

HIL/LHD/ENV/MoEF/426

Date: 25.11.2023

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

**Sub:** Compliance Report of EC conditions for Bhusar (65.31 ha) Bauxite Mining project of M/s Hindalco Industries Limited located in Lohardaga, for the period April'23 to September'23.

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

Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for **Bhusar (65.31 ha) Bauxite** Mining project of **M/s Hindalco Industries Limited** located in Lohardaga, Jharkhand for the period April'23 to September'23.

The lease detail is as below.

Lease area (ha)	Production Capacity (MT)	Lease Period
65.31	280000	11.07.1981 to 31.03.2030

Hope you will find the same in order.

Thanking You

**Yours Sincerely** 

FOR HINDALCO INDUSTRIES LIMITED

(Basudev Gangopadhyay)

AVP (Planning, Environment & Compliance)

Enclosure: - As Above

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

Name of the Project : Bhusar Bauxite Mine (65.31 ha)
M/s Hindalco Industries Ltd

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

Period of compliance Report : From 1st April 2023 to 30th September 2023

## **Specific Conditions: -**

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

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

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

**Reply:** - This is not applicable for this mine as it is located far away from nearest Eco sensitive zone. However, we have prepared and obtained approval for Wildlife Conservation Plan by PCCF-Wildlife,Ranchi for the protection of flora and fauna of the surrounding premises.

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

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

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

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

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

**Reply:** - Backfilling and reclamation is being done concurrently by overburden. No OB dump is present in mines. The mining is being carried out as per the approved mining plan. Monitoring

and management of rehabilitated areas is being done through effective supervision.



Reclaimed area

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

**Reply:** - Backfilling and reclamation is being done concurrently by overburden. The mining is being carried out as per the approved mining plan. Data pertaining to backfilling is enclosed as **Annexure 4**. Monitoring and management of rehabilitated areas is being done through effective supervision. Compliance status is being submitted to MoEF on six monthly basis.

Condition vii: - Catch drains and siltation ponds of appropriate size should be constructed for the working pit, temporary OB dumps, if any and mineral dumps to arrest flow of silt and sediment. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted, particularly after monsoon, and maintained properly.

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

**Reply:-** No run-off is generated from mining activities. However, to collect & manage rainwater during monsoon, part of mined out area is used as settling tank for the runoff. Rainwater stored is being used for watering the mine area, roads, green belt development and sprinkling as necessary. Catch drains, Garland drains of appropriate size are being constructed in both around the mine pit to prevent runoff of water and flow of sediments directly into the

agricultural field and water bodies, if applicable. Sump of adequate capacity is being provided and maintained as required.

No active external dump exists.





Garland drain

Siltation Pond

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

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

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

**Reply:** - It is already in practice. Phase wise plantation of native species in consultation with forest department has been carried out within safety zone and mined out/reclaimed pits. Total 2150 saplings have been planted for the period April'23 to September'23 within the Bhusar mine lease area. In addition to this agricultural activity is going on reclaimed land as per the consent from landowners. Greenbelt development programme is in progress with progress of mining activities.







Plantation at mines

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

**Reply:** - Mobile water tankers have been provided for sprinkling of water in critical areas to suppress dust. AAQ parameters in mine monitored on regular basis is attached as **Annexure-2**.



Water Sprinkling through tanker

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

**Reply:** - A plan has been prepared to implement suitable conservation measures to augment ground water resources in the area (Bagru Plateau). The water reservoir, drainage system, sequential backfilling in mining lease area is so designed that all the rainwater within lease will be collected in pond only. The required slope is being maintained for this purpose. No water is allowed to flow out of lease. Near the portion of the slopes, bund is created by boulder and morrum to arrest outflow. Plantation is done at susceptible portions to prevent soil erosion. The same practice will continue in future. It may be noted that as mentioned earlier there is no chance of intersection of ground water table during mining operation at present and in future also.

Condition xii: - Regular monitoring of ground water level and quality should be carried out in and around the mine lease by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring should be carried out four times in a year i.e. January, April-May, August, November and the data thus collected may be sent regularly to Ministry of Environment and Forests, its

# Regional Office, Bhubaneswar; Central Ground Water Authority and Central Ground Water Board.

**Reply:** -We are not using ground water for any mining purpose. There is no chance of intersection ground water table during mining operation at present and in future also as the total mining depth is being and will be restricted above water table.

Piezometer has been installed for monitoring of ground water level. Water quality and water level report are attached herewith as **Annexure 1**. Currently, Regional office is at Ranchi.



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

**Reply:** Suitable arrangement for collection of water in rainwater harvesting pond is in practice. Water is drawn from rainwater harvesting pond being used for sprinkling on haul roads and for raising plantation. We are not using any ground water for mining purposes. No Objection Certificate (NOC) for ground water abstraction for Bhusar mines has been obtained for drinking purposes only.



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

**Reply:** - Bauxite is transported through ropeway from mine to Lohardaga siding. However, regular maintenance of vehicles and all measures are being undertaken to minimize vehicular emission.



Ropeway transportation- eco-friendly

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

**Reply:-** Blasting time is fixed during lunch time i.e. 1.00 PM -2.00 PM. Controlled blasting method is in practice. Ground vibration study has been conducted by IIT, Kharagpur. All efforts are being taken to mitigate impact of blasting.

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

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



Wet drilling

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

Reply: - Consent to operate has been obtained. The current CTO is valid up to 30.09.2027. Condition xviii: - A Final Mine Closure Plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.

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

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

Reply: - Noted.

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

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

Condition iii: - Four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for PM10, SO2 as NOx monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board.

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

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

**Reply:** - Suitable water spraying system is already available. To arrest fugitive dust proper water sprinkling is being carried out on haul roads, loading and unloading and at transfer points.

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

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

Condition vi: -Industrial wastewater (workshop and wastewater from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422(E) dated 19th May 1993 and 31st December 03 or as amended from time to time. Oil and grease trap should be installed before discharge of effluents from workshop.

**Reply:** - There is no industrial wastewater generation from workshop within mine lease area. We are not discharging any wastewater outside mine lease area. Effluent treatment mechanism (Oil and grease trap) has been installed at suitable site in Bagru Plateau.



Oil & Grease trap

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

**Reply:** - Complied. We are ensuring that the use of Personal Protective Equipment (PPE)should be done by individuals daily. Workers engaged in operation of HEMMs, etc. has been provided with PPEs such as ear plugs and earmuffs. Monitoring of noise level is being conducted at various locations of work zone area. Training is being provided through group vocational training Centre on safety and health aspects.

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

Reply: - Being carried out.

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

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

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

**Reply:** - Year wise expenditure is being reported to the Ministry and its Regional Office located at Ranchi. Copy is enclosed as **Annexure-5**.

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

Reply: - Agreed. Now Regional office is at Ranchi.

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

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

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

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

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

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

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

Reply: - Displayed.

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

**Reply:** - Complied. Copies of relevant paper cutting are submitted earlier.

	Annexure 1						
	Piezometer rea	ading - Bhusar Mines					
S No	S No Month Depth (meter)						
1	Apr-23	35.07					
2	May-23	35.02					
3	Jun-23	34.95					
4	Jul-23	34.25					
5	Aug-23	34.18					
6	Sep-23	34.1					



PLOT NO-30, MANSAROVAR ENCLAVE, PUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20/A ECE9713D124



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

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



## TEST REPORT

Test Report No.	: ELES/RNC/2023/1924	Report Release Date	: 12.06.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000000885F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1351 : Near View Point-1 (Bhusar Mine Pit I)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	Bhusar Bauxite Mine(65,31ha) : 22.04.2023 to 23.04,2023 : 10.05.2023	
Plant Status	: Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	; 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved	

IETEOROLOGICAL INFORMATION			
Average Temperature (°C) : 32	2	Barometric Pressure (mmHg) : 743	
Relative Humidity (%) : 59		Weather Condition : Clea	

NABL Accredited Discipline:	Chemical	Group	Atmospheri	e Pollution
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/m <sup>3</sup>	IS 5182 (Part- 24): 2019	33	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m³	IS 5182 (Part-2): 2001; RA2022	10.8	80 (24hrs)
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part-6): 2006; RA2022	13.1	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m <sup>3</sup>	IS 5182 (Part-9); 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	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/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m²	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/2023/1924	Report Release Date	: 12.06.2023	
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/1351 : Near View Point-I (Bhusar Mine Pit I)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	Bhusar Bauxite Mine(65.31ha) : 22.04.2023 to 23.04.2023 : 10.05.2023 : Ambient Air	
Plant Status	: Operational	Sample Drawn By	: ELES/DOC/SMPL/02	
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION			
1.	Average Temperature (°C) : 32	2	Barometric Pressure (mm	Hg) : 743
3	Relative Humidity (%) : 59	4.	Weather Condition	: Clear

Discipline	: Chemical	Group :	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene*	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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Ph. D. Environmental English ELES Pvt. Ltd. Technical Manager

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



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TEST REPORT

Test Report No.	: ELES/RNC/2023/1925	Report Release Date	: 12.06.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000000886F		- manufacture	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1352 : Near View Point-2 (Bhusar Mine Pit II)	
Address 1 Lohardaga, Jharkhand-835302		Sampling Date Sample Received Date Type of Sample	Bhusar Bauxite Mine(65.31ha : 22.04.2023 to 23.04.2023	
Plant Status	: Operational	Sample Drawn By	A CONTRACTOR OF THE PROPERTY O	
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	: ELES/DOC/SMPL/02 : Scaled & Preserved	

MET	TEOROLOGICAL INFORM	IATION			
1 .	Average Temperature (°C)	32	2	Barometric Pressure (mmHg)	: 743
3 1	Relative Humidity (%)	59		Weather Condition	: Clear

NABL Accredited				
Discipline :	Chemical	Group	: Atmospheri	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	60	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	31	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	6.9	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part-6): 2006; RA2022	11.8	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part-9); 1974; RA2019	<20,0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	μg/m³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	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/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	D6 (Annual)

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

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Page 1 of 1 Ph. D. Environmental Engg.

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

## ENGINEERING SERVICES PVT. LTD.

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

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

## TEST REPORT

Test Report No.	: ELES/RNC/2023/1925	Report Release Date	: 12.06.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name  Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location	: ELES/RNC/2023/AA/1352 : Near View Point-2 (Bhusar Mine Pit II) Bhusar Bauxite Mine(65,34ha)	
Plant Status : Operational		Sampling Date Sample Received Date Type of Sample Sample Drawn By	: 22.04.2023 to 23.04.2023 : 10.05.2023 : Ambient Air	
Period of Analysis	± 10.05,2023 to 08.06.2023	Sample Condition	: ELES/DOC/SMPL/02 : Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION				_
1	Average Temperature (°C) : 32	2	Barometric Pressure (mm)	(p) · 743	
3	Relative Humidity (%) : 59		Weather Condition	: Clear	

Discipline	: Chemical	Group	: Atmospheri	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene*	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\*\*\*\*

Authorized Signatory
Dr. Deapendra Numar Sinn

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

Page 1 of 1

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

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## TEST REPORT

Test Report No.	; ELES/RNC/2023/1926	Report Release Date	: 12.06,2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000000887F	120 30 30 7 20 7 20 7	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	ELES/RNC/2023/AA/1353 Near Rest Shelter	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	Bhusar Bauxite Minc(65.31ha) : 22.04,2023 to 23.04.2023 : 10.05,2023	
Plant Status	: Operational	Type of Sample Sample Drawn By	: Ambient Air	
Period of Analysis	: 10.05.2023 to 08.06,2023	Sample Condition	: ELES/DOC/SMPL/02 : Sealed & Preserved	

### METEOROLOGICAL INFORMATION Average Temperature (°C) : 32 Barometric Pressure (mmHg) 743 Relative Humidity (%) : 59 Weather Condition : Clear

Discipline :	Chemical	Group	: Atmospheri	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	56	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	1S-5182 (Part- 24): 2019	28	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m <sup>3</sup>	IS 5182 (Part-2): 2001, RA2022	6.9	80 (24hrs)
Nitrogen Di-Oxide (NO2)	μg/m³	1S 5182 (Pari-6): 2006; RA2022	10.5	80 (24hrs)
Ozone (O <sub>2</sub> )	μg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10); 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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Dr. Deependre Kuntar Sinn. Ph. D. Environmentol Engs.

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### TEST REPORT

Test Report No.	: ELES/RNC/2023/1926	Report Release Date	: 12.06.2023
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/1353 : Near Rest Shelter
Åddress	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	Bhusar Bauxite Mine(65,31ha) : 22.04.2023 to 23,04.2023 : 10.05.2023
Plant Status	s : Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

MI	TEOROLOGICAL INFORMATION			
1	A verage Temperature (°C) : 32	2	Barometric Pressure (mm	Ho) - 743
3	Relative Humidity (%) : 59		Weather Condition	
			Troublet Contaction	: Clear

Discipline	: Chemical	Group	Atmospheri	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene*	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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Authorized 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:- 20A4ECE9713D124



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TC-8839

## TEST REPORT

Test Report No.	: ELES/RNC/2023/1927	Report Release Date	: 12.06.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000000888F		

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1354 Near GTS Point
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	Bhusar Bauxite Mine(65.31ha) : 22.04.2023 to 23.04.2023 : 10.05.2023
Plant Status	Operational Type of Sample Sample Drawn By		: Ambient Air
Period of Analysis	; 10.05.2023 to 08.06.2023	Sample Condition	ELES/DOC/SMPL/02  Sealed & Preserved

Barometric Pressure (mmHg) ± 743
Weather Condition ‡ Clear

Discipline	Chemical	Group	: Atmospheri	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	59	100 (24hrs)
Particulate Matter (PM2.5)	μg/m <sup>1</sup>	IS 5182 (Part- 24): 2019	30	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	6.2	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part-6): 2006; RA2022	10.3	
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	80 (24hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>2</sup>	IS 5182 (Part- 25): 2018	<10.0	100 (8hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	400 (24hrs)
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	0.005	2 (8hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020		1 (24hrs)
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01	<2.0	20 (Annual) 06 (Annual)

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Website : www.elespl.co.in

### TEST REPORT

Test Report No.	: ELES/RNC/2023/1927	Report Release Date	: 12.06.2023	
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/1354 : Near GTS Point
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	Bhusar Bauxite Mine(65,31ha) : 22.04.2023 to 23,04,2023 : 10.05,2023
Plant Status : Operational		Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	: Scaled & Preserved

MI	ETEOROLOGICAL INFORMAT	TION			
1	Average Temperature (°C) : 32	2	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%) : 59	)	4	Weather Condition	: Clear

Discipline	; Chemical	Group	: Atmospheri	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene*	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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Dr. Deepend to Kumer Sinha Ph. D. Environmental Engg ELES Pvt. Ltd. Technical Manager

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FLOT INCIDEN MANISAFOVAR ENCLAVE TUPUDANA HATIA, RANCHI-RESTOR EDIARRIHANDI GET ALC: MAAFKEDT KRITER



Entails liga@alespl.co.ir . eles rom hi@annull.com Phone /10. 0651-2283103 



TEST REPORT

Test Report No.	: ELES/RNC/2023/1920	Report Release Date	÷ 12.06.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000000881F			

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	ELES/RNC/2023/AA/1347 Near Daldaliya Village Bagru Bauxite Mine (75,41ha)
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 20.04.2023 to 21.04.2023 : 10.05.2023
Plant Status	: Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	10.05,2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

M	TEOROLOGICAL INFO	RMATION			
	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	† 59	4	Weather Condition	: Clear
5	Longitude	: 84°35'37.93"E	6	Latitude	: 23°29'4.48"N

NABL Accredited				
Discipline :	Chemical	Group	Atmospheri	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limi
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	62	100 (24hrs)
Particulate Matter (PM2.5)	μg/m <sup>1</sup>	IS 5182 (Part-24); 2019	30	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m <sup>1</sup>	IS 5182 (Part-2): 2001; RA2022	7.1	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part-6): 2006; RA2022	13,1	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m <sup>7</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	15 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)	rig/m <sup>3</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewed by

Authorized Signatory

\*\*\*\*End of Report\*\*\*\* Dr. Descend/a Kuma/ Sinina Ph. D Environmental Engg

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PLOT NO-30, MANSAROVAR ENCLIVE, TUPLIDANA HATTA, RANCHI-834003 (IIKARKHANDI FOT NO:-20A46CE9713DLM ENGINEERING SERVICES FIT. LTD.

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## TEST REPORT

Test Report No.	: ELES/RNC/2023/1920	Report Release Date	: 12.06.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS	Easternament Transcription
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1347 : Near Daldaliya Village Bagru Bauxite Mine (75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 20.04.2023 to 21.04.2023 : 10.05.2023
Plant Status	Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

M.	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 32	1 2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	14	Weather Condition	: Clear
5	Longitude	84°35'37,93"E	6	Latitude	: 23°29'4.48"N

Discipline	: Chemical	Group	: Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene*	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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Dr. Deependia Kumai Sinha
Ph. D. Grandomental Engo
ELES Put. Ltd. Technical Manager

Page 1 of 1

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TEGT NO. 10. MANSARGKAR ENCERVE TURNOWN HATA RANDHIVE SHOOT LIHAM WANDS SST NO: 40AASCESTLSQUE



Small Impasielasp) to fit, sies, unchi Somali, can Phone vinc. 3551-3296103 Wahrite while elegation in



TEST REPORT

Test Report No.	: ELES/RNC/2023/1921	Report Release Date	: 12.06.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000000882F		

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	; ELES/RNC/2023/AA/1348
		Location	: Aditya School Gangupara
	Landa and the same of the same		Bagro Bauxite Mine (75.41ha)
Address	: Lohardaga, Tharkhand-835302	Sampling Date	: 20.04.2023 to 21.04.2027
		Sample Received Date	: 10.05.2023
Plant Status	: Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	; 32	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°38'8.14"E	6	Latitude	: 23°27'46,287N

NABL Accredited	Class to al					
Discipline :	Chemical	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	28	60 (24hrs)		
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	7,1	80 (24hrs)		
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m³	IS 5182 (Part-6): 2006; RA2022	12.2	80 (24hrs)		
Ozone (O <sub>1</sub> )	μg/m <sup>2</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH <sub>s</sub> )	μg/m³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<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/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)		

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

Ph. D. Environmental Engli

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PLOT HO-30, WANESARGVAR ENCLAVE, TITUDANA WATTA, BANK'H-834005 (HARRHAND) BST HO-3044655513D374 Emul); into@elespi.co.ln , elessonchi@amaii.com

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## TEST REPORT

Test Report No.	: ELES/RNC/2023/1921	Report Release Date	: 12.06.2023	
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/1348 : Aditya School Gangupara Bagru Bauxite Mine (75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 20.04.2023 to 21.04.2023 : 10.05.2023
Plant Status	: Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFO	RMATION			
_	Average Temperature (°C)	: 32	12	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	-4	Weather Condition	: Clear
5	Longitude	: 84°38'8.14"E	6	Latitude	: 23°27'46.28"N

Discipline	: Chemical	Group	: Atmospheri	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene*	μg/m <sup>5</sup>	IS:5182 (part-11): 2006;RA2017	<1.0	05(Annual)
Benzo (a) Pyrene*	ng/m³	IS:5182 (Part-12): 2004;RA2019	< 0.5	Ol(Annual)

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



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Authorized Signatory

Dr. Despendra Kumar Sintia Ph. D. Entire mental Engg. ELES PVI. Lin. Technical Manager

Page 1 of 1

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FIRST NOT NO, MANSARDIVAN ANCIAVE TUPHDANA THETEA, BANCHI-THADDS (LIVARKICKNO). UST NO - JUAACCUTACADO



Phone nov. 8651 2250108 Metator : www.elespi.co.in

## TEST REPORT

Test Report No.	: ELES/RNC/2023/1922	Report Release Date	: 12,06,2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000000883F			

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	Ropeway Unloading Station Bagru Bauxite Mine (75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	; 20.04,2023 to 21,04,2023 ; 10.05,2023
Plant Status	: Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	132	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84*41'28.22"E	- 6	Latitude	: 23°26'45.48"N

NABL Accredited					
Discipline :	Chemical	Group	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	62	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	29	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	8.1	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part-6); 2006; RA2022	12.2	80 (24hrs)	
Ozone (O <sub>3</sub> )	µg/m²	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	μg/m <sup>3</sup>	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/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 <sup>3</sup>	15.5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m²	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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Ph. D. Environmental Enge Page I of 1

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PLOT NO-10, MANSAROVAR ENCLAVE, TURJOANA HATIA, NAIVENI-33 ADDS (HARINNAND) EST NO:- 10AAECE971.10174 ENGINEERING SERVICES FUE DOD.

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## TEST REPORT

Test Report No.	: ELES/RNC/2023/1922	Report Release Date	: 12.06.2023	
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/1349 : Ropeway Unloading Station Bagru Bauxite Mine (75.41ha)
Address	; Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 20,04.2023 to 21.04.2023 : 10.05.2023
Plant Status	: Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	± 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°41'28.22"E	6	Latitude	: 23°26'45.48"N

Discipline	: Chemical	Group	: Atmospheri	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene*	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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Ph. Deepen Fa (Curriar Status Ph. D. Environmental Engl. ELES Pvt. Ltd. Technical Manager

Page 1 of 1

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PLOT NO-30, MANEAROVAR ENCLAVE, TUNUDANA NATIA, NANCH-ELSIGOS (HABIKHAND) NIT NO-30NAKE97230214



Email: iphilipelospi.codu ; eles italeni@prial.com Phone ira = 0661-229a3e5 Website : iwww.elmphco.ir



TEST REPORT

Test Report No.	: ELES/RNC/2023/1923	Report Release Date	12.06.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000000884F			

CUSTOMER DET.	AIL5	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1350 : Ropeway Angle Station
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	Bagru Bauxite Mine (75.41ha) : 20.04.2023 to 21.04.2023 : 10.05.2023
Plant Status	: Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

	ETEOROLOGICAL INFOI				
1	Average Temperature (°C)	: 32	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59		Weather Condition	: Clear
5	Longitude	: 84°37'18.22"E	1.6	Latitude	: 23°27'56.84N

Discipline :	Chemical	Group	Atmospheri	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	цg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	61	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	33	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m <sup>2</sup>	IS 5182 (Part-2): 2001; RA2022	7.9	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part-6): 2006; RA2022	12.2	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m <sup>2</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m²	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.006	1 (24hrs)
Nickel (Ni)	ng/m <sup>3</sup>	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AJR/SOP/01	<2.0	06 (Annual)

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

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Page 1 of 1 Phy D. Environtino

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Phone no.: 0651-2250103 Website: www.elespi.co.in

### TEST REPORT

Test Report No.	; ELES/RNC/2023/1923	Report Release Date	: 12.06.2023	
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/1350 : Ropeway Angle Station
Address	: Lohardaga, Jharkhand-835302	Sampling Date	Bagru Bauxite Mine (75.41ha) : 20.04.2023 to 21.04.2023
Plant Status	: Operational	Sample Received Date Type of Sample Sample Drawn By	: 10.05.2023 : Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved

MI	TEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	; 32	2	Barometric Pressure (mmHg)	:743
3	Relative Humidity (%)	: 59	4.	Weather Condition	: Clear
5	Longitude	: 84°37'18.22"E	6	Latitude	: 23°27'56.84N

Discipline	: Chemical	Group	: Atmospheri	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene*	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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Dr. Decount to Julian Ston.
Ph.D. Saylor ments Englished Manager

Page 1 of 1

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

## ENGINEERING SERVICES PYT. LTD.

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TC:8839

### TEST REPORT

Test Report No.	: ELES/RNC/2023/2255	Report Release Date	: 01.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21,04.2023	
ULR No.	; TC883923000001177F			

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1728 : Near View Point-U (Bhusar Mine Pit I)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	Bhusar Bauxite Mine(65.31ha) : 16.05.2023 to 17.05.2023 : 06.06.2023
Plant Status	: Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 06,06.2023 to 07,06.2023	Sample Condition	: Sealed & Preserved

MI	TEOROLOGICAL INFOR!	MATION			
1	Average Temperature (°C)	35	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59		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	61	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	30	60 (24hrs)		
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	11.3	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part-6); 2006; RA2022	12.4	80 (24hrs)		
Ozone (O <sub>5</sub> )	μg/m <sup>1</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH <sub>3</sub> )	μg/m³	(S 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 <sup>2</sup>	IS 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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Authorized Signature

Authorized Signatory Deependra Kurnar Sinha

Page 1 of 1 ELES Fvt. Ltd. Technical Manager

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Serve Printerpagnerst Specification



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

Website: www.eiespl.co.in

### TEST REPORT

Test Report No.	: ELES/RNC/2023/2255	Report Release Date	: 01.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

Hindalco Industries Limited	Sample Ref. No.	The second line is not to the second line in the se
	Location	: ELES/RNC/2023/AA/1728 : Near View Point-1 (Bhusar Mine Pit I)
	Sampling Date Sample Received Date Type of Sample	Bhusar Bauxite Mine(65.31ha) : 16.05.2023 to 17.05.2023 : 06.06.2023 : Ambient Air
	The second secon	: ELES/DOC/SMPL/02 : Sealed & Preserved
	Lohardaga, Jharkhand-835302  Operational  06.06.2023 to 07.06.2023	Lohardaga, Jharkhand-835302  Sampling Date Sample Received Date Type of Sample Sample Drawn By

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 35	2	Barometric Pressure (mml	Hg) : 743
3	Relative Humidity (%) = 59	4	Weather Condition	: Clear

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

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



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

Authorized Signatory
Dr. Deependra Kumar Sinha
Ph. D. Environmental Engg.
ELES Pvi. Ltd. Trobiologi Manager

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 201/AECE97130124

## ENGINEERING SERVICES PYT. LTD.

Email: infa@elespl.co.ln , eles ranchi@gmail.com

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



TC-8839

## TEST REPORT

Test Report No.	: ELES/RNC/2023/2256	Report Release Date	: 01.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001178F		

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1729 : Near View Point-2 (Bhusar Mine Pit II)	
Address Plant Status	: Lohardaga, Jharkhand-835302 : Operational	Sampling Date Sample Received Date Type of Sample Sample Drawn By	Bhusar Bauxite Mine(65,31ha) : 16.05,2023 to 17.05,2023 : 06.06,2023 : Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	06.06.2023 to 07.06.2023	Sample Condition	: Scaled & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
4	Average Temperature (°C)	: 35	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	; 59		Weather Condition	: Clear

NABL Accredited					
Discipline :	Chemical	Group	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limi	
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2006; RA2022	57	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m <sup>3</sup>	1S 5182 (Part- 24): 2019	26	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	6.3	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m³	IS 5182 (Part-6): 2006; RA2022	10.2	80 (24hrs)	
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	µg/m³	IS 5182 (Part-25); 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10); 1999; RA2019	<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)	

Reviewed by

\*\*\*\*End of Report\*\*\*\* Dr. Deep

or. Deependra Kuffrar Sinna

Page 1 of 1 ELES Pvi. Ltd. Technical Manage

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE97130174

## ENGINEERING SERVICES PVT. LTD.

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10-8839

### TEST REPORT

Test Report No.	: ELES/RNC/2023/2257	Report Release Date	; 01.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000001179F			

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	ELES/RNC/2023/AA/1730 : Near Rest Shelter	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	Bhusar Bauxite Mine(65.31ha : 16.05.2023 to 17.05.2023 : 06.06.2023	
Plant Status	: Operational	Type of Sample Sample Drawn By	: Ambient Air	
Period of Analysis	: 06.06,2023 to 07.06.2023	Sample Condition	: ELES/DOC/SMPL/02 : Scaled & Preserved	

M	ETEOROLOGICAL INFORMATION			
	Average Temperature (°C) : 35	2	Barometric Pressure (mmHg)	- 743
3	Relative Humidity (%) : 59		Weather Condition	: Clear
			THE PROPERTY OF PERSONS ASSESSED.	- Cicai

Discipline :	Chemical	Group	: Atmospheri	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23); 2006; RA2022	53	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	23	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	7.5	80 (24hrs)
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part-6): 2006; RA2022	10.9	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m²	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>1</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)



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

or. Deependra Kumar Sinha

Page 1 of I

ELES Pvt. Ltd. Technical Manager

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

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### TEST REPORT

Test Report No.	: ELES/RNC/2023/2257	Report Release Date	: 01.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1730	
	1	Location	: Near Rest Shelter	
	The second second	70.00	Bhusar Bauxite Mine(65.31ha)	
Address	: Lehardaga, Jharkhand-835302	Sampling Date	: 16.05.2023 to 17.05.2023	
	a respect to the same	Sample Received Date	: 06.06,2023	
	Digital Disease and Digital Di	Type of Sample	: Ambient Air	
Plant Status	: Operational	Sample Drawn By	ELES/DOC/SMPL/02	
Period of Analysis	: 06.06.2023 to 07.06.2023	Sample Condition	: Sealed & Preserved	

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 35	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	. 4	Weather Condition	: Clear

Discipline	: Chemical	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene*	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	(lauranal)		

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



\*\*\*\*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 NOI- ZUAAECEU7130124

## ENGINEERING SERVICES PUT, LYD

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TC-8839

## TEST REPORT

Test Report No.	: ELES/RNC/2023/2258	Report Release Date	: 01.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001180F		

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1731 : Near GTS Point Bhusar Bauxite Mine(65.31ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 16.05.2023 to 17.05.2023 : 06.06.2023	
Plant Status : Operational		Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 06.06.2023 to 07.06.2023	Sample Condition	Sealed & Preserved	

M	METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 35	2	Barometric Pressure (mmHg)	743	
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear	

Discipline :	: Atmospheric Pollution			
Parameter	Unit	Test Protocol		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	27	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m <sup>1</sup>	IS 5182 (Part-2); 2001; RA2022	6.7	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>1</sub> )	μg/m³	IS 5182 (Part-6): 2006; RA2022	12.7	80 (24hrs)
Ozone (O <sub>3</sub> )	Hg/m <sup>3</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10); 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m <sup>‡</sup>	IS 5182 (Part-22): 2004; RA2019	0.004	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AJR/SOP/01	<2.0	06 (Annual)

Reviewed by

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

K Sinha

Dr. Duthorized Signatory
Ph. D. Environmental Engg.

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GST NO:- 20A4ECE9713D124 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/2023/2258	Report Release Date	: 01.07.2023	
Work Order No.	r 13612310218	Work Order Date	: 21.04,2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1731		
	Location	: Near GTS Point		
		Bhusar Bauxite Mine(65.31ha)		
: Lohardaga, Jharkhand-835302	Sampling Date	: 16.05.2023 to 17.05.2023		
	Sample Received Date	: 06.06.2023		
: Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02		
: 06.06.2023 to 07.06.2023	Sample Condition	: Sealed & Preserved		
	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Operational	: Hindalco Industries Limited Sample Ref. No. Location  : Lohardaga, Jharkhand-835302 Sampling Date Sample Received Date Type of Sample Sample Drawn By		

METEOROLOGICAL INFORMATION				
	Average Temperature (°C) : 35	2	Barometric Pressure (mm.	Hg) : 743
3	Relative Humidity (%) : 59	4	Weather Condition	: Clear

Discipline : Chemical		Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene*	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\*\*\*\*

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

Page 1 of 1

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PLOT WO JO MANSARO VAN ENCLAVE, RUPLINANA HATTAL KANONI ESPORT I WAR THURSON #37 NOI- DOMA ECEST 25000



Emour (info@l) legal caller, elaszáriellil/Samollicom

Phone no.: 0651-2290103 Watering Surrent alarget posts



TEST REPORT

Test Report No.	: ELES/RNC/2023/2251	Report Release Date	: 01.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001173F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2023/AA/1724 : Near Daldaliya Village Bagru Bauxite Mine (75.41hs)	
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample	: 15.05.2023 to 16.05.2023 : 06.06.2023	
Plant Status	: Operational	Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 06,06,2023 to 07.06,2023	Sample Condition	Sealed & Preserved	

M	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	:35	3.	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°35'37.93"E	6	Latitude	: 23°29'4.48"N

NABL Accredited						
Discipline:	Chemical	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	29	60 (24hrs)		
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m³	IS 5182 (Part-2): 2001; RA2022	7.8	80 (24hrs)		
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m³	IS 5182 (Part-6): 2006; RA2022	16.2	80 (24hrs)		
Ozone (O <sub>5</sub> )	ня/ш	15 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH <sub>3</sub> )	µg/m²	1S 5182 (Part- 25); 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m³	1S 5182 (Part-10): 1999; RA2019	<1,0	2 (Shrs)		
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)		
Nicket (Ni)	ng/m²	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Atsenić (As)	пр/т	ELES/AIR/SOP/01	<2.0	06 (Amual)		

Reviewed by

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

Authorized Signatory

Descendra Kumar Sinha

Page 1 of 1 The Document named as Test Regions a Johnston the Largemont under General Terms and Carpendous, only our Campboy Long head in the applicant name The name shown in the Test Report refer or relates only to the obtainalysis done by the University unity. The minimalities above on the Test Report reflects the studies done by the Laboratory at the time of monitorment only and within the limits of disent's nutricinase. The faboratory is responsible for all the information or data provided on the report. except the information which is provided by the elect. The Report cancer be reproduced except in full and any part of the report is not taken out of context, we found written approval of the Laboratory. The Report in Fall or in part shall not be published, subsense, used for any legal actions wikess provide permission has been account from the Menagement of the Laboratory. Accounts a drawn to the limitation of rabinty, compensation and jurisdiction issues. Any companies of distributions of the laboratory. ground or approximate of the Test Report is implying and offenders may be prescuted to the fallest extent of the Law. All the samples are remined for 20days from the Date of release/issue of the Test Report. The samples from Regulatory bodies see to be retained as specified. Any type of Otrservations of Complaints reperting the Reports shall be done within Liddys from the Date of Test Report released local. After the first period dated before, no completes will be accepted. The entire Time adhedate memorial in Test Report is in Espain and Espain a



PLOT NO-30, MANSARDVAR ENCLAVE TURNOANA MATIA, RANCHI BEADOS (HARRISHNO) STI NO-3000ECENTEDIZA ENGINEERING SERVICES PUT. LTD.

Email: Info@elespl.co.in . eles ranchi@pmill.com Phone no: 0653-2290103 Niebsiro: www.elespl.co.in

#### TEST REPORT

Test Report No.	; ELES/RNC/2023/2251	Report Release Date	: 01.07,2023	
Work Order No.	; 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	; Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2023/AA/1724 : Near Daldaliya Village Bagru Bauxite Mine (75,41ha	
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample	: 15.05.2023 to 16.05.2023 : 06.06.2023	
Plant Status	- Operational	Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 06.06.2023 to 07.06,2023	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 35	2	Barometric Pressure (mmHg)	. 743
3	Relative Humidity (%)	: 59	- 4	Weather Condition	; Clear
5	Longitude	: 84°35'37.93"E	6	Latitude	: 23°29'4,48"N

Discipline	: Chemical	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene <sup>n</sup>	μg/m³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)		
Benze (a) Pyrene*	ng/m³	15 5182 (Part-12)2004; RA2019	< 9.5	01(Annual)		

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



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

Authorized Signatory
Dr. Deependra Kumar Sinha

F) D Environmental Edgg. ELES PVI. Ltd. Thetholesi Manager

Page 1 of 1

The Discinness stitled as Test Report of the substitute of the substitute of the polylandysts plate by the Laboratory and Computing and the Computing better head in pre-approved france. The Laboratory of the line of involvement only and within the limits of client's instructions. The Laboratory is corporable for all the information or data provided on the report except the information which is provided by the client. The Report current be reported except in full and any part of the report is not taken out of context, without prior written approval of the Laboratory. The Report is find in it is part shall not be published, adverting used for any legal actions saless pour permission has been accured from Witnessensen of the Laboratory. Actionance is drawn to the Investion of liability, comparisation and breakness actions and sentence & falsification of the Context or appearance of the Test Report is unlessful and difference may be prosecuted so the full and the law. All the samples are retained for Johny of refesses/water of the Test Report in unlessful and difference within a specified. Any type of Observations or Complainty regarding the Reports shall be done within 15thays from the Date of Test Report refesses/assed. After the time period struct helper, the context of the entire Time schedule mentioned at Test Report is 24 form. All the values of the entire Time schedule mentioned at Test Report is a 24 form. All the values of the context Limit.



PLOT NO-30 MANUSCOCKA ENGLAVE TI TURANA MATIA TRANSMESSAGOS DINARNAMON SET NO MANUSCATORIO



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#### TEST REPORT

Test Report No.	: ELES/RNC/2023/2252	Report Release Date	: 01.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR-No.	: TC883923000001174F		

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	Hindaleo Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2023/AA/1725 : Aditya School Gangupara Bagru Bauxite Mme (75.41ha	
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 15.05.2023 to 16.05.2023 : 06.06.2023 : Ambient Air	
Plant Status	: Operational	Sample Drawn By	ELES/DOC/SMPL/02	
Period of Analysis	06.06,2023 to 07.06,2023	Sample Condition	Sealed & Preserved	

ľ	Average Temperature (°C')	135	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°38'8.14"E	6	Latitude	: 23°27'46.28"N

Discipline :	Chemical	Group : Atmospheric Pollution				
Parameter U		ilt. Test Protocol		Regulatory Limit		
Particulate Matter (PM10)	μg/m³	15 5182 (Part-23): 2006; RA2022	57	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	24	60 (24hrs)		
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS \$182 (Part-2); 2001; RA2022	7.9	80 (24hrs)		
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m³	IS 5182 (Part-6); 2006; RA2022	15.2	80 (24hrs)		
Ozone (O <sub>2</sub> )	μg/m <sup>1</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH <sub>3</sub> )	µg/ta³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m <sup>3</sup>	1S 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	μg/m <sup>3</sup>	IS 5182 (Part-22): 2004: RA2019	0.010	1 (24hrs)		
Nickel (Ni)	ng/m²	IS 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\*\*\*

Authorized Signatury

Page 1 of 1 ELEX First Lid Technical Manager

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PLOT NO-30, MANSAROVAR ENCLAVE TURNDAMA NATIA, BANCHI-834002 (IMARKMANG) GST NO. 2044-52597120171 ENGINEERING SERVICES PYT, LTD.

Ermall: Info@elesal.co.ln eles ranchi@annali.com. Prione na., 0651-2190103 Wessite : www.elesal.co.ln

#### TEST REPORT

Test Report No.	: ELES/RNC/2023/2252	Report Release Date	: 01.07.2023
Work Order No.	: 13612310218	Work Order Date	; 21,04,2023

CUSTOMER DET	AILS	SAMPLE DETAILS	
Clistomer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2023/AA/1725 : Aditya School Gangupara Bagru Bauxite Mine (75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample	; 15.05.2023 to 16.05.2023 : 06.06.2023
Plant Status	: Operational	Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPLA/2
Period of Analysis	: 06.06.2023 to 07,06.2023	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	3 3 5	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
5	Longitude	: 84°38'8,14"E	- 6	Latitude	: 23°27'46,28"N

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

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

Reviewed by

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

Authorized Signatory

Dr. Delependra Kumar Sinha pr. pr. Environmental Engg. ELES Th. Ud. Teomical Manager

Page 1 of 1

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TEST REPORT

Test Report No.	: ELES/RNC/2023/2253	Report Release Date	: 01.07,2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000001175F			

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2023/AA/1726 : Ropeway Unloading Station Bagru Bauxite Mine (75,41ha)	
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	16.05,2023 to 17.05.2023 06.06,2023 Ambient Air	
Plant Status	: Operational	Sample Drawn By	: ELES/DOC/SMPL/02	
Period of Analysis	: 06.06,2023 to 07.06,2023	Sample Condition	: Sealed & Preserved	

MJ	ETEOROLOGICAL INFOR	RMATION			
L	Average Temperature (°C)	: 35	-2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	; 59	4	Weather Condition	Clear
5	Longitude	: 84°41'28.22"E	- 6	Latitude	: 23°26'45.48"N

NABL Accredited						
Discipline :	Chemical	Group : Atmospheric Pollution				
Parameter Unit		Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	59	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019.	27	60 (24hrs)		
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m²	1S 5182 (Part-2): 2001; RA2022	6.8	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m³	15 5182 (Pan-6): 2006; RA2022	10.3	80 (24hrs)		
Ozone (O <sub>2</sub> )	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m <sup>1</sup>	1S 5182 (Part-10): 1999; RA2019	<1.0	Z (Shrs)		
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part-22): 2004; RA2019	0.008	1 (24hrs)		
Nickel (NI)	ng/m²	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m²	ELES/AIR/SOP/01	<2.0	Ø6 (Annual)		

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

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Page 1 of 1 ELES DVI LIG. Technology Linder General Terms and Conditions, only on Company total in presupposed forms. The results shown in the Test Report refer to relate, any in the job/analysis after by the Latinostory coay. The information stated on the Test Report reflects the findings discie by the Laboratory at the unsenf involvement only and within the limits of citem's entractions. The Laboratory is responsible for all the information or data provided on the report, except the infirmation, which is provided by the client. The Report cannot be reproduced except in full and any part of the report is not taken out of context, without provi written approval of the Laboratory. The Report is full or in part shall not be published, advertise, used for any lugal actions unless price permession has been sectived from the Management of the Laboratory. Attention is drawn to the limitation of facility, compensation and printing essect. And according alteration & falsification of the continuous appearance of the Text Report is vislawful and influences may be presented to the follow executed for law. All the samples are removed for 30 hays from the Date of release/sine of the Test Report. The simples from Regulatory bodies are to be comined as operated. Any type of Observations or Complaints regarding the Reports shall be done within 15days from the Date of Text Report released/assed. After the time period stated before, no complaints will be excepted. The entire Time schedule menumed in Two Report is in Manuse former. Abbrevious stated: N/A (Nov. Applicables), BDE (Below Detection Lines). LDE (Linear Detection Lines).



PLOT NG-30, MANYARDVAR ENCLAVE, TUFFUGANA HATIA, RANCHI-934003 (HARKHAND) BST NO - MARCESTI FOLE

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Website : www.elesph.co.in

#### TEST REPORT

Test Report No.	: ELES/RNC/2023/2253	Report Release Date	: 01.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2023/AA/1726 : Ropeway Unloading Station Bagru Bauxite Mine (75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample	: 16.05,2023 to 17.05,2023 : 06.06,2023
Plant Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02
Period of Analysis	06.06.2023 to 07.06.2023	Sample Condition	: Sealed & Preserved

MI	TEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	135	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	. 59	4	Weather Condition	: Clear
5	Longitude	: 84°41'28.22"E	6	Latitude	: 23°26'45.48"N

Discipline : Chemical		Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene*	(ag/m <sup>3</sup>	1S 5182 (Part-11)2006;RA2017	<1.0	05(Annual)		
Benzo (a) Pyrena*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)		

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



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

Dr. Daspendra Rumar Sinna Ph. D. Britis mental Engg. ELES TV. US. Technical Manager

Page 1 of 1

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TEST REPORT

Test Report No.	: ELES/RNC/2023/2254	Report Release Date	: 01.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	1 TC883923000001176F			

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2023/AA/1727 : Ropeway Angle Station Bagru Bauxite Mine (75,41ha)
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample	; 16.05.2023 to 17.05.2023 ; 06.06.2023
Piant Status	: Operational	Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	; 06.06.2023 to 07.06.2023	Sample Condition	: Sealed & Preserved

Mi	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	135	2	Barometric Pressure (mmHg)	; 743
3	Relative Humidity (%)	: 59	-4.	Weather Condition	: Clear
5	Longitude	: 84°37'18.22"E	6	Latitude	: 23°27'56.84N

NABL Accredited						
Discipline :	Chemical	Group : Atmospheric 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/m <sup>5</sup>	IS 5182 (Part- 24): 2019	30	50 (24hrs)		
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m³	IS 5182 (Part-2): 2001; RA2022	6.4	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part-6): 2006; RA2022	14.5	80 (24hrs)		
Ozone (O <sub>1</sub> )	µg/m²	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH <sub>1</sub> )	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs).		
Curbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	μg/m <sup>†</sup>	IS 5182 (Pan-22): 2004; RA2019	0.005	1 (24hrs)		
Nickel (Ni)	rtg/m <sup>1</sup>	IS 5182 (Part-26):2020	< 5.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)		

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

Authorized Signatory Descentra Kumar Sinha

Page 1 of 1 ELES PVI, LIG Technical Engag.

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Email: Info@elespi.co.lp., eles.ranchi@amail.com Phone nd., 9651-2290102 Wetsits: http://www.siesci.co.jp

#### TEST REPORT

Test Report No.	: ELES/RNC/2023/2254	Report Release Date	: 01.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2023/AA/1727 : Ropeway Angle Station Bagru Bauxite Mine (75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample	: 16.05.2023 to 17.05.2023 : 06.06.2023
Plant Status	: Operational	Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 06.06.2023 to 07.06.2023	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	+35	1.2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	1:59	4	Weather Condition	: Clear
5	Longitude	: 84°37'18.22"E	6	Latitude	: 23°27'56.84N

Discipline	: Chemical	Group	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene*	μg/m³	IS 5182 (Part-11)2006;RA2017	<1.0	Q5(Annual)	
Benzo (a) Pyrene*	ng/m²	IS 5182 (Part-12)2004;RA2019	< 0.5	OI(Annual)	

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



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

D. Enterprised Signatory
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D. Enterprised Engg.
L. External Engg.
L. External Manager

Page 1 of 1

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

## ENGINEERING SERVICES PVT. LTD.

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

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

#### TEST REPORT

Test Report No.	: ELES/RNC/2023/2843	Report Release Date	: 29.07.2023
Work Order No.	± 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name  Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location  Sampling Date Sample Received Date Type of Sample	: ELES/RNC/2023/AA/2175 : Near View Point-1 (Bhusar Mine Pit I) Bhusar Bauxite Mine(65.31ha : 21.06.2023 to 22.06.2023 : 26.06.2023 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	; 26.06.2023 to 07.07.2023	Sample Condition	: Sealed & Preserved	

METEOROLOGICAL INFORMATION			
1 Average Temperature (°C) 33	2	Barometric Pressure (mm	Hg) : 740
	14	Weather Condition	: Clear
Relative Humidity (%) : 60	-	Wednes Constitution	2000

Discipline : Chemical Group			: Atmospheric Pollution		
Unit	Test Protocol	Result	Regulatory Limit		
- 1	IS:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)		
	THE LEVEL WATER TO SERVICE THE PARTY OF THE	< 0.5	01(Annual)		
	20.0	Unit Test Protocol  μg/m³ 1S:5182 (Part-11): 2006;RA2017	Unit Test Protocol Result  μg/m <sup>3</sup> 1S:5182 (Part-11): 2006;RA2017 <1.0		

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

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

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

Page 1 of I

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AA6CE9713DIZM



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TEST REPORT

Test Report No.	: ELES/RNC/2023/2844	Report Release Date	: 29.07.2023
Work Order No.	: 13612310218	Work Order Date	; 21.04.2023
ULR No.	: TC883923000001709F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2176 : Near View Point-2 (Bhusar Mine Pit II)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	Bhusar Bauxite Mine(65,31ha) : 21,06,2023 to 22,06,2023 : 26,06,2023 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	= 26,06.2023 to 07.07.2023	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 33	2	Barometric Pressure (mmH	lg) : 740
3	Relative Humidity (%)	: 60	4	Weather Condition	: Clear

NABL Accredited				Secretary Control	
Discipline :	Chemical	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	29	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	ug/m³	IS 5182 (Part-2): 2001; RA2022	7.5	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part-6): 2006; RA2022	8.6	80 (24hrs)	
Ozone (O <sub>3</sub> )	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	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	0.006	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\*\*\*\*

Page 1 of 1

Authorised Signatory

Dr. Deependra Kumar Sinha

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

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Serie Educations and Stone States

mentioned in Test Report is in 24hours format. Abbreviation used: N/A (Not Applicable), BDt. (Below Detection Limit), LDt. (Lower Detection Limit)



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

### ENGINEERING SERVICES PVT. LTD.

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

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

#### TEST REPORT

Test Report No.	: ELES/RNC/2023/2844	Report Release Date	: 29.07.2023	
Work Order No.	: 13612310218	Work Order Date	; 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location  Sampling Date Sample Received Date Type of Sample	: ELES/RNC/2023/AA/2176 : Near View Point-2 (Bhusar Mine Pit II) Bhusar Bauxite Mine(65,31ha : 21,06,2023 to 22,06,2023 : 26,06,2023 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 26.06.2023 to 07.07.2023	Sample Condition	: Sealed & Preserved	

METEOROLOGICAL INFORMATION			The Park
Average Temperature (°C) : 33	2	Barometric Pressure (mml	Hg) : 740
Relative Humidity (%) : 60	4	Weather Condition	: Clear

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

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

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



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TEST REPORT

Test Report No.	: ELES/RNC/2023/2845	Report Release Date	: 29.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001710F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name  Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location  Sampling Date Sample Received Date Type of Sample	: ELES/RNC/2023/AA/2177 : Near Rest Shelter Bhusar Bauxite Mine(65.31ha : 21.06.2023 to 22.06.2023 : 26.06.2023 : Ambient Air	
Mines Status Period of Analysis	: Operational : 26.06.2023 to 07.07.2023	Sampling Procedure Sample Drawn By Sample Condition	: ELES/DOC/SMPL/02 : ELES Pvt, Ltd. : Scaled & Preserved	

METEOROLOGICA	L INFORMATION			
1 Average Temperar		2	Barometric Pressure (mm	Hg) : 740
3 Relative Humidity		4	Weather Condition	: Clear

ABL Accredited  Discipline: Chemical Group: Atmospheric Pollution					
Triscipline : Circuitent			Result	Regulatory Limit	
Parameter Particulate Matter (PM10)	μg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	58	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	30	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m³	18 5182 (Part-2): 2001; RA2022	6.3	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part-6): 2006; RA2022	16.2	80 (24hrs)	
Ozone (O <sub>3</sub> )	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>3</sup>	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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\*\*\*\*End of Report\*\*\*\*

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Jr. Deependra Kumar Sinha

n. 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/2023/2845	Report Release Date	: 29.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DET/	ULS	SAMPLE DETAILS	The state of the s	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2177 : Near Rest Shelter Bhusar Bauxite Mine(65.31ha	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 21.06.2023 to 22.06.2023 : 26.06.2023 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sample Drawn By	: ELES Pvt. Ltd. : Sealed & Preserved	
Period of Analysis	: 26.06.2023 to 07.07.2023	Sample Condition	. Seared to Tread year	

IETEOROLOGICAL INFORMATION			2000
Average Temperature (°C) 33	2	Barometric Pressure (mmHg)	:740
Relative Humidity (%) : 60	4	Weather Condition	: Clear

Discipline : Chemical Group			: Atmospheric Pollution	
	Test Protocol	Result	Regulatory Limit	
	IS:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)	
		< 0.5	01(Annual)	
	Unit µg/m³	Unit Test Protocol  μg/m³ IS:5182 (Part-11): 2006;RA2017	Unit Test Protocol Result  μg/m³ IS:5182 (Part-11): 2006;RA2017 <1.0	

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

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Authorised Signatory ال. 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 (JHANKHAND) GST NO:- 20AAECE9713D124

#### ENGINEERING SERVICES PVT. LTD.

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#### TEST REPORT

Test Report No.	: ELES/RNC/2023/2846	Report Release Date	: 29.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001711F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location  Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2023/AA/2178 : Near GTS Point Bhusar Bauxite Mine(65.31ha) : 21.06.2023 to 22.06,2023 : 26.06.2023 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status : Operational		Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	
Period of Analysis	: 26.06.2023 to 07.07.2023	Sample Condition	1.0000000000000000000000000000000000000	

METEOROLOGICAL INFORMATION			
1 Average Temperature (°C) : 33	2	Barometric Pressure (mm	Hg) : 740
3 Relative Humidity (%) : 60	4	Weather Condition	: Clear

VABL Accredited  Discipline : Chemical Group : Atmospheric Pollution					
Parameter	Unit			Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	58	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	29	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m <sup>3</sup>	LS 5182 (Part-2): 2001; RA2022	6.9	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	1S 5182 (Part-6): 2006; RA2022	13.2	80 (24hrs)	
Ozonė (O <sub>3</sub> )	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>2</sub> )	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	0.005	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)	



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

Authorised Signatory Dr. Deependra Kumar Sinha

Ph. D. Covironmental Engg.

Page 1 of 1 "LES Pvt, Ltd. Technical Manager
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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, HANCHI-R340G3 (JHARKHAND) GST NO:- 20AAECE97130124

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#### TEST REPORT

Test Report No.	: ELES/RNC/2023/2846	Report Release Date	: 29.07.2023	
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/2023/AA/2178 : Near GTS Point Bhusar Bauxite Mine(65.31ha)		
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 21,06,2023 to 22,06,2023 : 26,06,2023 : Ambient Air		
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.		
Period of Analysis	: 26.06.2023 to 07.07.2023	Sample Condition	: Sealed & Preserved		

ME	TEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 33	2	Barometric Pressure (mm)	Hg) : 740	
_	Relative Humidity (%) 2 60	- 4	Weather Condition	Clear	

Discipline : Chemical		Group : Atmospheric Pollution			
Parameter Unit		Test Protocol	Result	Regulatory Limit	
Benzene*	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.

Reviewed by

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

Kolinta

Authorised Signatory

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

Page 1 of 1

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PEOT NO-30, MINASAROVAR ENCLAVE, TLP UDANA HETTE, PANCHI RESORT (INANKHANO) TYPING DOMECTOTISTICS

Email: Info@elesal.co.in | cigulanzii.Bomaii con Phone no.: 0651-2290103 Website: www.elesn/.co.id



#### TEST REPORT

Test Report No.	: ELES/RNC/2023/2839	Report Release Date	: 29.07.2023	
Work Order No.	: 13612310218	Work Order Date	7 21,04.2023	
ULR No.	; TC883923000001704F			_

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindaico Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2171 : Near Daldaliya Village Bagru Bauxite Mine (75,41ha	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 20.06.2023 to 21.06.2023 : 26.06.2023 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sample Drawn By	: ELES Pvt, Ltd.	
Period of Analysis	: 26.06.2023 to 06.07.2023	Sample Condition	: Sealed & Preserved	

VII	ETEOROLOGICAL INFORMATION			man.
	Average Temperature (°C) : 33	2	Barometric Pressure (mmHg)	: 739
	Relative Humidity (%) : 59	4	Weather Condition	: Clear
3	0.402.5124.0297	- 6	Latitude	: 23°29'4.48"N
5	Longitude : 84°35'37.93"E	9	Lanting	

NABL Accredited		Group :	Atmospheric	e Pollution
Discipline :	Chemical		-	Regulatory Limit
Parameter	Unit	Test Protocol	Result	
Particulate Matter (PMI0)	µg/m³	IS 5182 (Part-23): 2006; RA2022	57	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	30	60 (24hrs)
Sulphur Di-Oxide (SO <sub>1</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	6.9	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>1</sub> )	µg/m³	IS 5182 (Part-5): 2006; RA2022	15.4	80 (24hrs)
Ozone (O <sub>1</sub> )	ng/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>2</sub> )	ug/m¹	3S 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)	ug/m³	IS 5182 (Part-22): 2004; RA2019	< 0.002	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)

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

Reviewed by

Authorised Signatory r. Deepengra Kumar Sinna

ELES PVI. Ltd. Technical Manager

Page 1 of 1

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PLOT NO-50: MANSAROWAR ENCLAVE, TUPUDANA HATIN, RENICH) \$54003 (HARICHAND) GSTNO-2GAASCERT(3D)24

#### RING SERVICES PVT. LTD.

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#### TEST REPORT

Test Report No.	; ELES/RNC/2023/2839	Report Release Date	: 29.07.2023	
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/2171 : Near Daldaliya Village Bagro Bauxite Mine (75.41ha
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 20.06.2023 to 21.06.2023 : 26.06.2023 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 26.06.2023 to 06.07.2023	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			1000
	Average Temperature (*C) : 33	2	Barometric Pressure (mmH	g) : 739
_	Relative Humidity (%) : 59	4.	Weather Condition	Clear
4	Longitude : 84°35'37.93°E	6	Latitude	: 23°29'4.48"N

Discipline : Chemical		Group : Atmospheric Pollution			
Parameter Unit		Test Protocol	Result	Regulatory Limit	
Benzene*	sag/m³	IS:5182 (Part-11); 2006; RA2017	<1.0	05(Annual)	
Benzo (a) Pyrene*	ng/m²	1S:5182 (Part-12): 2004;RA2019	<(),5	01(Annual)	

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

Reviewell lly

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

Anthorised Signatory Dr. Deepenura Kumar Sinha Ph. D. Environmental Engg. FLES PVI Ltd. Technical Manager

Page 1 of 1

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PLOT YOU IN HANSENOVER ENCLAVE PURLICIONAL HATTA RANCHI 234001 (MAKKWANO) GET NO - JUANETETTI SONIA

Email: Into E elegarica In . Bies, Langu 3 pinasi sani Phone no. 0551-2290103 Oversite : were eleaphed //r



TEST REPORT

Test Report No.	: ELES/RNC/2023/2840	Report Release Date	1 29.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001705F		

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	; Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2172 : Aditya School Gangupata Bagru Bauxite Mine (75.41ha)
Address	; Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 20.06,2023 to 21.06.2023 : 26.06.2023 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 26.06.2023 to 06.07.2023	Sample Condition	: Sealed & Preserved

VII	TEOROLOGICAL INFOR	MATION			Tarabar .
	Average Temperature (°C)		2	Barometric Pressure (mmHg)	= 739
_	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
2	Longitude	: 84°38'8.14"E	6	Latitude	23°27'46.28"N

NABL Accredited Discipline :	Chamical	Group :	Atmospheri	e 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	34	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m³	IS 5182 (Part-2): 2001; RA2022	7.3	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m³	IS 5182 (Part-6); 2006; RA2022	11.6	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>2</sub> )	μg/m³	JS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Manaxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m²	1S 5182 (Part-22); 2004; RA2019	0.010	1 (24hrs)
Nickel (Ni)	ng/m³	1S 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>X</sup>	ELES/AIR/SOP/01	<2,0	06 (Annual)

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

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Authorised Signatory

Jr. Deependra Kumar Sinha

SLES Pvi. Ltd. Technical Manager Page I of 1

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FLOT NO. 30, MANSAROVAR ENCLAVE, TUPUDANA HATCA, RANCHI-834003 (HARKHASID) GSF NO. 30A4ECES\*130124

### ENGINEERING SERVICES PUT. LTD.

Email: info@elespl.co.in eles.ronchi@gmail.com. Phone no : 0651-2290103 Website : www.elespl.co.in

#### TEST REPORT

Test Report No.	± ELES/RNC/2023/2840	Report Release Date	: 29.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04,2023	

CUSTOMER DETA	XILS.	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	ELES/RNC/2023/AA/2172     Aditya School Gangupara     Bagru Bauxite Mine (75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 20.06,2023 to 21.06,2023 : 26,06,2023 : Ambient Altr
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt; Ltd.
Period of Analysis	26.06.2023 to 06.07.2023	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	133	2	Barometric Pressure (mntHg)	: 739
_	Relative Humidity (%)	: 59	4.	Weather Condition	: Clear
5	Longitude	: 84°38'8.14"E	6	Latitude	: 23°27'46.28"N

Discipline	: Chemical	Group : Atmospheric Pollution				
Parameter Unit		Test Protocol	Result	Regulatory Limit		
Benzene*	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 Pct. Ltd. Technical Manager

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PLOT NO SO, MANSARDY ARENGLAVE TUMUDANA MATIA, RANGO-934003 (HIARKHAND) OF NO PRESENTANTE

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Small Info Егисор сала, энэлекти радани, гут Phone no. 0511-2390103 Website: www.elespl.co.in.



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#### TEST REPORT

Test Report No.	: ELES/RNC/2023/2841	Report Release Date	; 29.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001706F		

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2173 : Ropeway Unloading Station Bagru Bauxite Mine (75.41ba)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 21,06,2023 to 22,06,2023 : 26,06,2023 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	Operational	Sample Drawn By	; ELES Pvt. Ltd.
Period of Analysis	: 26.06.2023 to 06.07.2023	Sample Condition	Sealed & Preserved

_	EOROLOGICAL INFOR		12	Barometric Pressure (mmHg)	: 739
133	Average Temperature (°C)	. 32		And the second s	
3 4	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
	Longitude	: 84°41'28.22"E	6	Latitude	: 23°26'45.48"N

NABL Accredited Discipline 1	Chemical	Group :	Atmospheri	e 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)	нд/т	IS 5182 (Part- 24): 2019	29	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m³	IS 5182 (Part-2); 2001; RA2022	7.4	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part-6); 2005; RA2022	15.7	80 (24hrs)
Ozone (O <sub>2</sub> )	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (Shrs)
Ammonia (NH <sub>5</sub> )	µg/m <sup>3</sup>	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 (Ph)	μg/m¹	IS 5182 (Part-22): 2004; RA2019	0.011	1 (24hrs)
Nickel (Ni)	ng/m1	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m <sup>1</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)

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

Reviewed hy

Authorised Signatory Or, Deependra Kumar Sinha

Dh. O. Empigemental Engg.

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) BET NO: 20M8CE87130114

#### ENGINEERING SERVICES PVT. LTD.

Email: info@elespl.co.in - eles ranchi@gmail.com Phane no. 0651-2290103 Webite : www.elespl.co.in

#### TEST REPORT

Test Report No.	: ELES/RNC/2023/2841	Report Release Date	: 29.07.2023	
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/2173 : Ropeway Unloading Station Bagru Bauxite Mine (75,41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 21,06,2023 to 22,06,2023 : 26,06,2023 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 26.06.2023 to 06.07.2023	Sample Condition	: Sealed & Preserved

MI	TEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)		2	Barometric Pressure (mmHg)	: 739
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear
_	Longitude	: 84°41'28.22"E	6	Latitude	: 23°26'45.48"N

Discipline	Chemical	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene*	µg/m²	IS:5182 (Part-I1): 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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4=\*\*End of Report\*\*\*\*

Authorised Signatory

Jr. Deependra Kumar Sinha
Ph. D. Environmental Engg.
ELES Pvl. Ltd. Technical Manager

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TEST REPORT

Test Report No.	: ELES/RNC/2023/2842	Report Release Date	: 29.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
III.R No.	: TC883923000001707F		

CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	; Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2174 : Ropeway Angle Station Bagru Bauxite Mine (75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 21.06.2023 to 22.06.2023 : 26.06,2023 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sample Drawn By	: ELES Pvt. Ltd.
Period of Analysis	: 26.06.2023 to 06.07.2023	Sample Condition	: Sealed & Preserved

	ETEOROLOGICAL INFORMATION	1 3	Barometric Pressure (mml	(la) · 720
1	Average Temperature (°C) : 33		Barometric Pressure (anni	GE) . 122
3	Relative Humidity (%) : 59	4	Weather Condition	: Clear
S	Longitude : 84°37'18.22°E	6	Latitude	: 23°27'56.84N

NABL Accredited		ALC: A	A to short well	- Dalladian
Discipline :	Chemical	Group	Atmospheri	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2006; RA2022	52	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	29	60 (24hrs)
Sulphur Di-Oxide (SO <sub>t</sub> )	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	6.9	80 (24hrs)
Mitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part-6): 2006; RA2022	15.1	80 (24hrs)
Ozone (O <sub>1</sub> )	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	0.006	1 (24hrs)
Nickel (NI)	ng/m³	1S 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/in³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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

Reviewed by

Authorised Signatory Or. Deependra Kumar Sinha

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ELES Pvt. Ltd. Technical Manager Page 1 of 1

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# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MARSAROVAR ENCLAVE TUPLDANA HATTA RANTHI-334003 (HARKHAND) GST NOS-20AAFCES7130124

## ENGINEERING SERVICES PUT. LTD.

Email: info@elespl.co.in . eles.ranchi@gmail.com Phone no.: 0651-2290103 Website: www.eleial.to.in

#### TEST REPORT

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NC/2023/2842	Report Release Date	: 29.07.2023	
0218	Work Order Date	: 21.04.2023	
	eric at an	90 LO. L. D. L.	21 1 0 1 10 1 10 1 10 10 10 10 10 10 10 1

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindulco Industries Limited	Sample Ref. No. Location Sampling Date	: ELES/RNC/2023/AA/2174 : Ropeway Angle Station Bagru Bauxite Mine (75.41ha : 21.06.2023 to 22.06.2023	
Address Mines Status	: Lohardaga, Tharkhand-835302 : Operational	Sample Received Date Type of Sample Sampling Procedure Sample Drawn By	: 26.06.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt, Ltd.	
Period of Analysis	: 26.06.2023 to 06.07.2023	Sample Condition	: Sealed & Preserved	

TETEOROLOGIC.	AL INFORMATION			
Average Tempera		2	Barometric Pressure (mm)	Hg) : 739
Relative Humidit		4	Weather Condition	‡ Clear
5 Longitude	: 84°37'18.22"E	6	Latitude	: 23°27'56.84N

Discipline	: Chemical	Group	: Atmospheri	e Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene*	ug/m³	1S:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)	
Benzo (a) Pyrene*	rig/m <sup>3</sup>	IS:5182 (Part-12): 2004;RA2019	<0.5	01(Annual)	

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

Reviewed by

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

Authorised Signatory ar Deepenora Kumar Sinha Ph. D. Environmental Engg. ELES Pyt Lig. Technical Manager

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) 65T NO: 20AAECE9713D124



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

Phone na.: 0651-2290103 Website: www.elespl.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2023/2970	Report Release Date	: 08.08.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000001817F	•		

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date	: ELES/RNC/2023/AA/2756 : Near View Point-1 (Bhusar Mine Pit 1) Bhusar Bauxite Mine(65.31ha) : 24.07.2023 to 25.07,2023	
Mines Status Period of Analysis	: Operational : 31,07,2023 to 07,08,2023	Sample Received Date Type of Sample Sampling Procedure Sample Drawn By Sample Condition	: 31.07,2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 24	2	Barometric Pressure (mmH	lg) ; 737
3	Relative Humidity (%) : 68	-4	Weather Condition	: Cloudy

Discipline :	Chemical	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23); 2006; RA2022	52	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	33	60 (24hrs)		
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	10.5	80 (24hrs)		
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part-6): 2006; RA2022	17.1	80 (24hrs)		
Ozone (O <sub>5</sub> )	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH <sub>3</sub> )	μg/m <sup>T</sup>	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)		

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

Reviewed by

\*

Authorised Signatory

Dr. Deependra Kumar Sinha

ELES Pvt. Lid. Technical Manager Page I of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-E34003 (JHARKHAND) GST NO:- 20AAECE97130124

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#### TEST REPORT

Test Report No.	: ELES/RNC/2023/2970	Report Release Date	: 08.08.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Hindulco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2756 : Near View Point-I (Bhusar Mine Pit I)	
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	Bhusar Bauxite Mine(65.31ha : 24.07,2023 to 25.07.2023 : 31.07.2023 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	= 31.07.2023 to 07.08.2023	Sample Condition	: Sealed & Preserved	

MI	TEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 24	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%)	: 68	4	Weather Condition	: Cloudy

Discipline	: Chemical	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene*	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	Q1(Annual)	

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

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Dr. Deependra Rumar Sinha Ph. O. Environmental Engg. ELES Pvt. Ltd. Technical Manager

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PLOT NO-30, MANSAROVAR ENGLAVE, TUPUDANA HATIA, RANCHI-834003 [IHARKHAND] GST NO: 20AAECE9713D1Z4

#### ENGINEERING SERVICES PUT. LTD.

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#### TEST REPORT

Test Report No.	: ELES/RNC/2023/2971	Report Release Date	: 08.08.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001818F		

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2757 : Near View Point-2 (Bhusar Mine Pit II) Bhusar Bauxite Mine(65,31ha)	
Address	Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	= 24.07,2023 to 25.07,2023 = 31.07,2023 = Ambient Air	
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 31.07.2023 to 07.08.2023	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATIO	N		
1	Average Temperature (°C) : 24	2	Barometric Pressure (mn	nHg) : 737
3	Relative Humidity (%) : 68	4	Weather Condition	: Cloudy

NABL Accredited				
Discipline :	Group	Atmospheri	c Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	48	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	25	60 (24hts)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	6.6	80 (24hrs)
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part-6): 2006; RA2022	12.3	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	15 5182 (Part-10); 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>1</sup>	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)



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

Dr. Deependra Kumar Sinha Ph. D. Environmental End

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mentioned in Test Report is in 24hours format. Abbreviation used: N/A (Not Applicable); BDL (Below Desection Limit), LDL (Lower Detection Limit).



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

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#### TEST REPORT

Test Report No.	: ELES/RNC/2023/2971	Report Release Date	: 08.08.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location	: ELES/RNC/2023/AA/2757 : Near View Point-2 (Bhusar Mine Pit II) Bhusar Bauxite Mine(65,31ha)
Mines Status	: Operational	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sample Drawn By	: 24.07.2023 to 25.07.2023 : 31.07.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 31.07.2023 to 07.08,2023	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (*C) : 24	2	Barometric Pressure (mm	Hg) : 737
.3	Relative Humidity (%) . 68	4	Weather Condition	‡ Cloudy

Discipline	: Chemical	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene*	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 Kurnal Sinha
Ph. D. Environmental Engg.
ELES Pvt. Ltd. Technical Manager

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA RATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECES715D124



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#### TEST REPORT

Test Report No.	: ELES/RNC/2023/2972	Report Release Date	: 08.08.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001819F		

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2758 : Near Rest Shelter Bhusar Bauxite Mine(65,31ha)	
Address	: Lohardaga, Jharkhand-835302 Sampling Date Sample Receiv		24.07,2023 to 25,07,2023 yed Date : 31,07,2023	
Mines Status	: Operational	Type of Sample Sampling Procedure Sample Drawn By	ELES/DOC/SMPL/02 ELES Pvt. Ltd.	
Period of Analysis	: 31,07.2023 to 07.08.2023	Sample Condition	Sealed & Preserved	

MI	TEOROLOGICAL INFORM	ATION			
1	Average Temperature ("C) :	24	2	Barometric Pressure (mmHg)	737
3	Relative Humidity (%)	68	4	Weather Condition	: Cloudy

NABL Accredited Discipline	Chemical	Group	: Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	51	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	26	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	6.7	80 (24lirs)
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part-6): 2006; RA2022	18.6	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part-9); 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>1</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	15 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m <sup>3</sup>	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m <sup>1</sup>	1S 5182 (Part-26);2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)



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

Sinha

Authorised Signatory Dr. Deependra Kumar Sinha

Ph. D. Emilionmental Erron.

Page 1 of 1

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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/2023/2972	Report Release Date	± 08.08.2023	
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/2758 : Near Rest Shelter Bhusar Bauxite Mine(65.31ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	24.07.2023 to 25.07.2023 31.07.2023 Ambient Air	
Mines Status	: Operational	Type of Sample Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt, Ltd.	
Period of Analysis	= 31.07.2023 to 07.08,2023	Sample Condition	: Sealed & Preserved	

MI	TEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 24	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%)	: 68	- 4	Weather Condition	: Cloudy

Discipline : Chemical		Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene*	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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Dr. Deependra (Kumar Sinha Ph. O. Environmental Engg. ELES Pvt. Ltd. Technical Manager

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHANKHAND) GST NO:- 20AAFCE9713D1Z4



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TEST REPORT

Test Report No.	: ELES/RNC/2023/2973	Report Release Date	: 08.08.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000001820F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location  Sampling Date Sample Received Date Type of Sample	: ELES/RNC/2023/AA/2759 : Near GTS Point Bhusar Bauxite Mine(65.31ha) : 24.07,2023 to 25.07.2023 : 31.07,2023 : Ambient Air	
Mines Status	; Operational	Sampling Procedure Sample Drawn By	ELES/DOC/SMPL/02 ELES Pvt. Ltd.	
Period of Analysis	: 31.07.2023 to 07.08.2023	Sample Condition	: Sealed & Preserved	

MI	TEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 24	2	Bammetric Pressure (mmHg)	2737
3	Relative Humidity (%)	: 68	4	Weather Condition	: Cloudy

NABL Accredited				W. W F
Discipline : Chemical Group				c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m³	1S 5182 (Part-23): 2006; RA2022	53	100 (24hrs)
Particulate Matter (PM2.5)	μg/m <sup>3</sup>	IS 5182 (Part- 24): 2019	21	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	1S 5182 (Part-2); 2001; RA2022	5.6	80 (24hrs)
Nitrogen Di-Oxide (NO2)	μg/m³	1S 5182 (Part-6): 2006; RA2022	15,5	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m <sup>1</sup>	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>1</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	ug/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)



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Authorised Signatory
Dr. Deependra Kumar Sinha

Ph. D. Environmental Front

Page 1 of 1 ELES Pvt. Ltd. Technical Manager

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Sales Errationmental Sales Beinger'



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

#### ENGINEERING SERVICES PVT. LTD.

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#### TEST REPORT

Test Report No.	: ELES/RNC/2023/2973	Report Release Date	: 08.08.2023	
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/2759 : Near GTS Point Bhusar Bauxite Mine(65.31ha)	
Address	: Luhardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 24.07,2023 to 25,07,2023 : 31.07,2023 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sample Drawn By	: ELES Pvt. Ltd.	
Period of Analysis	: 31.07.2023 to 07.08.2023	Sample Condition	: Sealed & Preserved	

MI	TEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 24	2	Barometric Pressure (mmHg)	: 737
	Relative Humidity (%)	: 68	4	Weather Condition	: Cloudy

Discipline : Chemical		Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene*	pg/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
Dr. Deependra Kumar Sinha
Ph. D. Environmental Engg.
ELES Pvt. Ltd. Technical Manager

Page 1 of 1

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BUST NO. BO, MANSARGVAR ENCLAVE, TUPUDANA HATIA, RANCHI EBIOOB (HARRHAND) GETNO: 30432CEFT13D1/V

## ENGINEERING SERVICES PVT. LTD.

Emoli: Info@elesci.co.in , Eles.ranchi@amail.com

Phone no.: 0651-2250103 Website : www.eiespl.co.in



TEST REPORT

Test Report No.	: ELES/RNC/2023/2966	Report Release Date	: 08.08.2023
Work Order No.	; 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001813F		

CUSTOMER DET	CUSTOMER DETAILS		1.74
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2752 : Near Daldaliya Village Bagru Bauxite Mine (75.41ha
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 23.07.2023 to 24.07.2023 : 31.07.2023 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 31.07.2023 to 07,08.2023	Sample Condition	: Sealed & Preserved

METEOROLOGICA	LINFORMATION			and the same
J Average Tempera		2	Barometric Pressure (mm)	Hg) : 737
		- 4	Weather Condition	: Partly Cloudy
3 Relative Humidity				: 23°29'4.48"N
5 Longitude	: 84°35'37.93"E	6	Latitude	2,1 23 4, 40 11

NABL Accredited	Chambon	Group 3	Atmospheric	Pollution
Discipline :	Unit	Test Protocol	Result	Regulatory Limit
Parameter (PM 110)	µg/m <sup>3</sup>	1S 5182 (Part-23); 2006; RA2022	53	100 (24hrs)
Particulate Matter (PM(10)	µg/m²	IS 5182 (Part- 24): 2019	27	60 (24hrs)
Particulate Matter (PM2.5) Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	6.2	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	ug/m <sup>1</sup>	1S 5182 (Part-6): 2006; RA2022	17.8	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Parc-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>1</sub> )	ug/m <sup>7</sup>	IS 5182 (Part- 25): 2018	<1.0.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m³	19 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m²	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (At)	ng/m²	ELES/AIR/SOP/01	<3.0	Di (Annual)

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

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Dr. Despendra Kur lar Sinna

Sp. D. Spennigs-min Esse

Page 1 of 1 EUES Pyr. Lag. Technical Manager

The Doomtest stated as Lest Report, is caused by the Laboratory under General Terms and Combations, only on Company effort being in pre-approved formal. The results show to the Lest Report reflects the findings show by the Laboratory at the Lest Report reflects the findings show by the Laboratory at the time of months and an interference of the information within the limits of pour shows a record the information which is provided on the report except the information which is provided by the class of the laboratory within a prior except the information which is provided by the class of the laboratory. The Report in full or in part shall had be published, advertise, used for any legal values understoning prior permission has been associated from the Marian event of the Laboratory. According to drawn to the limitation of barriery, composition and according to the samples we retained of Sidays Broat the Concentrator of the Laboratory. According to drawn to the limitation of barriery as follows extend of the Laboratory according to the following the Marian event of the Laboratory according to the following the



PLOT NO-30, MANSAROVAR ENCLAVE, TUPUBANA HATIA, RANCHI-834003 (IHARKHAND) GST NO-208460697130324

## ENGINEERING SERVICES PVT. LTD.

Email: Info@elespl.co.in , eles.carichi@gmail.com Phone no.: 0651-2290103 Website www.elespl.co.in

#### TEST REPORT

ELES/RNC/2023/2966	Report Release Date	: 08.08.2023	
13612310218	Work Order Date	; 21.04.2023	
	To Address Address	EDESTITION OF THE PARTY	ELES/RIVG/2023/2900 Report Reference of the 21 04 2023

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	; Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2752 : Near Daldaliya Village Bagru Bauxite Mine (75,41ha	
Address	: Lohanlaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 23.07.2023 to 24.07.2023 : 31.07.2023 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 ELES PVL Ltd.	
Period of Analysis	: 31.07.2023 to 07.08.2023	Sample Condition	Sesled & Preserved	

METEOROLOGIC	'AL INFORMATION			
Average Tempe		1 2	Barometric Pressure (mm	Hg) = 737
3 Relative Humid		4	Weather Condition	Partly Cloudy
5 Longitude	- 84°35′37,93″E	- 6	Latitude	: 23°29'4.48"N

Discipline	; Chemical	Group	Group : Atmospheric Pollution		
Parameter Unit		Test Protocol	Result	Regulatory Limit	
Benzene*	µg/m¹	IS:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)	
Benzo (a) Pyrene*	ng/m³	IS:5182 (Part-12): 2004;RA2019	<1),5	01(Annual)	

Remarks: (\*)-Parameters are ontsourced to other Lair.

Reviewed by

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

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Or Caepandre Kurnar Sinns
Ph D Environment Fage
ELES Pvr. Ltd. Technical Manager

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE TUPLION NO HATTA RANCHI-334003 (JHARKKAND) GST NO. 30445CE97130124



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TEST REPORT

Test Report No.	: ELES/RNC/2023/2967	Report Release Date	: 08.08.2023
Work Order No.	± 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001814F		

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	ELES/RNC/2023/AA/2753 : Aditya School Gangupara Bagra Bauxite Mine (75.41ha)
Address	: Lohandaga, Jharkinnd-835302	Sampling Date Sample Received Date Type of Sample	: 23.07.2023 to 24.07.2023 : 31.07.2023 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 31.07.2023 to 07.08.2023	Sample Condition	: Sealed & Preserved

ME:	TEOROLOGICAL INFOR	RMATION			
	Average Temperature (°C')	26	2	Barometric Pressure (mm	Hg) 1737
_	Relative Humidity (%)	2.65	- 4	Weather Condition	: Partly Cloudy
	Longitude	: 84°38'8.14"E	6	Latitude	: 23°27'46.28"N

NABL Accredited				n.W.co.vo
Discipline :	Chemical	Group :	Atmospheri	
Parameter	Unit	Unit Test Protocol		Regulatory Limi
Particulate Matter (PM10)	µg/m <sup>3</sup>	18.5182 (Part-23): 2006; RA2022	54	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part-24): 2019	29	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	8.5	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m³	IS 5182 (Part-6): 2006; RA2022	9.2	80 (24hrs)
Ozone (O <sub>3</sub> )	ug/m <sup>3</sup>	IS 5182 (Part-9); 1974; RA2019	<20.0	100 (Shrs)
Ammonia (NH <sub>3</sub> )	µg/m³	13 5182 (Part-25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CC)	mg/m²	15 5182 (Parc-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	ug/m²	IS 5182 (Part-22); 2004; RA2019	0.010	1 (24tus)
Nickel (Ni)	ng/in <sup>3</sup>	(S 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	05 (Annual)

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Dr. Dawler Well Manner Stone

Pn. D. Environmental Enga ECES PVI; Lig. Technica (Marage)

Page 1 of 1

The Document dated to Test Report, in issued by the caboticary under General Towns and Community only on Company letter tend to pre-approved serial. The results shown in the Test Report refer or relate, only to the inframers of the Laboratory only. The reference at most on the Test Report refer or relate, only to the findings done by the Laboratory at the risk of involvement only and waters the limits of blank's instructions. The Laboratory is responsible for all the Imbernation or dain provided on the report. except the information which is gravitable by the climit. The Report cannot be rescutated except in full and any part of the report is not taken out of context, without prior written approximal the Laboratory. The Report in fall or in part shall not be published, salvenian, used for may legal actions unless pray commission has been succosed from the Management of the Laboratory. Assessment to the limitation of hisbirty, compensatives and justification haves. Any manufactured & cramon & falsaforches of the assured in appearance of the Test Report is influential and utilitides may be prosecuted to the fuller, better of the saw. All the nameles are retained for 30 days from the Date of reductionage of the Test Region. The complete from Requisitory heates are to be 100 med at specific. Are type of Observations or Completion regarding the Reports shall He done within 15days thin the Date of Test Report released father the time pency stated festion, no complaints will be separed. The copie Time subscine maximated in Tex Report is in 2-through firmum Associations and 50% of all Applicables, BIV of Index Deporture Code). LEst, (Lower Research Lamp)



PLOT NO-30, MANSAROVAR ENCLAVE, PUPLIDANA HATIA, RANCHI-831003 (HARKHAND) GST NO:- 10AA8CE9713D124

## ENGINEERING SERVICES PVT. LTD.

Email: <u>info@elespl.co.in</u> , <u>eles.ranchi@amail.com</u> Phone no., 0651-2290103 Isebsite : www.elespl.co.in

#### TEST REPORT

Test Report No.	: ELES/RNC/2023/2967	Report Release Date	: 08.08.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	USTOMER DETAILS		
Customer Name	: Hindalco Industries Limited	Sumple Ref. No. Location	: ELES/RNC/2023 AA/2753 : Acitya School Gangupara Bagru Bauxite Mine (75,41ha
Address	: Lohardaga, Jharkharsd-835302	Sampling Date Sample Received Date Type of Sample	: 23.07.2023 to 24.07.2023 : 31.07.2023 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES Pvt. Ltd.
Period of Analysis	: 31.07.2023 to 07.08.2023	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFO	RMATION			
_	Average Temperature (°C)		2	Barometric Pressure (mm	Hg) 737
_	Relative Humidity (%)	: 65	-4	Weather Condition	: Partly Cloudy
	Longitude	: 84°38'8.14"E	6	Lufftude	: 23°27'46.28"N

Discipline	: Chemical	Group : Atmospheric Pollution			
Parameter Unit		Test Protocol	Result	Regulatory Limit	
Benzene*	μg/m <sup>3</sup>	IS:5182 (Part-11): 2006;RA2017	<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.

Reviewed has

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

Authorised Signatory

Dr. Deependra Kurnar Sinita

Ph. D. Enuronmento Enga

ELES Pvr. Lid. Technical Manager

Page 1 of 1

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PLOT NO-30 MANSAROVAR ENGLAVE, FUMIDIANA HATIA, RANCHI E34003 (HARRHAND) SST NO - 264AFFFFFFFBB1P4

### ENGINEERING SERVICES PVT. LTD.

Emall/info@elexal.com, diss.ranchi@antall.com Phone na. 0651-2290103 Website / www.slaspi.co.in



Design

#### TEST REPORT

Test Report No.	: ELES/RNC/2023/2968	Report Release Date	: 08.08.2023
Work Order No.	: 13612310218	Work Order Date	; 21.04.2023
ULR No.	: TC883923000001815F		

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2754 : Ropeway Unloading Station Bagru Bauxite Mine (75,41ha)
Address	; Lohardaga, Frankhand-835302	Sample Received Date	; 24,07,2023 to 25,07,2023 ; 31,07,2023
Mines Status	: Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 31.07.2023 to 07.08.2023	Sample Condition	: Sealed & Preserved

1,8.1	ETEOROLOGICAL INFO	ALTER & EX. (1)	11 -		-00 PM
1	Average Temperature (°C)	:24	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%)	: 68	리	Weather Condition	: Cloudy
5	Longitude	: 84°41'28.22°E	6	Latitude	: 23°26'45.48"N

NABL Accredited	Charles	Crown	Atmospheri	e Pollution
Discipline:	100000000000000000000000000000000000000		Result	
Parameter	Unit	Test Protocol	Resun	Regulatory Limit
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2006; RA2022	52	100 (24hrs)
Particulate Matter (PM2.5)	µg/m³	15 5182 (Part- 24): 2019	24	50 (24hrs)
Sulphur DI-Oxide (SO <sub>2</sub> )	µg/m³	IS 5182 (Part-2): 2001; RA2022	6.2	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	[\$ 5182 (Part-6); 2006; RA2022	18.9	80 (24hrs)
Ozone (O <sub>1</sub> )	µg/m"	IS 5182 (Part-9): 1974; RA2019	<20.0	LOO (Bhrs)
Ammonia (NFI <sub>2</sub> )	µg/m³	15 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	15 5182 (Part-10): 1999; RA2019	<1.0	2 (Shrs)
Lead (Pb)	ug/m²	IS 5182 (Part-22): 2004; RA2019	0.007	(24firs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<0.0	20 (Annual).
Arsenic (As)	ng/m <sup>7</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)



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

Dr. Deepandra Kimar Sinha

Pr. D. Bhyimmens San

ELES RVI. Lld. Technical Manager Page 1 of 1

The Document times as Ten Report, in issued by the Laboratory under General Tenns and Conditions, only on Company letter herst or pre-approved formst. The results shown in the Tax. Report refer to relate soils to the publicalizate done by the Latoratory only. The information ented on the Taxt Report reference the findings didn't by the Laboratory at the rang of involvement only und within the times of ellient's restrictions. The Laboratory is responsible for all the information of data provided on the report, except the information obtain a provided by the above. The Report corpor by reproduced except in this and any part of the report is not triam out of common without price section approval of the Laboratory. The Report is fall or in part shall not be published, advertise trace for any legal arrays prior permission has been secured from the Management of the Laboratory. Attention is drawn to the finishment of labellity, componential and considerates across Acro strong region attention & falsification of the control or apparatus of the Typ Report is unlawful and offered to may be presented in the follow scrapt of the two All the autopies are residual for Military from the flux of paces of our familiar for the surples to a Regular y notes been to return of a special, any type of Chairs from a Commission regarding for Report shall be done within lifeting from the Date of Test Report released within the stronger of selection before the expectation will be supposed. The enter, Time schedule neuropation Test Report to a 24 hours from the neuropation (and 1994) (No. April 1994) (Bellio Derivation Light of Florida Personal Local Personal Personal Local Personal Local Personal Personal Local Personal Pe



PLOT NO-30, MANSAROVAR ENCLAVE, YUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GST NO. - 20AAFCE9713D124

### ENGINEERING SERVICES PVT. LTD.

Email: info@elespl.ca.in . eles.canchi@gmail.com Phone ho.: 0651-2290103 Website www.elespi.co.in

#### TEST REPORT

Test Report No.	: ELES/RNC/2023/2968	Report Release Date	; 08.08.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Costomer Name	/ Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2754 : Ropeway Unloading Station Baggu Bauxite Mine (75.41ha
Address	: Lohardaga, Jharkhund-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 24.07.2023 to 25.07.2023 : 31.07.2023 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sample Drawn By	: ELES Pvt. Ltd.
Period of Analysis	; 31.07,2023 to 07,08,2023	Sample Condition	: Sealed & Preserved

	ETEOROLOGICAL INFOR		- 1-3	Te the contra	
1	Average Temperature (°C')	24	2	Barometric Pressure (mmHg)	:737
_	Relative Humidity (%)	: 68:	4	Weather Condition	; Cloudy
_	Longitude	: 84°41'28.22"E	6	Latitude	: 23F2645.48"N

Discipline	: Chemical	Group	: Atmospher!	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene*	jag/m³-	15:5182 (Part-11): 2006;RA2017	<1.0	05(Amual)
Benzo (u) Pyrene*	ng/m*	IS:5182 (Part-12): 2084;RA2619	<0.5	(Janual)

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

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Dr. Delatherted Manager Sinna

Ph. D. Bevinsprental Engs. BUSS PV Uti, Technical Manager

Page I of 1

The Openment stated as Test Report, is issued by the Laborovoy under General Terms and Conditions, only we Company setter head in pre-approved format. The results shows in the Test Report softs or unities only to the job/analysis done by the Laboratory only. The maximum and did not feat Report reflects the indexing date by the Laboratory or the time of myslection only and websit the limits of closed a intractains. The Laboratory or impossible for all the information only and websit the inputs of closed a intractains. The Laboratory or impossible for all the information of the possible of the report. except the information which a provided by the elect. The Report maintible reproduced except in full and any part in the report in not plant out of createst section prior western approval of the Laboratory. The Report to field or in pair shall and the published, all section, and for any Man actions arrived prior positions are also accurate from the Management of the Laboratory. Admission is drawn to the Hautenian of Cutolity, compensation and parediction between Any quantities and alternation & Blaidestics of the consum or appearance of the Test Senters is unlawful and offenders may be provended in the fulless extent of the taw. All the suspice are removed for lockays from the Date of related time of the Test Regary. The samples from Regulatory Society or or to retained as tree field. Any type of Courtsalano or Complaints regarding the Reports (tell) be done within 15 law from the Date of Ten Report released/mond. After the one period states before, no complaints with he accepted. The entire Time arisable measured in Ten Report in in Interest from the Advantage one. The (Not-Applicable), BDL (Below Dejection Limit) Line (Linear Grandian Limit)



PLOT NO 40, MANSAHOVAR ENCLAYE, TURUDANA HATIA, RANCHI-ES4003 (PIARKHANO) SETNON JUNASCHOLUSIJA



Email: into@elessi.co.in., eles rentrillé gural, com Phone no.: 0651-2290103 Website : www.elespi.co.in



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#### TEST REPORT

Test Report No.	ELES/RNC/2023/2969	Report Release Date	1 08.08.2023
Work Order No.	z 13612310218	Work Order Date	1 21,04,2023
ULR No.	: TC883923000001816F		

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	; Hindelco (ndustries Limited	Sample Ref. No. Location	: ELES/RNC/2013/AA/2755 : Ropeway Angle Station Bagru Bauxite Mine (75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 24.07.2023 to 25.07.2023 : 31.07.2023 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sample Drawn By	: ELES Pvt. Ltd.
Period of Analysis	31,07,2023 to 07,08,2023	Sample Condition	: Sealed & Preserved

Average Temperature (		2	Barometric Pressure (mml	(g) : 737
Relative Humidity (%)		4	Weather Condition	Cloudy
Longitude	- 84°37'18.22°E	6	Latitude	23°27'56.84N

NABL Accredited Discipline :	Chemical	Group :	Atmospheri	e Pollution
Parameter .	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	pg/m <sup>2</sup>	IS 5182 (Part-23): 2006; RA2022	48	100 (24hrs)
Particulate Matter (PM2.5)	µg/m²	IS 5182 (Part- 24): 2019	25	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m	IS 5182 (Part-2): 2001; RA2022	5,8	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m <sup>1</sup>	1S 5182 (Part-6): 2006; RA2022	137	80 (24hrs)
Ozone (O <sub>3</sub> )	µg/m²	IS 5182 (Part-9): 1974; RAZ019	<20.0	100 (8hrs)
Ammonia (NH <sub>2</sub> )	ug/m³	[5 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	15 5182 (Part-10): 1999; RA2019	<1.0	2 (Shrs)
Lead (Pb)	y.g/m <sup>1</sup>	IS 5182 (Part-22); 2004; RA2019	0.009	1 (24lus)
Niekel (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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Dr. Authorised Signalary Sinhs

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Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE TUPUDAMA HATIA RANCHIBBRIOG (HARKHAND) BST NO:- 10AAECERTIBOLER

### ENGINEERING SERVICES PVT, LTD.

Email: Info@elespl.co.in eles.ranchi@gmail.com Phane no.: 0651-2290203 Website www.elespl.co.in

#### TEST REPORT

Test Report No.	: ELES/RNC/2023/2969	Report Release Date	c 08.08.2023	
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/2755 : Ropeway Angle Station Baggu Bauxite Mine (75.4 lha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 24.07.2023 to 25.07.2023 : 31.07.2023 : Ambient Air	
Mines Smus	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/82 : ELES Pvt. Ltd.	
Period of Analysis	: 31.07.2023 to 07.08.2023	Sample Condition	: Scaled & Preserved	

M	ETEOROLOGICAL INFOR	EMATION			
1	Average Temperature (°C)	: 24	2	Barometric Pressure (mmHg)	: 737
	Relative Humidity (%)	:08	4	Weather Condition	Cloudy
-	Longitude	: 84°37'18.22"E	6	Latitude	: 23°27'56.84N

Discipline : Chemical		Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene*	ug/m²	IS:5182 (Part-II): 2006;RA2017	<1.0	05(Annual)	
Benzo (a) Pyrene*	ng/m	IS:5182 (Part-12): 2004;RA2019	<0.5	01(Ammal)	

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

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

Authorised Signatory
Dic Deependra Numay Sinha

Pil. D. Environment.s Engo. ELES Pvi. Ltd. Technical Manager

Page I of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO.-20A4ECE9713D124



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

Phone na.: 0651-2290103 Website: www.elespi.ca.in



TE-AUTH

#### TEST REPORT

Test Report No.	: ELES/RNC/2023/3417	Report Release Date	: 09.09.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000002185F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location  Sampling Date Sample Received Date Type of Sample	: ELES/RNC/2023/AA/3041 : Near View Point-1 (Bhusar Mine Pit 1) Bhusar Bauxite Mine(65,31ha) : 22.08.2023 to 23.08.2023 : 26.08.2023 : Ambient Air	
Mines Status	- Operational	Sampling Procedure	; ELES/DOC/SMPL/02	
Period of Analysis : 26.08.2023 to 08.09,2023		Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 22	12	Barometric Pressure (mml	Ho) - 736
3	Relative Humidity (%) : 67	4	Weather Condition	: Cloudy
			Wentlet Condition	- Clothdy

Discipline : Chemical Group :			: Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulme Matter (PM10)	µg/m³	IS 5182 (Part-23): 2006; RA2022	46	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	30	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2); 2001; RA2022	7.8	80 (24hrs)
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part-6): 2006; RA2022	14.3	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	µg/m <sup>1</sup>	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	0.008	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)



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

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Authorised Signatory
Dr Deependra Kurner Sinha

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Page 1 of 1

ELES Pvt. Ltd. Technical Manager

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

### INCOMETRING 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/2023/3417	Report Release Date	: 09.09.2023	
Work Order No.	: 13612310218	Work Order Date	= 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location  Sampling Date Sample Received Date Type of Sample	: ELES/RNC/2023/AA/3041 : Near View Point-1 (Bhusar Mine Pit I) Bhusar Bauxite Mine(65.31ha) : 22.08.2023 to 23.08,2023 : 26.08.2023 : Ambient Air	
Mines Status	: Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 26,08,2023 to 08,09,2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

1 Average Temperature (°C) : 22 2	
2 2 2 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Barometric Pressure (mmHg) 736
3 Relative Humidity (%) : 67 4	Weather Condition : Cloudy

Discipline : Chemical Group			Atmospheri	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene*	μg/m <sup>3</sup>	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. Deegendra Kurner Sinha
Ph. D. Environmental Engg.
ELES Pvt. Ltd. Technical Manager

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPLIDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20A4ECE9713D124



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16-8639

#### TEST REPORT

Test Report No.	: ELES/RNC/2023/3418	Report Release Date	1 09.09.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000002186F			

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3042 : Near View Point-2 (Bhusar Mine Pit II)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	Bhusar Bauxite Mine(65.31ha) : 22.08.2023 to 23.08.2023 : 26.08.2023 : Ambient All	
Mines Status	Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 26.08.2023 to 08.09.2023	Sample Condition	Sealed & Preserved	

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 22	2	Barometric Pressure (mm	Hg) : 736
3	Relative Humidity (%) : 67		Weather Condition	: Cloudy

Discipline :	Discipline : Chemical Group				
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23); 2006; RA2022	42	100 (24hrs)	
Particulate Matter (PM2,5)	μg/m <sup>3</sup>	1S 5182 (Part- 24); 2019	23	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	5.8	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	μg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022	9.1	80 (24hrs)	
Ozone (O <sub>1</sub> )	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>4</sub> )	μg/m³	(S 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	0.004	1 (24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)	



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

Dr. Deependra Komar Sinna

Ph. C. Environmental Engg.

Page 1 of 1

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

### NOMERRING SERVICES PUT, LTD.

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

Website: www.elespl.cu.in

#### TEST REPORT

Test Report No.	: ELES/RNC/2023/3418	Report Release Date	: 09.09.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04,2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location  Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2023/AA/3042 : Near View Point-2 (Bhusar Mine Pit II) Bhusar Bauxite Mine(65,31ha) : 22.08.2023 to 23.08.2023 : 26.08.2023 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational		The state of the s	
Period of Analysis	: 26.08.2023 to 08.09.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Scaled & Preserved	

M	ETEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 22	2	Barometric Pressure (mm	Hg) - 736	
3	Relative Humidity (%) : 67		Weather Condition	: Cloudy	

Discipline	: Chemical	Group	Atmospheri	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene*	μg/m <sup>†</sup>	IS:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)
Benzo (a) Pyrene*	ng/m³	IS:5182 (Part-12): 2004;RA2019	<0.5	91(Annual)

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

Reviewed by

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

Authorised Signatory

Dr. Deependra Kumar Sinha

Pir. D. Environmental Engg

ELES Pvi. Ltd. Technical Manager

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D174



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#### TEST REPORT

Test Report No.	: ELES/RNC/2023/3419	Report Release Date	: 09.09.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000002187F		

CUSTOMER DET.	CUSTOMER DETAILS		SAMPLE DETAILS		
Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location  Sampling Date Sample Received Date Type of Sample Sampling Procedure Sample Drawn By	: ELES/RNC/2023/AA/3043 : Near Rest Shelter Bhusar Bauxite Mine(65,31ha) : 22.08.2023 to 23.08.2023 : 26.08.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.		
Period of Analysis	: 26.08,2023 to 08.09,2023	Sample Condition	T Scaled & Preserved		

1	Average Temperature (°C) : 22	2	Barometric Pressure (mmHg)	- 736
3.	Relative Humidity (%) : 67		Weather Condition	: Cloudy

Discipline :	Discipline : Chemical Group				
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23): 2006; RA2022	45	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	23	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	5.8	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	μg/m <sup>3</sup>	IS 5182 (Part-6): 2006; RA2022	16.9	80 (24hrs)	
Ozone (O <sub>3</sub> )	µg/m³	IS 5182 (Part-9); 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>2</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)	
Nickel (Ni)	ng/m³	15 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	



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

Authorised Signatory Dr. Deependra Kumar Sinha

Page 1 of 1 ELES Pvt. Ltd. Technical Manager
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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) 65T NO:- 20AAECE9713D124 ENGINEERING SERVICES PST. LTD.

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#### TEST REPORT

Test Report No.	: ELES/RNC/2023/3419	Report Release Date	: 09.09.2023	
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/3043 : Near Rest Shelter Bhusar Bauxite Mine(65.31ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 22.08.2023 to 23.08.2023 : 26.08.2023 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Period of Analysis	: 26.08.2023 to 08.09.2023	Sample Condition	Sealed & Preserved	

MI	TEOROLOGICAL INFOR	MATION			
	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	≈ 67		Weather Condition	: Cloudy

Discipline	: Chemical	Group	Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene*	μg/m <sup>3</sup>	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.

Reviewed by

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

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

ELES Pvt Ltb. Technicas Manager

Page 1 of 1

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

### ENGINEERING SERVICES PVE. LTD.

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

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



No-saran

#### TEST REPORT

Test Report No.	: ELES/RNC/2023/3420	Report Release Date	: 09.09.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000002188F		

CUSTOMER DETA	CUSTOMER DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	SAMPLE DETAILS Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure	: ELES/RNC/2023/AA/3044 : Near GTS Point Bhusar Bauxite Mine(65,31ha : 22.08.2023 to 23.08.2023 : 26.08.2023 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sample Drawn By	: ELES PVL Ltd.
Period of Analysis	; 26,08,2023 to 08,09,2023	Sample Condition	2 Sealed & Preserved

MI	TEOROLOGICAL INFOR	MATION			
	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	:67		Weather Condition	: Cloudy

NABL Accredited					
Discipline :	Chemical	Group	Group : 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	25	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	6.1	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part-6); 2006; RA2022	11.8	80 (24hrs)	
Ozone (O <sub>3</sub> )	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	µg/m¹	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/m <sup>3</sup>	IS 5182 (Part-22): 2004; RA2019	0.005	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 Rumar Sinha

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

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE97130124 INGINEERING 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/2023/3420	Report Release Date	: 09.09.2023	
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/3044 : Near GTS Point Bhusar Bauxite Mine(65.31ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 22.08.2023 to 23.08.2023 : 26.08.2023 : Ambient Air : ELES/DOC/SMPL/02	
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES PVL Ltd.	
Period of Analysis	: 26.08.2023 to 08.09.2023	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 22	2	Barometric Pressure (mm	iHg) : 736
3	Relative Humidity (%) : 67	4	Weather Condition	: Cloudy

Discipline : Chemical		Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene*	μg/m³	IS:5182 (Part-11); 2006;RA2017	<1.0	05(Annual)		
Benzo (a) Pyrene*	ng/in <sup>3</sup>	IS:5182 (Part-12): 2004;RA2019	< 0.5	01(Annual)		

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

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Dr. Daependra Kumar Sinha Pri. D. Environmental Engg. El Es Pvi. Ltd. Technical Manager

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Test Report No.	: ELES/RNC/2023/3413	Report Release Date	: 09.09.2023	
Work Order No.	: 13612310218	Work Order Date	1 21.04.2023	
ULR No.	: TC883923000002181F			

CUSTOMER DETA	ULS	SAMPLE DETAILS	
Customer Name	! Hinduleo Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3037 : Near Daldaliya Village Bagru Bauxite Mine (75.41ha)
Address	: Lohardage, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 21.08.2023 to 22.08.2023 : 26.08.2023 : Ambient Air
Mines Status	Operational	Sampling Procedure Sample Drawn By	ELES/DOC/SMP1/02 ELES Pvi. Ltd.
Period of Analysis	: 26.08.2023 to 08.09/2023	Sample Condition	: Scaled & Preserved

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 23	2	Barometric Pressure (mmH	g) : 736
3	Relative Humidity (%)	: 66	-4.	Weather Condition	: Partly Cloudy
5	Longitude	. 84°35'37.93"E	6	Latitude	, 23°29'4.48"N

NABL Accremien						
Discipline :	Chemical	Group	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 5182 (Part-23): 2006; RA2022	51	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24); 2019	25	60 (24hrs)		
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m³	IS 5182 (Part-2): 2001; RA2022	5.2	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part-6): 2006; RA2022	14.3	80 (24hrs)		
Ozone (O <sub>3</sub> )	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH <sub>3</sub> )	µg/m <sup>2</sup>	1S 5182 (Pari- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m <sup>1</sup>	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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Page 1 of 1 ELES Pvi Ltd. Technical Manage

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Test Report No.	: ELES/RNC/2023/3413	Report Release Date	1 09.09.2023	
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/3037 : Near Daldallya Village Bagro Bauxhe Mine (75.41ha)	
Address	: Lohardagu, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 21.08.2023 to 22.08.2023 : 26.08.2023 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sample Drawn By	ELES/DOC/SMPL/02 ELES Pvt. Ltd.	
Period of Analysis	: 26:08.2023 to 08:09.2023	Sample Condition	: Sealed & Preserved	

1	Average Temperature (°C) : 23	2	Barometric Pressure (mm	Hg) 1736
3	Relative Humidity (%) : 66	14	Weather Condition	: Partly Cloudy
5	Longitude : 84°35'37,93		Latitude	: 23°29'4.48"N

Disciplina	Chemical	Genup	- Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene*	μg/m³	IS:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)
Benzo (a) Pyrene*	ng/m³	15:5182 (Part-12): 2004:RA2019	< 0.5	OI(Annual)

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

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Page 1 of 1

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Test Report No.	: ELES/RNC/2023/3414	Report Release Date	: 09.09.2023
Work Order No.	: 13612310218	Work Order Date	1 21.04.2023
ULR No.	: TC883923000002182F		

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindaloo Industries Lingited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3038 : Aditys School Gangupara Bagru Baurite Mine (75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	21.08.2023 to 22.08.2023 26.08.2023 Ambient Air
Mines Status	: Operational	Sampling Procedure Sample Drawn By	ELES/DOC/SMPL/02 ELES Pvt. Ltd.
Period of Analysis	± 26.08.2023 to 08.09,2023	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFOI	RMATION			
1	Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 66	4	Weather Condition	t Partly Cloudy
5	Longitude	: 84°38'8,14"E	6	Latitude	±23°27'46.28"N

NABL Accredited				
Discipline ;	Chemical	Group	Atmospheri	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m <sup>2</sup>	fS 5182 (Part-23): 2006; RA2022	51	100 (24hrs)
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	27	60 (24hrs)
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	1S 5182 (Part-2): 2001; RA2022	7,3	80 (24hrs)
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m <sup>5</sup>	IS 5182 (Part-6): 2006; RA2022	7.4	80 (24hrs)
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m <sup>3</sup>	IS 5182 (Part+10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	1S 5182 (Part-22): 2004; RA2019	0.010	1 (24hrs)
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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Page 1 of 1

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Test Report No.	: ELES/RNC/2023/3414	Report Release Date	: 09.09.2023	
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/3038 : Aditya School Gangupani Bagru Bauxite Mine (75.41ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 21.08.2023 to 22.08.2023 : 26.08.2023 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 ELES Pvt. Ltd.	
Period of Analysis	: 26.08.2023 to 08.09.2023	Sample Condition	Sealed & Preserved	

1	Average Temperature ("C)	: 23	2	Barometric Pressure (nmHg)	: 736
3	Relative Humidity (%)	: 66	-	Weather Condition	: Partly Cloudy
5	Longitude	: 84°38'8.14"E	6	Latitude	: 23°27'46.28"N

Discipline	· Chamical	Group	Group - Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene*	μg/m³	IS:5182 (Part-11): 2006;RA2017	<1.0	U5(Annual)		
Benzo (a) Pyrene*	ng/m³	IS:5182 (Part-12): 2004;RA2019	< 0.5	01(Annual)		

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

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#### TEST REPORT

Test Report No.	: ELES/RNC/2023/3415	Report Release Date	: 09.09,2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000002183F			

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3039 : Ropeway Unloading Station Bagru Bauxite Mine (75.41ha)	
Address Mines Status	: Lohardaga, Jharkhand-835302 : Operational	Sampling Date Sample Received Date Type of Sample Sampling Procedure Sample Drawn By	; 22.08.2023 to 23.08.2023 ; 26.08.2023 ; Ambient Air ; ELES/DOC/SMPL/02 ; ELES Pvt. Ltd.	
Period of Analysis	; 26.08.2023 to 08.09.2023	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 22	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 67	4	Weather Condition	: Cloudy
5	Longitude:	: 84°41'28.22"E	6	Latitude	: 23°26'45.48"N

Discipline :	Chemical	Group	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit			
Particulate Matter (PM10)	μg/m <sup>†</sup>	IS 5182 (Part-23): 2006; RA2022	49	100 (24hrs)			
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	22	60 (24hrs)			
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m²	IS 5182 (Part-2): 2001; RA2022	5.8	80 (24hrs)			
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part-6): 2006; RA2022	19,1	80 (24hrs)			
Ozone (O <sub>3</sub> )	µg/m²	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)			
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)			
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 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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Page 1 of 1

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Test Report No.	: ELES/RNC/2023/3415	Report Release Date	: 09.09.2023	
Work Order No.	: 13612310218	Work Order Date	: 21-04.2023	

CUSTOMER DET	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: BLES/RNC/2023/AA/3039 : Ropeway Unloading Station Bagru Baugite Mine (75,41ha)	
Address	; Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	22,08,2023 to 23.08,2023 26.08,2023 Ambient Air	
Mines Status	: Operational	Sampling Procedure Sample Drawn By	ELES/DOC/SMPL/02 ELES Pvt. Ltd.	
Period of Analysis	: 26.08.2023 to U8.09.2023	Sample Condition	Sealed & Preserved	

14.	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) (22)	2	Barometric Pressure (minHg)	: 736
3	Relative Humidity (%) : 67	14	Weather Condition	: Cloudy
5	Longitude : 84°41'28.22"E	6	Latitude	: 23°26'45.48"N

Discipline	Chemical	Group , Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene*	ng/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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#### TEST REPORT

Test Report No.	# ELES/RNC/2023/3416	Report Release Date	: 09:09.2023	
Work Order No.	: 13612310218	Work Order Date	±21.04.2023	
ULR No.	: TC883923000002184F			

CUSTOMER DETA	CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3040 : Ropeway Angle Station Bagru Bouxite Mine (75.41hn)		
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	(22.08.2023 to 23.08.2023 (26.08.2023		
Mines Status	: Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/07 : ELES Pvt. Ltd.		
Period of Analysis	: 26.08.2023 to 08.09.2023	Sample Condition	Sealed & Preserved		

M	ETEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 22	- 2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 67	4	Weather Condition	: Cloudy
5	Longitude	: 84°37'18,22"E	6	Latitude	= 23°27'56.84N

NABL Accredited						
Discipline ;	Chemical	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limi		
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	45	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	21	60 (24hrs)		
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m³	1S 5182 (Part-2): 2001; RA2022	7.3	80 (24hrs)		
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m <sup>3</sup>	IS 5182 (Pan-6): 2006; RA2022	14.2	80 (24hrs)		
Ozone (O <sub>3</sub> )	µg/m³	15 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH <sub>3</sub> )	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)	ug/m³	IS 5182 (Part-22): 2004; RA2019	0.005	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)		

Reviewed by:

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

Authorised Signatory

Page 1 of 1 ELES Pvt. Ltd. Technical Manager

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Test Report No.	: ELES/RNC/2023/3416	Report Release Date	1.09.09.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Hindalco industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location  Sampling Date Sample Received Date	ELES/RNC/2023/AA/3040 Ropeway Angle Station Bagru Bauxite Mine (75.41ha 22.08.2023 to 23.08.2023 26.08.2023	
Mines Status	: Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air ELES/DOC/SMPL/02 ELES PVL Ltd.	
Period of Analysis	: 26.08.2023 to 08.09.2023	Sample Condition	Sealed & Preserved	

MI	TEOROLOGICAL INFO	RMATION			
1	Average Temperature (°C)	: 22	- 2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 67	4	Weather Condition	: Cloudy
5	Longitude	. 84°37'18.22"E	6	Latitude	: 23°27'56.84N

Discipline - Chemical		Group	e Patherine	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene*	µg/m <sup>2</sup>	IS:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)
Benzo (a) Pyrene*	ng/m³	IS:5182 (Pan-12); 2004;RA2019	<0.5	01(Annual)

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

Reviewed by

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

Authorised Signatory

E. Ra PV Ltv. Technical Manager

Page 1 of 1

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Save Payronnman Save Future



PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NOI-2014ECE97130124

### 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/2023/1720	Report Release Date	: 10.09.2023
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/DW/1607 : 19.08.2023 : 28.08.2023	
Address	: Lohardaga, Jharkhand-835302	Type of Sample Source/Location of Sample	: Drinking Water : Bhusar Bauxite Mines (65.31 ha)	
Mines Status	: Operational	Sampling Procedure Sample Collected By	: ELES/DOC/SMPL/01 : ELES Pvt. Ltd.	
Period of Analysis	: 28.08.2023 to 09.09.2023	Sample Condition	: Sealed & Preserved	

Discipline : Chem	ical	Group : Water			ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
pH (at 24.7°C)	8-1	APHA 23 <sup>rd</sup> Ed.2017, 4500-H	6.72	6.5-8.5	No Relaxation
Turbidity	NTU	APHA 23 <sup>rd</sup> Ed.2017, 2130 B	0.19	1.0	5.0
Taste	90	APHA 23rd Ed.2017, 2160 C	Agreeable	Agreeable	Agrecable
Odour	1.4	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 23 <sup>rd</sup> Ed.2017, 2540B,C&D	392	500	2000
Chloride (as Cl)	mg/L	APHA 23rd Ed.2017, 4500 C1 B	38.6	250	1000
Fluoride (as F)	mg/L	APHA 23 <sup>rd</sup> Ed.2017, 4500 F-D	BDL (DL; 0.1)	1.0	1.5
Total Alkalinity (as CaCO <sub>3</sub> )	mg/L	APHA 23 <sup>rd</sup> Ed.2017, 2320 B	104	200	600
Total Hardness (as CaCO <sub>5</sub> )	mg/L	APHA 23 <sup>rd</sup> Ed.2017, 2340 C	148	200	600
Sulphate (as SO <sub>4</sub> )	mg/L	APHA 23 <sup>rd</sup> Ed.2017, 4500 SO <sub>4</sub> <sup>-2</sup> -E	32.2	200	400
Nitrate (as NO <sub>3</sub> )	mg/L	APHA 23 <sup>rd</sup> Ed.2017, 4500 NO <sub>3</sub> -B	3,82	45	No Relaxation
Phenolic Compound (as C <sub>6</sub> H <sub>3</sub> OH)	mg/L	IS 3025 (Part-43):1992;RA2019	BDL (DL: 0.0005)	0.001	0.002

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SING SERVICES PVT. LTD.

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### TEST REPORT

: ELES/RAN/2023/1720 Report Release Date : 10.09.2023 Test Report No. Work Order Date : 21.04.2023 Work Order No. : 13612310218

Discipli	ine : Cher	mical Group: W	ater		tory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Cyanide (as CN)	mg/L	APHA 23 <sup>rd</sup> Ed.2017, 4500 CN-E	BDL (DL: 0.012)	0.05	No Relaxation
Residual Free Chlorine (RFC)	mg/L	IS 3025 (Part-26):2021	BDL (DL: 0.1)	0.02	0.1
Calcium (as Ca)	mg/L	APHA 23 <sup>ed</sup> Ed.2017, 3500 Ca B	35.2	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 23rd 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 23 <sup>rd</sup> Ed.2017, 3111B	BDL (DL: 0.03)	0.05	1,5
Iron (as Fe)	mg/L	APHA 23rd Ed.2017, 3111B	0.316	1.0	1.0
Lead (as Pb)	mg/L	APHA 23rd Ed.2017, 3111B	BDL (DL: 0.01)	0.01	No Relaxation
Manganese (as Mn)	mg/L	APHA 23rd 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 <sup>rd</sup> Ed.2017, 3111B	BDL (DL: 0.1)	5	15

Remarks: 1. pH & RFC done at Lab.

Page 2 of 4

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#### TEST REPORT

Test Report No.	: ELES/RAN/2023/1720	Report Release Date	: 10.09.2023	
Work Order No.	: 13612310218	Work Order Date	; 21.04.2023	

Discipline : Che	mical		Group: Water	
Parameter	Unit	Test Protocol	Result	Regulatory Limit as per IS 10500:2012
Pesticides				
Alachlor*	μg/L	APHA	BDL (DL: 1.0)	20
Atrazine*	µg/L	АРНА	BDL (DL: 1.0)	2
Aldrin/Dieldrin*	µg/L	APHA	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	APHA.	BDL (DL: 10)	125
Chlorpyriphos*	μg/L	АРНА	BDL (DL; 10)	30
Delta HCH*	μg/L	АРНА	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	APHA	BDL (DL: 0.1)	0.4
Ethion*	μg/L	APHA	BDL (DL: 0.5)	3
Gamma HCH (Lindane)*	μg/L.	АРНА	BDL (DL: 0.5)	2
Isoproturon*	μg/L	APHA	BDL (DL: 0.5)	9

Page 3 of 4

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

### ENGINEERING SERVICES PYT. LTD.

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#### TEST REPORT

Test Report No.	: ELES/RAN/2023/1720	Report Release Date	: 10.09.2023	- 1
Work Order No.	: 13612310218	Work Order Date	; 21.04.2023	

Discipline ; Bi	ological	Group: \	Water		ory Limit
Discipline ( Di	Olo Miceni	Strange Control			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 l	ha datactad
Escherichia Coli (E. Coli)	Per 100 mL	IS (5185:2016; RA 2021	Not Detected	Shall not be detected	
Discipline : Chemical		Group:	Water		ory Limit 10500:2012
Parameter	Unit	Test Protocol	Result	Acceptable Limit	Permissible Limit
Anionic Surfactants (as MBAS)*	mg/L	1S 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 23 <sup>rd</sup> Edition	BDL (DL: 0.0001)	0.0001	No relaxation
Polychlorinated Biphenyls (PCB)*	mg/L	APHA 23 <sup>rd</sup> Edition	BDL (DL: 0.0005)	0.0005	No relaxation

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

Reviewed b

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

Authorised Signatory Rekha Saxena B Sc, M. Sc. (Botany) Director ELES PVI. Ltd.

Page 4 of 4

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### TEST REPORT

Test Report No.	: ELES/RNC/2023/4025	Report Release Date	: 28.10.2023	
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/3442 : Near View Point-I (Bhusar Mine Pit I)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	Bhusar Bauxite Mine(65.31ha) : 18.09.2023 to 19.09.2023	
Mines Status	: Operational	Sample Received Date Type of Sample Sampling Procedure	: 29.09,2023 : Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 29.09.2023 to 11.10.2023	Sample Drawn By Sample Condition	: ELES Pvt, Ltd. : Sealed & Preserved	

M	ETEOROLOGICAL INFORMATIO	N		
1	Average Temperature (°C) : 25	2	Barometric Pressure (mm	(Hg) 1734
3	Relative Humidity (%) : 66	4	Weather Condition	: Partly Cloudy

Discipline : Chemica	d	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m³	IS 5182 (Part-23); 2006; RA2022	41	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	25	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	6.2	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part-6): 2006; RA2022	13.8	80 (24hrs)	
Ozone (O <sub>5</sub> )	µg/m²	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (Bhrs)	
Ammonia (NH <sub>3</sub> )	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m <sup>1</sup>	IS:5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m <sup>3</sup>	IS 5182 (Part-22): 2004; RA2019	0.005	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/2023/4025	Report Release Date	: 28.10.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

Discipline: Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C <sub>6</sub> H <sub>6</sub> )*	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 Engly.
FI ES Fyl. Ltd. Technical Manager

Page 2 of 2

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#### TEST REPORT

Test Report No.	: ELES/RNC/2023/4026	Report Release Date	: 28.10.2023
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 <sub>6</sub> H <sub>6</sub> )*	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 Pvi\_Ltd. Technical Manager

Page 2 of 2

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

### ENGINEERING SERVICES PVT, LTD.

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#### TEST REPORT

Test Report No.	: ELES/RNC/2023/4027	Report Release Date	: 28,10.2023	
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/3444 : Near Rest Shelter Bhusar Bauxite Minc(65.31ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	18.09.2023 to 19.09.2023 29.09.2023
Mines Status	: Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air :: ELES/DOC/SMPL/02 :: ELES Pvt. Ltd.
Period of Analysis	: 29.09.2023 to 11.10,2023	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 25	2	Barometric Pressure (mm)	Hg) : 734
	Relative Humidity (%) : 66	4	Weather Condition	: Partly Cloudy

Discipline : Chemica	1	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	42	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	20	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m <sup>3</sup>	IS 5182 (Part-2): 2001; RA2022	5.1	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m <sup>1</sup>	18 5182 (Part-6): 2006; RA2022	17.8	80 (24hrs)	
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	1S 5182 (Part-22): 2004; RA2019	<0.002	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)	

Page 1 of 2

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#### TEST REPORT

Test Report No.	: ELES/RNC/2023/4027	Report Release Date	: 28.10.2023
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 <sub>6</sub> H <sub>6</sub> )*	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.

Reviewed by

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

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

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARICHAND) GST NO:-28AAECE9713D124 ENGINEERING SERVICES PVT. LTD.

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### TEST REPORT

Test Report No.	; ELES/RNC/2023/4028	Report Release Date	: 28.10.2023	
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/3445 : Near GTS Point Bhusar Bauxite Mine(65.31ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 18.09.2023 to 19.09.2023 : 29.09.2023 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sample Drawn By	ELES/DOC/SMPL/02 ELES Pvt. Ltd.
Period of Analysis	: 29.09.2023 to 11.10.2023	Sample Condition	Sealed & Preserved

M	ETEOROLOGICAL INFOR	MATION	7	100	
1	Average Temperature (*C)	: 25	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy

Discipline : Chemica	ıl	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m <sup>3</sup>	IS 5182 (Part-23); 2006; RA2022	36	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part- 24): 2019	20	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	<5.0	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	μg/m³	IS 5182 (Part-6): 2006; RA2022	12.2	80 (24hrs)	
Ozone (O3)	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>5</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10): 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/2023/4028	Report Release Date	: 28.10,2023	
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 <sub>6</sub> H <sub>6</sub> )*	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

CHICA

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

Authorised Signatory

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

Page 2 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI 834003 (JHARKHONO) GST NO:- 20AAECE9713D124 ENGINEERING SERVICES PV7. LTD.

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#### TEST REPORT

Test Report No.	: ELES/RNC/2023/4021	Report Release Date	; 28,10,2023	
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/3438 : Near Daldaliya Village Bagru Bauxite Mine(75.4 ha)	
Address	: Lohardaga, Iharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 17.09.2023 to 18.09.2023 : 29.09.2023 : Ambient Air	
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Lid.	
Period of Analysis	: 29.09.2023 to 10.10.2023	Sample Condition	: Sealed & Preserved	

	ETEOROLOGICAL INFO	STATE A POST	-		
1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 66	-4	Weather Condition	: Partly Cloudy
5	Longitude	: 84°35'37,93"E	-6	Latitude	: 23°29'4.48"N

Discipline: Chemica	d	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m <sup>3</sup>	1S 5182 (Part-23): 2006; RA2022	43	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m²	IS 5182 (Part- 24); 2019	20	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m³	IS 5182 (Pan-2); 2001; RA2022	5.8	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m <sup>3</sup>	IS 5182 (Part-6); 2006; RA2022	15.1	80 (24hrs)	
Ozone (O <sub>3</sub> )	ug/m³	IS 5182 (Part-9); 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	µg/m³	1S:5182 (Part- 25); 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	15 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m³	IS 5182 (Part-22): 2004; RA2019	<0.002	L(24hrs)	
Nickel (Ni)	ng/m³	IS 5182 (Pan-26):2020	< 6.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

Page I of Z

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PLOT NO-30, MANSARDVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO: - 20AAECE9719D124

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#### TEST REPORT

Test Report No.	: ELES/RNC/2023/4021	Report Release Date	; 28.10.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

Discipline : Chemi	enl	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene (C <sub>6</sub> H <sub>6</sub> )*	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 Engs. ELES PVI Ltd. Technical Manager

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

### ENGINEERING SERVICES PUT, LTD.

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#### TEST REPORT

Test Report No.	: ELES/RNC/2023/4022	Report Release Date	: 28.10,2623	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Litrated	Sample Ref. No. Location	: ELES/RNC/2023/AA/3439 : Adirya School Gangupara Bagru Bauxite Mine(75.41ha)
Address	; Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 17,09,2023 to 18,09,2023 : 29,09,2023 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sample Drawn By	; ELES/DOC/SMPL/02 ; ELES Pvt. Ltd.
Period of Analysis	: 29,09,2023 to 10,10,2023	Sample Condition	Sealed & Preserved

M	TEOROLOGICAL INFORMATION			
1	Average Temperature (°C) 325	2	Barometric Pressure (mm	Hg) : 738
_	Relative Humidity (%) : 66	4	Weather Condition	: Partly Cloudy
5	Longitude : 84°38'8.14"E	6	Latitude	: 23°27'46.28"N

Discipline: Chemica	il.	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m <sup>2</sup>	IS 5182 (Part-23): 2006; RA2022	40	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	22	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>1</sub> )	μg/m³	IS 5182 (Part-2): 2001; RA2022	6,1	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	µg/m³	I\$ 5182 (Part-6); 2006; RA2022	5.5	80 (24hrs)	
Ozone (O <sub>s</sub> )	μg/m³	IS-5182 (Part-9); 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>2</sub> )	ug/m"	IS 5182 (Part- 25); 2018	<10.0	400 (24hrs)	
Carbon Monaxide (CO)	mg/m³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs).	
Lead (Pb)	μg/m²	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/m²	ELES/AIR/SOP/01	<2.0	96 (Annual)	

Page 1 of 2

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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/2023/4022	Report Release Date	: 28,10.2023	
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 <sub>6</sub> H <sub>6</sub> )*	μg/m <sup>1</sup>	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m³	IS 5182 (Part-12)2004;RA2019	<0.5	Ol(Annual)	

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

Reviewed by

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

Authorised Signatory

Dr. Deependra Kumar Sinha Ph. D. Environmental Engg. BLES Pyl. Ltd. Technical Manager

Page 2 of 2

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PLOT NO-30, MANSARGVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GSTNO:-20A4ECE97130124

### ENGINEERING SERVICES PVT. LTD.

Email: Infa@elespi.co.in . eles ranchi@amail.com Phone no.: 0651-2290103 Website: www.elespi.co.in

#### TEST REPORT

Test Report No.	: ELES/RNC/2023/4023	Report Release Date	: 28.10.2023	
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/3440 : Ropeway Unloading Station Bagru Bauxite Mine(75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 17,09,2023 to 18.09,2023 : 29,09,2023 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES PVL Ltd.
Period of Analysis	: 29.09,2023 to 10.10.2023	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFORM	MATION			
U	Average Temperature (°C)	. 25	2	Barometric Pressure (mmHg)	738
3	Relative Humidity (%)	66	4	Weather Condition	: Partly Cloudy
5	Longitude	: 84°41'28.22"E	6	Latitude	: 23°26'45.48"N

Discipline: Chemica	ul	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m³	IS 5182 (Part-23): 2006; RA2022	41	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m³	IS 5182 (Part- 24): 2019	19	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>3</sub> )	μg/m³	JS 5182 (Part-2): 2001; RA2022	5.1	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>2</sub> )	μg/m³	IS 5182 (Part-6): 2006; RA2022	17.5	80 (24hrs)	
Ozone (O <sub>3</sub> )	μg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>3</sub> )	μg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m³	IS 5182 (Part-10); 1999; RA2019	<1.0	2 (Shrs)	
Lead (Pb)	μg/m <sup>3</sup>	IS 5182 (Part-22): 2004; RA2019	0.006	t (24hrs)	
Nickel (Ni)	ng/m*	IS 5182 (Part-26):2020	<5.0	20 (Annual)	
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2,0	06 (Annual)	

Page 1 of 2

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CIN: CI74992HHZ018PTC0111ZS

# ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDARA HATIA, RANCHI-834003 (JHARKHAND) GST NO:-20AABCE9713D124

### ENGINEERING SERVICES PVT. LTD.

Emall: Info@elespl.co.in , eles.ranchi@amali.com Phone no.: 0651-2290103 Website : www.elespl.co.in

#### TEST REPORT

Test Report No.	: ELES/RNC/2023/4023	Report Release Date	: 28.10.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C <sub>6</sub> H <sub>6</sub> ) <sup>6</sup>	μg/m <sup>3</sup>	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)
Benzo-(a)-Pyrene*	ng/m²	15 5182 (Part-12)2004;RA2019	<0.5	01(Annual)

Remarks; (")-Parameters are outsourced to other Lah:

Reviewed by

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

Authorised Signatory

Or, Deependra Kumar Sinha Ph. D. Environmental Engg. ELES Pvi. Ud. Technical Manager

Page 2 of 2

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CTN: U74595UH201AP7C011113

# ENVIRONMENTAL LABORATORIES &

PROT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-534003 (IHARKHAND) GST NO:- 20AAFCE97130124 ENGINEERING SERVICES PVF. LTD.

Email: Info@elespl.co.in , eles.ronchi@amail.com Phone no.: 0651-2290103 Website : www.elespl.co.in

#### TEST REPORT

Test Report No.	; ELES/RNC/2023/4024	Report Release Date	: 28.10.2023
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/3441 : Ropeway Angle Station Bagru Bauxite Mine(75.41ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 17.09,2023 to 18.09,2023 : 29.09,2023 : Ambient Air
Mines Status	: Operational	Sampling Procedure Sample Drawn By	: ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 29.09.2023 to 10.10,2023	Sample Condition	Scaled & Preserved

1	Average Temperature ("C)	: 25	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy
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/m <sup>3</sup>	IS 5182 (Part-23); 2006; RA2022	39	100 (24hrs)	
Particulate Matter (PM2:5)	μg/m³	IS 5182 (Part- 24): 2019	17	60 (24hrs)	
Sulphur Di-Oxide (SO <sub>2</sub> )	µg/m³	IS 5182 (Part-2): 2001; RA2022	5.5	80 (24hrs)	
Nitrogen Di-Oxide (NO <sub>1</sub> )	µg/m²	IS 5182 (Part-6); 2006; RA2022	15.6	80 (24hrs)	
Ozone (O <sub>5</sub> )	μg/m <sup>†</sup>	IS 5182 (Part-9), 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH <sub>2</sub> )	µg/m¹	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 (Ph)	µg/m³	JS 5182 (Part-22): 2004; RA2019	0.007	) (24lus)	
Nickel (Ni)	ng/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m <sup>3</sup>	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (HARKHAND) GST NO- 20A46C69713D124

### ENGINEERING SERVICES 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/2023/4024	Report Release Date	: 28.10,2023	
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 <sub>6</sub> H <sub>6</sub> )*	μg/m³	IS 5182 (Part-11)2006;RA2017	<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.

Reviewed by

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

Authorised Signatory

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

ELES Pyl. Ltd. Tachnical Manager.

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### ENGINEERING SERVICES PYT. LTD.

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#### TEST REPORT

Test Report No.	: ELES/RNC/2023/4128	Report Release Date	: 31.10.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DE	TAILS	SAMPLE DETAILS			
Customer Name Address	: Hindaleo Industries Limited : Lohardaga, Jharkhand-835302	Sampling Date Sampling Received Date Type of Sample Sampling procedure Sample Drawn By	: 18.09.2023 to 19.09.2023 : 30.09.2023 : Ambient Noise : ELES/DOC/SMPL/03 : ELES Pvt. Ltd.		
Mines Status	: Operational	Period of Analysis	: 30.09.2023 to 10.10.2023		

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) ; 25	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%) : 66	4	Weather Condition	: Partly Cloudy

Location	Unit Test Protocol		Res	Regulatory Limit (Industrial Zone)		
Same All Control			Time	Leq		
Bhusar Mines Pit 1 Bhusar Bauxite Mines (65.31ha)	dB(A)	IS 9989:1981, RA 2020	Day Time	68	75 dB(A) Day Time &	
Sample ID: ELES/RNC/2023/AN/3520			Night Time	49	70 dB(A) Night Time	

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Authorised Signat

Dr. Deependra Kumar Sinha Pm. D. Environmental Enga BLES PVL Ltd. Technical Managen

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834005 LIHARICHANDI GST NO:-20AAECE9713D124

### GINEERING 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/2023/4150	Report Release Date	: 31.10.2023	
Work Order No.	; 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DE	TAILS	SAMPLE DETAILS			
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sampling Date Sampling Received Date Type of Sample Sampling procedure Sample Drawn By	: 18.09.2023 : 30.09.2023 : Workzone Noise : ELES/DOC/SMPL/03 : ELES Pvt. Ltd.		
Mines Status	: Operational	Period of Analysis	: 30.09.2023 to 11.10.2023		

M	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	26	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	65	4	Weather Condition	: Partly Cloudy

Location	Unit	Unit Test Protocol		ult	Regulatory Limit (Industrial Zone)	
Bhusar Mines Pit - II	7.1		Time	Leq		
Bhusar Bauxite Mine(65,31ha)	dB(A)	IS 4758:1968; RA 2017		70	90 dB (A)	
Sample ID: ELES/RNC/2023/WN/3542			Day Time	70		

Reviewed by

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

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

ELES Pvt. Ltd. Technical Manager

Page 1 of 1

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Annexure 3

Date - 28.10.2023

### **Office Order**

Environmental Cell has been re-constituted at Bhusar Bauxite Mine (Area 65.31 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. Malay Kumar Prushty (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.

Basudev Gangopadhyay
AVP (Planning, Environment & Compliance)

# **Annexure 4**

	Production, Min	ned Out, Ba	ck Filled and	<b>Over Burden</b>	removal from	n April'23 to	September <sup>4</sup>	<b>'23</b>
S No	Name of the Mines	Mining lease area (ha)	Production Capacity (MT)*	Lease Period*	Production (MT)	Mined out area (ha)	Back filled area (ha)	Over burden (Cu.M)
1	Bagru bauxite Mine	75.41	85000	22.01.1974 to 31.03.2030	0	0	0.00	0.00
2	Bhusar Bauxite Mine	65.31	280000	11.07.1981 to 31.03.2030	148918	0.92	0.45	163157.26
3	Hisri (New) Bauxite Mine	14.55	100000	19.07.1981 to 31.03.2030	56738	0.4	0.49	27329.28
4	Kujam - I Bauxite Mine	80.87	150000	13.03.2006 to 12.03.2056	102270	2.1	1.61	157784.02
5	Kujam - II Bauxite Mine	157.38	300000	24.03.2006 to 23.03.2056	61110	3.02	1.21	134785.10
6	Amtipani Bauxite Mine	190.95	150000	13.03.2006 to 12.03.2056	100700	2.91	1.00	125875.50
7	Gurdari Bauxite Mine	584.19	325000	23.03.1985 to 22.03.2035	78106	3.07	2.38	242675.00
8	Shrengdag A Bauxite Mine	155.81	260000	16.10.1974 to 31.03.2030	14860	0.39	0.35	14280
9	Shrengdag B Bauxite Mine	140.07	100000	04.10.1978 to 31.03.2030	43320	1.12	1.15	77170
10	Jalim & Sanai Bauxite 'Mine	12.14	50000	16.10.1974 to 31.03.2030	26725	0.21	0.2	8750
11	Orsapat Bauxite Mine	196.36	200000	17.07.1986 to 16.07.2036	NIL	NIL	NIL	NIL
12	Chiro Kukud bauxite Mine	152.57	100000	29.01.1985 to 28.01.2035	NIL	NIL	NIL	NIL
13	Pakhar (8.09)	8.09	80000	16.05.1973 to 31.03.2030	NIL	NIL	NIL	NIL
14	Pakhar (35.12)	35.12	200000	17.04.1975 to 31.03.2030	NIL	NIL	NIL	NIL

# Annexure 4

15	Pakhar (115.13)			19.07.1996 to				
		115.13	300000	31.03.2030	147508.00	2.29	0.4	532571.87
				Miner	als & Minerals Li	mited		
16	Pakhar (15.58)			28.04.1965 to	80.00	0.00	0.00	0.00
		15.58	60000	31.03.2030		0.00	0.00	0.00
17	Pakhar (109.507)			26.07.2008 to	97720.00			
		109.507	280000	25.07.2058		1.93	0.71	237280.85
18	Bimarla Bauxite Mine			18.07.2009 to				
		134.37	300000	17.07.2059	39550	2.21	0.8	64913.65
19	Amtipani Chirodih			11.01.2017 to				
	Bauxite Mines	130.01	450000	10.01.2067	84678	3.96	1.15	98519.66

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



Basudev Gangopadhyay

AVP (Planning, Environment and Compliance)

### **Annexure-5**

#### BREAK UP THE COST OF ENVIRONMENTAL MEASURES DURING THE YEAR 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 Pakhar (115,13 ha), Pakhar (15.58 ha), Pakhar (109.507 ha), Pakhar (8.09 ha), Pakhar (35.12 ha), Serengdag (140.06 ha), Serengdag (155.81 ha), Jalim & Sanai (12.14 ha), Gurdari (584.19 ha), Amtipani (190.95 ha), Kujam I (80.97 ha) Kujam II (157.38 ha), Bagru (75.41 ha), Hisri New (14.55 ha), Chiro kukud (152.57 ha), Orsa pat (196.36 ha), Bhusar (65.31 ha), Bimarla Bauxite Mines (134.52 ha) and Amtipani Chirodih (130.01 ha) Bauxite Mine.

S No	Description	Budget (in Rupees) FY 2023-24	Actual (in Rupees) FY 2023-24 (From April'23 to September'23)
1	Pollution Control & Environment monitoring	1,57,41,102.00	82,15,825.36
2	Reclamation/ Back filing & Rehabilitation**	1,36,62,095.00	6,66,42,814.70
3	Green belt, Plantation & Water sprinkling arrangement	67,45,898.00	19,34,590.20
4	Rural Development	6,19,33,534.00	1,83,73,453.27

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

Basudev Gangopadhyay
AVP (Planning, Environment & Compliance)