SW/2175 : 12.03.2025 : 17.03.2025 : Surface Water : Down Stream : Dhardhari Nadi, Gurdari Bauxite Mine (584.19ha)
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01
Period of Analysis	: 17.03.2025 to 24.03.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

Discipline: Chemical		Gr	Group: Water		
Parameter	Unit	Test Protocol	Result	as per 18 2296-1992 Class C (Inland Surface Water)	
pH (at 24.9 °C)	540	IS 3025 (Part-11): 2022	6.56	6.5-8.5	
Colour	Hazen	IS 3025 (Part -4): 2021	7.8	300	
Odour	(30)	IS 3025 (Part-5): 2018	Unobjectionable	£ V E	
Turbidity	NTU	IS 3025 (Part-10): 2023	12.8	200	
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part-16): 2023	60.0	1500	
Total Alkalinity (as CaCO ₃)	mg/L	IS 3025 (Part-23): 2023	14.2		
Total Hardness (as CaCO ₃)	mg/L	IS 3025 (Part-21): 2019	21.5		
Sulphate (as SO ₄)	mg/L	IS 3025 (Part-24/Sec1): 2022	6.6	400	
Chloride (as CI)	mg/L	IS 3025 (Part-32): 2019	11.6	600	
Fluoride (as F)	mg/L	IS 3025 (Part-60): 2019	BDL (DL: 0.1)	1.5	
Nitrate (as NO ₃)	mg/L	APHA 24 th Ed.2023, 4500 NO ₃ -B	0.96	50	

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE971301Z4

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TO-13587

TEST REPORT

Test Report No. : ELES/RNC/2025/2055 Report Release Date : 25.03.2025

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC1358725000002012F

Discipline : Chemical		Group: Wa	ter	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per 1S 2296-1992 Class C (Inland Surface Water)
Free Residual Chlorine (RFC)	mg/L	IS 3025 (Part-26): 2021	BDL (DL: 0.1)	878
Phenols Compounds (as C ₆ H ₅ OH)	mg/L	IS 3025 (Part-43/Sec1): 2022	BDL (DL: 0.001)	0.005
Calcium (as Ca)	mg/L	IS 3025 (Part-40): 2019	5.7	
Discipline : Cher	nical	Gre	oup : Residues	in Water
Aluminum (as AI)	mg/L	1S 3025 (Part-55): 2003;RA2019	BDL (DL; 0.02)	-
Arsenic (as As)	mg/L	IS 3025 (Part 37):2022	BDL (DL: 0.005)	0.2
Boron (as B)	mg/L	IS 3025 (Part-57): 2021	BDL (DL: 0.2)	325
Cadmium (as Cd)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.003)	0.01
Total Chromium (as Cr)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL; 0.03)	0.05
Copper (as Cu)	mg/L	IS 3025 (Part 42): 2019	BDL, (DL: 0.03)	1.5
Iron (as Fe)	mg/L	APHA 24th Ed.2023; 3111B	0.165	50
Lead (as Pb)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.01)	1.0
Manganese (as Mn)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.05)	25
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 2019	BDL (DL: 0.001)	
Selenium (as Se)	mg/L	IS 3025(Part-56): 2019	BDL (DL: 0.01)	0.05
Zinc (as Zn)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.1)	15

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TEST REPORT

Test Report No. : ELES/RNC/2025/2055 Report Release Date : 25.03.2025

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC1358725000002012F

Discipline : Chemi	cal	Group: Residue	in Water	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
Cyanide (as CN)	mg/L	APHA 24 th Ed.2023, 4500 CN-E	BDL (DL: 6.012)	0.05
Polynuclear Aromatic Hydrocarbons (PAH)	μg/1.	ELES/GC/SOP/04: 2023	BDL (DL: 0.05)	577.
Pesticides				
Alachlor	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	***
Atrazine	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	122
Butachlor	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	(**)
Chlorpyriphos	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	
Ethion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	
Malathion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	(46)
Methyl parathion	μg/L.	ELES/GC/SOP/01: 2023	BDL (DL: 0.1)	**
Monocrotophos	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	(1)
Phorate	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	
Phorate Sulphone	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	4
Dieldrin	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.01)	**

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

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TC-13882

TEST REPORT

 Test Report No.
 : ELES/RNC/2025/2055
 Report Release Date
 : 25.03.2025

 Work Order No.
 : 13612312113
 Work Order Date
 : 28.03.2024

ULR No. : TC1358725000002012F

Pesticides				Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
Alpha HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.006)	**
Beta HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	*
Delta HCH	μg/1.	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	*
Gamma HCH (Lindane)	μg/L	ELES/GC/SOP/02: 2023	BDL. (DL: 0.02)	240
Endosulfan (alpha, beta and sulphate)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05))**(
DDT (o,p and p,p-isomers of DDT) (DDE and DDD)	μg/L	ELES/GC/SOP/02; 2023	BDL (DL: 0.05)	
Discipline: Biological		Gre	oup: Water	
Total Coliform	CFU/100 mL	IS 15185: 2021	3.59×10 ²	5000
Escherichia coli	CFU/100 mL	IS 15185; 2021	BDL (DL: 1.0)	

Remarks: pH & RFC done at site.

Reviewed by Akash Kumar Quality Managor

****End of Report***

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

Page 4 of 4

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TEST REPORT

Test Report No.	: ELES/RNC/2025/2055	Report Release Date	: 25.03.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2025/SW/2175 : 12.03.2025 : 17.03.2025 : Surface Water : Down Stream : Dhardhari Nadi, Gurdari Bauxite Mine (584.19ha)
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01
Period of Analysis	: 17.03.2025 to 25.03.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

Discipline : Chemic	Discipline: Chemical			: Chemical Group: Water		Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)		
Taste	8	APHA 24th Ed.2023, 2160C	N/A	72		
Anionic Surfactants (as MBAS)	mg/L	APHA 24th Ed.2023, 5540-C	BDL (DL: 0.025)	0.1		
Mineral Oii*	mg/L	IS 3025 (Part-39):2021 (Clause 6 Infrared Speciroscopic Method)	BDL (DL: 0.05)	1949		

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

Reviewed by Akash Kumar Quality Managor

****End of Report****

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

Page 1 of 1

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

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TC-13507

TEST REPORT

Test Report No.	: ELES/RNC/2025/2056	Report Release Date	: 25.03.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000002013F			

AILS	SAMPLE DETAILS		
: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2025/SW/2176 : 11.03.2025 : 17.03.2025 : Surface Water : Up Stream : Koyal River, Gurdari Bauxite Mine (584.19ha)	
: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
: 17.03.2025 to 24.03.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	
	: Lohardaga, Jharkhand-835302 : Operational	: Hindalco Industries Limited Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample Location of Sample Sampling Procedure Sampling Done By	

Discipline: Chemical		Gr	oup: Water	Tolerance Limits
Parameter	Unit Test Protocol		Result	as per IS 2296-1992 Class C (Inland Surface Water)
pH (at 24.9 °C)		IS 3025 (Part-11): 2022	6.54	6.5-8.5
Colour	Hazen	15 3025 (Part -4): 2021	4.6	300
Odour	3	IS 3025 (Part-5) ; 2018	Unobjectionable	200
Turbidity	NTU	IS 3025 (Part-10): 2023	16.2	**
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part-16): 2023	52.0	1500
Total Alkalinity (as CaCO ₃)	mg/L	IS 3025 (Part-23): 2023	20.4	-
Total Hardness (as CaCO ₂)	mg/L	IS 3025 (Part-21): 2019	13.7	142
Sulphate (as SO _c)	mg/L	IS 3025 (Part-24/Sec1): 2022	9.8	400
Chloride (as Cl)	mg/L	IS 3025 (Part-32): 2019	9.7	600
Fluoride (as F)	mg/L	IS 3025 (Part-60): 2019	BDL (DL: 0.1)	1.5
Nitrate (as NO ₃)	mg/L	APHA 24th Ed.2023, 4500 NO ₃ -B	0.98	50

Page 1 of 4

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TC-13587

TEST REPORT

Test Report No. : ELES/RNC/2025/2056 Report Release Date : 25.03.2025

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC1358725000002013F

Discipline : Chemical	(Group : Wa	ter	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
Free Residual Chlorine (RFC)	mg/L	1S 3025 (Part-26): 2021	BDL (DL: 0.1)	(##)
Phenols Compounds (as C _s H ₈ OH)	mg/L	IS 3025 (Part-43/Sec1): 2022	BDL (DL: 0.001)	0.005
Calcium (as Ca)	mg/L	IS 3025 (Part-40): 2019	3.6	
Discipline : Cher	nical	Gre	oup : Residues	in Water
Aluminum (as Al)	mg/L	IS 3025 (Part-55): 2003;RA2019	BDL (DL: 0.02)	:#X
Arsenic (as As)	mg/L	IS 3025 (Part 37):2022	BDL (DL: 0.005)	0.2
Boron (as B)	mg/L	IS 3025 (Part-57): 2021	BDL (DL: 0.2)	(44)
Cadmium (as Cd)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.003)	0.01
Total Chromium (as Cr)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.03)	0.05
Copper (as Cu)	mg/L	IS 3025 (Part 42): 2019	BDL (DL: 0.03)	1.5
iron (as Fe)	mg/L	APHA 24th Ed.2023; 3111B	0.113	50
Lead (as Pb)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.01)	0.1
Manganese (as Mn)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.05)	T#F
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 2019	BDL (DL: 0.001)	æ.
Selenium (as Se)	mg/L	IS 3025(Part-56): 2019	BDL (DL: 0.01)	0.05
Zinc (as Zn)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.1)	15

Page 2 of 4

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

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TO-13557

TEST REPORT

Test Report No. : ELES/RNC/2025/2056 Report Release Date : 25.03.2025

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC1358725000002013F

Discipline : Chemie	cal	Group: Residue	s in Water	Tolerance Limits
Parameter Unit		meter Unit Test Protocol		as per IS 2296-1992 Class C (Inland Surface Water)
Cyanide (as CN)	mg/L	APHA 24 th Ed.2023, 4500 CN-E	BDL (DL: 0.012)	0.05
Polynuclear Aromatic Hydrocarbons (PAH)	μg/L	ELES/GC/SOP/04; 2023	BDL (DL: 0.05)	(#)
Pesticides				
Alachlor	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	(#)
Atrazine	µg/L	ELES/GC/SOP/01; 2023	BDL (DL: 0.5)	150
Butachlor	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	
Chlorpyriphos	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	(**)
Ethion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	170
Malathion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	
Methyl parathion	μg/t.	ELES/GC/SOP/01: 2023	BDL. (DL: 0.1)	-
Monocrotophos	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	257.0
Phorate	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	(14)
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)	

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-13567

TEST REPORT

Test Report No. : ELES/RNC/2025/2056 Report Release Date : 25.03.2025

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC1358725000002013F

Pesticides				Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per 15 2296-1992 Class C (Inland Surface Water)
Alpha HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.006)	五
Beta HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	3#3
Delta HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL; 0.02)	(78)
Gamma HCH (Lindane)	µg/L	ELES/GC/SOP/02: 2023	BDL: (DL: 0.02)	<u> </u>
Endosulfan (alpha, beta and sulphate)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	144
DDT(o,p and p,p-isomers of DDT) (DDE and DDD)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	:25
Discipline: Biolo	ogical	Gre	oup: Water	
Total Coliform	CFU/100 mL	IS 15185: 2021	7.18×10 ²	5000
Escherichia coli	CFU/100 mL	IS 15185: 2021	BDL (DL: 1.0)	

Remarks: pH & RFC done at site.

Reviewed by Akash Kumar Quality Manager

****End of Report***

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

Technical Manager

Page 4 of 4

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

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TEST REPORT

Test Report No.	: ELES/RNC/2025/2056	Report Release Date	: 25.03.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2025/SW/2176 : 11.03.2025 : 17.03.2025 : Surface Water : Up Stream : Koyal River, Gurdari Bauxite Mine (584.19ha)
Mines Status	t Operational	Sampling Procedure	: ELES/DOC/SMPL/01
Period of Analysis	: 17.03.2025 to 25.03.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

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

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

Reviewed by Akash Kumar Quality Managor

****End of Report****

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

Page 1 of 1

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TO-13567

TEST REPORT

Test Report No.	: ELES/RNC/2025/2057	Report Release Date	: 25.03.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000002014F			

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2025/SW/2177 : 11.03.2025 : 17.03.2025 : Surface Water : Down Stream : Koyal River, Gurdari Bauxite Mine (584.19ha)	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 17.03.2025 to 24.03.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved	

Discipline: Chemical	oup: Water	Tolerance Limits		
Parameter	Unit	Test Protocol	Result	as per 15 2296-1992 Class C (Inland Surface Water)
pH (at 24.9 °C)	74	IS 3025 (Part-11): 2022	6.52	6.5-8.5
Colour	Hazen	IS 3025 (Part -4): 2021	6.2	300
Odour	28	1S 3025 (Part-5): 2018	Unobjectionable	G+#-0
Turbidity	NTU	IS 3025 (Part-10): 2023	17.8	****
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part-16): 2023	50.0	1500
Total Alkalinity (as CaCO ₃)	mg/L	IS 3025 (Part-23): 2023	16.3)#F
Total Hardness (as CaCO ₁)	mg/L	IS 3025 (Part-21); 2019	17.6	-
Sulphate (as SO ₄)	mg/L	IS 3025 (Part-24/Sec1): 2022	4.8	400
Chloride (as CI)	mg/L	IS 3025 (Part-32): 2019	6.7	600
Fluoride (as F)	mg/L	IS 3025 (Part-60): 2019	BDL (DL: 0.1)	1.5
Nitrate (as NO ₃)	mg/L	APHA 24th Ed.2023, 4500 NO ₃ -B	0.87	50

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

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TG-13581

TEST REPORT

Test Report No. : ELES/RNC/2025/2057 Report Release Date : 25.03.2025

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC1358725000002014F

Discipline : Chemical	Ę	Group: Wa	Tolerance Limits	
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
Free Residual Chlorine (RFC)	mg/L	IS 3025 (Part-26): 2021	BDL (DL: 0.1)	(** (
Phenols Compounds (as C ₆ H ₅ OH)	mg/L	IS 3025 (Part-43/Sec1): 2022	BDL (DL: 0.001)	0.005
Calcium (as Ca)	mg/L	IS 3025 (Part-40): 2019	4.6	(**)
Discipline : Cher	nical	Gre	oup : Residues	in Water
Aluminum (as Al)	mg/L	IS 3025 (Part-55): 2003;RA2019	BDL (DL: 0.02)	世
Arsenic (as As)	mg/L	IS 3025 (Part 37):2022	BDL (DL: 0.005)	0.2
Boron (as B)	mg/L	IS 3025 (Part-57): 2021	BDL (DL: 0.2)	-
Cadmium (as Cd)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.003)	0.01
Total Chromium (as Cr)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.03)	0.05
Copper (as Cu)	mg/L	IS 3025 (Part 42): 2019	BDL (DL; 0.03)	1.5
Iron (as Fe)	mg/L	APHA 24 th Ed.2023; 3111B	0.235	50
Lead (as Pb)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.01)	0.1
Manganese (as Mn)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.05)	3#3
Mercury (as Hg)	mg/L	1S 3025 (Part-48); 2019	BDL (DL: 0.001)	(**)
Selenium (as Se)	mg/L	IS 3025(Part-56); 2019	BDL. (DL: 0.01)	0.05
Zinc (us Zn)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.1)	15

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TC-11587

TEST REPORT

Test Report No. : ELES/RNC/2025/2057 Report Release Date : 25.03.2025

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC1358725000002014F

Discipline : Chemie	cal	Group: Residues	s in Water	Tolerance Limits
Parameter Unit		Test Protocol	Result	as per IS 2296-1992 Class C (Intend Surface Water)
Cyanide (as CN)	mg/L	APHA 24th Ed.2023, 4500 CN-E	BDL (DL: 0.012)	0.05
Polynuclear Aromatic Hydrocarbons (PAH)	μg/L	ELES/GC/SOP/04: 2023	BDL (DL: 0.05)	5無3
Pesticides				
Alachior	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	(#)
Atrazine	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	SES
Butachlor	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1000
Chlorpyriphos	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	(#)
Ethion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	(E)
Malathion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	- 100 mm -
Methyl parathion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.1)	2#2
Monocrotophos	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	<u>(#)</u>
Phorate	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	5-11-5 1 11- 2
Phorate Sulphone	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	:88:
Dieldrin	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.01)	

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

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TC-13567

TEST REPORT

Test Report No. : ELES/RNC/2025/2057 Report Release Date : 25.03.2025

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC1358725000002014F

Pesticides				Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
Alpha HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.006)	**
Beta HCH	μg/L	ELES/GC/SOP/02: 2023	BDL. (DL: 0.02)	3.2
Delta HCH	µg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	3 99 2
Gamma HCH (Lindane)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL; 0.02)	255
Endosulfan (alpha, beta and sulphate)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	-
DDT(o,p and p,p-isomers of DDT) (DDE and DDD)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	
Discipline: Biolo	ogical	Gre	oup: Water	
Total Coliform	CFU/100 mL	IS 15185; 2021	4.45×10 ²	5000
Escherichia coli	CFU/100 mL	IS 15185: 2021	21.0	7##

Remarks: pH & RFC done at site.

Akash Kumar Quality Managor

****End of Report****

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

Technical Manager

Page 4 of 4

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

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TEST REPORT

Test Report No.	: ELES/RNC/2025/2057	Report Release Date	: 25.03.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2025/SW/2177 : 11.03.2025 : 17.03.2025 : Surface Water : Down Stream : Koyal River, Gurdari Bauxite Mine (584.19ha)	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 17.03.2025 to 25.03.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

Discipline : Chemical Group : Water			Tolerance Limits	
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
Taste		APHA 24th Ed.2023, 2160C	N/A	164
Anionic Surfactants (as MBAS)	mg/L	APHA 24 th Ed.2023, 5540-C	BDL (DL: 0.025)	1.0
Mineral Oil*	mg/L	IS 3025 (Part-39):2021 (Clause 6 Infrared Spectroscopic Method)	BDL (DL: 0.05)	18

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

ABELIEVED by Quality Manager

****End of Report***

Authorised Signatory Sinha Ph. D. Environmental Engg. Technical Manager

Page 1 of 1

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

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TEST REPORT

Test Report No. : ELES/RNC/2025/2051 Report Release Date : 25.03.2025

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC1358725000002008F

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2025/SW/2171 : 13.03.2025 : 17.03.2025 : Surface Water : Spring Water : Jhapa Jhuri, Gurdari Bauxite Mine (584.19ha)	
Mines Status	Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 17.03.2025 to 24.03.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved	

Discipline: Chemical		Gr	oup: Water	Tolerance Limits
Parameter	Unit	Test Protocol	Result	us per IS 2296-1992 Class C (Inland Surface Water)
pH (at 24.9 °C)	-	IS 3025 (Part-11): 2022	6.50	6,5-8.5
Colour	Hazen	IS 3025 (Part -4): 2021	2.6	300
Odour	(E)	1S 3025 (Part-5) ; 2018	Unobjectionable	825
Turbidity	NTU	IS 3025 (Part-10): 2023	6.01	-
Total Dissolved Solids (TDS)	mg/L	1S 3025 (Part-16): 2023	60.0	1500
Total Alkalinity (as CaCO ₁)	mg/L	IS 3025 (Part-23): 2023	18.3	-
Total Hardness (as CaCO ₃)	mg/L	IS 3025 (Part-21): 2019	23.5	Teach.
Sulphate (as SO ₂)	mg/L	IS 3025 (Part-24/Sec1): 2022	6.9	400
Chloride (as Cl)	mg/L	IS 3025 (Part-32): 2019	8.7	600
Fluoride (as F)	mg/L	IS 3025 (Part-60): 2019	BDL (DL: 0.1)	1.5
Nitrate (as NO ₃)	mg/L	APHA 24th Ed.2023, 4500 NO ₁ -B	0.98	50

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



TC-13587

TEST REPORT

Test Report No. : ELES/RNC/2025/2051 Report Release Date : 25.03.2025

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC1358725000002008F

Discipline : Chemical		Group : Wa	ter	Tolerance Limits
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
Free Residual Chlorine (RFC)	mg/L	1S 3025 (Part-26) : 2021	BDL (DL: 0.1)	100
Phenols Compounds (as C ₆ H ₇ OH)	mg/L	IS 3025 (Part-43/Sec1): 2022	BDL (DL: 0.001)	0.005
Calcium (as Ca)	mg/L	1S 3025 (Part-40): 2019	5.5	4. 44 3
Discipline : Cher	nicul	Gro	oup: Residues	in Water
Aluminum (as Al)	mg/L	1S 3025 (Part-55): 2003;RA2019	BDL (DL: 0.02)	(25)
Arsenic (as As)	mg/L	1S 3025 (Part 37):2022	BDL (DL: 0.005)	0.2
Boron (as B)	mg/L	IS 3025 (Part-57): 2021	BDL (DL: 0.2)	(99)
Cadmium (as Cd)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.003)	0.01
Total Chromium (as Cr)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.03)	0.05
Copper (as Cu)	mg/L	IS 3025 (Part 42): 2019	BDL (DL: 0.03)	1.5
Iron (as Fe)	mg/L	APHA 24th Ed.2023; 3111B	0.101	50
Lead (as Pb)	mg/L	APHA 24 th Ed.2023; 3111B	BDL (DL: 0.01)	0.1
Manganese (as Mn)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.05)	**
Mercury (as Hg)	mg/L	1S 3025 (Part-48): 2019	BDL (DL: 0.001)	-
Selenium (as Se)	mg/L	IS 3025(Part-56): 2019	BDL. (DL: 0.01)	0.05
Zine (as Zn)	mg/L	APHA 24th Ed.2023; 3111B	BDL (DL: 0.1)	15

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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/2025/2051 Report Release Date : 25.03.2025

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC1358725000002008F

Discipline : Chemie	cal	Group: Residues	in Water	Tolerance Limits
Parameter	Unit	Unit Test Protocol		as per IS 2296-1992 Class C (Inland Surface Water)
Cyanide (as CN)	mg/L	APHA 24th Ed.2023, 4500 CN-E.	BDL (DL: 0.012)	0.05
Polynuclear Aromatic Hydrocarbons (PAH)	μg/L	ELES/GC/SOP/04: 2023	BDL (DL: 0.05)	(200)
Pesticides				
Alachior	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	- 1 1
Atrazine	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	=
Butachlor	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	1#45
Chlorpyriphos	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	2.000
Ethion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	
Malathion	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	(**)
Methyl parathion	µg/L	ELES/GC/SOP/01: 2023	BDL (DL; 0.1)	-
Monocrotophos	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	-
Phorate	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	
Phorate Sulphone	μg/L	ELES/GC/SOP/01: 2023	BDL (DL: 0.5)	183
Dieldrin	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.01)	**

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

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TC-13587

TEST REPORT

Test Report No. : ELES/RNC/2025/2051 Report Release Date : 25.03.2025

Work Order No. : 13612312113 Work Order Date : 28.03.2024

ULR No. : TC1358725000002008F

Pesticides				Tolerance Limits
Parameter	Parameter Unit		Result	as per IS 2296-1992 Class C (Inland Surface Water)
Alpha HCH	μg/L,	ELES/GC/SOP/02: 2023	BDL (DL: 0.006)	(42)
Beta HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	: ** C
Delta HCH	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	11.00
Gamma HCH (Lindane)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.02)	123
Endosulfan (alpha, beta and suiphate)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	***
DDT(o,p and p,p-isomers of DDT) (DDE and DDD)	μg/L	ELES/GC/SOP/02: 2023	BDL (DL: 0.05)	
Discipline: Biolo	gical	Gre	oup: Water	
Total Coliform	CFU/100 mL	1S 15185; 2021	5.04×10 ³	5000
Escherichia cali	CFU/100 mL	IS 15185: 2021	BDL (DL: 1.0)	(#)

Remarks: pH & RFC done at site.

Reviewed by Akash Kumar Quality Manager

****End of Report****

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

Page 4 of 4

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 2004ECE9713D124

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TEST REPORT

Test Report No.	: ELES/RNC/2025/2051	Report Release Date	: 25.03.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name Address	; Hindalco Industries Limited ; Lohardaga, Jharkhand-835302	Sample Ref. No. Sampling Date Sample Received Date Type of Sample Source of Sample Location of Sample	: ELES/RNC/2025/SW/2171 : 13.03.2025 : 17.03.2025 : Surface Water : Spring Water : Jhapa Jhuri, Gordari Bauxite Mine (584.19ha)	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 17.03.2025 to 25.03.2025	Sampling Done By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

Discipline: Chemic	al	Gro	Tolerance Limits	
Parameter	Unit	Test Protocol	Result	as per IS 2296-1992 Class C (Inland Surface Water)
Taste	- 2	APHA 24* Ed.2023, 2160C	N/A	1
Anionic Surfactants (as MBAS)	mg/L	APHA 24th Ed. 2023, 5540-C	BDL (DL: 0.025)	1,0
Mineral Oil*	mg/L	IS 3025 (Part-39):2021 (Clause 6 Infrared Spectroscopic Method)	BDL (DL: 0.05)	(4)

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

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

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TG-13507

TEST REPORT

Test Report No.	: ELES/RNC/2025/2023	Report Release Date	: 24.03.2025	
Work Order No.	: 13612312113	Work Order Date	: 28.03.2024	
ULR No.	: TC1358725000001981F			

CUSTOMER DE	TAILS	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	

MI	ETEOROLOGICAL INFOR	MATION		11.	
1	Average Temperature (°C)	: 27	2	Barometric Pressure (mmHg)	: 715
3	Relative Humidity (%)	:59	4	Weather Condition	Clear

Location	Unit	Test Protocol	Result		Regulatory Limit (Industrial Zone)
Near Kathuwapani Pit -			Time	L_{eq}	_
Gurdari Bauxite Mine (584.19ha) Sample ID: ELES/RNC/2025/WN/2165	dB(A)	IS 4758: 2017	Day Time	75	90 dB(A)

Reviewed by Akash Kumar Quality Managar

****End of Report****

Authorised Signatory

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

Page 1 of 1

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Annexure 3

Date - 06.11.2024

Office Order

Environmental Cell has been re-constituted at Gurdari Bauxite Mine (Area 584.19 ha) comprising below mentioned team members. The team will ensure compliance with the Environment Act, Regulation & Rule in respect of the said mines of Hindalco Industries Limited.

- 1. Mr. Vidya Singh (Coordinator)
- 2. Mr. Krishnendu Das (Geologist)
- 3. Mr. Ankit Das (Environment Engineer)
- 4. Mr. Anand Prakash Tiwari (Environment Engineer)

The Undersigned is the in charge of above Environment Management Cell constituted for the purpose of ensuring compliances of environmental act rule and regulation for the above mine.

Basudev Gangopadhyay AVP (Planning, Environment &Compliance)

Annexure 4

	Production, Mined Out, Back Filled and Over Burden removal from October'24 to March'25								
S No	Name of the Mines	Mining lease area (ha)	Production Capacity (MT)*	Lease Period*	Production (MT)	Mined out area (ha)	Backfilled area (ha)	Over burden (Cu.M)	
1	Bagru Bauxite Mine	75.41	85000	22.01.1974 to 31.03.2030	NIL	NIL	NIL	NIL	
2	Bhusar Bauxite Mine	65.31	280000	11.07.1981 to 31.03.2030	86061	1.53	0.695	88218.66	
3	Hisri (New) Bauxite Mine	14.55	100000	19.07.1981 to 31.03.2030	25362	0.345	0.10	30825.23	
4	Pakhar (8.09) Bauxite Mine	8.09	80000	16.05.1973 to 31.03.2030	NIL	NIL	NIL	NIL	
5	Pakhar (35.12) Bauxite Mine	35.12	200000	17.04.1975 to 31.03.2030	NIL	NIL	NIL	NIL	
6	Pakhar (115.13) Bauxite Mine	115.13	300000	19.07.1996 to 31.03.2030	109753	2.12	7.6	332929.81	
7	Sherangdag-A Bauxite Mine	155.81	260000	16.10.1974 to 31.03.2030	2989	0.02	0.02	2110.0	
8	Serangdag-B Bauxite Mine	77.89	100000	04.10.1978 to 31.03.2030	35253	0.756	0.35	38119.67	
9	Jalim & Sanai Bauxite Mine	12.14	50000	16.10.1974 to 31.03.2030	24760	0.13	0.08	12444.82	
10	Gurdari Bauxite Mine	584.19	325000	23.03.1985 to 22.03.2035	105401	4.42	3.76	185747.47	
11	Kujam - I Bauxite Mine	80.87	150000	13.03.2006 to 12.03.2056	NIL	NIL	2.54	NIL	
12	Kujam - II Bauxite Mine	157.38	300000	24.03.2006 to 23.03.2056	61250	2.40	4.72	136798.61	
13	Amtipani Bauxite Mine	190.95	150000	13.03.2006 to 12.03.2056	62240	4.047	6.423	255249.72	

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

^{*}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

^{**}Part of OB removed cost

Basudev Gangopadhyay

AVP (Planning, Environment & Compliance)