

HIL/LHD/ENV/MoEF 702

Date: 23.05.2024

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 Bagru (75.41 ha) Bauxite Mining project of M/s Hindalco Industries Limited located in Lohardaga District of Jharkhand for the period October'23 to March'24.

Ref: Environmental Clearance letters no J-11015/585/2007-IA. II (M) dated 04th Feb 2011

Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for Bagru (75.41 ha) Bauxite Mining project of M/s Hindalco Industries Limited, located in Lohardaga District of Jharkhand for the period

October'23 to March'24. The lease detail is as below.

Lease area (ha) Production Capacity (MT) Lease Period

75.41 85000 22.01,1974 to 31.03.2030

Hope you will find the same in order.

Thanking You

Yours Sincerely FOR M/s Hindalco Industries Limited,

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

Enclosure: - As Above

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

Corporate ID No.: L27020MH1958PLC011238

Name of the Project : Bagru Bauxite Mine (75.41 ha)

M/s Hindalco Industries Ltd

Environment Clearance No & date

: J-11015/585/2007-IA.II (M), dated 04.02.2011

Period of compliance Report : From 1st October 2023 to 31st March 2024

CONDITIONS: -

Specific Conditions: -

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

Reply: - Implementations of stipulated conditions in NOC are fulfilled post which consent to operate has been obtained from time to time when mine was operational. Presently, Mine is not in operation since November 2013.

Condition ii: - The environmental clearance is subject to grant of forestry clearance for diversion of 19.56 ha forestland.

Reply: - Compensatory land for forest diversion has been identified and NOC from DFO, AC and Registrar has already been obtained. Registration and Mutation in favor of State Forest Department for CA land have been completed. Obtaining forest clearance is under process (Bagru FC proposal has been recommended by the DFO and CF and has been forwarded to Nodal for further needful action). Presently, Mine is not in operation since November 2013.

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

Reply: - No mining operation has been carried out during the above period. The Mine is not in operation since November 2013.

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

Reply: - No mining operation was carried out during above period. Mine has not been in operation since November 2013. No natural water course /water resource was obstructed /will be obstructed due to mining operation.

Condition v: - Topsoil should be temporarily stacked with proper slope at earmarked site(s) only with adequate measures and it should not be kept unutilized for a period of more than 3 years. The topsoil shall be used for land reclamation and rehabilitation of mined out areas.

Reply: - Sequential backfilling and reclamation of mined out area were exercised when mine was operational. No mining operation was being carried out during the above period and as on date. Mine has not been in operation since November 2013.

Condition vi:- The entire waste generated shall be backfilled and there shall be no external overburden dump left at the end of the mine life. The entire backfilled area shall be reclaimed by plantation. The backfilling should be carried out in such a manner that it is restored to the normal ground level. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forest and its Regional Office, Bhubaneshwar on six monthly basis.

Reply: - No mining operation was carried out during above period and as on date. Cumulative 32.05 ha areas have been planted till date. Monitoring and management of rehabilitated areas is in progress through supervision. There is no active external dump. Old dumps are stabilized.

Condition vii: - The void left unfilled in an area of 1.76 ha shall be converted into water body. The higher benches of excavated void/mining pit shall be traced and plantation done to stabilize the slopes. The slopes of higher benches shall be made gentler for easy accessibility by local people to use the water body. Peripheral fencing shall be carried out along the excavated area.

Reply: - The earlier mined out area converted into water body which still exist. No mining operation has been carried out during the above period and as on date. Mine has not been in operation since November 2013.

Condition viii :- Catch drains and siltation ponds of appropriate size shall be constructed around the working pit, sub-grade dump, and mineral dumps to arrest flow of silt and sediment directly into Chanpi Nallah, Sukri Nadi and others water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted, particularly after monsoon, and maintained properly. Garland drains settling tanks and check dams of appropriate size, gradient and length shall be constructed for both around the mine pit and sub-grade dump to prevent run off of water and flow sediments directly into Chanpi Nallah, Sukri Nadi and other water

bodies and sump capacity should be designed keeping 50% safety margin over and above peak sudden rainfall (based on 50 years date) and maximum discharge in the area adjoin the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material. Sedimentation pits should be constructed at the corners of the garland drains and desilted at regular intervals.

Reply: - Mine has not been in operation since November 2013. No mining operation was carried out during the above period and as on date. Hence, no runoff was generated from mining activities. However, to collect and manage rainwater during monsoon rains, pit sumps were made, part of mined out area were used as settling tank. Settled water was used for sprinkling quarry, roads, green belt development, etc. Compliance to this provision will further continue post resumption of mining operation. Water harvesting pond and sump of adequate capacity exist in lease area to harvest rainwater.



Rainwater Harvesting Pond

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

Reply: - The dimensions of retaining wall of OB dumps are based on average rain fall. The dump is stabilized. The compliance to this provision was being practiced when mine was in operation and same will continue post resumption of mining operation. Mine has not in operation since November 2013. No active external dump exists in the mine lease area.

Condition x: - Plantation shall be raised in an area of 50.11 ha including a 7.5m wide green belt in the safety zone around the mining lease by planting the native species around ML area, backfilled and reclaimed area, around water body, roads etc. in consultation with the local

DFO/Agriculture Department. At least 1500 trees per year shall be planted with a tree density of 1000 trees per hectare.

Reply: - Plantation on Bagru plateau was carried out progressively. Till date 32.05 Ha areas are already planted. Total no of plantation is 83715 till date.







Plantation at mine

Bio-diversity Park - A classic bio park (Birsa Upvan) has been created to validate that all species can grow. We have also developed tea garden, strawberry garden, spice garden, medicinal garden, Nakshatra Van, VR-DOME & butterfly garden to build a unique Bio-diversity Park.



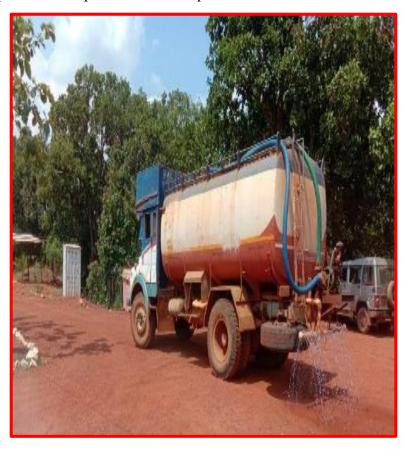


Biodiversity Park at Bagru mine in reclaimed area

Condition xi:- Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as around crushing and screening plant, loading and unloading point and all

transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the AAQ parameters conform to the norms prescribed by the central Pollution Control Board in this regard.

Reply: - Water sprinkling is being carried out regularly. AAQ and water quality are monitored. Measured AAQ parameters reported are within permissible limit.



Water sprinkling on roads

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

Reply: - System is in place and same will continue in future post resumption of mining activity. Mine is not in operation since November 2013. Rainwater harvesting pond and sump is already in place as water conservation measures.

Condition xiii:- Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and constructing new piezometers during the mining operation. The 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, its Regional Office, Bhubaneshwar; Central Ground Water Authority and Central Ground Water Board.

Reply: - We are not using ground water for any mining purpose. There is no chance of intersection ground water table during mining operation as it is much below mining horizon.

A piezometer has been installed for monitoring of ground water level. Water quality and level report are attached herewith as **Annexure 1**. Mine is not in operation since November 2013



Piezometer

Condition xiv: -The project authority shall obtain necessary prior approval of the competent authority for drawl of requisite quantity of water (surface water and ground water) for the project.

Reply: - Rainwater harvested during rainy season is being used for sprinkling on haul roads and raising plantation. No surface water from natural resource was/is being/will be used for mining operation. Mine is not in operation since November 2013. However, we have obtained NOC for drinking water only from CGWB, Patna.

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

Reply: - Mine is not in operation since November 2013. No mining operation was being carried out during above period and as on date.

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

Reply: - Mine is not in operation since November 2013. No mining operation was carried out during above period and as on date. However, blasting time is fixed during Lunch Time i.e. 1.00 PM -2.00 PM (whenever will be done post resumption of mining operation). Controlled blasting method will be practiced once mine becomes operational. All efforts will be taken to mitigate impact of blasting post resumption of mining activities.

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

Reply: - Mine is not in operation since November 2013. No mining operation was being carried out during above period and as on date.

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

Reply: - The sewage water from domestic uses is collected and treated in Sewage Treatment Plant. No effluent is generated. However, Effluent treatment mechanism (Oil grease separator) has been constructed at suitable site in Bagru plateau.



Oil & Grease separator

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

Reply: - No mining operation was carried out during the above period and as on date. Mine will be operative post obtaining renewed consent to operate and other clearances as applicable.

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

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

Condition xxi:- The critical parameters such as RSPM (Particulate matter with size less than 10micron (i.e., PM10, PM2.5) and NOX in the ambient air within the impact zone, peak particle velocity at 300m distance or within the nearest habitation, whichever is closed shall be monitored periodically. Further, quantity of discharged water shall also be monitored [TDS,DO, PH and TSS} The monitored data shall be uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the Company in public domain. The Circular No. J-20012/1/2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment and Forest, which is available on the website of the Ministry www.envfor.nic.in shall also be referred in this regard for its compliance.

Reply: - Being carried out. Monitoring report is attached as **Annexure-2**. Data is being uploaded on the company website regularly.

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

Reply: - Progressive mine closure plan along with mining scheme has been approved by IBM. FMCP (part area) has also been approved by IBM. Final mine closure plan (FMCP) for total lease area will be prepared in due time as per applicable guideline and timelines mentioned in MCDR/IBM guildeline who are competent authority to approve the same. Based on present resource estimate and peak rated production capacity, mining operation will be done.

General Conditions: -

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

Reply: - Noted. The Mine is not in operation since November 2013.

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

Reply: - The Mine is not in operation since November 2013. No mining operation was carried out during the above period and as on date. Report is attached as **Annexure-4**. We agree to comply with the provision stipulated herein post resumption of mining operations.

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

Reply: - The Mine is not in operation since November 2013. Suitable conservation measures were undertaken in past when mine was operational as per plan submitted and is being done continuously.

Also, we have been granted letter of approval for the Integrated Site-specific Wildlife Conservation Plan via Office Order No.29 dated 01.06.2023 by PCCF, Wildlife, Ranchi. No mining operation was carried out during the above period and as on date.

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

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

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

Reply: - Monitoring report are attached as Annexure-2.

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

Reply: - The Mine is not in operation since November 2013. No mining operation was carried out during the above period and as on date. We agree to comply with the provision stipulated herein post resumption of mining operations.

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

Reply: - The Mine is not in operation since November 2013. No mining operation was carried out during the above period and as on date.

We agree to comply with the provision stipulated herein post resumption of mining operation as complied in past.

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

Reply: - The Mine is not in operation since November 2013. No mining operation was carried out during the above period and as on date.

We agree to comply with the provision stipulated herein post resumption of mining operation as complied in past.

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

Reply: - The Mine is not in operation since November 2013. No mining operation was carried out during the above period and as on date.

We agree to comply with the provision stipulated herein post resumption of mining operation as complied in past.

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

Reply: - Adhering to our environmental policies and in order to create more awareness at mines site regarding environment, separate Environmental Management Cell (EMC) has been constituted and is functioning effectively. Copy is enclosed as **Annexure-3**.

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

Reply: - Mining Plan along with Progressive mine Closure Plan has been approved by IBM, Ranchi. This was an operating Mine, hence provision related to Financial closure is not applicable. Currently, the Regional Office is located at Ranchi.

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

Reply: - The funds earmarked for environmental protection measures is being budgeted. Annual expenditure is being reported to the Ministry as attached as **Annexure 5**.

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

Reply: - Being complied with. Now the Regional office is at Ranchi.

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

Reply: - Six monthly reports on the status of compliance of the stipulated environmental clearance conditions including results of monitored data by e mail are being submitted to the Ministry of Environment and Forests, its Regional office Ranchi, the respective Zonal office of Central Pollution Control Board the State Pollution Control Board and uploaded in company's website.

Condition xv: -A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad / Municipal corporation, urban local body and the local NGO, if any, from whom and suggestions / representations if any were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.

Reply: - A copy of clearance letter has been sent to concerned Panchayat, Zila Parisad / Municipal corporation, urban local body and the local NGO.

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

Reply: - Displayed.

Condition xvii: - The environment statement for each financial year ending 31st March in Form V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection)Rules,1986, as amended subsequently, shall also be put on the website of the company along with the

status of compliance of environmental clearance conditions and shall also be sent to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar by e-mail.

Reply: - Being submitted.

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

Reply: - Already done (Documents already submitted).

	Annexure 1					
Pie	Piezometer reading - Bagru Mines					
S No	S No Month Depth (meter					
1	Oct-23	34.95				
2	Nov-23	34.25				
3	Dec-23	34.18				
4	Jan-24	35.07				
5	Feb-24	35.02				
6	Mar-24	35.7				

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) G5T 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/2023/4429	Report Release Date	: 22.11,2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindaleo Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3955 : Entrance Gate (Ropeway Loading Stn); Bagru Bauxite Mine(75.41ha)	
Address	; Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 17,10,2023 to 18.10.2023 : 28.10.2023	
Mines Status	: Non Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 28.10.2023 to 09.11.2023	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION			
	Average Temperature (°C) : 25	2	Barometric Pressure (mn	Hg) : 734
_	Relative Humidity (%) : 55	4	Weather Condition	: Clear

Discipline : Chemica	d	Group : A	tmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2006; RA2022	57	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	29	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	7.1	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	18.5	80 (24hrs)
Ozone (O ₃)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<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): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m ²	IS 5182 (Part-22): 2004; RA2019	0.005	1 (24hrs)
Nickel (Ni)	ng/m³	1S 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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

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Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

Discipline : Chemi	ical	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₆ H ₆)*	μg/m³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)

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

Reviewed by

****End of Report****

Authorised Signatory

Dr. Deependra Kumar Sinha Ph. D. Environmental Engg. ELES Pvt. Ltd. Technical Manager

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

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Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3956 : Administrative Office Bagru Bauxite Mine(75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 17.10.2023 to 18.10.2023 : 28.10.2023
Mines Status	: Non Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 28.10.2023 to 09.11.2023	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 25	2	Barometric Pressure (mm	Hg) : 734
3	Relative Humidity (%) : 55	4	Weather Condition	: Clear

Discipline : Chemica	d	Group : A	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	1S 5182 (Part-23): 2006; RA2022	58	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	23	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part-2): 2001; RA2022	6.2	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	21.8	80 (24hrs)	
Ozone (O ₅)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<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): 1999; RA2019	<1.0	2 (8ius)	
Lead (Pb)	μg/m³	IS 5182 (Part-22); 2004; RA2019	0.008	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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

ENGINEERING SERVICES PVT. LTD.

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

Website : www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2023/4430	Report Release Date	: 22.11.2023	
Work Order No.	: 13612310218	Work Order Date	; 21.04.2023	

Discipline: Chemi	cal	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)*	μg/m³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)	
Вепло-(а)-Рутепе*	ng/m³	1S 5182 (Part-12)2004;RA2019	<0.5	01(Annual)	

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

****End of Report****

Authorised Signatory

Ph. D. Environmental Engg ELES Pvt. Ltd. Technical Manager

Page 2 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4431	Report Release Date	: 22.11,2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3957 : Near Shiv Temple Compound Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 17.10.2023 to 18.10.2023 : 28.10.2023	
Mines Status	: Non Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 28.10.2023 to 09.11.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFO	RMATION	-			
1	Average Temperature (°C)	: 25	2	Barometric Pressure (mm	Hg) : 734	
3	Relative Humidity (%)	2.55	-4	Weather Condition	: Clear	

Discipline : Chemica	ıl	Group:	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	61	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m ^T	1S 5182 (Part- 24): 2019	33	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part-2); 2001; RA2022	6.4	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	13.7	80 (24hrs)	
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m ²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10); 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	< 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	<2.0	06 (Annual)	

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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/2023/4431	Report Release Date	: 22.11.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

Discipline: Chemi	ical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)*	μg/m³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	< 0.5	01(Annual)	

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

Reviewed by

****End of Report****

Authorised Signatory

Ph. D. Environmental Engg. ELES Pvt. Ltd. Technical Manager

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

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4432	Report Release Date	: 22.11.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3958 : Near Weigh Bridge Bagru Bauxite Mine(75.41ha)	
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 17,10,2023 to 18,10,2023 : 28,10,2023	
Mines Status	: Non Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 28.10.2023 to 09.11.2023	Sample Condition	: Sealed & Preserved	

MI	TEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	:25	2	Barometric Pressure (mmH	(g):734
3	Relative Humidity (%)	: 55	4	Weather Condition	; Clear

Discipline : Chemica	il	Group : A	tmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	63	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	32	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	9.1	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6); 2006; RA2022	24.2	80 (24hrs)
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	jig/m ²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.007	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26);2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

Page 1 of 2

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4432	Report Release Date	: 22.11.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

Discipline : Chemi	cal	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	μg/m³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)		

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

****End of Report****

Authorised Signatory

or. Deependra Kumar Sinha

Ph. D. Environmental Engg

ELES Pvt. Ltd. Technical Manager

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4433	Report Release Date	: 22.11.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3959 : Near Daldaliya Village Bagru Bauxite Mine(75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	; 17,10,2023 to 18,10,2023 ; 28,10,2023
Mines Status	: Operational	Type of Sample Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 28.10.2023 to 09.11.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

M	ETEOROLOGICAL INFOR	RMATION			- 5
1	Average Temperature (°C)	25	2	Barometric Pressure (mmHg)	: 734
3.	Relative Humidity (%)	: 55	4	Weather Condition	: Clear
5	Longitude	: 84°35'37.93"E	6	Latitude	: 23°29'4.48"N

Discipline : Chemica	ıl	Group: A	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	49	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	23	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m ⁵	IS 5182 (Part-2): 2001; RA2022	6.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	18.1	80 (24hrs)
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<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): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	< 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	<2.0	06 (Annual)

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4433	Report Release Date	: 22.11.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

Discipline: Chemi	ical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	μg/m³	15 5182 (Part-11)2006;RA2017	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)		

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

Reviewed by

****End of Report****

Ph. D. Environmental Engg ELES Pvt. Ltd. Technical Manager

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4434	Report Release Date	: 22.11.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3960 : Aditya School Gangupara Bagru Bauxite Mine(75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 17,10,2023 to 18.10.2023 : 28.10.2023 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES Pvt. Ltd.
Period of Analysis	: 28.10.2023 to 09.11.2023	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFOI	RMATION		A CONTRACTOR OF THE PARTY OF TH	
1	Average Temperature (°C)	125	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 55	4	Weather Condition	: Clear
5	Longitude	: 84°38'8.14"E	6	Latitude	: 23°27'46.28"N

Discipline: Chemica	d	Group : A	tmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	57	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part-24): 2019	25	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	5,8	80 (24hrs)
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part-6); 2006; RA2022	11.2	80 (24hrs)
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<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): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	1S 5182 (Part-22): 2004; RA2019	< 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	<2.0	06 (Annual)

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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/2023/4434	Report Release Date	: 22.11.2023	
Work Order No.	: 13612310218	Work Order Date	21.04.2023	

Discipline : Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)*	µg/m³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m ¹	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)	

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

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****End of Report****

Authorised Signatory
Deeps for Kumar Sinha
Ph. D. Environmental Engg
ELES Pvr. Ltd. Technical Manager

Page 2 of 2

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VIRONWENTAL LABORATORIES:

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

RING SERVICES PYT, LTD.

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Website: www.elespi.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2023/4435	Report Release Date	: 22.11.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET/	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	ELES/RNC/2023/AA/3961 Ropeway Unloading Station Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 17.10.2023 to 18.10.2023 : 28.10.2023	
Mines Status	: Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 28.10.2023 to 09.11.2023	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	RMATION	-		
1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 55	4	Weather Condition	: Clear
5	Longitude	: 84°41'28.22"E	6	Latitude	: 23°26'45.48"N

Discipline : Chemica	ıl	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2006; RA2022	58	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	1S 5182 (Part- 24): 2019	21	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	5.9	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	18.2	80 (24hrs)	
Ozone (O ₃)	μg/m³	IS 5182 (Part-9); 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	µg/m²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m²	IS 5182 (Part-22): 2004; RA2019	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	<2.0	06 (Annual)	

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4435	Report Release Date	: 22.11.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

Discipline : Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)*	μg/m³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)	

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

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****End of Report****

Authorised Signatory

r. Deependra Kumar Sinha Ph. D Environmental Engg ELES Pvt. Ltd. Technical Manager

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4436	Report Release Date	: 22.11,2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3962 : Ropeway Angle Station Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	± 17.10.2023 to 18.10.2023 ± 28.10.2023	
Mines Status	: Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	the control of the co		: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION	-		
1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 55	- 4	Weather Condition	: Clear
5	Longitude	: 84°41'28.22"E	6	Latitude	: 23°26'45.48"N

Discipline : Chemica	d -	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	55	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	26	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	5.9	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	18.3	80 (24hrs)	
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	1S 5182 (Part-10); 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.005	1 (24hrs)	
Nickel (Ni)	ng/m³	1S 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4436	Report Release Date	: 22.11.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)*	μg/m³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)	

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

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Authorised Signatory

Ph. D. Environmental Engg. ELES Pvi. Ltd. Technical Manager

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4772	Report Release Date	: 21.12.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	:Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4242 : Entrance Gate (Ropeway Loading Stn); Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 17.11.2023 to 18.11.2023 : 24.11.2023	
Mines Status	: Non Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	c 24.11.2023 to 09.12.2023	Sample Condition	: Sealed &Preserved	

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 20	2	Barometric Pressure (mm	Hg) ±734
3	Relative Humidity (%) : 49	4	Weather Condition	: Clear

Discipline: Chemica	ıl	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	64	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	32	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	8.3	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	20.2	80 (24hrs)	
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<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): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	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	<2.0	06 (Annual)	

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Karps

Authorised Signatory
Dr. Deependra Kumar Sinha

Page 1 of 1

Ph. D Environmental Engg.

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4772	Report Release Date	: 21.12.2023	
	72.5 02.502.50			
Work Order No.	: 13612310218	Work Order Date	; 21.04.2023	

CUSTOMER DETA	CUSTOMER DETAILS		
Customer Name	:Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4242 : Entrance Gate (Ropeway Loading Stn); Bagru Bauxite Mine(75.41ha
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 17.11.2023 to 18.11.2023 : 24.11.2023
Mines Status	: Non Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	(24.) 1.2023 to 09.12.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed &Preserved

MI	ETEOROLOGICAL INFO	RMATION			
.1	Average Temperature (°C)	: 20	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 49	4	Weather Condition	: Clear

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₅ H ₆)*	µg/m³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	1S 5182 (Part-12)2004;RA2019	<0.5	01(Annual)	

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

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****End of Report****

Dr. Deependra Kumar Sinha
Ph. D Environmental Engg.
ELES Pvt. Ltd. Technical Manager

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4773	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4243 : Administrative Office Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 17.11.2023 to 18.11.2023 : 24.11.2023	
Mines Status	: Non Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	= 24.11.2023 to 09.12.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 20	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%) : 49	4	Weather Condition	: Clear

Discipline : Chemica	d	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³-	IS 5182 (Part-23): 2006; RA2022	60	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	28	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	18:5182 (Part-2): 2001; RA2022	7.1	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6); 2006; RA2022	23.4	80 (24hrs)		
Ozone (O ₂)	µg/m ⁷	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	pg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	1S 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	0.005	1 (24hrs)		
Nickel (Ni)	ng/m²	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)		

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Page 1 of 1

Authorised Signatory

Dr. Deependra Kumar Sinha

Ph. D Environmental Eng

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4773	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4243 : Administrative Office Bagru Bauxite Mine(75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 17,11.2023 to 18.11,2023 : 24,11,2023
Mines Status	: Non Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 24.11.2023 to 09.12.2023	Sample Condition	: Sealed & Preserved

1	Average Temperature (°C)	: 20	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 49	4	Weather Condition	: Clear

Discipline : Chem	icat	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)*	µg/m³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)	

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

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****End of Report****

Authorised Signatory
Dr. Deependra Kumar Sinha

Ph. D Environmental Engg. eLES Pvt. Ltd. Technical Manager

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

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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/2023/4774	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	:: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4244 : Near Shiv Temple Compound Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jhurkhand-835302	Sampling Date Sample Received Date	: 17.11.2023 to 18.11.2023 ; 24.11.2023	
Mines Status	Non Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 24.11.2023 to 09.12.2023	Sample Condition	: Sealed &Preserved	

MI	ETEOROLOGICAL INFORM	IATION			
1	Average Temperature (°C)	20	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	49	4	Weather Condition	: Clear

Discipline : Chemica	ıl	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	1\$ 5182 (Part-23): 2006; RA2022	66	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	29	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part-2): 2001; RA2022	7.1	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	18.3	80 (24hrs)	
Ózotie (O ₃)	µg/m³	IS-5182 (Part-9): 1974; RA2019	<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): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	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	<2.0	06 (Annual)	

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Dr. Deependra Konfar Sinha

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4774	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4244 : Near Shiv Temple Compound Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 17.11.2023 to 18.11.2023 : 24.11.2023	
Mines Status	: Non Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 24.11.2023 to 09.12.2023	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 20	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	; 49	4	Weather Condition	: Clear

Discipline : Chem	ical	Group:	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (CoHo)*	µg/m³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)		

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

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****End of Report****

Authorised Signatory

Dr. Deependra Kumar Sinha

Ph. D Environmental Engg.

LLES Pvt. Ltd. Technical Manager

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4775	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	CUSTOMER DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4245 : Near Weigh Bridge Bagru Bauxite Mine(75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 17.11.2023 to 18.11,2023 : 24.11,2023
Mines Status	: Non Operational	Type of Sample Sampling Procedure Sample Desum By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 24.11.2023 to 09.12.2023	Secretary and the second second	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) 20	2	Barometric Pressure (mm)	Hg) : 734
3	Relative Humidity (%) : 49	. 4	Weather Condition	: Clear

Discipline : Chemic	al	Group: A	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	67	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	35	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	10.4	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	27.5	80 (24hrs)
Ozone (O ₃)	µg/m³	1S 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₂)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	1S 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.010	I (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4775	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	CUSTOMER DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4245 : Near Weigh Bridge Bagru Bauxite Mine(75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 17.11.2023 to 18.11.2023 : 24.11.2023
Mines Status	: Non Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 24.11.2023 to 09.12.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed &Preserved

MI	ETEOROLOGICAL INFORM	MATION				
1	Average Temperature (°C)	20	2	Barometric Pressure (mmH	lg) : 734	
3	Relative Humidity (%)	49	4	Weather Condition	d Clear	

Discipline : Chem	ical	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)*	µg/m³	1S 5182 (Part-11)2006;RA2017	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	< 0.5	01(Annual)	

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

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****End of Report****

Dr. Deependra Kumar Sinha
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ELES Pvt. Ltd. Technical Manager

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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/2023/4776	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4246 : Near Daldaliya Viltage Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 17.11.2023 to 18.11.2023 : 24.11.2023 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sample Drawn By	: ELES Pvt. Ltd.	
Period of Analysis	: 24.11.2023 to 09.12.2023	Sample Condition	: Sealed & Preserved	

METEOROLOGICAL INFORMATION					
3	Average Temperature (°C)	: 20	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 49	-4	Weather Condition	: Clear
3	Longitude	: 84°35'37.93"E	6	Latitude	: 23°29'4.48"N

Discipline : Chemic:	ıl -	Group : A	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit			
Particulate Matter (PM10)	μg/m²	IS 5182 (Part-23): 2006; RA2022	52	100 (24hrs)			
Particulate Matter (PM2.5)	μg/m ⁱ	IS 5182 (Part- 24): 2019	26	60 (24hrs)			
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	7.1	80 (24hrs)			
Nitrogen Di-Oxide (NO ₁)	μg/m³	1S 5182 (Part-6): 2006; RA2022	20.5	80 (24hrs)			
Ozone (O ₃)	µg/m	1S 5182 (Part-9): 1974; RA2019	<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): 1999; RA2019	<1.0	2 (8hrs)			
Lead (Pb)	µg/m²	IS 5182 (Part-22): 2004; RA2019	0.008	1 (24hrs)			
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)			
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)			

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Authorised Signatory Dr. Deependra Kumar Sinha

Page 1 of 1

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4776	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	; ELES/RNC/2023/AA/4246 ; Near Daldaliya Village Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 17.11.2023 to 18.11.2023 : 24.11.2023	
Mines Status	: Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 24,11.2023 to 09.12.2023	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	RMATION			-
C	Average Temperature (°C)	: 20	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	:49	4	Weather Condition	: Clear
5	Longitude	: 84°35'37.93"E	6	Latitude	: 23°29'4.48"N

Discipline: Chem	ical	Group:	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₀ H ₆)*	µg/m³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	< 0.5	01(Annual)		

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

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****End of Report****

Authorised Signatory
Dr. Deependra Kumar Sinha
Ph. D Environmental Engg
ELES Pvt. Ltd. Technical Managor

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

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TEST REPORT

Test Report No.	: ELES/RNC/2023/4777	Report Release Date	: 21,12,2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4247 : Aditya School Gangupara Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 17.11.2023 to 18.11.2023 : 24.11.2023 : Ambient Air	
Mines Status	:Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 24.11.2023 to 09.12.2023	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFO	RMATION			0.000
1	Average Temperature (°C)	: 20	2	Barometric Pressure (mmHg)	; 734
3	Relative Humidity (%)	: 49	- 4	Weather Condition	: Clear
5	Longitude	: 84°38'8.14"E	6	Latitude	: 23°27'46.28"N

Discipline : Chemica	d	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	61	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	30	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	64	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	12.5	80 (24hrs)		
Ozone (O ₃)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<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): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	µg/m³	1S 5182 (Part-22): 2004; RA2019	< 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	<2.0	-06 (Annual)		

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****End of Report****

Dr. Deependra Kumar Sinha

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

ENGINEERING SERVICES PVT. LTD.

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

Website: www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2023/4777	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4247 : Aditya School Gangupara Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 17.11.2023 to 18.11.2023 : 24.11.2023	
Mines Status	:Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 24.11.2023 to 09.12.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

M	METEOROLOGICAL INFORMATION				
1	Average Temperature (°C)	: 20	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 49	4	Weather Condition	: Clear
5	Longitude	: 84"38'8.14"E	6	Latitude	: 23°27'46.28"N

Discipline: Chem	ical	Group:	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit			
Benzene (C ₆ H ₆)*	µg/m³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)			
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)			

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

Reviewed by

****End of Report****

Authorised Signatory

Dr. Deependra Kumar Sinha Ph. D Environmental Engg. ELES Pvt. Ltd. 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/2023/4778	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4248 : Ropeway Unloading Station Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 17.11.2023 to 18.11.2023 : 24.11.2023 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status : Operational		Sample Drawn By	: ELES Pvt. Ltd.	
Period of Analysis	: 24.11.2023 to 09.12.2023	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 20	2.	Barometric Pressure (mmHg)	: 734
3.	Relative Humidity (%)	: 49	4	Weather Condition	: Clear
5	Longitude	: 84°41'28.22"E	6	Latitude	: 23°26'45.48"N

Discipline: Chemica	al	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2006; RA2022	61	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	26	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part-2): 2001; RA2022	6.4	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part-6): 2006; RA2022	20.1	80 (24hrs)		
Ozone (O ₃)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	µg/m²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	μg/m ³	1S 5182 (Part-22): 2004; RA2019	0.011	1 (24hrs)		
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m	ELES/AIR/SOP/01	<2.0	06 (Annual)		

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****End of Report****

Authorised Signatory
Dr. Deependra Kumar Sinha

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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TEST REPORT

Test Report No.	: ELES/RNC/2023/4778	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/4248	
		Location	: Ropeway Unloading Station	
			Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 17.11.2023 to 18.11.2023	
	The second second	Sample Received Date	: 24.11.2023	
		Type of Sample	: Ambient Air	
Mines Status : Operational		Sampling Procedure	: ELES/DOC/SMPL/02	
	0.17.2022 - 00.72.2022	Sample Drawn By	: ELES Pvt. Ltd.	
Period of Analysis	: 24.11.2023 to 09.12.2023	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 20	.2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 49	4	Weather Condition	: Clear
5	Longitude	: 84°41'28.22"E	6	Latitude	: 23°26'45.48"N

Discipline: Chem	ical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	µg/m³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)		

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

Reviewed by

422,2

****End of Report****

Authorised Signatory

Dr. Deependra Kumar Sinha

Ph. D Environmental Engg.

ELES Pvl. Ltd. Technical Manager

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

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TEST REPORT

Test Report No.	; ELES/RNC/2023/4779	Report Release Date	: 21.12.2023	
Work Order No.	; 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	MLS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4249 : Ropeway Angle Station Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 17.11.2023 to 18.11.2023 : 24.11.2023 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sample Drawn By	: ELES Pvt. Ltd. : Sealed & Preserved	
Period of Analysis	: 24:11:2023 to 09.12:2023	Sample Condition		

MI	ETEOROLOGICAL INFOR	RMATION			
T	Average Temperature (°C)	: 20	2	Barometric Pressure (mmHg)	2 734
3	Relative Humidity (%)	: 49	4	Weather Condition	: Clear
5	Longitude	: 84°41'28.22"E	6	Latitude	: 23°26'45.48"N

Discipline : Chemica	ıl	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2006; RA2022	64	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	(S 5182 (Part- 24): 2019	31	.60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2); 2001; RA2022	6.7	80 (24hrs)	
Nitrogen Di-Öxide (NO ₂)	μg/m³	IS 5182 (Part-6); 2006; RA2022	20.1	80 (24hrs)	
Ozone (O ₁)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<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): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m³	1S 5182 (Part-22): 2004; RA2019	0.009	1 (24hrs)	
Nickel (Ni)	ng/m³	1S 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m²	ELES/AIR/SOP/01	<2.0	06 (Annual)	

Reviewed by

****End of Report****

Dr. Deependra Kumar Sinha

Page 1 of 1

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

ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	; ELES/RNC/2023/4779	Report Release Date	: 21,12,2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4249 : Ropeway Angle Station Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 17.11.2023 to 18.11.2023 : 24.11.2023	
Mines Status	: Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd. : Sealed &Preserved	
Period of Analysis	: 24.11.2023 to 09.12.2023	Sample Condition		

M	ETEOROLOGICAL INFO	RMATION	70.0		
1	Average Temperature (%C)	≈ 20	2	Barometric Pressure (mmHg)	: 734
3.	Relative Humidity (%)	: 49	4	Weather Condition	: Clear
5	Longitude	: 84°41'28.22"E	6	Latitude	: 23°26'45.48"N

Discipline: Chem	ical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C _é H ₆)*	µg/m³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	1S 5182 (Part-12)2004;RA2019	<0.5	01(Annual)	

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



****End of Report****

Authorised Signatory

Dr. Deependra Kumar Sinha Ph. D Environmental Engg. ELES Pvt. Ltd. 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/RAN/2023/3121	Report Release Date	: 21,12,2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET	AILS	SAMPLE DETAILS			
Customer Name	t Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RAN/2023/DW/3008 (07.11.2023 : 24.11.2023		
Address	: Lohardaga, Jharkhand-835302	Type of Sample Source/Location of Sample	: Drinking Water : Bagru Bauxite Mines		
Mines Status	: Non Operational	Sampling Procedure Sample Collected By	(75.71 ha) ELES/DOC/SMPL/01 ELES Pvt, Ltd.		
Period of Analysis	: 24.11.2023 to 08.12.2023	Sample Condition	; Sealed & Preserved		

Discipline : Chem	ical	Group : Wate	r		ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
pH (at 24.8 °C)	2	APHA 23 rd Ed.2017, 4500-H	6.70	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 23rd Ed,2017, 2130 B	0.30	1.0	5.0
Taste		APHA 23 rd Ed.2017, 2160 C	Agreeable	Agrecable	Agreeable
Odour	Le	IS 3025 (Part-5) :2018	Agreeable	Agreeable	Agreeable
Colour	Hazen	APHA 23 rd Ed.2017, 2120B&D	1.0	5	15
Total Dissolved Solids (TDS)	mg/L	APHA 23 rd Ed.2017, 2540B,C&D	186	500	2000
Chloride (as Cl)	mg/L	APHA 23 rd Ed.2017, 4500 CI B	30.5	250	1000
Fluoride (as F)	mg/L	APHA 23 rd Ed.2017, 4500 F-D	BDL (DL; 0.1)	1.0	1.5
Total Alkalinity (as CaCO ₃)	mg/L	APHA 23 rd Ed.2017, 2320 B	60.8	200	600
Total Hardness (as CaCO ₃)	mg/L	APHA 23rd Ed.2017, 2340 C	94.8	200	600
Sulphate (as SO ₄)	mg/L	APHA 23 rd Ed.2017, 4500 SO ₄ -3-E	9.72	200	400
Nitrate (as NO ₃)	mg/L.	APHA 23 rd Ed.2017, 4500 NO ₃ -B	4.28	45	No Relaxation
Phenolic Compound (as C ₆ H ₅ OH)	mg/L	IS 3025 (Part-43):1992;RA2019	BDL (DL: 0.0005)	0.001	0.002

Page 1 of 4

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 200AECE97130124

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TEST REPORT

Test Report No. : ELES/RAN/2023/3121 Report Release Date : 21.12.2023

Work Order No. : 13612310218 Work Order Date : 21.04.2023

Discipl	ine : Che	mical Group: V	Vater		ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Cyanide (as CN)	mg/L	APHA 23 rd Ed.2017, 4500 CN-E	BDL (DL: 0.012)	0.05	No Relaxation
Residual Free Chlorine (RFC)	mg/L	1S 3025 (Part-26):2021	BDL (DL: 0.1)	0.02	1.0
Calcium (as Ca)	mg/L	APHA 23 rd Ed.2017, 3500 Ca B	24.8	75	200
Discipl	ine : Che	mical Group	Residues in	Water	
Aluminum (as Al)	mg/L	IS 3025 (Part-55): 2003; RA2019	BDL (DL: 0.02)	0.03	0.2
Arsenic (as As)	mg/L	IS 3025 (Part 37): 2022	BDL (DL: 0.005)	0.01	No Relaxation
Boron (as B)	mg/L	IS 3025(Part-57): 2005; RA2021	BDL (DL: 0.2)	0.5	1.0
Cadmium (as Cd)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL: 0.003)	0.003	No Relaxation
Total Chromium (as Cr)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL: 0.03)	0.05	No Relaxation
Copper (as Cu)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL: 0.03)	0.05	1.5
Iron (as Fe)	mg/L	APHA 23 rd Ed.2017, 3111B	0.152	1.0	1,0
Lead (as Pb)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL: 0.01)	0.01	No Relaxation
Manganese (as Mn)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL: 0.05)	0.1	0.3
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 1994; RA2019	BDL (DL: 0,001)	0.001	No Relaxation
Selenium (as Se)	mg/L	IS 3025 (Part-56); 2003; RA2019	BDL (DL: 0.01)	0.01	No Relaxation
Zinc (as Zn)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL. (DL: 0.1)	5	15

Remarks: 1. pH & RFC done at Lab.

Page 2 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/RAN/2023/3121
 Report Release Date
 : 21.12.2023

 Work Order No.
 : 13612310218
 Work Order Date
 : 21.04.2023

Discipline: Che	mical		Group: Water		
Parameter	Parameter Unit		Result	Regulatory Limi	
Pesticides					
Alachlor*	μg/L	АРНА	BDL (DL: 1.0)	20	
Atrazine*	μg/L	АРНА	BDL (DL: 1.0)	2	
Aldrin/Dieldrin*	μg/L	АРНА	BDL (DL: 0.01)	0.03	
Alpha HCH*	μg/L	АРНА	BDL (DL: 0.001)	0.01	
Beta HCH*	μg/L	АРНА	BDL (DL: 0.01)	0.04	
Butachlor*	μg/L	АРНА	BDL (DL: 10)	125	
Chlorpyriphos*	rpyriphos* μg/L APHA		BDL (DL: 10)	30	
Delta HCH*	μg/L	APHA	BDL (DL: 0.01)	0.04	
2,4 dichlorophenoxyacetic acid*	µg/L	АРНА	BDL (DL: 10)	30	
DDT(o,p and p,p-isomers of DDT,DDE and DDD)*	μg/L	АРНА	BDL (DL: 0.5)	1.	
Endosulfan (alpha, beta, and sulphate)*	μg/L	АРНА	BDL (DL: 0.1)	0.4	
Ethion*	μg/L	АРНА	BDL (DL: 0.5)	3	
Gamma HCH (Lindane)*	µg/L	APHA	BDL (DL: 0.5)	2	
Isoproturon*	μg/L	APHA	BDL (DL: 0.5)	9	

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TEST REPORT

Test Report No.	: ELES/RAN/2023/3121	Report Release Date	: 21.12.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

Discipline : B	Discipline : Biological		Water	Regulatory Limit as per IS 10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Total Coliform	Per 100 mL	IS 15185;2016; RA 2021	Not Detected	OLAN - and	La discional
Escherichia Coli (E. Coli)	Per 100 mL	IS 15185:2016; RA 2021	Not Detected	Shan not	be detected
Discipline: Chemical		Group:	Water	Regulatory Limit as per IS 10500:201	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Anionic Surfactants (as MBAS)*	mg/L	IS 3025 Part 68	BDL (DL: 0.1)	0.2	1.0
Mineral Oil*	mg/L	CL-6, IS: 3025 (P-39)	BDL (DL: 0.1)	1.0	No relaxation
Polynuclear Aromatic Hydrocarbons (PAH)*	mg/L	APHA 23rd Edition	BDL (DL: 0.0001)	0.0001	No relaxation
Polychlorinated Biphenyls (PCB)*	mg/L	APHA 23 rd Edition	BDL (DL: 0.0005)	0.0005	No relaxation

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

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Reviewed by

****End of Report****

Dr. Desirpenda Vguwar Sinha Ph. D Environmental Engg. ELES Pvt. Ltd. Technical Manager

Page 4 of 4

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TEST REPORT

Test Report No.	: ELES/RAN/2023/3134	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RAN/2023/EF/3021 : 09.11.2023 : 24.11.2023	
Address	: Lohardaga, Jharkhand-835302	Type of Sample Source of Sample	: Effluent Water : Work Shop Effluent - Bagru Bauxite Mines (75.41 ha)	
Mines Status	: Non Operational	Sampling Procedure Sample Collected By	: ELES/DOC/SMPL/01 : ELES Pvt. Ltd.	
Period of Analysis	: 24,11,2023 to 02,12,2023	Sample Condition	: Sealed & Preserved	

Discipline: Chemical		Group: Pollution & Environment Discharge Limit EPR, 1986 Sch				
Parameter Unit		Test Protocol	Result	Inland Surface Water	Land for Irrigation	
Dissolved Oxygen (as DO)	mg/L	IS 3025 (Part-38):1989; RA2019	5.0		-	
Fluoride (as F)	mg/L	IS 3025 (Part-60) :2008; RA2019	0.360	2.0	-	
Sulphide (as S)	mg/L	IS 3025 (Part-29):1986; RA2019	0.84	2.0	-	
Discipline: Chem	ical	Group: R	esidues in Wate	r		
Lead (as Pb)	mg/L	APHA 23 rd Ed.2017; 3111 B	BDL (DL: 0.01)	0.1	*	
Manganese (as Mn)	mg/L	APHA 23rd Ed.2017; 3111 B	0.242	2.0	-	
Mercury (as Hg)	mg/L	IS 3025 (Part-48):1994; RA2019	BDL (DL: 0.001)	0.01	-	
Nickel (as Ni)	mg/L	APHA 23 rd Ed.2017; 3111 B	BDL (DL: 0.01)	3.0	~	



****End of Report****

Authorised Signatory
or Deependra Kumar Sinha
Ph. D Environmental Engg.
ES Pvt. Ltd. Technical Manager

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TEST REPORT

Test Report No.	: ELES/RAN/2023/3133	Report Release Date	: 21.12.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RAN/2023/EF/3020 : 09.11.2023 : 24.11.2023 : Effluent Water
Address	: Lohardaga, Jharkhand-835302	Type of Sample Source of Sample	: STP Outlet- Bagru Bauxite Mines (75.41 ha)
Mines Status	: Non Operational	Sampling Procedure Sample Collected By	: ELES/DOC/SMPL/01 : ELES Pvt. Ltd.
Period of Analysis	: 24.11.2023 to 02.12.2023	Sample Condition	: Sealed & Preserved

Discipline: Chemica	1	Group: Pollution & Env	vironment	Discharge Lim EPR, 1986 Sc		
Parameter U		Test Protocol Result		Inland Surface Water	Land for Irrigation	
pH (at 25.1 °C)	-	APHA 23 rd Ed.2017,4500-H*B	6.48	5,5-9.0	5,5-9.0	
Total Suspended Solids (TSS)	mg/L	1S 3025 (Part-17): 2022	26.5	100	200	
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part 16): 1984; RA2017	745	- 97	8	
Chemical Oxygen Demand (COD)	mg/L	IS 3025 (Part-58): 2006: RA2022	72.8	250		
Biochemical Oxygen Demand (BOD) (at 27 °C for 3 days)	mg/L	IS 3025 (Part-44): 1993: RA2019	10.8	30	100	
Oil & Grease	mg/L	IS 3025 (Part-39); 2021	2.4	10	10	
Calcium (as Ca)	mg/L	IS 3025 (Part-40):1991; RA2019	30.4		**	
Discipline: Chemical		Group: Res	idues in Wate	r		
Aluminum (as Al)	mg/L	IS 3025 (Part-55): 2003; RA2019	BDL (DL: 0.02)	-	- 94	
Iron (as Fe)	mg/L	APHA 23 rd Ed.2017; 3111B	0.481	3.0		

Remarks: 1. pl done ar

Reviewed by

****End of Report****

Dr. Deependra Kumar Sinha Ph. D Environmental Engg. ELES Pvt. Ltd. Technical Manager

Page 1 of 1

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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0211	Report Release Date	: 15.01.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

ULR No. : TC883924000000194F

Reviewed by

CUSTOMER DET/	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4810 : Entrance Gate (Ropeway Loading Stn); Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 19.12.2023 to 20.12.2023 : 26.12.2023	
	000'00 10 4	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Non Operational	Sampling Done By	: ELES Pvt, Ltd.	
Period of Analysis	; 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 19	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 47	4	Weather Condition	: Clear

Discipline : Chemica	al .	Group: A	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2006; RA2022	71	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): 2001; RA2022	10.2	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	24.6	80 (24hrs)		
Ozone (O ₁)	μg/m ³	IS 5182 (Part-9): 1974; RA2019	<20,0	100 (8hrs)		
Ammonia (NH ₃)	µg/m ¹	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m²	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	µg/m³	1S 5182 (Part-22): 2004; RA2019	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	<2.0	06 (Annual)		

****End of Report****

Authorised Signatory

Dr. Deependra Kumar Sinha

Ph. D Environmental Enga

Page 1 of 1 ELES Pvt. Ltd. Technical Manager

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0211	Report Release Date	: 15.01.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4810 : Entrance Gate (Ropeway Loading Stn); Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 19.12.2023 to 20.12.2023 : 26.12.2023	
Mines Status	: Non Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvl. Ltd.	
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	:19	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 47	4	Weather Condition	: Clear

Discipline : Chem	ical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)*	μg/m³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)	

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



****End of Report****

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

ELES Pvt. Ltd. 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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TEST REPORT

Test Report No.	: ELES/RNC/2024/0212	Report Release Date	: 15.01,2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

: TC883924000000195F ULR No.

des & Enp

Reviewed b

CUSTOMER DETA	CUSTOMER DETAILS		
Customer Name	Hindalco Industries Limited	Sample Ref. No. Location	ELES/RNC/2023/AA/4811 Administrative Office Bagru Bauxite Mine(75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 19.12.2023 to 20.12.2023 : 26.12.2023
		Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Non Operational	Sampling Done By	; ELES Pvt. Ltd.
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C) : 19	2	Barometric Pressure (mml-	lg) : 736	
3	Relative Humidity (%) : 47	4	Weather Condition	: Clear	

Discipline : Chemica	d	Group: A	tmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2006; RA2022	64	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): 2001; RA2022	8.3	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6); 2006; RA2022	26.1	80 (24hrs)
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25); 2018-	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	0.011	I (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

****End of Report****

Dr. Deependra Kumar Sinha

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Page 1 of 1

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0212	Report Release Date	: 15.01.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4811 : Administrative Office Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 19.12,2023 to 20.12.2023 : 26.12.2023	
		Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Non Operational	Sampling Done By	: ELES PVL Ltd.	
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	:19	2	Barometric Pressure (mmHg)	: 736
_	Relative Humidity (%)	:47	4	Weather Condition	: Clear

Discipline : Chemical		Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	μg/m³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)		

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



****End of Report****

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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/2024/0213	Report Release Date	: 15.01.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

ULR No. : TC883924000000196F

Reviewed by

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4812 : Near Shiv Temple Compound Bagru Bauxite Mine(75,41ha)	
Address) Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 19.12.2023 to 20.12.2023 : 26.12.2023 : Ambient Air	
Mines Status	: Non Operational	Sampling Procedure Sampling Oone By	: ELES/DOC/SMPL/02 : ELES Pvl. Ltd.	
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 19	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 47	4.	Weather Condition	: Clear

Discipline : Chemica	al	Group: A	tmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	71	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): 2001; RA2022	8.9	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part-6): 2006; RA2022	22.1	80 (24hrs)
Ozone (O ₃)	μg/m ⁷	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ¹	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	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	<2.0	06 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (/

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 204AECE9713D124

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0213	Report Release Date	: 15.01.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4812 : Near Shiv Temple Compound Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 19.12.2023 to 20.12.2023 : 26.12.2023	
		Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Non Operational	Sampling Done By	: ELES Pvi. Ltd.	
Period of Analysis	: 26.12,2023 to 08.01,2024	Sample Condition	: Sealed & Preserved	

MI	METEOROLOGICAL INFORMATION				
1	Average Temperature (°C)	: 19	2	Barometric Pressure (mmHg)	÷ 736
3	Relative Humidity (%)	: 47	4	Weather Condition	† Clear

Discipline : Chem	ical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₈)*	μg/m³	1S 5182 (Part-11)2006;RA2017	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)	

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



****End of Report****

Authorised Signatory
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ELES Pvt. Ltd. Technical Manager

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0214	Report Release Date	: 15.01.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

ULR No. : TC883924000000197F

Reviewed by

CUSTOMER DET	MLS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4813 : Near Weigh Bridge Bagru Bauxite Mine(75.41ha)	
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 19.12.2023 to 20.12.2023 : 26.12.2023 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Non Operational	Sampling Procedure Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	= 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	RMATION				
1	Average Temperature (°C)	: 19	2	Barometric Pressure (mmH	g) :736	
3	Relative Humidity (%)	:47	4	Weather Condition	: Clear	

Discipline : Chemica	al	Group : A	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	72	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): 2001; RA2022	12.8	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m³	1S 5182 (Part-6): 2006; RA2022	30.1	80 (24hrs)
Ozone (O ₃)	µg/m	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m³	IS 5182 (Pan- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m ³	IS 5182 (Part-22): 2004; RA2019	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	<2.0	06 (Annual)

****End of Report****

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0214	Report Release Date	: 15.01.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DET	CUSTOMER DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4813 : Near Weigh Bridge Bagru Bauxite Mine(75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 19.12.2023 to 20.12.2023 : 26.12.2023
Mines Status	: Non Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved

MI	METEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 1	9 2	Burometric Pressure (mmHg)	: 736	
3	Relative Humidity (%) 4	7 4	Weather Condition	: Clear	

Discipline : Chem	ical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)*	µg/m³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)	

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



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Authorised Signatory
Dr. Deependra Kumar Sinlia
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ELES Pvt. Ltd. Technical Manar

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0215	Report Release Date	: 15.01.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883924000000198F			

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	- Hindalco Industries Limited	Sample Ref. No. Location	ELES/RNC/2023/AA/4814 Near Daldaliya Village Bagru Bauxite Mine(75,41ha)	
Address	Eohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 19.12,2023 to 20.12,2023 : 26.12,2023 : Ambient Air	
Mines Status	: Non Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 26.12,2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

M	METEOROLOGICAL INFORMATION					
1	Average Temperature (°C) : 19	2	Barometric Pressure (mml-	(g) : 736		
3	Relative Humidity (%) : 47	4	Weather Condition	: Clear		

Discipline : Chemica	d	Group: /	tmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM I0)	μg/m³	IS 5182 (Part-23): 2006; RA2022	62	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): 2001; RA2022	8.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	22.8	80 (24hrs)
Ozone (O ₅)	μg/m [®]	IS 5182 (Part-9): 1974; RA2019	<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): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.012	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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Reviewed by

Authorised Signatory Dr. Deependra Kumar Sinha

Ph. D Environmental Engo

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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/2024/0215	Report Release Date	: 15.01.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4814 : Near Daldaliya Village Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 19.12.2023 to 20.12.2023 : 26.12.2023 : Ambient Air	
Mines Status	: Non Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

M	METEOROLOGICAL INFORMATION				
1	Average Temperature (°C)	: 19	2.	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 47	4	Weather Condition	: Clear

Discipline : Chem	ical	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₆ H ₆)*	ug/m³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	< 0.5	01(Annual)

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



****End of Report****

Ph. D Environmental Engg ELES Pvt. Ltd. Technical Manager

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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0216	Report Release Date	: 15.01.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000000199F		

CUSTOMER DETA	ALS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4815 : Aditya School Gangupara Bagru Bauxite Mine(75.41ha)	
Address	∴ Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 19.12,2023 to 20.12.2023 : 26.12.2023	
Mines Status	: Non Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	26.12.2023 to 08.01.2024	Sample Condition	; Sealed & Preserved	

M	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 19	.2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	:47	4	Weather Condition	; Clear

Discipline : Chemica	il	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m ³	IS-5182 (Part-23): 2006; RA2022	69	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): 2001; RA2022	7.2	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part-6): 2006; RA2022	15.1	80 (24hrs)	
Ozone (O ₃)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	ug/m ¹	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m ³	1S 5182 (Part-22): 2004; RA2019	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	<2.0	06 (Annual)	

****End of Report****

Reviewed by

Ph. D Environmental Engg ELES Pvt. Ltd. Technical Manager

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

ENGINEERING SERVICES PVT. LTD.

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

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

TEST REPORT

Test Report No.	: ELES/RNC/2024/0216	Report Release Date	: 15.01.2024	
Work Order No.	: 13612310218	Work Order Date	; 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4815 : Aditya School Gangupara Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 19.12.2023 to 20.12.2023 : 26.12.2023 : Ambient Air	
Mines Status	: Non Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	; 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	;19	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 47	4	Weather Condition	: Clear

Discipline: Chemical		Group:	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C _s H _s)*	μg/m³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)		

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



****End of Report****

Authorised Signatory
Dr. Deependra Kumar Sirina
Ph. D Environmental Engg.
ELES Pvt. Ltd. Technical Manager

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

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0217	Report Release Date	: 15.01.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000000200F		

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/4816	
		Location	Ropeway Unloading Station Bagru Bauxite Mine(75.41ha)	
		Sampling Date	: 19.12.2023 to 20.12.2023	
Address	Lohardaga, Jharkhand-835302	Sample Received Date	: 26.12.2023	
		Type of Sample	: Ambient Air	
		Sampling Procedure	: ELES/DOC/SMPL/02	
Mines Status	- Non Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C) : 19	2	Barometric Pressure (mmH	g) : 736	
3	Relative Humidity (%) : 47	4	Weather Condition	: Clear	

Discipline : Chemica	ıl -	Group: A	Atmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	68	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): 2001; RA2022	8.3	80 (24hrs)
Nitrogen Di-Oxide (NO2)	μg/m³	1S 5182 (Part-6): 2006; RA2022	23.5	80 (24hrs)
Ozone (O ₃)	μg/m ¹	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	0.013	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Atsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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****End of Report****

Dr. Deependra Kumar Sinna

Ph. D Environmental Engg.

CLES Pvt. Ltd. Technical Manager

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0217	Report Release Date	: 15.01.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4816 : Ropeway Unloading Station Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 19.12.2023 to 20.12.2023 : 26.12.2023 : Ambient Air	
Mines Status	; Non Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 19	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 47	4	Weather Condition	: Clear

Discipline: Chem	ical	Group:	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)*	µg/m³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)	

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



****End of Report****

Authorised Signatory
Dr. Deependra Kumar Sinua
Ph. D Environmental Engg
ELES Pvt. Ltd. Technical Manager

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TC-8835

TEST REPORT

Test Report No.	: ELES/RNC/2024/0218	Report Release Date	: 15.01.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000000201F		

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4817 : Ropeway Angle Station Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 19.12,2023 to 20.12,2023 : 26.12,2023 : Ambient Air	
Mines Status	; Non Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt, Ltd.	
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	RMATION			7-04-0
1	Average Temperature (°C)	: 19	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 47	.4	Weather Condition	: Clear

Discipline : Chemica	it	Group : A	tmospheric	Pollution
Parameter Unit		Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	71	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	35	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part-2): 2001; RA2022	9.1	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	23.5	80 (24hrs)
Ozone (O ₃)	µg/m²	IS 5182 (Part-9): 1974; RA2019	<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): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	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	<2.0	06 (Annual)

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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/2024/0218	Report Release Date	: 15.01.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DET/	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/4817 : Ropeway Angle Station Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 19.12.2023 to 20.12.2023 : 26.12.2023	
Mines Status	: Non Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 26.12.2023 to 08.01.2024	Sample Condition	: Sealed & Preserved	

M	METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 19	2	Barometric Pressure (mmHg)	: 736	
3	Relative Humidity (%)	:47	4	Weather Condition	: Clear	

Discipline : Chem	Group:	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C _t H _t)*	μg/m³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)

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



****End of Report****

Ph. D Environmental Engg.
ELES Pvt. Ltd. Technical Manager

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0535	Report Release Date	: 06.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
III R No.	: TC883924000000506F		

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	ELES/RNC/2024/AA/0474 Entrance Gate (Ropeway Loading Stn); Bagru Bauxite Mine(75.41ha)
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 21.01.2024 to 22.01.2024 : 27.01.2024 : Ambient Air
Mines Status	: Non Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	±736
3	Relative Humidity (%)	:47	4	Weather Condition	: Clear

Discipline : Chemica	1	Group : A	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit			
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part-23): 2006; RA2022	78	100 (24hrs)			
Particulate Matter (PM2.5)	μg/m³	1S 5182 (Part- 24): 2019	45	60 (24hrs)			
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	12.7	80 (24hrs)			
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part-6): 2006; RA2022	27.3	80 (24hrs)			
Ozone (O ₁)	µg/m²	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)			
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)			
Carbon Monoxide (CO)	mg/m³	1S 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)			
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.016	l (24hrs)			
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)			
Arsenic (As)	ng/m	ELES/AIR/SOP/01	<2.0	06 (Annual)			

****End of Report****

Reviewed by

Authorised Signatory
Dr. Deependra Kumar Sinha

Ph. D Environmental Engg.

Page 1 of I ELES Pvt. Ltd. Tec

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 200AECE97130124

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0535	Report Release Date	: 06.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0474 : Entrance Gate (Ropeway Loading Stn); Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 21.01.2024 to 22.01.2024 : 27.01.2024	
		Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Non Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	:47	4	Weather Condition	: Clear

Discipline : Chem	ical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	μg/m³	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12): 2004; RA2019	<0.5	01(Annual)		

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

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Reviewed by

****End of Report****

Dr. Deependra Kumar Sinha Ph. D Environmental Engg. ELES Pvt. Ltd. Technical Manar

Page 1 of 1

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

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TEST REPORT

 Test Report No.
 : ELES/RNC/2024/0536
 Report Release Date
 : 06.02,2024

 Work Order No.
 : 13612310218
 Work Order Date
 : 21.04.2023

ULR No. : TC883924000000507F

Reviewed by

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0475 : Administrative Office Bagru Bauxite Mine(75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 21.01.2024 to 22.01.2024 : 27.01.2024
Mines Status	: Non Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 27.01.2024 to 05.02,2024	Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION			
1 Average Temperature (°C) : 18	2	Barometric Pressure (mmHg)	:736
Relative Humidity (%) : 47	4	Weather Condition	Clear

Discipline: Chemica	al	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	69	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	38	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	1S 5182 (Part-2): 2001; RA2022	11.2	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part-6): 2006; RA2022	28.5	80 (24hrs)	
Ozone (O ₃).	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8iars)	
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.015	1 (24hrs)	
Nickel (Ni)	ng/m ³	1S 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

****End of Report****

Authorised Signatory
Dr. Deependra Kurnar Sinha

Ph. D Environmental Engg.

Page 1 of 1 ELES Pvt. Ltd. Technical Mans

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

TEST REPORT

Test Report No.	: ELES/RNC/2024/0536	Report Release Date	: 06.02.2024
Work Order No.	: 13612310218	Work Order Date	; 21.04.2023

CUSTOMER DETA	CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0475 : Administrative Office Bagru Bauxite Mine(75.41ha)		
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 21.01,2024 to 22.01,2024 : 27.01.2024 : Ambient Air : ELES/DOC/SMPL/02		
Mines Status	Non Operational	Sampling Done By	: ELES Pvt. Ltd.		
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	: Sealed & Preserved		

MI	TEOROLOGICAL INFOR	MATION			
T	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 736
	Relative Humidity (%)	:: 47	4	Weather Condition	: Clear

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)*	µg/m³	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12): 2004; RA2019	<0.5	01(Annual)	

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



****End of Report****

Dr. Deependra Kumar Sinha
Ph. D Environmental Engg.
ELES Pvt. Ltd. Technical Manar

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TEST REPORT

 Test Report No.
 : ELES/RNC/2024/0537
 Report Release Date
 : 06.02.2024

 Work Order No.
 : 13612310218
 Work Order Date
 : 21.04.2023

ULR No. : TC883924000000508F

CUSTOMER DETA	CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0476 : Near Shiv Temple Compound Bagru Bauxite Mine(75.41ha)		
Address	:: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 21.01.2024 to 22.01.2024 : 27.01.2024		
		Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02		
Mines Status	= Non Operational	Sampling Done By	: ELES Pvt. Ltd.		
Period of Analysis	: 27.01,2024 to 05.02,2024	Sample Condition	: Sealed & Preserved		

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 18	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%) £47	4	Weather Condition	: Clear

Discipline : Chemica	al	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	78	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	1S 5182 (Part- 24): 2019	46	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	11.2	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	25.4	80 (24hrs)	
Ozone (O ₃)	µg/m²	IS 5182 (Part-9): 1974; RA2019	<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): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	1S 5182 (Part-22): 2004; RA2019	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	<2.0	06 (Annual)	

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0537	Report Release Date	: 06.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0476 : Near Shiv Temple Compound Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 21.01.2024 to 22.01.2024 : 27.01.2024	
		Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Non Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	MATION	7.00		
1	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 47	4	Weather Condition	: Clear

Discipline : Chem	ical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)*	μg/m ¹	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m ³	IS 5182 (Part-12): 2004; RA2019	<0.5	01(Annual)	

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



****End of Report****

Authorised Signatory
Dr. Deependra Kumar Sini (4)
Ph. D Environmental Engg.

ELES Pyt. Ltd. Technical Management

Page 1 of 1

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0538	Report Release Date	: 06.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000000509F		

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0477 : Near Weigh Bridge Bagru Bauxite Mine(75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 21.01.2024 to 22.01.2024 : 27.01.2024 : Ambient Air
Mines Status	: Non Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 ; ELES Pvt. Ltd.
Period of Analysis	: 27.01,2024 to 05.02,2024	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 18	2	Barometric Pressure (mml	lg) : 736
3	Relative Humidity (%) : 47	4	Weather Condition	: Clear

Discipline : Chemica	el .	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	78	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): 2001; RA2022	14.1	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m³	15 5182 (Part-6): 2006; RA2022	32.5	80 (24hrs)	
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.015	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m'	ELES/AIR/SOP/01	<2.0	06 (Annual)	

****End of Report****

Reviewed by

Dr. Deependia Kumar Sinha

Ph. D Environmental Engg.

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ENGINEERING SERVICES PVT. LTD.

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0538	Report Release Date	: 06.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04,2023

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0477 : Near Weigh Bridge Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 21.01.2024 to 22.01.2024 : 27.01.2024 : Ambient Air	
Mines Status	: Non Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	±736
3	Relative Humidity (%)	: 47	4	Weather Condition	: Clear

Discipline : Chem	ical	Group:	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)*	μg/m ⁵	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12): 2004; RA2019	<0.5	01(Annual)	

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



****End of Report****

Dr. Deependra Kumar Sinha Ph. D Environmental Engg. ELES Pvt. Ltd. Technical Mananol

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0531	Report Release Date	: 06.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000000502F		

CUSTOMER DETA	CUSTOMER DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0470 : Near Daldaliya Village Bagru Bauxite Mine(75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 21.01.2024 to 22.01.2024 : 27.01.2024 : Ambient Air
Mines Status	: Non Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 27.01,2024 to 05.02,2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	:18	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	:47	4	Weather Condition	: Clear

Discipline : Chemica	ıl	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	69	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	1S 5182 (Part- 24): 2019	38	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	9.3	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	1S 5182 (Part-6): 2006; RA2022	23.7	80 (24hrs)
Ozone (O ₃)	μg/m³	15 5182 (Part-9): 1974; RA2019	<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): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	1S 5182 (Part-22): 2004; RA2019	0.017	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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****End of Report****

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TEST REPORT

Test Report No.	: ELES/RNC/2024/0531	Report Release Date	: 06.02,2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0470 : Near Daldaliya Village Bagru Bauxite Mine(75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 21.01.2024 to 22.01.2024 : 27.01.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Non Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	c 736
3	Relative Humidity (%)	: 47	4.	Weather Condition	; Clear

Discipline : Chem	ical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)*	µg/m ¹	IS 5182 (Part-I1): 2006; RA2022	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12): 2004; RA2019	< 0.5	01(Annual)	

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

Reviewed by

****End of Report****

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

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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/2024/0532	Report Release Date	: 06.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
III D No	- TC883924000000503F			

CUSTOMER DET	MLS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0471 : Aditya School Gangupara Bagru Bauxite Mine(75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 21.01.2024 to 22.01.2024 : 27.01.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Non Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	27.01.2024 to 05.02.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 18	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%) : 47	4	Weather Condition	: Clear

Discipline : Chemica	d	Group : A	tmospheric	Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2006; RA2022	76	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	43	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	1S 5182 (Part-2): 2001; RA2022	10.7	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	20.2	80 (24hrs)
Ozone (O ₁)	μg/m ⁹	IS 5182 (Part-9): 1974; RA2019	<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): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	ug/m³	1S 5182 (Part-22); 2004; RA2019	0.014	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

****End of Report****

14.60

Reviewed by

Authorised Signatory

Dr. Deependra Kumar Sinha

Ph. D Environmental Enga

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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/2024/0532	Report Release Date	: 06.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0471 : Aditya School Gangupara Bagru Bauxite Mine(75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 21.01.2024 to 22.01.2024 : 27.01.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Non Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature ("C)	: 18	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 47	4	Weather Condition	: Clear

Discipline : Chem	ical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C _s H _s)*	µg/m³	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	1S 5182 (Part-12): 2004; RA2019	<0.5	01(Annual)		

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



****End of Report****

Authorised Signatory

Dr. Deependra Kurnar Sinha Ph. D Environmental Engg. ELES Pvt. Ltd. Tachnical Manager

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TEST REPORT

Test Report No.	; ELES/RNC/2024/0533	Report Release Date	: 06.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883924000000504F			

CUSTOMER DETA	CUSTOMER DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0472 : Ropeway Unloading Station Bagru Bauxite Mine(75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 21.01.2024 to 22.01.2024 : 27.01.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Non Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORM	IATION			
1	Average Temperature (°C)	18	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	47	4	Weather Condition	: Clear

Discipline : Chemica	d	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	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): 2001; RA2022	11.5	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part-6): 2006; RA2022	26.9	80 (24hrs)	
Ozone (O ₃)	μg/m²	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₂)	μg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	0.017	1 (24hrs)	
Nickel (Ni)	ng/m³	1S 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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****End of Report****

Authorised Signatory

Dr. Deependra Kumar Sinhu

Ph. D Environmental Engg.

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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/2024/0533	Report Release Date	: 06.02,2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETA	CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0472 : Ropeway Unloading Station Bagru Bauxite Mine(75.41ha)		
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 21.01.2024 to 22.01.2024 : 27.01.2024 : Ambient Air : ELES/DOC/SMPL/02		
Mines Status	: Non Operational	Sampling Done By	: ELES Pvt. Ltd.		
Period of Analysis	; 27.01.2024 to 05.02.2024	Sample Condition	: Sealed & Preserved		

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 736
_	Relative Humidity (%)	: 47	4	Weather Condition	: Clear

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)*	µg/m ³	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m ³	IS 5182 (Part-12): 2004; RA2019	<0.5	01(Annual)	

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



****End of Report****

Authorised Signatory Dr. Deependra Kumar Sinna Ph. D Environmental Engg. ELES PVI. Ltd. Technical Mana-

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

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1

TEST REPORT

Test Report No.	: ELES/RNC/2024/0534	Report Release Date	: 06.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000000505F		

CUSTOMER DETA	MLS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0473 : Ropeway Angle Station Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 21.01.2024 to 22.01.2024 : 27.01.2024 : Ambient Air	
Mines Status	: Non Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	±47	4	Weather Condition	; Clear

Discipline : Chemica	1	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	79	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	1S 5182 (Part- 24): 2019	40	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2): 2001; RA2022	12.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	15 5182 (Part-6): 2006; RA2022	27.1	80 (24hrs)
Ozone (O ₃)	μg/m³	1S 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m³	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	0.015	1 (24hrs)
Nickel (NI)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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****End of Report****

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Dr. Deependra Kumar Sinha

Ph. D Environmental Engg.

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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/2024/0534	Report Release Date	: 06.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/0473 : Ropeway Angle Station Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Mines Status	: Non Operational			
Period of Analysis	: 27.01.2024 to 05.02.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	MATION			
_	Average Temperature (°C)	: 18	2	Barometric Pressure (mmHg)	: 736
_	Relative Humidity (%)	:47	4	Weather Condition	:: Clear

Discipline : Chem	ical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	μg/m³	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12); 2004; RA2019	<0.5	01(Annual)		

Remarks; (*)-Parameters are outsourced to other Lab.

Reviewed by

****End of Report****

Authorised Signatory
Dr. Deependra Kumar Simila
Ph. D Environmental Engg.
ELES Pvt. Ltd. Technical Manar

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TEST REPORT

 Test Report No.
 : ELES/RNC/2024/0604
 Report Release Date
 : 06.02.2024

 Work Order No.
 : 13612310218
 Work Order Date
 : 21.04.2023

ULR No. : TC883924000000575F

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2024/SL/0639 : 22.01.2024 : 31.01.2024	
Address	: Lohardaga, Jharkhand-835302	Type of Sample Location of Sample	: Soil : Near Workshop, Bagru Bauxite Mines (75.41 ha)	
Mines Status	: Non Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/05 : ELES Pvt. Ltd.	
Period of Analysis	: 31.01.2024 to 05.02.2024	Sample Condition	: Sealed	

Discipline : Chemical		Group: Pollution & En	vironment
Parameter	Unit	Test Protocol	Result
pH (1:2) at 24.6 °C		IS 2720 (Part 26):1987; RA2021	4.40
Conductivity (1:2) at 24.6 °C	μS/cm	IS 14767: 2000; RA2021	193
Total Organic Carbon (TOC)	%	Soil Testing in India: 2011 (Walkley & Black Method)	1.06
Available Phosphorus (as P) (1:10)	kg/ha	Soil Testing in India; 2011	0.64
Potassium (as K)	mg/kg	IS 9497:1980; RA 2020	1250
Available Nitrogen	%	Soil Testing in India: 2011	0.28
Chloride (1:2)	%	ELES/SOIL/SOP/01	0.08
Lead (as Pb)	mg/kg	US EPA 3050 A&B: 1996	BDL (DL: 0.1)
Cadmium (as Cd)	mg/kg	US EPA 3050 A&B: 1996	BDL (DL: 0,1)
Mercury (as Hg)	mg/kg	US EPA 7473 : 2007	BDL (DL: 0.01)
Magnesium (as Mg)	mg/kg	Soil Testing in India: 2011	281

Remarks: 1. pH done at Lab.

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****End of Report****

Authorised Signatory Dr. Deependra Komar S.m.

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

ENGINEERING SKRVICES PVT. LTD.

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

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

TEST REPORT

Test Report No.	: ELES/RNC/2024/0604	Report Release Date	: 06.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RNC/2024/SL/0639 : 22.01.2024 : 31.01.2024	
Address	: Lohardaga, Jharkhand-835302	Type of Sample Location of Sample	: Soil : Near Workshop, Bagru Bauxite Mines (75.41 ha)	
Mines Status	: Non Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/05 : ELES Pvt. Ltd.	
Period of Analysis	: 31.01.2024 to 05.02.2024	Sample Condition	: Sealed	

Discipline: Chemical		Group: Pollution & Environment		
Parameter	Unit	Test Protocol	Result	
Arsenic (as As)	mg/kg	IS 3025 (Part 37); 2022	BDL (DL: 0.005)	
Selenium (as Se)	mg/kg	IS 3025 (Part-56) :2003; RA 2019	BDL (DL: 0.01)	

Reviewed by

****End of Report****

Authorised Signatory
Dr. Deependra Kulmar Samus
Ph. D. Environmental Engg.
2LES Pvt. Ltd. Technical Mann.

Page I of I

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

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TC-8839

TEST REPORT

Test Report No.	: ELES/RNC/2024/1209	Report Release Date	: 13.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883924000001145F			

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.: Location	: ELES/RNC/2024/AA/1131 : Entrance Gate (Ropeway Loading Stn): Bagru Bauxite Mine(75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	10.02.2024 to 11.02.2024 12.02.2024
Mines Status	: Non Operational	Type of Sample Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 12.02.2024 to 13.02.2024	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 22	2	Barometric Pressure (mm	Hg) : 736
3	Relative Humidity (%) : 48		Weather Condition	: Clear

Discipline	: Chemical	Group : Atmosp	heric Pollutio	on
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2006; RA2022	73	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): 2001; RA2022	13.3	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	29.1	80 (24hrs)
Ozone (O ₃)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<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): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.016	1 (24hrs)
Nickel (Ni)	ng/m ⁸	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ¹	ELES/AIR/SOP/01	<2.0	06 (Annual)

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****End of Report****

Authorised Signatory

Dr. Deependra Kumar Sinna

Page 1 of 1

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

TEST REPORT

Test Report No.	; ELES/RNC/2024/1276	Report Release Date	: 26.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET	CUSTOMER DETAILS		
Customer Name	; Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1131 : Entrance Gate (Ropeway Loading Stn); Bagru Bauxite Mine(75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 10.02,2024 to 11.02.2024 : 12.02.2024 : Ambient Air
Mines Status	: Non Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt, Ltd.
Period of Analysis	: 12.02.2024 to 21.02.2024	Sample Condition	: Sealed & Preserved

MI	TEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)		2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 48	4	Weather Condition	: Clear

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C _s H _s)*	μg/m³	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m ³	IS 5182 (Part-12): 2004; RA2019	< 0.5	01(Annual)	

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

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****End of Report****

Authorised Signatory

Dr. Deependra Kurnar Sinha Ph D Environmente/Engg.

LES PVL Ltd. Technical Manager

Page 1 of 1

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TEST REPORT

Test Report No.	: ELES/RNC/2024/1210	Report Release Date	: 13.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000001146F		

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1132 : Administrative Office
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	Bagru Bauxite Mine(75.41ha) : 10.02.2024 to 11.02.2024 : 12.02.2024
Marie Prince		Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Mines Status	; Non Operational	Sampling Done By	ELES Pvt. Ltd.
Period of Analysis	: 12.02.2024 to 13.02.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 48	4	Weather Condition	: Clear

Discipline	: Chemical	Group : Atmosp	heric Pollutio	on
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ⁴	IS 5182 (Part-23): 2006; RA2022	63	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	1S 5182 (Part- 24): 2019	32	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m³	IS 5182 (Part-2); 2001; RA2022	9.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part-6): 2006; RA2022	25.3	80 (24hrs)
Ozone (O ₁)	μg/m¹	15 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH _x)	µg/m³	IS 5182 (Part- 25): 2018	<10,0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.008	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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****End of Report****

Authorised Signatory

Dr. Deependra Kumar Sinna

Page 1 of 1

Ph: D Environmental Engg.

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Website: www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2024/1277	Report Release Date	: 26.02.2024	
Work Order No.	: 13612310218	Work Order Date	; 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1132 : Administrative Office Bagru Bauxite Mine(75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 10.02.2024 to 11.02.2024 : 12.02.2024 : Ambient Air	
Mines Status	: Non Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 12.02.2024 to 21.02.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 736
	Relative Humidity (%)	: 48	4	Weather Condition	; Clear

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C ₆ H ₆)*	μg/m²	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12): 2004; RA2019	<0.5	01(Annual)	

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

Reviewed by

****End of Report****

Authorised Signatory

Dr. Deapendra Kumar Sinna

Ph. D Environmental Engg

ELES Pvt. Ltd. Technical Manager

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TC-6839

TEST REPORT

Test Report No.	: ELES/RNC/2024/1211	Report Release Date	: 13.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883924000001147F		_0.2005.Delay-	

CUSTOMER DET		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1133 : Near Shiv Temple Compound
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	Bagru Bauxite Mine(75,4Tha) : 10.02.2024 to 11.02.2024 : 12.02.2024
Mines Status	: Non Operational	Sampling Procedure Sampling Done By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 12.02,2024 to 13.02.2024	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFOR	MATION			
J.	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 48	4	Weather Condition	: Clear

Disciplin	e: Chemical	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	69	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	39	60 (24hrs)		
Sulphur Di-Oxide (SO ₁)	μg/m ³	IS 5182 (Part-2): 2001; RA2022	10.8	80 (24hrs)		
Nitrogen Di-Oxide (NO ₁)	µg/m³	IS 5182 (Part-6): 2006; RA2022	23.7	80 (24hrs)		
Ozone (O ₃)	μg/m¹	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m ¹	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Ph)	μg/m ¹	IS 5182 (Part-22): 2004; RA2019	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	<2.0	06 (Annual)		

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****End of Report***

Authorised Signatory Dr. Deependra Kumar Si

Page 1 of 1

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

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

TEST REPORT

Test Report No.	: ELES/RNC/2024/1279	Report Release Date	: 26.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	; Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1133 : Near Shiv Temple Compound Bagru Bauxite Mine(75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 10.02.2024 to 11.02.2024 : 12.02.2024 : Ambient Air
Mines Status	: Non Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES PVL Ltd.
Period of Analysis	: 12.02.2024 to 21.02,2024	Sample Condition	: Scaled & Preserved

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 48	4	Weather Condition	: Clear

Discipline: Chemical		Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₀ H ₆)*	μg/m³	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12); 2004; RA2019	<0.5	01(Annual)		

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

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****End of Report****

Konha

Authorised Signatory

Dr. Deependra Kumar Simta Ph. D Environmentel Engg. ELSS Pvl. Ltd. Technical Managi F

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

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TC-8839

TEST REPORT

Test Report No.	: ELES/RNC/2024/1212	Report Release Date	; 13.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000001148F		

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name.	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2024/AA/1134	
		Location	: Near Weigh Bridge	
			Bagru Bauxite Mine (75.41ha)	
	to a mile a particular control	Sampling Date	: 10.02,2024 to 11.02.2024	
Address	: Lohardaga, Jharkhand-835302	Sample Received Date	: 12.02,2024	
		Type of Sample	Ambient Air	
	III. A STATE OF THE STATE OF TH	Sampling Procedure	: ELES/DOC/SMPL/02	
Mines Status	: Non Operational	Sampling Done By	ELES Pvt. Ltd.	
Period of Analysis	: 12.02.2024 to 13.02.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	; 22	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 48	4	Weather Condition	: Clear

Discipline	: Chemical	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23); 2006; RA2022	82	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): 2001; RA2022	15.6	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6); 2006; RA2022	30.3	80 (24hrs)		
Ozone (O ₃)	μg/m ^y	1S 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	µg/m¹	IS 5182 (Part-22): 2004; RA2019	0.011	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/0)	<2.0	06 (Annual)		

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Authorised Signatory

Dr. Deapandra Kumar Sinna

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Website: www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2024/1280	Report Release Date	: 26.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1134 : Near Weigh Bridge Bagru Bauxite Mine (75.41ha	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 10.02.2024 to 11.02.2024 : 12.02.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Non Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 12.02.2024 to 21.02.2024	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 736
_	Relative Humidity (%)	: 48	4	Weather Condition	: Clear

Discipline: Chemical		Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	µg/m³	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m²	IS 5182 (Part-12): 2004; RA2019	<0.5	01(Annual)		

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

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Dr. Deependra Kumar Sinita
Ph. D Environmental Enga
ELES Pvt. Ltd. Technical Manager

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TC-8839

TEST REPORT

Test Report No.	: ELES/RNC/2024/1213	Report Release Date	: 13.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000001149F		

CUSTOMER DET.		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	ELES/RNC/2024/AA/1135 Near Daldaliya Village Bagru Bauxite Mine (75.41ha
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 10.02.2024 to 11.02.2024 : 12.02.2024 : Ambient Air
Mines Status	: Non Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 12.02.2024 to 13.02,2024	Sample Condition	: Sealed & Preserved

2	Barometric Pressure (mmHg)	: 736
4		Clear
	2	2 Barometric Pressure (mmHg) 4 Weather Condition

Disciplin	e: Chemical	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	64	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): 2001; RA2022	8.2	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part-6): 2006; RA2022	22.3	80 (24hrs)	
Ozone (O ₅)	µg/m ¹	IS 5182 (Part-9): 1974; RA2019	<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): 1999; RA2019 (NDIR Method)	<1.0	2 (8lus)	
Lead (Pb)	ug/m)	IS 5182 (Part-22): 2004; RA2019	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	<2.0	06 (Annual)	

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Authorised Signatory Dr. Despendre Kumar Sin la

Ph. D Environments! Enga

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Website: www.elespl.co.in

TEST REPORT

Test Report No.	: ELES/RNC/2024/1281	Report Release Date	: 26.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1135 : Near Daldaliya Village Bagru Bauxite Mine (75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 10.02.2024 to 11.02.2024 : 12.02.2024 : Ambient Air
Mines Status	: Non Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 12.02,2024 to 21.02,2024	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 736
_	Relative Humidity (%)	: 48	4	Weather Condition	: Clear

Discipline: Chemical		Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₈ H ₆)*	µg/m³	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12): 2004; RA2019	<0.5	01(Annual)		

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

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Dr. Doepandra Kumar Sinna

Ph C Environmental Engg

ELES Pvt. Ltd. Technical Manager

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TC-SESS

TEST REPORT

Test Report No.	: ELES/RNC/2024/1214	Report Release Date	: 13.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883924000001150F			

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1136 : Aditya School Gangupara Bagru Bauxite Mine (75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 10.02.2024 to 11.02.2024 : 12.02.2024 : Ambient Air
Mines Status	: Non Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 12.02,2024 to 13.02.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 22	2	Barometric Pressure (mml	(e) : 736	
3	Relative Humidity (%) : 48	-	Weather Condition	:: Clear	

Discipline	: Chemical	Group : Atmosp	heric Pollutio	no
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	1S 5182 (Part-23): 2006; RA2022	71	100 (24hrs)
Particulate Matter (PM2,5)	μg/m³	IS 5182 (Part- 24): 2019	40	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part-2): 2001; RA2022	8.8	80 (24hrs)
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part-6); 2006; RA2022	17.6	80 (24hrs)
Ozone (O ₃)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	1S 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m²	IS 5182 (Part-22): 2004; RA2019	0.016	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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Dr. Deependra Kumar Sinha

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TEST REPORT

Test Report No.	: ELES/RNC/2024/1282	Report Release Date	: 26.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1136 : Aditya School Gangupara Bagru Bauxite Mine (75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 10.02,2024 to 11.02.2024 : 12.02,2024 : Ambient Air	
Mines Status	: Non Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 12.02.2024 to 21.02.2024	Sample Condition	: Sealed & Preserved	

MI	TEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 48	4	Weather Condition	: Clear

Discipline	: Chemical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	μg/m³	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12): 2004; RA2019	<0.5	01(Annual)		

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

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Authorised Signatory

Dr. Deapundra Kamar Sin. 3 Ph. D Environmental Enga

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TEST REPORT

Test Report No.	: ELES/RNC/2024/1215	Report Release Date	: 13.02.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883924000001151F		

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1137 : Ropeway Unloading Station Bagru Bauxite Mine (75,41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 10.02.2024 to 11.02.2024 : 12.02.2024 : Ambient Air
Mines Status	: Non Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 12.02.2024 to 13.02.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 22	2	Barometric Pressure (mmH	2) : 736	
3	Relative Humidity (%) : 48	4	Weather Condition	: Clear	

Discipline	e: Chemical	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	78	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): 2001; RA2022	13.1	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part-6): 2006; RA2022	27.3	80 (24hrs)		
Ozone (O ₃)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<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): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	µg/m²	IS 5182 (Part-22): 2004; RA2019	0.013	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m ²	ELES/AIR/SOP/01	<2.0	06 (Annual)		

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TEST REPORT

Test Report No.	: ELES/RNC/2024/1283	Report Release Date	: 26.02,2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1137 : Ropeway Unloading Station Bagru Bauxite Mine (75.41ha)	
Address	; Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 10.02.2024 to 11.02.2024 : 12.02.2024 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Non Operational	Sampling Done By	: ELES Pvt. Ltd.	
Period of Analysis	: 12.02,2024 to 21,02,2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 736
_	Relative Humidity (%)	: 48	4	Weather Condition	: Clear

Discipline	: Chemical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C _s H ₆)*	μg/m³	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12): 2004; RA2019	< 0.5	01(Annual)		

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

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Authorised Signatory

Dr. Deependra Kumar Sinna Ph. D Environmental Eng. CLES PVL Ltd. Technical Mener F

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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



TC-8839

TEST REPORT

Test Report No.	: ELES/RNC/2024/1216	Report Release Date : 13.02.2024
Work Order No.	: 13612310218	Work Order Date : 21.04.2023
ULR No.	: TC883924000001152F	

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1138 : Ropeway Angle Station Bagru Bauxite Mine (75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 10.02.2024 to 11.02.2024 : 12.02.2024 : Ambient Air
Mines Status	: Non Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 12.02.2024 to 13.02.2024	Sample Condition	: Sealed & Preserved

M	METEOROLOGICAL INFORMATION					
1	Average Temperature (°C) : 22	2	Barometric Pressure (mmHs	g) : 736		
3	Relative Hamidity (%) : 47	4	Weather Condition	Clear		

Disciplin	e: Chemical	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2006; RA2022	73	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): 2001; RA2022	10.8	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m³	IS 5182 (Part-6): 2006; RA2022	25.3	80 (24hrs)		
Ozone (O ₃)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH ₁)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m ¹	1S 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	µg/m³	IS-5182 (Part-22): 2004; RA2019	0.014	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m*	ELES/AIR/SOP/01	<2.0	06 (Annual)		

Reviewed by

****End of Report****

Dr. Authorised Signatory Singa

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TEST REPORT

Test Report No.	: ELES/RNC/2024/1284	Report Release Date	: 26.02.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1138 : Ropeway Angle Station Bagru Bauxite Mine (75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 10.02.2024 to 11.02.2024 : 12.02.2024 : Ambient Air
Mines Status	: Non Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 12.02.2024 to 21.02,2024	Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 48	4	Weather Condition	: Clear

Discipline: Chemical		Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene (C ₆ H ₆)*	µg/m³	IS 5182 (Part-11): 2006; RA2022	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m ¹	IS 5182 (Part-12): 2004; RA2019	<0.5	01(Annual)		

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

Reviewed by

****End of Report****

Authorised Signatory

Dr. Deependra Kumar Siri, a
Ph. D Environmental Priog.
ELSS Pvr. Ltd. Technical Man.

Page 1 of 1

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TEST REPORT

Test Report No.	: ELES/RAN/2024/1318	Report Release Date	: 11.03.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RAN/2024/DW/1164	
		Sampling Date Sample Received Date	: 10.02.2024 : 14.02.2024	
Address	Lohardaga, Jharkhand-835302	Type of Sample	: Drinking Water	
		Source/Location of Sample	: Bagra Bauxite Mines (75.71 ha)	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/01	
Period of Analysis	: 14.02.2024 to 23.02.2024	Sample Collected By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

Discipline : Chemical		Group : Water	N. C.	- Marie Mari	ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
pH (at 24.6 °C)	-8	APHA 23 rd Ed.2017, 4500-H	6.68	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 23rd Ed.2017, 2130 B	0.18	1.0	5.0
Taste	-	APHA 23 rd Ed.2017, 2160 C	Agreeable	Agreeable	Agreeable
Odour	Ť	IS 3025 (Part-5) :2018	Agreeable	Agreeable	Agreeable
Colour	Hazen	APHA 23rd Ed.2017, 2120B&D	1.0	5	15
Total Dissolved Solids (TDS)	mg/L	APHA 23rd Ed.2017, 2540B,C&D	282	500	2000
Chloride (as Cl)	ntg/L	APHA 23 rd Ed.2017, 4500 CI B	52.8	250	1000
Fluoride (as F)	mg/L	APHA 23 rd Ed,2017, 4500 F-D	BDL (DL: 0.1)	1,0	1.5
Total Alkalinity (as CaCO ₃)	mg/L	APHA 23 rd Ed.2017, 2320 B	104	200	600
Total Hardness (as CaCO ₁)	mg/L	APHA 23 [™] Ed.2017, 2340 C	126	200	600
Sulphate (as SO ₁)	mg/L	APHA 23 rd Ed.2017, 4500 SO ₄ ⁻² -E	28.6	200	400
Nitrate (as NO ₃)	mg/L	APHA 23 rd Ed.2017, 4500 NO ₃ -B	2.86	45	No Relaxation
Phenolic Compound (as C ₆ H ₅ OH)	mg/L	IS 3025 (Part-43):1992;RA2019	BDL (DL; 0.001)	100.0	0.002

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TEST REPORT

 Test Report No.
 : ELES/RAN/2024/1318
 Report Release Date
 : 11.03.2024

 Work Order No.
 : 13612310218
 Work Order Date
 : 21.04.2023

Discipl	ine ; Che	mical Group : V	Vater		tory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Cyanide (as CN)	mg/L	APHA 23 rd Ed.2017, 4500 CN-E	BDL (DL: 0.012)	0.05	No Relaxation
Residual Free Chlorine (RFC)	mg/L	1S 3025 (Part-26):2021	BDL (DL: 0.1)	0.02	1,0
Calcium (as Ca)	mg/L	APHA 23 rd Ed.2017, 3500 Ca B	33.4	75	200
Discipl	ine: Che	mical Group	: Residues in	Water	
Aluminum (as Al)	mg/L	IS 3025 (Part-55): 2003; RA2019	BDL. (DL: 0.02)	0.03	0.2
Arsenic (as As)	mg/L	IS 3025 (Part 37): 2022	BDL (DL: 0.005)	0.01	No Relaxation
Boron (as B)	mg/L	IS 3025(Part-57): 2005; RA2021	BDL (DL: 0.2)	0.5	1.0
Cadmium (as Cd)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL: 0.003)	0.003	No Relaxation
Total Chromium (as Cr)	mg/L	APHA 23rd Ed.2017, 3111B	BDL (DL: 0.03)	0.05	No Relaxation
Copper (as Cu)	mg/L	APHA 23th Ed.2017, 3111B	BDL (DL: 0.03)	0.05	1.5
Iron (as Fe)	mg/L	APHA 23th Ed.2017, 3111B	0.210	1.0	1.0
Lead (as Pb)	mg/L	APHA 23 st Ed.2017, 3111B	BDL (DL: 0.01)	0.01	No Relaxation
Manganese (as Mn)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL (DL: 0.05)	0.1	6,0
Mercury (as Hg)	mg/L	IS 3025 (Part-48): 1994; RA2019	BDI. (DL: 0.001)	0.001	No Relaxation
Selenium (as Se)	mg/L	IS 3025 (Part-56); 2003; RA2019	BDL (DL: 0.01)	10.0	No Relaxation
Zinc (as Zn)	mg/L	APHA 23 rd Ed.2017, 3111B	BDL, (DL: 0.1)	5	15

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TEST REPORT

Test Report No. : ELES/RAN/2024/1318 Report Release Date : 11.03.2024

Work Order No. : 13612310218 Work Order Date : 21.04.2023

Discipline: Chemical		Group:	Water		tory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Pesticides					
Alachlor*	μg/L	APHA 23 rd Edition 6630 B&C	BDL (DL: 1.0)	20	No Relaxation
Atrazine*	μg/L	APHA 23rd Edition .6630 B&C	BDL (DL: 1.0)	2.0	No Relaxation
Aldrin/Dieldrin*	μg/L	APHA 23 rd Edition 6630 B&C	BDL (DL: 0.01)	0.03	No Relaxation
Alpha HCH+	µg/L	USEPA 508:1985	BDL (DL: 0.001)	0.01	No Relaxation
Beta HCH*	µg/L	USEPA 508:1985	BDL (DL: 0.01)	0.04	No. Relaxation
Butachlor*	μg/L	APHA 23 rd Edition 6630 B&C	BDL (DL: 10)	125	No Relaxation
Chlorpyriphos*	μg/L	USEPA 8141 A	BDL (DL: 10)	30	No Relaxation
Delta HCH*	μg/L	USEPA 508:1985	BDL (DL: 0.01)	0.04	No Relaxation
2,4 dichlorophenoxyacetic acid*	μg/L	APHA 23rd Edition 6640 B	BDL (DL: 10)	30	No Relaxation
DDT(o,p and p,p-isomers of DDT,DDE and DDD)*	μg/L	APHA 23 rd Edition 6630 B&C	BDL (DL: 0,5)	1.0	No Relaxation
Endosulfan (alpha, beta, and sulphate)*	μg/I.	APHA 23 rd Edition 6630 B&C	BDL (DL: 0.1)	0.4	No Relaxation
Ethion*	µg/L	USEPA 1657.A	BDL (DL: 0.5)	3.0	No Relaxation
Gamma HCH (Lindane)*	μg/L	USEPA 508;1985	BDL (DL: 0.5)	2.0	No Relaxation
Isoproturon*	μg/L	USEPA 532:2000	BDL (DL: 0.5)	9.0	No Relaxation

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TEST REPORT

Test Report No.	: ELES/RAN/2024/1318	Report Release Date	: 11.03.2024	
Work Order No.	: 13612310218	Work Order Date	; 21.04.2023	

Di Ali	et atait	Custom t W	Valor	Regulate	ory Limit
Discipline: Biological		Group : V	Group: Water		10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Total Coliform	Per 100 mL	IS-15185:2016; RA 2021	Not Detected	Shall not be detected	
Escherichia Coli (E. Coli)	Per 100 mL	IS 15185:2016; RA 2021	Not Detected		
22 3 2 2 3			efasin.	Regulate	ory Limit
Discipline :	Chemical	Group: Water		as per IS 10500:2012	
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Anionic Surfactants (as MBAS)*	mg/L	IS 3025 (Part- 68) : 2019 (RA2023)	BDL (DL: 0.1)	0.2	1.0
Polynuclear Aromatic Hydrocarbons (PAH)*	mg/L	APHA 23 rd Edition: 6440 B	BDL (DL: 0.0001)	0,0001	No Relaxation
Polychlorinated Biphenyls (PCB)*	mg/L	APHA 23 ⁿ² Edition: 6431B	BDL (DL: 0.0005)	0.0005	No Relaxation

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

Reviewed by S

****End of Report****

Authorised Signatory

Dr. Deependra Kumar Sinha

Ph. D Environmental Engg.

ELES Pvt. Ltd. Technical Manager

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TEST REPORT

Test Report No.	: ELES/RAN/2024/1336	Report Release Date	: 11.03.2024	
Work Order No.	: M&M/23-24/01	Work Order Date	: 31.03.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Sampling Date Sample Received Date	: ELES/RAN/2024/EF/1160 : 11.02.2024 : 14.02.2024	
Address	: Lohardaga, Jharkhand-835302	Type of Sample Source of Sample	: Effluent Water : Work Shop Effluent - Bagru Bauxite Mines (75.41 ha)	
Mines Status	: Non Operational	Sampling Procedure Sample Collected By	: ELES/DOC/SMPL/01 : ELES Pvt. Ltd.	
Period of Analysis	: 14.02.2024 to 21.02.2024	Sample Condition	Sealed & Preserved	

Discipline: Chemical		Group: Pollution & Environment		Discharge Limits - CPCE EPR, 1986 Schedule VI	
Parameter	Unit	Test Protocol	Result	Inland Surface Water	Land for Irrigation
Dissolved Oxygen (as DO)	mg/L	IS 3025 (Part-38):1989; RA2019	4.8	*	i aa
Fluoride (as F)	mg/L	IS 3025 (Part-60) :2008; RA2019	0.786	2.0	***
Sulphide (as S)	mg/L	IS 3025 (Part-29):1986; RA2019	0.42	2.0	-
Discipline: Chem	ical	Group: Ro	esidues in Wate	r	
Lead (as Ph)	mg/L	APHA 23 rd Ed.2017; 3111 B	BDL (DL: 0.01)	0.1	-
Manganese (as Mn)	mg/L	APHA 23rd Ed.2017; 3111 B	BDL (DL: 0.05)	2.0	~
Mercury (as Hg)	mg/L	IS 3025 (Part-48) :1994; RA2019	BDL (DL: 0.001)	0.01	75
Nickel (as Ni)	mg/L	APHA 23 rd Ed.2017; 3111 B	BDL (DL: 0.01)	3.0	-



****End of Report****

Ph. D Environmental Engg.
ELES Pvt. Ltd. Technical Manager

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SAME EXPLORABILITY NAME TO SHOP



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TEST REPORT

		- Carlotte	
Test Report No.	: ELES/RAN/2024/1329	Report Release Date	: 11.03.2024
Work Order No.	; M&M/23-24/01	Work Order Date	: 31.03.2023
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	: ELES/RAN/2024/EF/1161 : 11.02.2024 : 14.02.2024 : Effluent Water : STP Outlet- Bagru Bauxite Mines (75.41 ha)
Mines Status Period of Analysis	: Non Operational : 14.02.2024 to 21.02.2024	Sampling Procedure Sample Collected By Sample Condition	: ELES/DOC/SMPL/01 : ELES Pvt. Ltd. : Sealed & Preserved

Discipline: Chemical		Group: Pollution & Env	ironment	Discharge Limits - CPCB EPR, 1986 Schedule VI	
Parameter	Unit	Test Protocol	Result	Inland Surface Water	Land for Irrigation
pH (at 24.5 °C)	144	APHA 23 [™] Ed.2017,4500-H B	7.28	5.5-9.0	5.5-9.0
Total Suspended Solids (TSS)	mg/L	IS 3025 (Part-17): 2022	42.0	100	200
Total Dissolved Solids (TDS)	mg/L	IS 3025 (Part 16): 1984; RA2017	1180		-
Chemical Oxygen Demand (COD)	mg/L	IS 3025 (Part-58): 2006: RA2022	68.4	250	**
Biochemical Oxygen Demand (BOD) (at 27 °C for 3 days)	mg/L	IS 3025 (Part-44): 1993; RA2019	7.6	30	100
Oil & Grease	mg/L	IS 3025 (Part-39); 2021	2.8	10	10
Calcium (as Ca)	mg/L	IS 3025 (Part-40):1991; RA2019	16.4	-	- 4
Discipline: Chemica	ľ	Group: Res	idues in Wate	r	
Aluminum (as Al)	mg/L	IS 3025 (Part-55): 2003; RA2019	BDL (DL: 0.02)	**	-
Iron (as Fe)	mg/L	APHA 23rd Ed.2017; 3111B	0.584	3.0	-

Remarks: 1, pll done at Lab.

& Engl

Reviewed by

****End of Report****

Dr. Deependra Kumar Sinha

Ph. D Environmental Engg.

Page 1 of 1 ELES Pvt Ltd. Technical Manager

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Take Environment Sign Europe



ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

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

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

TEST REPORT

Test Report No.	: ELES/RAN/2024/1336	Report Release Date	: 11,03.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

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	: 10.02.2024 to 11.02.2024 : 14.02.2024 : Ambient Noise : ELES/DOC/SMPL/03 : ELES Pvt. Ltd.	
Mines Status	: Non Operational	Period of Analysis	: 14.02.2024 to 20.02,2024	

M	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 48	4	Weather Condition	: Clear

Location	Unit	Test Protocol	Resi	ult	Regulatory Limit (Industrial Zone)
100 To 10			Time	Leq	1000
Near Mine Office Bagru Bauxite Mines (75.41ha)	dB(A)	1S 9989:1981. RA 2020	Day Time	65	75 dB(A) Day Time &
Sample ID: ELES/RAN/2024/AN/1279		RA 2020	Night Time	52	70 dB(A) Night Time



****End of Report****

Dr. Deependra Kumar Sinha
Ph. D Environmental Engo.
ELES Pvt. Ltd. Technical Manager

Page 1 of 1

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ENVIRONMENTAL LABORATORIES &

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

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

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

TEST REPORT

Test Report No.	: ELES/RAN/2024/1350	Report Release Date	: 11.03,2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

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	: 11.02.2024 : 14.02.2024 : Workzone Noise : ELES/DOC/SMPL/03 : ELES Pvt. Ltd.	
Mines Status	: Non Operational	Period of Analysis	: 14.02.2024 to 20.02.2024	

M	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 48	4	Weather Condition	: Clear

Location	Unit	Test Protocol	Res	ult	Regulatory Limit (Industrial Zone)
Bagru Crusher Site -			Time	Leq	
Bagru Bauxite Mine(75.41ha)	dB(A)	IS 4758:1968; RA 2017	D. T.	70	90 dB (A)
Sample ID: ELES/RAN/2024/WN/1284			Day Time	70	



****End of Report****

Dr. Deependra Kumar Sinna Ph. D Environmental Engg.

ELES PVL Ltd. Technical Mana-

Page 1 of 1

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TEST REPORT

Test Report No.	; ELES/RNC/2024/1441	Report Release Date	: 10.04.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2024/AA/1188 : Entrance Gate (Ropeway Loading Stn); Bagru Bauxite Mine(75.41ha) : 02.03.2024 to 03.03.2024

Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 02.03.2024 to 03.03.2024 : 06.03.2024
Address	, Liountaiga, markitana assista	Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
Mines Status	: Non Operational	Sampling Done By	ELES Pvt. Ltd.
Period of Analysis	: 06.03.2024 to 12,03.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 22	2	Barometric Pressure (mmH	g) : 736
3	Relative Humidity (%) = 47	4	Weather Condition	: Clear

Discipline: 0	Chemical	Group: Atme	spheric Pollu	ttion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2006; RA2022	70	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): 2001; RA2022	11.6	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m³	1S 5182 (Part-6): 2006; RA2022	25.5	80 (24hrs)
Ozone (O ₃)	µg/m ⁱ	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₁)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ¹	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m	1\$ 5182 (Part-22): 2004; RA2019	0.016	1 (24hrs)
Nickel (Ni)	ng/m²	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m	ELES/AIR/SOP/01	<2.0	06 (Annual)
Benzene (C ₆ H ₆)	µg/m³	ELES/GC/SOP/06	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m²	ELES/GC/SOP/05	< 0.5	01(Annual)

Reviewed by :

Good . (Saswata Burman Roy, Dy. Quality Manager)

Authorised Signatory : ****End of Report****

Sho.

(Bapan Das, Dy. Technical Manager)

Page 1 of 1

Jharkhand





Latt : MIG, Rt 3 Honsing Colony, Dhantrud, Pin - 826001, State - Hurkhand \$ 9830067044 / \$ 9304513737

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TEST REPORT

: ELES/RNC/2024/1442	Report Release Date	: 10.04.2024
: 13612310218	Work Order Date	: 21.04.2023
ALS	SAMPLE DETAILS	A Transaction of the Control of the
: Hindalco Industries Limited	Sample Ref. No. Lucation	: ELES/RNC/2024/AA/1189 : Administrative Office Bagru Bauxite Mine(75,41hn)
	: 13612310218 AILS	: 13612310218 Work Order Date AILS SAMPLE DETAILS : Hindalco Industries Limited Sample Ref. No.

Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 02.03.2024 to 03.03.2024 : 06:03.2024 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Non Operational	Sampling Done By	: ELES Pvt. Ltd.
Period of Analysis	: 06.03.2024 to 12.03.2024	Sample Condition	; Sealed & Preserved

M	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 736
-	Relative Humidity (%)	: 47	4	Weather Condition	: Clear

Discipline: 0	Chemical	Group: Atmo	spheric Pollu	ition
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2006; RA2022	63	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	32	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part-2); 2001; RA2022	9.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part-6): 2006; RA2022	25.3	80 (24hrs)
Ozone (O ₂)	µg/m	1S 5182 (Part-9): 1974; RA2019	<20.0	100 (Shrs)
Ammonia (NH ₃)	µg/m³	15 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m ⁴	IS 5182 (Part-22): 2004; RA2019	0.008	1 (24hrs)
Nickel (Ni)	ng/m³	1S 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)
Benzene (CaHa)	µg/m²	ELES/GC/SOP/06	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m)	ELES/GC/SOP/05	<0.5	01(Annual)

Reviewed by :

(Saswata Burman Roy, Dy. Quality Manager)

Authorised Signatory :

(Bapan Das, Dy. Technical Manager)

Page 1 of 1

****End of Report**** VIROCA

Jharkhand

826001

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Lab (MK), B-3 Housing Colony, Channel, Pin - 826001/State - (Darkhand & 9830067044 / \$49304513737

TEST REPORT

Test Report No.	: ELES/RNC/2024/1443	Report Release Date	: 10.04.2024	
Work Order No.	: 13612310218	Work Order Date	; 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1190 : Near Shiv Temple Compound Bagru Bauxite Mine(75,41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 02.03.2024 to 03.03.2024 : 06.03.2024 : Ambient Air
Mines Status	: Non Operational	Type of Sample Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 06.03.2024 to 12.03.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	- 22	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	147	4	Weather Condition	:: Clear

Discipline: 0	Chemical	Group: Atmo	spheric Polle	ition
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	65	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): 2001; RA2022	9.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	1S 5182 (Part-6): 2006; RA2022	24.1	80 (24hrs)
Ozone (Oi)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<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): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m ²	IS 5182 (Part-22): 2004; RA2019	0.007	1 (24hrs)
Nickel (Ni)	ng/m³	1S 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)
Benzene (C ₆ H ₆)	µg/m	ELES/GC/SOP/06	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05	< 0.5	01(Annual)

Reviewed by :

(Saswata Burman Roy, Dy. Quality Manager

Authorised Signatory:

The same

(Bapan Das, Dy. Technical Manager)

Page | of 1

Jharkhand 826001

****End of



lab: MiG. R-3 Housing Colony, Utranbod, Pin - 826001, State - Harkhand \$ 9850067044 / \$ 9304513737



TEST REPORT

Test Report No.	: ELES/RNC/2024/1444	Report Release Date	: 10.04.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DET	MLS	SAMPLE DETAILS	
Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Non Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: ELES/RNC/2024/AA/1191 : Near Weigh Bridge Bagru Bauxite Mine (75,41ha) : 02,03,2024 to 03,03,2024 : 06,03,2024 : Ambient Air : ELES/DOC/SMPL/02 - ELES Pvt. Ltd.
Period of Analysis	÷ 06.03.2024 to 12.03.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMAT	TON		
1	Average Temperature (°C) : 22	2	Barometric Pressure (mmHg	: 736
3	Relative Humidity (%) ; 47	4	Weather Condition	: Clear

Discipline:	Chemical	Group: Atmo	spheric Pollu	ition
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2006; RA2022	88	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	1S 5182 (Part- 24): 2019	55	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part-2): 2001; RA2022	17.1	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part-6): 2006; RA2022	34.7	80 (24hrs)
Ozone (Os)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m³	1S 5182 (Part- 25); 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mu/m³	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	0.017	1 (24hrs)
Niekel (Ni)	ng/m1	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)
Benzene (Colfo)	pg/m³	ELES/GC/SOP/06	<2.5	05(Annual)
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05	<0.5	01(Annual)

Reviewed by :

700-1

****End of Report****

Jharkhand

(Saswata Burman Roy, Dy. Quality Managers)

Authorised Signatory :

(Bapan Das, Dy. Technical Manager)

Page 1 of 1



: 47



Lali (MIG, R-3 Hensing Colony, Dhanbad, Pip - B26001, State - Burkkand (9830067044 / (9304513737

TEST REPORT

Test Report No.	: ELES/RNC/2024/1445	Report Release Date	: 10.04.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DETA	All.S	SAMPLE DETAILS	
Customer Name Address	E Hindalco Industries Limited Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample	: ELES/RNC/2024/AA/1192 : Near Daldaliya Village Bagru Bauxite Mine (75.41ha) : 02.03,2024 to 03.03.2024 : 06.03.2024 : Ambient Air
Mines Status	: Non Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 06.03.2024 to 12.03.2024	Sample Condition	: Sealed & Preserved

Discipline: (Themical	Group; Atmo	spheric Pollu	tion
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	15 5182 (Part-23): 2006; RA2022	59	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	28	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m³	IS 5182 (Part-2): 2001; RA2022	10.4	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part-6); 2006; RA2022	24.1	80 (24hrs)
Ozone (O ₁)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₅)	μg/m¹	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ⁵	IS 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.010	1 (24hrs)
Nickel (Ni)	ng/in ¹	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

4

Weather Condition

Reviewed by:

Benzene (C6H6)

Benzo-(a)-Pyrene

Average Temperature (°C)

Relative Humidity (%)

3

****End of Report***

ELES/GC/SOP/06

ELES/GC/SOP/05

Jharkhand

Saswata Burman Roy, Dy. Quality Manager)

µg/m

ng/m³

Authorised Signatory:

(Bapan Das, Dy, Technical Manager)

<2.5

< 0.5

: Clear

Page Lof I

05(Annual)

01(Annual)





TEST REPORT

Test Report No.	: ELES/RNC/2024/1446	Report Release Date	: 10.04.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETA	ILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1193 : Aditya School Gangapara Bagru Bauxite Mine (75.41ha
Address Mines Status	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sampling Done By	: 02.03.2024 to 03.03.2024 : 06.03.2024 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 06.03.2024 to 12.03.2024	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mm11g)	: 736
3	Relative Humidity (%)	: 47	4	Weather Condition	t Clear

Discipline: 0	Chemical	Group: Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2006; RA2022	68	100 (24lirs)		
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): 2001; RA2022	9.4	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part-6): 2006; RA2022	19.2	80 (24hrs)		
Ozone (O1)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	µg/m¹	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10); 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)		
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.013	1 (24hrs)		
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)		
Benzene (C ₆ H ₆)	µg/m³	ELES/GC/SOP/06	<2.5	05(Annual)		
Benzo-(a)-Pyrene	ng/m ¹	ELES/GC/SOP/05	<0.5	01(Annual)		

Reviewed by z

****End of Report****

Authorised Signatory :

Hoper

(Saswata Burman Roy, Dy, Quality Manager)

Jharkhand 828001

(Bapan Das, Dy. Technical Manager)

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: Non Operational

± 06.03.2024 to 12.03.2024

Mines Status



TEST REPORT

Test Report No.	; ELES/RNC/2024/1447	Report Release Date	: 10.04.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1194 ; Ropeway Unloading Station Bagru Bauxite Mine (75,41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 02.03.2024 to 03.03.2024 : 06.03.2024

Type of Sample

Sampling Procedure

Sampling Done By

Sample Condition

Period of Analysis	: 06.03.2024 to 12.03.2024	San	nple Condition	: Sealed & Preserved	
METEOROLOGIC	AL INFORMATION				
1 Average Temper	rature (°C) = 22	2	Barometric Pressu	ire (mmHg) : 736	
3 Relative Huntidi	iv (%) : 47	4	Weather Condition	i Clear	

Discipline: (Chemical	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2006; RA2022	64	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); 2001; RA2022	10.8	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	µg/m³	IS 5182 (Part-6); 2006; RA2022	25.1	80 (24hrs)	
Ozone (O ₂)	mg/m ²	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ^T	1S 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Ph)	ug/m¹	18 5182 (Part-22); 2004; RA2019	0.011	1 (24hrs)	
Nickel (Ni)	ng/m ³	1S 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	
Benzene (C.H.)	μg/m ³	ELES/GC/SOP/06	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05	<0.5	01(Annual)	

Reviewed by :

****End of Report****

Jharkhand 826001

(Saswata Burman Roy, Dy. Quality Manager)

Ambient Air

: ELES Pvt. Ltd.

: ELES/DOC/SMPL/02

: Sealed & Preserved

(Bapan Das, Dy Technical Manager)

Authorised Signatory:

Page 1 of 1





Lab : MKG, R-3 Housing Colony: Dhanbard, Pin - 826001, State - (bar)Grand 1-9890067044 / 1-9304513737

TEST REPORT

Test Report No.	: ELES/RNC/2024/1448	Report Release Date	: 10,04,2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/AA/1195 : Ropeway Angle Station Bagru Bauxite Mine (75.41ha)	
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 02.03.2024 to 03.03.2024 : 06.03.2024 : Ambient Air	
Mines Status	: Non Operational	Sampling Procedure Sampling Done By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 06.03,2024 to 12.03.2024	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 22	2	Barometric Pressure (mml	Hg) : 736
3	Relative Humidity (%) : 47	4	Weather Condition	: Clear

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	18 5182 (Part-23): 2006; RA2022	69	(00 (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): 2001; RA2022	8.2	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part-6): 2006; RA2022	22.8	80 (24hrs)	
Ozone (O ₃)	µg/m ²	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	1S 5182 (Part-10): 1999; RA2019 (NDIR Method)	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part-22); 2004; RA2019	0.012	1 (24hrs)	
Nickel (Ni)	ng/m ^x	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	
Benzene (CaHa)	μg/m³	ELES/GC/SOP/06	<2.5	05(Annual)	
Benzo-(a)-Pyrene	ng/m³	ELES/GC/SOP/05	< 0.5	01(Annual)	

Reviewed by:

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****End of Report****

(Saswata Burman Roy, Dy. Quality Manager)



Authorised Signatory:

(Bapan Das, Dy. Technical Manager)

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TEST REPORT

Test Report No.	: ELES/RNC/2024/1555	Report Release Date	: 10.04.2024	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2024/SM/1398 : Bagru (75.41 ha) Bauxite Mine DG (25 KVA)
Address	; Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 02.03.2024 : 15.03.2024 : Flue Gas : ELES/DOC/SMPL/02(A)
Mines Status	: Operational	Sampling Done By	ELES Pvt. Ltd.
Period of Analysis	: 15.03.2024 to 23.03.2024	Sample Condition	: Sealed & Preserved

NERAL INFORMATION	
Particular of the Plant	: Bauxite Mines
Emission Due to	: Burning of HSD
Stack Connected to	: DG 25 KVA
Material of Construction of Stack	: MS
Stack Height from Ground Level (m)	: 11.0
Height of Sampling Port from Ground Level (m)	: 7.0
Inner Diameter of Stack at Sampling Point (m)	; 0,07
Shape of the Stack	: Circular
Working Load of the Stack	: 25 KVA
Pollution Control System	; N/A
Ladder & Platform	: Temporary
	Particular of the Plant Emission Due to Stack Connected to Material of Construction of Stack Stack Height from Ground Level (m) Height of Sampling Port from Ground Level (m) Inner Diameter of Stack at Sampling Point (m) Shape of the Stack Working Load of the Stack Pollution Control System

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



Partially Spirit great prior of the conduction along Lah : MIG, R-3 Housing Colony, Diumbad, Pin - 826001, State - Harkmand (9830067044 / (9304513207



TEST REPORT

Test Report No.	: ELES/RNC/2024/1555	Report Release Date	: 10.04.2024
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

Discipline : Chemical		Group: Atmospheric Pollution	
Parameter	Unit	Test Protocol	Results
Particulate Matter (PM)	mg/Nm ³	IS 11255 (Part-1): 1985; RA2019	34
Sulphur Di-Oxide (SO ₂)	mg/Nm ²	USEPA 6C:2017	48
Oxides of Nitrogen (NO ₄)	mg/Nm ³	USEPA 7E :2020	74
Carbon Monoxide (CO)	mg/Nm ³	USEPA 10B :2017	25
Carbon Di- Oxide (CO ₂)	%	IS 13270:1992; RA2019	4.7
Flue Gas Temperature	9°C	IS 11255 (Part-3): 2008; RA2018	130
Barometric Pressure	mmHg	IS 11255 (Part-3); 2008; RA2018	741
Velocity of Flue Gas	m/sec	IS 11255 (Part-3): 2008; RA2018	11,14
Quantity of Gas Flow	Nm³/hr	IS 11255 (Part-3); 2008; RA2018	111

Reviewed by:

****End of Report****

Authorised Signatory:

(Saswata Burman Roy, Dy. Quality Manager)

(Bapan Das, Dy. Technical Manager)



Annexure 3

Date - 28.10.2023

Office Order

Environmental Cell has been re-constituted at Bagru Bauxite Mine (Area 75.41 ha) comprising below mentioned team members. The team will ensure compliance of Environment Act, Regulation & Rule in respect of the said mines of Hindalco Industries Limited.

- 1. Mr. Raj Sinha (Coordinator)
- 2. Mr. Gauri Shankar Prasad (Geologist)
- 3. Ms. Abhilasha Singh-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.

Sy

Basudev Gangopadhyay
AVP (Planning ,Environment &Compliance)

BREAK UP THE COST OF ENVIRONMENTAL MEASURES DURING THE YEAR 2023-24

The composite cost during the year 2023-24 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), Pakhar (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 2023-24	Actual (in Rupees) FY 2023-24 (From Oct'23 to Mar'24)
1	Pollution Control & Environment monitoring	1,57,41,102.00	73,14,906.01
2	Reclamation/ Back filing & Rehabilitation**	1,36,62,095.00	6,53,29,973.21
3	Green belt, Plantation & Water sprinkling arrangement	67,45,898.00	32,08,288.90
4	Rural Development	6,19,33,534.00	2,08,14,673.36

^{**}Part of OB removed cost.

Basudev Gangopadhyay
AVP (Planning, Environment & Compliance)