

HIL/LHD/ENV/MoEF/429

Date: 25.11.2023

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

Sub: Compliance Report of EC conditions for Orsa (196.36ha) Bauxite Mining project of M/s Hindalco Industries Limited located in Latehar, Jharkhand for the period April'23 to September'23.

Ref: Environmental Clearance letter no J-11015/241/2006-IA II (M) dated 17th May 2007

Sir,

With reference to the above, we are submitting herewith the Compliance status report of EC conditions for **Orsa (196.36 ha)** Bauxite mining project of M/s Hindalco Industries Limited located in Latehar, Jharkhand for the period April'23 to September'23. The lease details are below.

Lease area (ha)	Production Capacity (MT)	Lease Period
196.36	200000	17.07.1986 to 16.07.2036

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

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Mines Division, Court Road, Lohardaga 835302, Jharkhand, India T: +91 6526 224112/224015/223113 | E: hindalco@adityabirla.com | W: www.hindalco.com Registered Office: Ahura Centre, 1st Floor, B Wing, Mahakali Caves Road, Andheri (East), Mumbai 400 093, India T: +91 22 6691 7000 | F: +91 22 6691 7001 Corporate ID No.: L27020MH1958PLC011238

Name of the Project	:	Orsa Bauxite Mine (196.38 ha) M/s Hindalco Industries Ltd
Environment Clearance No & date	:	J-11015/241/2006-IA. II (M), dated 17.05.2007
Period of compliance Report	:	From 1 st April 2023 to 30 th September 2023

A. Specific Conditions

Condition 1- Environmental Clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa foundation Vs Union of India in write petition (civil) no 460 of 2004, as may be applicable to this project.

Reply to Condition 1 - Noted.

Condition 2- Environmental Clearance is subject to obtaining clearance from Wildlife (Protection) Act '1972 from the competent authority.

Reply to Condition 2- The Mine is not in operation since 20 April 2018 and this matter is subjudice.

Condition 3- All the conditions stipulated by SPCB in their NOC shall be effectively implemented.

Reply to Condition 3- Noted and agreed. The Mine is not in operation since 20 April 2018. Mine was operational for a very limited period of 4-5 months. As on date mine is not operational. Post resumption of mining operation compliance to the said conditions will be implemented.

Condition 4- The environmental clearance is subject to approval of the state land use Department, Government of Jharkhand for diversion of agricultural land for nonagricultural use.

Reply to Condition 4- The Mine is not in operation since 20 April 2018. Prior to this, Mine was operational for very limited period of 4-5 month.

Condition 5- Mining shall not intersect groundwater. The mine working shall be restricted to above ground water table. Prior approval of the Ministry of Environment & Forests and Central Ground Water Authority shall be obtained for mining below water table.

Reply to Condition 5- Noted. Mine has not been in operation since 20 April 2018. Prior to this, Mine was operational for a very limited period of 4-5 months during which time it was also above

ground water level. Post resumption of mining operation compliance to the said conditions will be implemented. In future also, working zones will be restricted to above ground water tables.

We undertake that no mining was carried out below ground water table and the same status will be maintained in future also if any.

Condition 6- The project proponent shall ensure that the mining shall be carried out in small blocks and at a given point of time active mining shall not be more than 2.0 ha.

Reply to Condition 6- Noted. The Mine has not been in operation since 20 April 2018. Prior to this, Mine was operational for very limited period of 4-5 month.

As on date mine is not operational. Post resumption of mining operation compliance to the said conditions will be implemented.

Condition 7- The project proponent shall ensure that no natural water course shall be obstructed due to any mining operations.

Reply to Condition 7- Noted. The Mine has not been in operation since 20 April 2018. Prior to this, Mine was operational for a very limited period of 4-5 months and this condition was complied with. As on date mine is not operational. Post resumption of mining operation compliance to the said conditions will be implemented.

Condition 8- Topsoil, if any, shall be stacked properly with proper slope with adequate measures and should be used for reclamation and rehabilitation of mined out areas.

Reply to Condition 8- Noted. The Mine has not been in operation since 20 April 2018. Prior to this, Mine was operational for very limited period of 4-5 month. As on date, mine is not operational and this condition was complied with. Post resumption of mining operation compliance to the said conditions will be implemented.

Condition 9- The overburden generated during the initial year shall be kept as a temporary dump. Concurrent backfilling starts from the 2nd year onwards and there shall be no external dump at the end of the mine life.

Reply to Condition 9- The Mine has not been in operation since 20 April 2018. Prior to this, Mine was operational for a very limited period of 4-5 months and this condition was complied with. As on date mine is not operational. Post resumption of mining operation compliance to the said conditions will be implemented.

Condition 10- The entire excavated area of 155 ha shall be reclaimed, out of which 131 ha land shall be returned to raiyats for agricultural purposes and in 24 ha plantation shall be raised. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forest on a six-month basis.

Reply to Condition 10- The Mine has not been in operation since 20 April 2018. Prior to this, Mine was operational for very limited period of 4-5 month. Post resumption of mining operation compliance to the said conditions will be implemented.

Condition 11- Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from mine working. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains should be regularly desilted particularly after monsoon and maintained properly.

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

Reply to Condition 11- The Mine is not in operation since 20 April 2018. Prior to this, Mine was operational for very limited period of 4-5 months.

As on date mine is not operational. Post resumption of mining operation compliance to the said conditions will be implemented.

Condition 12- Dimension of the retaining wall at the OB benches within the mine to check run-off and siltation should be based on rainfall data.

Reply to Condition 12- The Mine has not in operation since 20 April 2018. Prior to this, Mine was operational for very limited period of 4-5 months. As on date mine is not operational. Post resumption of mining operation compliance to the said conditions will be implemented.

Condition 13- Plantation shall be raised in an area of 24.0 ha including a green belt of adequate width by planting the native species around the ML area, roads, reclaimed area etc. in consultation with the local DFO / Agriculture Department. The density of the trees should be around 1500 plants per ha.

Reply to Condition 13- The Mine has not been in operation since 20 April 2018. A total of 0.13 ha has been planted till date. Prior to this, Mine was operational for very limited period of 4-5 month. As of date mine is not operational. Post resumption of mining operation compliance to the said conditions will be implemented.

Condition 14- The project authority should implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground Water Board

Reply to Condition 14- The Mine has not been in operation since 20 April 2018. Prior to this, Mine was operational for very limited period of 4-5 month. As on date mine is not operational. Post resumption of mining operation compliance to the said conditions will be implemented.

It may be noted that there is no chance to intersect ground water table during mining operation.

Condition 15- Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and constructing new piezometers during the mining operation. The monitoring should be carried out four times in a year – pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the data thus collected may be sent regularly to MOEF, Central Ground water Authority and Regional Director Central Ground Water Board.

Reply to Condition 15- Mine has not been in operation since 24 April 2018. This condition was complied with and also will be complied with in future post resumption of mining work.

Condition 16- Prior permission from the competent authority should be obtained for drawl of water from the surface water bodies.

Reply to Condition 16- Noted. As on date, mine is not operational.

Condition 17- Vehicular emissions should be kept under control and regularly monitored. Measures shall be taken for maintenance of vehicles used in mining operations and transportation of minerals. The vehicles should be covered with a tarpaulin and should not be overloaded.

Reply to Condition 17- The Mine is not in operation since 20 April 2018. Mine was operational for a very limited period of 4-5 months and this condition was complied with. Post resumption of mining operation compliance to the said conditions will be implemented.

Condition 18- Drills should either be operated with dust extractors or should be equipped with a water injection system.

Reply to Condition 18- The Mine has not been in operation since 20 April 2018. Prior to this, Mine was operational for a very limited period of 4-5 months and this condition was complied with as on date mine is not operational. Post resumption of mining operation compliance to the said conditions will be implemented.

Condition 19- Blasting operation should be carried out only during the daytime. Controlled blasting should be practiced. The mitigative measures for control of ground vibration and to arrest fly rocks and boulders should be implemented.

Reply to Condition 19- The Mine has not been in operation since 20 April 2018. Prior to this, Mine was operational for a very limited period of 4-5 months and this condition was complied with as on date mine is not operational. Post resumption of mining operation compliance to the said conditions will be implemented.

Condition 20- Consent to operate should be obtained from SPCB prior to start of enhanced production from the mine.

Reply to Condition 20- There is no proposal for enhancement of production. As on date, mine is not operational.

Condition 21- Sewage treatment plant should be installed for the colony. ETP should also be provided for workshops and wastewater generated from mining operations. Reply to Condition 21- Noted. As on date, mine is not operational.

Condition 22- The project proponent should take all precautionary measures during mining operation for conservation and protection of endangered fauna such as Leopard, Indian Wolf, Indian elephant, Indian small civet, Indian Python, etc. Spotted in the study area. Action plan

for conservation of flora and fauna shall be prepared and implemented in consultation with the State Forest and Wildlife Department. The necessary allocation of funds for implementation of the conservation plan shall be made and the funds so allocated shall be included in the project cost. A copy of the action plan may be submitted to the Ministry and its Regional Office within 3 months.

Reply to Condition 22- The Mine is not in operation since 20 April 2018. Prior to this, Mine was operational for very limited period of 4-5 month. Wildlife conservation plan has already been approved by PCCF, Ranchi. However, a fresh wildlife conservation plan has already been submitted to PCCF, Ranchi for its approval.

Condition 23- A Final Mine Closure plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forest 5 years in advance of final mine closure for approval.

Reply to Condition 23- The Mine is not in operation since 20 April 2018. Prior to this, Mine was operational for a very limited period of 4-5 months and this condition was complied with as on date mine is not operational.

FMCP for entire lease will be prepared & submitted in due time as per applicable guidelines and timelines mentioned in MCDR/IBM guidelines who are competent authority to approve the same.

Based on the present resource estimate, and peak rated production capacity, mining operation will be done.

B. General Conditions

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

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

Reply to Condition 2- The Mine is not in operation since 20 April 2018. Prior to this, Mine was operational for a very limited period of 4-5 months and this condition was complied with. As on date mine is not operational. Post resumption of mining operation compliance to the said conditions will be implemented.

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

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

Condition 4- Data on ambient air quality (RPM, SPM, SO₂, and NOx) should be regularly submitted to the Ministry including its regional office located at Bhubaneswar and the State Pollution Control Board / Central pollution Control Board once in six months. Reply to Condition 4- Monitoring Reports is attached as Annexure-2.

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

Reply to Condition 5- The Mine is not in operation since 20 April 2018. Prior to this, Mine was operational for very limited period of 4-5 month and this condition was complied with. As on date mine is not operational. Post resumption of mining operation compliance to the said conditions will be implemented.

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

Reply to Condition 6- The Mine has not been in operation since 20 April 2018. Prior to this, Mine was operational for a very limited period of 4-5 months and this condition was complied with.

As of date mine is not operational. Post resumption of mining operation compliance to the said conditions will be implemented.

Condition 7- Industrial wastewater (workshops and wastewater from the mine) Should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December,

1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.

Reply to Condition 7- There was no generation of wastewater from the mine as of now. Compliance with this condition will be adhered to as applicable. As of date, mine is not operational.

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

Reply to Condition 8- Mine has is not in operation since 20 April 2018. Prior to this, Mine was operational for a very limited period of 4-5 months and this condition was complied with. As on date mine is not operational. Post resumption of mining operation compliance to the said conditions will be implemented.

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

Reply to Condition 9- A suitable environmental management cell has been developed with qualified personnel. Copy is enclosed as **Annexure-3**.

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

Reply to Condition 10- Provisions related to financial closure not applicable. Now the Regional office is at Ranchi.

Condition 11- The funds earmarked for environmental protection measures should be kept in separate accounts and should not be diverted for other purposes. Year-wise expenditure should be reported to the Ministry and its Regional Office located at Bhubaneswar. Reply to Condition 11- Cost of Environmental protection measures are attached as Annexure-5. Now the Regional office is at Ranchi.

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

Reply to Condition 12- Agreed. Now the Regional office is at Ranchi.

Condition 13- The project proponent shall submit six monthly report on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests its Regional Office, Bhubaneshwar CPCB and State Pollution Control Board. Reply to Condition 13- Duly submitted. Now the Regional office is at Ranchi.

Condition 14- A copy of clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom suggestion / representation has been received while processing the proposal.

Reply to Condition 14- Complied.

Condition 15- State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Center and Collector's office / Tehsildar's Office for 30 days.

Reply to Condition 15- Displayed.

Condition 16- The project authorities should advertise at least in two local newspapers widely circulated, one of which locality concerned, within 7days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment and Forests at <u>http://envfor.nic.in</u> and a copy of the same should be forwarded to the Regional Office of this Ministry located Bhubaneshwar. Reply to Condition 16- Already done and copies submitted.

ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT.LTD.

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

Orsapat Bauxite Mine-Environmental Monitoring Report

April 2023



Annexure 2

CONTENT

Hind	alco Industries : Orsapat Bauxite Mine	Environmental Monitoring Report April 2023
	Orsapa	t Bauxite Mine
	AMBIENT AIR QUALITY- CORE ZONE	
1	Orsa Village/Near Mine Area	
2	Orsa Village/Southern Part of Orsa Lease	
3	Orsa Village/Near New Mine office/Near Wey	gh Bridge
4	Orsa Village/Nortern Part of Orsa Lease	
	AMBIENT AIR QUALITY- BUFFER ZO	NE
1	Kudag Village/ Near Hindalco Campus	
2	Jaljali Village/Near Shiv Temple Sabag Road	
3	Amtahi Village/Near Tailoring Centre	
4	Ambakona Village	





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Email: <u>Info@elespl.co.in</u>, eles.ranchi@gmail.com Phone.no.: 0651-2290103 Website www.elespl.co.in



	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/1980	Report Release Date	: 12.06.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC88392300000941F			

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	 Hindalco Industries Limited 	Sample Ref. No. Location	: ELES/RNC/2023/AA/1407 : Orsa Village/Near Mine Area Orsapat Bauxite Mine (196.36ha
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 27.04.2023 to 28.04.2023 : 10.05.2023
Plant Status	: Non 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

Average Temperature (°C) : 33	2	Barometric Pressure (mm	Hg) : 739
3 Relative Humidity (%) : 62		Weather Condition	: Clear

NABL Accredited					
Discipline :	Chemical	Group	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part-23): 2006; RA2022	63	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	35	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m³	IS 5182 (Part-2): 2001; RA2022	6,4	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	19.3	80 (24hrs)	
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₁)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)	
Nickel (Ni)	ng/m ⁷	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenie (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)	



Dr. Deependra Kumar Sinha

****End of Report**** Page 1 of 1

ELES Pvt. Ltd. Technical Manager

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	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/1980	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/1407 : Orsa Village/Near Mine Area
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	Orsapat Bauxite Mine (196.36ha) 1 27.04.2023 to 28.04.2023 1 10.05.2023
Plant Status	: Non 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

METEOR	OLOGICAL INFOR	MATION			
1 Avera	ge Temperature (°C)	: 33	2	Barometric Pressure (mmHg)	: 739
3 Relati	ve Humidity (%)	: 62		Weather Condition	: Clear

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

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

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	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/1981	Report Release Date	: 12.06.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC88392300000942F			

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name Address	 Hindalco Industries Limited Lohardaga, Jharkhand-835302 	Sample Ref. No. Location Sampling Date	: ELES/RNC/2023/AA/1408 : Orsa Village/Southern Part of Orsa Lease; Orsapat Bauxite Mine (196.36ha) : 27.04.2023 to 28.04.2023
Plant Status	: Non Operational	Sample Received Date	; 10.05.2023 ; Ambient Air
Period of Analysis	: 10.05.2023 to 08.06.2023	Sample Condition	: ELES/DOC/SMPL/02 : Scaled & Preserved

1	Average Temperature ("C) = 33	2	Barometric Pressure (mmHg)	: 739
3	Relative Humidity (%) : 62		Weather Condition	: Clear

NABL Accredited

Discipline :	Chemical	Group	Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	65	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	1S 5182 (Part- 24): 2019	35	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m³	IS 5182 (Part-2): 2001; RA2022	6.4	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	16.7	-80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m ¹	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

Engi Reviewed by

Dr. Deependra Kumar Sinha **** End of Report****

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Ph. D. Environmental Engg

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-R34003 (JHARKHAND) GST NO:- 20AAECE9713D124

NGINEERING SERVICES PVT. LTD.

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

	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/1981	Report Release Date	112.06.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name Address	Hindalco Industries Limited Lohardaga, Jharkhand-835302	Sample Ref. No. Location	: ELES/RNC/2023/AA/1408 : Orsa Village/Southern Part of Orsa Lease; Orsapat Bauxite Mine (196.36ha)
Plant Status	: Non Operational	Sampling Date Sample Received Date Type of Sample	: 27.04.2023 to 28.04.2023 : 10.05.2023 : Ambient Air
Period of Analysis	: 10.05.2023 to 08.06,2023	Sample Drawn By Sample Condition	: ELES/DOC/SMPL/02 : Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION				_
	Average Temperature (%C) :: 33	2	Barometric Pressure (mm	He) ±739	
3	Relative Huntidity (%) : 62		Weather Condition	: Clear	_

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

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



**** End of Report****

Authorized Signatory Dr. Deependra Kuman Ph. D. Environmental Engg. ELES Pvt. Ltd. Technical Manager

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

ENGINEERING SERVICES PVT. LTD.

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



	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/1982	Report Release Date	: 12.06.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000000943F	1	- Constanting	-

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location	: ELES/RNC/2023/AA/1409 : Orsa Village -Near New Mine Office/Near Weigh Bridge; Orsapat Bauxite Mine (196.36ha
Plant Status	: Non Operational	Sampling Date Sample Received Date Type of Sample	= 27.04.2023 to 28.04.2023 = 10.05.2023 : Ambient Air
Period of Analysis	: 10.05,2023 to 08.06.2023	Sample Drawn By Sample Condition	: ELES/DOC/SMPL/02 : Sealed & Preserved

	Average Temperature (°C) : 33	2	Barometric Pressure (mm	He) - 739
3	Relative Humidity (%) : 62		Weather Condition	: Clear

NABL Accredited **Discipline** : Chemical Group : Atmospheric Pollution Parameter Unit Test Protocol Result **Regulatory Limit** Particulate Matter (PMI0) µg/m3 IS 5182 (Part-23): 2006; RA2022 73 100 (24hrs) Particulate Matter (PM2.5) ug/m 15 5182 (Part- 24): 2019 44 60 (24hrs) Sulphur Di-Oxide (SO₂) µµ/m³ IS 5182 (Part-2): 2001; RA2022 8.2 80 (24hrs) Nitrogen Di-Oxide (NO-) µµ/m* IS 5182 (Part-6): 2006; RA2022 21.7 80 (24hrs) Ozone (O1) µg/m³ IS 5182 (Part-9): 1974; RA2019 <20.0 100 (8hrs) Ammonia (NH₃) HE/m IS 5182 (Part-25): 2018 <10.0400 (24hrs) Carbon Monoxide (CO) mg/m3 IS 5182 (Part-10): 1999; RA2019 <1.0 2 (8hrs) Lead (Pb) $\mu g/m^3$ 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/mª ELES/AIR/SOP/01 <2.0 06 (Annual)

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Authorized Signatory Dr. Deependra Kumar Sinn..

****End of Report**** Page 1 of 1

Ph. D. Environmental Enge

The Document stated as Test Report, is the Laboratory under General Terms and Conditions, on FIRES PVI, 110, Technical Manager The results shown in the Test Report refer or relates only to the job/analysis done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory at the time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the client. The Report cannot be repreduced except in full and any part of the report is not taken out of context, without prior written approval of the Laboratory. The Report in fall or in part shall not he published, advertise, used for any legal actions unless price parmission has been secured from the Management of the Laboratory. Attention is drawn to the limitation of Isability, compensation and jurisdiction tasses. Any unsufficienced alteration & faisafication of the content or appearance of the Text Report is onlawful and affreders may be prosecuted to the fuilest extent of the law. All the samples are retained for 30days from the Date of release/issue of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complaints regarding the Reports shall be done within 15days from the Date of Test Report released/issued. After the time period stated before, no complaints will be accepted. The entire Time schedule mentioned in Test Report is in 24hours format. Alterevision used: N/A (Net Applicable); BDL (Below Detection Linin); LDL (Lower Detection Linin)



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

NGINEERING SERVICES PVT. LTD.

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

	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/1982	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 Lohardaga, Jharkhand-835302 	Sample Ref. No. Location	: ELES/RNC/2023/AA/1409 : Orsa Village -Near New Mine Office/Near Weigh Bridge;	
Plant Status	: Non Operational	Sampling Date Sample Received Date Type of Sample Sample Drawn By Sample Condition	Orsapat Bauxite Mine (196.36ha) 27.04.2023 to 28.04.2023 10.05.2023 Ambient Air	
Period of Analysis	= 10.05.2023 to 08.06.2023		: ELES/DOC/SMPL/02 ; Sealed & Preserved	

MI	TEOROLOGICAL INFORMATIO	ON			
1	Average Temperature (°C) : 33	2	Barometric Pressure (mm	Hg) :739	_
3	Relative Humidity (%) : 62	the second se	Weather Condition	: Clear	

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

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



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Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARNHAND) GST-WO--20/AECE97130124

ENGINEERING SERVICES PVT, LTD.

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



	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/1983	Report Release Date	: 12.06.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	_
ULR No.	: TC883923000000944F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	; Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1410 : Orsa Village/Northern Part of Orsa Lease; Orsapat Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	(196.36ha) : 27.04.2023 to 28.04.2023 : 10.05.2023	
Plant Status	: Non Operational	Type of Sample	: Ambient Air	
Period of Analysis	: 10.05.2023 to 08.06.2023	 Sample Drawn By Sample Condition 	: ELES/DOC/SMPL/02 : Scaled & Preserved	

METEOROLOGICAL INFORMATION

1	Average Temperature (°C) : 33	2	Barometric Pressure (mm]	lg) : 739	
3	Relative Humidity (%) : 62	4	Weather Condition	Clear	

NABL Accredited

Discipline :	Chemical	Group	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23); 2006; RA2022	63	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m ³	IS \$182 (Part- 24): 2019	31	60 (24hrs)		
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	6.8	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	μg/m ³	IS 5182 (Part-6): 2006; RA2022	16.2	80 (24hrs)		
Ozone (O ₁)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH3)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)		
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)		

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Authorized Signatory Dr. Deependra Kumar Sinha

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

NGINEERING SERVICES PVT. LTD.

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

	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/1983	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/1410 : Orsa Village/Northern Part of Orsa Lease; Orsapat Bauxite Mine (196.36ha)	
Plant Status	: Non Operational	Sampling Date Sample Received Date Type of Sample	: 27.04.2023 to 28.04.2023 : 10.05.2023 : Ambient Air	
Period of Analysis	: 10.05.2023 to 08.06.2023	 Sample Drawn By Sample Condition 	: ELES/DOC/SMPL/02 : Sealed & Preserved	

1	Average Temperature (°C) : 33	2	Barometric Pressure (mm	Hg) : 739	-
3	Relative Humidity (%) : 62		Weather Condition	: Clear	

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

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

METEODOLOGICAL INFORMATION



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Authorized Signatory Dr. Deependra Kumar Sinn. Ph. D. Environmental Engg. ELES Pvt. Ltd. Technical Manager

Page 1 of 1

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

GINEERING ACHIVICES PVT. LTD.

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



	TE	ST REPORT	
Test Report No.	: ELES/RNC/2023/1984	Report Release Date	: 12.06.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC88392300000945F		

CUSTOMER DET/	CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1411 : Kudag Village / Near Hindalco Campus		
Address	1 Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 28.04.2023 to 29.04.2023 : 10.05.2023		
Plant Status	: Non 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		

	Average Temperature (°C)	: 35	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 62		Weather Condition	: Clear

Discipline :	Chemical	Group	: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	66	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	34	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	7.6	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	22.5	80 (24hrs)	
Ozone (O ₇)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m ⁸	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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

NGINEERING SERVICES PVT, LTD.

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

	TE	ST REPORT	
Test Report No.	: ELES/RNC/2023/1984	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/1411 Kudag Village / Near Hindalco Campus 	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 28.04.2023 to 29.04.2023 : 10.05.2023	
Plant Status	Non 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 INFOR	MATION			
1	Average Temperature (°C)	: 35	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 62		Weather Condition	: Clear

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

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



****End of Report****

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

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST ND:> 20AAECE97138124

ANVICES PVT. LTD

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



	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/1985	Report Release Date	: 12.06.2023	
Work Order No.	: 13612310218	Work Order Date	+ 21.04.2023	
ULR No.	: TC88392300000946F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	t Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1412 : Jaljali Village/Near Shiv Temple Sabag Road.	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 28.04.2023 to 29.04.2023 : 10.05.2023 : Ambient Air	
Plant Status	- Non Operational	Sample Drawn By	: ELES/DOC/SMPL/02	
Period of Analysis	= 10.05.2023 to 08.06.2023	Sample Condition	: Sealed & Preserved	

1	Average Temperature (°C)	35	2	Barometric Pressure (mmH	g) : 743	
3	Relative Humidity (%) :	62		Weather Condition	: Clear	

NABL Accredited				
Discipline :	: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	60	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	32	60 (24hrs)
Sulphur Di-Oxide (SO2)	μg/m ³	1S 5182 (Part-2): 2001; RA2022	6.9	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	15.2	80 (24hrs)
Ozone (O3)	p.g/m ³	1S 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonía (NH3)	µg/m ³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Pari-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.008	1 (24hrs)
Nickel (Ni)	ng/m ²	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)
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Dr. Deependra Kumar Sinn.

****End of Report****

ELES Pvl. Ltd. Technical Manager

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

ENGINEERING SERVICES PVT. LTD.

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

	TE	ST REPORT	
Test Report No.	: ELES/RNC/2023/1985	Report Release Date	: 12.06.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DET.	AILS	SAMPLE DETAILS	a service the service of the
Customer Name	3 Hindalco Industries Limited	Sample Ref. No. Location	 ELES/RNC/2023/AA/1412 Jaljali Village/Near Shiv Temple Sabag Road.
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 28.04.2023 to 29.04.2023 : 10.05.2023
Plant Status	: Non 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 INFO	RMATION			
1	Average Temperature (%)	: 35	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	; 62	4	Weather Condition	: Clear

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

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



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

ENGINEERING SERVICES POT. LTD

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



	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/1986	Report Release Date	: 12.06.2023	-
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000000947F			-

CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1413 : Amtahi Village/Near Tailoring Centre
Address	- Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 28.04.2023 to 29.04.2023 : 10.05.2023
Plant Status	: Non 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

	Average Temperature ("C) 35	2	Barometric Pressure (mm	Hg) :743
3	Relative Humidity (%) : 62	4	Weather Condition	: Clear

NABL Accredited	a more direct			
Discipline :	Chemical	Group	: Atmospheri	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	69	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	40	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	7.5	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	14.2	80 (24hrs)
Ozone (O ₃)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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Dr. Deependra Komar Sinna

****End of Report**** Page 1 of 1

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The Decument stated as Test Report, is morell by the Laboratory under General Terms and Conditions, only on Company letter listed in pro-approved formal. The results shown in the Test Report refer or relates only to the job/analysis done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory at the time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the client. The Report cannot be reproduced except in full and any part of the report is not taken out of context, without prior written approval of the Laboratory. The Report in full or in part shall not be published, advertise, used for any legal actions timess prior permission has been secured from the Management of the Laboratory. Attention is drawn to the limits on the limits of tability, compensation and jurisdiction issues. Any unsufficient alteration & fabilitation of the secure of the Test Report. The samples from Reputatory inter to generate of the Test Report. The samples from Reputatory inter the trained as specified. Any type of Observations of Complaints regarding the Reports shall be done within 15days from the Date of Test Report relaced/assued. After the time period sated by the distribution (Linut), LDL (Lower Dependent Linut).

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ENGINEERING SERVICES PVT. LTD.

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

	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/1986	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/1413 : Amtahi Village/Near Tailoring Centre
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 28.04.2023 to 29.04.2023 : 10.05.2023
Plant Status	: Non 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 INFOR	MATION			
1	Average Temperature (°C)	: 35	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 62	4	Weather Condition	: Clear

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

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



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	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/1987	Report Release Date	: 12.06.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000000948F			

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Location Sampling Date	: ELES/RNC/2023/AA/1414 : Ambakona Village : 28.04.2023 to 29.04.2023
Plant Status	; Non 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

METEOROLOGICAL INFORMATION

- t-	Average Temperature (*L)	: 33
3	Relative Humidity (%)	± 62

NABL Accredited

2	Barometric Pressure (mmHg)
4	Weather Condition

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Discipline :	Chemical	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	68	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	35	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	1S 5182 (Part-2): 2001; RA2022	6.1	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	1S 5182 (Part-6): 2006; RA2022	20.3	80 (24hrs)
Ozone (O3)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m°	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ²	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



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

NGINEERING SERVICES FVT. LTD.

Email: info@elespl.co.in , eles.ranchi@gmail.com Phone na.: 0651-2290103 Website : www.elespl.co.in

TEST REPORT				
Test Report No.	: ELES/RNC/2023/1987	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/1414 Ambakona Village	
Address : Lohardaga, Jharkhand-83		5302 Sampling Date Sample Received Date	: 28.04.2023 to 29.04.2023 : 10.05.2023	
Plant Status : Non 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	

ME	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	:35	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 62	the second se	Weather Condition	: Clear

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

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



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ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT.LTD.

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

Orsapat Bauxite Mine-Environmental Monitoring Report

May 2023



CONTENT

Hindalco Industries : Orsapat Bauxite Mine		Environmental Monitoring Report May 2023
	Orsap	at Bauxite Mine
	AMBIENT AIR QUALITY- CORE ZONE	6
1	Orsa Village/Near Mine Area	
2	Orsa Village/Southern Part of Orsa Lease	
3	Orsa Village/Near New Mine office/Near We	egh Bridge
4	Orsa Village/Nortern Part of Orsa Lease	
	AMBIENT AIR QUALITY- BUFFER ZO	ONE
1	Kudag Village/ Near Hindalco Campus	
2	Jaljali Village/Near Shiv Temple Sabag Road	1
3	Amtahi Village/Near Tailoring Centre	
4	Ambakona Village	





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

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

ENGINEERING SERVICES PUT, LTD.



Website I www.elespl.co.in

	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/2311	Report Release Date	: 01.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	_
ULR No.	; TC883923000001233F			

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1784 : Orsa Village/Near Mine Area Orsapat Bauxite Mine (196.36ha
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 26.05.2023 to 27.05.2023 : 06.06.2023
Plant Status	: Non Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 06.06.2023 to 09.06.2023	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 35	2	Barometric Pressure (mm.	Hg) :740	
3	Relative Humidity (%) : 61	4	Weather Condition	: Clear	

Discipline :	Chemical	Group :	: Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	$\mu g/m^3$	IS 5182 (Part-23): 2006; RA2022	57	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ²	IS 5182 (Part- 24): 2019	28	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	6,8	80 (24hrs)
Nitrogen Di-Öxide (NO2)	µg/m ²	1S 5182 (Part-6): 2006; RA2022	21.7	80 (24hrs)
Ozone (O ₁)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH2)	µg/m ¹	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m ³	1S 5182 (Pari-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewed by

Authorized Signatory Dr. Deependra Numa

Page 1 of 1

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Page 1 of 1 ELES PVI Ltd Technice Ital Engg. The Document stated as Test Report it could be the Laboratory ander General Terms and Conditions, only on Company letter head in pro-dependent while the results above in the Test Report refer or relation only to the jobanalysis done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory in the time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information of data provided on the report, except the information which is provided by the client. The Report cannot be repreduced except in full and any part of the report is not taken out af context, without prior written approach of the Laboratory. The Report cannot be repreduced except in full and any part of the report is not taken out af context, without prior written approval of the Laboratory. The Report in full or in part shall not be published, advertise, used for any legal actions unless prior percussion has been secured from the Management of the Laboratory. Attention is drawn to the limitation of liability, compensation and jurisdiction issues. Any unauthorized alteration & falsification of the contents or appearance of the Test Report is unlowful and offenders may be protected to the fullest extent of the low. All the samples are retained for 30days from the Date of released issue of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complicities regarding the Reports shall be done within 15days from the Date of Test Report released/issued. After the time period stated before, no complaints will be accepted. The entire Time schedule menhaned in Test Report is in 24hours formut. Abbreviation used: N/A (Not Applicable), BDL (Below Detection Limit); LDL (Lower Detection Limit)



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ENGINEERING SERVICES PVT, LTD,

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

CIM: 074999/H2018PTC011125

TEST REPORT				
Test Report No.	: ELES/RNC/2023/2311	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	: ELES/RNC/2023/AA/1784 : Orsa Village/Near Mine Area Orsapat Bauxite Mine (196.36ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	26.05.2023 to 27.05.2023	
Plant Status : Non Operational		Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 06.06.2023 to 09.06.2023	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 35	2	Barometric Pressure (mmH	lg) : 740
3	Relative Humidity (%) : 61	4	Weather Condition	: Clear

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

****End of Report****

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



Authorized Signatory Dr. Deependra Kuma Sinha Ph. D. Environmental Engg ELES PVI. LID Technical Manager

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATVA, RANCHI-834003 (JHARKHAND) GST NO: JUAAECE9713D174

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

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	TE	STREPORT	
Test Report No.	: ELES/RNC/2023/2312	Report Release Date	: 01.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001234F		

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	 ELES/RNC/2023/AA/1785 Orsa Village/Southern Part of Orsa Lease; Orsapat Bauxite Mine 	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	(196.36ha) : 26.05.2023 to 27.05.2023 : 06.06.2023	
Plant Status	+ Non Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 06.06.2023 to 09.06.2023	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 35	2.	Barometric Pressure (mmHg)	+740
3	Relative Humidity (%) 161	4	Weather Condition	: Clear

NABL Accredited Discipline :	Chemical	Group	Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	1S 5182 (Part-23): 2006; RA2022	61	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	30	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	7.8	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	18 5182 (Part-6): 2006; RA2022	19.2	80 (24hrs)
Ozone (O3)	µg/m ³	IS 5182 (Part-9); 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	1S 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	Lig/m ³	IS 5182 (Part-22): 2004; RA2019	<0,002	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	^t m/ga	ELES/AIR/SOP/01	<2.0	06 (Annual)



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****End of Report**** Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GST NO:- 20AAECE9719D1Z4

ENGINEERING SERVICES PVT. LTD.

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

CIN: U740993/H2018P7C011125

	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/2312	Report Release Date	: 01.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1785 : Orsa Village/Southern Part of Orsa Lease: Orsapat Bauxite Mine	
Plant Status		Sampling Date Sample Received Date Type of Sample	(196.36ha) : 26.05.2023 to 27.05.2023 : 06.06.2023 : Ambient Air	
Frank Status	: Non Operational	- Sample Drawn By	: ELES/DOC/SMPL/02	
Period of Analysis	eriod of Analysis : 06.06.2023 to 09.06.2023		: Sealed & Preserved	

1	Average Temperature (%C)	: 35	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%)	:61	-4	Weather Condition	: Clear

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene*	µg/m²	1S:5182 (part-11): 2006;RA2017	<1.0	05(Annual)
Benzo (a) Pyrene*	ng/m ³	IS:5182 (Part-12): 2004;RA2019	<0.5	ØI(Annual)

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

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

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ENGINEERING SERVICES PVT. LTD.

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

	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/2313	Report Release Date	: 01.07.2023	
Work Order No.	: 13612310218	Work Order Date	1 21.04.2023	

CUSTOMER DETA	CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1786 : Orsa Village/Southern Part of Orse Lease; Orsapat Bauxite Mine		
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	(196.36ha) : 26.05.2023 to 27.05.2023 : 06.06.2023		
Plant Status	: Non Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02		
Period of Analysis	: 06.06.2023 to 09.06.2023	Sample Condition	: Scaled & Preserved		

 Average Temperature (°C) : 35	2	Barometric Pressure (mm	iHg) : 740	
Relative Humidity (%) : 61	4	Weather Condition	: Clear	

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene®	µg/m ³	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)

****End of Report****

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



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

ELES Pvt. Ltd. Technical Manager

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-534003 (IHARKHAND) GS1 ND- 28AAECE97130124

ENGINEERING SERVICES PVT, LTD.



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

	TE	ST REPORT		-
Test Report No.	: ELES/RNC/2023/2313	Report Release Date	: 01.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	1 TC883923000001235F			

CUSTOMER DETA	ALS	SAMPLE DETAILS		
Customer Name	E Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1786 : Orsa Village -Near New Mine Office/Near Weigh Bridge; Orsapat Bauxite Mine (196.36ha)	
Plant Status	: Non Operational	Sampling Date Sample Received Date Type of Sample Sample Drawn By	: 26,05,2023 to 27,05,2023 : 06,06,2023 : Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	06.06.2023 to 09.06.2023	Sample Condition	Scaled & Preserved	

MI	ETEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 35	2	Barometric Pressure (mm	iHg) : 740	
	Relative Humidity (%) : 61	4	Weather Condition	d Clear	

NABL Accredited Discipline :	Chemical	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PMIÖ)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	67	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	39	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	µg/m ³	1S 5182 (Part-2): 2001; RA2022	7.6	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	23	80 (24hrs)	
Ozone (O ₁)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20,0	100 (Shrs)	
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	15 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m ^a	1S 5182 (Part-22): 2004; RA2019	0.014	1 (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

Reviewed by

Authorized Signatory Deepenora Kuma Sinha

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

ENGINEERING SERVICES PVT. 57D

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



0	10.0143330/12/038-10/00 112				
		TE	ST REPORT		
	Test Report No.	: ELES/RNC/2023/2314	Report Release Date	: 01.07.2023	
	Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
	ULR No.	: TC883923000001236F			

CUSTOMER DET/	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1787 : Orsa Village/Northern Part of Ors Lease; Orsapat Bauxite Mine	
Address	C.Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	() 96.36ha) 26.05.2023 to 27.05.2023 : 06.06.2023	
Plant Status : Non Operational Type of Sample Sample Drawn By Sample Condition Period of Analysis : 06.06.2023 to 09.06.2023 Sample Condition			: Ambient Air : ELES/DOC/SMPL/02	
		Sample Condition	: Scaled & Preserved	

MI	ETEOROLOGICAL INFORMATION				
1	Average Temperature (°C) : 35	2	Barometric Pressure (mm	Hg) : 740	_
3	Average Temperature (°C) : 35 Relative Humidity (%) : 61	4	Weather Condition	: Clear	

Discipline :	Chemical	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	60	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	29	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m³	IS 5182 (Part-2): 2001; RA2022	5.5	80 (24hrs)
Nitrogen Di-Oxide (NO2)	μg/m ³	IS 5182 (Part-6): 2006; RA2022	15.9	80 (24hrs)
Ozone (O ₁)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	1S 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	1S 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	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.

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

CMc 1/74999/H2018PTC012125

TEST REPORT				
Test Report No.	: ELES/RNC/2023/2314	Report Release Date	: 01.07.2023	
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/1787 : Orsa Village/Northern Part of Orsa Lease; Orsapat Bauxite Mine (196.36ha)	
Plant Status	/ Non Operational	Sampling Date Sample Received Date Type of Sample Sample Drawn By	: 26.05.2023 to 27.05.2023 : 06.06.2023 : Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 06.06.2023 to 09.06.2023	Sample Condition	: Sealed & Preserved	

	Average Temperature (°C) : 33	2	Barometric Pressure (mm	Hg) : 739
-	Relative Humidity (%) : 62	4	Weather Condition	: Clear

Discipline	: Chemical	Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzenc*	ug/m ³	IS:5182 (part-11): 2006;RA2017	<1.0	05(Annual)	
Benzo (a) Pyrene*	ng/m ³	IS:5182 (Part-12): 2004;RA2019	<0.5	01(Annual)	

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



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PEOTING GO, MAINSARDISAR ENCLAVE, TURDOAN'S KATLI, RANDHI LAUGH (PRARKRANS) ESTWO- MARCESTISOURA

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Phone nc. 0653-2230203 Website Lottwice Remiters In

	TES	TREPORT	
Test Report No.	: ELES/RNC/2023/2315	Report Release Date	: 01.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04,2023
ULR No.	: TC883923000001237F		
CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1788 : Kudag Village /

	1	Loonuon	Near Hindalco Campus
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 28.05.2023 to 29.05.2023 : 06.06.2023
Plant Status	: Non Operational	Type of Sample Sample Drawn By	- Ambient Air - ELES/DOC/SMPL/02
Period of Analysis	: 06.06.2023 to 09.06.2023	Sample Condition	Sealed & Preserved

M	ETEOROLOGICAL INFORMATION			
_	Average Temperature ("C) : 36	2	Barometric Pressure (mm	Hg) : 741
		4	Weather Condition	: Clear
3	Relative Humidity (%) : 61	4	weather Continuou	- Cristi

NABL Accredited Discipline :	Chemical	Group :	Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	63	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	30	60 (24brs)
Sulphur Di-Oxide (SO2)	µg/m ³	1S 5182 (Part-2): 2001; RA2022	8.1	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	17.2	80 (24hrs)
Ozone (O1)	ug/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8brs)
Ammonia (NH ₃)	µg/m ²	15 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Muttexide (CO)	mg/m ¹	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ¹	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24)ms)
Nickel (Ni)	ne/m³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ²	ELES/AIR/SOP/01	<2.0	06 (Annual)



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Page 1 of 1

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PLDT ND-38, MAIISARDVAR ENCLAVE. TUPUDANA HATIA, NANCHI-NSA003 (IRANKHANO) GST NG-308450537130123

Email: <u>Info@elesni.co.in</u>, <u>eles.conchi@amail.com</u> Phone I.o.: 6651-2290103 Website: wnw.cietal.co.in

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TEST REPORT				
Test Report No.	7 ELES/RNC/2023/2315	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	: ELES/RNC/2023/AA/1788 : Kudag Village / Near Hindalco Campus	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 28.05.2023 to 29.05.2023 : 06.06.2023	
Plant Status	: Non Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 06.06.2023 to 09.06.2023	Sample Condition	: Sealed & Preserved	

MI	ETEOROLOGICAL INFORM	LATION				_
1	Average Temperature (°C)	36	2	Barometric Pressure (mm	Hg) :741	
3	Relative Humidity (%)	61		Weather Condition	; Clear	

Discipline : Chemical		Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene ³	µg/m ⁷	IS:5182 (part-11): 2005;RA2017	<1.0	05(Annual)	
Benzo (a) Pyrene*	ng/m ³	IS:5182 (Part-12): 2004;RA2019	<0.5	01(Annual)	

Remarks: (4)-Parameters are outsourced to other Lab.



"*** End of Report****

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Page 1 of 1

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PLOT NO-30, MANSAROWAR EVELA VE TO UNITAR HATLA, RANGHAESAROS (HEAVILLA IN) SATING: 2014/2017/10/03

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	TE	ST REPORT	
Test Report No.	: ELES/RNC/2023/2316	Report Release Date	: 01.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001238F		
CUSTOMER DET/	ATT S	SAMPLE DETAILS	
COSTOSTER DEST	Tarries.	1 20 2 35 1	L. CLEC/DX(02503274 A/1720

Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1789 : Jaljati Village/Near Shiv Temple
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	Sabag Road. 28.05.2023 to 29.05.2023 06.06.2023
Plant Status	: Non Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 06,06:2023 to 09.06,2023	Sample Condition	: Sealed & Preserved

IETEOROLOGICAL INFORMATION			
Average Temperature (°C) : 36	2	Barometric Pressure (mmHg)	:741
	4	Weather Condition	: Clear
3 Relative Humidity (%) : 61		THE REPORT OF TH	

NABL Accredited		Group :	Atmospheri	e Pollution
Discipline :				Regulatory Limit
Parameter	Unit	Test Protocol	Result	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	54	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ¹	IS 5182 (Part- 24); 2019	27	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	5.4	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ¹	IS 5182 (Part-6): 2006; RA2022	19,5	80 (24hrs)
Ozone (O3)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammouia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (Shrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.008	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6,0	20 (Annual)
Arsenic (As)	ng/m ²	ELES/AIR/SOP/01	<2.0	Q6 (Annual)



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Page 1 of 1 The Document stated as Test Report, in using the bit Laboratory order Caucial Terms and Coordinas, only on Coupany labor head in pre-approved format. The relates states in the Test Report reference or relates only to the polylicity clove by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory as the time of oracle arrive only and within the limits of cloves's instructional. The Laboratory or responsible by all the information or data provided on the report except the information which is provided by the closet. The Report cannot be remoduled enoty: it full and any part of the report is not taken out of context, without provided by the closet. The Report cannot be remoduled enoty: it full and any part of the report is not taken out of context, without the Management of the Laboratory. The Report is full on a pain shall be be published, observate, used for any legal actions index provided and therefore on the function of the laboratory. Amention is drawn to the limitation of lability, compression and pressions have are related for 20 days from the Date of the Test Report is in Planas from Regulatory bodies are in be remained to the take within 15days from the Barry bodies are in be remained to the take of the accepted. The entire Time schedole in recense/issue of the Test Report. The samples from Regulatory bodies are in be remained to the form and under of Date values of Compliants seganting the Report shall be date within 15days from the Date of Test Report released/instead. After the time penul shall be formed to the taken between between times. All the entry Time schedole mentioned in Test Report is in Planas formation. After taken we are the time penul shall be formed in the taken between testing the schedole mentioned in Test Report is in Planas formation. After taken we do NA (Net Applicatory), EDL (Below Detection Limit), LDF (Lawer Detection Limit)

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FEGT NG-30, MARISAROVAR ENCLAVE "UPSDANA Harva, RANDH-REANDS (HARVHAND) SET ND-20AAECERTIECIZE émail: info@elesul.co.in , gles.romh/@ymail.com

Phone no :: 0651-2290103 Webster / www.electron.co.ur

	TE	ST REPORT	
Test Report No.	; ELES/RNC/2023/2316	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	ELES/RNC/2023/AA/1789 Jaljali Village/Near Shiv Temple Sabag Road.	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 28.05.2023 to 29.05.2023 : 06.06.2023	
Plant Status	: Non Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 06.05.2023 to 09.06.2023	Sample Condition	: Sealed & Preserved	

MI	TEOROLOGICAL INFORMATION			
1	Average Temperature (9C) : 36	2	Barometric Pressure (mm	Hg) : 741
3	Relative Humidity (%) : 61	4	Weather Condition	: Clear

Discipline : Chemical		Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene [§]	µg/m ²	IS:5182 (part-11): 2006;RA2017	<1.0	05(Annual)	
Benzo (a) Pyrene*	ng/m ³	IS:5182 (Part-12): 2004;RA2019	<0.5	01(Annual)	

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



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Page 1 of 1

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FLOT NO 35 MANSAROVAR ENDAVE, TUPEDANA MATTA, RANCHI-234003 (Jul # 2mol/10) SST NO: 20AAECE97180174

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Test Report No.	: ELES/RNC/2023/2317	Report Release Date	: 01.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	+ TC883923000001239F		

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindaleo Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1790 : Amtahi Village/Near Tailoring Centre
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 28.05.2023 to 29.05.2023 : 06.06.2023 : Ambient Air
Plant Status	: Non Operational	_ Sample Drawn By	: ELES/DOC/SMPL/02
Period of Analysis	: 06.06.2023 to 09.06.2023	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION			
1.1.2.1	Average Temperature (°C) : 36	2	Barometric Pressure (mmHg) (741
	Relative Humidity (%) : 61	4	Weather Condition	; Clear
2	Relative Fundanty (207 - 94		Contraction of the second s	

NABL Accredited Discipline :	Chemical	Group :	Atmospheric	e Pollution
Parameter	Unif	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ¹	IS 5182 (Part-23): 2006; RA2022	63	100 (24hrs)
Particulate Matter (PM2,5)	µg/m ³	IS 5182 (Part- 24): 2019	34	60 (24hrs)
Sulphur Di-Oxide (SO)	μg/m ¹	18 5182 (Part-2): 2001; RA2022	6.5	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	ug/m ¹	1S 5182 (Part-6): 2006; RA2022	11.8	80 (24hrs)
Ozone (O ₃)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH3)	ug/m ³	IS 5182 (Part- 35): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10); 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	ug/m ¹	15 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)
Nickel (NI)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m1	ELES/AIR/SOP/01	<2.0	(Annual)

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FLOT NO-30, MANSAROVAR INCLAVE TUPLIDANA HATIA, RANCHT-E34009 (JMARKHALIDI BST ND:-20/AECEV130124

smulli info@elespi.co.in , cles rapchi@dmnfl.com Phone no : 0651-2290103 Website : www.sistpi.co.in

	TE	ST REPORT	
Test Report No.	: ELES/RNC/2023/2317	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	 ELES/RNC/2023/AA/1790 Amtahi Village/Near Tailoring Centre 	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 28.05.2023 to 29.05.2023 ; 06.06.2023	
Plant Status	: Non Operational	Type of Sample Sample Drawn By	: Ambient Alr : ELES/DOC/SMPL/02	
Period of Analysis	: 06.06.2023 to 09.06.2023	Sample Condition	: Sealed & Preserved	

ME	TEOROLOGICAL INFOR	MATION				
T	Average Temperature ("C)	: 36	2	Barometric Pressure (mm	Hg) : 741	
3	Relative Humidity (%)	: 61	-4	Weather Condition	: Clear	

Discipline : Chemical		Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene®	µg/m²	IS:5182 (part-11): 2006;RA2017	<1.0	05(Annual)	
Benzo (a) Pyrene*	ng/m ²	IS:5182 (Part-12): 2004;RA2019	<0.5	01(Annual)	

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



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Test Report No.	: ELES/RNC/2023/2318	Report Release Date	:01.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000001240F			

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1791 : Ambakonn Village
Address	: Lohardaga, Jharkhund-835302	Sampling Date Sample Received Date	: 28.05.2023 to 29.05.2023 : 06.06.2023
Plant Status	(Non Operational	Type of Sample Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 06.06.2023 to 09.06.2023	Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION			
 Average Temperature (°C) : 36 	2	Barometric Pressure (mm	Hg) : 741
3 Relative Humidity (%) : 61	4	Weather Condition	: Clear

NABL Accredited	Chamical	Group :	Atmospheric	e Pollution
Discipline : Chemical Parameter Unit Test Protocol			Result Regulat	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	56	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	30	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	15 5182 (Part-2): 2001; RA2022	7,3	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ¹	IS 5182 (Part-6): 2006; RA2022	19.8	80 (24hrs)
Ozone (O ₃)	ug/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (Shrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monuxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	ug/m ³	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/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



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HOT NO 10, MANSAROVAR ENCLAVE, TURBENNA HATIA, RANCHI ESPOSI (HARREAND) IST NOI: 2044ECERTISD124

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Emitil: info@elespl.co.in , eles.ropshi@amail.com Phone no.1 0651-2290103 Website i www.clespi.ro.in

	TES	TREPORT	
Test Report No.	: ELES/RNC/2023/2318	Report Release Date	: 01.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DETA	ILS	SAMPLE DETAILS	
Contant's Steres	Lorden P. Leo. W. H. Leo. P. M. H. No. H.		

Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1791
	Contraction of the second seco	Location	: Ambakona Village
Address	:: Lohardaga, Jharkhand-835302	Sampling Date	: 28.05.2023 to 29.05.2023
	and the state of the second second second	Sample Received Date	: 06.06.2023
		Type of Sample	: Ambient Air
Plant Status	: Non Operational	Sample Drawn By	; ELES/DOC/SMPL/02
Period of Analysis	: 06.06.2023 to 09.06.2023	Sample Condition	: Scaled & Preserved

MI	ETEOROLOGICAL INFORMATION				
1	Average Temperature (%C) : 36	2	Barometric Pressure (mm	Hg) : 741	
3	Relative Humidity (%) :61	4	Weather Condition	; Clear	

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

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



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Page 1 of 1

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ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT.LTD.

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

Orsapat Bauxite Mine-Environmental Monitoring Report

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June 2023

CONTENT

Hind	alco Industries : Orsapat Bauxite Mine Environmental Monitoring Report	June 2023
	Orsapat Bauxite Mine	
	AMBIENT AIR QUALITY- CORE ZONE	
1	Orsa Village/Near Mine Area	
2	Orsa Village/Southern Part of Orsa Lease	
3	Orsa Village/Near New Mine office/Near Wegh Bridge	
4	Orsa Village/Nortern Part of Orsa Lease	
	AMBIENT AIR QUALITY- BUFFER ZONE	
1	Kudag Village/ Near Hindalco Campus	
2	Jaljali Village/Near Shiv Temple Sabag Road	
3	Amtahi Village/Near Tailoring Centre	
4	Ambakona Village	





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

CIN: U74999JH2018PTC011125

Test Report No.

Work Order No.

ULR No.

ENGINEERING SERVICES PVT. LTD.



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

TEST REPORT						
: ELES/RNC/2023/2815	Report Release Date	: 29.07.2023				
: 13612310218	Work Order Date	: 21.04.2023				
: TC883923000001680F						

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2147	
		Location	: Orsa Village/Near Mine Area	
	6		Orsapat Bauxite Mine (196.36ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 17.06.2023 to 18.06.2023	
		Sample Received Date	: 26.06.2023	
		Type of Sample	: Ambient Air	
		Sampling Procedure	: ELES/DOC/SMPL/02	
Mines Status	: Non Operational	Sample Drawn By	: ELES Pvt. Ltd.	
Period of Analysis	: 26.06.2023 to 06.07.2023	Sample Condition	: Sealed & Preserved	

1	Average Temperature (°C)	: 31	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear

Discipline :	Discipline : Chemical Group			
Parameter	Unit	Test Protocol	Protocol Result	
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part-23): 2006; RA2022	63	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	31	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part-2): 2001; RA2022	7.4	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part-6): 2006; RA2022	23.8	80 (24hrs)
Ozone (O ₃)	μg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m ³	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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Authorised Signatory Dr. Deependra Kumar Sinha Dh. D. Environmental Enca

Page 1 of 1

****End of Report****

ELES Pvt. Ltd. Technical Manager

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

ENGINEERING SERVICES PVT. LTD.

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

CIN: U74999JH2018PTC011125

TEST REPORT				
Test Report No.	: ELES/RNC/2023/2815	Report Release Date	: 29.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2147	
		Location	: Orsa Village/Near Mine Area	
			Orsapat Bauxite Mine (196.36ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 17.06.2023 to 18.06.2023	
Audress	. Lonardaga, markitand-855502	Sample Received Date	: 26.06.2023	
		Type of Sample	: Ambient Air	
		Sampling Procedure	: ELES/DOC/SMPL/02	
Mines Status	: Non Operational	Sample Drawn By	: ELES Pvt. Ltd.	
Period of Analysis	: 26.06.2023 to 06.07.2023	Sample Condition	: Sealed & Preserved	

ME	CTEOROLOGICAL INFOR	MATION	_		
1	Average Temperature (°C)	: 31	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear

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

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



****End of Report****

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

Page 1 of 1

The Document stated as Test Report, is issued by the Laboratory under General Terms and Conditions, only on Company letter head in pre-approved format. The results shown in the Test Report refer or relates only to the job/analysis done by the Laboratory only. The information stated on the Test Report reflects the findings done by the Laboratory at the time of involvement only and within the limits of client's instructions. The Laboratory is responsible for all the information or data provided on the report, except the information which is provided by the client. The Report cannot be reproduced except in full and any part of the report is not taken out of context, without prior written approval of the Laboratory. The Report in full or in part shall not be published, advertise, used for any legal actions unless prior permission has been secured from the Management of the Laboratory. Attention is drawn to the limitation of liability, compensation and jurisdiction issues. Any unauthorized alteration & falsification of the content or appearance of the Test Report is unlawful and offenders may be prosecuted to the fullest extent of the law. All the samples are retained for 30days from the Date of release/issue of the Test Report. The samples from Regulatory bodies are to be retained as specified. Any type of Observations or Complaints regarding the Reports shall be done within 15days from the Date of Test Report released/issued. After the time period stated before, no complaints will be accepted. The entire Time schedule mentioned in Test Report is in 24hours format. Abbreviation used: N/A (Not Applicable); BDL (Below Detection Limit); LDL (Lower Detection Limit).



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

ENGINEERING SERVICES PVT. LTD.



CIN: U74999JH2018PTC011125

L NI A DY

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



	TH	EST REPORT		
Test Report No.	: ELES/RNC/2023/2816	Report Release Date	: 29.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000001681F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2148	
		Location	: Orsa Village/Southern Part of Orsa	
			Lease; Orsapat Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302		(196.36ha)	
		Sampling Date	: 17.06.2023 to 18.06.2023	
		Sample Received Date	: 26.06.2023	
		Type of Sample	: Ambient Air	
Mines Status	: Non Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 26.06.2023 to 06.07.2023	Sample Drawn By	: ELES Pvt. Ltd.	
renou of Allalysis	. 20.00.2023 10 00.07.2023	Sample Condition	: Sealed & Preserved	

IVIE	LIEURULUGICAL INFURMATION	_		
1	Average Temperature (°C) : 31	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%) : 59	4	Weather Condition	: Clear

Discipline :	Chemical	Group	up: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Test Protocol Result		
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part-23): 2006; RA2022	63	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	32	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part-2): 2001; RA2022	7.2	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part-6): 2006; RA2022	22.7	80 (24hrs)	
Ozone (O ₃)	μg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m ³	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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

ELES Pvt. Ltd. Technical Manager

Page 1 of 1

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

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/2023/2816	Report Release Date	: 29.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2148	
		Location	: Orsa Village/Southern Part of Orsa	
			Lease; Orsapat Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302		(196.36ha)	
		Sampling Date	: 17.06.2023 to 18.06.2023	
		Sample Received Date	: 26.06.2023	
		Type of Sample	: Ambient Air	
Mines Status	: Non Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
D 1 1 CA 1 1	26.06.0002 +	Sample Drawn By	: ELES Pvt. Ltd.	
Period of Analysis	: 26.06.2023 to 06.07.2023	Sample Condition	: Sealed & Preserved	

ME	TEOROLOGICAL INFOR	RMATION	_		
1	Average Temperature (°C)	: 31	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear

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

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



****End of Report****

Authorised Signatory Dr. Deependra Kumar Sinha Ph. D. Environmental Enga. ELES Pvt. Ltd. Technical Manager

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

ENGINEERING SERVICES PVT. LTD.



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



TEST REPORT				
Test Report No.	: ELES/RNC/2023/2817	Report Release Date	: 29.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000001682F			

CUSTOMER DETA	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2149	
		Location	: Orsa Village - Near New Mine	
			Office/Near Weigh Bridge;	
Address	: Lohardaga, Jharkhand-835302		Orsapat Bauxite Mine (196.36ha)	
		Sampling Date	: 17.06.2023 to 18.06.2023	
		Sample Received Date	: 26.06.2023	
		Type of Sample	: Ambient Air	
Mines Status	: Non Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Denie d C. A Innie	1 2(0(2022 to 0(07 2022	Sample Drawn By	: ELES Pvt. Ltd.	
Period of Analysis	: 26.06.2023 to 06.07.2023	Sample Condition	: Sealed & Preserved	

	STECKOECCICIE IN OF				
1	Average Temperature (°C)	: 31	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear

Discipline :	Chemical	Group :	: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Test Protocol Result		
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part-23): 2006; RA2022	61	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	33	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part-2): 2001; RA2022	7.9	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part-6): 2006; RA2022	20	80 (24hrs)	
Ozone (O ₃)	μg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m ³	IS 5182 (Part-22): 2004; RA2019	0.008	1 (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

Reviewed

Authorised Signatory Ur. Deependra Kumar Sinha Ph. D. Environmental Engg ELES Pvt. Ltd. Technical Manager

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

ENGINEERING SERVICES PVT. LTD.

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

<u>TEST REPORT</u>				
Test Report No.	: ELES/RNC/2023/2817	Report Release Date	: 29.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2149	
		Location	: Orsa Village -Near New Mine	
			Office/Near Weigh Bridge;	
Address	: Lohardaga, Jharkhand-835302		Orsapat Bauxite Mine (196.36ha)	
Address		Sampling Date	: 17.06.2023 to 18.06.2023	
		Sample Received Date	: 26.06.2023	
		Type of Sample	: Ambient Air	
Mines Status	: Non Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Daniad of Amalunia	+ 26 06 2022 to 06 07 2022	Sample Drawn By	: ELES Pvt. Ltd.	
Period of Analysis	: 26.06.2023 to 06.07.2023	Sample Condition	: Sealed & Preserved	

ME	TEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 31	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear

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

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



****End of Report****

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

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

ENGINEERING SERVICES PVT. LTD.



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

	TH	EST REPORT		
Test Report No.	: ELES/RNC/2023/2818	Report Release Date	: 29.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000001683F			

CUSTOMER DETAILS		SAMPLE DETAILS			
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2150		
		Location	: Orsa Village/Northern Part of Orsa		
			Lease; Orsapat Bauxite Mine		
Address	: Lohardaga, Jharkhand-835302		(196.36ha)		
		Sampling Date	: 17.06.2023 to 18.06.2023		
		Sample Received Date	: 26.06.2023		
		Type of Sample	: Ambient Air		
Mines Status	: Non Operational	Sampling Procedure	: ELES/DOC/SMPL/02		
Deried of Analysia	+ 26 06 2022 to 06 07 2022	Sample Drawn By	: ELES Pvt. Ltd.		
Period of Analysis	: 26.06.2023 to 06.07.2023	Sample Condition	: Sealed & Preserved		

1	Average Temperature (°C)	: 31	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear

NABL Accredited				
Discipline :	Chemical	Group	Atmospheri	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part-23): 2006; RA2022	56	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	24	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part-2): 2001; RA2022	6.2	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part-6): 2006; RA2022	16.7	80 (24hrs)
Ozone (O ₃)	μg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m ³	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewed By

METEOROLOGICAL INFORMATION

Authorised Signatory Jr. Deependra Kumar Sinha Ph. D. Environmental Ence

Page 1 of 1

****End of Report****

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.

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

	TE	EST REPORT		
Test Report No.	: ELES/RNC/2023/2818	Report Release Date	: 29.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/2150
Address	: Lohardaga, Jharkhand-835302	Location Sampling Date	: Orsa Village/Northern Part of Orsa Lease; Orsapat Bauxite Mine (196.36ha) : 17.06.2023 to 18.06.2023
		Sample Received Date Type of Sample	: 26.06.2023 : Ambient Air
Mines Status	: Non Operational	Sampling Procedure	: ELES/DOC/SMPL/02
Period of Analysis	: 26.06.2023 to 06.07.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved

ME	TEOROLOGICAL INFOR				
1	Average Temperature (°C)	: 31	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 59	4	Weather Condition	: Clear

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

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



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

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

ENGINEERING SERVICES PVT. L 'D.

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



Test Report No.	: ELES/RNC/2023/2811	Report Release Date	: 29.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001676F		

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1991
		Location	: Kudag Village /
			Near Hindalco Campus
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 15.06.2023 to 16.06.2023
		Sample Received Date	: 17.06.2023
		Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
Mines Status	:Non Operational	Sample Drawn By	: ELES Pvt. Ltd.
Period of Analysis	: 17.06.2023 to 27.06.2023	Sample Condition	: Sealed & Preserved

IVAL			T		
1	Average Temperature (°C)	: 34	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 61	4	Weather Condition	: Clear

NABL Accredited Discipline :	Chemical	Group	: Atmospheri	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part-23): 2006; RA2022	56	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	28	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part-2): 2001; RA2022	7.6	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part-6): 2006; RA2022	15.7	80 (24hrs)
Ozone (O ₃)	μg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH3)	μg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m ³	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewed by

Authorised Signatory

Or. Deepenara Kumar Ph. D. Environmental Engg.

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDAMA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D1Z4 ENGINEERING SERVICES PV:T. 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/2023/2811	Report Release Date	: 29.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1991	
		Location	: Kudag Village /	
			Near Hindalco Campus	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 15.06.2023 to 16.06.2023	
Address	. Lonardaga, markhand-855502	Sample Received Date	: 17.06.2023	
		Type of Sample	: Ambient Air	
		Sampling Procedure	: ELES/DOC/SMPL/02	
Mines Status	: Non Operational	Sample Drawn By	: ELES Pvt. Ltd.	
Period of Analysis	: 17.06.2023 to 27.06.2023	Sample Condition	: Sealed & Preserved	

M	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 34	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 61	4	Weather Condition	: Clear

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

****End of Report****

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



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

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ENGINE RING SERVICES PVT. LTD

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



	10.		
Test Report No.	: ELES/RNC/2023/2812	Report Release Date	: 29.07.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001677F		
CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	· Hindalco Industries Limited	Sample Ref No	· FLES/PNC/2023/AA/1002

TEST REPORT

Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1992
		Location	: Jaljali Village/Near Shiv Temple
			Sabag Road.
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 15.06.2023 to 16.06.2023
Address	. Lonardaga, markhand-055502	Sample Received Date	: 17.06.2023
		Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
Mines Status	: Non Operational	Sample Drawn By	: ELES Pvt. Ltd.
Period of Analysis	: 17.06.2023 to 27.06.2023	Sample Condition	: Sealed & Preserved

IVII	LIEUROLOGICAL INFOR	RMATION	_		
1	Average Temperature (°C)	: 34	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 61	4	Weather Condition	: Clear

Discipline :	Chemical	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part-23): 2006; RA2022	49	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	24	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part-2): 2001; RA2022	6.2	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part-6): 2006; RA2022	20.8	80 (24hrs)	
Ozone (O ₃)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m ³	IS 5182 (Part-22): 2004; RA2019	0.005	1 (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

Reviewed

Authorised Signatory

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Or. Deependra Kumar Sinha

Page 1 of 1

D. Environmental Engg.

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

CIN: U74999JH20182TC011125

ENGINEERING SERVICES PVT. LTD.

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

TEST	REP	ORT

Test Report No.	: ELES/RNC/2023/2812	Report Release Date	: 29.07.2023
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/1992
		Location	: Jaljali Village/Near Shiv Temple
Address : Lohardaga, Jharkhand-835302			Sabag Road.
Address	· Lohardaga Iharkhand-835302	Sampling Date	: 15.06.2023 to 16.06.2023
Address	. Lonardaga, markhand-055502	Sample Received Date	: 17.06.2023
		Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
Mines Status	: Non Operational	Sample Drawn By	: ELES Pvt. Ltd.
Period of Analysis	: 17.06.2023 to 27.06.2023	Sample Condition	: Sealed & Preserved

ME	TEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 34	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 61	4	Weather Condition	: Clear

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

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



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

ENGINE 'R NG SERVICES PVT. LTD

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Email: info@elespl.co.in , eles.ranchi@gmail.com TC-8839

Test Report No.	: ELES/RNC/2023/2813	Report Release Date	: 29.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000001678F			

CUSTOMER DETAILS		SAMPLE DETAILS			
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/1993		
		Location	: Amtahi Village/Near Tailoring		
			Centre		
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 16.06.2023 to 17.06.2023		
		Sample Received Date	: 17.06.2023		
		Type of Sample	: Ambient Air		
		Sampling Procedure	: ELES/DOC/SMPL/02		
Mines Status	: Non Operational	Sample Drawn By	: ELES Pvt. Ltd.		
Period of Analysis	: 17.06.2023 to 27.06.2023	Sample Condition	: Sealed & Preserved		

M	ETEOROLOGICAL INFOR	RMATION	-		
1	Average Temperature (°C)	: 33	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 60	4	Weather Condition	: Clear

NABL Accredited Discipline :	Chemical	Group	Atmospheri	c Pollution
Parameter Unit		Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part-23): 2006; RA2022	65	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	36	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part-2): 2001; RA2022	8.3	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part-6): 2006; RA2022	18.3	80 (24hrs)
Ozone (O ₃)	μg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	μg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m ³	IS 5182 (Part-22): 2004; RA2019	0.012	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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Authorised Signatory

Or. Deependra Kumar Sinha

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

ENGINEERING SERVICES PVT. LTD.

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

Test Report No.	: ELES/RNC/2023/2813	Report Release Date	: 29.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS			
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/1993 : Amtahi Village/Near Tailoring Centre		
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 16.06.2023 to 17.06.2023 : 17.06.2023 : Ambient Air		
		Sampling Procedure	: ELES/DOC/SMPL/02		
Mines Status	: Non Operational	Sample Drawn By	: ELES Pvt. Ltd.		
Period of Analysis	: 17.06.2023 to 27.06.2023	Sample Condition	: Sealed & Preserved		

Ν	METEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 34	2	Barometric Pressure (mmHg)	: 743
	8 Relative Humidity (%)	: 61	4	Weather Condition	: Clear

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

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



****End of Report****

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

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

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Email: info@elespl.co.in , eles.ranchi@gmail.com TC-8830

Test Report No.	: ELES/RNC/2023/2814	Report Release Date	: 29.07.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000001679F	246		

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 Sample Drawn By	: ELES/RNC/2023/AA/1994 : Ambakona Village : 16.06.2023 to 17.06.2023 : 17.06.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.			
Mines Status	: Non Operational	Sample Condition	: Sealed & Preserved			
Period of Analysis	: 17.06.2023 to 27.06.2023	3				

	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (°C)	: 33	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%)	: 60	4	Weather Condition	: Clear

NABL Accredited						
Discipline :	Chemical	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limi		
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part-23): 2006; RA2022	50	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	26	60 (24hrs)		
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part-2): 2001; RA2022	6.7	80 (24hrs)		
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part-6): 2006; RA2022	23.4	80 (24hrs)		
Ozone (O ₃)	μg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH ₃)	μg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	μg/m ³	IS 5182 (Part-22): 2004; RA2019	< 0.002	l (24hrs)		
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)		

Reviewed by

Authorised Signatory Dr. Deependra Kumar Sinha on, o Enviropmental Eaod

Page 1 of 1

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

ENGINEERING SERVICES PVI. LTD.

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

	TES	T REPORT	
Test Report No.	: ELES/RNC/2023/2814	Report Release Date	: 29.07.2023
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/1994 : Ambakona Village : 16.06.2023 to 17.06.2023

Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 17.06.2023 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Non Operational	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved
Period of Analysis	: 17.06.2023 to 27.06.2023		

N	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 33	2	Barometric Pressure (mmHg)	: 743
3	Relative Humidity (%) : 60	4	Weather Condition	: Clear

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

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



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Authorised Signatory Dr. Deepenara Kumar Sinha Ph. D. Environmental Engg. ELES Pvt. Ltd. Technical Manager

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ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT.LTD.

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

Orsapat Bauxite Mine-Environmental Monitoring Report

July 2023



CONTENT

Hind	lalco Industries : Orsapat Bauxite Mine	Environmental Monitoring Report	July 2023
	Orsa	oat Bauxite Mine	oury acae
	AMBIENT AIR QUALITY- CORE ZON	E	
1	Orsa Village/Near Mine Area		
2	Orsa Village/Southern Part of Orsa Lease		
3	Orsa Village/Near New Mine office/Near We	egh Bridge	
4	Orsa Village/Nortern Part of Orsa Lease	-sh shoge	
	AMBIENT AIR QUALITY- BUFFER ZO	DNE	
1	Kudag Village/ Near Hindalco Campus		
2	Jaljali Village/Near Shiv Temple Sabag Road	1	
3	Amtahi Village/Near Tailoring Centre		
4	Ambakona Village		





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

ENGINEERING SERVICES PVT. LTD.

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



	TI	EST REPORT	
Test Report No.	: ELES/RNC/2023/2998	Report Release Date	: 08.08.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001845F		
CUSTOMER DET.	AILS	SAMPLE DETAILS	

CONTOURDED DELL	1165	SAME DE DELAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2784 : Orsa Village/Near Mine Area Orsapat Bauxite Mine (196.36ha
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 29.07.2023 to 30.07.2023 : 31.07.2023
Mines Status	: Non Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 31.07.2023 to 07.08.2023	Sample Condition	: Sealed & Preserved

1	Average Temperature (°C) : 27	2	Barometric Pressure (mmH	lg) : 739
3	Relative Humidity (%) : 64	4	Weather Condition	: Partly Cloudy

NABL Accredited				
Discipline : Chemical Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	55	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	27	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	6.3	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	20.7	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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****End of Report****

Authorised Signatory Dr. Deependra Kumar Sinha

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

ENCINEERING SERVICES PVT. LTD.

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

CIN: U74999/H2018PTCD11125

and the second second	TH	EST REPORT		
Test Report No.	: ELES/RNC/2023/2998	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/2784 : Orsa Village/Near Mine Area Orsapat Bauxite Mine (196.36ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 29.07.2023 to 30.07.2023 : 31.07.2023
Mines Status	: Non Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 31.07.2023 to 07.08.2023	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFORMATION	N		
0	Average Temperature (°C) : 27	2	Barometric Pressure (mn	nHg) :739
3	Relative Humidity (%) : 64	4	Weather Condition	: Partly Cloudy

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

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



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ur, Deependra Kumar Sinha Ph. D. Environmental Engo 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.

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



	TI	STREPORT		
Test Report No.	: ELES/RNC/2023/2999	Report Release Date	: 08.08.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000001846F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2785 : Orsa Village/Southern Part of Orsa Lease; Orsapat Bauxite Mine (196.36ha)	
Address Mines Status	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 29.07.2023 to 30.07.2023 : 31.07.2023 : Ambient Air : ELES/DOC/SMPL/02	
tvirines oraine	. Non Operational		and the second se	
Period of Analysis	: 31.07.2023 to 07.08.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

1	A verage Temperature (°C)	: 27	2	Barometric Pressure (mm	Hg) : 739
3	Relative Humidity (%)	: 64	4	Weather Condition	: Partly Cloudy

NABL Accredited Discipline :	Chemical	Group	Atmospheri	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA 2022	57	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	29	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	6.4	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	18.3	80 (24hrs)
Ozone (O3)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewed

Authorised Signatory Dr. Deependra Kumar Sinha

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

ENGINEERING SERVICES PVT, LTD.

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

Test Report No.	: ELES/RNC/2023/2999	Report Release Date	: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/2785 : Orsa Village/Southern Part of Orsa Lease; Orsapat Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	(196.36ha) : 29.07.2023 to 30.07.2023 : 31.07.2023	
Mines Status	: Non Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 31.07.2023 to 07.08.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

METEOROLOGICAL INFORMATION

1	Average Temperature (°C)	: 27	2	Barometric Pressure (mmH	g) :739
3	Relative Humidity (%)	: 64	4	Weather Condition	: Partly Cloudy

Discipline : Chemical		Group : Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Benzene*	µg/m ³	IS:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)	
Benzo (a) Pyrene*	ng/m ³	IS:5182 (Part-12): 2004; RA 2019	<0.5	01(Annual)	

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



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

ENGINEERING SERVICES PVT. LTD.



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

	TE	EST REPORT		
Test Report No.	: ELES/RN C/2023/3000	Report Release Date	: 08.08.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000001847F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date	: ELES/RNC/2023/AA/2786 : Orsa Village - Near New Mine Office/Near Weigh Bridge; Orsapat Bauxite Mine (196.36ha) : 29.07.2023 to 30.07.2023	
Mines Status	: Non Operational	Sample Received Date Type of Sample Sampling Procedure	: 31.07.2023 : Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 31.07.2023 to 07.08.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

1	Average Temperature (°C) : 27	2	Barometric Pressure (mm	Hg) : 739
3	Relative Humidity (%) : 64	4	Weather Condition	: Partly Cloudy

Discipline :	Group :	oup : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	56	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	30	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	6.5	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	22	80 (24hrs)
Ozone (O3)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.005	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



METRODOLOGICAL DIRODALITICAL

Dr. Deependra Kumar Sinha

****End of Report****

Ph. D. Environmental Enoo ELES FVI, Lid. Technical Manager

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

ENGINEERING SERVICES PVT. LTD.

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TEST REPORT				
Test Report No.	: ELES/RNC/2023/3000	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/2786 : Orsa Village -Near New Mine Office/Near Weigh Bridge; Orsapat Bauxite Mine (196.36ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 29.07.2023 to 30.07.2023 : 31.07.2023 : Ambient Air	
Mines Status	:Non Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
Period of Analysis	: 31.07.2023 to 07.08.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

METEOROLOGICAL INFORMATION

1	Average Temperature (%C)	: 27	2	Barometric Pressure (mmHg)	:739
3	Relative Humidity (%)	: 64	4	Weather Condition	: Partly Cloudy

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

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



**** End of Report****

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

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

ENGINEERING SERVICES PVT. LTD.

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



CIN: U749991H2018PTC011125

	TEST	REPORT	
Test Report No.	: ELES/RNC/2023/3001	Report Release Date	: 08.08.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000001848F		
CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2787 : Orsa Village/Northern Part of Orsa Lease; Orsapat Bauxite Mine
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	(196.36ha) : 29.07.2023 to 30.07.2023 : 31.07.2023 : Ambient Air
Mines Status	: Non Operational	Sampling Procedure	: ELES/DOC/SMPL/02

Period of Analysis	: 31.07.2023 to 07.08.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	
METEOROLOGIC	AL INFORMATION			

1	Average Temperature (°C)	: 27	2	Barometric Pressure (mmHg	;) : 739
3	Relative Humidity (%)	: 64	4	Weather Condition	: Partly Cloudy

NABL Accredited							
Discipline :	Chemical	Group	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit			
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	53	100 (24hrs)			
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	21	60 (24hrs)			
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	5.9	80 (24hrs)			
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	14.2	80 (24hrs)			
Ozone (O3)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)			
Ammonia (NH3)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)			
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)			
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)			
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)			
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)			

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PLOT NO-30, MANSAROVAR EN CLAVE, TU PUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D124

ENGINEERING SERVICES PVT. LTD.

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

CINE U749991H2018FTC011125

TEST REPORT					
Test Report No.	: ELES/RNC/2023/3001	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/2787 : Orsa Village/Northern Part of Orsa Lease; Orsapat Bauxite Mine (196,36ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 29.07.2023 to 30.07.2023 : 31.07.2023	
Mines Status	: Non Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 31.07.2023 to 07.08.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

METEOROLOGICAL INFORMATION

	Average Temperature (°C)	: 27	2	Barometric Pressure (mmHg)	: 739
3	Relative Humidity (%)	: 64	4	Weather Condition	: Partly Cloudy

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

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



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

ENGINEERING SERVICES PVT, LTD,



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

	TE	ST REPORT		
Test Report No.	: ELES/RN C/2023/2994	Report Release Date	: 08.08.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000001841F			

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2780 : Kudag Village / Near Hindalco Campus
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 28.07.2023 to 29.07.2023 : 31.07.2023 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Non Operational	Sample Drawn By	: ELES Pvt. Ltd.
Period of Analysis	: 31.07.2023 to 07.08.2023	Sample Condition	: Sealed & Preserved

I Average Temperature (°C) : 26	2	Barometric Pressure (mm	Hg) : 740
3 Relative Humidity (%) : 65	4	Weather Condition	: Partly Cloudy

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	50	100 (24hrs)		
Particulate Matter (PM2.5)	µg/m³	IS 5182 (Part-24): 2019	24	60 (24hrs)		
Sulphur Di-Oxide (SO2)	µg/m³	IS 5182 (Part-2): 2001; RA2022	6.2	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part-6): 2006; RA2022	5.8	80 (24hrs)		
Ozone (O3)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH3)	ug/m²	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	µg/m ³	1S 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)		
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)		

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Ph. D. Environmental Engl.

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

	TI	EST REPORT		
Test Report No.	: ELES/RNC/2023/2994	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/RINC/2023/AA/2780 : Kudag Village / Near Hindalco Campus
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 28.07.2023 to 29.07.2023 : 31.07.2023 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Non Operational	Sample Drawn By	: ELES Pvt. Ltd.
Period of Analysis	: 31.07.2023 to 07.08.2023	Sample Condition	: Sealed & Preserved

1	A verage Temperature (°C)	:26	2	Barometric Pressure (mmHg)	: 740
3	Relative Humidity (%)	: 65	4	Weather Condition	: Partly Cloudy

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/m ³	IS:5182 (Part-12): 2004;RA2019	<0.5	01(Annual)		

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



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Authorised Signatory Dr. Deependra Kumer Sinha Pn. D. Environmental Engg-ELES Pvt. Ltd. Technical Manager

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PLOT NO-30, MANSAROVAR ENCLAVE, TURUDANA HATIA, RANCHI-534003 (IHARKHAND) GST NO - 20AAECE97130124

ENGINEERING SERVICES PVT. STD.

Email: Info@elesol.co.in., eles.con.chi.Bamall.com Phone no.: 0651-2299103 Website : www.elespi.co.in



Test Report No.	: ELES/RNC/2023/2995	Report Release Date	: 08.08.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000001842F			

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2781 : Jaljali Village/Near Shiv Temple Sabag Road.
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 28.07.2023 to 29.07.2023 : 31.07.2023 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Non Operational	Sample Drawn By	· ELES Pvt. Ltd.
Period of Analysis	: 31.07.2023 to 07.08.2023	Sample Condition	: Sealed & Preserved

1 Averag	e Temperature (°C) :26	2	Barometric Pressure (mm	Hg) : 740
3 Relativ	e Humidity (%) : 65	4	Weather Condition	: Partly Cloudy

NABL Accredited				
Discipline :	Chemical	Group	Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	45	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	21	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA 2022	5.2	80 (24 hrs)
Nitrogen Di-Oxide (NO2)	µg/m³	IS 5182 (Part-6): 2006; RA2022	16.7	80 (24hrs)
Ozone (O3)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24 hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	0.01	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2,0	06 (Annual)

Reviewella

Dr. Deeperkark Sigan Sigha Ph. D. Environmental Engo ELES Mit. US. Technical Menonar

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

ENGINEERING SERVICES PVT. LTD.

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

	TI	EST REPORT		
Test Report No.	: ELES/RNC/2023/2995	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/2781 : Jaljali Village/Near Shiv Temple Sabag Road.
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 28.07.2023 to 29.07.2023 : 31.07.2023 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Non Operational	Sample Drawn By	: ELES Pvt. Ltd.
Period of Analysis	: 31.07.2023 to 07.08.2023	Sample Condition	: Sealed & Preserved

1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmH	Ig) : 740
3	Relative Humidity (%)	: 65	-4	Weather Condition	: Partly 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/m ³	IS:5182 (Part-12): 2004;RA2019	<0.5	01(Annual)		

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



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

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PLOT NO-30, MANSAROVAR ENCLAVE, TUBUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 204AECE37139124

CIN-U14949442018#TCD1 I1 25

ENGINEERING SERVICES PVT. LTD



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

Test Report No.	: ELES/RNC/2023/2996	Report Release Date	:08.08.2023	
and the state of the				
Work Order No.	:13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000001843F			

CUSTOMER DETA	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/2782 : Amtahi Village/Near Tailoring Centre
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 29.07.2023 to 30.07.2023 : 31.07.2023 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Non Operational	Sample Drawn By	: ELES Pvt. Ltd.
Period of Analysis	: 31.07.2023 to 07.08.2023	Sample Condition	: Sealed & Preserved

1	Average Temperature (°C) : 27	2	Barometric Pressure (mm	Hg) : 739
3	Relative Humidity (%) : 64	4	Weather Condition	: Partly Cloudy

NABL Accredited						
Discipline :	Chemical	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part-23): 2006; RA2022	57	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	30	60 (24hrs)		
Sulphur Di-Oxide (SO2)	μg/m ³	IS 5182 (Part-2): 2001; RA2022	6.9	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	μg/m ³	1S 5182 (Part-6): 2006; RA2022	13.7	80 (24hrs)		
Ozone (O3)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH3)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)		
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m³	ELES/AIR/SOP/01	<2.0	06 (Annual)		

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Authorised Signatory Dr. Deependra Kumar Sinha Ph. D. Saurana and Tao

****End of Report**** Page 1 of 1

ELES Pvi, Ltd. Technical Manager

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PLOT NO-30, MANSARO VAR 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.elespl.co.in

	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/2996	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/2782 : Amtahi Village/Near Tailoring Centre
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 29.07.2023 to 30.07.2023 : 31.07.2023 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Non Operational	Sample Drawn By	: ELES Pvt. Ltd.
Period of Analysis	: 31.07.2023 to 07.08.2023	Sample Condition	: Sealed & Preserved

1	Average Temperature (°C)	: 27	2	Barometric Pressure (mmHg)	: 739
3	Relative Humidity (%)	: 64	4	Weather Condition	: Partly 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/m ³	1S:5182 (Part-12): 2004;RA2019	<0.5	01(Annual)		

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



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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) GST NO-20AA ECE9713D124 ENGINEERING SERVICES PVT. LTD.

Email: <u>Info@elespl.co.in</u>, <u>eles.ranchi@gmail.com</u> Phane na.: 0651-2290103 Website : www.elespl.co.in



	TE	STREPORT		
Test Report No.	: ELES/RNC/2023/2997	Report Release Date	: 08.08.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000001844F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Non Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure Sample Drawn By	: ELES/RNC/2023/AA/2783 : Ambakona Village : 29.07.2023 to 30.07.2023 : 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	

I. Averag	ge Temperature (°C) : 27	2	Barometric Pressure (mm	Hg) :739
3 Relativ	ve Humidity (%) : 64	4	Weather Condition	: Partly Cloudy

NABL Accredited				
Discipline :	Chemical	Group	: Atmospheri	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM 10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	46	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	22	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m³	IS 5182 (Part-2): 2001; RA2022	5.3	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	1S 5182 (Part-6): 2006; RA2022	17.9	80 (24hrs)
Ozone (O3)	µg/m³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



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

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CIN: U74595/H2018PTC011125

ENGINEERING SERVICES PVT. LTD.

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

Test Report No.	: ELES/RNC/2023/2997	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 Sampling Date	: ELES/RNC/2023/AA/2783 : Ambakona Village : 29.07.2023 to 30.07.2023
Address	: Lohardaga, Jharkhand-835302	Sample Received Date Type of Sample Sampling Procedure	: 31.07.2023 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Non Operational	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved
Period of Analysis	: 31.07.2023 to 07.08.2023	- condition	. otaleu ce moserveu

ME	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 27	2	Barometric Pressure (mmH	lg) : 739
3	Relative Humidity (%)	: 64	4	Weather Condition	: Partly 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/m ³	IS:5182 (Part-12): 2004; RA 2019	<0.5	01(Annual)	

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



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ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT.LTD.

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

Orsapat Bauxite Mine-Environmental Monitoring Report



August 2023

CONTENT

alco Industries : Orsapat Bauxite Mine Environmental Monitoring Report August 2023							
Orsapat Bauxite Mine							
AMBIENT AIR QUALITY- CORE ZONE							
Orsa Village/Near Mine Area							
Orsa Village/Southern Part of Orsa Lease							
Orsa Village/Near New Mine office/Near Wegh Bridge							
Orsa Village/Nortern Part of Orsa Lease							
AMBIENT AIR QUALITY- BUFFER ZONE							
Kudag Village/ Near Hindalco Campus							
Jaljali Village/Near Shiv Temple Sabag Road							
Amtahi Village/Near Tailoring Centre							
Ambakona Village							
1 Parts							





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

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



	TH	ST REPORT	
Test Report No.	: ELES/RNC/2023/3442	Report Release Date	: 09.09.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000002210F		

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/3066 : Orsa Village/Near Mine Area Orsapat Bauxite Mine (196.36ha) : 23.08.2023 to 24.08.2023 : 26.08.2023 : Ambient Air	
Mines Status	: Non 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) :2	3	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%) : 6	6	4	Weather Condition	: Partly Cloudy

NABL Accredited Discipline :	Chemical	Group	Atmospheri	e Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	58	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	25	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA 2022	5.5	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	18.3	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewed by 103 4

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WGINEERING SERVICES PVT, LTD.

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

and the second second second	TH	IST REPORT		
Test Report No.	: ELES/RNC/2023/3442	Report Release Date	: 09.09.2023	_
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETAILS		SAMPLEDETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3066 : Orsa Village/Near Mine Area Orsapat Bauxite Mine (196.36ha	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 23.08.2023 to 24.08.2023 : 26.08.2023 : Ambient Air	
Mines Status	: Non 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			
1	Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	:66	4	Weather Condition	: Partly 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/m ³	IS:5182 (Part-12): 2004;RA2019	<0.5	01(Annual)	

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



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

CINEERING SERVICES PVT, LT

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



	TI	EST REPORT		
Test Report No.	: ELES/RNC/2023/3443	Report Release Date	: 09.09.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000002211F			

CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302	Sample Ref. No. Location Sampling Date Sample Received Date	: ELES/RNC/2023/AA/3067 : Orsa Village/Southern Part of Orsa Lease; Orsapat Bauxite Mine (196.36ha) : 23.08.2023 to 24.08.2023 : 26.08.2023
Mines Status	: Non Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02
Period of Analysis	: 26.08.2023 to 08.09.2023	Sample Drawn By Sample Condition	: ELES Pvi. Ltd. : Sealed & Preserved

 Average Temperature (°C) 	: 23	2	Barometric Pressure (mm)	Hg) : 734
3 Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy

Discipline :	Chemical	Group :	Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	51	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	26	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	5.7	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	20.6	80 (24hrs)	
Ozone (O3)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH3)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	1S 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	<0.002	I (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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Dr. Deependra Signateonha

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Ph. D. Environmental Engg ELES Pvl. Ltd. Remoter Lings

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Save Environment, Save Future



PLOT NO-30, MANSAROVAR EN CLAVE, TUPUDANA HATIA, RANCHI-B34003 (JHARKHAND) GST ND:- 204AECE9713D124

NGINEERING 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/2023/3443	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/3067 : Orsa Village/Southern Part of Orsa Lease; Orsapat Bauxite Mine (196,36ha)
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	: 23.08.2023 to 24.08.2023 : 26.08.2023 : Ambient Air
Mines Status	: Non 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	A verage Temperature (°C)	:23	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy

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

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



****End of Report****

Authorised Signatory Dr. Deependra Kumar 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:- 20A AECE 9713D1Z4

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CM: 1174999/H2018PTC011125

	TH	ST REPORT		
Test Report No.	: ELES/RN C/2023/3444	Report Release Date	: 09.09.2023	_
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000002212F			

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name Address	: Hindalco Industries Limited : Lohardaga, harkhand-835302 :	Sample Ref. No. Location Sampling Date Sample Received Date	: ELES/RNC/2023/AA/3068 : Orsa Village -Near New Mine Office/Near Weigh Bridge; Orsapat Bauxite Mine (196.36ha) : 23.08.2023 to 24.08.2023 : 26.08.2023 : Ambient Air
Mines Status	Non Operational	Type of Sample Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By Sample Condition	

1	Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	:734
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy

Discipline :	Chemical	Group :	Atmospheri	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part-23): 2006; RA2022	52	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	28	60 (24hrs)
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	5.2	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	19.2	80 (24hrs)
Ozone (O ₃)	µg/m ³	1S 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m³	1\$ 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.008	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



Authorised Signatory Dr. Deependra Kumar Sinha Ph O F

****End of Report****

ELES Pvt. Ltd. Technical Manager

Page 1 of 1

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

NGINEERING SERVICES PVT. LTD.

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

CIN: UT4999142018PTC011125

	TEST REPORT					
Test Report No.	: ELES/RNC/2023/3444	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/3068 : Orsa Village -Near New Mine Office/Near Weigh Bridge; Orsapat Bauxite Mine (196.36ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 23.08.2023 to 24.08.2023 : 26.08.2023	
Mines Status	: Non Operational	Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 26.08.2023 to 08.09.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

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r					No.		

	Average Temperature (°C) : 2	3	2	Barometric Pressure (mmHg)	:734
3	Relative Humidity (%) : 6	6	4	Weather Condition	: Partly Cloudy

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

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



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Page 1 of 1

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

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



	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/3445	Report Release Date	: 09.09.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000002213F			

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location	: ELES/RNC/2023/AA/3069 : Orsa Village/Northern Part of Orsa Lease; Orsapat Bauxite Mine	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample	(196.36ha) : 23.08.2023 to 24.08.2023 : 26.08.2023 : Ambient Air	
Mines Status	: Non 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	

I	Average Temperature (°C)	: 23	2	Barometric Pressure (mm)	lg) :734
	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy

Discipline :	Discipline : Chemical				
Parameter	Unit.	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	49	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	18	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	5.1	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA 2022	17.3	80 (24hrs)	
Ozone (O3)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH3)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)	



****End of Report****

Authorised Sig natory Dr. Deependra Kumar Sinha

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ELES Pvt. Ltd. Technical Manager

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST ND:- 20AAECE9713D 124

NGINEERING 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/2023/3445	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/3069 : Orsa Village/Northern Part of Orsa Lease; Orsapat Bauxite Mine (196.36ha)	
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	: 23.08.2023 to 24.08.2023 : 26.08.2023	
Mines Status : Non Operational		Type of Sample Sampling Procedure	: Ambient Air : ELES/DOC/SMPL/02	
Period of Analysis	: 26.08.2023 to 08.09.2023	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved	

METEOROLOGICAL INFORMATION

1	Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	: 734
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy

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

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



****End of Report****

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

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PLOT NO 30, MANEAROVAT EACLE +F TUPVOANA AUTUL AL' CHI 532003 (BLATINI I) INT NO -TUNAECOMIEDIDI

imail: info@elesol.co.in , eles rantid® ynail.com Phone no.: 0651-2296303 Website : www.elespi.co.in



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11501	REPORT

Test Report No.	: ELES/RN C/2023/3438	Report Release Date	: 09.09.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	
ULR No.	: TC883923000002206F			

CUSTOMER DE	TAILS	SAN	IPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure Sample Drawn By		: ELES/RNC/2023/AA/3062 : Kudag Village / Near Hindalco Campus : 22.08.2023 to 23.08.2023 : 26.08.2023 : Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.	
Address Mines Status	: Lohardaga, Jharkhand-835302 : Non Operational				
Period of Analysis		Sam	ple Condition	: Sealed &	& Preserved
METEOROLOG	: 26.08 2023 to 08.09 2023 ICAL INFORMATION			-	
1 Average Tem		2	Barometric Pressu	e (mmHg)	:737
3 Relative Hum		4	Weather Condition		: Partly Cloudy

NABL Accredited			_	0.0.0	
Discipline :	Chemical	Group	: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limi	
Particulate Matter (Fivi 10).	με/μ	13 5182 (Fait-23). 2006, RA2022	44	100 (24hrs)	
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	18	60 (24hrs)	
Sulphur Di-Oxide (SO2)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	5.6	80 (24hrs)	
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	5.1	80 (24hrs)	
Ozone (O3)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH3)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	1S 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

Reviewed by

Authorised Signatory

D: Deependra Kumar Sinha and Environmenta Enge.

Page 1 of 1

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Ensail: <u>InfolGelesal c...</u> Phone na - 2551-2290103 Website: :www.despl.co.m

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Test Report No.	: ELES/RNC/2023/3438	Report Release Date	: 09.09.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Non Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure Sample Drawn By	: ELES/RNC/2023/AA/3062 : Kudag Village / Near Hindalco Campus : 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

MI	TEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	:24	2	Barometric Pressure (mmHg)	: 737
3	Relative Humidity (%)	: 65	4	Weather Condition	: Partly 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)	
Banzo (a) Pyrene*	ng/m ³	15:5129 (Part-17): 2004: RA2010	<0.5	(11(Annual)	

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

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****End of Report****

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PLOT NO-3D, MANSAROVAR (NCLAVE, TUTBOCKA) HATIA, NANCHI-834002 (INARVIJANG) GST NO-70445CE915J0124

imail: Info@elessi.co.in=eles.runchi@enail.com Phone n.o.: 0651-2390103 Websilie : www.elespi.co.in



	TEST	REPORT	
Test Report No.	: ELES/RNC/2023/3439	Report Release Date	: 09.09.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000002207F		
CUSTOMER DET/	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Non Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure Sample Drawn By	: ELES/RNC/2023/AA/3063 : Jaljali Village/Near Shiv Temple Sabag Road. : 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

Average Temperature (°C)	:24	2	Barometric Pressure (mm	Hg) : 737
Relative Humidity (%)	: 65	4	Weather Condition	: Partly Cloudy

NABL Accredited				
Discipline :	Chemical	Group	: Atmospheri	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (Fwilid)	µg/m ³	15 5162 (Part-25): 2006; RA2022	41	100 (2dbs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part-24): 2019	17	60 (24hrs)
Sulphur Di-Oxide (SO2)	μg/m ³	IS 5182 (Part-2): 2001; RA2022	5.6	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	13.2	80 (24 hrs)
Ozone (O3)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m³	IS 5182 (Part-22): 2004; R A2019	0.01	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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**** End of Report****

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Wessle : www.alesdi.co.lp

	TES	TREPORT	
Test Report No.	: ELES/RNC/2023/3439	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/3063 : Jaljali Village/Near Shiv Temple Sabag Road.

Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date Type of Sample Sampling Procedure	: 22.08.2023 to 23.08.2023 : 26.08.2023 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Non Operational	Sample Drawn By	: ELES Pvt. Ltd.
Period of Analysis	: 26.08.2023 to 08.09.2023	Sample Condition	: Sealed & Preserved

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	:24	2	Barometric Pressure (mm	Hg) : 737
3	Relative Humidity (%)	: 65	4	Weather Condition	: Partly Cloudy

Discipline	: Chemical	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene*	μg/m ³	IS:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)		
Benzo (a) Dyrene*	ng/m ³	15-5182 (Part-12): 2004-R 42010	<0.5	(Annual)		

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

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****End of Report****

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PLD ET 5 10 EL 65 Technical Manager

Page 1 of 1

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PLOT NO-30, MANSAROVAR ENCLAVE, TURUDANA HATIA, RANCHE234003 (INARKHAND) SST NO- 204AECER120124

Email: Infa@eiesol.co.in ...eles.r.mcN@amail.com Phone no.7 0651-2290303 Metaine : which elesol no In



	163	TREFORT	
Test Report No.	: ELES/RNC/2023/3440	Report Release Date	: 09.09.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
ULR No.	: TC883923000002208F		
CUSTOMER DET.	AILS	SAMPLE DETAILS	1
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3064

TECT DEDODT

W Sarel and all all all all all all all all all al		Location	: Amtahi Village/Near Tailoring
Address	: Lohardaga, Jharkhand-835302	Sampling Date Sample Received Date	Centre : 23.08.2023 to 24.08.2023 : 26.08.2023
Mines Status	: Non Operational	Type of Sample Sampling Procedure Sample Drawn By	: Ambient Air : ELES/DOC/SMPL/02 : ELES Pvt. Ltd.
Period of Analysis	: 26.08.2023 to 08.09.2023	Sample Condition	: Sealed & Preserved

M	ETEOROLOGICAL INFOR	RMATION		and a second second	
1	Average Temperature (°C)	:23	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy

NABL Accredited				
Discipline :	Chemical	Group	: Atmospheri	c Pollution
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PMII0)	48'm ³	15 \$182 (Par 23): 2006; RA2022	53	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	26	60 (24hrs)
Sulphur Di-Oxide (SO2)	μg/m ³	IS 5182 (Part-2): 2001; RA2022	6.1	80 (24hrs)
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	16.1	80 (24hrs)
Ozone (O3)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH3)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ¹	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewed by

Authorised Signatory

20 G Shvironmenta Engg FLSS PVI, Ltd. Technical Manager

****End of Report**** Page 1 of 1

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Ernell'; I<u>nfo@ets.io.us.[r</u> Phone.no.: 0651-1290103 Website : www.slept.co.in

	TEST	T REPORT	
Test Report No.	: ELES/RNC/2023/3440	Report Release Date	: 09.09.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DET.	AILS	SAMPLE DETAILS	
Customer Name Address Mines Status	: Hindalco Industries Limited : Lohardaga, Jharkhand-835302 : Non Operational	Sample Ref. No. Location Sampling Date Sample Received Date Type of Sample Sampling Procedure Sample Drawn By	: ELES/RNC/2023/AA/3064 : Amtahi Village/Near Tailoring Centre : 23.08.2023 to 24.08.2023 : 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

MI	ETEOROLOGICAL INFOR	RMATION			
1	Average Temperature (%)	: 23	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy

Discipline : Chemical		Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Benzene*	μg/m ³	IS:5182 (Part-11): 2006;RA2017	<1.0	05(Annual)		
Renzn (a) Pyrene*	ngAn ³	IS-5182 (Part-12): 2004:RA2019	⊲0.5	01(Annual)		

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

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****End of Report****

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NOT NO-30, MANSAROVAR ERCLAVE, TUYUDANA MATIA, IVAN CHI-E34003 I MARIKHAND) BST NO - 20AAEC297130130

CIN: U74539/m2018=70011125

Email: I<u>nfo@elesol.co.in , eles ranchi@a</u>mail.com Phone no.; 0651-2290103 Website i Welwelesor.co.in



	TES	TREPORT	
Test Report No.	: ELES/RN C/2023/3441	Report Release Date	: 09.09.2023
Work Order No.	: 13612310218	Work Order Date	; 21.04.2023
ULR No.	: TC883923000002209F		
CUSTOMER DET	AILS	SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3065

Address Mines Status	: Lohardaga, Jharkhand-835302 : Non Operational	Location Sampling Date Sample Received Date Type of Sample Sampling Procedure Sample Drawn By	: Ambakona Village : 23.08.2023 to 24.08.2023 : 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

MI	ETEOROLOGICAL INFOR	MATION			
1	Average Temperature (°C)	: 23	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%)	:66	4	Weather Condition	: Partly Cloudy

NABL	Accredited
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Discipline :	Chemical	Group : Atmospheric Pollution				
Parameter	Unit	Test Protocol	Result	Regulatory Limit		
Particulate Matter (PM10)	ug/m ³	IS 5182 (Part-23): 2006; RA2022	42	100 (24hrs)		
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	18	60 (24hrs)		
Sulphur Di-Oxide (SO2)	μg/m ³	IS 5182 (Part-2): 2001; RA2022	<5.0	80 (24hrs)		
Nitrogen Di-Oxide (NO2)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	20.2	80 (24hrs)		
Ozone (O3)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)		
Ammonia (NH3)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)		
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)		
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)		
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)		
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)		

Reviewell by

Authorised Signatory

Déspendra Kemar Sinha

**** End of Report****

ELES Pol. Ltd. Technical Manager

Page 1 of 1

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Emult. info@ielespt.co.ln Phone no - 0651-2280203 Webute : www.elesol.co.in

	TEST	REPORT	
Test Report No.	: ELES/RNC/2023/3441	Report Release Date	: 09.09.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023
CUSTOMER DET/	AILS	SAMPLE DETAILS	Contraction of the
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/3065 : Ambakona Village : 23.08.2023 to 24.08.2023 : 26.08.2023 : Ambient Air : ELES/DOC/SMPL/02
Mines Status	: Non Operational	Sample Drawn By Sample Condition	: ELES Pvt. Ltd. : Sealed & Preserved
Period of Analysis	: 26.08.2023 to 08.09.2023	- ounpre condition	. Searce of Treserved

MI	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 23	2	Barometric Pressure (mm	Hg) : 736
3	Relative Humidity (%) : 66	4	Weather Condition	: Partly 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.



****End of Report****

Authorised Signatory

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ENVIRONMENTAL LABORATORIES & ENGINEERING SERVICES PVT.LTD.

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

Orsapat Bauxite Mine-Environmental Monitoring Report



September- 2023

CONTENT

Hind	alco Industries : Orsapat Bauxite Mine Environmental Monitoring Report September- 2023
	Orsapat Bauxite Mine
	AMBIENT AIR QUALITY- CORE ZONE
1	Orsa Village/Near Mine Area
2	Orsa Village/Southern Part of Orsa Lease
3	Orsa Village/Near New Mine office/Near Wegh Bridge
4	Orsa Village/Nortern Part of Orsa Lease
	AMBIENT AIR QUALITY- BUFFER ZONE
1	Kudag Village/ Near Hindalco Campus
2	Jaljali Village/Near Shiv Temple Sabag Road
3	Amtahi Village/Near Tailoring Centre
4	Ambakona Village
	AMBIENT NOISE
	WORKZONE NOISE





ENVIRONMENTAL LABORATORIES &

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

ENGINEERING SERVICES PVT. LTD.

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

	IES	I REPORT	
Test Report No.	: ELES/RNC/2023/4050	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.	: ELES/RNC/2023/AA/3467
		Location	: Orsa Village/Near Mine Area
			Orsanat Bauxite Mine (196 36ha

			Orsapat Bauxite Mine (196.36na)
Address	Lohardaga, Jharkhand-835302	Sampling Date	: 24.09.2023 to 25.09.2023
		Sample Received Date	: 29.09.2023
		Type of Sample	: Ambient Air
Mines Status	: Non Operational	Sampling Procedure	: ELES/DOC/SMPL/02
winnes Status		Sample Drawn By	: ELES Pvt. Ltd.
Period of Analysis	: 29.09.2023 to 12.10.2023	Sample Condition	: Sealed & Preserved

ME	TEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 25	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%) : 66	4	Weather Condition	: Partly Cloudy

Discipline : Chemics	al	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	51	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	21	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part-2): 2001; RA2022	5.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part-6): 2006; RA2022	16.3	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

Page 1 of 2

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ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA HATIA, RANCHI-834003 (IHARKHAND) G5T NO:- 204AECE9713D124

VOINCERING 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/2023/4050	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 (CoHo)*	µg/m³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)
Benzo-(a)-Pyrene*	ng/m ¹	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)

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

Reviewed by

**** End of Report****

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

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

ENGINEERING SERVICES PVT. LTD.

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

	TEST	REPORT			
Test Report No.	: ELES/RNC/2023/4051	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.	: ELES/RNC/2023/AA/3468		
		Location	: Orsa Village/Southern Part of Orsa		
			Lease; Orsapat Bauxite Mine		
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 24.09.2023 to 25.09.2023		
		Sample Received Date	: 29.09.2023		
		Type of Sample	: Ambient Air		
Mines Status	: Non Operational	Sampling Procedure	: ELES/DOC/SMPL/02		
D 1 1 1 1		Sample Drawn By	: ELES Pvt. Ltd.		
Period of Analysis	: 29.09.2023 to 12.10.2023	Sample Condition	: Sealed & Preserved		

M	ETEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 25	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%) : 66	4	Weather Condition	: Partly Cloudy

Discipline : Chemica	al	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part-23): 2006; RA2022	44	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	22	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part-2): 2001; RA2022	<5.0	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part-6): 2006; RA2022	17.3	80 (24hrs)
Ozone (O ₃)	μg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH3)	μg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m ³	IS 5182 (Part-22): 2004; RA2019	< 0.002	I (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

Page 1 of 2

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PLOT NO-30, MANSAROVAR ENCLAVE, TUFUDANA HATTA, RANCHI-834003 (JHARKHAND) GST ND:- 204AECE9713D124

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/2023/4051	Report Release Date	: 28.10.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

Discipline : Chemical		Group : Atmospheric Pollation		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Benzene (C ₆ H ₆)*	µg/m ²	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)
Benzo-(a)-Pyrene*	ng/m ³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)

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

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, TUPUDANA HATIA, RANCHI-834003 (JHARKHAND) GST NO:- 20AAECE9713D1Z4

ENGINEERING SERVICES PVT. LTD.

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

	TES	T REPORT	
Test Report No.	: ELES/RNC/2023/4052	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.	: ELES/RNC/2023/AA/3469

Customer Name	. Innuarco muusines Ennicu	Bampie Rei. No.	. LELOINICIZOZJININ JAO)
		Location	: Orsa Village -Near New Mine
			Office/Near Weigh Bridge;
Address	: Lohardaga, Jharkhand-835302		Orsapat Bauxite Mine (196.36ha)
		Sampling Date	: 24.09.2023 to 25.09.2023
		Sample Received Date	: 29.09.2023
		Type of Sample	: Ambient Air
Mines Status	: Non Operational	Sampling Procedure	: ELES/DOC/SMPL/02
D 1 1 6 1 1 1		Sample Drawn By	: ELES Pvt. Ltd.
Period of Analysis	: 29.09.2023 to 12.10.2023	Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION

1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy

Discipline : Chemica	al	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	40	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	22	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	<5.0	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	15.4	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	μg/m ³	IS 5182 (Part-22): 2004; RA2019	0.005	I (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

Page 1 of 2

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ENVIRONMENTAL LABORAT

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

ERING SERVICES PVT. LTD.

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

TEST REPORT					
Test Report No.	: ELES/RNC/2023/4052	Report Release Date	: 28.10.2023		
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023		

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

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

Reviewed by

**** End of Report****

Authorised Signatory **Un Deepundra Kumar Sinha** Ph. D. Environmental Engl. ELES Pvi. Ltd. Technical Manager

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

Test Report No.	: ELES/RNC/2023/4053	Report Release Date	: 28.10.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3470
		Location	: Orsa Village/Northern Part of Orsa
			Lease; Orsapat Bauxite Mine
Address	: Lohardaga, Jharkhand-835302		(196.36ha)
		Sampling Date	: 24.09.2023 to 25.09.2023
		Sample Received Date	: 29.09.2023
		Type of Sample	: Ambient Air
Mines Status	: Non Operational	Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
Period of Analysis	: 29.09.2023 to 12.10.2023	Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION

1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 66	4	Weather Condition	: Partly Cloudy

Discipline : Chemical		Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part-23): 2006; RA2022	43	100 (24hrs)
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	16	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part-2): 2001; RA2022	<5.0	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part-6): 2006; RA2022	12.9	80 (24hrs)
Ozone (O ₃)	μg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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NGINETHING SERVICES PVT. LTD.

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

Concernant of the second se	TE	ST REPORT	
Test Report No.	: ELES/RNC/2023/4053	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 ₆ H ₆)*	µg/m ³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)	
Benzo-(a)-Pyrene*	ng/m ³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)	

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

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****End of Report****

Authorised Signatory Dr. Deependra Kumar Sinha Ph. D. Environmental Enge. ELES Pvr. Ltd. Technical Manager

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ENGINCERING SER VIGES PV1. LTD.

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

: 738

: Cloudy

	TE	EST REPORT		
Test Report No.	: ELES/RNC/2023/4046	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.	: ELES/RNC/2023/AA/3463
		Location	: Kudag Village /
			Near Hindalco Campus
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 23.09.2023 to 24.09.2023
		Sample Received Date	: 29.09.2023
		Type of Sample	: Ambient Air
Mines Status	: Non Operational	Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
Period of Analysis	: 29.09.2023 to 12.10.2023	Sample Condition	: Sealed & Preserved

METEOROLOGICAL	INFORMATION
----------------	--------------------

1A verage Temperature (°C): 252Barometric Pressure (mmHg)3Relative Humidity (%): 684Weather Condition

Discipline : Chemica	al	Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part-23): 2006; RA2022	32	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	15	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part-2): 2001; RA2022	5.1	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part-6): 2006; RA2022	16.8	80 (24hrs)	
Ozone (O ₃)	μg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m ³	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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PLOT NO-30, MANSAROVAE ENCERVE, TUPVOANA HATLA RANCHI-834003 (IHARKHAND) 957 NO:- 20A4ECE#7130120

SEPARCES PVT. LTD. Emailt info@elesal.co.io . eles.ranchi@gmail.com

Phone no.: 0651-2290103

Website : www.elassy.co.in

	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/4046	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 (CtHa)*	µg/m ³	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)
Benzo-(a)-Pyrene*	ng/m ²	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)

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

Reviewed by

****End of Report****

Anthorised Signatory Dr. Duependra Kumer Sinha Ph D. Envisionmental Enge ELES For Lin Technical Manager

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NOINEERING SERVICES PVJ. LTD.

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

	TEST	REPORT	
Test Report No.	: ELES/RNC/2023/4047	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.	: ELES/RNC/2023/AA/3464
		Location	: Jaljali Village/Near Shiv Temple
			Sabag Road.
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 23.09.2023 to 24.09.2023
		Sample Received Date	: 29.09.2023
	(Type of Sample	: Ambient Air
Mines Status	: Non Operational	Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
Period of Analysis	: 29.09.2023 to 12.10.2023	Sample Condition	: Sealed & Preserved

ME	CTEOROLOGICAL INFOR	MATION				
1	Average Temperature (°C)	: 25	2	Barometric Pressure (mmHg)	: 738	
3	Relative Humidity (%)	: 68	4	Weather Condition	: Cloudy	

Discipline : Chemica	al	Group: Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	μg/m ³	IS 5182 (Part-23): 2006; RA2022	32	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	15	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part-2): 2001; RA2022	<5.0	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part-6): 2006; RA2022	15.9	80 (24hrs)
Ozone (O ₃)	μg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.01	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

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PLOT NO-30, MANSAROVAR ENCLAVE, FUPUDANA HATTA, NANCHI 634003 (IHARKHAND) GST NO- 104 AFCER/13D124

SERVICES PVT. 4.TD.

Email: info@elespl.co.in . eles.conch/@amail.com Phone no.1 0651-2290103 Website I www.elespl.co.in

TEST REPORT					
Test Report No.	: ELES/RNC/2023/4047	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 (CsH ₄)*	µg/m²	1S 5182 (Part-11)2006;RA2017	<1.0	05(Annual)
Benzo-(a)-Pyrete*	ng/m ³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)

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

Reviewed by,

*****End of Report#***

Authorised Signatory _7. Deependra Kumar Sinna Ph. C. Environmental Engg. ELES PALLIS, Technical Manager

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

ENGINEERING SERVICES PVT. LTD.

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

IEST REPORT				
Test Report No.	: ELES/RNC/2023/4048	Report Release Date	: 28.10.2023	
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023	

CUSTOMER DETAILS		SAMPLE DETAILS		
Customer Name	: Hindalco Industries Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3465	
		Location	: Amtahi Village/Near Tailoring	
			Centre	
Address	: Lohardaga, Jharkhand-835302	Sampling Date	: 24.09.2023 to 25.09.2023	
		Sample Received Date	: 29.09.2023	
		Type of Sample	: Ambient Air	
Mines Status	: Non Operational	Sampling Procedure	: ELES/DOC/SMPL/02	
		Sample Drawn By	: ELES Pvt. Ltd.	
Period of Analysis	: 29.09.2023 to 12.10.2023	Sample Condition	: Sealed & Preserved	

METEOROLOGICAL INFORMATION

1	Average Temperature (°C)	: 24	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%)	: 68	4	Weather Condition	: Cloudy

Discipline : Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	43	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	20	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part-2): 2001; RA2022	5.3	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	15.7	80 (24hrs)	
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH ₃)	μg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	μg/m ³	IS 5182 (Part-22): 2004; RA2019	< 0.002	1 (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

Page 1 of 2

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PLDT NO-30, MANSAROVAR ENCLAVE, TUPUDANA MATIA, RANCHI-834003 (IMARKHAND) GST NO:- 20AAECES713D124

ENGINEERING SERVICES PVT. LTD.

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

	TE	ST REPORT		
Test Report No.	: ELES/RNC/2023/4048	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 (C6H6)*	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 LT Deependra Kumar Sinha Ph. D. Environmental Enge ELSS Pvt Ltd. Technical Manager

Page 2 of 2

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

ENGINEERING SERVICES PVT. LTD.

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

	TE	EST REPORT		
Test Report No.	: ELES/RNC/2023/4049	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.	: ELES/RNC/2023/AA/3466
		Location	: Ambakona Village
		Sampling Date	: 24.09.2023 to 25.09.2023
Address	: Lohardaga, Jharkhand-835302	Sample Received Date	: 29.09.2023
		Type of Sample	: Ambi <mark>ent Air</mark>
		Sampling Procedure	: ELES/DOC/SMPL/02
Mines Status	: Non Operational	Sample Drawn By	: ELES Pvt. Ltd.
Period of Analysis	: 29.09.2023 to 12.10.2023	Sample Condition	: Sealed & Preserved

M	TEOROLOGICAL INFORMATION			
1	Average Temperature (°C) : 24	2	Barometric Pressure (mmHg)	: 738
3	Relative Humidity (%) : 68	4	Weather Condition	: Cloudy

Discipline : Chemical		Group: Atmospheric Pollution			
Parameter	Unit	Test Protocol	Result	Regulatory Limit	
Particulate Matter (PMI0)	μg/m ³	IS 5182 (Part-23): 2006; RA2022	34	100 (24hrs)	
Particulate Matter (PM2.5)	μg/m ³	IS 5182 (Part- 24): 2019	16	60 (24hrs)	
Sulphur Di-Oxide (SO ₂)	μg/m ³	IS 5182 (Part-2): 2001; RA2022	<5.0	80 (24hrs)	
Nitrogen Di-Oxide (NO ₂)	μg/m ³	IS 5182 (Part-6): 2006; RA2022	16.3	80 (24hrs)	
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)	
Ammonia (NH3)	μg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)	
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)	
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	< 0.002	I (24hrs)	
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)	
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)	

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

ENGINEERING SERVICES PVT. LTD.

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

	TE	ST REPORT	and the second s	
Test Report No.	: ELES/RNC/2023/4049	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 (C6H6)#	µg/m ¹	IS 5182 (Part-11)2006;RA2017	<1.0	05(Annual)		
Benzo-(a)-Pyrene*	ng/m ³	IS 5182 (Part-12)2004;RA2019	<0.5	01(Annual)		

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

Reviewed hg

**** End of Report****

Authorised Signatory Lt. Daspendra Kumar Sinha Ph. D. Environmental Engg. ELES Pvt. Ud. Technical Manager

Page 2 of 2

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

ENGINEERING SERVICES PVT. LTD.

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

Test Report No.	: ELES/RNC/2023/4139	Report Release Date	: 31.10.2023
Work Order No.	: 13612310218	Work Order Date	: 21.04.2023

CUSTOMER DET	TAILS	SAMPLE DETAILS			
Customer Name	: Hindalco Industries Limited	Sampling Date	: 24.09.2023 to 25.09.2023		
Address	2	Sampling Received Date	: 30.09.2023		
		Type of Sample	: Ambient Noise		
	: Lohardaga, Jharkhand-835302	Sampling procedure	: ELES/DOC/SMPL/03		
		Sample Drawn By	: ELES Pvt. Ltd.		
Mines Status	: Non Operational	Period of Analysis	: 30.09.2023 to 10.10.2023		

M	ETEOROLOGICAL INFORMAT	TION		
1	Average Temperature (°C) : 25	2	Barometric Pressure (mmHg)	: 736
3	Relative Humidity (%) : 66	4	Weather Condition	: Partly Cloudy

Location	Unit	Test Protocol	Resi	ılt	Regulatory Limit (Industrial Zone)
			Time	L _{eq}	
Orsa Village/Near Mine Area Orsapat Bauxite Mine (196.36ha)	dB(A)	IS 9989:1981, RA 2020	Day Time	62	75 dB(A) Day Time &
Sample ID: ELES/RNC/2023/AN/3531			Night Time	44	70 dB(A) Night Time



****End of Report****

Dr. Deepenora KunnarySinha Ph. D. Environmental Engg. ELES Pvt. Ltd. Technical Manager

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

ENGINEERING SERVICES PVT. LTD.

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

TEST REPORTTest Report No.: ELES/RNC/2023/4161Report Release Date: 31.10.2023Work Order No.: 13612310218Work Order Date: 21.04.2023

CUSTOMER DE	TAILS	SAMPLE DETAILS			
Customer Name : Hindalco Industries Limited		Sampling Date	: 24.09.2023		
		Sampling Received Date	: 30.09.2023		
		Type of Sample	: Workzone Noise		
Address	: Lohardaga, Jharkhand-835302	Sampling procedure	: ELES/DOC/SMPL/03		
	1	Sample Drawn By	: ELES Pvt. Ltd.		
Mines Status	: Non Operational	Period of Analysis	: 30.09.2023 to 11.10.2023		

M	METEOROLOGICAL INFORMATION						
1	Average Temperature (°C)	: 26	2	Barometric Pressure (mmHg)	: 738		
3	Relative Humidity (%)	: 64	4	Weather Condition	: Partly Cloudy		

Location	Unit	Test Protocol	Res	ult	Regulatory Limit (Industrial Zone)	
Near Weich Dridge			Time	L _{eq}		
Near Weigh Bridge – Orsapat Bauxite Mine (196.36ha)	dB(A)	IS 4758:1968; RA 2017		60	90 dB (A)	
Sample ID: ELES/RNC/2023/WN/3553			Day Time	69		



****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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Annexure 3

Date - 01.11.2023

Office Order

Environmental Cell has been re-constituted at Orsa Bauxite Mine (Area 196.36 ha) comprising below mentioned team members. The team will ensure compliance with the Environment Act, Regulation & Rule in respect of the said mines of Hindalco Industries Limited.

- 1. Mr. Vijay Chauhan (Coordinator)
- 2. Mr. Praveen Pradhan Geologist
- 3. 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)

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)	15.58	60000	28.04.1965 to 31.03.2030	80.00	0.00	0.00	0.00
17	Pakhar (109.507)	109.507	280000	26.07.2008 to 25.07.2058	97720.00	1.93	0.71	237280.85
18	Bimarla Bauxite Mine	134.37	300000	18.07.2009 to 17.07.2059	39550	2.21	0.8	64913.65
19	Amtipani Chirodih Bauxite Mines	130.01	450000	11.01.2017 to 10.01.2067	84678	3.96	1.15	98519.66

*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

**Part of OB removed cost.

Basudev Gangopadhyay AVP (Planning, Environment & Compliance)